Appendix G. Response to Comments

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Acronyms

In addition to the acronyms used in the FEIS, the following additional acronyms are used in this appendix.

AMP allotment management plan

AUL allowable use levels (livestock)

CARA Comment Analysis and Response Application

EPA Environmental Protection Agency

RMO riparian management objective

SYL sustained yield limit

Introduction

This appendix describes the process used to analyze the comments received during the public comment period of June 28, 2018 to October 9, 2018 and includes either direct comments or representative comments and subsequent agency responses to the substantive comments received. A variety of methods were used to inform the public about the DEIS and Draft Forest Plan. These included direct mailings to interested and potentially affected individuals and organizations, news releases, newsletters, media interviews, open houses, contacts with other federal and local agencies, publication of the Notice of Availability in the Federal Register, and website posting at www.fs.usda.gov/goto/hlc/forestplanrevision.

The HLC NF received 1,191 letters; of which there were 1,009 unique letters, 161 form letters, and 21 duplicates. Comments were received from 98 agencies/organizations.

Some comments included literature for the agency to consider. The responses to the literature can be found in a table at the end of this appendix.

Content Analysis Process

Content analysis is a method commonly used by the Forest Service to gather information about comment letters. The content analysis process ensured that every comment was read, analyzed, and considered. Each unique letter was read, and substantive comments were identified and coded by major topic. The substantive comments and their coding were entered into the Content Analysis and Response Application (CARA) database, which enabled reports to be run listing all substantive comments by topic. Once the unique and substantially different comments had been coded, the concerns raised by different commenters on the same subject and with the same intent were grouped by topic. Resource specialists combined similar comments into statements that captured the intent of the commenter(s). These statements are the "comments" in the response to comments section. Thus, even though not every comment is displayed in this appendix exactly as written by each respondent, each comment was considered individually. Comments specific to the identification of SCC have been forwarded to the Regional Forester for consideration.

The comment statements are followed by the responses prepared by the team. The interdisciplinary team prepared responses for each comment based on its merits, regardless of the source or whether the comment was expressed by one person or by many.

In considering the comments, it is important for readers and decision makers to understand this process makes no attempt to treat input as if it were a vote. Instead, the content analysis process focuses on the content of the comments and ensures that every comment is considered in the decision process.

Individual letters are not included in this report but can be viewed online in the Content Analysis and Response Application (CARA) public reading room for this project. Go to https://cara.ecosystem-management.org/Public//ReadingRoom?Project=44589.

This appendix documents the Forest Service responses to the substantive comments. The agency responded by:

- modifying the forest plan and alternatives;
- developing or analyzing alternatives not given detailed consideration in the draft EIS;
- supplementing, improving, or modifying the analysis that the draft EIS documented;
- making factual corrections; and/or
- explaining why the comments need no further agency response.

Considering Different Types of Comments (substantive/non-substantive)

Agencies have a responsibility under the NEPA to first "assess and consider comments both individually and collectively" and then to "respond… stating its response in the final statement." The content analysis process considers comments received "individually and collectively" and equally, not weighting them by the number received or by organizational affiliation or other status of the commenter. Public comment statements and supporting quotes from public input form the basic summary of public comment and were the primary focus of the interdisciplinary team in considering comments.

In completing the content analysis, comments were identified that fell outside the scope of the forest plan revision. Comments outside the scope do not require a response. Generally, the types of comments that were considered outside the scope include those that:

- Do not address the purpose, need, or goals of the 2020 Forest Plan;
- Address concerns that are already decided by federal law or national policy;
- Suggest an action not appropriate for the forest plan decision (such as site-specific decisions to construct new roads, campgrounds or facilities, to offer special use permits, or the sale of timber resources);
- Propose untenable restrictions on management of the Forest or conflict with approved plans not being revised in the Forest Plan revision process; and/or
- Did not consider reasonable and foreseeable negative consequences.

Once comments were identified as being within the scope, they were identified as being substantive or not. Based on the Council of Environmental Quality's regulations, a substantive comment is one that:

- Questions, with a reasonable basis, the accuracy of the information in the environmental impact statement;
- Questions, with a reasonable basis, the adequacy of environmental analysis as presented;
- Presents reasonable alternatives other than those presented in the DEIS that meet the purpose and need of the proposed action and address significant issues; and
- Causes changes or revisions in the proposal.

Nonsubstantive comments, or concerns identified from them, include those that simply state a position in favor of or against an alternative, merely agree or disagree with Forest Service policy, or otherwise express an unsupported personal preference or opinion.

A response is only required for substantive comments or the concerns identified from them. Responses to substantive concerns are typically more extensive, complete, and most importantly, offer an explanation of why or why not and where the concern may have resulted in changes to the Forest Plan or analysis. If several concerns are very similar, they have been grouped for response purposes. Public comments that identified editorial or other errors in the presentation of information in the DEIS were used to revise text and make corrections for the FEIS.

Commenters and Coding Numbers

Letters received from commenters were numbered. Comments within each letter were then assigned to a comment category. Table 1 includes the individuals and organizations that submitted letters and the categories associated with each letter. Commenters can look for their name and then find the comment categories to refer to see the FS response. Some categories (marked with an asterisk) also have more detailed answers, which can be found in the supplemental appendix G in the project record.

Table 1. Commenters and comment categories

Last name	First name	Organization name	Letter number	Comment category number(s)
Abelin	Doug		1177	30, 68, 78, 120, 135, 138
Action Committee	CTVA	Capital Trail Vehicle Association	719	30, 66, 67*, 68, 74, 75, 104, 107, 120, 135, 140, 188*, 201, 266
Adair	Robert		34	76, 140
Adams	Stephanie	National Parks Conservation Association	1028	2, 7, 12, 15, 52*, 84, 102, 119*, 138, 192, 275*
Ahrens	James		188	78
Albrecht	Quincie		1119	3, 21
Alford	David		129	83
Allen	Bob	Montana Mountain Bike Alliance	547, 1136	3, 21, 31, 138, 187
Allen	Bob		1139	3, 28, 76, 138, 187
Alley	Katherine		320	3, 76
Allison	Emily Anne		233	2, 5, 16, 34, 93, 102
Allison	John		364	76
Altobelli	Rocco		594	3, 138
Altshuld	Bonnie		856	2, 5, 16, 34, 102
Andersen	Chamois	Defenders of Wildlife	1037	14, 15, 52*, 78, 104
Anderson	Rick		87	82
Anderson	David		357	2, 21, 201
Anderson	Sherman	Sun Mountain Lumber	606	6
Anderson	Ted		728	5, 78
Anderson	Ryan		807	3, 143
Anderson	Kelsey		821	5
Anderson	Heidi		892	18, 2, 5, 16, 34, 102
Anderson	Jennings		955	3
Anderson	Eric		956	3, 28, 31, 38, 76, 138
Anderson	Taylor		1036	31, 138
Anderson	John		1183	23
Angstead	Zach		795, 866	7, 12, 21, 23, 52*, 67*, 175
Angstead	Zach	Northern Rocky Mountain Grotto	1032	107, 122
Ankofski	Greg		383, 596	31, 34, 68, 76, 187
Anon	Anon		1, 2, 3, 96, 389, 530, 578, 813, 820	1, 6, 16, 30, 49*, 83, 76, 78, 138
Anon	Jack		35	30

Last name	First name	Organization name	Letter number	Comment category number(s)
Anon	Anonymous		381	3, 31
Anon	Luke Gorst		440	92, 143
Anon	Leonard		1024	5, 17*, 39, 41, 43, 70, 71, 91*, 96*, 108, 116, 119*, 121, 134*, 161, 162, 177, 180, 184*, 189*, 192, 203*, 239, 260*, 272*
Arlinghaus	Paul	Allegion	365	3, 30, 31, 76, 92
Arndt	Matthew		893	78
Arndt	Michael		1151	21
Arno	Gary		1097	28, 31, 138
Arno	Matt	Montana Department of Natural Resources Conservation	1185	68, 78, 104, 120, 171, 205, 222*, 223, 224, 231, 236*, 258*
Arnold	Anthony		612	3, 31
Ascheman	John		327	1, 30, 78, 135, 201
Ashwood	Lester		201	30
Atchison	Tenlee	Cascade Conservation District	543	183, 237
Aumann	Philip Fulton		649	78
Axhelm	Zoe		1126	2, 5, 23, 33, 34, 102
Babat	Alexander		368	3
Backstrom	James		799	30
Bailey	Jerry		645	78
Baillie	Rusty		399	68, 107
Baker	August		1190	3, 68, 104
Balasky	Cathy		902	7, 23
Ballard	Rebecca		654	7, 34, 102
Barabe	Russell		941	31, 68, 187
Barber	Jack		58	3, 66, 135, 143
Bardwell	Dean		165, 652	30, 68
Barnard	Larry M.		912	78
Barnard	Grant		976	21, 34, 76, 150
Barnes	Jim		469	3
Barnes	Matt		930	28, 31, 76, 78, 138
Barnett	Ann		335	14
Barry	Daniel		1156	67*
Barta	Randy		477	207
Bartel	Dan		275	205
Bartlett	Lee		1150	2, 5, 12, 16, 23, 34, 102, 175

Last name	First name	Organization name	Letter number	Comment category number(s)
Barton	Alex A		661	2, 16, 23, 102
Baskett	Sally		1003	30, 176
Bates	Sarah	National Wildlife Federation	804	15, 59, 72, 119*, 120, 153, 163, 178*, 184*
Baughan	Kalon C		1023, 1118	2, 5, 16, 34, 73*, 102
Baxter	Larry		840	78
Bay	Lisa		591	5, 23, 30, 44*, 150
Bay	Mike		1132	5
Bayer	Joane		184	7
Beardslee	Greg	Montana Mountain Bike Alliance	547	3, 31, 138, 187
Beardslee	Greg		549, 982	3, 78
Beatty	Marvin		678	2, 151
Beck	Scott		446	135, 143
Beckert	Stephanie		91	135
Beckes	Arthur		1110	78
Begler	Henry		191	78
Beier	Dave		429	143
Beischel	Linda		562	5, 14, 15, 150
Bell	Priscilla		161	21
Bender	Bruce		154	2, 3, 5, 16, 34, 102
Benes	Michelle		899	2, 5, 16, 34, 102
Bergan	Faye		1059	5, 23
Bergroos	Raymond		186	78
Bergstrom	Annika		1189	3, 104
Bernhardt	Joseph		390	3, 76
Bertram	Sue		230	2, 3, 5, 16, 34, 102
Bertram	Aubrey R		644	7, 14, 21, 23, 115, 147
Bierly	Craig		452	76
Biggers	Corey		1030	3, 67, 138
Birkes	Lara		182	2, 5, 16, 34, 102
Bishop	Matthew	Helena Hunters & Anglers Association	527	44*, 104, 272*
Bishop	Jodi		676	2, 5, 16, 34, 102
Bishop	Norman A.		688	2, 5, 16, 34, 102
Bishop	Margareta		715	5, 23, 30, 76, 150
Blank	D. L.		248	5, 21, 102
Bloomquist	Dean	Golden Valley County Commissioners	408	28, 44*, 135, 184*, 246
Blum	Scott		985	21, 23

Last name	First name	Organization name	Letter number	Comment category number(s)
Blumenthal	Casey		1105	30
Bodman	Noah	Flathead Area Mountain Bikers	723	3, 76, 138, 208
Bodner	Jay	Montana Stockgrowers Association	1004	1, 18, 108, 116, 163, 219, 228
Boland	Bob		923	5, 23, 102
Bond	Sarah		4	5
Boschert	John		639	68
Bouchard	Kathryn		856	2, 5
Bove	Cliff and Pearl		88	18, 82, 132, 151
Bovingdon	Mark		260	28, 84, 138
Bovington	Tere		159	7, 16, 34, 102
Bowers	Pat		854	17*
Bowman	Jane		223	144
Boyer	Nicholas		102, 952	3, 76, 135
Boyer	Elizabeth		143	28, 31, 138
Boyle	Rich	Fort Shaw Irrigation District	529	67*, 78, 183
Brad	McBratney	Sun River Rental	796	226
Bradford	Sandra		379	76
Bradley	Stacey		104	28, 31, 76, 93, 138, 140
Bradley	Evlyn		891	78
Bradley	James		913	28, 31, 66, 67*, 76, 135, 138
Brake	Matthew		963	3, 31
Brasher	Daniel		895	16, 33, 34
Bray	Tom		231	16, 102
Brewer	Rod	Meagher County Commissioners	471	104, 125, 135, 165, 223, 226, 230
Brooks	David	Trout Unlimited	580	198
Broste	Anders		29	76
Broughton	Kayla	Mountain Bike Guild	602	138
Brown	Lloyd		284	3, 6, 40*, 258*
Brown	David	Elkhorn Working Group	285, 1180	17*, 18, 30, 34, 40*, 44*, 51*, 53, 55, 56, 57, 58*, 59, 60, 67*, 68, 75, 76, 78, 79, 86, 87, 90*, 98, 107, 110, 113*, 119*, 123, 137*, 138, 154, 156, 161, 164, 166, 174, 175, 177, 178*, 184*, 189*, 196, 204, 209, 210*, 213*, 223, 226,

Last name	First name	Organization name	Letter number	Comment category number(s)
				238, 243*, 244, 245, 253, 260*, 279, 287
Brown	Rhett		908	3, 31, 138, 146*, 208
Bruner	Erik		551	92, 138
Bruno	Louis		1171	5, 14, 15, 102
Bucher	William		539	7
Buhl	Timothy		337	34, 138
Buhman	Mike		388	28
Buley	Sara		700	7, 14, 16, 21, 23, 102
Bullis	Rod		316	7, 44*, 63, 90*, 209, 222*, 232*, 287
Burbidge	John		118	31
Burch	Theron		1083	6, 135, 138
Burgess	Aevind		670	2, 5, 16, 21, 34, 102
Burk	Rachel Louise		677	78
Burnham	Bryn L		841	1, 34
Burningham	Dave		1094	76
Bushnell	Jessica	Broadwater County Weed District	523	18, 68
Busse	Ryan		332	14, 76, 102
Butcher	Ross	Fergus County	1063	30, 68, 78
Butterworth	David		524, 525	5, 14, 15, 102, 150
Byerly	Dave	City of Lewistown	552	152*
Byerly	Dave		975	7, 21, 68, 152*
Byrne	Amanda		682	138
Calder	Serena		387	3
Callaghan	Ed		114	21, 67*
Callaghan	E		115	21, 86
Callaghan	Marc		311	78
Callaghan	Noah		319, 359	5, 78
Callaghan	Amelia		323	21
Callaghan	Gabe		360	5
Calvao	Jody		435	28, 135
Calvert	Dale		427	135
Calvert	Wayne		449	135
Campbell	Casey		425	135
Canfield	Arthur Gary		1134	2, 5, 16, 34, 102
Cardin	William		1182	5, 14, 15, 102, 150
Carl	Rich		724	2, 5, 16, 21, 26, 34, 66, 78, 90*, 91*, 93, 102,

Last name	First name	Organization name	Letter number	Comment category number(s)
				113*, 131, 147, 152*, 201
Carnahan III	John	Cutthroat Ranch on the Landers Fork, LLC	315	21
Carr	David		1020	5, 23, 76, 150, 267
Carreon	Benjamin		37	31
Carroll	Linda		685, 1099	2, 5, 16, 34, 102
Carson	G. B.		173	2, 21
Caruso-Hirst	Donna		774	5, 14, 52*
Casile	Almer		860	117*, 138
Cassidy	Duane		46, 65, 988	1, 30, 205, 226, 230
Castillo	John		415	138
Cates	Menolly		367	76
Caughron	Clif	Backcountry Horsemen of America	454	34, 76, 154
Chamarro	George		432	201
Chapman	Cheryl		1122	138
Chase	John	Sun River Watershed Group	557	48*, 51*, 53, 67*, 135, 183, 229, 235*, 237, 257
Chenault	David		21	1, 138
Chester	Maryalice		1018	7, 23, 31, 102, 115
Chilson	James A		865	3, 76
Christensen	Kjeld		1000	3
Christensen	Kim		1001	3
Christensen	Hanna		1002	3
Christian	Mark		462	6
Christophersen	Al		285	17*, 18, 30, 34, 40*, 44*, 51*, 53, 55, 56, 57, 58*, 59, 60, 67*, 68, 75, 76, 78, 79, 86, 87, 90*, 98, 107, 110, 113*, 119*, 123, 137*, 138, 154, 156, 161, 164, 166, 174, 175, 177, 178*, 184*, 189*, 196, 204, 209, 210*, 213*, 223, 226, 238, 243*, 244, 245, 253, 260*, 279, 287
Cicon	Kyle		714	3
Clark	Cody		294	78, 230
Clark	Bill M		888	78
Clark	Kelsey		929	3, 66, 76
Clarke	Bob		725	71, 174, 175, 176, 177

Last name	First name	Organization name	Letter number	Comment category number(s)
Clarke	Nick	Yellowstone to Yukon Conservation Initiative	791	14, 18, 21, 67*, 70, 73*, 75, 78, 119*, 149*, 174, 282
Clausen	Leigh		850	2, 5, 16, 23, 34, 38, 102
Clawson	William		174	2, 5, 16, 34, 93, 102, 113*
Cleary	Alan Michael		184	2, 5, 16, 34, 102
Clemens	Phillip		962	30, 78
Cleveland	Emily		1143	2, 5, 16, 21, 34, 102
Clifford	Claudia		812	5, 23, 78
Cohenour	joe	10 Mile/South Helena Forest Collaborative	346, 347	66, 68, 71, 94, 113*, 123, 149*, 152*, 210*, 235*, 243*
Colella	Casey		867	76, 208
Collins	Kyle		23	5, 21, 132
Collins	Wilmot	City of Helena	409	21, 68, 107, 152*, 175, 177
Condit	Kevin		550	3, 76, 78
Connell	Steve		863	78
Conroy	Faith		152, 226	2, 3, 5, 16, 34, 102
Consolvo	Camille Ann		631	5, 21, 38, 151
Contreras	Lisa		380	138, 201, 208
Cook	Christopher		100	3
Cook	Chris		1088	76, 135
Cook	Deborah and Jerry	BHA	1168	5, 23, 78, 197
Cooney	Colin	Trout Unlimited	579, 581	17*, 30, 91*, 112*, 116, 198, 283
Copenhaver	Steve		560	135
Corse	Sarah		516	5, 14
Corzine	Darik		1178	82, 154
Cove	John		453	76
cowdick	bob		192	21
Cox	Keenan		1056	30, 31, 92, 208
Crase	Claudia		693	34, 102
Crawford	Chris		615	30
Crawford	William		683	78
Crawford	Jackson		739	2, 5, 16, 34, 102
Cree	Anthony		1074	3, 31, 187
Crissman	Emma		741	78
Crocifisso	Jack		830	78

Last name	First name	Organization name	Letter number	Comment category number(s)
Cronin	Melissa		1049	3, 76, 138
Cronin	Paul		1080	3, 31, 187
Culpo	Matthew		472	30, 76
Cummings	Amber		1188	3
Cunningham	Bill		362, 370	7, 14, 23, 67*, 175, 187
Cunningham	Bill & Polly		585	5, 14, 15, 102, 150
Curd	Melissa		171	16, 30
Curry	Edwin		218	21
Curtis	Pamala		614	135
Da	David		722	30
Dabler	Dustin		431	6, 92, 135, 138
Daniel	Aaron		53, 54	135
Daniels	Jody		744	78
Danley	Tom		405	76
Dannells	Michael Lynn		632	7, 21, 23, 34
Darling	Scott		127	66
Daugaard	Patricia		1176	78, 138
Davenport	JR		45	5
Davidson	Karen		738	2, 5
Davis	Darlene		468	76
Davis	Cory	Southwest Crown Collaborative	793	51*, 246, 247*, 249*
Dawes	Carol		626	14
De meij	Ann		883	78
Dean	Daniel		483	3, 154
DeBoer	Natalie and Jon		1129	2, 5, 16, 34, 102
Deemer	Mike		404	138, 208
DeGroot	Richard		219	21, 23, 102
Deikman	Steve Edward		760	78
Delger	Mike	Broadwater County Commissioners	376	18, 108
Delmue	Jason	Self	1161	3, 31, 78, 138, 187
Demarais	Julie		643	2, 5, 16, 34, 102, 209
Dendy	John		268	21, 23, 76, 115
Denney	Teresa S		885	5, 23
DeVall	Chad		40	3
Deveny	Christine		801	21, 30, 40*, 44*, 63, 78, 160, 176, 209
dias	domingos		496	31, 68, 187

Last name	First name	Organization name	Letter number	Comment category number(s)
Dickinson	Christine		990	2, 5, 12, 14, 21, 23, 34, 141, 175
Dillenbeck	Beth		846	5, 16, 33, 34, 76, 102, 123, 154
Divoky	Dennis		228, 229	2, 5, 16, 34, 102
Donahue	Larissa		1149	21, 131, 192
Donohoe	Joe		1162	30, 104, 224
Donovan	Nicholas		43	1, 30, 138, 143
Douglas	Aaron		457	76
Downing	Emily		925	2, 5, 16, 34, 102
du mont	lyn		660	5
Duel	Dave		510	30
Duellette	Ken		506	6, 16
Duley	Amanda		953	3, 28, 31, 76
Dundas	Jim		624	6, 78
Dunnington	Alexandra	City of Lewistown	552	152*
Durham	Rebecca		216	78
Eckhardt	Lori		1033	76
Edmo	Kendall	Blackfeet Nation	1193	14, 15, 52*, 54, 102, 123
Edwards	Mike		1052	3, 187
Ehnes	Cory		426	135
Ehnes	Ramona		442, 1047	23, 135, 138, 283
Ehnes	Will		1164, 1166	6, 78, 135, 138
Ehnes	Russ	Great Falls Trail Bike Riders Association	1175	16, 49*, 135, 138, 201
Eisen	Hilary	Winter Wildlands Alliance	128	16, 21, 23, 34, 44*, 45, 61, 66, 67*, 68, 78, 86, 89, 113*, 139, 199, 201, 213*
Eldredge	Bonnie		828	7, 34
Elison	Glenn		627	21, 38, 76, 147
Elliot	Alan		277	135
Ellison	Julie B		633	102
Elsby	Rob		375	138
Emerson	Lauran		926	2, 5, 23
Engle	Donelle		324	21
Enk	Michael		476, 587	5, 7, 14, 21, 26, 34, 91*, 96*, 97*, 102, 106, 116, 138, 160, 161, 162, 180, 184*, 189*, 203*, 204, 221, 260*

Last name	First name	Organization name	Letter number	Comment category number(s)
Ensign	Diane		211	21, 34, 102
Erbach	Kurt		214	2, 5, 16, 34, 102
Erickson	Cody		417	3
Erickson	David R		653	7, 68
Erickson	Pamela		900	5
Erwin	Jaden		777	5, 21, 23, 38, 43, 44*, 71, 72, 75, 76, 90*, 97*, 112*, 175, 176, 222*
Estes	David		475	3, 208
Evavold	Chris		759	21
Faber	Timothy		732, 750	5, 21, 49*, 67*
Faber	Dave		811	3, 6, 28, 31, 76, 135, 138
Fauth	David		64	30
Feckanin	John		217	21
Feinberg	Jackie	The Pew Charitable Trusts	1026	21, 23, 68, 75, 78, 257
Felstet	Brian		423	135
Ferrell	Peter A		681	2, 5, 16, 34, 102
Ferren	Glenn		145	44*, 78, 91*, 112*, 237
Fiaschetti	Aaron		146	3, 31, 92, 135, 138
Fiaschetti	Elisa		1077	16, 28, 31, 76, 138
Fiebig	Michael	American Rivers	24	38
Finch	John		382	3, 31
Fiorita	Richard		698	78
Fisher	Joanne		307	2, 30
Fleckman	Adrienne		829	68, 78
Flint	Kendall	Glacier-Two Medicine Alliance	617	5, 14, 15, 38, 52*, 54, 99*, 102, 150
Fluge	Nick		189	78
Ford	Michael J.		702	7, 26, 186*
Forehand	Dick		861	2, 5, 16, 34, 102
Fortenbery	Luann K.		823	21
Foster	George		274	5, 78
Fox	Robert L.		634	2
Fox	Marla	WildEarth Guardians	1048	40*, 51*, 66, 69*, 75, 78, 81, 87, 89, 99*, 110, 113*, 118, 120, 178*, 182, 189*, 201, 203*, 271*, 275*, 286
Franklin	Richmond W		628	23, 197
Franzen	Joice		75	5

Last name	First name	Organization name	Letter number	Comment category number(s)
Franzen	Jesse		77	5
Frazer	Eliza		622	5, 67*, 76, 209
Fredrickson	Michael J.		712	2, 30, 68
French	Blaire		534	5, 14, 15, 102, 150
Friedmann	Michael		691	2, 16, 34, 93, 102
Frieze	Mary		640	21
Frost	Rachel	Missouri River Conservation Districts Council	1031	183, 224
Funke	Kyle		450	3, 28, 31, 68, 76
Furlong	Roger		353	5, 21, 23, 38, 43, 44*, 71, 72, 75, 76, 78, 90*, 97*, 112*, 175, 176, 222*
G	Chris		80	30
Gage	Josh		139	3, 31
Gale	Janet Marie		234	2, 5, 16, 34, 102
Galen	Andrew		48	1, 3, 28, 41, 66, 143
Gallagher	Amy Lynn		876	5, 34, 102
Gamon	Aislin		1187	2
Gann	Leah		607	3, 135
Gansauer	Grete		1073	21, 76, 102, 187
Gardella	Lu		340	1, 77, 201, 205
Garrity	Michael	Alliance for the Wild Rockies	410, 411	39, 41, 43, 44*, 58*, 70, 71, 81, 99*, 106, 119*, 121, 127, 134*, 136, 177, 192, 194, 195, 222*, 223, 237, 239, 244, 247*, 248*, 249*, 250, 261*, 262*, 270, 271*, 274*, 275*
Garvey	Lydia		627	2, 5, 16, 34, 102
Gatchell	John	Montana High Divide Trails Partners	790	21, 67*, 68, 78, 152*, 175, 177
Gates	Bob		133	5
Gebo	Keith		783	30
George	Bob		608	30
George	Bret		834	3, 78, 138, 146*, 187, 208
Gessaman	Kathleen Z		636	2, 5, 16, 34, 102
Getman	Mike		135	21, 30, 68
Gewirtz	Joshua		398	76
Gidley	Alli		22	3

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Gidley	Quint		486	31
Gingras	Brian R.		198, 675	2, 5, 16, 34, 102
Glow	Steven		148	5, 23
Goebel	Tia		1116	7, 78
Golb	Richard		782	76
Good	Karyn	Upper Blackfoot Working Group	600	16, 21, 30, 49*, 139, 222*
Good	Margaret Carlin		763	2, 5, 16, 34, 102
Good	Mark		1016	2, 3, 5, 16, 21, 26, 34, 38, 49*, 67*, 73*, 76, 78, 102, 113*, 131, 138, 147, 152*, 210*
Goodhue	Jacob		418	31, 201
Goodman5430	Shelby		103	135, 200, 230
Goodrum	Greg		333	21
Gores	Joanne		886	78
Grace	Patrick		787	5, 14, 21, 34
Granger	Bruce L		752	23
Gravance	Rochelle		141, 870	2, 5, 16, 34, 75, 91*, 102, 112*, 237, 283
Gray	Jeff		868	7, 26, 135, 144
Gray	Randy		922	7, 48*, 69*, 78, 90*, 97*, 151, 201, 225
Greer	Helen		265	78
Gregovich	Gayle		690	21
Gregovich	Barbara		1109	2, 5, 16, 34, 102
Grenz	Susan		256	76
Griffen	Richard		890	3, 68
Grigsby	Dave		570	1, 17*, 77, 81, 135, 138
Grosfield	Janice		931	6
Grosnick	Timothy		391	3
Gullings	Kree		914	2, 5, 16, 34, 102
Gunderson	Kari		657	21, 102
Gunther	Jake		957, 989, 994	16, 28, 31, 34, 45, 67*, 68, 76, 92, 138, 177, 181
Gunther	Kelsey		1022	16, 28, 31, 45, 66, 68, 135, 138, 177, 181, 187
Guynn	Dr. Dwight Evans		167, 575	30, 78, 119*, 151, 272*

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Guynn	Peter		1113	7, 14, 21, 34
Haagen-Smit	Cathy		619	3
Haanstad	Tina		322	21, 68
Habel	Pat		441	6, 135, 138
Hagen	Pat		508	6, 49*, 135, 143
Hagen	Mike		514	135, 201
Haggerty	Jim		42, 767	2, 5, 78, 115
Haggerty	Donna		63	2
Hajenga	Don		276	6, 201
Hale	Dexter		873	21
Hall-Skank	Nick		242	2, 5
Hallinan	Bill		950	78
Hamann	John		317,1170	17*, 43, 75, 84, 164, 170*, 262*
Handelsman	Robert		85, 213	21, 68
Handl	Steven		57, 447	6, 135
Hansing	Scott		1014	68, 208
Hanson	Jay		194	21, 78, 93, 201
Hanson	Mark		747	2, 5, 16, 34, 102
Harber	Will		858	30
Harder	James		521	5, 150
Hardin	Rush		684	2, 5, 16, 34, 102
Hargrave	David		38	16, 68, 209
Harris	Barbara		781	23
Harris	Jennifer		1065, 1089	3, 16, 31, 34, 67*, 138, 187
Hart	Eric		292	28, 31, 76
Hasenauer	Jim		609	3, 31, 76, 187
Hasson	Alex		966	2, 5, 16, 34, 102
Haufler	Jonathan		519	246, 249*, 251, 252*
Haverlandt	Carol		1045	21, 26
Hawke	Tim		287	3, 28
Hazel	Joe		482	31, 138, 187
Heaton	Russ		386	102
Heckel	Jim J		635	5, 21
Hedquist	Valerie		314	21
Heffern	Roy		224	78
Heidle	Eric		928	2, 5, 34, 154
Heierman	William		98	17*, 78, 201, 230

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Heinitz	Nathan		36	66, 143
Heinzig	Dennis Earl		847	2, 5, 16, 34, 102
Heinzmann	Holly		212	7, 16, 102
Helgeson	William		97	30
HELLEKSON	DOUGLAS		940	30, 227*
Hendershot	James		433	135
Henning	Blake	Rocky Mountain Elk Foundation	451	18, 44*, 66, 78, 104, 107, 108, 112*, 135, 237
Henry	Dr. Shani Lee		169	68
Heuwinkel	Ryan		249	3, 76, 138
Hewitt	Diana	City of Lewistown	552	152*
Hibbs	Luc		361	34, 138
Hillstrom	Susan		942	21, 26, 68, 79, 147
Hillyer	Christina		113	30
Hindoien	Chris		90	6
Hinshaw	Michael		498	6, 16, 49*, 135, 138
Hobson	Caroline		1192	3
Hodge	Brad		369	3, 68, 76
Hoffman	Andrew	Great Divide Cyclery	1050	16, 23, 68, 287
Hoisted	Dean		973	7
Holder	Betty		9, 839	21, 147
Holdhusen	Chris J.		689	102
Holeman	Michele		1137	23, 38, 78
Holien	Dave		416	3, 31, 76, 135
Holkup	Patricia A.		857	2, 5, 16, 34, 102
Holmes	Branton		792	76
Holter	Lance		844	7, 23, 68
Holtz	sherie		131	28, 31, 138
Horan	Jan		915	7
Horan	Ben	MTB Missoula	1009	3, 68, 76, 138, 187
Horn	Jack		295	83
Hotovy	Justin Charles		235	7
House	Tim		194	2, 3, 5, 16, 34, 102
Hover	Patrick		601	3
Howard	Loretta		155	21
Huber	Peggy		882	78
Hudson	Jon	Montana Pilots Assn., Recreational Aviation Foundation	1072	1, 83
Hudson	Hank		1169	21, 31, 78

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Humes	Loren		106	112*
Hunner	Bruce		736	23, 68, 113*
Hunthausen	Samuel		537	3, 31
Huntington	Ciarra		646	7, 16, 23, 34, 102, 131
Hyyppa	Craig		1087	3, 16, 31, 34, 138
Infanger	Rocky	TriCounty-Fire Safe Working Group	589	30, 78, 205, 245
Ingalls	Kelly		342	6, 135, 145, 230
Ingman	Gary		488	73*, 97*
Irby	Dustin		79	30
Irvine	Brian		903	7
Ivers	Kevin		301	3, 76
Jabaut	Nicole		290	3, 31, 68, 138, 208
Jacobson	Ken		282	30
James	Lynn		197	154
James	Casey		200	2, 5, 16, 34, 93, 102
Jantos	Jeff		611	3
Jarecki	Chuck		321	83
Jeffries	Tim		203, 204	144
Jenkins	Florence		909	30
Jennings	Charles D		175	2, 5, 93, 102
Jennings	Gerry		210	5, 7, 16, 21, 23, 115, 186*
Jester	Lee		377	151
Jewett	Matt		1055	3, 31, 68, 138, 177, 187, 208
Johnson	Sara Jane	Native Ecosystems Council	410, 411	39, 41, 43, 44*, 58*, 70, 71, 81, 99*, 119*, 121, 127, 134*, 136, 177, 192, 194, 195, 222*, 233*, 237, 239, 244, 247*, 248*, 249*, 250, 261*, 262*, 270, 271*, 274*, 275*
Johnson	Brody		916	78
Johnson	EA Andy		995	17*, 135
Johnson	Cole		1043	28, 31, 45, 138
Johnson	Peter		1068	2, 5, 7, 16, 34, 102
Johnston	Joan		878	23
Johnston	Jessica		879	2, 5, 21, 23, 34, 43, 45

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Jones	Gary B.		140	2, 5, 16, 34, 75, 91*, 102, 112*, 237, 283
Jones	Steven		384, 818	3, 30, 31, 68, 138
Jones P.E.	David J.		710, 1098	7, 23
Joslin	Gayle		625	12, 21, 44*, 48*, 55, 58*, 66, 71, 73*, 75, 77, 78, 84, 86, 90*, 96*, 113*, 119*, 120, 123, 124*, 132, 147, 149*, 154, 156, 161, 184*, 197, 203*, 227*, 232*, 233*, 236*, 246, 247*, 248*, 249*, 272*, 274*, 276, 277*
Juel	Jeffrey	Alliance for the Wild Rockies	1061, 1159	23, 38, 44*, 48*, 51*, 59, 68, 69*, 73*, 74, 75, 78, 81, 84, 86, 87, 91*, 94, 96*, 97*, 99*, 106, 107, 108, 112*, 116, 119*, 120, 125, 126, 127, 137*, 146*, 155, 156, 158, 160, 161, 163, 164, 165, 168, 169, 170*, 171, 172, 180, 182, 184*, 185, 189*, 190*, 203*, 204, 208, 221, 222*, 224, 225, 226, 229, 232*, 235*, 237, 246, 247*, 248*, 249*, 250, 252*, 258*, 260*, 261*, 263, 271*, 272*, 274*, 277*
Juras	Luke		533	138
Juras	John	Great Falls Bicycle Club	568	28, 31, 76, 135, 138
Juras	Evan		934	3, 6, 21, 31, 135
Juras	John		935	81
Kahle	Cora		84	68
Kajkowski	Thad		637	2
Kaler	Matthew		166	2, 5, 16, 34, 102
Kamela	Robert		158	78
Kamm	Wendy		701	5, 7, 23
Kampf	Hannah		832	21
Kantor	Isaac		227	21, 23
Kantor	Mike and Aleta		629	5, 23
Karinen	Charley		596	5, 21, 67*
Kegley	Brittany		1191	2, 104

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Kelley	Aimee		862	2, 5, 16, 34, 102
Kelly	Kyle		363	3, 76, 92, 208
Kent	Paul		968, 1174	1, 5, 21, 23, 44*, 73*, 78, 234, 257
Kent	Vicki		1174	1, 5, 21, 23, 44*, 73*, 78, 234
Kenyon	Sue	Jefferson County Parks, Trails, Recreation Commission	473	68, 107
Kerr	Rick		518, 810	7, 12, 14, 15, 21, 23, 78, 175
Kiehn	Don		565	5, 14, 15, 102, 150
Killen	Sandy		180	200
King	Michael		977	7, 76
Kirsch	Scott		414	3, 138
Kirsch	Cory	Jefferson County Montana	559	68, 107, 108, 225, 230
Klein	Ed		68, 70, 71, 72	17*, 30, 77, 125, 135, 146*, 205
Kligerman	Jack Mark		680	234
Kligerman	Jack		754	78
Kline	Patrick		788	3, 6, 28, 31, 68, 76, 135, 187
Knowles	Randall		11, 49, 123, 124, 262, 312, 325, 338, 339, 341, 461, 621, 797, 1091	30, 46, 67*, 68, 230
Knudsen	B.D.		918	78
Knudson	Ken		1051	5, 21, 23
Kobrin	Benjamin		947	3, 138
Koehnke	Bill F.		1121	23, 66
Konesky	Kelly		437	135
Konsella	Frank		595	3
Kopec	Len		798	14, 21, 68, 102
Kotick	Stephen		826	2, 78
Kotynski	Tom		47	2, 7, 12, 14, 16, 21, 23, 34, 49*, 93, 102, 138, 154, 200
Kovalicky	Tom		241	5
Krause	Ken		509	16, 49*
Kreidler	Jeffrey S		343, 669, 1120	2, 5, 14, 16, 34, 102
Krier	Rodney		577	1, 6, 16

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Krone	Kent & Charlene		199	78
Kronfuss	Brent		39	30, 78, 230
Krueger	James and Margaret		193	2, 3, 5, 16, 34, 102
Krueger	Ryan		936	3, 78, 138, 146*, 187, 208
Krueger	Casey		939	3, 31, 138, 146*, 208
Kubas	Michael		101	3, 5, 66, 138
Kuehn	John C		845	7
Kulesa	Evan	Prickly Pear Land Trust	970	17*, 30, 45, 68, 76, 78, 104, 113*, 152*, 197
Kunen	Julie	Wildlife Conservation Society	1006	15, 104
Kurnick	Rebecca		937	3, 78, 138, 146*, 187, 208
Kurnick	Janna		938	3, 31, 138, 146*, 208
Kurtz	Peter		987, 1152	7, 78, 102
LaGarde	Jerry		163	7, 144
Laird	Scott	Theodore Roosevelt Conservation Partnership	561, 582, 1044	17*, 30, 44*, 65, 67*, 73*, 78, 91*, 104, 107, 112*, 116, 119*, 125, 135, 163, 198, 204, 237, 260*, 274*, 283, 287
LaLiberty	Frank		269	6, 28, 31, 135
Langlois	Ed	Back Country Horsemen of the Flathead	422	102
Langstaff	Larry		695	2, 5, 16, 23, 33, 34, 76, 102, 154
Larsen	Curtis		730	5, 23, 30, 34, 76, 208
Larson	Nancy		969	78
Lassila	Chris		1167	6, 135, 138
Lauer	Ann		791	2, 5, 21
Lawler	Kate		1195	68
Lawley	Gregg		816	3, 31, 138
Layman	Karen		1111	21, 30, 78, 108, 230, 234
Leatham	John		318	28
Leatham	Chris		924	3, 28, 31, 135, 138, 187
Leathers	Megan		894	30
LeBaron	Anthony		590	3
Lee	Jeffrey		30	76
Lee	Sean		366	76

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Lee	James		392	76
Lee	Kenneth		699	7
Leffingwell	Margery Ann		238	78
Lehfeldt	William	Golden Valley County Commissioners	408	28, 44*, 135, 184*, 246
Lehl	Brian		1085	76, 78
Lehman	Aubree		1008	16, 28, 31, 45, 76, 78, 138
Lehman	Lindsey		1008	16, 28, 31, 45, 76, 78, 138
Lehman	Tyler		1008	16, 28, 31, 45, 76, 78, 138
Lehman	Vaidee		1008	16, 28, 31, 45, 76, 78, 138
Lemler	Dan		428	6, 120, 135, 138
Lenard	Susan		1046	5, 23, 76, 150
Lepinski	Devan		297	30
Lepinski	Tyson		563	70
Lewin	Stuart		538	132
Lewis	John	Golden Valley County Commissioners	408	28, 44*, 135, 184*, 246
Lewis	Philip and Barbara J		656	7, 102
Lian	Bret		420	23, 30, 31, 66, 76, 78, 138
Lionberger	Sherri		1181	23
Lipes	Charles		66	30
Lish	Christopher		770	38, 198
Litostansky	Ron	Russell Country Sportsmen's Association	802	6, 51*, 66, 79, 113*, 119*, 135, 201, 210*
Little	Jed		817	3, 135, 138
Littlepage	Dean		855	21
Lloyd	Joseph		419	28, 31, 67*, 68, 76, 138
Lloyd	Allen		991	67*, 138
Lock	Mark		505	16, 49*, 138
Locke	Jacqueline		655	7, 34, 68
Lohrer	Laurie		593	7, 152*
Lojo	Rosemary		874	78
Lonn	Jeff		571	2, 5, 16, 34, 102
loomis	Clint		122	21, 66, 76, 78, 152*
Loomis	Clint	Big Spring Watershed Council	520	224

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Loomis	Clint	City of Lewistown	552	152*
Loomis	Jody		731	30
Loomis	Jennifer		768	30
Loomis	Ashton		769	30
Lowenstein	Roy		1127	2, 5, 16, 34, 102
Lucero	Heather L		641	7, 12, 14, 21, 23, 52*, 67*, 175
Lundstrum	Sarah	National Parks Conservation Association	1028	2, 7, 12, 15, 52*, 84, 102, 119*, 138, 192, 275*
Mabry	Kate		207	2, 5, 16, 34, 102
MacCartney	Douglas L.		884	7
Madden	Brandon		658	76
Madden	William		1038	2, 5, 16, 34, 102
Maddock	Brad	Montana Backcountry Yurts LLC	944	3, 34, 138
Maddock	Brad		948	31, 34
Magley	Beverly		1076	5, 150, 212
Maldonado	Alejandra		264	2, 5, 16, 34, 102
Malek	Frank		492	6, 16, 49*, 135, 138
Malek	Andrew		493	6, 16, 49*, 135, 138
Malek	Gerry		279, 503	6, 16, 49*, 135, 138
Malek	Joyce		522	6, 16, 49*, 135, 138
Malek	Frank	Blackfoot Valley OHV Association	603	16, 49*, 135
Malek	Frank	Upper Blackfoot Working Group	1184	16, 21, 30, 49*, 78, 107
Mangels	Angela		815	3, 31, 138
Manley	Teri		707	5, 16, 33, 34, 102, 154
Mann	Katherine		502	6, 16, 49*, 135, 138
Marckley	Steve		401	76
Mari	David		283	7, 21, 26, 49*
Marks	Gary	Marks-Miller Post and Pole Inc	573	6, 44*
Marks	Kail		616	31, 205
Marks	Steve		981	18, 68, 135, 230
Marolf	Megan		751	2, 5, 16, 34, 102
Maronick	Dan		178	2, 5, 16, 34, 102
Marsh	Wendy		246	2, 5, 16, 34, 76, 102
Martinez	Teresa	Continental Divide Trail Coalition	1160	5, 67, 186*, 188*
Marty	Debian		648	7
Massick	Kyle		1017	30, 92

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Massouh	Donna		1064	14
Matthews	Jonathan		696	2, 5, 16, 34, 102
Matz	Matthew		309	28, 31, 76, 138
Matz	M.J.		310	1
Maxwell	Laramie	Center for Large Landscape Conservation	1062	5, 38, 48*, 58*, 69*, 73*, 75, 99*, 119*, 132, 253, 267
Mazer	Jeff		395	3, 138
Mazuji	Nasrin		330	14, 102
Mazzullo	Sonny		28, 746	2, 5, 16, 21, 34, 102
McArdle	Dan		592	30, 76, 82, 187, 208
McCarthy	Mindy		1104	68, 76, 78
McCarty	Helen Downman		672	2, 5, 16, 102, 154, 208
McCollum	James		270	6, 138
McConnell	Nate		254	5
Mccuen	Dan		55	1, 30
McEvoy	Stephen		555, 1005	23, 78
McGuffin	Patrick		137, 766	5, 33, 34, 78, 102
McIntosh	Ian		421	76
McKelvey	Patrick		1078	78, 223
McKnight	Deva		564	5, 14, 150
McMillion	Geoff		183, 843	21, 102
McOmber	Christie		1066	78
Meagher	Todd		50	30
Meis	Clifford		558	68, 222*, 225
Meloy	Tim		889	7, 176
Melson	Eric		371	3, 76, 138
Mercenier	Jacqueline		358	17*, 21, 28
Mercill	Forest		110	138, 140
Mergler	Jeffrey		344	3, 76
Merrell	Scott		974	76, 78
Merriot	Ivy		848	78
Mertes	Calvin		551	16, 135
Meyer	Eric		185	2, 5, 16, 34, 102
Meyer	Carolyn		880	7, 34, 102
Michael	Ken		438	6, 135
Michaletz	Jake		393	76
Mickelsen	Brock		138	21

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Milhon	Karl		352	23, 76, 83, 154
Miller	Travis		331	102
Miller	Kevin		764	30, 68
Miller	Robert R		838	16, 21, 33, 34, 102
Miller	Ira		1133	31, 78, 138, 208
Mills	Dean		967	38, 76
Mills	Ashea		1102	2, 5, 33, 34, 102
Minow	Terry		1019	76
Minyard	Liz		835	2, 5, 16, 34, 102
Mitchell	Lea		345	68, 78
Mitic	Alex		713	78
Mobley	Bryson		41	1, 3, 41, 143
Moe	Laurie		907	78
Moen	Phillip		144	230
Moon	Sophie		875	2, 5, 16, 34, 102
Moore	Jim		99	140
Moore	Vicki		215	5
Moore	Kevin	Montana Wilderness Association	620	21, 154, 177
More	Robert		266	5, 21, 34
Morgus	Gregory		1114	2, 5, 23, 30, 34
Morton	Scott		1069	76
Mueller	Lisa		822	2, 5, 16, 34, 102
Mulcare	Lindsey		497	6, 16, 49*, 135, 138
Mulcare	Tim		499	6, 16, 49*, 78, 135, 138
Mulcare	Maggie		526	6, 16, 49*, 135, 138
Murnion	David		358, 544	14, 17*, 21, 28
Murnion	David & Jacqueline		545	194
Murphy	Sean		412	76
Murray	Chris		125	5
Muse	Zach		56	135, 205, 230
Myers	Karen		1141, 1146	14, 21, 23
Nawrocki	Joe		554	76, 78
Nedom	Woody		240	21, 78
Neher	Dan		911	78
Nelson	Jerry Nelson		308	76
Nelson	L		334	14, 102
Nelson	Raymond		905	3, 138

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Nelson	Peter	Defenders of Wildlife	1081	17*, 44*, 48*, 66, 67*, 69*, 73*, 76, 77, 78, 87, 90*, 91*, 94, 96*, 97*, 99*, 101, 105, 112*, 116, 119*, 120, 157, 161, 162, 163, 165, 178*, 184*, 189*, 190*, 191*, 203*, 204, 221, 222*, 225, 229, 232*, 235*, 236*, 241, 242, 246, 248*, 249*, 252*, 262*, 263, 271*, 272*, 274*, 275*, 280
Nelson	Danica		1093, 1144	6, 31, 68, 76, 104, 146*
Nelson	Catherine I.		1155	7, 17*, 23
Newman	Richard		243, 704	2, 5, 12, 14, 16, 21, 23, 34, 90*, 102, 197
Newpower	Scott	Recreational Aviation Foundation	303	83
Nicholls	S		491	6
Nirgenau	Paul		1130	31, 187
Nixon	Brian		494	31, 68, 76, 108, 138
Nolte	Miles	Tributaries Digital Cinema	136	5, 44*, 78, 90*, 131
Norderud	Brian		638	21, 28, 31, 45, 78, 138
Norland	Brady		1135, 1158	5, 76, 78
Northy	Paul		1131	21
Nyberg	Harvey		463	66, 108, 112*, 147, 152*, 201, 204, 231
O'Brien	Mary		711	7, 102
O'Connor	Connie K.		1123	5, 23
O'Hara	Tim		142	28, 31, 138
Oates	David		507	16, 30, 49*
Obert	Laura	Broadwater County Commissioners	376	18, 108
Odell	David		244	5
Oldenburg	Diane	City of Lewistown	552	152*
Oliver	Adam	Southwest MT Mountain Bike Assn.	814	31, 34, 45, 76, 138
Olsen	Lance		5, 13, 14, 15, 16, 17, 19, 20, 25, 26, 27, 33, 44, 51, 52, 59, 60, 61, 62, 76, 78, 89, 92, 95, 117, 121, 126, 250, 251, 252,	47, 48*, 261*

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			253, 255, 256, 257, 258, 271, 288, 289, 298, 299, 302, 306, 313, 487, 528, 535, 536, 584, 599, 717, 779, 780, 785	
Olsen	Lois		485, 553	17*, 21, 30, 34, 39, 40*, 44*, 51*, 53, 56, 57, 59, 60, 70, 71, 75, 84, 86, 90*, 98, 107, 108, 110, 113*, 137*, 154, 156, 166, 174, 177, 178*, 182, 184*, 189*, 196, 209, 213*, 226, 243*, 253, 260*
Olson	Curtis		720	3, 68, 208
Olson	Karen		998	3
Olson	Erica		1138	28, 78, 138, 208
Opperman	Fred		232	5, 17*, 21, 23, 93
O'Neil	Devon		808	3
O'Neil	Jason		1163	45, 187
Ormseth	Douglas		497	3
Orr	Jim		515	30
Orr	Taylor		1107	7, 21, 23, 33, 34
Orsello	William		1015	5, 49*, 78, 119*, 120, 135, 138, 154
Ortega	Jolyn		202	2, 5, 16, 34, 102
Osher	Josh	Western Watersheds Project	1090	18, 66, 78, 90*, 91*, 95, 106, 108, 119*, 120, 145, 158, 160, 161, 163, 164, 180, 184*, 185, 238, 277*
Osiecki	Joseph		705	78
Ostlie	Nancy	Great Old Broads for Wilderness, Bozeman Broadband	18	5, 23, 78
Ousley	Dalton		663	78
Overfelt	Kent		439	135, 143
Oviatt	Ms. Brenda G		181	2, 16, 30, 78
Palmer	Denny	Montana Bicycle Guild, Inc.	993	2, 16, 21, 28, 31, 34, 45, 66, 76, 104, 138, 177
Palmer	Denny		1027	16, 28, 31, 34, 45, 68, 76, 138, 177, 181
Pannell	Kenny Z		833	21

Last name	First name	Organization name	Letter number	Comment category number(s)
Parke	Jason		12	2, 76
Parker	Michael		827	2, 78, 102
Parson	Harley		773	68, 138
Patterson	Scott		727	21, 23, 34, 45, 61, 66, 78, 86, 93, 139, 199, 213*
Patterson	Don		1060	78
Patton-Griffin	Sharon		208	78
Paul	Don		385	28
Paulin	Robin		733	68
Paulson	Kyle		94	2, 5, 82
Pavkovich	Anthony Stephen		686	2, 5, 16, 21, 23, 33, 34, 102
Pearson	William		566	5, 150
Peaslee	Rick		83	30
Perkins	Kyle		946	138
Perkins Drishinski	Casey	Montana Wilderness Association	1054	2, 5, 12, 14, 16, 21, 23, 26, 30, 34, 49*, 66, 67*, 68, 76, 77, 78, 93, 102, 131, 174, 201, 207, 214, 237
Pester	Skyler		1115	67*, 68, 78
Peterson	Collin Jeffrey		172, 851	2, 5, 16, 33, 34, 74, 78, 102
Peterson	Preston		336	68, 135
Peterson	Tami	Bch Flathead member	378	76
Peterson	Joel		574	5, 15, 102, 150
Pfaff	Beth		245	2
Phelps	Holly	City of Lewistown	552	152*
Philips	David		540	5, 14, 15, 73*, 76, 150
Phillips	Harold		964	5, 21
Pierce	George		455	30, 68, 135, 205
Platt	Steve	Montana Backcountry Hunters and Anglers	489	5, 21, 38, 43, 44*, 71, 75, 76, 78, 90*, 97*, 102, 177, 222*, 225
Platt	Steve		959	5, 21, 40*, 44*, 49*, 76, 78, 82, 90*, 102, 138, 146*, 154, 201
Ployhar	James	Blackfoot Chapter of Gold Prospectors Assn of America	281	201
Plummer	Michael		618	76
Poncelet	Cameron		424, 960	6, 30, 34, 135, 138, 179

Last name	First name	Organization name	Letter number	Comment category number(s)
Porte	Sanna		729	5, 23, 76, 150
Porter	Dotty		500	30
Porter	Rick		501	16, 30
Porter	Karen W.		1142	7, 78, 115
Powell	Douglas		997	5, 21, 78, 146*
Powell	Maisie		1012	14, 102
Powers	Debo		1172	5, 14, 15, 102, 150
Pozgar	Christopher		758	68
Prange	Chris		679	21
Prather	Steve		869	2, 5, 16, 34, 102
Pratt Jr.	Peter		697	7, 147
Prison	Reid		1103	76
Prissel	Mitch		943	76
Publieee	Jean		86	81
Purcell	John		837	68
Pysher	Lance	Bitterroot Backcountry Cyclists	546	23, 31, 104, 208
Quigley	William		984	68, 208
R	Annmarie		466	138
Radlowski	Matt		349	3, 76, 92, 138
Raleigh	Kenneth		305	3, 31, 76
Ramirez	Dr. Jorge		239	30
Ramos	Peter		789	68, 76
Rasmussen	Robert		7, 1039	7, 12, 14, 21, 38, 39, 78, 82, 177
Rau	Thomas		394	76, 208
Rausch	Nancy		735, 743	2, 5, 16, 34, 68, 102
Ray	Robert	Helena United Cycling	261	34, 76, 138
Read	Donald		972	2, 5, 16, 34, 102
Reed	Anthony		737	34, 68
Reeves	Jordan	The Wilderness Society	1035	5, 12, 23, 52*, 62, 65, 66, 67*, 72, 73*, 74, 75, 78, 104, 110, 130*, 138, 146*, 153, 160, 174, 177, 178*, 275*
Reeves	Linda		1112	2, 5, 16, 34, 102
Renander	Zara		176	144
Ressberg	Richard		443	6, 143
Reynolds	Josie	Broadwater Conservation District	1010	38, 108, 119*, 135, 156, 230
Rhoades	Gerry		901	2, 5, 138

Last name	First name	Organization name	Letter number	Comment category number(s)
Rice	Bonnie	Sierra Club	1084	5, 7, 14, 21, 38, 66, 73*, 96*, 119*, 175, 275*
Richards	Laurie		1066	68, 78
Richards	Doug		1067	78
Richardson	Gail and John		776, 920	7, 14, 16, 21, 23, 34, 45, 102, 200
Riemer	Jeff		877	2
Riley	Brendan		1086	31, 76, 177
Robertson	Kent		396	76
Robinson	Brett		481	3, 31, 68, 187
Robinson	Amy		1007	21, 23, 41, 177, 187, 200
Rodabaugh	Owen		805	31, 76
Roe	Laura		849	2, 5, 16, 34, 102
Romine	Mike		82	30
Ronan	Bob		906	2, 5, 16, 23, 33, 34, 78, 102
Roper	Dan		695	2, 5, 16, 34, 102
Roppo	Joshua		919	78
Rosario	Jill		819	78
Rosin	Cindy		665	2, 5, 16, 34, 102
Ross	Tom Bradley		755	2, 16, 34, 93, 102
Rostect	Bob	Blackfoot Ch. of Gold Prospectors Assn. of America	281	201
Rotar	Mark		852	5
Roubik	Sarah and Andy		1140	23, 78
Routa	Robert	Elk Creek Minerals LLC	280	17*
Rowan	Lynda		272	78
Royer	Fritz and Amy		898	7, 197
Rupp	Gretchen		1173	78, 86, 101, 116, 155, 158, 184*, 202, 203*, 222*, 232*, 248*, 281
Russell	Alex		190	144
Ryan	Terry		397	76
Ryter	John Wesley		825	7
Salisbury	Russell		921	21
Salmon	Marni	The Pew Charitable Trusts	263	2, 3, 21, 38, 67*, 78, 104
Sammons	Dave	Lewis and Clark County Rural Fire Council	775	75, 78, 138, 245
Samuels	A. K.		293	76

Last name	First name	Organization name	Letter number	Comment category number(s)
Sanchez	John		436	135
Sanders	Clarence Raymond		765	2, 5, 16, 34, 102
Sanders	Nathan		1082	16, 45, 138
Sauer	Greg		31	2, 21, 23, 132, 147
Schara	Trent		109	135
Schatz	Deborah		356	14, 102
Scheunemann	Anita		757	2, 5, 16, 34, 102
Schilling	John		479	31, 68, 187
Schmid	John		671	78
Schmid	Katherine P		1154	151
Schmidt	Matt		1092	28, 31, 68, 76, 82, 92, 138, 208
Schmitt	Anna		749	7
Schoen	Laurie		650	78
Schoenfeld	Mark		470	31
Schott	Ms. Sandy L		170	2, 16, 34, 93, 102
Schroeder	David		1125	16, 28, 31, 34, 45, 66, 76, 138
Schultz	Pete		961	30
Schwanke	Corbin		1079	76
Schwarz	Kurt	Maryland Ornithological Society	132	2, 5, 16, 23, 34, 102, 104
Schwyn	Penelope		400	31, 68, 138
Schwyn	Craig		413	3, 31
Scown	Pat		971	76, 192
Scraggs	David		610	30
Secrest	Jess		588	78, 126, 135, 165, 224, 225, 226, 228
Sedgwick	Meg M		642	2, 5, 16, 34, 102
Sedlack	Elaine		1029	14, 15, 21, 23, 73*
Sedlack	Jaye Marie		1145	2, 5, 16, 34, 93, 102, 113*
Sedlock	Michael		1034	30, 78, 135, 146*
Sedlock	David		1106	16, 30
Sem	Steve		567, 992	6, 30, 84, 112*, 135, 201, 210*
Sem	Christy		729	6
Senecal	Cortney		1128	16, 28, 31, 45, 76, 138, 181
Seninger	Steve		709	7, 23, 102

Last name	First name	Organization name	Letter number	Comment category number(s)
Sentz	Gene and Linda		10, 326, 666	2, 5, 14, 21, 34, 48*, 55, 102
Severtson	Eric		784	78, 138
Shabbott	Mary		756	2
Shank	Jana		434	28, 135, 138
Sheets	David		932	6
Sheets	Trygg		933	6
Shefelbine	Paul A		706	68
Shelden	Jeff		116	21, 138, 152*
Shifrin	Brooke	Greater Yellowstone Coalition	1057	21, 74, 99*, 119*, 275*, 277*
Shockley	Richard		8	21
Short	Robert		120, 44, 445	6, 7, 16, 49*, 135, 138
Shotnokoff	Tiffany		108	30
Shovers	Brian		996	2
Shryer	Jeff		703	2, 5, 16, 34, 102
Shuler	Elizabeth		958	6
Shull	Donna		556	5, 14, 15, 102, 150
Sisk	Cory		734	78
Sisk	Carol		864	16, 17*, 34, 102
Sivers	Eric		721	31, 34, 44*, 45, 76, 135
Slabaugh	Bucko and Amy		407	3, 31
Slawson	Cassie		604	6, 135, 138
Slifka	Frank	Boadwater County Commissioners	376	18, 108
Smith	Steven		156	21
Smith	Tony		459	28, 31
Smith	Charles		531	6, 16, 49*, 68, 135, 138
Smith	Shannon		532	6, 16, 49*, 135, 138
Smith	Rhett		651	2, 5, 16, 34, 102
Smith	Garrett		692	2, 5, 16, 34, 102
Smith	Susan G.		1101	68, 78
Sophia	Tristan		662	7
Sovner	Nick		1025	5, 23, 76
Spence	Ryan		576	135
Spence	David		718	3, 76
St. Lawrence	Abigail	Rocky Mtn. Stockgrowers Assn.	1147	108, 138, 219
Stam	Wendell		348	68, 76, 92

Last name	First name	Organization name	Letter number	Comment category number(s)
Stansberry	Scott		541	5, 76, 147
Stark	Tom		73, 598	30
Starshine	Dorothy		196	78
Steffen	Jared		896	3, 41, 135
Steinmuller	Patti		613	2, 5, 14, 21, 23, 175
Stephenson	Elizabeth		247	5, 21, 78
Sterinmuller	David		742	14, 102
Steuer	Daniel		374	3, 31
Stevens	Timothy		134	5
Stevens	Shannon		897	31, 45, 76, 138
Stewart	Sarah		149, 354	7, 12, 14, 21, 23, 102, 147, 175
Stewart	Frances		236	78
Stiffler	Loretta J		753	7, 23
Stimpson	Robert		1157	31, 68, 138
Stone	Scott		597	135
Stoops	Hugh		220	2, 16, 34
Strange	Marcus	Montana Wildlife Federation	586	12, 14, 16, 21, 23, 30, 34, 40*, 44*, 49*, 54, 78, 90*, 93, 102, 107, 119*, 175, 197
Straughn	Jon		69	30
Street	Alex		771	2, 3, 5, 21, 23, 30, 66, 68, 78, 104, 138
Strobel	Philip	EPA, Region 8	406	51*, 63, 87, 96*, 120, 137*, 152*
Stroll	Ted	Sustainable Trails Coalition	291	31
Struble	Dan		842	2, 5, 16, 34, 102
Sullivan	Susan		150	21, 23, 200
Sullivan	Derek		1011	1, 16, 28, 31, 45, 68, 76, 138
Summerscales	Rodney		372	138
Summerscales	Tiffany		373	3, 76
Sundy	Ben		495	3, 31, 67*
Surgenor	Chris		1040	68, 76
sutej	chad		107, 513	6, 16, 135, 257
Sutherland	Shari Weston		694	147
Swan	Greg		474	135
Sweeney	Scott		350	21, 23
Swenson	Gigi Dundas		872	5, 12, 16, 21, 78, 138

Last name	First name	Organization name	Letter number	Comment category number(s)
Swenson	Chuck		917	2, 5, 16, 34, 102
Taber	David		583	16, 49*
Tew	Craig		81	1
Thibaudeau	Mary		667	78
Thomas	Jim		74	5
Thomas	Shannon Kinsella		157	2, 5, 14,16, 34, 93, 102
Thompson	Brian		6	2
Thompson	Cameron		402	30, 31, 68
Thompson	David		623	30
Thompson	Vince and Denise		1013	78, 107, 108, 120, 135, 155
Thornton	Cheri		1070, 1075	76, 104
Thums	Daniel		1108	3, 76
Thums	Patricia		1117	3
Tighe	Dennis		716	5, 7, 14, 21, 23, 34, 147, 176
Tjaden	Steve		512	6, 16, 49*
Todhunter	Jason	Montana Logging Association	548	6, 135, 143, 231
Tompkins	Ed		904	7, 78
Townsley	Lea		67	68
Trenfield	Gail		153	12, 21, 90*, 147, 151, 175
Trujillo	Ric		403	76
Tureck	Hugo		1124	76
Turk	Patty	City of Lewistown	552	152*
Turnquest	Joshua		740	2, 5, 16, 34, 102
Tuss	Darrell		1179	1, 205
Tyler	Jack		304	83
Updike	Jonathan		109, 1148	6, 30, 31
Van Tine	Jeff		673, 772	2, 16, 23, 34, 76, 115
VanOverbeke	Bryce		130	138
VANTINE	Jeff		949, 1042	5, 14, 15, 67*, 75, 102, 150, 154
Vejnoska	Andy		480	31, 68, 187
Vignere	Joel		853	78
Villasenor	Estela	Montana Mountain Bike Alliance	547	3, 31, 138, 187
Villasenor	Estela		1153	3
Vitale	Frank		748	5, 14, 102
Vitoff	Micah		806	30, 76

Last name	First name	Organization name	Letter number	Comment category number(s)
Vogl	Zach		179	78
Vogler	Robin		160	2, 5, 16, 34, 102
Von Bergen	Bing		328	6, 135
Wagner	Jess		460	2, 18, 108, 274*
Walden	John		300	28
Wales	Rob		273	3, 28, 31, 138
Walker	Molly		205	93
Walker	Mike		296	3, 28, 31, 68
Wall	Raylene		668	2, 5, 16, 34, 102
Wallace	Shirley	Montana Wilderness Association	1165	2
Walsh	Dr. Steve J.		209, 674	7, 16, 21
Wantink	Courtney		745	14, 102
Ward	Pete		177	16, 102
Warford	Billie		647, 836	7, 34, 76, 102
Warhank	Murry		979	68, 76
Warr	Thomas		448	135, 138, 201
Warren	Sean		111	30
Warren	Bonnie		237	5, 41
Warren	Greg		664	5, 12, 66, 67*, 77, 78, 90*, 113*, 117*, 124*, 186*, 188*, 205
Wasser	Brandon		800	3, 76
Watson	Mikie	imtbtrails.com	478	31, 68, 187
Watson	Vicki		927	2, 5, 16, 34, 102
Watson	Ryan		945	76
Wear	Emma		168	7, 12, 21
Weber	Cristy		456	76
Weinstein	Lawrence		630	2
Weiser	Jill		187, 659	21, 78
Welch	Jeff		803	3, 138
Wellner	Rich		93	83
Wells	Jerry		980	5, 23, 44*, 76
Weltzien	Dr. O. Alan		167	2, 5, 34
Westphal	Bruce		809	6
Wheeler	Gregg and Wendy		1053	2, 5, 16, 34, 102
Whetzel	Jane		221, 222	2, 5, 16, 34, 93, 102
Whirry	Gordon		119, 542	2, 5, 14, 21, 34

Last name	First name	Organization name	Letter number	Comment category number(s)
White	Kerry	Citizens for Balanced Use	1186	30, 49*, 66, 67*, 68, 78, 112*, 120, 135, 138, 201, 266
Whitnah	Garrick		495	3, 31
Wilhelms	Don		430	135
Wilkins	Cameron		986, 987	66, 135, 143
Willett	George		286	90*, 199
Williams	Tom	Elkhorn Restoration Committee	285	17*, 18, 30, 34, 40*, 44*, 51*, 53, 55, 56, 57, 58*, 59, 60, 67*, 68, 75, 76, 78, 79, 86, 87, 90*, 98, 107, 110, 113*, 119*, 123, 137*, 138, 154, 156, 161, 164, 166, 174, 175, 177, 178*, 184*, 189*, 196, 204, 209, 210*, 213*, 223, 226, 238, 243*, 244, 245, 253, 260*, 279, 287
Williams	David		786	30
Williams	Martha	Montana Fish, Wildlife & Parks	1041	17*, 21, 41, 43, 44*, 51*, 58*, 62, 63, 68, 69*, 71, 72, 73*, 74, 75, 77, 78, 84, 86, 91*, 97*, 104, 106, 107, 108, 110, 112*, 116, 119*, 120, 121, 124*, 134*, 146*, 149*, 156, 161, 162, 163, 174, 177, 180, 184*, 189*, 192, 194, 201, 203*, 204, 227*, 228, 243*, 244, 247*, 252*, 255, 269, 271*, 272*, 287
Williamson	Mike		951	16, 21, 31, 135
Wilsey	David L.		708	2, 5, 16, 21, 34, 102
Wilson	David		151	2, 5
Winberry	Alma		954	17*, 67*, 78
Winestine	Zack		910	2, 5, 16, 34, 102
Witschard	Moe		658	2, 5, 16, 34, 102
Wolar	Glynn		32	7, 21, 23
Wold	Norman		978	6, 138
Wolf	James	Continental Divide Trail Society	517	5, 40*, 66, 76, 78, 110, 113*, 117*, 130*, 138, 146*, 186*, 188*

Last name	First name	Organization name	Letter number	Comment category number(s)
Wolfe	Lynne		794	3, 78, 138, 146*, 187, 208
Wollenzien	Barry		206	44*
Wood	Brian		1071	76
Woodrow	Erin		999	31, 45, 209
Wool	Bobby	Motorcycles of Atlanta	605	68
Woolley	John		871	7
Woolsey	Brad		484	3, 76
Workman	Garrett		329	6, 7
Wright	Jo Ann		983	21
Wuerthner	George		112	21, 23, 67*
Wyberg	Bryan		762	5, 23, 33, 34, 102, 151
Wyntjes	Cassidy		490	3, 31, 68, 187
Xanthopoulos	Susan E.		831	78
Yack	Vince		778	68, 78
Zakheim	Hugh S.		1100	7, 230
Zale	Geary		225	21
Zammit	Tony		1021	16, 28, 31, 34, 45, 66, 78, 104, 138
Zarr	Ron		105, 504	1, 6, 16, 49*, 68, 78, 138
Zarr	Julie	Ponderosa Snow Warriors Snowmobile Club	464	6, 143
Zelasko	Sandy		351	14, 102
Zimmerman	Mark Andrew		1058	14, 21
Zink	Terry		887	78
Zrimsek	Alanna		881	7, 34

Responses to Comments

The following is arranged by resource, in the same order as they are presented in the FEIS. In addition, two other categories (General and Geographic Areas) were added at the beginning to capture the comments that were not necessarily resource related (such as editorial and others).

Alternatives – General support/opposition

CR1 Alternatives A – Support

Concern: Commenters in support of alternative A.

Response: Thank you for your comment.

CR2 Alternatives B – Support

Concern: Commenters in support of alternative B.

Response: Thank you for your comment.

CR3 Alternatives C – Support

Concern: Commenters in support of alternative C.

Response: Thank you for your comment.

CR5 Alternatives D – Support

Concern: Commenters in support of alternative D.

Response: Thank you for your comment.

CR6 Alternatives E – Support

Concern: Commenters in support of alternative E.

Response: Thank you for your comment.

CR140 Alternatives A and E – Support

Concern: Commenters in support of alternatives A and E.

Response: Thank you for your comment.

CR143 Alternative D – Oppose

Concern: Commenters oppose alternative D.

Response: Thank you for your comment.

CR269 Alternatives A and E – Oppose

Concern: Commenter does not support alternative A or E.

Response: Thank you for your comment.

General

CR12 CDNST – General Support

Concern: Commenters support the plan components which provide protection for the Continental Divide National Scenic Trail.

Response: Thank you for your comment.

CR51 Monitoring - General

Concern: Multiple commenters had concerns about the HLC NF monitoring plan, including that the plan is inadequate, not detailed enough, not likely to be funded and/or completed, lacks treatment effectiveness monitoring, lacks sustainable recreation monitoring, and does not meet adaptive management requirements. There were also requests for the FS to add a monitoring guide for public review and comment.

Response: The plan monitoring program (appendix B of the 2020 Forest Plan) addresses the most critical components for informed management of the Forest's resources within the financial and technical capability of the agency. Every monitoring question links to one or more desired conditions, objectives, standards, or guidelines. However, not every plan component has a corresponding monitoring question.

The Forest used the best available scientific information in the development of the monitoring plan, considering expected budgets and agency protocols. In the implementation stage of the 2020 Forest Plan, if a monitoring guide is needed, it would be developed then. The monitoring guide is not required Forest Plan content.

CR66 New/combined Alternatives

Concern: Commenters suggested additional alternatives, modifications to alternatives, or combinations of alternatives.

Response: Thank you for your comments and suggestions. We have considered this additional information and have made some minor changes to the alternatives, as well as developed the preferred alternative based on public comment on the DEIS - all still meeting the purpose and need. Please refer to the "Comparison of Issues by Alternative" "Comparison of Issues by Resource" tables in Chapter 2 of the DEIS and FEIS. The tables cover the different resources in the planning area. Also included in Chapter 2 is list of “Alternatives Not Considered in Detail” which includes many of the commenters’ suggestions and the FS’s rationale for not considering the suggested alternatives in analysis.

CR67 Attachments – No Further Response Required

Concern: Commenters provided attachments in support of their statements.

Response: Thank you for your comments and submissions. All of them were reviewed and many of the ideas and suggestions were incorporated into the 2020 Forest Plan, the preferred alternative, or the FEIS. Please see the corresponding sections of those documents.

CR77 Maps and Data

Concern: Commenters sought additional maps or clarification on existing maps, including:

a. Question on why there was no map for alternative E.

b. Request for existing roads and new wilderness to be included on map UB15_DesArea8x11AltBC.pdf.

c. Concern that the maps did not have enough detailed information/features.

d. Request for the Elkhorns GA IRAs to be included on maps.

e. Request for geospatial data to be provided on our website.

f. Request for more detail to be added to the maps, roads, rivers, creeks, continental divide, etc. make available on-line.

g. It is hard to compare ROS alts B and C as the maps are the same.

h. Request for a map of lynx habitat, including areas where habitat has been added or reduced.

Response:

a. All maps can be found in appendix A (of both the 2020 Forest Plan and the FEIS), including maps for alternative E.

b. Map UB15_DesArea8x11AltBC.pdf is designated areas for the Upper Blackfoot GA. This map is limited by size and scale, therefore adding all the open roads would make the intent of this map difficult to read. The first map in each GA grouping shows more detailed roads, streams, and land ownership for reference.

c. The maps are limited by size and scale, therefore adding all the open roads, streams, and land ownership would make these maps difficult to read. The first map in each GA grouping shows more detailed ownership, roads, streams for reference.

d. E19_IRA8x11.pdf that is found in appendix A of the DEIS did have the IRA listed in the legend and on the map. Unfortunately, the name of this IRA was confusing. It was labeled "Elkhorns Wilderness Study Area Plus Additions". Between the DEIS and FEIS the FS went through the formal process to change the name to "Elkhorns".

e. Geospatial data is available by request.

f. The maps are limited by size and scale, therefore adding all the open roads, streams, and land ownership would make these maps difficult to read. The first map in each geographic area grouping shows more detailed ownership, roads, streams for reference. In chapter 1 of FEIS, as well as in the 2020 Forest Plan you will find a vicinity map and a forest geographic areas map for reference. Geospatial data is available by request.

g. The maps do not vary between alternatives B and C for ROS summer, but they do for ROS winter. Please refer to the comparison of alternatives in chapter 2 of the FEIS and in the individual resource analysis sections.

h. The maps are limited by size and scale, therefore adding both the previous lynx habitat and the revised lynx habitat to the same map would make these maps difficult to read and understand.

CR78 Comment Noted

Concern: Comment letters included introductory narrative and other information that was reviewed and noted with no further response required.

Response: Thank you for your comments. No further response will be provided for those comments that were:

- unrelated to the decision being made,
- already decided by law, regulation or policy,
- beyond the scope of the proposal,
- conjectural in nature or not supported by scientific evidence, or
- general in nature or without position statements.

CR81 Public Involvement

Concern: Commenters expressed concern over the public involvement process, including the use of GovDelivery to distribute information, the format of meetings, the complexity of documents, the notice given for public meetings, and the use of the comments.

Response: The FS used an email delivery system called GovDelivery. This system enables the agency to efficiently reach thousands of interested publics (in excess of 12,000 people signed up to receive information via this system). Interested publics had numerous ways to interact with the Revision Team - via telephone, postal mail, meeting attendance, in person, and emails. Meeting announcements and other updates were sent through this system, as well as through postal mailings, newspaper announcements, posters, website postings, and the Federal Register.

All of the public meetings involved information sharing and feedback retrieval. Some of the public meetings were workshops, where the attendees were tasked with creative problem solving and listening to

concerns of others. Attendees were encouraged to visit with other attendees and Forest personnel. It was deemed important for attendees to hear viewpoints of others, recognizing that there are many opinions and interests across the Forest.

The documents created as a result of the analysis are large; they contain years of information and analysis which will be used to guide the Forest for many years. The large documents were broken into chapters and appendices - complete with a table of contents and an index. With the release of the DEIS, a summary was made available. This summary is a 21-page document which summarizes the alternatives and their effects.

The comment content analysis process ensured that every comment was read, analyzed, and considered. Each submission was assigned a letter number and each unique comment was numbered and coded by topic in a database. The comment analysis process makes no attempt to treat comments as if they were votes and therefore give more weight to similar comments made many different people. Instead, the comment content analysis process focuses on the content of the comments and ensures that every substantive comment is considered in the decision process. Previously submitted comments were used to draft alternatives and to consider during analysis.

CR84 Editorial

Concern: Commenters provided editorial input on the documents that ranged from very general comments to specific edits, including

- Edits to appendix C;
- Edits to the Draft Plan;
- Questions about the alternatives;
- Questions about the GAs; and
- Comments about the length of the plan and supporting documents.

Response: Thank you for your comments. Where appropriate, edits were made to the documents, please see the appropriate sections in the 2020 Forest Plan and appendices.

The description of the alternatives as well as a comparison of the alternatives can be found in Chapter 2 of the EIS.

General descriptions of GAs have been adjusted as appropriate. GAs were chosen because they have their own unique characteristics and conditions. They are landscapes that people associate with on the Forest. By using GAs, we are able to fine tune our management to better respond to more local conditions and situations. GAs provide a means for describing conditions and trends at a more local scale if appropriate. They are ecological areas that are synonymous with basin and watershed. Please see Chapter 3 of the 2020 Forest Plan for more information.

We recognize that the size of the plan, its appendices, the EIS, and its appendices is lengthy. However, years of public interaction and analyses have gone into the creation of these documents. Therefore, we have included much of this information in them. Since they will be used for future management, we wanted to provide a consolidated location of information for forest land managers.

CR104 References

Concern: Commenters provided links and citations for reference.

Response: FS specialists reviewed and responded to references provided by the public. The responses can be found in the table included in this appendix.

CR107 Collaboration and Intergovernmental Coordination

Concern: Multiple comments requesting more FS collaboration with local user groups as well as counties and State agencies.

Response: Collaboration with the public, state and local governments, tribes, and other interest groups is a requirement of the 2012 Planning Rule. Youth involvement has also been a focus for the Forest.

The Forest has facilitated an inter-agency working group consisting of county, state, tribal and federal government representatives since the beginning of this plan revision process. This group has met semiannually since 2014 and a focus of these meetings was to discuss issues of mutual concern with respect to each agency's policies and/or plans. The FEIS section 2.4 discusses the process of involving the various government agencies as well as consistency of the 2020 Forest Plan with the various agencies policies and/or plans.

Public engagement on the forest plan revision process began in 2014 and included four rounds of public meetings in ten communities across the planning area. The first round was an open house introduction to the process, the second was centered around gathering input on the need to change, the third focused on desired future conditions, and the fourth centered on mapping management areas, timber suitability, and recommended wilderness areas. The primary purpose of all these meetings was go gather input from the communities and stakeholders across the planning area. Comments were taken from the public at all the meetings. The Forest also solicited public input via an online mapping tool, the "Talking Points Collaborative Mapping Tool".

Following the release of the proposed action and then again after the release of the 2018 Plan and DEIS, two more rounds of public meetings were held across the planning area communities. The primary purpose of these was to provide an introduction to the documents and to the comment process. During both the comment periods (for the Proposed Action and Draft Plan/DEIS), the Forest utilized the online comment database (CARA) to gather comments. The CARA database was also used in coding and responding to the Draft Plan/DEIS comments to assist in the preparation of the FEIS appendix G: Response to Comments. Over 800 original comments were received during the proposed action comment period and over 1000 were received during the Draft Plan/DEIS comment period.

Another key component of the involvement and transparency of the public involvement efforts associated with this planning effort has been the information made available to the public through the use of the forest plan revision website. The forest greatly benefited from the use of collaborative mapping tools in receiving input on its wilderness inventory and evaluation process. The availability to provide equal opportunities to anyone who wanted to participate in the planning process was greatly enhanced through our ability to provide web-based information for the public to comment on the process as well as plan components. The forest plan revision website is an excellent source of information of both the current information but also includes record of all the previous public involvement efforts as well.

CR120 Planning/Process/Methodology – No Further Response Needed

Concern: Commenters expressed concern on whether or not the planning rule was implemented properly, including the use/lack of best available scientific information, methodology, analysis, data set and processes; adaptive management; analysis of effects; realistic and measurable goals, and availability for consultation results for comment.

Response: Thank you for your comments.

The FS is required to follow all existing laws, regulations, and policies relating to the management of NFS lands. The 2020 Forest Plan is consistent with the National Forest Management Act (NFMA), NEPA, and other required guidelines and laws.

The 2020 Forest Plan and FEIS are being completed under the 2012 planning rule. The FS is required to follow all the direction it provides. All suggested references and other scientific information were

reviewed. The summary of this review is included in the response to comments section of the FEIS. The results of the FWS consultation will also be included in the FEIS.

CR125 Funding

Concern: Commenters had several concerns regarding funding and the ability of the USFS to meet its requirements with its current or future funding. These questions/concerns included:

- Requests for direction or guidance within the plan in relation to budget, capability to achieve the goals;
- Request for increasing funding for actions that include active management on the landscape that benefit big game and other upland wildlife species;
- Whether or not the proposed forest plan monitoring program in Draft Forest Plan appendix A is also based on reasonably foreseeable budgets; and
- How budget and staffing increases/decreases, increased/decreased planning efficiencies, unanticipated resource constraints factor into implementation of the 2020 Forest Plan.

Response: The 2012 Planning Rule requires the 2020 Forest Plan and alternatives to be based on the fiscal capability of the unit. This includes the objectives and the monitoring program. As described in Forest Service Handbook 1909.12 Chapter 22.12, objectives in the 2020 Forest Plan were identified through a trend analysis of the recent past budget obligations for the unit (3 to 5 years). In addition, the 2020 Forest Plan includes goals or management approaches to use additional statutory authorities for shared stewardship, partnerships, and volunteers to increase capacity to achieve desired conditions and/or conduct monitoring.

The purpose of the land management plan is to guide future project and activity decision making. Although some commenters requested an identification of the "cost of the plan" or portions of the plan, it would be highly speculative to estimate the cost of plan implementation as specific locations, timing, and activities associated with implementation are unknown at this time. In addition, forest plans do not make budget decisions. Should Congress emphasize specific programs by appropriation, a redistribution of priorities would follow, regardless of the alternative implemented. In all management activities, the Forest would still be required to either be making progress toward, or not be precluding achievement of the desired conditions. Reduced budgets or changed priorities may change the speed at which this occurs but does not change our obligation to meeting them.

CR127 Suggested Alternatives

Concern: Commenters felt that the range of alternatives analyzed was insufficient. Several commenters specifically asked for the HLC NF to consider an alternative that they proposed, including:

- An alternative that maintains 50% of all watersheds as wildlife habitat with no roads or management activities, and the remaining 50% would be managed for timber production; and
- Including an ecocentric/biocentric alternative, which was previously submitted during scoping and was addressed in alternatives not considered in detail in the DEIS. The commenter seeks clarification on why this alternative would meet the laws, regulation, and policies that guide the multiple use management of NFS lands.

Response: Elements of both of these suggested alternatives are included in the range of alternatives. Each of these alternatives is discussed in further detail in the FEIS, in the alternatives considered but not in detail section of chapter 2. The rationale for not analyzing these alternatives in detail include, but are not limited to, inconsistencies with the 2012 Planning Rule and associated directives.

CR196 Law, Regulation, and Policy

Concern: Commenters ask for repeat of Law, Regulation and Policy, as inspections are required by law.

Response: Per the 2012 Planning Rule, the 2020 Forest Plan does not repeat law, regulation and policy. All laws, regulations and policies are applicable and will be followed.

Geographic Areas

CR39 Big Belts GA

Concern: Commenters requesting additional information be included to describe the Big Belts GA, including information on cover types and winter ranges, connectivity, additional species in terrestrial vegetation, and additional cultural sites.

Response: Various GA plan components and other editorial suggestions were provided. Changes were made where applicable; please see the Big Belts GA section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

Desired conditions for cover types were added to each GA. Winter range is covered in the Forestwide plan components (see FW-WL-DC-06, FW-WL-GDL-05, 06). Please refer to the forestwide plan components for wildlife and fisheries. The GA sections do not repeat forestwide direction, and it was determined that no GA-specific wildlife/fisheries components were needed in the Big Belts GA.

Connectivity was considered in the wilderness recommendation process, as well as in the mapping of ROS areas across the forest, including the Big Belts.

CR41 Highwoods GA

Concern: Commenters provide general support for the protections of the roadless nature of the Highwood Mountains and requests for specific corrections/additions to the GA description, including:

a. Request for standards and guidelines for wildlife;
b. Request for and against primitive for roadless areas in the Highwoods;
c. Request for edits to the information about westslope cutthroat trout;
d. Edits to the Highwoods GA description; and
e. Request for control of noxious weed expansion.

Response: Various GA plan component and other editorial suggestions were provided. Changes were made where applicable. Please see the Highwoods GA section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

a. Please refer to the forestwide plan components for wildlife. The GA sections do not repeat forestwide direction, and it was determined that no GA-specific wildlife components were needed in the Highwoods.
b. Primitive ROS areas were considered for the Highwoods GA in alternative D but were not included in the preferred alternative.
c. Please see Highwoods GA Ecological Characteristics and westslope cutthroat trout viability. Wording was changed from "restored" to "relatively secure" to reflect that non-native fish have ascended barriers in the plan area in the past. A sentence describing the North Fork Highwood Creek westslope cutthroat trout project was added as was a sentence addressing the need for retention of all westslope cutthroat trout core and conservation in the Upper Missouri River drainage to maintain westslope cutthroat trout viability.
d. Please see Highwoods GA introduction
e. Noxious weeds are a concern in the Highwoods GA, as well as the other GAs on the Forest. Please refer to the forestwide plan components for invasive plant species. The GA sections do not repeat

forestwide direction, and it was determined that no GA-specific invasives components were needed in the Highwoods.

CR43 Little Belts GA

Concern: Commenters recommend a number of edits to the GA description and plan components.

Response: Various GA plan components and other editorial suggestions were provided, thank you. Changes were made where applicable, please see the Little Belts GA section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

Please refer to the forestwide plan components for wildlife. The GA sections do not repeat forestwide direction, and it was determined that no GA-specific wildlife components were needed in the Little Belts.

Commercial hunting permits are not detailed in the 2020 Forest Plan.

CR60 Monitoring – GA Level

Concern: Commenters had requests for more specific information or finer scales for monitoring (appendix B of the 2020 Forest Plan). Specifically, commenters suggested monitoring some attributes at the GA-scale, such as vegetation attributes, wildlife, recreation, and pollinators. They also suggest the use of the intensified FIA grid for monitoring.

In addition, they suggested that the best monitoring method for elk needs to be determined with MFWP; hunter days alone seem inadequate.

Response: Where appropriate, the suggestions to improve the monitoring plan were incorporated. For example, the 2020 Forest Plan (appendix B) now contains detailed desired conditions at the GA level for more vegetation attributes. Other factors are better monitored at broader scales. As described in appendix B of the 2020 Forest Plan, monitoring for pollinators would occur in conjunction with vegetation monitoring associated with grazing allotments, because grazing would be the primary activity that may influence pollinator habitat. During the implementation of the 2020 Forest Plan, the monitoring guide may be updated to refine the best scale for monitoring.

The HLC NF installed a 4x intensification of the FIA grid, and this data has been integral in the planning and analysis for the 2020 Forest Plan. However, the budget to re-read this data source is uncertain and the Forest is unable to commit to maintain this plot grid over time as a monitoring tool. For this reason, the monitoring plan is designed so that the monitoring can be accomplished using other data sources, such as the base (National) FIA grid and/or VMap, if necessary.

CR70 Upper Blackfoot GA

Concern: Commenters provide recommendations for the Upper Blackfoot GA description and plan components associated specifically with the Upper Blackfoot GA.

Response: Various GA plan component and other editorial suggestions were provided. Changes were made where applicable, please see the Upper Blackfoot GA section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

In addition to the GA plan components, please refer to the forestwide plan components for wildlife and other resources. The GA sections do not repeat forestwide direction, and only GA specific plan components are included in the GA sections.

CR71 Divide GA

Concern: Commenters recommended edits to the Divide GA description and plan components.

Response: Various GA plan component and other editorial suggestions were provided. Changes were made where applicable, please see the Divide GA section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

CR121 Castles GA

Concern: Commenters recommend edits to the Castles GA description and plan components.

Response: Changes to plan components were made where applicable, please see the forestwide Wildlife section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule. Please note that the GA sections do not repeat forestwide direction, and it was determined that no GA specific wildlife components were needed in the Castles.

CR134 Rocky Mountain Range GA

Concern: Commenters offer recommendations for the Rocky Mountain Range GA description and plan components.

Response: Various GA plan component and other editorial suggestions were provided. Changes were made where applicable. Please see the Rocky Mountain GA section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

CR174 Elkhorns – Plan Components

Concern: Various GA plan component and other editorial suggestions were provided.

Response: Changes were made where applicable. Please see the Elkhorns GA section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

CR192 Crazies GA

Concern: Commenters had specific comments related to the Crazies GA.

Response: Various GA plan components and other editorial suggestions were provided. Changes were made where applicable, please see the Crazies GA section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

Please refer to the forestwide plan components for wildlife and other resource plan components. The GA sections do not repeat forestwide direction, and it was determined that no GA specific wildlife components were needed in the Crazies.

CR194 Snowies GA

Concern: Commenters shared a number of suggestions/recommendations regarding the Big and Little Snowies, including:

a. A request for GA specific wildlife plan components;
b. Questions about timber suitability in the Little Snowies, especially the effects to wildlife;
c. Additional information for the GA description about westslope cutthroat trout; and
d. A request for continued motorized access into the south side of the Big Snowies.

Response: Thank you for your comments, changes were made where applicable; please see the Snowies GA section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

a. Please refer to the forestwide plan components for wildlife and other resource plan components as the GA sections do not repeat forestwide direction.
b. The FS appreciates your interest in the ecological integrity of the Little Snowies landscape. Several alternatives, including the preferred alternative, do identify the Little Snowies portion of the Snowies GA as suitable for timber production, based on the topography, access, and vegetation conditions of the area. Plan component SN-TIM-GDL-01 underscores the important features of this area by stating that timber harvest and other vegetation management activities should "emphasize ponderosa pine habitat restoration, wildlife habitat, reducing hazardous fuels, protecting communities and values at risk, and providing for public safety." The desired conditions for the vegetation in the Snowies GA are based on a natural range of variation (NRV) analysis, which established the likely range of natural conditions. The plan does not authorize any site-specific projects. Prior to logging or other treatments, additional NEPA analysis would be conducted. Any future projects planned in this area would adhere to these as well as the full suite of applicable forestwide and Snowies GA plan components, including those that provide for all terrestrial and aquatic species. The FW-TIM plan components also provide additional guidelines and standards designed to ensure that harvest is conducted in a sustainable manner.
c. The westslope cutthroat trout information has been added.
d. To accommodate established motorized over-snow use and to provide access to the more popular trails for mountain bike use (mechanized means of transport), the RWA boundary in the preferred alternative (alternative F) has been adjusted. The RWA boundary would exclude those trails that access the Ice Caves (Trails #403, #490, and #493) and provide a loop trail riding experience based out of the Crystal Lake Campground complex. The area outside of the RWA would still provide a primitive recreation experience and would be managed for primitive ROS, except in those locations where motorized over-snow use is allowed under the current winter travel plan. Trails within the RWA boundary would prohibit motorized and mechanized means of transportation in the preferred alternative (alternative F).

CR195 Elkhorns GA

Concern: Comments on the Elkhorns GA plan components.

Response: Please refer to the forestwide plan components for wildlife. The GA sections do not repeat forestwide direction, and it was determined that no GA specific wildlife components were needed in the Elkhorns. Also see Elkhorns GA WMU plan components.

Aquatic Ecosystems and Soils

CR62 Monitoring - Water

Concern: Commenters had concerns with the monitoring plan and appendix B of the Draft Forest Plan related to:

a. Asking for additional tracking of measures of ecological and fiscal sustainability, with respect to roads and trails within subwatersheds, as well as aquatic organism passage; and
b. Requesting more detail about staffing/budgeting to accomplish monitoring goals related to watershed management.

Response: Thank you for your concerns and suggestions dealing with monitoring.

a. MON-WTR-04 through 07 (appendix B) would track and report on the requested data for priority watersheds**.**
b. The HLC NF realizes staffing, and the completion of required monitoring, would continue to be difficult under today's budgets allocations. The completed monitoring plan (appendix B of the 2020 Forest Plan) will be released with the FEIS. It has been edited and provides additional

indicators to aid in prescribing adaptive management tools. Staffing considerations and budgeting numbers are outside the consideration of the 2020 Forest Plan.

CR65 Conservation Watershed Network

Concern: Commenters were generally supportive of the Conservation Watershed Network (CWN), and there were requests for additional information in the FEIS.

Response: Thank you for your comments. The HLC NF agrees that the use of the CWN to prioritize watersheds will support the recovery of these important watersheds. More information was added to App E, please see the 2020 Forest Plan.

CR87 Water Quality

Concern: Commenters had concerns with water quality and project best management practices (BMPs) in respect to the Clean Water Act. These included requests for:

a. Additional DC to include highly altered systems;
b. Protections to be included to protect resources from future actions;
c. Editorial corrections;
d. Addition of RMZ plan components to include winter recreation in RMZs east side of the divide;
e. Plan components for new trail construction sediment and compliance with the Clean Water Act; and
f. Road related BMPs to comply with Clean Water Act.

Response:

a. The Forest realizes the difficulty of moving highly altered stream systems to desired conditions. Additions were made to DC-3 to include highly altered systems to move towards stable or improved function towards desired conditions.
b. The 2020 Forest Plan includes protections for water quality and quantity as required by the Clean Water Act. The use of BMPs and other mitigations to protect water quality would be implemented at the project level. We agree with your comments that roads affect many processes that in turn affect aquatic systems. The 2020 Forest Plan provides plan components to address, minimize, and mitigate the impacts of roads. The EIS may not directly address all the impacts from roads, it does analyze and disclose the effects of the 2020 Forest Plan on implementation of forest activities. The 2012 Planning Rule requires the FS to comply with the Clean Water Act, to implement national BMPs on all forest management activities, and to have specific plan components stating if or when individual national BMPs are not required. FW-WTR-DC-04 and 05, FW-WTR-STD-02, FW-RMZ-GDL-04 all provide protections under the Clean Water Act.
c. Corrected in FEIS. FW-WTR-STD-02 requires the use of BMPs to control sediment delivery to streams. The component has been reworded to include road infrastructure BMPs.
d. The adoption of RMZs would increase the area protected on the east side of the divide and would be similar to alternative A on the west side of the divide.
e. Any identification of or new trail construction is beyond the scope of this document. The 2020 Forest Plan requires the use of BMPs during planning and construction to mitigate and limit impacts to streams and water resources by new or existing trail system construction/maintenance.
f. This is covered in FW-WTR-STD-02.

CR91 Fish/Aquatic Habitat

Concern: Commenters had concerns about fisheries and aquatic habitat, including: sediment in streams; funding for fisheries management, including removal of barriers, mitigation of mine pollution, and restoration/reintroduction of native westslope cutthroat and bull trout; road density; livestock impacts and setting allowable use standards; consideration of westslope cutthroat trout; and monitoring.

Response: The 2020 Forest Plan was developed following the 2012 Planning Rule and is intended to protect aquatic resources. The 2020 Forest Plan contains standards, guidelines and objectives to meet obligations under the Clean Water Act, Endangered Species Act (ESA), NFMA, and Federal Land Policy and Management Act. While any management or development carries risk to aquatic resources, the standards and guidelines in the 2020 Forest Plan as well as National BMPs and State of Montana SMZ rules were developed to mitigate potential impacts to aquatic ecosystems. The Forest agrees that native trout species that inhabit the plan area are important to protect and that roadless areas provide important refugia that minimize sediment and maintain temperatures and habitats in the face of climate change.

CR96 RMZs

Concern: Commenters had concerns related to the proposed Riparian Management Zones (RMZs). These concerns include RMZ width, management within RMZs, riparian and terrestrial connectivity, and the analysis of RMZs within the EIS.

Response: RMZs, and management within these zones, are critical to overall forest and ecosystem health. Based on best available scientific information, the RMZ width is adequate to protect aquatic resources, riparian and terrestrial connectivity (FW-RMZ-DC-02) and management activities that occur within the RMZ would restore or enhance aquatic and riparian-associated resources.

CR97 Watershed

Concern: Commenters had a general concern for impacts to watersheds and/or the way the effects analysis for watersheds was conducted. The main concerns were watershed resilience with climate change, concerns with a specific watershed, the watershed analysis used, and forest plan editorial changes.

Response: Watersheds, and management within these areas, are critical to overall forest and ecosystem health. The 2020 Forest Plan provides direction to improve and protect riparian areas, as well as whole watersheds, to become resilient into the future from multiple potential impacts including changing climate (FW-WTR-DC-01). Forest management, through the plan components, would work toward the goals, objectives, and desired conditions for all resources. Project level decisions, including travel planning, are outside the scope of the 2020 Forest Plan.

Based on the comments received, changes were made where applicable, please see the water resources section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

CR98 Soil – Nutrient Cycling

Concern: Commenters had concerns about soil nutrient cycling and requested the FS to add ecological site descriptions to the desired conditions in the 2020 Forest Plan.

Response: Ecological site descriptions have not been developed for the Forest at this time. The statement regarding ecological site descriptions has been removed as it is not considered a desired condition. Please see changes in the soils section of the 2020 Forest Plan.

CR137 303D Listed Streams/TMDL Issues

Concern: Commenters had concerns with 303d listed streams, streams with developed TMDL plans, and overall water quality in these streams. The concerns were centered on priority treatments to 303d listed streams, edits in the plan, baseline data for 303d listed streams, and Forest data discrepancies with 303d listed streams.

Response: The Forest recognizes the significance of having all waters free from pollutants and impairments and would actively work toward that end (FW-WTR-DC-07). The 2012 Planning Rule requires that all watersheds with 303d listed streams within the planning area be included and designated

within/as Conservation Watershed Networks (CWN). CWNs have additional plan components that would be required in project management actions within these watersheds. Once MTDEQ has completed TMDLs for a stream segment, they will also include baseline data of that designated watershed. The Clean Water Act stipulates the Forest will work within the parameters of the TMDL to move towards attainment of beneficial uses, and we would accomplish this in partnership with MTDEQ (FW-WTR-GO-03).

Based on the comments received, changes were made where applicable, please see the Water resources section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

CR152 Watershed – Municipal

Concern: Commenters had concerns with the management actions and protections of water quality in forest designated municipal watersheds.

Response: Municipal watersheds provide water for public consumption and are critical for the citizens that rely on them. The 2020 Forest Plan recognizes the importance of these watersheds, and they are included in the CWN. This designation affords municipal watersheds additional protections through the CWN plan components (please see the FW-CWN section), as well as, all other watershed and riparian plan components, and GA municipal watershed plan components. The 2020 Forest Plan provides direction to improve and protect all watersheds in an effort to become resilient into the future from multiple potential impacts including changing climate (FW-WTR-DC-01).

CR164 Soil – Detrimental Soil Disturbance/Region 1 Soil Quality Standards

Concern: Commenters had questions/concerns about the detrimental soil disturbance/Region 1 soil quality standards. These included:

a. The standards are difficult to achieve and are flawed; studies are needed to show their effectiveness;
b. Soils standards should apply to livestock grazing;
c. Why does the Draft Forest Plan not incorporate the full Region 1 soil quality standards fully; and
d. Do existing or past disturbance areas count toward the 15% detrimental soil disturbance?

Response:

a. Soil quality standards do have inherent assumptions and flaws; however, they present a consistent approach for assessing and quantifying management activity impacts on soil. It is true that soil quality and soil disturbance may not directly equate with changes to site productivity; the long-term soil productivity experiment was designed to detect productivity changes resulting from soil disturbance and represents the most applicable research on this topic. It has shown mixed productivity responses to soil compaction and organic matter removal 5, 10, and 20 years following treatment, both for above ground arboreal biomass production as well as below-ground properties of soil carbon, nitrogen, and microbial communities (please see long term soil productivity references in the FEIS). However, studies have shown impacts of harvest on other soil properties, including nutrient cycling and microbial communities. But it is exactly because of these variable responses and measurement challenges that soil quality standards represent are valuable; they represent a quantitative tool for consistently representing management impacts on soil on a landscape scale, and incorporate measures of soil function beyond those that directly impact plant productivity (such as depth of organic layer, understory root density, and ground cover estimates). While imperfect, the FS believes that the 15% detrimental soil disturbance threshold derived from Region 1 soil quality standards represents a conservative baseline for preserving soil functions across a site.

b. Thank you for your comment. Though monitoring grazing is not applicable under the current Regional Soil Standards, impacts to the resource from grazing are still assessed. Any impacts are addressed through revised allotment management plans (AMPs).
c. Though not stated verbatim, the FS feels that the Region 1 soil quality standards are covered in the soils plan components.
d. Administrative sites/infrastructure (system roads, trailheads, etc.) are excluded from detrimental soil disturbance as per the Region 1 soil quality standards. Also, we do not have any permanent log landings on the forest, and disturbance from log landings is included in detrimental soil disturbance monitoring.

CR165 Soil – Coarse Woody Debris

Concern: Comments were received regarding soil and coarse woody debris, including:

a. The desired conditions and guideline thresholds for coarse woody debris are too high and/or should be removed. It appears that there is a desire for more downed wood than what is present currently, which is not consistent with desired for resilience to fire; nor is the concept of adding fuel to a site that does not meet the guideline.
b. The analysis needs to disclose the frequency, magnitude and potential effects of activities that would be excepted from the woody debris guidelines (where fire risk is of concern).
c. There were requests to disclose the scientific basis for the acceptable levels and distribution of downed wood. How was NRV estimated (data source)? What is the scientific basis for stating that 30-50% of a forest area may have little or no woody debris at a given time? The analysis must include information on the distribution of downed wood in "unmanaged" areas as compared to the NRV, in order to assume that sufficient habitat associated with this material is available.
d. The guideline allows for "gerrymandering" of project unit design to avoid leaving downed wood in treated areas.
e. The coarse woody debris guidelines need to be reduced to factor in climate change, because the timespan that woody debris will contribute to fire severity and intensity will increase.

Response:

a. The coarse woody debris plan components are based on the best available scientific information for the HLC NF. These components are necessary to ensure that sufficient wood is present on the landscape to provide for key ecosystem processes such as nutrient cycling into the soil and wildlife habitat. The levels of downed wood are based in large part upon the natural fire regime of the area; and acknowledge that distribution of the material may vary with some areas containing little to no downed wood. In addition, there are exceptions granted specifically for areas where fire risk is of concern. Coarse woody debris would only be added in areas where the tons/acre are below what is needed to sustain future productivity and meet multiple management objectives.
b. Additional discussion has been added to the downed woody debris section of the FEIS to address the potential effects of activities that would be excepted from the woody debris guideline due to fire risk. These instances would likely be limited to harvest and prescribed fire activities that occur within wildland urban interface (WUI) areas.
c. The basis for the coarse woody debris plan components is further described in appendix H of the FEIS. The NRV in terms of quantities and distributions is based on forest inventory analysis (FIA) data within unroaded and wilderness areas, because these areas have been influenced to a lesser degree by management intervention. Lacking other quantitative information, this method is consistent with the best available scientific information. The downed wood section of the final EIS includes additional analysis describing the distribution of downed wood in "unmanaged" areas as compared to the NRV, to inform conclusions on whether sufficient habitat associated with this material is available.

d. The intent of the coarse woody debris guideline is to guide managers in designing the best placement, distribution, and linkages of down woody material across a treatment area.
e. The FS appreciates the concern related to downed woody debris. Utilizing the best available scientific information cited in the FEIS as the basis for the desired conditions and guideline is the best approach for managing downed wood, especially given future uncertainties. The potential impacts of climate change are more uncertain and complex than the influence on decay rates. Additional discussion was added to the downed woody debris section of the FEIS to address this. While decay of this material may be somewhat slower in warm and dry conditions, conversely an increase in expected fire activity may consume downed wood, thereby emphasizing the importance of retaining it in situations under FS control to contribute to soil nutrient cycling and wildlife habitat.

CR166 Monitoring – Soils

Concern: Commenters are concerned with soil monitoring and the ability to assess soils at the Forest scale. They also asked about GA level monitoring and questioned what the elements in the Soil Monitoring Plan include.

Response: Since the effects to the soil resource are considered site specific, the monitoring would occur inside of management units at the project scale. Post-treatment forest floor conditions would be monitored within the activity units, this includes, detrimental soil disturbance, course woody debris, visual ground cover estimates, soil burn severity, and number/acres and types of road/trail treatment.

CR169 Soil – Nonnative Invasive Plants

Concern: Commenter was concerned with the lack of disclosure of losses of soil productivity due to foreseeable increases in noxious weeds.

Response: Under the 2020 Forest Plan, following implementation of all management activities (including road construction and road decommissioning), sites would be monitored for noxious weed invasion, and subsequent weed treatments would be conducted to control and eradicate weeds. With this mitigation, soil cumulative effects from noxious weeds would be minimized.

CR170 Soil – Productivity, Quality, Function

Concern: Commenters had concerns/suggestions for plan components related to soil productivity, quality, and function.

Response: Thank you for your comments. Changes were made where applicable. Please see the soils section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule. Please also see the soils section of appendix C of the 2020 Forest Plan as well as the FEIS for more information on the best available scientific information regarding detrimental soil disturbance in the long term.

CR171 Soil – Ground Cover

Concern: Commenters were concerned with ground cover, including: the definition and how to measure it; and the sustainability of the 1cm threshold.

Response: Thank you for your comments. Please see the glossary section of the 2020 Forest Plan for the definition of ground cover. Ground cover would be monitored per the monitoring plan, appendix B of the 2020 Forest Plan).

CR172 Soil – Sensitive Soils

Concern: Commenter was concerned with sensitive soils, including: the definitions and process for determining which soils are sensitive and what protections they require, especially slump prone soils, ash laden soils, and grazing impacts on mollic soils.

Response: The initial criteria for determining if a soil is slump prone or mass wasting is by using data from the Natural Resource Conservation Service Soil Survey of either the Helena NF or the Lewis and Clark NF or ground truthing by FS soil scientists. In some cases, ground truthing is required to determine the extent/existence of the slump/mass wasting potential. Please see FW-SOIL-GDL-08.

By aligning primary grazing areas with soils, we can better anticipate where impacts from grazing would occur. This does not necessarily mean there would be an increase in stocking rates. However, once inventoried, it would allow us to mitigate impacts through the AMP revision process.

CR178 Watershed – Plan Components

Concern: Commenters had general concerns and suggested changes, or additions, to watershed plan components. These suggested changes, or additions, were for all the watershed Forestwide plan components.

Response: Forestwide plan components were developed to enhance or maintain properly functioning watershed condition on NFS lands. One of the original purposes for establishing the FS was to protect the nation's water resources. The 2012 Planning Rule includes a newly created set of requirements associated with maintaining and restoring watersheds and aquatic ecosystems, water resources, and riparian areas on the national forests. The increased focus on watersheds and water resources in the 2012 planning rule reflects the importance of this natural resource, and the commitment to stewardship of our waters.

The 2012 Planning Rule requires that plans identify watersheds that are a priority for restoration and maintenance. The 2012 Planning Rule requires all plans to include components to maintain or restore the structure, function, composition, and connectivity of aquatic ecosystems and watersheds in the plan area, taking into account potential stressors, including climate change, and how they might affect ecosystem and watershed health and resilience.

Plans are required to include components to maintain or restore water quality and water resources, including public water supplies, groundwater, lakes, streams, wetlands, and other bodies of water. The 2012 Planning Rule requires that the FS establish BMPs for water quality, and that plans ensure implementation of those practices.

Based on the comments received, changes were made where applicable, please see the water resources section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

CR183 Watershed – Downstream Water Users/Irrigation

Concern: Commenters had concerns about forest management of surface water quality and quantity related to water delivered to downstream users, primarily irrigators.

Response: The HLC NF recognizes the important role the Forest has in supplying adequate clean water to water users downstream of forest managed lands. The 2020 Forest Plan includes management strategies to help achieve these goals of maintaining quality and quantity of water into the future in the face of climate change. We also recognize beneficial downstream uses and the 2020 Forest Plan provides tools for appropriate fire management in the designated wilderness areas. Timing of runoff along the HLC NF section of the Rocky Mountain front has not been directly linked to wildfires, however, climate shifts (earlier runoff) throughout the entire Rocky Mountains has been studied and early runoff has been attributed to climate change and not wildfires.

The HLC NF works to mitigate the effects of climate change through vegetation management activities within its managed lands. The 2020 Forest Plan has standards, desired conditions and guidelines we believe would provide continued delivery of quality and quantity of water to downstream users. Management within designated wilderness, the forest lands that supply water to the Sun River Watershed Group, is limited due to limited access (Roadless rule) and laws (Wilderness Act). Past management of wildfire within the wilderness areas have been managed in coordination with downstream water users to the extent possible.

CR184 RMZ – Plan Components

Concern: Commenters had concerns for the Riparian Management Zone (RMZ) Plan Components to include Desired Conditions, Objectives, Standards, and Guidelines.

Response: Various RMZ plan components and other editorial suggestions were provided. Changes were made where applicable, please see the RMZ section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

The 2020 Forest Plan RMZ plan components have been expanded to focus on key ecological processes and functions, to highlight the importance of vegetation structure and composition, and provide suitable connected wildlife habitat rather than being fish-centric under the Inland Native Fish Strategy. Vegetation management within RMZs is allowed but riparian and aquatic conditions must be maintained, restored, or enhanced. Also, many activities that can degrade soil function (compaction or erosion) are restricted or minimized within this zone. RMZs are not "no management zones" since treatment may be necessary to achieve desired conditions. However, guidance is provided for any activities that may occur within RMZs.

CR189 Aquatics/Fish Habitat – Plan Components

Concern: General concerns and suggested edits to plan components for Fisheries and Aquatic Habitat were provided.

Response: Various plan component and other editorial suggestions were provided. Changes were made where applicable, please see the fisheries and aquatic habitat section of the 2020 Forest Plan section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

CR190 Aquatics – Bull Trout Conservation Strategy

Concern: Commenters asked for additional clarification regarding how the HLC NF 2020 Forest Plan would be consistent with the Bull Trout Conservation Strategy.

Response: A desired condition has been added to the Divide and Upper Blackfoot GA sections to demonstrate the intent of contributions to recovery. Please see the Divide and Upper Blackfoot GA Fisheries and Aquatic Habitat sections of the 2020 Forest Plan.

Forestwide desired conditions: plan components for fisheries and aquatic habitat provide the guidance to improve habitat conditions where the HLC NF has the ability to manage habitat. Core area populations would be expanded by increasing local populations, which are considered to be the smallest group of fish that are known to represent an interacting reproductive unit. A core area represents the closest approximation of a biologically functioning unit for bull trout. Those portions of the patch size needed to maintain viability on the HLC NF are addressed by plan components.

Current USFS direction requires the Bull Trout Conservation Strategy to be used to inform forest plan revision in core areas, for local populations and in areas of other important populations. The conservation strategy prioritized needs for core areas on the HLC NF to provide the best available information on bull trout restoration opportunities. It is intended to be a document that would be updated and improved over

time in light of changing conditions and status of local populations and core area. The forest plan provides oversight direction rather than name-specific actions to take for recovery actions. In addition to other plan components, it helps provide guidance originally provided by the INFISH strategy and can increase the effectiveness of plan direction. Plan components address mitigating sediment, recreational use impacts instream flows, improvement of passage and entrainment, restoring instream habitat and improving spawning and rearing habitat, which are actions to address habitat threats in the Columbia Headwaters Recovery Unit Implementation Plan.

The Memorandum of Understanding and Conservation Agreement for westslope cutthroat trout in Montana serves to document Montana's efforts as part of coordinated multi-state, rangewide efforts to conserve cutthroat trout. Plan components address goals of the MOU. Sub-basin plans provide the framework for population enhancement, protection and replication.

CR191 Aquatics – INFISH

Concern: Commenter provide a number of comments related to INFISH, including:

a. Aquatic strategy proposed in the revised Forest Plan must be an improvement of INFISH;
b. Please include an action alternative that retains and improves INFISH;
c. INFISH was short-term strategy;
d. Support the expansion of an aquatic strategy to areas not covered by INFISH;
e. Monitoring should have been used to develop specific desired conditions and objectives;
f. The revised forest plan should require site specific, interdisciplinary watershed analysis before projects proceed in the RMZ's;
g. The protection measures outlined in INFISH need to be included to comply with ESA; and
h. An action alternative should be included that retains INFISH on the west side and applies it to the east side.

Response:

a. The aquatic strategy plan components in the 2020 Forest Plan are an updated synthesis of the two existing aquatic strategies: 1) Interim Strategies for Managing Anadromous Fish-Producing Watersheds in Eastern Oregon and Washington, Idaho, and portions of California (PACFISH) and 2) the Inland Native Fish Strategy (INFISH). PACFISH and INFISH were originally expected to only provide direction for a few years while a broader effort, the Interior Columbia Basin Ecosystem Management Project, was completed for the Interior Columbia River Basin. Although that strategy was never completed, science from that effort has been retained in the form of guidance for plan revisions in the Interior Columbia Basin Ecosystem Management Project Framework Memorandum of Understanding (2014). While portions of the HLC NF planning area were not originally subject to these strategies, the underlying principles in these plan components and strategy are relevant and applicable. The 2020 Forest Plan addresses new requirements in the 2012 Planning Rule, advances in BASI for such components as riparian management objectives, and standards and guidelines. The Northern Region has also provided guidance for identifying compliance with the goals of a conservation strategy as first outlined by PACFISH and INFISH. Additional guidance addressed aquatic and riparian ecosystem integrity and connectivity. Some components, such as desired conditions, have been added or altered to provide more clarity in project development under the 2020 Forest Plan.
b. Plan components related to INSFISH protections are located in the RMZ, WTR, FAH, and CWN sections.
c. Regional guidance provided oversight to ensure compliance with the aquatic strategy replacing INFISH. In all alternatives, the aquatic strategy has been extended to the Missouri River Basin.

d. PIBO monitoring would demonstrate whether habitat trends are degrading or improving towards desired conditions based on the physical stream habitat metrics at each site that are appropriate for the stream rather than the interim RMOs that were not site specific.

e. NEPA analysis would occur on all proposed projects and BMPs would be implemented as required by law. Also, INFISH requires a science-based watershed analysis which was performed on numerous watersheds west of the continental divide. That analysis would be incorporated into all future actions. INFISH provided for a network of priority bull trout watersheds within the proposed action area, based on metapopulation needs of bull trout. Ongoing projects within the priority watersheds would be screened to determine their potential habitat effects and whether they would need to be modified. Watershed analysis would also be required for some management activities within the riparian habitat conservation areas in priority watersheds." INFISH watershed analysis has occurred on priority watersheds.

f. Please see FW-RMZ-STD-03.

g. The INFISH Direction was amended to the 1986 Helena Forest Plan as Amendment 14 in May 1996 and as a result continues to be part of the no-action alternative. An aquatic strategy's plan components that would replace the INFISH Direction in the 2020 Forest Plan would be required to comply with ESA and a programmatic biological assessment would address the effects of implementing the 2020 Forest Plan on bull trout and designated bull trout habitat on the HLC NF.

h. Thank you for your comment. The intent of the 2020 Forest Plan is to replace the Interim INFISH Direction with plan components that provide the same result and would utilize PIBO monitoring to determine if habitat conditions are trending towards desired conditions using a science-based methodology.

CR203 Monitoring- Aquatics

Concern: Comment primarily deal with different aspects of monitoring need to track the progress towards meeting desired conditions included in the Forest Plan and removing INFISH protections and the use of riparian management objectives, which were part of INFISH. These include monitoring, restoration, effects of grazing, roads, and noxious weeds.

Response: PIBO data would be used to evaluate aquatic habitat status and trend across the plan area and would guide adaptive management strategies, to meet aquatic desired conditions. Desired conditions and objectives are not determined for future projects they are determined for a specific resource such as watersheds, RMZ or riparian area. For aquatic plan components, NRV means the expected range of variation for a condition or process as described by monitoring that condition or processes in a similar biophysical setting, in relatively unmanaged landscape. The 2020 Forest Plan was written following the guidance given in the 2012 Planning Rule. The use of one-size-fits-all riparian management objectives has been shown to not represent the best available scientific information. Please see the monitoring plan in appendix B of the 2020 Forest Plan. The interim INFISH riparian management objectives would be replaced by the 2020 Forest Plan.

The standards and guidelines contained in the 2020 Forest Plan are designed to minimize the impacts of grazing, noxious weeds, and the road and trail system on wetlands and aquatic resources of the HLC NF. The 2012 Planning Rule gives direction on how forest plans are developed and implemented. We agree that limiting development and motorized use would help movement of aquatic systems toward desired conditions. However, it is important to remember the FS mandate is to facilitate multiple use, so not all areas can be maintained in limited use. The impacts to aquatic resources would be minimized by implementation of the plan components.

Based on the comments received, changes were made where applicable, please see the Water resources section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

CR204 Aquatics – Roads

Concern: Commenters had concerns with potential road impacts to streams and their interactions with habitat quality. The concerns were centered on the EIS analysis, suggested additions to plan components, RMZs, roadless areas, and fish habitat.

Response: Based on the comments received, changes were made where applicable, please see the 2020 Forest Plan and specific sections that relate to the concern. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

Since the building of roads into the forest began, they have always divided opinions, potential impacts, and personal beliefs. The FS believes in allowing access for all Americans into their natural lands, and at the same time, minimizing the impacts to the native habitat. The majority of FS lands are wilderness and IRA, so there are very little roads to begin with (on a national scale). The goals of access and preservation are sometimes competing, but with the use of BMPs, travel analysis, road decommissioning, road maintenance, and aquatic organism passage improvements, we are actively working so they will become mutually inclusive into the future.

CR221 Watershed – FEIS

Concern: Commenters had concerns with or suggestions for some aspects of the analysis in the EIS, including:

a. Requests to consider limiting development and motorized travel to benefit watershed resources;
b. The conclusion that watershed effects are comparable between alternatives because of RWA, WSA and IRA designations may not be correct, given changes in direction from congress and the administration. Not all of these designations can be relied on to be permanent;
c. Request to clarify that under the 1986 Forest Plans, the areas west of the continental divide do have existing fixed riparian zones, as opposed to east of the divide; and
d. Concern that RMZs would allow for widespread logging in riparian areas.

Response:

a. The FS manages lands for multiple uses. There are many areas that limit development and motorized travel, as well as areas where other types of recreation and uses are emphasized.
b. The 2012 Planning Rule requires the Forest to analyze RWA. The analyzed RWAs were mostly in IRAs where there are limited impacts to aquatic habitat from roads and infrastructure. Designation of wilderness areas is not at the discretion of the FS; Congress is the only entity that can do that. Similarly, the designation or undesignation of IRAs or WSAs is also not at the discretion of the HLC NF. Should those protections be removed, the 2020 Forest Plan would need to be amended and the effects disclosed.
c. The suggested edits were made in the FEIS; please refer to the RMZ section.
d. The proposed RMZs would not allow for increased and widespread logging in riparian areas, please see FW-RMZ-STD-02 and 03.

CR260 Conservation Watershed Network – Plan Components

Concern: Commenters had concerns related to the Draft Forest Plan Conservation Watershed Network (CWN) plan components.

Response: The 2012 Planning Rule includes a newly created set of requirements associated with maintaining and restoring watersheds and aquatic ecosystems, water resources, and riparian areas on the national forests. The 2020 Forest Plan includes these additional requirements and are described as CWN standards and guidelines to maintain, or improve, watersheds towards desired conditions. CWN and

RMZ-specific plan components would provide strong conservation measures in support of riparian and terrestrial habitat connectivity. It is beyond the scope of the 2020 Forest Plan to address road maintenance, or travel planning, at a project level scale.

Based on the comments received, changes were made where applicable, please see the Water resources section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

Air quality

CR63 Air Quality and Smoke

Concern: Several comments were received regarding air quality and smoke, including requests for:

a. More language about the forest fires generating poor and unhealthy air quality;
b. Brief discussion of the existing Clean Air Act airshed classifications (e.g., attainment, non-attainment, maintenance) in and near the planning area;
c. Inclusion of air quality objectives, standards and guidelines to identify planning horizon activities;
d. Estimates, by alternative, of predicted emissions that may result from future burn-related treatments;
e. Recognition that effects of off-road vehicle use will impact air quality; and
f. Corrections to tables in the DEIS.

Response:

a. Detailed information about air quality conditions and monitoring, the effects of wildfires and wintertime wood burning smoke, and airshed classifications is available in the air quality section of the FEIS.
b. The 2020 Forest Plan air quality desired conditions and goals addresses planning horizon activities. Forest air pollution emissions are regulated by the state and this will continue into the foreseeable future.
c. Applicable plan components have been included in the 2020 Forest Plan, please see the air quality section.
d. A rough estimate range of emissions from forecasted forest prescribed burning and wildfire emissions under each of the alternatives can be done. However, the resulting range of emissions would be very wide and potentially misleading and confusing given the number of variables that drive emissions on a forestwide scale. Project level emissions estimates would be more refined and provide closer to accurate emissions ranges.
e. We acknowledge that if there is an increase in fossil-fuel-burning off-road vehicles and snowmobiles there would be an increase in air pollution and greenhouse gas emissions.
f. The tables have been updated to show the acreages for decades 1-5.

Fire and fuels

CR53 Monitoring - Fire

Concern: Several commenters had concerns/requests regarding fire monitoring, including:

- Fire monitoring should measure something about the vegetation composition; and
- The FS should include more monitoring of the cause and effects of fire/fuels to evaluate impacts for all beneficial uses.

Response: In the monitoring plan, disturbance to vegetation is monitored using monitoring trends in burn severity, which indicates effects to vegetation. Additionally, vegetation monitoring includes effects fire has on vegetation composition. See MON-FIRE-01, MON-VEGT-01, MON-VEGF-07, MON-POLL-02.

CR222 Fire – Silviculture

Concern: Comments were received regarding fire and vegetation/ecosystem function, including:

a. A more detailed description of existing condition is needed. The DEIS does not provide scientific support that disturbance regimes have been altered. Change FW-FIRE-OBJ-01 to a range from 15,000 to 25,000;
b. Table 34 (fire regimes on the HLC NF) in the DEIS has outdated information on fire regimes. Review available scientific information on fire regime and update table as needed;
c. Need to detail how wildfire and prescribed fire can be managed to help restore/maintain ecosystem function. Prescribed fire can be used in old growth. Forest health is poor, and the forest needs to be proactively managed to address fire risk and to benefit recreation and wildlife. Ogden Mountain, Dalton Mountain and Lincoln Gulch areas need active management to address fire risk and restore forest health;
d. Need to identify which vegetation types are maintained by fire and have fire as a means to maintain/restore ecosystems;
e. DEIS nullifies many statements in the Draft Forest Plan in stating that fire regimes do not vary much between alternatives because projected future treatments are generally the same; and
f. Follow the National Cohesive Wildland Fire Management Strategy goals and use forest products to generate funds for restoration efforts.

Response:

a. A detailed discussion on existing condition can be found in the project record, specifically the Forest Assessment. FW-FIRE-OBJ-01 is designed to set the minimum expectation of treating 15,000 acres in the WUI. FW-VEGT-OBJ-01 specifies treating at least 130,000 acres per decade which includes all fuels treatments.
b. The FEIS uses the best available scientific information which supports the information in Table 34 in the DEIS (Table 35 in the FEIS). Additionally, no opposing references were provided to support the claim made that we are using outdated science.
c. Throughout the FEIS and the 2020 Forest Plan, fire is identified as an essential function in the ecosystem. FW-FIRE-DC-01, 02 and 03 encourage fire across the landscape. Additionally, FW-FIRE-GDL-01 addresses that vegetation treatments should allow opportunities for naturally ignited wildfire to occur. The use of prescribed fire is acceptable across the landscape, including old growth stands, as described in the old growth section. See FEIS for more detail on the role of wildfire and prescribed fire in managing and restoring ecosystems.
d. Vegetation types that have frequent fire and where fire is needed to maintain/restore ecosystem function are described in FW-VEGT-DC-01. Additionally, FW-VEGNF-DC-03 identifies vegetation conditions where fire maintains nonforested vegetation.
e. The reason fire regimes and wildfire occurrence are generally the same is due to projected treatments. In addition, wildfire estimates are similar across alternatives. This is discussed in FEIS (Please see Tables 36, 37, and 38 in the fire and fuels section).
f. The National Cohesive Wildland Fire Management Strategy is part of the regulatory framework and will be followed. The 2020 Forest Plan has been developed to achieve this strategy. Forest products are factored in the 2020 Forest Plan and FEIS. See the terrestrial vegetation section of the 2020 Forest Plan and FEIS. Funds from commercial harvest are put back into land management activities within existing laws and regulations.

CR223 Fire – Desired Conditions

Concern: Commenters stated that the plan desired conditions do not adequately address the following:

a. Fuel treatment lessen negative effects to high value resources. Strategically locate treatments in relation to the WUI. Minimize any risk to loss of life and property. Prevent fire spread onto private lands;
b. Treated areas need to be maintained to provide conditions for benefiting fire management operations and meeting other resource desired conditions;
c. Provide public information on wildfire risk; and
d. Allow for the full range of management options to meet ecological desired conditions and create resilient systems.

Response:

a. FW-FIRE-DC-02 provides for minimizing threats to values and reducing fire severity. This DC also addresses treating in and around the WUI, municipal watersheds, and other values. Private land is also considered one of the values this DC is designed to minimize threats to. Existing plan components for fire management account for addressing risk to life and property. Additionally, FW-FIRE-DC-01 addresses ecosystem function.
b. FW-FIRE-DC-03 was added to address the desire to maintain treated areas to increase the opportunity to allow naturally ignited fire to play a more natural role.
c. FW-FIRE-GO-02 addresses providing public information on wildfire risk to landowners, permittees and others.
d. FW-FIRE-GDL-01 and 02 provide the basis for using all available tools to manage fire across the forest including mechanical, prescribed fire and naturally ignited wildfire. Additionally, fire is clearly identified as an essential ecological process and is a necessary disturbance. The use of fire as a tool is allowed as described in the plan. Per the 2020 Forest Plan "Fire management strives to balance the natural role of fire while minimizing the impacts from fire on values to be protected, especially in the wildland urban interface."

CR224 Fire Suppression

Concern: Commenters had concerns and suggestions regarding fire suppression, including:

a. Impacts of wildfire to municipal watershed and associated infrastructure. Fire will continue to be suppressed as in the past;
b. Use other fire models to determine fire strategies. Complete a spatial wildfire risk assessment and include in the forest plan revision;
c. Highly valued resources need to be reconsidered to include the value of the land and vegetation as a water capture, storage and release tool;
d. Fire suppression is not adequately analyzed;
e. Inability to mitigate risk from fire creating a chance of landowner complacency;
f. Decreasing road access may increase risk to firefighters and reduce successful initial attack.

Response:

a. Desired conditions FW-FIRE-DC-01 and 02 address minimizing threats to values including watersheds and associated infrastructure. FW-FIRE-DC-01 and 02 provide direction on where and what type of fire is acceptable. Additionally, the introduction of the fire and fuels management section of the 2020 Forest Plan describes where fire is acceptable. FW-FIRE-DC-01 provides the basis for fire being used in its natural ecological role as much as possible.

b. In the plan the introduction of the fire and fuels management section refers to using a "coordinated risk management approach" which includes a fire risk assessment to assist with fire management planning. A fire risk assessment has been completed for the forest and would be used to inform the risk management approach.
c. FW-FIRE-DC-02 addresses high value resources which includes land and vegetation.
d. Fire suppression is analyzed throughout the EIS within many of the specific resource areas including aquatic ecosystems and soils; terrestrial vegetation; old growth, snags and downed wood; and plant species at risk (threatened, endangered, proposed, and candidate plant species, and plant species of conservation concern).
e. Plan components under the fire and fuels section provide direction on managing risk and communicating with the public about wildfire risk to landowners. Additionally, the components describe the desire for natural process to function as nearly as possible.
f. Forest plan revision does not direct decreasing road access. This is done outside forest plan revision process, generally through the travel management process.

CR225 Fire – WUI

Concern: Comments/suggestions were received regarding fuels treatments and WUI, including:

a. Clarify that mechanical fuel treatments are appropriate to protect WUI structures, however, they are ineffective for structural protection as treatments are located away from structures. Health and well-being of people of Montana, specifically around Helena. FS to proactively manage National Forest lands in and near the WUI. Firewise government facilities;
b. Treatments within WUI and around high value resources may have adverse ecological effects;
c. High value resources should be identified as well as WUI. Describe how WUI is defined and how it can be re-defined;
d. Identify conditions for cool moist forest types outside WUI; and
e. Helping communities adapt to fire prone ecosystems.

Response:

a. FW-FIRE-DC-02 provides direction on fuel conditions within the WUI and around high value resources. This addresses the need to manage lands in and around the WUI and other areas with high value resources including government facilities.
b. Treatments around the WUI and high value resources have been analyzed in the FEIS, specifically in the aquatic ecosystems, terrestrial vegetation, old growth, snags and down wood, terrestrial wildlife diversity, and terrestrial wildlife species sections.
c. “High value resources” is defined in the glossary in the 2020 Forest Plan. Additionally, WUI designation is dictated by the Healthy Forest Restoration Act 2003 and WUI maps can be and are updated more frequently than the forest plan. WUI maps are not included in the 2020 Forest Plan due to the continual updating that occurs. Current WUI maps are available from the State of Montana and from the FS.
d. FW-VEGT-DC-01 describes desired conditions for cool moist forest outside WUI.
e. FW-FIRE-GO-01 and 02 provide the basis to work with communities on addressing wildfire risk.

CR226 Fire – Plan Components

Concern: Commenters provided suggestions and requests in regard to the FIRE plan components, including:

a. Add goal 03 to prioritize activities in areas where adjacent landowners are doing fuel mitigation work. Plan will limit fuels management in the area which will cause watershed damage;
b. Add objective "Over the life of the Plan manage natural and planned ignitions to meet resource objectives." Plan components do not provide incentive to allow fire to take a more ecological role on the landscape;
c. Address fire management plans for wilderness areas;
d. Add a goal to address coordinating access for initial attack and suppression activities. Add a guideline to work with adjacent landowners on designing fuel treatments on the forest;
e. Add objective to move toward or maintain fuels treatment son 25,000 to 75,000 acres per decade, with emphasis on the WUI;
f. Add desired conditions and objects to address minimizing risk and loss of life, damage to property and ecosystems. The full range of management activities are recognized and used in fire management;
g. Add desired condition to maintain treated areas into the future and treating lands in the WUI;
h. Provide public information on wildfire risk;
i. Address benefits to resources from fuels treatments;
j. Paragraph 3 of the Fire and Fuels section is not correct; and
k. Fire can be managed across all areas of the National Forest.

Response: Various fire plan components and other editorial suggestions were provided. Changes were made where applicable; please see the fire and fuels section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule. Some specifics include:

a. FW-FIRE-GO-01 addresses working with adjacent landowners by meeting goals of community wildfire protection plans. This would include working on access for response to wildfires if part of the plans. Also added FW-FIRE-GO-03.
b. Objectives need to be measurable and based on reasonably foreseeable budgets. Additionally, FW-FIRE-DC-01 sets the desire to have fire both natural and planned across the landscape.
c. FW-FIRE-DC-01 provides direction for fire in wilderness. Additionally, direction for fire management plans for wilderness is found in Forest Service Manual 2320.
d. FW-FIRE-GO-01 and FW-FIRE-GO-03 provide direction on coordinating with partners on implementing community wildfire protection plans and designing fuel treatments. This would include access for fire suppression.
e. FW-VEGT-OBJ-01 sets the minimum of 130,000 acres per decade. Most if not all is considered a fuel treatment. Additionally, FW-FIRE-OBJ-01 addresses treating a minimum of 15,000 acres of WUI per decade.
f. Risk to fire personnel and the public is addressed in FW-FIRE-STD-01. FW-FIRE-DC-02 sets the desire to manage fuels in the WUI to minimize threats to values.
g. Within the introduction to the fire and fuels section of the 2020 Forest Plan it states that fire management is achieved through prescribed, wildfire, and mechanical methods. FW-FIRE-DC-03 provides guidance on treated fuel management areas being viable into the future for benefiting fire management decisions.
h. FW-FIRE-GO-02 provides direction on communicating with the public on wildfire risk and that fire is an ecological process.
i. Details were added to the benefits of fuels treatments in the introduction of the fire and fuels section of the 2020 Forest Plan.
j. Paragraph 3 was reworded to clarify prescribed fire.

k. FW-FIRE-DC-01 sets the desire for fire to occur across the forest in a natural ecological role. FW-FIRE-OBJ-01 states to use any wildland fire management opportunity to reduce fire intensity and severity.

CR228 Fire – Prescribed

Concern: Comments were received about prescribed fire, including:

a. Prescribed fire needs to be part of fuels treatments. Acres in the WUI needs to be increased from the specified 15,000 acres. Ability to manage fire across the entire forest is needed. Need to treat more acres with prescribed burning than shown in the FEIS;

b. Coordinate with grazing permittees on the use of prescribed fire; and

c. Connection between mechanical treatments and prescribed burning is not clear.

Response:

a. The introduction to the fire and fuels section of the 2020 Forest Plan explains that fire management is achieved through the use of prescribed fire and mechanical methods. Additionally, FW-FIRE-GDL-01 identifies mechanical and prescribed fire treatments would allow for naturally ignited fire to occur and benefit fire management operations. FW-FIRE-OBJ-01 specifies a minimum of 15,000 acres of hazardous fuels treatment per decade. FW-FIRE-DC-01 allows for fire to be managed anywhere on the forest under favorable conditions. We agree that more prescribed burning would be preferred. However, due to limited burn windows, funding, and historical accomplishments, the acres are a reasonable estimate of what can be accomplished. While prescribed burning is limited, wildfire on the landscape is an important part of the 2020 Forest Plan. As shown in the FEIS it is anticipated that on average over 12,000 acres of wildfires would burn across the forest yearly. Management actions to treat fuels in strategic locations across the forest would create conditions more favorable for wildfire to take a natural role and help maintain and restore ecosystems. See the FEIS and project record for more detail on the interrelationship between prescribed fire, mechanical fuel treatments, and wildfire.

b. FW-FIRE-GO-03 provides guidance on developing treatments with partners. Additionally, various regulatory framework provides direction on working with the public and interested individual on managing NFS lands.

c. Clarifying language was added to the FEIS fire and fuels introduction section to explain why mechanical treatments are often needed prior to prescribed burning.

CR229 Fire – Analysis

Concern: Commenters expressed concerns and had suggestions regarding fire analysis in the 2020 Forest Plan, including requests for:

a. Evaluation of what high valued resources are. Suggest including runoff;

b. Additional analysis regarding fire effects to recreation and agriculture;

c. Additional analysis needed including assumptions made, any differences between alternatives from differences in timber suitability, effects of fire suppression and how fire was modeled;

d. Information on where fuel treatments will occur that would be outside normal ecological conditions;

e. More analysis of mechanical treatments;

f. More scientific basis for uncharacteristic fire;

g. More scientifically defensible analysis of NRV relating to fuel conditions;

h. More analysis to address the variety of different types of fire across the landscape including mixed-severity fire or stand replacing fire;

i. More options for having fire on the landscape;

j. More scientific evidence that intensive tree removal activities reduce the risk of catastrophic fires. Intensive treatment efforts do not provide "fire-proofing". Fires burn through treated and untreated areas. Recognize the temporal gradients in vegetative recovery following fuel treatments. Large fires are weather-driven and cannot be affected by fuels treatments;

k. Disclosure of limitations of using fire regimes;

l. Inclusion of information that treated areas will need follow-up treatments to maintain desired conditions;

m. More disclosure of how past management activities and future activities influence fire behavior;

n. Disclosure of scientific information that contradicts some of the premises of the forest plan. Namely that untreated areas experience "less intensive fire compared with areas that have been logged";

o. More analysis of beneficial effects of wildfire to fish populations due to fire suppression forest-wide; and

p. More scientific information that mechanical treatments can replicate natural disturbance is contradicted by science.

Response:

a. High value resources include watersheds, infrastructure, and other; see forest plan glossary.

b. The HLC NF recognizes the important role the Forest has in supplying adequate clean water to water users downstream of NFS lands. The 2020 Forest Plan includes management strategies to help achieve these goals of maintaining quality and quantity of water into the future in the face of climate change. We also recognize beneficial downstream uses and the 2020 Forest Plan provides tools for appropriate fire management in the designated wilderness areas. Timing of runoff along the HLC NF section of the Rocky Mountain Front has not been directly linked to wildfires. However, climate shifts (earlier runoff) throughout the entire Rocky Mountains has been studied and early runoff has been attributed to climate change, not wildfires. Effects to recreation from wildfire are analyzed throughout the FEIS including sections 3.16 through 3.22. Also see the project record for more detailed analysis of fire effects on recreation.

c. Analysis of fire suppression effects are included in the following sections of the FEIS: 3.5.6 aquatic ecosystems environmental consequences, 3.8.5 terrestrial vegetation affected environment, 3.10.6 old growth, snags and downed wood environmental consequences, 3.10.6 plant species at risk environmental consequences, 3.12.5 invasive plants affected environment, 3.13.6 terrestrial wildlife diversity environmental consequences, 3.14.6 terrestrial wildlife species at risk, grizzly bear, environmental consequences, and 3.26.6 infrastructure environmental consequences. Also see the project record for more details on analysis. Section 3.7-fire and fuels section of the FEIS contains assumptions made relating to fire. Additionally, see Section 3.7 for a discussion on differences between alternatives which includes timber harvest. For information see Section 3.8 and appendix H for details on vegetation and fire modeling. Also see the project record for more details on analysis.

d. “High value resources” is defined in the glossary in the 2020 Forest Plan. Additionally, WUI designation is dictated by the Healthy Forest Restoration Act 2003, and as such, WUI designations can and are updated more frequently than the 2020 Forest Plan. WUI maps are not included in the 2020 Forest Plan due to the continual updating that occurs. Current WUI maps are available from the State of Montana and from the FS. Treatments around the WUI and high value resources have been analyzed in the FEIS within the following sections: 3.5 aquatic ecosystems, 3.8 terrestrial vegetation, 3.9 old growth, snags and down wood, 3.13 terrestrial wildlife diversity, and 3.14 terrestrial wildlife species at risk. Also see the project record for more details on analysis.

e. Analysis of mechanical treatment effects are included in the following sections of the FEIS: 3.5.6 aquatic ecosystems environmental consequences, 3.10.6 plant species at risk environmental consequences, and 3.12.6 invasive plants environmental consequences. Additional analysis is

conducted in adherence to the NEPA prior to any project implementation. Also see the project record for more details on analysis.

f. The FEIS provides citations of published research relating to uncharacteristic fire. See the following sections of the FEIS: 3.7 fire and fuels and 3.8 terrestrial vegetation. Also see the project record for more details on analysis.

g. Historic fuel and vegetation conditions and NRV are discussed in the FEIS sections 3.7 fire and fuels and 3.8 terrestrial vegetation. Also see the project record for more details on analysis.

h. The FEIS discusses the wide variety of different fire types ranging from low-severity to high-severity stand replacing fire in the following sections: 3.5 aquatic ecosystems, 3.7 fire and fuels, 3.8 terrestrial vegetation, 3.9 old growth, 3.14 terrestrial wildlife species at risk. Additionally, see Table 37 in the FEIS that identifies expected acres burned by alternative for different fire types.

i. The 2020 Forest Plan provides plan components that encourage fire's natural role on the landscape and supports the full array of fire management decision options. In contrast, the 1986 Helena National Forest Plan includes direction related to suppression of wildfires, with several management areas direct full suppression as the response including A-1, H-1, H-2, T-4 and others. Additionally, the 1986 Lewis and Clark National Forest Plan directs full suppression in the following management areas: A, H, J, K and others.

j. Beneficial effects of fuels treatments relating to changing fire behavior under extreme weather were added to the FEIS in the following section: 3.7 fire and fuels. Also see the project record for more details on analysis.

k. The FEIS section 3.8 discusses in detail various influences on fire regimes. See the project record for more detail including additional citations relating to fire regime condition class.

l. FW-FIRE-DC-01 and 02 provide the guidance for follow-up treatments and creating conditions for natural fire to take its ecological role in maintaining the ecosystem.

m. The influence of past activities is reflected in the current condition of forest vegetation, as shown in the Terrestrial Vegetation section and appendix H of the FEIS. Additionally, effects of potential future treatments are discussed throughout the FEIS under environmental consequences, including the terrestrial vegetation and fire and fuels sections. Also see the project record for more details on analysis.

n. Discussion was added about the effects of fuel treatments on fire severity. See FEIS section 3.7. Also see the project record for more details on analysis.

o. Benefits of wildfire to fish is included in the FEIS as quoted in the comment, section 3.5 of the FEIS. The FEIS also identifies plan components to minimize impacts from fire suppression on aquatic ecosystems. Additionally, FW-FIRE-DC-01 provides direction that fire be allowed to function in its ecological role as much as possible. The 2020 Forest Plan and FEIS acknowledge that under certain circumstances and locations fire would be suppressed. However, the desire is to get to a point where the need for suppression is reduced forestwide.

p. Section 3.7 of the FEIS provides citations that ecological restoration can be achieved through fuel treatments using mechanical methods.

Terrestrial vegetation

CR54 Badger Two Medicine – Timber

Concern: Commenters had concerns about timber harvest in the Badger-Two Medicine area, including:

a. A request to clarify the timber suitability statement in terms of providing desired conditions and constraints for possible timber harvests; and

b. There is too much discretion for "non-commercial harvest" in RM-BTM-SUIT-01. The plan should include additional components that clarify under what conditions the HLC NF or Blackfeet Nation may undertake harvest. This should include government-to-government consultation as well as a public comment process. There should be a standard requiring harvest to be compatible with protection of the Blackfeet Traditional Cultural District and the area's desired conditions. A specific re-word of this plan component is suggested.

Response:

a. All other plan components in the 2020 Forest Plan would apply for possible timber harvests in the Badger Two Medicine area. This includes forestwide standards and guidelines specific to timber harvest (FW-TIM) as well as the desired conditions for all resources specified forestwide, in the Rocky Mountain GA, and in the Badger Two Medicine area.

b. Timber harvest would be constrained in the Badger Two Medicine as per the forestwide timber standards and guidelines, as well as all the plan components for other resources forestwide, in the Rocky Mountain GA, and in the Badger Two Medicine area. Government-to-government consultation is required by law and does not need to be restated in the forest plan. Similarly, any project that includes harvest would be subject to a public process per the NEPA; these requirements should not be restated in the forest plan.

CR56 Monitoring – Pollinators

Concern: Several commenters requested pollinator monitoring using the FIA intensified grid, rather than base FIA grid. They also requested information on where Range 2210/2240 files are located.

Response: The FIA intensified grid is acknowledged as a valuable information source throughout appendix B. However, because funding for the maintenance of this data source is discretionary and uncertain, the monitoring plan includes other potential data sources that may be used.

"Range 2210 and 2240 files" has been corrected to read "Range Trend Monitoring Files" in the pollinators monitoring table. Range trend monitoring includes past vegetation monitoring that has taken place on any NFS lands that are, or once were within a grazing allotment. Data found in range trend monitoring files provides a valuable snapshot in time for vegetation conditions and determining past and potential diversity. Collectively, this information can be used to describe an apparent trend of condition and abundance of various plant species for a site-specific area, including pollinator resources such as floral availability and native species diversity.

CR237 Vegetation – Active Management/Restoration

Concern: Comments/questions regarding vegetation management included:

a. Active forest management at landscape scales is desirable and necessary to benefit multiple resources, including fish and wildlife; scale of restoration must allow for dominant ecosystem processes at appropriate temporal and spatial scales;

b. The EIS and plan should describe how the FS will work to create healthier forest stands; left unmanaged, catastrophic damage can occur to entire watersheds;

c. The Good Neighbor Authority program should be used to increase pace and scale of restoration; commenters identify specific projects they recommend be brought to completion;

d. How will the FS accomplish the restoration of large burns in the Sun River drainage when most of this area is in the wilderness; and

e. There is concern about the potential for logging, fuels treatments, and prescribed burning in unroaded areas such as wilderness, wilderness study act areas, and inventoried roadless areas. Please provide the data and rationale that support the need to conduct active management in these areas; and how much is expected to occur.

Response:

a. Thank you for your comments regarding the need for active restoration on the HLC NF. All alternatives provide opportunities for forest management at landscape scales to benefit multiple resources.

b. Terrestrial vegetation objective FW-VEGT-OBJ-01 specifies a minimum level of vegetation treatments expected to be implemented for the purposes of achieving desired conditions on the landscape. Projects would be designed to move the landscape toward the desired conditions outlined throughout the plan.

c. The 2020 Forest Plan allows for projects to be designed and implemented to move the landscape toward desired conditions. It does not preclude the use of a variety of methods and authorities that may be used to help accomplish the objectives of the plan, which may change over time. The FS appreciates the support for specific project areas on the forest; however, the 2020 Forest Plan does not authorize site-specific project areas.

d. The 2020 Forest Plan does not address specific post-burn restoration projects. The plan allows for restoration activities such as tree planting, and includes desired conditions related to healthy watersheds and vegetation. For burns specifically in the wilderness, restoration activities would be limited by the Wilderness Act. In general, natural recovery of these landscapes would occur over time; in some locations where topography and climate are harsh, reforestation may occur over very long timeframes.

e. Under all alternatives, plan components provide direction for unroaded areas allocated specific designations. With the action alternatives, plan components for wilderness, recommended wilderness, and wilderness study act areas explicitly prohibit timber harvest (FW-WILD-SUIT-03, FW-RWA-SUIT-04, and FW-WSA-SUIT-01). Restoration activities such as prescribed fire could be done in inventoried roadless areas, recommended wilderness, and wilderness study act areas (FW-IRA-SUIT-03, FW-RWA-SUIT-02, and FW-WSA-SUIT-01). Prescribed burning in designated wilderness would be constrained by the Wilderness Act and Forest Service Manual 2324.21 and 5140.31. Harvest and fuels treatments could be allowed in IRAs but would be constrained by the Roadless Area Conservation Rule (RACR) of 2001.

   The need to manage in any landscape is based upon the desired conditions in the plan, including those to provide for the coarse filter of terrestrial vegetation conditions. The desired vegetation conditions are based in large part upon the NRV, and by default would also provide for the necessary habitat conditions for native wildlife species. The terrestrial vegetation section as well as appendix H of the FEIS provide discussion and best available scientific information regarding these desired conditions. All other plan components would also apply when determining the need for active management, such as those related to fire and fuels as well as wildlife. To the extent possible, resource constraints were incorporated into the vegetation modeling and therefore projected harvest and prescribed burning acres take these factors into account, as discussed in appendix H, as well as the terrestrial vegetation and timber sections of the FEIS. The timber section also discloses the projected acres of harvest and prescribed burning expected to occur to groups of designated areas.

CR238 Vegetation – Nonforested Management

Concern: Comments on vegetation and nonforested management included:

a. A suggestion for a specific objective for treating 5% of grassland/shrublands forestwide annually or 100% every 20 years; and

b. Standards and guidelines are inadequate to prepare nonforested vegetation for the impacts of drought - specifically, modifying livestock grazing practices to ensure the success of revegetation/reforestation as currently outlined in FW-VEGT-GDL-02. Many AMPs will not have drought direction to reduce

stocking rates or limit the season of use. These issues need to be addressed with forestwide standards and not left to site-specific prescriptions or AMP revisions.

Response:

a. The FS appreciates the importance of promoting healthy nonforested vegetation types. However, the suggested objective was not incorporated into the 2020 Forest Plan, because it does not take into account the potential for natural disturbances and successional processes to maintain some proportion of grassland/shrublands in a desirable state without management intervention. It may not be necessary or realistic to treat 100% of these areas over the next several decades. The desired conditions for these vegetation types would help identify treatment needs in these areas, and vegetation treatment objective (FW-VEGT-OBJ-01) includes acres of treatment in nonforested types.

b. Site-specific prescriptions would be most appropriate to manage livestock grazing following management activities and/or drought conditions. The diversity of rangeland vegetation, climatic conditions, and past and present allotment management would vary across the plan area annually. Allowable use levels found in existing AMPs and annual operating instructions allow managers to adjust for drought conditions according to resource conditions on a case by case basis. When AMPs are revised, new plan components would be followed to evaluate vegetation conditions and what changes in management may be needed to move towards desired conditions.

CR243 Vegetation - Editorial

Concern: Various vegetation plan component and other editorial suggestions were provided.

Response: Various vegetation management plan components and other editorial suggestions were provided. Changes were made where applicable, please see the vegetation section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

CR244 Vegetation – GA level Components

Concern: Several commenters requested that quantitative vegetation desired conditions be provided at the GA scale. Others voiced concern about how the changes in forest types by GA would be understood, monitored, and implemented.

Response: To better support project design, analysis, and monitoring, and to reflect the unique condition of each GA, GA-level vegetation desired conditions have been added to the 2020 Forest Plan under all alternatives and analyzed in the FEIS. The components that have been added at the GA level include cover type, forested size class, and forested density class, in addition to individual tree species presence. Monitoring for all elements except individual tree species presence is included at the GA level in appendix B of the 2020 Forest Plan. The terrestrial vegetation section and appendix H of the FEIS discuss the expected trend of vegetation conditions over time. Changes in vegetation conditions may be a result of management activities but is more often influenced by natural processes and disturbances.

CR245 Vegetation – Juniper

Concern: Several commenters thought that the amount of juniper in the desired conditions and estimated NRV is too high and should be re-visited.

Response: The NRV analysis was redone for the FEIS and is summarized in appendix I of the FEIS. In addition, the desired conditions for juniper were revisited and additional literature was reviewed to determine that the NRV model likely overestimated this component to some extent. The desired conditions were adjusted accordingly as described in appendix H of the FEIS.

CR246 Vegetation – Large Trees

Concern: Commenters had suggestions and questions about the vegetation-large trees plan components and analysis, including:

a. There should not be a GDL that requires leaving certain amounts of large trees; those determinations should be made at the project level;

b. Why are the desired large trees per acre in warm dry less than the existing amount, when these are likely less commonly than they were historically;

c. The only way to increase large and very large trees is to let mature trees grow;

d. The DEIS incorrectly refers to the large tree GDL as a STD. This GDL allows for the removal of large trees which is inconsistent with ecological integrity and the desire to increase the very large size class. The FEIS must explain and analyze this and consider an alternative that would retain more large trees;

e. Firm, clear non-discretionary standards are needed for large-tree retention in the forest plan. FW-VEGF-GDL-01 would promote gerrymandering of treatment units and large clearcuts; and

f. It is unclear what how the large tree indicators are determined or applied in analyses.

Response:

a. FW-VEGF-GDL-01, requiring the minimum retention of large trees, has been kept in the 2020 Forest Plan, due to the emphasis on increasing these components on the landscape. The guideline allows for sufficient flexibility to account for the unique conditions that may be encountered at the project level; for example, if insufficient large trees are present or diseased.

b. The desired large trees per acre were derived from best available scientific information, which summarized the large trees per acre found in roadless and wilderness areas as an indicator of the natural range of variability. Other science does indicate that these trees are likely less prevalent than they were historically in the warm dry PVT, consistent with the NRV analysis for the large size class (see appendix H). The trees per acre desired condition for large/very large trees has been removed; rather, large trees are addressed by the desired condition for large tree-structure and the large size class on the landscape.

c. Individual large and very large trees can be promoted by providing additional growing space for mature trees to grow to larger sizes. The large size class can be increased by removing small and medium trees in a stand while retaining the large trees. Additional information regarding the promotion of large and very large trees was added to the terrestrial vegetation section of the FEIS.

d. The error in referring to the guideline as a standard was rectified. FW-VEGF-GDL-01 would allow the removal of some large trees in some cases; however, this is not inconsistent with the desired condition to increase large/very large size classes. Further explanation of this was added to the Terrestrial Vegetation section of the FEIS.

e. The 2020 Forest Plan would promote large trees through several plan components related to the large and very large size classes; large-tree structure; and retention of large trees within treatment units (FW-VEGF-DC-02, FW-VEGF-DC-04, and FW-VEGF-GDL-01). Monitoring of the large size classes and large-tree structure would also occur over time (appendix B of the 2020 Forest Plan).

f. In the FEIS, large-tree structure is described in the Terrestrial Vegetation section. This attribute was included in the SIMPPLLE modeling for all alternatives. It ensures that large-tree components are considered even when they do not dominate the stand (and so classified as a large or very large size class).

CR247 Vegetation – NRV and Desired Conditions

Concern: Commenters had concerns related to NRV and vegetation desired conditions, including:

a. A need for more explanation about the use of NRV;

b. The potential for management of NFS lands to compensate for departures from NRV on adjacent lands;

c. The desired conditions are established in a way that requires management, and/or is at conflict with natural processes. Late successional stages and shade tolerant species are important for wildlife habitat;

d. The analysis used to determine DCs has not been peer reviewed for scientific reliability, validity, and limitations and cannot adequately address climate change;

e. Clarify why the NRV is the basis for DCs, when it is acknowledged that the NRV is not necessarily a management target;

f. Concern about the analysis of the reference conditions of landscape pattern using scientific metrics; or analysis that shows treatment effects would mimic these patterns or contribute to wildlife viability;

g. Increases in roads and old growth management are not consistent with the NRV; and

h. The desired conditions and associated management actions do not adequately take into account wildlife habitat needs; and inadequate direction is provided to guide habitat management.

Response:

a. The NRV analysis was updated and the process and results are summarized more thoroughly in appendix I for the FEIS.

b. All lands in the project area were included in the modeling to determine the NRV.

c. The DCs may be achieved through natural processes, such as fire, in addition to management activities. Natural processes were applied to both the NRV modeling (and therefore are integral to the formulation of the desired conditions) as well as the future modeling of all alternatives. While the NRV analysis and desired conditions do indicate a need for an increase in some intolerant species and open forest structures, shade tolerant species and closed forest structures are also reflected as important conditions on the landscape.

d. The process to determine DCs is documented in appendix H of the FEIS.

e. The use of NRV as a basis for DCs is consistent with the direction found in FSH 1909.12. Detailed discussion is available in appendix H of the FEIS.

f. Refer also to CR 233. Landscape pattern, including opening size, amount and relative distribution of cover types and tree species as well as forest structure, was modeled using BASI to establish the estimated NRV (refer to Appendix H for details) and to estimate pattern under all alternatives. Also see the terrestrial vegetation section of the FEIS and also CR277 and CR136.

g. The impacts of roads on wildlife, watersheds, and other resources is addressed in the FEIS.

h. The 2020 Forest Plan is consistent with the 2012 planning rule and associated directives with respect to ensuring wildlife species viability. Habitat needs of wildlife species or groups of species were assessed in developing the 2020 Forest Plan; refer to Appendix D for additional information.

CR249 Vegetation – Snags

Concern: Commenters expressed concerns about the guidance in the 2020 Forest Plan related to desired snag conditions, and guidelines for retaining snags on the landscape during vegetation treatments. Specifically:

a. Retaining all very large snags is appropriate; especially in the Warm Dry PVT;

b. Please provide the existing condition of snags per acre (Table 9);

c. Explain why the current snag guidance (alternative A) is less clear than the action alternatives, and how the proposed guidelines provide clarity;

d. The snag guideline is not based on BASI and are confusing;

e. The analysis fails to quantify the cumulative snag loss in previously logged areas or other losses such as firewood cutting;

f. The analysis fails to apply BASI to describe the snag habitat needed to sustain the viability of pileated woodpecker and other snag-associated species; and

g. If a higher proportion of large snags are found on lands suitable for timber production, then protecting snags in these areas is critical for wildlife viability. Why are snags in wilderness/IRAs the best indication of NRV? What data source was used to estimate historic snag conditions?

Response:

a. Desired minimum retention for both large and very large snags is provided in FW-VEGF-GDL-02. This guideline has been revised to reflect public and internal comments. It requires that the largest snags available be retained; this would ensure that very large and large snags are the priority for retention in project areas.

b. The existing condition of snags is provided in FW-VEGF-DC-06 as well as in the snag section of the FEIS.

c. The snag section of the FEIS was revised to better describe the differences between alternative A and the action alternatives in terms of snag management; in addition, the guideline was re-written to improve clarity (FW-VEGF-GDL-02). While the 1986 Forest Plans do provide snag retention requirements for harvest projects, they do not point to a quantitative desired condition for snags.

d. The snag desired conditions (FW-VEGF-DC-06) and guideline (FW-VEGF-GDL-02) have been revised in the Forest Plan to improve clarity. The intent of the guideline is to allow managers to design and retain the best linkages of snag habitat throughout the project area.

e. The effects of past logging and firewood activities on snags are taken into account with the existing condition estimates, which are based on the latest available FIA data; additional description was added to the snag section of the FEIS.

f. DCs for snags are based upon the best available information related to the NRV at the forestwide scale. The responsible official believes that the forest plan components related to snag desired conditions, and the guideline that directs how activities that may affect snags and snag habitat must be conducted, would provide for the needs of snag-dependent wildlife species as well as for future downed wood habitat. Plan components allow flexibility to manage for site-specific needs to maintain or enhance wildlife habitat as needed. Additional discussion is provided in the wildlife section of the FEIS.

g. Historic snag conditions were estimated based on the number of snags currently present in wilderness and roadless areas on the HLC NF estimated using Forest Inventory Analysis (FIA) data, as described in the snag section of the final EIS. Retaining snags, especially large snags, within those lands is one of the functions of FW-VEGF-GDL-02.

CR250 Vegetation – Restoration and Resilience

Concern: Commenters had concerns about vegetation restoration and resilience, including:

a. The terms "restoration" and "resilience" are poorly defined, and inappropriately used to justify management intervention, without due consideration for wildlife. There is no definition of "normal function" related to these concepts;

b. The FS does not specify an adequate way to measure degraded ecosystems, resilience, resistance, or measure the change in resilience following management actions;

c. There are no measurable metrics for desired conditions or NRV; no trends are presented; and climate change was not adequately addressed. The desired conditions are not scientifically sound; and

d. The FS is using resilience to justify intensive management to maintain an unnatural stasis that does not allow for natural disturbance. Resilience and resistance would be best achieved by allowing natural processes to occur.

Response:

a. The definitions for resistance and resilience used by the HLC NF plan revision are from the Planning Rule and associated directives (Forest Service Handbook 1909.12).

b. As per Forest Service Handbook 1909.12, the HLC NF uses a coarse filter approach to define ecosystem diversity in the plan area and compares the existing condition to the NRV to assess ecological integrity. The plan defines and measures a variety of vegetation attributes at the broad scale to represent ecosystem diversity. The DCs for these attributes are defined in the 2020 Forest Plan and would be monitored over time as specified in appendix B of the 2020 Forest Plan. During project design and analysis, more localized conditions and possibly degraded conditions would be identified and defined based on specific site conditions.

c. Measurable metrics are specified for an array of vegetation desired conditions, as presented in FW-VEGT, FW-VEGF, FW-VEGNF, and Chapter 3 (Geographic Areas). These metrics include ecosystem components such as cover type, individual tree species presence, forest size class, forest density class, large-tree structure, and snags. Historic trends for these metrics are provided in the NRV analysis, which is summarized in appendix I of the FEIS. Expected future trends are provided in detail in appendix H and summarized in the FEIS. Climate change was incorporated into the modeling process with the SIMPPLLE model, to the degree possible, using expected future fire scenarios and climate parameters, as described in appendix H. The DCs are formulated using the NRV ranges as well as other best available scientific information, as described in appendix H of the FEIS.

d. Resilience may be achieved through natural disturbances; management intervention where needed would mimic the effects of natural disturbances as well as promote resilience to expected future disturbances, as described in the terrestrial vegetation section of the FEIS.

CR251 Vegetation – Ecosystem Diversity

Concern: Commenter believes that the Draft Forest Plan does not adequately represent ecosystem diversity because: 1) the classification and definition of ecosystems is not sufficiently specific; 2) desired conditions do not include non-NFS lands and therefore do not represent an all-lands approach; and 3) ecosystem diversity is not adequately mapped and included in the plan.

Response: The depiction of ecosystem diversity in the 2020 Forest Plan is consistent with the requirements of the directives (Forest Service Handbook 1909.12) as well as other planning efforts in Region 1 and is sufficient to provide for ecological integrity at the broad scale.

The classification of ecosystem diversity is adequate for programmatic planning purposes, and 'finer scale' (unique combinations of type/size/density) would not be supported by available data or analysis tools. As described in the terrestrial vegetation section of the FEIS, the comparison of NRV and desired conditions are consistent with the findings of an assessment conducted Blackfoot Swan project, which was based on more fine scale classifications of the ecosystem.

The vegetation modeling was conducted across all ownerships in the plan area; therefore, vegetation conditions and disturbance processes expected to occur on non-FS lands were included and appropriately influence the conditions summarized on NFS lands. However, the DCs quantify only the conditions found on NFS lands because those are the lands the FS can directly influence. Future conditions on non-NFS lands would be included in the cumulative effects analysis when projects are proposed under the 2020 Forest Plan.

The components of ecosystem diversity are spatially represented in the vegetation model input file, which is based on FIA data and the Region 1 VMap, for analysis purposes in the EIS. However, the current condition of ecosystem components would be subject to constant change as disturbances, successional processes, and management actions occur. Such changes would be monitored as described in appendix B of the 2020 Forest Plan. While the existing condition is described numerically in the 2020 Forest Plan to

provide context for the desired trend on the landscape, these conditions are not included as a map in the 2020 Forest Plan. There is no requirement to include such a map as part of the 2020 Forest Plan.

CR252 Vegetation Modeling

Concern: Commenters provided a range of concerns and suggestions regarding the vegetation modeling used in the forest plan revision process. Specifically:

a. The vegetation modeling is inadequate or unclear in terms of supporting the analysis and decision;

b. The graphs and charts are unclear; specifically, why the decade 0 of the model is different than the estimated existing condition;

c. Using these models to support wildlife viability conclusions is not valid, given the multiple assumptions used to formulate the models and because the models do not estimate the possible impacts of salvage treatments;

d. The model methodologies and results are not appropriate to support decision making because they have not been validated as the best available scientific information, supported by literature citations, or observations. An independent peer-review process should be conducted. The reliability of the input data has not been disclosed or ensured; the models have not been validated for the way they are used in the EIS;

e. Further explanation is needed as to why the models are not "predictive"; prediction is necessary to ascertain viability. Further, displaying the results as an average of alternatives is inappropriate - the EIS needs to disclose the differences across alternatives whether large or small;

f. The EIS suggests that alternatives A-D are modeled to harvest more warm/dry sites to achieve large size classes; but then suggests projects might not actually do this. This has impacts to wildlife - how are the effects determined if the models do not conform to reality; and

g. The wildlife habitat models specifically should be validated with independent wildlife-use data.

Response: The FS recognizes the complexity and inherent limitations in the use of simulation models to support decision-making. The vegetation modeling was conducted utilizing the best available modeling tools and data sources, and the results were closely reviewed by subject matter experts. The known limitations of the models are disclosed, and other best available scientific information was used to inform the analysis and conclusions (see appendix H of the FEIS).

a. The vegetation modeling processes used represent the best available data and modeling techniques to support Forest Plan revision analysis and decision-making. The data and techniques used by the HLC NF align with other efforts in Region 1. Modeling assumptions and limitations are disclosed in appendix H.

b. Decade 0 as reported by the model differs in some cases from the estimated existing condition because two different data sources are used. The existing condition used in the plan for most attributes is based on the most statistically reliable data, FIA and FIA intensified grid plots. Decade 0 in the model is derived from the spatial input file, which is derived from Region 1 VMap. The spatial input file for the model was refined to be more similar to FIA; however, there are inherent differences in the two products. Both starting conditions are disclosed and shown on the graphs to ensure transparency in the analysis processes. Additional explanation is found in appendix H of the final EIS.

c. The future projections from the model are utilized primarily to compare alternatives; the model is heavily driven by future disturbances, and it is not known specifically when and to what degree disturbances will actually occur. Using these programmatic models to reach conclusions regarding wildlife viability is consistent with other work conducted across Region 1. The model is calibrated to incorporate a broad range of potential future disturbance scenarios, to provide the most likely future trend. The monitoring of actual vegetation conditions on the ground through time, as per the monitoring plan in appendix B of the 2020 Forest Plan, would inform habitat analyses and influence the actual management that occurs on the ground, rather than the projected model results. Potential

salvage activities are not included in the PRISM (timber scheduling) model, because per the Directives these activities should not be included in potential timber output estimates. Salvage activities would be dependent the timing and location of disturbance events, which is uncertain. The potential effects of salvage are addressed qualitatively in the terrestrial vegetation section of the FEIS.

d. The SIMPPLLE model tool has been peer-reviewed (Chew 2012) and has been used consistently in Region 1 for Forest Plan revisions and other broad scale vegetation analyses. As a knowledge-based model, there are many calibrations that can be done. The calibrations and assumptions used for the HLC NF build upon other work being conducted in the Region, and included input and extensive reviews from subject matter experts on the planning team, in the Regional Office, and at the Rocky Mountain Research Station to ensure that the assumptions and results were appropriately represented for the ecosystems on the HLC NF. The assumptions in the model are also based on actual data when possible - for example, to emulate the levels of known fire start frequencies and locations, actual acres burned historically, and mapped insect infestations. Even so, the analysis acknowledges and discloses the limitations of the model and utilizes other BASI when needed to reach analysis conclusions. The reliability of the input data is disclosed in appendix H of the FEIS. The accuracy assessment of the Region 1 VMap, along with the statistical reliability of FIA estimates (with 95% confidence intervals) reflect the general accuracy of the input data, because those two products were utilized to create the model input landscape.

e. See also the response for (c), regarding the predictive value of vegetation models. Appendix H of the FEIS discloses the detailed model results by alternative and decade. However, in many cases the results across alternatives were nearly identical, and not compelling for the purposes of display and discussion in the body of the FEIS.

f. Appendix H of the FEIS describes how each alternative was modeled in PRISM related to future timber harvest. In alternatives A-D, the model emphasized attainment of desired conditions. In contrast, alternative E was modeled to maximize timber production as a priority in addition to achieving desired conditions; this was done to provide a range of possible management emphases on the landscape. In this alternative, the model harvested more productive forest types to a greater extent (such as lodgepole pine); this was not inconsistent with desired conditions but did not contribute as greatly to movement toward desired conditions. The timber section of the FEIS clarifies how the model emphasis relate to on -the-ground management.

g. The wildlife habitat model estimates are based on the best available scientific information which inherently incorporate known wildlife use and patterns. The habitat models used are consistent with other broad scale modeling efforts in Region 1, and specifically include the rigorous work conducted by the FS and partners to develop the East Side Assessment for wildlife habitat for a multitude of species.

CR255 Vegetation – Tree Density

Concern: Comments regarding tree density plan components, including:

a. The plan should represent tree density in a more meaningful way. Canopy cover is not a good surrogate for stand density; trees per acre should be used;

b. Using 1 tree per acre to represent species presence is not useful; a different metric or higher threshold should be used; and

c. High density areas include both small diameter material as well as older multi-storied stands that are beneficial to wildlife; while the NRV indicates a necessary reduction in high density forests, specific conditions such as high density older multi-story stands are below the NRV.

Response:

a. Forest density is an important feature of ecological diversity and plan components are in place to represent this feature based on available data sources. Canopy cover is the best available measure of

density in spatial map products such as Region 1 VMap. This is the only metric that can be reliably estimated both from plot data sources and map products to inform programmatic forest plan components and allow for broad-scale monitoring over time. Metrics such as trees per acre are available from plot data (such as FIA) but are not spatially represented. In addition, trees per acre can be a problematic measurement because it does not necessarily describe forest density without an understanding of the tree size. On a more site-specific basis, projects may utilize other metrics such as basal area, trees per acre, average diameter, and canopy cover, as needed to adequately analyze project-level effects for specific species.

b. Tree species presence, as indicated by 1 tree, is the best available metric to represent the extent of a tree species overall; this metric can be consistently mapped and monitored over time. The threshold of species presence that would be meaningful for other analysis purposes would vary, such as the number of trees necessary for seed dispersal, and those needed for various wildlife species habitats. It is not possible to programmatically assess these various thresholds.

c. The FS agrees that density alone does not indicate the size class of the forest, and the utility of high-density forests for wildlife would depend upon other factors as well such as canopy layers and tree species. The NRV is assessed separately for density class, size class, and vertical structure. Some specific wildlife habitats of importance, such as mature multistoried forests in potential lynx habitat, are modeled explicitly due to their importance. The plan components for desired vegetation conditions provide the coarse filter. Other plan components provide specifically for habitats of interest, such as Canada lynx. The terrestrial vegetation and wildlife sections of the FEIS provide interpretation as to how the desired conditions and future projections for vegetation metrics contribute toward wildlife habitat needs.

CR262 Vegetation – Other Species

Concern: Commenters had concerns about aspen decline, especially under the proposed fire management as well as livestock grazing. There were also concerns about the lack of cottonwood DCs, the ability of spruce/fir cover type to be too much, and why there is a desired range for ponderosa pine (which was mentioned to be rare and minor).

Response: Based on the suggestions and comments, the expected trends for aspen have been expanded in the terrestrial vegetation section of the FEIS. Plan components were included in the 2020 Forest Plan for protection of aspen from grazing (FW-GRAZ and FW-VEGF DCs). See appendix I of the FEIS for NRV conditions for hardwood species, which include cottonwood. Please see the updated vegetation modeling in the FEIS as well as the terrestrial vegetation sections for discussion of the spruce/fir trends as well as ponderosa pine.

CR280 DEIS Sagebrush Update

Concern: Commenter was concerned that a sagebrush-related guideline that is referenced in wildlife section of the DEIS does not exist.

Response: The wildlife analysis has been updated to reference the appropriate plan components.

Old Growth, snags, and downed wood

CR248 Vegetation – Old Growth

Concern: Commenters had concerns about vegetation, old growth, including:

a. No treatment in old growth should occur. All old growth on the landscape should be protected, and the amount of old growth increased, to provide ecosystem integrity and because of the value it provides for wildlife and plants;

b. Logged old growth stands would no longer remain effective wildlife habitat. Clarify why old growth stands should be treated from a wildlife perspective - particularly cool/moist types that may become more fire-prone after treatment;

c. Old growth should be mapped;

d. The estimated NRV of old growth is too low. An appropriate NRV level of old growth should be included as a DC;

e. The need to sustain old-growth for associated wildlife species;

f. The existing condition of old growth should be provided;

g. The analysis is inconsistent when it states that all old growth is conserved, but some removal of old growth is allowed by plan components;

h. The agency isn't clear on the definition of old growth;

i. The EIS is inconsistent in how it describes the trend in future size classes, such as the effects of fire suppression versus the results of the SIMPPLLE model;

j. The use of remote inventory techniques to determine old growth and other vegetation metrics;

k. The exception to the old growth GDL that allows for the removal of old growth when mortality is imminent;

l. Maintenance of snags in old growth; and

m. A request for more science and analysis of fire refugia for old forests and direction for how to identify or protect it.

Response:

a. The plan acknowledges the ecological importance of old growth. Forest plan direction complies with a USDA policy statement ("USDA Old growth policy statement of 10/11/89). Please see plan components: FW-VEGF-DC-05 and FW-VEGF-GDL-04. Additional discussion has been added to the old growth section of the FEIS on treatment approaches and the supporting science that could support the maintenance or development of old-growth forests.

b. The stated purposes for treating in old growth (FW-VEGF-GDL-04) would result in stand conditions consistent with the natural processes that create old growth, and therefore those stands would likely remain useful for many wildlife species. Additional discussion has been provided in the Wildlife section of the FEIS.

c. There is not a comprehensive map of all of the old growth across the HLC NF that can be used at the programmatic level, because complete field inventory would be required. Existing levels of old growth can be reliably estimated using FIA data, but these points do not necessarily correspond to a stand or patch of old growth. Old growth is subject to continual change - as old stands die, they are replaced by other stands growing older. It would be inappropriate to permanently designate a given stand as old growth into perpetuity. As old growth stands are identified during project development, they would be protected under the old growth guidelines. The intent of the 2020 Forest Plan is not to identify permanent designations of old growth, but rather provide for an increasing amount on the landscape overall.

d. Setting a specific target for the amount of old-growth forest is infeasible. The ability to quantify historical amounts of old-growth forest and the NRV is problematic because of the site specificity of the old-growth forest definitions and the need for field inventory to confirm its presence and location, as described in the old growth section of the FEIS. The plan direction emphasizes the protection of existing old-growth forest and the development of future old-growth forest (to the degree that the Forest is able to do so), understanding that natural disturbance processes and forest succession will continue to be the primary means by which old-growth forest is created and removed on the Forest.

e. The distribution of old growth is not specified in the 2020 Forest Plan, due to the uncertainty and variability associated with future disturbance processes. The optimal distribution of old growth from a wildlife perspective would vary by species and landscape, as well as by vegetation type. The 2020 Forest Plan provides the flexibility to recognize and adapt management practices to provide for a range of old growth patch sizes, while emphasizing that larger patches are desirable.

f. The existing amount of old growth is disclosed in FW-VEGF-DC-05, as well as in the old growth section of the FEIS. The condition of old growth stands themselves is addressed qualitatively based on general vegetation type, as the specific condition within individual old growth stands is variable and not possible to address at the programmatic scale with available data.

g. The FEIS was updated to clarify that most old growth would be conserved, with some possible exceptions as allowed by the plan components. Stands that are currently old-growth forest may not be treated to the extent that they no longer meet old-growth forest definitions (FW-VEGF-GDL-04). Also see FW-VEGF-DC-05 and FW-VEGF-GDL-01.

h. The old growth components state that old growth is defined based best available scientific information currently available. In addition, FW-VEGF-GDL-04 also notes that if new best available scientific information is developed to update these definitions, the HLC NF would then use the best available definitions. A forest plan amendment would not be needed to incorporate new best available scientific information. Old growth maps are not part of the Forest Plan, and therefore no forest plan amendment would be needed to reflect old growth conditions change across the landscape.

i. The FEIS acknowledges that fire suppression may contribute to overall decreasing size class by allowing small trees to establish and dominate some forests. At the same time, the future SIMPPLLE model results indicate that large size classes will increase on the landscape, even though fire suppression is expected to continue. While the effects of fire suppression will continue to occur, large size classes may also increase overall because of other factors such as predicted increases in fire on the landscape, forest succession in small/medium forests that are abundant in some landscapes, and management practices such as prescribed fire and thinning that favor retaining large trees and removing smaller trees. Additional discussion has been added to the terrestrial vegetation section of the FEIS.

j. As discussed in the old growth section of the FEIS, tree size class can be reliably determined based on the remote sensing techniques used to build the input layer for NRV modeling. Size class is classified in the R1-VMap, with a known accuracy, and tracked with the SIMPPLLE model used to derive the NRV. Old growth cannot be similarly modeled, however, because the definition requires additional information, such as age, that is only available in stand-level field inventory. Such data is not available across the Forest, nor can it be derived with the model used to determine NRV.

k. The FS agrees that dead trees and late-stage forest processes are integral components of old growth. The plan component has been modified and no longer contain an exception to treat old growth when mortality is imminent, because of the potential subjectivity of that determination (FW-VEGF-GDL-04).

l. The old growth guideline has been re-worded, and more specifically guides managers to retain as much of the old growth characteristics as possible in treated areas, including snags (FW-VEGF-GDL-04).

m. Refugia is defined in the glossary of the 2020 Forest Plan. The old growth section of the final EIS describes forest remnants that may survive fire located in topographical features such as rock outcrops. When such refugia meet old growth definitions and are identified during project analysis, they would be subject to the management limitations required in FW-VEGF-GDL-04.

CR270 Wildlife – Old Growth and Snags General

Concern: Comments were received that voiced general concerns that the 2020 Forest Plan will not conserve wildlife associated with old growth and snags, nor provide adequate monitoring related to those species. See also the summary and responses for CR 248 and 249.

Response: The 2020 Forest Plan uses a coarse-filter fine-filter approach to maintain a diversity of plant and animal species, as required by the 2012 Planning Rule. Old growth and snags are important habitat elements for a number of different species, and so the plan includes components to maintain these key characteristics. These plan components were developed using the best available scientific information. The forest plan assessment describes sources of monitoring data for species associated with snags and old growth, along with data used to estimate the NRV for these characteristics. Maintaining habitat components within the NRV is expected to provide for the needs of associated wildlife species.

For a discussion of the plan components designed to maintain old growth and snags, see CR 248 and 249, vegetation-old growth, and vegetation-snags. These plan components, along with components that promote large trees, will contribute to maintaining wildlife associated with old growth and snags. Section 3.14.5 in the FEIS discusses a number of species that are associated with old growth or with certain components of old growth such as large trees or snags that would be expected to benefit from plan direction under the preferred alternative. As stated in the FEIS, plan direction is expected to maintain old growth and snags, thus conserving species associated with these habitat elements. Table 1 in appendix D of the FEIS notes specific species that are associated with old growth and snags.

See also CR 248 old growth, snags and downed wood, and CR 249 vegetation-snags.

Plant species at risk

CR101 Botany

Concern: Commenters had concerns about the botany analysis in the DEIS, including:

a. The EIS does not adequately address sensitive species and provides inadequate public notice about the change in management for sensitive species. The analysis ignores NEPA requirements for disclosure of effects in a DEIS, relative to sensitive species. Consider the increased risk to species formerly considered sensitive due to plan components because the plan alternatives would affect those sensitive species that have not been classified as SCC; and

b. An editorial error was identified.

Response:

a. The at-risk plant report analyzes the risks of implementation of the 2020 Forest Plan to species that were formerly sensitive species and no longer included as SCC, and also the species that were not previously listed as sensitive species but now would have SCC status. Additional analysis from the botany report was brought into the FEIS to ensure that sensitive species were adequately covered.

   The selection of SCC was a separate analysis conducted by the FS Region 1 office; the selection of SCC is a Regional Forester decision. Updated information regarding the evaluation and scientific information used to determine species included and excluded as SCC for the HLC NF can be found on the Northern Region webpage. This includes the evaluation process document, a link within the process document to a supplemental botany report, and the evaluation spreadsheets. Sensitive species not selected as SCC through this process were determined not have to substantial concern regarding their long-term persistence in the plan area.

   The 2020 Forest Plan components ensure that at-risk species would be considered during project activities. The monitoring plan ensures that the at-risk species are monitored using species-specific protocols to determine that the methods used to implement the plan components are effective and consistent with best available scientific information. Appendix C of the 2020 Forest Plan provides more detail on species-specific monitoring to ensure that appropriate data for each species is collected to support the plan components when necessary.

b. The error has been corrected.

CR202 Monitoring – Botany

Concern: Commenter thought that monitoring for sensitive plants needs to include species-specific information.

Response: The monitoring plan in appendix B of the 2020 Forest Plan describes a minimum requirement to monitor threatened, endangered, proposed, candidate, and SCC plants; collectively these are referred to as 'at risk' plants in the planning directives and FEIS. The monitoring plan ensures that at-risk plants are reviewed every 6 years for all available trend and status data to determine the status of at-risk plants in the plan area and determine future monitoring needs and effectiveness of plan components. Language was added to ensure that species-specific monitoring protocols would be used as appropriate to document necessary trend data and support the plan components. While species-specific monitoring plans are not included in the monitoring plan for each species, the language of the monitoring plan ensures that species-species techniques would be applied to collect the necessary data to answer the monitoring question: What is the status of SCC species in the plan area?

Additional information on at-risk plant monitoring is described in the at-risk plant section of appendix C of the 2020 Forest Plan. This section recommends monitoring known occurrences of at-risk plants within project areas and forestwide to determine trend data of individual occurrences, to contribute to trend data at the species-range level, and to document impacts of project activities. Best available scientific information would be considered and applied to document species and occurrence trends.

CR263 Vegetation – Whitebark Pine

Concern: Commenters had suggestions about whitebark pine, including:

a. The EIS needs to explain inconsistent discussions for whitebark pine: it is estimated to remain static in the future with the modeling, and yet effects analyses note that current and future declines are expected; and

b. The Draft Forest Plan does not include a scientifically based conservation strategy for whitebark pine.

Response:

a. Discussion was added to the terrestrial vegetation and at-risk plants sections of the FEIS to clarify the expected trend of whitebark pine.

b. Whitebark pine is included as a cover type and individual tree presence that is tracked at the forestwide and GA scales in the desired conditions for the plan and would be monitored over time as described in appendix B of the 2020 Forest Plan. Further, the at-risk plants section of the 2020 Forest Plan includes components specific to whitebark pine and includes an objective specific to restoration treatments for this species (FW-PLANT-OBJ-01). These elements together provide the framework to contribute to the conservation of this species.

CR281 Rare Plants – RWA

Concern: Commenter suggested that the presence of rare plants should be considered when choosing which RWAs to designate.

Response: At-risk plant locations were reviewed to determine which species overlapped with various land management areas, including RWAs. The populations that overlap these areas are described in the at-risk plants report. No species' persistence in the plan area was dependent upon populations within the RWAs. A botanist was present at the discussions for some RWAs and provided input in the decision making. Review the at-risk plant report for more information on the species included in the RWAs and the anticipated effects of this designation on the sensitive plants within and outside of these areas.

Pollinators

CR253 Pollinators

Concern: Commenters had suggestions for plan components related to pollinators, including:

a. Pollinator best available scientific information reference needed within the FW-POLL-GDL; and

b. Connectivity needs to be protected/provided for native pollinators. Add plan components to provide connectivity opportunities.

Response:

a. The reference is not needed within FW-POLL-GDL-01. The reference is listed under the pollinators section in appendix C of the 2020 Forest Plan.

b. Pollinator habitat is covered by FW-POLL-DC-01: "Plant communities composed of an abundant and diverse mix of native grass, forb, shrub, and tree species are present across the landscape to provide foraging habitat for native pollinators. Pollinator nesting and hiding cover are also provided through graminoid and herbaceous structural diversity in nonforested habitats as well as snags and large downed woody material in forested habitats."

   Connectivity is currently available for pollinators along roadsides in the plan area at a higher abundance given the natural character of the landscape when compared to transportation right-of-ways. Transportation right-of-ways represent a more isolated form of pollinator habitat in denser populated areas with fewer natural species. Therefore, transportation right-of-way plan components are not needed in the plan area to achieve the desired condition.

Invasive plants

CR18 Nonnative Invasive Plants – General

Concern: Comments had suggestions for invasive weed management, including:

a. The HLC NF needs to place more emphasis on invasive weed management as the issue affects all forest users. A collaborative approach utilizing early detection rapid response is needed for prompt containment of invasive plants;

b. Weed management is a huge task and expense and should be taken on as a landscape approach with multiple partners through an integrated weed management approach. Wildlife habitat should be prioritized for weed treatments given there is a great area needing treatment tan resources available;

c. Plan components need to consider secondary invasion from winter annuals in weed management strategies;

d. The plan should consider increases in atmospheric carbon levels and higher temperatures would likely make invasive species more competitive and adaptable, especially annual grasses;

e. Consider the increased threat of invasive plant introductions from disturbance impacts from management activities to increased recreational uses and provide plan components to address these vectors; and

f. RWA and IRAs reduce the ability of county and FS personnel to respond to invasive weed infestations and enable the spread of invasive species by allowing existing infestations to expand.

Response:

a. The HLC NF realizes it would take coordination from all landowners and outside partners within the planning area to establish an effective weed management program. The HLC NF 2020 Forest Plan includes plan components that would direct the Forest to utilize collaborative partnerships to extend

weed control efforts to a landscape level. Plan components found under Invasive Plants describe these partnership opportunities and extending efforts for invasive plant management.

b. Plan components for invasive plants provide the guidance to prioritize treatments where intact native plant communities are found and noxious weed populations are currently low. Many priority wildlife habitat areas currently contain these qualities and the plan components encourage these conditions to be maintained into the future. Partnerships opportunities, often with nongovernment organizations, provide project support for critical wildlife habitat improvement projects.

c. FW-INV-STD-01 and FW-INV-GDL-01, and 03 provide guidance to adapt weed treatment strategies to minimize adverse effects from secondary invasion. The HLC NF recognizes that bare ground from misapplication of chemicals or lack of native perennials to repopulate treated acres could lead to secondary weed invasion and risk of plant community conversion. Secondary invaders, such as annual invasive grass species, may present an even less desirable plant community than when noxious weed species were present. Plan components provide guidance for a sustainable treatment approach.

d. The invasive plants section in the FEIS acknowledges that climate change and increases in atmospheric carbon present possible challenges to weed managers. Issues could range from increases in range and distribution of invasive plant species as well as more herbicide resistance, shorter treatment windows, and less time for weeds to senesce and set seed.

e. FW-INV-STD-01 states: For all proposed projects or activities, the risk of noxious weed introduction or spread shall be determined and appropriate mitigation measures shall be implemented. Activities shall be designed to minimize the risk of spreading invasive species and meet multiple use and ecological objectives.

f. RWA and IRAs in general have limited motorized access due to topographic limitations. Where old trail or two-track prisms exist within these allocations, some level of motorized use for administrative purposes may be authorized, especially for invasive plant control. In most cases, Forest weed managers need to account for limited access when planning treatments in these nonmotorized areas. Many of these remote and nonmotorized areas are relatively weed-free or have containable infestations due to limited weed vectors from roads, trails and management activities. The HLC NF has significant investment into backcountry weed control projects, although we recognize much more could be done. Plan components address the need to continue a focus on these remote areas to maintain native plan communities.

CR57 Monitoring – Invasive Plants

Concern: Concerns regarding monitoring of invasive plants included:

a. Effectiveness of treatment for invasive species needs to be monitored and non-target species should be assessed; and

b. FIA intensified grid and non-forest plots should be used along with other data sources to monitor treatment effectiveness.

Response:

a. As part of any integrated pest management approach and early detection, rapid response strategy, monitoring of invasive species populations is a key component. FW-INV-GDL 01 and 03 would direct weed managers to use monitoring information to determine future management actions of invasive species.

b. Where possible, more intensive and quantifiable monitoring information regarding invasive species is needed and desired in order to determine how management strategies are affecting invasive species infestations and populations. FW-INV-GO-02 encourages working with partners, such as MSU extension and county weed departments, to collaboratively treat and monitor invasive plant

populations. Both existing rangeland trend study sites as well as new monitoring sites would be used to evaluate the effectiveness of weed management efforts in site specific locations.

CR155 Nonnative Invasive Plants – Management, Treatment, and Reclamation

Concern: Comments were received that asked the HLC NF to manage and treat weeds, including requests to:

a. Treat weeds more aggressively;

b. Limit treatments of broadcast spraying or only allow spot spraying;

c. Describe how an integrated pest management approach will not negatively affect at-risk plant populations;

d. Consider reinvasion of noxious weed species or a secondary invasion of invasive species following treatments; and

e. Have a restoration plan in place following weed treatment activities.

Response:

a. The HLC NF has an active forestwide noxious weed program utilizing an integrated pest management approach to managing invasive species. The Forest fights the spread of weeds as aggressively as budgetary and personnel constraints allow. Plan components provide the support to pursue the latest advancements in technology, herbicides, and treatment options, as well as establish criteria for invasive species management at the project level.

b. The 2020 Forest Plan would not limit, restrict, or authorize different treatment options for site-specific application through plan components. Design criteria at the project level would limit treatment options if resource concerns were identified.

c. An integrated pest management strategy would utilize the most appropriate tool for managing invasive species at the site-specific level. The plan components for at-risk or sensitive plant species are designed to look at options that may include hand pulling, mechanical, or precision spot-spraying when invasive species threaten or have invaded sensitive plant populations or habitat. Having a heavy-handed approach or taking no action near these populations of concern could lead to departure from desired conditions. This component was designed to evaluate all the resource values a site contains, and for weed managers to choose the most appropriate tool to move towards desired conditions of maintaining species diversity.

d. The HLC NF recognizes that reinvasion by secondary invasive plant species, such as winter annuals, following treatments of noxious weeds may have severe environmental consequences for range and forest lands. Consequences include increased fire return intervals, new steady vegetation states of communities comprised of entirely non-native plant species, and a loss of forage and wildlife habitat. Plan components for invasive plant management are designed to move plant communities toward desirable native plant species composition.

e. Plan components promote and support reclamation of native vegetation where needs have been identified in order to move towards desired conditions for site-specific projects. At the present time, most areas of the HLC NF have native plant communities that are still intact, even if severely suppressed by invasion on nonnative invasive plant species. Depending on site conditions, timing, and frequency, weed treatments generally result in a beneficial release of native vegetation cover where ground disturbance has been minimal. Options continue to improve to source native seed from plant species and genotypes that are native to the HLC NF.

CR156 Nonnative Invasive Plants – Plan Components

Concern: Various edits and plan component suggestions to the non-native invasive species section were received. These included:

a. An objective should be included to keep weed mapping and treatments up to date. Who will be responsible for weed inventories in the future;

b. An objective should be included to prioritize areas when adjacent landowners are undertaking control actions;

c. A guideline should be included which restricts road or trail construction or placement in areas where noxious weed establishment would occur as a result;

d. Addressing reseeding or weed treatments following projects on forest lands should be addressed this in the final plan;

e. Why was a minimum treatment target of 3,000 acres of noxious weed infestations selected, when this level of treatment would not be sufficient to reduce invasive populations, let alone even slow expanse of existing infestation levels? FS weed treatment programs have basically had the same Forest Plan direction in the past as what the new plan contains, and invasive species have continued to expand;

f. FW-INV-STD-02 "… maintain effective separation of bighorn sheep from domestic sheep or goats." is a design criteria that just highlights the limited usefulness of using domestic sheep or goats for weed management. This standard does not constrain management actions; and

g. Several comments suggested rewording of Invasive Species plan components to be clearer management constraints.

Response:

a. Invasive species inventory and treatment data is recorded or updated annually in the FACTS database. Maintaining noxious weed treatment data is already a Federal and state requirement, so additional plan components are unnecessary. The HLC NF is responsible for keeping inventory and treatment records with information updated annually from Forest weed crew, county cooperator, and private contractor daily treatment logs and mapping.

b. Goal FW-INV-GO 03 "Landscape scale weed treatments are coordinated with weed treatments occurring on adjacent lands" addresses this concern.

c. Plan components for invasive species would be followed and considered in project design when road or trail construction is involved. See FW-INV-STD 01.

d. See FW-INV-GDL 05 and FW-VEGT-GDL-04 regarding reseeding and restoration needs. These guidelines would be considered and incorporated at the project level if an interdisciplinary team determined them appropriate.

e. Noxious weed treatments of 3,000 acres is considered to be the absolute minimum acreage the Forest would achieve under the most limiting budgetary constraints and application methods. Objectives in the plan may be exceeded as funding and capacity allow. The HLC NF has treated up to three times this amount of weed infestations when funding allows. This minimum objective of 3,000 wetted acres could help "hold the line" on past work that has been done with noxious weeds. Forest plan components for invasive species encourage pursuing more efficient weed control technologies, which could lead to increased weed treatments.

f. Design criteria are constraints. FW-INV-STD-02 requires consideration and analysis at the project level of where wild bighorn sheep occupy habitat prior to authorizing domestic sheep or goats to be used for an integrated pest management option for noxious weed control. The responsible official should also recognize potential adverse interactions between domestic livestock and native species and provide plan components to avoid or mitigate these risks (FSH 1909.12, Land Management Planning Handbook, Chapter 20 - Land Management Plan).

g. Standards and guidelines in the 2020 Forest Plan for invasive plant species were reviewed by the revision team and determined to be constraints that would provide guidance for weed management at the project level. These standards and guidelines were developed from past concerns and issues that have occurred or have the potential to occur in the future.

CR157 Nonnative Invasive Plants - Aquatic

Concern: Commenters had concerns about aquatic invasive species and suction dredging and the effects of both on aquatic ecosystems, including:

h. Aquatic Invasive Species Concern: The commenter quoted the DEIS/FEIS that "spread and introduction vector" for aquatic invasive species associated with management activities would be mitigated: "More general or universal objectives and procedures, such as using current best practices for equipment washing before and after entering an area, are recommended for inclusion in the fish and aquatic wildlife sections of the document. This better assures that these components are included as resource protection measures at the project level". The commenter concluded that the recommended standards were not actually included in the plan document as plan components; and

i. Suction Dredging Concern: The commenter's concern was "the DEIS concludes that, "MTDEQ has seasonal restrictions on suction dredging and other in- stream mining activities on many of the forest's bull trout and cutthroat streams, therefore impacts will not be seen in those streams" (p. 96). It does not necessarily follow that there would be no impacts because it is regulated by the state. This must be explained in more detail and supported by BASI."

Response:

j. The following plan components were included in the 2020 Forest Plan to address the threat from aquatic invasive species. Please see Forestwide Fisheries and Aquatic Habitat Plan Components: FW-FAH-DC-06, FW-FAH-GDL-01, and FW-FAH-GDL-02.

k. Montana DEQ requires a General Permit for Portable Suction Dredges that regulates wash water effluent into state waters. Effluent limitations, monitoring requirements, and other conditions are set forth in Parts I, II, III, and IV of the General Permit. Written authorization from DEQ is required before an applicant can discharge under the General Permit. New applicants for the permit must secure the Instream Mining Stream Classification List that identifies restrictions from MFWP. The list of streams provides guidelines for each stream based on stream classification and spawning/incubation periods for fish species that are present. Based on these guidelines, Class 1 and 2 streams are closed, Class 3 and 4 streams are seasonally restricted, and Class 5 streams are open. Reaches of streams that are considered important occupied habitat by bull trout and/or westslope cutthroat trout are closed, while a few reaches have appropriate seasonal restrictions. Both new and renewal applicants must complete a Notice of Intent which is filed with DEQ and all suction dredging proposals must secure a Natural Streambed and Land Preservation Act 310 Permit from the local County Conservation District, which includes a landowner signature line. This is a link that interconnects with the FS' internal permitting process. The potential effects to streams and fish habitat from suction dredging activities requires a Notice of Intent be filed with the District Ranger to determine if a Plan of Operations is necessary. State permits as well as the NOI or the Plan of Operations on the HLC NF utilize the restrictions in the Instream Mining Stream Classification List to determine if suction dredging is restricted. The FS approval process would need to comply with FW-EMIN-GDL-01. As a result of the interrelationship of the State, Conservation District and FS permitting processes, any impacts to stream habitat would be avoided, minimized and/or required to be restored in westslope cutthroat and bull trout streams.

CR158 Nonnative Invasive Plants – Livestock Grazing

Concern: Commenters had concerns regarding non-native invasive plants and livestock grazing, including:

a. Livestock are a main vector in spreading invasive plant species as well as degrading the vigor of native plant communities. Plan components do not address this issue, nor managed livestock grazing. Livestock grazing creates favorable conditions to annual grass establishment and dominance;

b. Livestock should be quarantined before entering public lands and be immediately removed should new infestations be discovered. In addition, livestock grazing in suitable acreage that have noxious weeds should be avoided to minimize weed spread; and

c. Scientific literature should be utilized concerning noxious weed spread from livestock.

Response:

a. Livestock are a vector for transporting invasive species, as are wildlife, motorized vehicles, machinery, and forest users. BMPs to mitigate weed spread from livestock grazing would continue to be applied where appropriate. Plan components provide direction for site-specific project design to minimize effects of livestock grazing to native plant communities and maintain healthy rangelands resistant to weed invasion.

b. Quarantine of livestock prior to entering allotments could be an integrated pest management tool used to manage invasive species and already used where appropriate, such as targeted grazing with domestic sheep and goats that come from outside the planning area. Removal of livestock due to new invasive species being discovered may not be the most appropriate action as the cause of many invasive species infestations oftentimes is hard to place on one specific vector alone. However, exclusion, deferment, or herding livestock away from newly discovered infestations of priority 1a and 1b species (Montana State Noxious Weeds List) until eradication of the infestation is complete may be a management approach on affected areas of allotments. Grazing and invasive species management would be closely linked, with site-specific analysis to best address future management approaches.

c. Best available scientific information was considered in the analysis and the HLC NF doesn't dispute that livestock can be a vector for invasive species as well as other forms of multiple uses. Please see literature cited in the Invasive Species section of the FEIS. Invasive species would be a constant factor in land management on the HLC NF landscape, but multiple uses of forest resources would also continue. Plan components combined with BMPs would be used to minimize spread of invasive species directly related to livestock grazing activities.

Terrestrial wildlife diversity

CR44 Wildlife - Big Game Plan Components & Analysis

Comment: Commenters are concerned with the management of and analysis for elk and other big game in the 2020 Forest plan. Concerns fall into several broad categories:

a. Suggested revisions to plan components in the 2020 Forest Plan;

b. Concerns about the science used in developing plan components and analysis, and concerns about the quality or completeness of the analysis in the DEIS; and

c. Concerns about winter range and migration corridors for elk and other big game species and the need for clear, strong guidance about motorized travel and other management in those areas.

Response:

a. Changes were made where applicable, please see the wildlife section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 planning rule. More detailed analysis on this issue can be found in section 3.15 of the FEIS.

b. The 2020 plan includes direction for management of activities that occur on NFS lands at a broad, programmatic level. Discussion of potential impacts to elk of various management and recreational activities is discussed broadly in the FEIS. That discussion includes, in section 3.15.5 (elk - affected environment), an overview of past and current management issues with respect to elk and other big game species. Refer to the updated information and analysis in the FEIS, specifically section 3.15.6 regarding environmental consequences, conclusions section. See other comments also related to travel

planning. Although the 2020 Forest Plan does not make site-specific travel management designations, it provides guidance for future decision-making. Future travel planning will need to consider ROS direction, suitability plan components, and the full suite of wildlife-related desired conditions, standards, and guidelines.

The discussion in the FEIS also addresses the changing history of elk management concerns since the 1986 plans were written. The information there includes discussion of recent research findings regarding the influence of differing levels of hunting pressure, as well as forage, cover, and other factors that influence elk movements and distribution during the hunting season. Recognizing this key issue, the FS worked closely with MFWP biologists and managers to develop a desired condition and guideline that directly address the issue of elk displacement from, and availability on NFS lands during the archery and rifle hunting seasons.

c. The 2020 plan includes components that guide vegetation management to provide for the habitat needs of native wildlife species and their movements, and that establish desired conditions for habitats to provide the life/natural history requirements of native and desired non-native species, and that allow wildlife to move within and between NFS parcels in response to habitat needs and other factors. The plan also includes desired conditions that key seasonal habitats, including ungulate winter ranges, are relatively free from human disturbance during the period in which those habitats are used by those species. In addition to desired conditions that managers must achieve and/or maintain, the 2020 plan includes components providing additional guidance that would constrain management actions and other activities in key seasonal habitats in order to avoid disturbance and displacement of ungulates, and to ensure that habitat features such as forage and cover are available in those areas.

CR58 Monitoring Wildlife

Comment: There is concern that the proposed monitoring plan for wildlife is inadequate.

Response: The wildlife elements of the monitoring plan have been updated for the FEIS in consideration of internal and external comments.

CR72 Wildlife – Beaver Habitat

Concern: Commenters provided information about the ecological role of beavers and their importance to ecosystem integrity, particularly resilience in the face of climate change. Although comments expressed support for the plan components included in the draft plan, there were suggestions for modifications and additions to specifically address beaver re-introduction and the restoration and maintenance of beaver habitat.

Response: The HLF NF agrees with the information provided regarding the beneficial role beavers play as a biotic factor on the landscape. Page 2, Table 3.1, in chapter 3 of the 2015 Helena- Lewis & Clark National Forest Assessment identifies the key aquatic and riparian ecological characteristics on the Forest and page 26 discusses the role beavers play as a system driver in aquatic habitats forestwide. As disclosed section 3.14.6 of the FEIS, the full suite of aquatic ecosystem plan components are designed to protect watershed integrity, riparian habitats, and hydrologic function and the adoption of riparian management zones forestwide would increase the total acreage of riparian-influenced area in which protections for water and habitat quality apply as compared to the no-action alternative.

Some components included in the 2020 Forest Plan already address commenter's concerns and suggestions such as those to address grazing effects in riparian areas (e.g., FW-FAH-GDL-03, FW-GRAZ-DC-03, FW-GRAZ-STD-02, and several of the FW-GRZ guidelines) or to work cooperatively with MFWP (FW-WTR-GO-04). Some changes were made in response to comment such as a modification to FW-WTR-GDL-03 to adjust the consideration of threats to human infrastructure.

Other comments requested that the revised plan more explicitly prioritize habitat restoration to increase beaver distribution and activity throughout unoccupied but suitable habitat. The 2020 Forest Plan includes

a desired condition (FW-WTR-DC-09) for beaver habitat which direct managers to retain, where possible, beaver presence and complexes to maintain watershed and wetland habitat and resilience (FEIS section 3.14.6). In addition, the outcomes of objectives such as FW-RMZ-OBJ-01 and FW-VEGT-OBJ-01 address riparian habitat improvement and terrestrial vegetation desired conditions, which although do not explicitly highlight beavers, are ecosystem level plan components that would improve beaver habitat and support beaver occupancy over time when applied in suitable habitat. For example, management approaches in appendix C specifically identify the reestablishment of beavers through riparian habitat restoration (in support of FW-RMZ-OBJ-01) and allowing beavers to flood aspen and riparian areas (in support of FW-VEGT-OBJ-01). Although additional objectives could be identified specific to beaver habitat, they would be redundant of the existing plan components and are not necessary.

CR73 Wildlife – Connectivity/migration

Concern: Commenters thought that the draft forest plan should provide specific direction for and recognize the importance of wildlife migration corridors and connectivity needs across the landscape.

Response: Please refer also to CR275: wildlife-grizzly bear connectivity and habitat, and to FEIS section 3.14.5 and 3.14.6 for details about connectivity on the HLC NF. That section of the FEIS, while specifically emphasizing grizzly bear habitat issues, also discusses the existing condition and effects of the plan and alternatives on habitat connectivity for most wide-ranging species that occur on the HLC NF. The FEIS has been updated to include discussion of plan components that were added as a result of comments, and to provide additional analysis.

CR74 Wildlife – Roads/Road Density

Concern: Some commenters expressed concern that plan components limiting motorized route densities are insufficient to protect wildlife, while others questioned the effect of roads on wildlife and expressed opposition to limiting motorized route densities because it could affect access for recreation.

Response: The 2020 Forest Plan includes several components related to motorized route density that are associated with the Northern Continental Divide Ecosystem Grizzly Bear Amendment. Standard Z1-NCDE-STD-01 limits motorized route density in zone 1 (see plan for definition) to the baseline level, while standards PCA-NCDE-STD-01 through 04 collectively set limits on open and total motorized route density in the primary conservation area (see 2020 Forest Plan glossary for definition). As noted in section 3.14.5 of the FEIS, motorized route density is a widely used measure of grizzly bear habitat security and numerous studies have found a relationship between open road density and grizzly bear occupancy, mortality risk, and abundance. A more thorough discussion of the scientific basis for these standards and their effects on wildlife can be found in the Final EIS. The impact of road density on elk is described in section 3.15.5 of the FEIS.

Additionally, road density is limited even in areas that are not affected by plan direction related to grizzly bear due to the fact that 20% of the forest is in designated wilderness and 50% is in IRAs. As noted in section 3.14.6 of the FEIS, plan components associated with these designated areas provide large areas of high-quality habitat for a wide variety of wildlife species. Additional plan components such as DI-WL-GDL-01, UB-WL-GDL-01, and RM-CMA-STD-01 limit road construction or motorized access in specific areas to help provide for wildlife habitat and connectivity.

Desired conditions Z1-NCDE-DC-01 and PCA-NCDE-DC-01 both express a desire to continue providing motorized access within zone 1 and the primary conservation area for a variety of public uses.

CR119 Wildlife- Plan Components

Comment: Commenters provided both general and specific recommendations for plan components related to wildlife.

Response: Various wildlife plan component and other editorial suggestions were provided. Changes were made where applicable, please see the wildlife sections of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 planning rule.

CR136 Wildlife – Coarse/Fine Filter

Concern: A commenter believed that the analysis does not adequately describe NRV or how coarse-filter plan components will maintain a diversity of wildlife species.

Response: The Forest took a coarse-filter and fine-filter approach to provide ecosystem integrity, as required by the 2012 Planning Rule (36 CFR 219.9) and described in the FEIS (terrestrial vegetation and wildlife sections). As the 2012 Planning Rule programmatic EIS disclosed, NFS lands are expected to more consistently provide the ecological conditions necessary to maintain the diversity of plant and animal communities and the persistence of native species using this approach. The Federal Register (volume 77, number 68, p. 21212) states that "The premise behind the coarse-filter approach is that native species evolved and adapted within the limits established by natural landforms, vegetation, and disturbance patterns prior to extensive human alteration. […] These ecological conditions should be sufficient to sustain viable populations of native plant and animal species considered to be common or secure within the plan area. These coarse-filter requirements are also expected to support the persistence of many species currently considered imperiled or vulnerable across their ranges or within the plan area."

The 2020 Forest Plan and coarse-filter analysis address key ecosystem characteristics, including composition, structure, function, and connectivity. The NRV analysis for these characteristics is described in appendix I of the FEIS, while the effect of plan direction on maintaining or restoring these conditions is analyzed in section 3.8.6. Section 3.13.6 analyzes how different habitat types would support a wide variety of different wildlife species, and additional details on the habitat needs of specific species can be found in appendix D. The species-specific analyses in section 3.14 of the EIS considered human alterations to the environment such as roads, and plan components placing limits on human alterations were included as needed to conserve at-risk wildlife species.

CR145 Wildlife – Big Horn Sheep

Concern: The plan and EIS do not adequately address viability of bighorn sheep herds on the forest or the risk of disease transmission from non-FS lands.

Response: Components have been added to and updated in the 2020 Forest Plan to address disease threats to bighorn sheep. Section 3.14.5 of the FEIS (Species associated with grass and shrub habitats) discusses threats to bighorn sheep and notes that the primary threat is from respiratory disease. Historic population trends and effects of past disease outbreaks were described in the Assessment. Section 3.14.6 of the FEIS describes how bighorn sheep would benefit from both course-filter plan components designed to maintain or restore key habitat and fine-filter plan components designed to minimize the risk of disease transmission. For example, plan components for the GAs where bighorn sheep herds occur (Rocky Mountain, Big Belts, and Elkhorn) and where sheep have been observed recently (Little Belts) are designed to support healthy bighorn sheep populations by minimizing the risk of disease transmission from domestic animals. While these components target specific areas, the forestwide standard FW-GRAZ-STD-03 would help minimize the risk of disease transmission by requiring use of effective separation techniques before existing sheep and goat allotments would be reauthorized or vacant allotments would be restocked. Further, goal FW-WL-GO encourages coordination with MFWP and other agencies during project planning (such as allotment planning), in order to allow consideration of the goals and objectives of these agencies regarding wildlife and wildlife habitats.

The 2020 Forest Plan includes several components guiding managers to work with other agencies regarding wildlife and habitat management issues, and to use BASI and interagency recommendations

regarding minimizing risk to bighorn sheep. The current interagency recommendations consideration of sheep grazing on both FS and on BLM lands.

Additional information on the distribution, population trends, and relevant threats to bighorn sheep can be found in the forest's Assessment, and in the rationale spreadsheet for animals evaluated as potential SCC, (available at https://www.fs.usda.gov/detail/r1/landmanagement/planning/?cid=fseprd500402). As noted in this document, there are no active domestic sheep grazing allotments within 10 miles of any bighorn herd in the plan area, which will help minimize the risk of disease transmission.

CR153 Wildlife – Beaver as Focal Species

Concern: Commenters requested that the HLC NF include beaver as a focal species in the 2020 Forest Plan. Comments provide background and rationale for the suggestion.

Response: The responsible official agrees that beavers are important to the ecosystems on the HLC NF and acknowledges that beaver presence does provide some understanding of aquatic ecosystem integrity, as indicated by best available scientific information. However, the interdisciplinary team and responsible official chose not to include beaver as a focal species for the 2020 Forest Plan. As per the 2012 Planning Rule and associated Directives, Forests are only required to select one focal species. The HLC NF has selected invasive annual grasses as focal species for grass and shrubland systems. Beavers have not been previously monitored on the HLC NF and the Forest does not currently have baseline data on the species. Other indicators will be used to monitor aquatic ecosystem integrity, as specified in appendix B of the 2020 Forest Plan; specifically, MON-WTR-01 through 06. Two years after the ROD is signed, the indicators selected for monitoring will be evaluated as part of the biennial monitoring report. At this time, the sufficiency of the selected indicators to assess aquatic ecosystem integrity will also be evaluated.

CR261 Wildlife/Vegetation – Focal Species

Concern: Commenters were concerned about the selection of focal species as well as the tracking of formerly sensitive species under the revised forest plan.

Response: Limber pine was selected as a focal species in the DEIS. However, based on public and internal discussions, limber pine was dropped as a focal species in the FEIS. This is because its presence is not necessarily an indication of ecotone health. The planning rule requires selection a minimum of one focal species, the purpose of which is to "permit inference to the integrity of the larger ecological system to which it belongs and provides meaningful information regarding the effectiveness of the plan… Focal species would be commonly selected on the basis of their functional role in ecosystems." In the FEIS, the HLC NF has selected invasive annual grasses as focal species for grass and shrubland systems, which would provide information regarding the effectiveness of the plan in providing the ecological conditions necessary to maintain the persistence of native species in the plan area.

In past forest plans, identification of management indicator species was intended to provide information about the ecosystems on which they depend, and management indicator species were to serve as surrogates for the status of a broader suite of species that rely on similar habitats. Use of management indicator species is a concept no longer supported by current science and population trends of identified management indicator species are "difficult and sometimes impossible to determine within the lifespan of a plan." Monitoring of key ecosystem characteristics, focal species, and specific fine-filter components of at-risk species habitat requirements as identified in the monitoring plan (appendix B of the 2020 Forest Plan) would provide information regarding the effectiveness of the plan in providing the ecological conditions necessary to maintain the persistence of native species in the plan area.

CR272 Wildlife – DEIS Analysis

Concern: Commenters had a number of specific comments about the sufficiency of the wildlife analysis.

Response: The FS appreciates the concern associated with the necessity of a thorough and well-rounded analysis for wildlife. Where possible, the wildlife analysis was updated to address these concerns. The wildlife analysis provides the programmatic effects analysis needed to inform the decision-making process for the 2020 Forest Plan.

CR274 Wildlife Habitat/Vegetation

Concern: Commenters have concerns about wildlife habitat/vegetation, including:

a. Concerns about the planning rule and whether or not managing habitat will not ensure viability of wildlife species, including promotion of early seral vegetation and forage for elk and other wildlife;

b. Viability of sagebrush associates and moose;

c. A desire to do more to promote forage for elk and other game species; and

d. Request more analysis of the effects of management/timber harvest on wildlife habitat.

Response:

a. The 2020 Forest Plan relies on a coarse-filter/fine-filter approach to conserving biodiversity. Maintaining key ecosystem characteristics is expected to support the persistence of most native species, and additional species-specific plan components were added as needed to address specific threats. This approach is consistent with the 2012 Planning Rule.

b. The FEIS describes several different types of ecotones that occur on the Forest and the types of locations where they are typically found. Effects of plan direction on xeric ecotones, where sagebrush is often a component, can be found in the "Nonforested vegetation, forest savannas, and xeric ecotones" section. This section describes how fire would historically have functioned as an important component of these ecosystems by limiting the encroachment of Douglas-fir trees. Wildlife species that rely on sagebrush shrublands and xeric ecotones are described, and fire exclusion is identified as a stressor that affects these types of wildlife habitat. To address this stressor, the 2020 Forest Plan includes a guideline (FW-VEGNF-GDL-01) to focus savanna and shrubland restoration treatments in areas historically dominated by nonforested vegetation such as sagebrush. Desired condition FW-VEGT-DC-01 describes a desire for sagebrush communities maintained by a natural disturbance regime within the xeric shrubland/woodland broad potential vegetation type. Additionally, desired conditions for these habitats occur specific to GAs. Numerous plan components are designed to support populations of moose and other native ungulates by protecting key habitat elements such as thermal cover. FW-WL-GDL-05, FW-WL-GDL-06, and FW-WL-DC-01, 02, 03, and 07 are designed to protect winter ranges and thermal cover, and FW-WL-GDL-14 promotes a landscape-scale approach through consistency with other land management agencies. Moose would also benefit from plan components designed to retain beaver complexes and associated wetland habitat. These wildlife-specific plan components complement the full suite of vegetation components designed to maintain vegetation conditions that support all native species.

c. Numerous plan components exist that will provide the direction and guidance the Forest will use to implement management actions that are either aimed directly at benefiting wildlife species, or that will be designed to achieve those goals ancillary to other reasons. These actions will work to allow progress towards achieving the desired conditions for all resources within the NRV.

d. The effects of plan components associated with timber harvest are described under the heading "Effects common to all action alternatives" because the plan components remain the same across alternatives. Potential effects are described generally due to the programmatic nature of this analysis, which examines effects of plan components rather than specific timber harvest activities. The effects of timber harvest are site-specific and will be analyzed at the project scale.

CR276 Wildlife – Travel Plans and Recreation Uses

Concern: Commenter asked for the 2020 Forest Plan to provide direction for recreation activities such as motorized uses, mechanized means of transportation, horse users, hikers, drones, and potentially hover crafts, and the effects of these activities on public land wildlife habitat. They feel that human entertainment must be secondary to the survival and life-cycle necessities of wildlife and the landscape.

Response: Thank you for your comment. The National Recreation Opportunity Spectrum (ROS) Inventory Mapping Protocol, April 2018, provides guidance for not only how ROS categories are mapped but also which recreation activities are appropriate in each ROS setting. Adherence to this protocol contributes to the consistent application of ROS settings across NFS lands. Please see forestwide plan components for recreation settings (ROS).

The 2020 Forest Plan components work together to meet the needs of native vegetation and wildlife, while providing sustainable recreation across the HLC NF. These plan components are in addition to the requirements of meeting all laws, regulations, and policies concerning land and resource management. Please see forest-wide plan components for aquatics, soil, air quality, vegetation, wildlife, and recreation.

CR277 Wildlife – Species Viability

Concern: Some commenters are concerned that the 2020 Forest Plan does not provide for species viability. Concerns include:

a. The 2012 Planning Rule and/or the 2020 Forest Plan for the HLC NF do not ensure viable populations of wildlife would be maintained or reached, and disagreement that a management focus on habitat (vegetation conditions) would ensure wildlife viability;

b. Monitoring for wildlife is inadequate because no species population trends are to be monitored. Because no terrestrial wildlife focal species are identified, the HLC NF cannot show compliance with NFMA's diversity requirements;

c. Species viability for current Region 1 sensitive species will not be provided, because most are not considered as management indicator species, sensitive, or SCC in the 2020 Forest Plan. Viability of current management indicator species cannot be assured because monitoring of populations trends (as per the 1986 Forest Plans) was not conducted; and

d. Viability requirements and/or threats for specific species are not adequately disclosed in the EIS, including marten, black-backed woodpecker, and western toad.

Response:

a. Refer also to CR136- coarse filter. The 2020 Forest Plan is consistent with the 2012 planning rule and associated directives with respect to ensuring wildlife species viability. Issues related to the adequacy of the 2012 planning rule are beyond the scope of the HLC NF revision.

   The 2020 Forest Plan is an integrated management plan for diverse habitats that support over 300 terrestrial animal species. The FEIS, section 3.13, first discusses the effects of a variety of coarse-filter plan components on ecosystems or key ecosystem characteristics, organized by broad habitat groups, and then discusses the effects on specific species, including but not limited to federally listed species, species listed as sensitive under the existing forest plan, and species of conservation concern as identified by the Regional Forester. Additional details on the habitat needs of particular species can be found in appendix D.

b. Population trend monitoring is not required by the 2012 planning rule and associated directives, nor is trend monitoring possible for most wildlife species. The 2020 forest plan includes a monitoring plan (appendix B of the 2020 Forest Plan) that includes comprehensive requirements for monitoring the full array of aquatic and terrestrial ecosystem characteristics that comprise wildlife habitats on the HLC NF. The monitoring plan has also been expanded to include requirements for measuring and reporting

key habitat characteristics for grizzly bear, Canada lynx, flammulated owls, connectivity, and habitat security.

c. The terrestrial wildlife diversity section (3.13) and a biological evaluation (see project file) provide evaluation of impacts of the 2020 Forest Plan on current Regional Forester Sensitive Species (RFSS). Implementation of the 2020 Forest Plan would support persistence of all current RFSS in the plan area and would not result in a trend toward federal listing for any current RFSS.

d. Information regarding the requirements, threats, and stressors for a variety of species considered in the planning process and the FEIS were discussed in the 2015 HLC NF Assessment. That information was supplemented by additional science or other information as available in order to develop plan components and the analysis included in the FEIS (sections 3.13 and 3.14.11). Additional information about terrestrial wildlife species' habitat needs considered in the planning process is in appendix D of the FEIS and in the project file.

Terrestrial wildlife species at risk

CR69 Wildlife-Wolverine

Comment: Commenters believed that the 2020 Forest Plan should include scientifically-based direction to protect wolverine and provide for habitat connectivity. The FEIS should include a more detailed analysis of how forest management and recreation would impact wolverine and should use the most recent available data.

Response: As stated in the FEIS section 3.15.9, the vast majority (>90%) of wolverine habitat is already in a conservation management area, IRA, or designated wilderness. This minimizes human disturbance and means that forest plan direction is unlikely to impact the recovery or persistence of wolverine in the plan area. The largest area of wolverine habitat on the HLC NF is in designated wilderness and provides connectivity to habitat on the Flathead NF and in Glacier National Park. Because of this, all alternatives would contribute to wolverine conservation. The action alternatives also include several desired conditions for specific geographic areas that contribute to wolverine habitat connectivity (DI-WL-DC-01, RM-WL-DC-01, and UB-WL-DC-01; see also the comment and response under connectivity/migration). These plan components contribute to the high level of wolverine protection and habitat connectivity that is already provided by existing land designations.

CR99 Wildlife – Grizzly Bear Conservation Strategy and Amendment

Concern: Commenters provide specific changes and recommendations to the Grizzly Bear Conservation Strategy and plan amendment. Some felt that plan components associated with the Grizzly Bear Amendment did not provide adequate protection or questioned certain aspects of the associated analysis. Other commenters expressed support for incorporating the NCDE Grizzly Bear Amendment into the revised forest plan. Changes, recommendations, or issues include the following:

a. Concern that the NCDE Grizzly Bear Amendments relied on the Draft NCDE Conservation Strategy rather than on a final product;

b. Lack of clarity regarding management, implementation, and potential effects of motorized route density standards for grizzly bear habitat;

c. The plan standards for grizzly bears do not rely on the current best available scientific information;

d. Plan components for minimizing the risks to grizzly bears associated with livestock grazing should be added, strengthened, and/or expanded to additional areas on the HLC NF;

e. Plan components for various resource management and recreation activities (e.g., snowmobiling, ski area developments, vegetation management, and others) are not sufficient to protect grizzly bears;

f. The HLC NF should include additional plan components to ensure connectivity between grizzly bear populations;

g. The HLC NF should expand identified management zones, such as the primary conservation area, and/or apply primary conservation area and Zone 1 plan components over larger areas; and

h. Analysis in the DEIS is inadequate to display potential impacts of plan components, and to demonstrate that plan components would contribute to recovery of the grizzly bear population.

Response:

a. The NCDE Grizzly Bear Conservation Strategy is now final. It has been reviewed and there are no significant changes from the draft that formed the basis for the GB Amendments, nor are there inconsistencies with the amendments.

b. Information in the 2020 Forest Plan and FEIS has been updated to clarify measures and methodology.

c. The 2020 Forest Plan standards for grizzly bears are based on the NCDE Grizzly Bear Conservation Strategy, which relied on the best available scientific information as well as on input from researchers, biologists, and managers from multiple agencies and tribes. The final EIS for the NCDE Grizzly Bear Amendments contains a thorough discussion of the science used in developing plan components related to motorized route density and in analyzing their effects. The FEIS (section 3.14.5) includes a thorough review of the best available scientific information, including recent research and recommendations regarding influences on grizzly bear individuals, population trend, and distribution. The review in the FEIS provides support for plan components and informs analysis of their potential effects.

d. PCAZ1Z2-NCDE-GDL-01 and 02 are designed to minimize the risk of conflict related to activities allowed by permit, including livestock grazing; these guidelines apply in the primary conservation area and Zones 1 and 2. Standard PCAZ1-NCDE-STD-01 requires that livestock grazing permits and plans include measures to reduce the risk of human-grizzly bear conflicts in the primary conservation area and Zone 1, and indicate actions that may be taken if conflicts occur. Standards PCAZ1-NCDE-STD-03 and 04 are designed to minimize conflicts between grizzly bears and livestock by prohibiting an increase in the number of active sheep allotments and ensuring that temporary grazing permits do not increase bear-small livestock conflicts in the primary conservation area and Zone 1. Guidelines PCA-NCDE-GDL-09 and 10 provide further guidance for the primary conservation area on reducing active sheep allotments and protecting key grizzly bear food production areas from conflicting and competing use by livestock. Section 3.15.6 of the FEIS discusses how plan direction related to livestock grazing is likely to affect grizzly bears, and notes that the risk of depredation is minimal. Unlike the primary conservation area, which is expected to function as a source population with continual occupancy by grizzly bears (refer to the 2020 Plan NCDE section and the NCDE Grizzly Bear Conservation Strategy), Zones 2 and 3 are not expected to have continual occupancy by grizzly bears. Therefore, plan components related to grizzly bears are focused on the primary conservation area and Zone 1, with food and attractant storage components extended into Zone 2 in order to facilitate potential movement of bears between the NCDE and GYE grizzly bear ecosystems.

e. The final EIS provides extensive review of and references to peer-reviewed scientific literature that documents the status, habitat relationships and responses to management activities of grizzly bears. The analysis of effects in the final EIS and the biological assessment for the amendments considered the effects of vegetation management on the grizzly bear to the degree possible in a programmatic document. As required by NEPA, additional analysis will occur as site-specific vegetation management projects are proposed. Site-specific analysis at the project level, supported by the necessary science, is the appropriate place to determine whether grizzly bear habitat in a specific location would or would not benefit from treatment. Refer also to response to comments regarding the coarse filter approach required by the 2012 planning rule.

Standard PCA-NCDE-STD-09 states that there can be no net increase in the area or trails open for motorized over-snow vehicle use in grizzly bear denning habitat within the primary conservation area. Standard PCA-NCDE-STD-08 requires permits for activities occurring at ski areas during the non-

denning season include provisions to limit the risk of grizzly bear-human conflicts. Discussion of the impacts of winter motorized over-snow use has been added to the FEIS (section 3.14.5 and 3.14.6).

f. Many of the connectivity plan components that commenters suggested are already included in the 2020 forest plan and alternatives as part of habitat management direction in the NCDE Grizzly Bear Amendment, which is retained in full. The goal for zone 2 is to maintain the potential for genetic connectivity between adjacent ecosystems.

   The 2020 Forest Plan provides additional direction aimed at promoting connectivity in this and other areas on the HLC NF. Forestwide desired conditions FW-WL-DC-03 and 04 address connectivity by directing managers to achieve vegetation conditions that "allow wildlife to move within and between NFS parcels", and large, unroaded areas that are "distributed and connected forestwide, providing for species with large home ranges". Both of these plan components will maintain or enhance connectivity at a forestwide scale. At the scale of GAs, plan components (e.g., UB-WL-GDL-01 and DI-WL-GDL-01) provide additional protection in key areas for connectivity by limiting the effects of recreation and ensuring that vegetation management does not diminish hiding cover. Desired conditions in several GAs guide managers to provide "habitat connectivity for wide-ranging species" such as grizzly bears.

   Plan components associated with other resource areas, notably vegetation, will further contribute to habitat conditions that support the movement of grizzly bears. For example, FW-VEGT-DC-02 promotes habitat for threatened and endangered species, while FW-VEGT-DC-03 states a desired condition for vegetation conditions that would contribute to genetic connectivity. Collectively, these plan components promote connectivity for grizzly bear, and additional standards or guidelines are not needed. See also CR73 wildlife - connectivity-migratory linkage.

g. The HLC NF acknowledges that grizzly bears may sometimes be found in zone 3. However, by definition, zone 3 does not have enough suitable habitat to contribute meaningfully to the long-term survival of the NCDE population. Nevertheless, the FS has implemented food storage orders across the entire HLC NF, including Zone 3.

   Additional plan components limiting developed recreation in zones 1 and 2 are not needed because grizzly bear occupancy is expected to be lower than in the primary conservation area and these zones do not serve as the source for supporting and maintaining recovery of the NCDE or other grizzly bear populations.

h. The information and analysis in the FEIS have been substantially expanded and updated, in part to include additional information used in the Biological Assessment for ESA section 7 consultation with the US FWS. Refer to section 3.14.5, which includes a list of changes from the Draft EIS, and to section 3.14.6; note also that the 2020 forest plan has been updated with information regarding the methods to be used to measure and report open and total motorized route density and secure core in the primary conservation area, as well as Grizzly Bear Analysis Unit based measures of secure habitat in Zones 1-3. For additional information regarding motorized route density and secure habitat, refer to Response #2 above.

   The effects of implementing plan components in the NCDE Grizzly Bear Amendments were discussed in detail in the EIS associated with the NCDE amendments, would remain the same under the 2020 forest plan and alternatives, and was therefore incorporated by reference into this FEIS as noted in section 3.14.6. Conclusions from this analysis are summarized, and additional detail on the science used to develop those plan components and support conclusions about their efficacy can be found in the FEIS for the NCDE amendments as well as in this FEIS for the 2020 HLC NF plan and alternatives (e.g., refer to section 3.15.5, "Key drivers and stressors", "Habitat security", etc.). The amendment FEIS provides extensive review of and references to peer-reviewed scientific literature that documents the status, habitat relationships and responses to management activities of grizzly bears, as does the updated FEIS for the 2020 HLC NF plan and alternatives. As required by NEPA, the Forest reviewed and discusses scientific consensus as well as opposing scientific information.

CR271 Wildlife – Lynx

Concern: Commenters are concerned with plan components and the analysis for Canada lynx. Specifically:

a. It is not appropriate to use the NRMLD to guide lynx management on the HLC NF, because it is not consistent with best available scientific information regarding the conservation and recovery of lynx; and project-level analysis often determines mapped habitat to not meet habitat requirements. Lynx habitat requirements should only be a consideration in unoccupied habitat; and not preclude managing for other wildlife as well in occupied habitat; and

b. Additional analysis or clarification related to lynx is requested, including clarification of terminology (potential and suitable lynx habitat); disclosure of potential effects to critical habitat PCEs; define, identify, and analyze effects to core areas; description of how fire would be managed (inside and outside the WUI) and the effects of fire to lynx habitat, as compared to the NRV condition; disclose the acreage of prescribed burning and discuss the effects to lynx; more information regarding the potential for timber harvest and associated effects within lynx habitat should be disclosed; present the changes in lynx habitat based on the difference between lynx habitat and potential lynx habitat; include desired conditions based on the NRV amounts of lynx habitat; clarify the trend of available snowshoe hare habitat over time, based on model results; clarify the desired conditions and NRV as compared to the expected trends of the spruce/fir cover type; disclose the amount of grazing expected to occur in lynx habitat; consider the cumulative impacts on lynx from trapping and use of the road and trail networks on the HLC NF.

Response: The FS appreciates and shares in the desire to provide for the needs of Canada lynx. The 2020 Forest Plan components and EIS analysis are based on the best available scientific information and regulatory guidance for this species.

a. The HLC NF is required to abide by the NRMLD until such time that new direction is issued. Lynx management direction does not preclude the potential to provide for a variety of other wildlife species on the landscape. The NRLMD is to be applied to areas occupied by lynx and to be considered in areas unoccupied by lynx. Presently, only 3 of 10 GAs are considered occupied. In areas where lynx may be present or are resident, the Forest is required by the ESA to work towards recovering lynx, assessing potential impacts to lynx and/or lynx designated critical habitat through the consultation process, and avoiding adverse effects where possible. Hence, projects planned, implemented, analyzed, and assessed through the consultation process need to consider scientific information to manage lynx habitat. The consideration of that science will be done at the project level, where direct effects can result and site-specific information is available to inform those decisions and analyses; however, the best available scientific information was considered or incorporated in the 2020 Forest Plan, as directed by the 2012 planning rule.

b. Where possible and appropriate, additional analysis and explanation was added to the wildlife section of the FEIS to address these concerns. There is no need for an explicit desired condition for lynx habitat because there are DCs for vegetation composition and structure based on NRV that would encompass those habitat conditions. The vegetation modeling was re-done between the DEIS and FEIS, based on key model improvements as discussed in the Terrestrial Vegetation section and appendix H of the FEIS. The lynx section of the FEIS was updated to incorporate the revised model outputs and clarify the expected trends of the spruce/fir cover type. The modeling has uncertainties, however, in no small part due to the difficulty in predicting if and when natural disturbances will occur. Therefore, there are multiple plan components in place to ensure adequate lynx habitat is maintained over time, as discussed in the lynx section (see lynx FEIS and biological assessment). These plan components have considered the best available scientific information. Since the 2020 Forest Plan is a framework programmatic action, it will not result in direct effects to lynx or lynx habitat. Thus, the analysis provides broad, general effects discussions based on programmatic level considerations, rather than effects determinations made with site-specific information that is generated at the project level.

Hence, future projects carried out under the 2020 Forest Plan will be planned, assessed, and analyzed using site-specific information.

CR275 Wildlife – Grizzly Bear

Concern: Commenters expressed concern that the plan direction is not adequate to provide viable grizzly bear habitat and connectivity. More specifically, commenters expressed the following concerns:

a. The HLC NF should coordinate with other NFs to the south (Custer-Gallatin NF and Beaverhead-Deerlodge NF) to ensure consistent grizzly bear management in connectivity or linkage areas. The FEIS should include information about potential impacts of the proposed plan and alternatives on other grizzly bear populations;

b. The HLC NF should do more to protect bears moving through the Blackfoot Divide area;

c. Some plan components from the PCA and Zone 1 should be extended into Zones 2 and 3;

d. Information in the plan and FEIS should place greater emphasis on the importance of the HLC NF for connectivity, including possibly identifying certain areas as "Genetic Connectivity Areas'; and

e. The HLC NF should limit increases in recreation in order to reduce potential bear-human conflicts.

Response: Please refer also to the response to Concern Statement #99, regarding plan components for grizzly bear retained from the NCDE Grizzly Bear Amendments (USDA FS 2017), and particularly part 6 of that response, regarding habitat connectivity. See also CR73, regarding wildlife connectivity/migration.

Specific responses about grizzly bear habitat and connectivity include:

a. The FEIS for the NCDE Grizzly Bear Amendments contains a discussion of how the plan components would support the grizzly bear metapopulation (section 6.5.5, "Cumulative effects on grizzly bear"). That subsection also discusses how management direction on neighboring forests, including the Beaverhead-Deerlodge and Custer Gallatin NFs, complements the direction in the Helena Lewis and Clark 2020 Forest Plan and contributes to connectivity across the broader landscape. 2020 Forest Plan components to maintain both habitat security and connectivity, as discussed in the FEIS (sections 3.14.5 and 3.14.6) would allow for individual bears to move between the NCDE and GYE populations, potentially increasing genetic variability in both populations (refer also to response to item b, below, and to CR99). In response to received comments, plan components were added to several GAs about providing habitat for and connectivity among populations of wide-ranging species such as grizzly bears. The cumulative effect of these plan components, along with the pattern of designated areas, recreation settings, and management of other resources is that the HLC NF will continue to support the presence and movements of grizzly bears in and among currently separate grizzly bear populations in Montana.

b. Desired condition Z1-NCDE-DC-02 promotes efforts to reduce connectivity barriers associated with highways, and goal FW-WL-GO-04 guides managers to work with other agencies to identify linkage areas. The plan identifies the areas near Highway 12 and Highway 200 as important for wildlife connectivity and includes plan components (DI-WL-GDL-01, and UB-WL-GDL-01) designed to manage those lands in a way that promotes connectivity by improving habitat security on NFS land. Some commenters suggested development of crossing structures; those or other means of enhancing connectivity would be developed as site-specific projects. Planning of site-specific projects would include consideration of site-specific needs and opportunities, appropriate interagency and public involvement, and appropriate analysis and consultation. Refer also to item d, below.

c. Please refer to the response to CR99, item g.

d. The 2020 forest plan section on "Distinctive roles and contributions" notes that portions of the HLC NF may help provide connectivity between the GYE and the NCDE. Discussion of grizzly bear management zone 2 in the 2020 Forest Plan and in the FEIS clearly identifies its role in maintaining genetic connectivity between the NCDE and the GYE, per the NCDE Grizzly Bear Conservation

Strategy and the NCDE Grizzly Bear Amendments. In response to comments, a guideline (DI-WL-GDL-01) was added regarding management for connectivity in the central portion of the Divide GA, and new desired conditions were added to promote wildlife connectivity in the Elkhorns, Big Belts, and Crazies GAs. New guidelines were also added explicitly stating that wildlife habitat is the management priority (EH-WL-GDL-01) and vegetation management should maintain or improve wildlife habitat (EH-WL-GDL-04). Text was also added in the descriptions of GAs to note when that GA is part of a grizzly bear management zone, as delineated by the FWS.

e. The 2020 Forest Plan and alternatives include plan components to reduce human-bear conflict, and human-wildlife conflicts overall. The FEIS sections (3.14.5 and 3.14.6) analyzing impacts to grizzly bears have been updated and expanded to include more thorough discussion regarding potential impacts to grizzly bears of various recreational activities.

CR279 Seed Mix – Attracting Animals

Concern: Commenter felt that FW-REC-GDL-07 would be difficult to achieve, as there are few if any seed mixes that wouldn't attract some species of mammals.

Response: This guideline was adjusted to be specific to bears to attempt to avoid bear/human conflict. Specific species have been identified to be avoided to meet this guideline.

CR286 FWS Consultation

Concern: Commenters are concerned about the consultation process with the FWS related to listed species and species proposed for listing. They request more information regarding consultation documents, and state that specifically for grizzly bear, more detailed analysis should have been included in the DEIS rather than the Biological Assessment.

Response: A biological assessment analyzing effects to threatened, endangered, and proposed species that may result from implementing the framework programmatic action 2020 Forest Plan has been prepared in accordance with section 7(a)2 of the ESA. Concurrently, the analysis for those species has been updated in the FEIS. A biological assessment was not prepared for the DEIS since the assessment is to reflect the proposed action, in this case the preferred alternative for the 2020 Forest Plan. The preferred alternative was not finalized in the DEIS because the Forest was still receiving public comment at that time and considering or incorporating that comment into the preferred alternative. The biological assessment and subsequent opinion from the US Fish and Wildlife Service will be made available for the public as part of the FEIS. In addition, the analysis for those species will be updated and available for review in the FEIS.

Recreation settings

CR33 ROS – Semi Primitive Nonmotorized for Mechanized Use

Concern: The FS should use the recreation opportunity settings (ROS) to determine where mechanized means of transportation (i.e. mountain bikes) may recreate. Specifically, the FS should state that mechanical uses should remain in semi-primitive nonmotorized ROS settings.

Response: The National Recreation Opportunity Spectrum (ROS) Inventory Mapping Protocol provides guidance for not only how ROS categories are mapped but also what activities are appropriate in each ROS setting. The 2020 Forest Plan will follow national direction to contribute to the consistent application of ROS settings across NFS lands.

In accordance with this national protocol, mechanized means of transportation are suitable in all ROS settings, unless those areas are specifically closed due to legislative action, such as congressionally designated wilderness, or by closure order at the Forest or District levels.

CR34 Primitive ROS – Suitable Recreation Uses Within

Concern: Commenters expressed concerns regarding the primitive ROS definition. Many commenters wish to exclude mountain bikes from primitive ROS areas as was outlined in the Proposed Action. Some commenters advocated for mountain bikes to be included within primitive ROS settings.

Response: The National Recreation Opportunity Spectrum (ROS) Inventory Mapping Protocol provides guidance for not only how ROS categories are mapped but also what activities are appropriate in each ROS setting. Adherence to this protocol contributes to the consistent application of ROS settings across NFS lands.

In accordance with this national protocol, mechanized means of transportation are suitable in all ROS settings, unless those areas are specifically closed due to legislative action, such as congressionally designated wilderness, or by closure order at the Forest or District levels.

During the formation of the Proposed Action, the HLC NF misinterpreted the national direction for primitive ROS settings and stated that mountain bikes would not be suitable within these primitive ROS settings. This is incorrect and not congruent with the national direction.

The HLC NF corrected this error in both the DEIS and the FEIS. The 2020 Forest Plan would follow national direction and would allow all forms of nonmotorized recreation uses within primitive ROS settings, including mountain bikes, unless this use is specifically prohibited by Congressional law or Forest closure order.

Clarifying language was added to the 2020 Forest Plan and the FEIS to clearly describe the national direction of nonmotorized recreation in primitive ROS settings.

CR61 ROS – Winter ROS Subcategories

Concern: The FS should adopt the specific winter ROS categories described by the commenter. Those categories are:

- Alpine Solitude;
- Backcountry;
- Alpine Challenge;
- Motorized Social; and
- Nonmotorized Social

Response: The National Recreation Opportunity Spectrum (ROS) Inventory Mapping Protocol provides guidance for not only how ROS categories are mapped but also what activities are appropriate in each ROS setting. In accordance with this national protocol, winter and summer ROS setting categories remain the same. The HLC NF has adhered to this protocol.

CR89 Sustainable Recreation – Plan Components

Concern: Commenters believe that the FS should develop a "full suite of sustainable recreation plan components that are integrated with plan components related to other uses". These plan components would provide for sustainable recreation, including standards or guidelines that maintain or restore ecological stability and contributions to social and economic sustainability.

Response: Recreation is recognized as a critical resource on the HLC NF due to its contributions to the local economy, its influence in connecting people to the land, its impact on public understanding of natural and cultural resources, and its role as a catalyst for public stewardship.

The HLC NF strives to provide a set of recreation settings, opportunities, and benefits that are sustainable over time. Sustainable recreation is defined as the set of recreation settings and opportunities on the NF that are ecologically, economically, and socially sustainable for present and future generations. For best

effect, all aspects of recreation should include the principle of sustainability. Therefore, all plan components in the Recreation Opportunity, Recreation Settings, Recreation Special Uses, Recreation Access, and Scenery sections are aimed at providing direction for a sustainable recreation program.

CR113 ROS – Recommended Plan Component Changes

Concern: Various ROS plan component editorial suggestions were provided, along with other editorial questions.

Response: All specific comments to ROS were reviewed and appropriate changes were made where applicable. Please see the ROS section of the 2020 Forest Plan.

When developing the ROS maps, the Forest followed the National Recreation Opportunity Spectrum (ROS) Inventory Mapping Protocol which provides guidance for not only how ROS categories are mapped but also what activities are appropriate in each ROS setting. Adherence to this protocol contributes to the consistent application of ROS settings across NFS lands. The desired ROS maps were developed from a national protocol that projected ROS settings using the location and relationship of constructed features such as roads, housing developments, utilities, etc. Please see the ROS section of the 2020 Forest Plan, which includes the maps as well.

In accordance with this national protocol, mountain bikes are allowed in all ROS settings, unless those areas are specifically closed due to legislative action, such as Congressionally designated wilderness, or by closure order at the Forest or District levels.

During the formation of the Proposed Action, the HLC NF misinterpreted the national direction for Primitive ROS settings and stated that mountain bikes would not be suitable within these primitive ROS settings. This is incorrect and not congruent with the national direction. The HLC NF corrected this error in the DEIS and the FEIS. The 2020 Forest Plan will follow national direction and will allow all forms of non-motorized recreation uses within primitive ROS settings, including mountain bikes, unless this use is specifically prohibited by Congressional law or Forest closure order. Clarifying language was added to the 2020 Forest Plan and the FEIS to clearly describe the national direction of nonmotorized recreation in primitive ROS settings.

CR282 ROS – Mapping Changes

Concern: Commenter would like to allocate semi-primitive non-motorized ROS settings to roadless areas outside of RWAs. Specific examples were provided.

Response: The National Recreation Opportunity Spectrum (ROS) Inventory Mapping Protocol, April 2018, provides guidance for not only how ROS categories are mapped but also what activities are appropriate in each ROS setting. The HLC NF used this protocol to map the desired ROS settings across the forest. Adherence to this protocol contributes to the consistent application of ROS settings across NFS lands. Except within the RWAs where the ROS setting changes to primitive, ROS settings do not substantially change from the existing condition.

Recreation opportunities

CR212 Recreation Definitions – Electric Bicycles

Concern: The FS should define "mechanically-assisted" devices as motorized use.

Response: "Mechanically-assisted" was added to the definition of motorized equipment in the glossary of the 2020 Forest Plan.

CR213 Recreation Plan Components

Concern: Commenters had editorial suggestions for recreation plan components.

Response: Changes were made where applicable; please see the recreation sections of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

Recreation special uses

CR90 Permits and Special Uses

Concern: Comments were received regarding plan components for special use permitting, including:

- Requests for plan components to limit the number of outfitting permits on the HLC NF;
- Requests for plan components to limit permits for special events along the CDNST;
- Questions about conflicts between special use permitting and the Forest Plan resource plan components, especially in ski areas; and
- Requests for plan components regarding how to deal with conflicts between special uses and wildlife.

Response: Plan components in the 2020 Forest Plan provide direction and guidance for recreation special use permits through forestwide desired conditions, and guidelines. Please see the Recreation Special Uses, Lands, and Land Uses plan components in the 2020 Forest Plan. In addition to forest plan direction, all special use permits are required to meet applicable laws, regulations, and policies. Decisions regarding the specific number and kinds of outfitter and guide permits would be determined outside of the forest planning process.

The FS has recognized ski areas as having rural ROS settings. This ROS setting provides for the continual development of these sites, allowing for changes over time. Plan components in the 2020 Forest Plan (including those for rural ROS settings) provide direction and guidance for recreation special use permits through forestwide desired conditions and guidelines. Authorization for special uses require that other resource desired conditions are considered. Additionally, the 2012 Planning Rule also requires that other resource desired conditions are met. Beyond forest plan direction, all special use permits are required to meet applicable laws, regulations, and policies.

CR92 Mountain Bike Volunteers and Partners

Concern: The FS should recognize, value, and actively pursue additional partnership and volunteer opportunities with the mountain bike community.

Response: The FS recognizes the tremendous positive impact that the mountain bike community provides to the agency. To encourage and continue these valued relationships, the preferred alternative (alternative F) and the 2020 Forest Plan established two additional goals: FW-RT-GO-01 and FW-RT-GO-02. These would encourage partnerships with various interest and user groups as well as the pursuit of grants, cost-sharing, and partnerships.

CR199 Ski Areas and Winter Recreation

Concern: Comments were received in regard to several aspects of winter recreation, including requests for:

- An avalanche forecaster and a Central Montana Avalanche Center;
- Stronger language associated with treating ski areas as unique and developed recreation sites;
- Acknowledgement of backcountry skiing and snowboarding as a recreation activity and provision of services to make it easier to recreate;
- Up to date access information, possibly a smartphone app, showing open and closed roads, gates, and campsites along with special comments such as avalanche danger, fire danger, flooding, etc;

- Establishment of backcountry ski areas that provide easy to intermediate ski ascents and descents with nearby parking lots (such as the former Skidway ski area); and
- Establishment of a non-motorized backcountry ski area at the site of the former Skidway ski area.

Response: The creation of a Central Montana Avalanche Center and the hiring of an avalanche forecaster is outside the scope of forest plan revision. Similarly, the development of a method for providing up-to-date access information showing open and closed roads, gates, and campsites along with special comments such as avalanche danger, fire danger, flooding, etc, is beyond the scope of the forest plan revision process.

All of the action alternatives recognize developed downhill ski areas as special emphasis areas. Plan components were developed to specifically address developed downhill ski area issues and concerns while still meeting all of the required laws, policies, and regulations. The creation of a backcountry ski area near Skidway campground in the Big Belts GA is a site-specific change that is beyond the scope of the forest plan revision process.

CR200 Primitive ROS vs. Wilderness

Concern: Commenters asked the FS to consider primitive designations in several areas, including:

- The Highwoods, Elkhorns, and the Badger Two Medicine;
- In areas recommended for wilderness; and
- The non-motorized areas in Tenderfoot Creek in the Smith River corridor.

Response: A range of alternatives were considered for RWAs in the both the DEIS and FEIS. Based on this analysis as well as public comments, in the 2020 Forest Plan, seven (7) recommended wilderness areas are included in the preferred alternative (alternative F). In addition, alternative F includes several primitive ROS areas outside of recommended wilderness, including:

- Badger Two Medicine in the Rocky Mountain Range GA;
- A core area within the Elkhorns GA;
- Deep Creek and the lower portion of Tenderfoot Creek in the Little Belts GA; and
- The west portion of the Big Snowies in the Snowies GA.

CR201 Travel Plan – Recommended Changes

Concern: The FS should consider general and specific concerns regarding current recreation access for motorized and mechanized recreation uses across the forest. Commenters voiced specific concerns related to:

- Blacktail Road on Grassy Mountain;
- Closed roads in the Lincoln area;
- Trails in the South Fork Deep Creek;
- Pilgrim Creek;
- Tillinghast Creek;
- Blackfoot Valley GPAA claims; and
- General road closures

Response: The responsible official chose not to include travel plan changes within the alternatives for forest plan revision process. A range of alternatives were considered for motorized/mechanized means of transportation within RWAs. Based on this analysis as well as public comments, in the 2020 Forest Plan, both motorized and mechanized means of transportation would not be suitable within RWAs in the preferred alternative F. These changes in suitability may be reflected in a future site-specific decision and

would reduce the amount of motorized and mechanized recreation access in each RWA. Other site-specific changes to existing travel plans should be brought to the District Ranger of the applicable ranger district.

Recreation access

CR16 Specific Trail Changes/Requests

Concern: The Forest should use the forest planning process to make site specific travel planning changes.

Response: The 2020 Forest Plan is programmatic in nature, guiding future project and activity decision-making, and does not make site-specific road, trail, or area motor vehicle use designations, or authorize road or trail construction.

Potential site-specific changes and/or recommendations to the existing travel plans, including the development of additional trails, may be submitted to the District Ranger at the ranger district where recommendations are being made. Site-specific analysis in compliance with the NEPA will need to be conducted in order for prohibitions or activities to take place on the ground, in compliance with the broader direction of the 2020 Forest Plan.

CR28 Big Snowies – Support Mountain Bike Use

Concern: The FS should allow mountain bike use to continue on the trails in the Big Snowy Mountains, particularly on the trails that access the Ice Caves. (Trails #403, #490, and #493).

Response: In the DEIS and FEIS, a range of alternatives was considered for mountain bike use in RWAs. In the preferred alternative, changes were made to the Snowies RWA to accommodate established motorized over-snow use and to provide access to the more popular trails for mountain bike use (mechanized means of transportation). In the preferred alternative, the RWA boundary would exclude those trails that access the Ice Caves (Trails #403, #490, and #493) and provide a loop trail riding experience based out of the Crystal Lake Campground complex. The area outside of the RWA is located within the Big Snowies WSA and would continue to be managed for the wilderness character, as it existed in 1977, and for its potential for inclusion in the National Wilderness Preservation System. As such it would be managed as it currently exists, for a primitive ROS setting, except in those locations where motorized over-snow use is allowed within a semi-primitive motorized ROS in winter.

CR30 Motorized Access – Maintain and/or Improve Access

Concern: Commenters wish to maintain and/or increase motorized access to the National Forest.

Response: The HLC NF recently completed travel plans for all locations across the forest; therefore, broad shifts in motorized access were not identified in the need for change. The responsible official chose not to include travel plan changes within the alternatives for 2020 Forest Plan.

A range of alternatives were considered for motorized/mechanized means of transportation within RWAs. Based on this analysis as well as public comments, in the 2020 Forest Plan, both motorized and mechanized means of transportation would not be suitable within RWAs in the preferred alternative F. These changes in suitability may be reflected in a future site-specific decision and would reduce the amount of motorized and mechanized recreation access in each RWA.

Other site-specific changes to existing travel plans are beyond the scope of the forest planning process and should be brought to the District Ranger of the applicable ranger district.

CR31 Core area of the Elkhorns GA – Mechanized Uses

Concern: Commenters oppose the plan component which states that mechanized means of transportation are not suitable within a core area of the Elkhorns GA in alternative C. One commenter opposes designation of the Wildlife Management Unit (WMU).

Response: After reviewing public comment received on the alternatives in the DEIS and the FEIS, the suitability of mechanized means of transportation (mountain bikes) within a core area of the Elkhorns GA was not included in the preferred alternative. Please see Recreation Access, section of the FEIS for more information.

CR46 Tourism/access

Concern: Comments were received regarding tourism and access, including:

- A concern for an appropriate amount of access to be allowed for the public and to prioritize accessibility for all, including those with physical handicaps, to our public lands;
- Tourism from recreation of all kinds and the associated economic activity from both resident and non-resident travel should be capitalized on;
- There is value to maintaining and increasing the road network on public lands;
- Increasing roads, trails, and access for the handicapped will benefit the local economy via tourism; and
- Sufficient wilderness already exists on the Forest.

Response: All action alternatives include plan components designed to enhance recreation opportunities and access and provide safer experiences to recreationists. Recreation monitoring is conducted via the National Visitor Use Monitoring program, and the jobs and income contributed from recreation across alternatives are reported in tabular format in the Environmental Consequences section of the Social and Economics section of the FEIS. The contributions of designated areas (e.g. wilderness) to the quality of life of the public are presented, and the tradeoffs among user groups and their varying perspectives and desires with respect to wilderness have been considered.

While increasing motorized access may benefit some user groups and the economy, because of the recently completed travel plans for the forest, broad shifts in motorized suitability were not identified in the need for change. Therefore, variations in motorized suitability across alternatives only reflect variations in what is recommended for wilderness. Site-specific route or area designations that increase access can be made consistent with the plan after plan approval.

The Forest completed its wilderness inventory and evaluation according to the 2012 Planning Rule. A range of alternatives for the number of RWAs to include (0-16) was considered. Based on public input and resource analysis, 7 RWAs areas are included in the preferred alternative.

The FS is required to meet all law and policy related to accessibility, particularly within developed recreation sites. Dispersed recreation sites are not required by law to meet accessibility standards. Neither is it policy or law to provide motorized access to areas that are closed to motorized recreation use in order to meet accessibility standards, except in wilderness where motorized wheelchair use is permitted according to the Americans with Disabilities Act of 1990 (Public Law 101-336).

CR76 Mountain Bike Access on Forest

Concern: Regarding mountain bike access on the HLC NF, commenters thought that either:

a. The FS should support, and not limit, mountain bike access within the National Forest; or

b. The FS should prohibit mountain bikes use in National Forests altogether.

Response: Thank you for your comments.

CR83 Aviation Access

Concern: Comments regarding aviation access were received, including:

a. Requests to support or expand aviation access;

b. Requests for airstrips within the Wilderness Preservation System;

c. Requests that aircraft should not be considered a motorized vehicle;
d. Requests for the FS to not increase aircraft landing areas or facilities; and
e. Requests for the FS to address unmanned aerial devices.

Response:

a. The preferred alternative provides specific plan components for aviation recreation. See 2020 Forest Plan, access section.
b. The preferred alternative (alternative F) identifies recreation aviation as a motorized recreation use and provides direction for the settings where that use is most appropriate. See 2020 Forest Plan, recreation settings, ROS sections. As a motorized recreation use, aircraft would not be permitted in primitive or semi-primitive nonmotorized ROS settings. This would include wilderness and RWAs.
c. The preferred alternative clearly lays out the ROS settings where motorized and nonmotorized recreation uses are appropriate. Aircraft with motors are considered "motorized" in the 2020 Forest Plan, regardless of their perceived impact to the land. Aircraft without motors would not be considered "motorized" and may be appropriate in semi-primitive nonmotorized settings. The Forest is in support of internal trailheads so long as they are located within semi-primitive motorized, roaded natural, and rural ROS settings.
d. Determining where landing strips are most appropriate is a site-specific analysis and is outside the scope of revising the forest plan.
e. The regulation of unmanned aerial devices is controlled by the Federal Aviation Administration. The FS cannot regulate how these devices are used when they are in the air.

CR144 Motorized Access – Limit or Eliminate

Concern: The FS should exclude, or limit motorized uses from "wild" areas on the National Forest. Commenters recommended several specific areas where motorized use should be prohibited:

- Big Snowies;
- Nevada Mountain;
- Badger Two Medicine; and
- Inventoried Roadless Areas

Response: Except within RWAs, the responsible official has decided not to make travel plan changes within the forest plan revision process. Under current travel plans, motorized uses are not allowed in the Badger Two Medicine, most of the Big Snowies, and the Nevada Mountain areas. IRAs have been allocated to both semi-primitive motorized and semi-primitive nonmotorized ROS settings.

The HLC NF recently completed travel plans for all locations across the forest; therefore, broad shifts in motorized access were not identified in the need for change. The responsible official chose not to include travel plan changes within the alternatives for 2020 Forest Plan.

A range of alternatives were considered for motorized/mechanized uses within RWAs. Based on this analysis as well as public comments, in the 2020 Forest Plan, both motorized and mechanized means of transportation would not be suitable within RWAs in the preferred alternative F. These changes in suitability may be reflected in a future site-specific decision and would reduce the amount of motorized and mechanized recreation access in each RWA.

Other site-specific changes to existing travel plans are beyond the scope of the forest planning process and should be brought to the District Ranger of the applicable ranger district.

CR154 Core of the Elkhorns GA and Mechanized Means of Transportation

Concern: The FS should not allow motorized or mechanized recreation uses within the Elkhorns Core area.

Response: Based on the analysis in the DEIS and the public input around this issue, the HLC NF decided mechanized means of transportation (including mountain bikes) would be suitable within the core area of the Elkhorns GA in the preferred alternative. Motorized uses are not allowed in this area as determined by the existing travel plan. Please see the Recreation Access section of the FEIS for more information on the analysis.

CR208 Mountain Bikes – Erosion

Concern: The FS should consider the minimal impact that mountain bike users have on the environment when determining where mountain bikes should and should not be permitted. Commenters assert that mountain bike users create minimal impact to trails and surrounding areas when compared to horses and hikers, and that there is little scientific proof that mountain bikes create soil erosion.

Response: A range of alternatives around this issue was included in the DEIS and FEIS. Following analysis and review of all of the public comments, the preferred alternative for the 2020 Forest Plan has the following plan component (FS-RECWILD-SUIT-01) for RWAs: "Motorized and mechanized means of transport are not suitable in recommended wilderness areas. Exceptions may be made for authorized permitted uses, valid existing uses, or in emergencies involving public health and safety that are determined on a case by case basis."

Mechanized means of transportation, including mountain bikes, is suitable in all areas on the HLC NF outside of wilderness and RWAs.

CR209 Recreation/Trail Conflicts

Concern: Commenters had concerns related to user conflict in several areas.

Response: Conflict resolution between user groups is a site-specific issue that could be addressed in future site-specific projects and is beyond the scope of forest plan revision.

The responsible official has decided not to make changes regarding specific trails within the forest plan revision process. Potential site-specific changes and/or recommendations to the existing travel plans, including the designation of trails for specific uses or the creation of speed limits to reduce user conflicts on specific trails, may be submitted to the District Ranger at the ranger district where recommendations are being made. Additional analysis at that level may be warranted.

CR287 Recreation Access

Concern: Commenters requested that plan components address recreation access issues, especially the acquisition of Right of Way easements through private lands to landlocked parcels of NFS lands. Additionally, these commenters asked to include direction for travel planning and to consider a no-net increase of trails unless adequate maintenance on existing trails can be conducted.

Response: The HLC NF is committed to pursuing Right of Way easements during the lifetime of the 2020 Forest Plan. Please see FW-ACCESS-GO-01, FW-LAND-DC-2, FW-LAND-DC-03, FW-LAND-OBJ-01, and FW-LAND-GDL-01.

Travel plan development and implementation are beyond the scope of the forest plan revision process.

Scenery

CR94 Scenery

Concern: Commenters requested additional clarifying language regarding scenery in each GA. They also asked the FS to clearly explain the effects to timber harvest resulting from high and very high SIO classifications. More clarification on the scenic integrity objectives was also requested.

Response: Additional language was added to each GA in the 2020 Forest Plan to provide additional clarity regarding the terms used to describe scenery. Additional language was also added in the FEIS to describe the effects to timber harvest resulting from high and very high SIOs.

Scenic character descriptions provide baseline scenery information for each GA. These character descriptions are found in appendix H of the 2020 Forest Plan. FW-SCENERY-DC-02, FW-SCENERY-DC-03, and FW-SCENERY-GDL-01 provide direction for the scenic character in the 2020 Forest Plan. Desired conditions describe characteristics towards which management should be directed. Guidelines are established to help achieve or maintain a desired condition.

Scenic character and scenic inventory objectives are described in Landscape Aesthetics: A Handbook for Scenery Management, Agriculture Handbook 701. Handbook 701 describes the most current FS direction for the management of scenery resources on NFS lands, and provides the process used for this analysis. The HLC NF used the guidance of Handbook 701 in the development of scenic integrity objectives for the 2020 Forest Plan.

Administratively designated areas

CR21 Recommended Wilderness Areas – General and Specific Support

Concern: The Forest should consider designating RWAs within the 2020 Forest Plan. Commenters recommended the following specific areas to be considered for inclusion as RWAs:

- Nevada Mountain;
- Loco Mountain (north Crazies);
- Tenderfoot;
- Big Snowies;
- Middle Fork Judith;
- Deep Creek;
- Baldy Mountain;
- Camas Creek;
- Grassy Mountain; and
- Middleman-Trout Creek.

Response:

RWAs were identified through a detailed wilderness inventory and evaluation process used to identify those areas within the forest which best met the criteria for consideration of their wilderness characteristics. All IRAs were considered in that analysis.There is a range of RWAs included in the alternatives. The preferred alternative, alternative F, includes seven (7) RWAs.

CR23 Recommended Wilderness Areas – Prohibit Motorized/Mechanized Uses

Concern: The Forest should prohibit motorized and mechanized means of transport in RWAs.

Response: A range of alternatives around this issue was included in the DEIS and the FEIS. Following analysis and review of all of the public comments, the preferred alternative includes the following plan component (FS-RECWILD-SUIT-01) for RWAs: "Motorized and mechanized means of transportation are not suitable in recommended wilderness areas. Exceptions may be made for authorized permitted uses, valid existing uses, or in emergencies involving public health and safety that are determined on a case by case basis."

The identification of suitability helps determine whether future projects and activities are consistent with desired conditions. The FEIS also includes an appendix that provides an analysis of the direct effects of potential future restrictions of motorized and mechanized means of transportation within RWAs, which would be used in a subsequent analysis and decision to implement the suitability plan components.

CR26 Tenderfoot/Deep Creek

Concern: The FS should consider a Special Management Area for the Tenderfoot/Deep Creek area along the Smith River corridor.

Response: A range of alternatives was considered for the Tenderfoot and Deep Creek areas in the DEIS, the FEIS, and in the 2020 Forest Plan. Based on the preferred alternative, alternative F, the Deep Creek and Tenderfoot Creek drainages would not be managed as RWA. Instead, these areas would be assigned a primitive ROS and would be managed for a primitive recreation setting. Access into these primitive ROS areas (see ROS map) would be nonmotorized and mechanized means of transportation would be allowed on established trails.

CR38 Eligible WSR Study – General Support

Concern: Multiple commenters were generally supportive of the eligible wild and scenic river study. Several offered specific additions to the final listing, including:

- Belt Creek (Monarch to Forest boundary) -recreation and scenery ORVs;
- South Fork Dupuyer Creek (headwaters to Forest boundary) - recreation and geology ORV;
- Tenderfoot Creek; and
- Deep Creek; and
- Permittees and ranchers in the Elkhorns would like the FS to reconsider Staubach Creek in the Elkhorns. These commenters are concerned with the potential negative implication for future grazing and other uses of the area if Staubach Creek is an eligible WSR.

Response: As per direction in FSH 1909.12 Chapter 80, the HLC NF conducted an eligibility study on each free-flowing river/stream on the Forest to determine its potential for inclusion in the National Wild and Scenic Rivers system. Each river was also studied to determine whether it possessed an outstandingly remarkable value. Those streams and rivers which were both free-flowing and had at least one outstandingly remarkable value were identified as eligible for inclusion as a wild and scenic river. The study identified 45 rivers/streams on the HLC NF that were eligible for inclusion.

Rivers/streams brought forward from the public for consideration in this process were also reviewed. Belt Creek, South Fork Dupuyer Creek, and Deep Creek were studied but were not found to have at least one outstandingly remarkable value. Tenderfoot Creek, from the FS boundary to Iron Mines Creek, was found to be eligible and has ORVs of Recreation and Fish. Staubach Creek was identified as an eligible river due to the outstandingly remarkable value as an important fishery. Please see appendix G of the 2020 Forest Plan for further information.

CR40 IRAs – Recommended Plan Components

Concern: Commenters provided various recommendations for plan components in the Inventoried Roadless Area (IRA) section of the 2020 Forest Plan. These included requests for clear plan components regarding suitability of management activities, including timber, roads and restoration in IRAs.

Response: Where applicable, changes were made in the 2020 Forest Plan components and suitability for various management activities. Please see the IRA section of the 2020 Forest Plan.

CR45 South Hills Recreation Area – Support

Concern: Commenters support the designation of the South Hills Recreation Area. Some suggested that the FS should establish this area as a National Recreation Area.

Response: The creation of the South Hills Recreation Area would allow the FS to better manage recreation activities and provide focused recreation services in this area. The FS has the authority to designate and manage parts of the forest as special recreation areas; however, only Congress may establish an area as a National Recreation Area.

CR49 RWA Boundary Adjustments

Concern: Multiple commenters had suggestions for boundary adjustments for several RWAs, including:

- Middle Fork Judith RWA in alternative D;
- Baldy-Edith RWA;
- Arrastra RWA;
- Silver King RWA;
- Nevada Mountain RWA;
- Red Mountain RWA; and
- Colorado Mountain RWA in alternative D.

Response: A number of changes were made to RWA boundaries in the preferred alternative. All RWA boundaries would be set back 300 feet from open roads or private land boundaries. The Nevada Mountain RWA was adjusted in alternative F so that the Helmville-Gould Trail could remain open. Additional acres were added to the Red Mountain RWA to follow the watershed divide between Red Creek and North Fork Copper Creek. The switchback on Trail 485 is located outside of the Red Mountain RWA boundary. Please see the RWA section of the 2020 Forest Plan as well as the analysis in the FEIS for more information.

CR55 Elkhorns GA – Primitive ROS within the core area

Concern: Commenters support allocating a primitive ROS to the core area of the Elkhorns GA.

Response: The core area of the Elkhorns GA was allocated a primitive ROS in the preferred alternative, alternative F.

CR86 Research Natural Areas and Botany Special Areas

Concern: Commenters had suggestions/questions regarding RNAs and botany special areas, including:

a. Support for the designation of specific RNAs (Indian Meadows Creek; Granite Butte);

b. RNAs should be unsuitable for off-trail motor vehicle use year-round;

c. Support the creation of the Poe-Manley RNA if activities to achieve vegetation desired conditions are allowed;

d. The plan documents need to explain RNA designation process;

e. The EIS does not provide information on how Poe-Manley RNA would be managed (the table provided is for the Tenderfoot Experimental Forest);

f. The forest plan needs to state which RNAs are appropriate to log and why; and

g. Please include botanical special areas in list of administratively designated areas. The Green Timber Basin/Beaver Creek/Sawmill Flat area should be designated as a botanical special area.

Response:

a. Indian Meadows and Granite Butte RNAs are included in all alternatives. Indian Meadows has already been established. Granite Butte is a proposed RNA, as described in the RNA section of the FEIS.

b. Motorized uses are greatly constrained in RNAs in all alternatives. However, some of these uses would be allowed. In the 2020 Forest Plan, FW-RNA-SUIT-02 provides that winter motorized travel (over snow) may be allowed in RNAs so long as those uses do not threaten or interfere with the objectives or purposes for which the RNA is established. FW-RNA-SUIT-03 states that summer motorized travel is not suitable in RNAs except on routes that existed at the time the RNA was established; and new motorized routes are not suitable. RNAs are generally juxtaposed within other land designations that either prohibit or limit motorized use, such as nonmotorized ROS settings, IRAs, or RWAs.

c. Management in the Poe-Manley RNA would be guided by the establishment record, if and when the area is formally established as a RNA. The plan components in the 2020 Forest Plan do not preclude the potential for management activities that would maintain the desired natural conditions. This includes the possible use of prescribed fire, mechanical removal of trees, and other management actions to achieve the desired conditions in the establishment record or management plan of the RNA (FW-RNA-SUIT-01).

d. The RNA section of the FEIS provides additional information regarding how RNAs are designated.

e. Information is available in the specialist report and table references have been corrected. Details on Poe Manley RNA management is available in the designated areas section of the FEIS.

f. All RNAs are unsuitable for timber production. The no-action alternative also prohibits timber harvest. Under the action alternatives, FW-RNA-GDL-01 and FW-RNA-SUIT-01 provide that harvest could occur if it is allowed by the establishment records. The plan is not required to identify more site-specific guidance for each RNA.

g. Green Timber Basin/Willow Beaver Creek area has been proposed/designated as special emphasis area. It has been included in the list of administratively designated areas.

CR93 RWA – Allowing Chainsaws

Concern: Commenters support the use of chainsaws in RWAs and WSAs.

Response: Chainsaw use is suitable within RWAs and WSAs in the preferred alternative, alternative F.

CR131 Smith River Corridor

Concern: Commenters feel that the Smith is iconic, and should be protected, including protection of stream banks. This area holds special memories for commenters' family and friends and should be managed as a "special management area".

Response: The HLC NF agrees that the Smith River is a special place. The Smith River Corridor was identified as a special emphasis area in all of the action alternatives, including the preferred alternative, alternative F. This recreation river corridor has specific plan components that support the semi-primitive nonmotorized setting and protect the natural resources for which it is renowned. No travel plan changes would be needed to be consistent with the preferred alternative for this area.

CR132 IRAs – Protection of Roadless Areas

Concern: Commenters asked for all IRAs to be designated as RWAs or some other protected wild area designation.

Response: The HLC NF followed the wilderness evaluation process to determine which lands should be included in the National Wilderness Preservation System. To accomplish this, the Forest used the four steps outlined in the 2012 Forest Service Planning Rule and Chapter 70 of the Forest Service Land Management Planning Handbook 1909.12. All IRAs were considered in this process. There is a range of RWAs included in the alternatives. The preferred alternative, alternative F, includes 7 RWAs.

CR135 RWAs – Opposed to Recommended Wilderness Areas

Concern: The FS should not create RWAs.

Response: During the Forest Planning process, the FS was required to identify and evaluate lands that may be suitable for inclusion in the National Wilderness Preservation System (FSH 109.12, chapter 70). Potential RWAs were identified through a detailed wilderness evaluation process used to identify those areas within the forest which best met the criteria for consideration of their wilderness characteristics. Please see appendix E of the FEIS.

Nine (9) RWAs were identified in the proposed action, alternative B. After public scoping on the proposed action, a range of alternatives, which included from 0 to 16 RWAs, were developed to address concerns brought forward by the public. Alternative E was developed to respond to comments asking the Forest to consider an alternative that did not identify RWAs. All alternatives were analyzed in the FEIS.

The preferred alternative, alternative F, includes seven (7) RWAs.

CR138 RWA – Allow Motorized/Mechanized Uses

Concern: Multiple commenters thought that motorized uses and mechanized means of transportation should be suitable within RWAs. Some did not think that it was within the HLC NF or the Region's authority to make motorized and mechanized means of transportation unsuitable within RWAs.

Response: Suitability of motorized and mechanized means of transportation within RWAs was an issue that drove alternatives development in the DEIS and FEIS. Following the analysis and review of all of the public comments, the preferred alternative, alternative F, includes the following plan component (FS-RECWILD-SUIT-01) for RWAs: "Motorized and mechanized means of transportation are not suitable in recommended wilderness areas. Exceptions may be made for authorized permitted uses, valid existing uses, or in emergencies involving public health and safety that are determined on a case by case basis."

The identification of suitability helps determine whether future projects and activities are consistent with desired conditions. The FEIS also includes an appendix that provides an analysis of the direct effects of potential future restrictions of motorized and mechanized means of transportation within RWAs, which would be used in a subsequent analysis and decision to implement the suitability plan components.

CR146 Wilderness Evaluation Process

Concern: Commenters had concerns about the wilderness evaluation process used by the HLC NF.

Response: During the Forest Planning process, the FS was required to identify and evaluate lands that may be suitable for inclusion in the National Wilderness Preservation System (FSH 109.12, chapter 70). Potential RWAs were identified through a detailed wilderness evaluation process used to identify those areas within the forest which best met the criteria for consideration of their wilderness characteristics. Please see appendix E of the FEIS.

Based on public comment to the proposed action, both Camas Creek and Colorado Mountain were included as RWAs in alternative D and analyzed in the FEIS. The preferred alternative, alternative F, does not include Camas Creek or Colorado Gulch as RWAs.

CR149 South Hills Recreation Area – Recommended Plan Components

Concern: Various South Hills Recreation Area plan component and other editorial suggestions were provided.

Response: Changes were made where applicable, please see the South Hills Recreation Area section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule. Please see the forestwide plan components, which are also applicable in the SHRA.

CR176 Core area of the Elkhorns Recommended Wilderness Area Designation

Concern: Commenters expressed support for recommending a core area of the Elkhorns for wilderness designation.

Response: Potential RWAs were identified through a detailed wilderness evaluation process used to identify those areas within the forest which best met the criteria for consideration of their wilderness characteristics. Details of the wilderness evaluation process are found in appendix E of the FEIS.

The core area of the Elkhorns was studied in the wilderness inventory and evaluation process but was not brought forward as a RWA under any alternative. Instead the entire Elkhorns GA was maintained as a Wildlife Management Unit. Please see the Elkhorns GA section of the 2020 Forest Plan.

CR177 Elkhorns Wildlife Management Unit

Concern: The FS should maintain the Elkhorns Wildlife Management Unit designation and/or pursue a Congressional designation of this area.

Response: The FS agrees that the Elkhorns is a special place and should continue to be managed as a Wildlife Management Unit, similar to how it was managed under the 1986 Helena Forest Plan. The WMU was included in all alternatives in the DEIS and is also designated as a special emphasis area in the 2020 Forest Plan and is included in the preferred alternative (alternative F). However, Congressional designation of this area is not within the authorization of the FS.

CR181 Core area of the Elkhorns GA – Boundary Adjustment

Concern: The FS should adjust the northern boundary of the Elkhorns core area. Commenters provided recommendation for the new adjusted boundary.

Response: Based on public input, the overall boundary for the core area of the Elkhorns GA area was adjusted between the draft and final and is included in the preferred alternative, alternative F. To the extent possible, the adjusted boundary follows natural features on the landscape such as ridgelines or creek bottoms. In a few locations, it follows property boundaries or buffers roads or trails. The northern boundary of the core area in the Elkhorns GA in the Willard Creek/McClellan area was adjusted to the south.

CR210 Recommended Wilderness Area Plan Components

Concern: Multiple comments were received regarding RWA plan components. Requests included:

a. Additional desired conditions;
b. Additional FW information included in in GA sections;
c. Information on overlapping designations/plan components;
d. Move RWA/WSR out of congressionally designated areas; and

e. Requests for additional suitability statements in RWAs and WSAs, including the Middle Fork Judith WSA.

Response:

a. Changes to plan components were made where applicable; please see the RECWILD section of the 2020 Forest Plan. Where plan components were not changed as per the comments, the Forest determined that the retained plan components were sufficient to meet the obligations of the 2012 Planning Rule.
b. Plan components for RWAs are found in the forestwide plan components section. There is no need to repeat them in the GA section.
c. Where multiple designations overlap, the plan components associated with the most restrictive designation apply.
d. The analysis for both RWAs and eligible WSRs has been relocated into the Administratively Designated section of the FEIS.
e. Suitable recreation activities are determined by the desired ROS settings. See Desired ROS maps, appendix A of the 2020 Forest Plan. Desired ROS settings are identified. Forest plan direction and current travel plans establish where motorized uses are suitable. In accordance with national policy, mechanical means of transportation (mountain bikes) are suitable in all ROS settings, unless those areas are specifically closed due to legislative action, such as congressionally designated wilderness, or by closure order at the Forest or District levels. Additional suitability plan components specific to the Middle Fork Judith WSA are not necessary because the suitability of activities within the Middle Fork Judith are addressed by other forestwide plan components and ROS.

CR283 Inventoried Roadless Areas – Conservation

Concern: Commenters support the continued conservation and management of IRAs according to the direction provided in the 2001 Roadless Conservation Management Rule.

Response: The FS must follow all law, regulation, and policy related to natural resources on the HLC NF, and, therefore, must follow the direction provided in the 2001 Roadless Area Conservation Rule.

Congressionally designated areas

CR115 Continental Divide National Scenic Trail – Prohibit Motorized/Mechanized Uses

Concern: The FS should prohibit motorized and mechanized uses along the entire length of the CDNST.

Response: Limiting motorized and mechanized uses along the CDNST is beyond the scope of the forest planning process. Except for wilderness and RWAs, motorized and mechanized means of transportation along the CDNST, have been established by summer and winter travel management plans. Recommended changes to these existing plans are site specific and, therefore, not forest planning issues. These potential changes should be discussed with the District Ranger at the applicable Ranger District.

CR117 Monitoring – Continental Divide National Scenic Trail

Concern: Commenters had questions and suggestions regarding monitoring of the CDNST.

Response: Elements of the CDNST Comprehensive Management Plan are monitored annually. There is no need to repeat this monitoring as a part of the 2020 Forest Plan. Additionally, the FS must follow all laws, regulations, and policies that provide direction for the CDNST.

FSM 2353.44b directs the FS to complete a CDNST Unit Plan for those segments of the trail that cross the HLC NF. There is no need to repeat this policy in the 2020 Forest Plan.

CR124 Wilderness – Plan Components

Concern: Commenters had a number of suggestions/recommendations for Wilderness plan components.

Response: Changes to plan components were made where appropriate. Please see the Wilderness section of the 2020 Forest Plan. Where plan components were not changed per the comment, the Forest determined that the retained plan components were sufficient to meet obligations under the 2012 Planning Rule.

CR130 Lewis and Clark National Historic Trail – Recommended Plan Alternatives

Concern: Commenters recommended changes to plan components and other editorial suggestions for the Lewis and Clark National Historic Trail section of the 2020 Forest Plan.

Response: Various LCNHT plan components and other editorial suggestions were provided. Changes to plan components of the 2020 Forest Plan were made where appropriate, please see the LCNHT, wildlife, and ROS sections of the 2020 Forest Plan. Where plan components were not changed per the comments, the Forest determined that the retained plan components were sufficient to meet obligations under the 2012 Planning Rule.

CR147 Wilderness Study Areas – Support Wilderness Designation

Concern: The FS should recommend the Middle Fork Judith and/or the Big Snowies WSAs as recommended wilderness areas.

Response: During the Forest Planning process, the FS was required to identify and evaluate lands that may be suitable for inclusion in the National Wilderness Preservation System (FSH 109.12, chapter 70). Potential RWAs were identified through a detailed wilderness evaluation process used to identify those areas within the forest which best met the criteria for consideration of their wilderness characteristics. Both the Middle Fork Judith and the Big Snowies WSAs were considered in that analysis. Please see appendix E of the FEIS.

A range of alternatives were considered for the WSA areas in the DEIS and FEIS. Based on this analysis, as well as public comments, the 2020 Forest Plan identifies approximately 67,000 acres of the Big Snowies WSA would be RWAs in the preferred alternative (alternative F). The Middle Fork Judith WSA was not chosen for recommended wilderness in the preferred alternative. However, much of the area was allocated to a primitive ROS category that would protect its wilderness characteristics.

CR179 Wilderness Study Areas – Oppose Wilderness Designation

Concern: Since the Big Snowies and Middle Fork Judith WSA are already IRAs and WSAs, the Forest should not consider them for RWAs.

Response: Potential RWAs were identified through a detailed wilderness evaluation process used to identify those areas within the forest which best met the criteria for consideration due to their wilderness characteristics. All lands outside of designated wilderness were included in this process, including both the Middle Fork Judith and the Big Snowies WSAs.

A range of alternatives were considered for the WSA areas in the DEIS. Based on this analysis as well as public comments, in the 2020 Forest Plan, approximately 66,894 acres of the Big Snowies WSA would be recommended wilderness area in the preferred alternative, alternative F. The Middle Fork Judith WSA was not chosen for recommended wilderness in the preferred alternative, however, much of the area was allocated to a primitive ROS category that would protect its wilderness characteristics.

CR182 Designated Areas – Plan Components

Concern: Commenters recommended changes and additions to plan components for RWAs, WSAs, and IRAs. These included requests for the FS to:

a. Add the following language to the WILD, RECWILD, and WSA sections of the 2020 Forest Plan: "restoration activities (such as management ignited fires, active weed management) are used in wilderness areas to protect and/or enhance the wilderness characteristics of these areas and "Non-native invasive species are nonexistent or in low abundance and do not disrupt ecological functions";

b. Coalesce all Suitability plan components into one location to allow the public to locate and meaningfully understand the proposed Suitability plan components; and

c. Incorporate plan components that state livestock grazing allotments be retired in designated Wilderness and in Wilderness Study Areas, so that such areas have the wild character intended by the Wilderness Act.

Response: Changes to plan components were made where appropriate, please see the Recommended Wilderness section of the 2020 Forest Plan. Where plan components were not changed per the comment, the Forest determined that the retained plan components were sufficient to meet obligations under the 2012 Planning Rule. Additionally:

a. Restoration activities are allowed in RWA and WSAs. Please see FW-RECWILD-SUIT-02 and FW-WSA-SUIT-03. Natural ecological process and disturbance should be the primary forces affecting the composition, structure, and pattern of vegetation in designated wilderness areas. Restoration actions would be inappropriate in these areas.

b. Suitability components change depending upon the designated area and, therefore, need to be placed within the plan components established by designated area.

c. Section 4(d)(4)(2) of the Wilderness Act (1964) states "the grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture." Wilderness range is to be managed in a manner that utilizes the forage resource in accordance with established wilderness objectives (36 CFR 293.7). The HLC NF would continue to follow guidance under the Wilderness Act (1964) and FSM 2300 regarding pre-existing land uses and livestock grazing permits within designated, recommended, and wilderness study areas. Grazing permits are the sole property of the Federal government and bestow no right or title of interest other than to the United States (CFR 222.3(b)). Allotment closures are not to be carried out at the requests of any third party. In the event of a permit waiver or an allotment becomes vacant, a new grazing authorization may be issued within the wilderness area allotments (FSM 2323.24-Permits). Allotment restoration activities are allowed in recommended wilderness and wilderness study areas. Please see FW-RECWILD-SUIT-02 and FW-WSA-SUIT-03. Natural ecological process and disturbance should be the primary forces affecting the composition, structure, and pattern of vegetation in designated wilderness areas. Restoration processes would be inappropriate in these areas.

CR186 Continental Divide National Scenic Trail – Recommended Plan Components

Concern: Commenters had many suggestions for Plan Component additions and edits in the Continental Divide National Scenic Trail section of the 2020 Forest Plan.

Response: Various CDNST plan component and other editorial suggestions were provided. Changes were made where appropriate. Please see the CDNST section of the 2020 Forest Plan. Where plan components were not changed per the comment, the Forest determined that the retained plan components were sufficient to meet obligations under the 2012 Planning Rule.

CR187 Continental Divide National Scenic Trail – Support for Mechanized Means of Transportation

Concern: The FS should support the use and expansion of the CDNST for mechanized recreation (mountain bike) use.

Response: In all alternatives, mechanized means of transportation (including mountain bikes) is suitable on the CDNST except within designated wilderness and RWAs.

CR188 Continental Divide National Scenic Trail – DEIS Comments

Concern: Multiple commenters had suggestions on the CDNST plan components and analysis.

Response: Plan components were developed for all designated areas on the HLC NF, including those that protect wilderness character and the nature and purposes of the National Scenic and Historic Trails. All action alternatives include plan components for the CDNST, and the preferred alternative, alternative F, establishes a CDNST corridor that extends 1/2 mile either side of the CDNST trail. Plan components for the CDNST provide direction within this corridor. Please see the CDNST section under Designated Areas in the forestwide section of the 2020 Forest Plan. The corridor map is displayed in appendix A of the forest plan. Analysis for the CDNST trail corridor is included in the FEIS.

CR205 Wilderness Fire

Concern: Commenters hold concerns about the management of fire within recommended and designated wilderness.

Response: Forest Service Manual (FSM) provides direction relating to fire management in designated areas. This direction is referenced in chapter 3 under section 3.3.2 Regulation and Policy in the DEIS. Regarding equipment, fire suppression and prescribed fire in wilderness see FSM 2320 Wilderness Management. Relating specifically to prescribed fire see FSM 2320 Wilderness Management and 5140 Hazardous Fuels Management and Prescribed Fire addresses wilderness.

CR207 Wilderness Study Areas – Legislation

Concern: Comments regarding Wilderness Study Act areas included:

a. The FS should support the Senator Daines' Bill to rescind the Wilderness Study Act in the Big Snowy Mountains; and

b. Allowing mechanized means of transportation in WSAs is inconsistent with the Montana Wilderness study act of 1977 and a departure from the Proposed Action.

Response:

a. The potential for Congress to rescind the 1977 Montana Wilderness Study Act is beyond the scope of the forest plan revision process. The FS does not advocate for or against legislation.

b. The Montana Wilderness Study Act of 1977 does not mention the allowance or prohibition of mechanical uses within WSAs. A Northern Region supplement to the Forest Service Manual 2329 was published in 2008 which provided clarification for management of WSA's. The Region 1 Manual Supplement includes guidance for management to maintain wilderness character, management of existing uses, and new uses such as mountain bikes.

   There were no restrictions to mechanized means of transportation in WSA areas in 1977. However, under the Northern Region supplement to Forest Service Manual 2339, "Mountain bikes may be allowed on trails that had established motor-bike use in 1977, or on non-motorized trails as long as the aggregate amount of mountain bike and motorcycle use maintains the wilderness character of the WSA as it existed in 1977 and the area's potential for inclusion in the National Wilderness Preservation System."

CR214 Conservation Management Areas

Concern: The FS should designate additional conservation management areas in the 2020 Forest Plan. Specific areas recommended include: Stonewall, Anaconda Hill, Specimen Creek, and Green Mountain.

Response: Conservation Management Areas are established by Congress. The HLC NF does not have the authority to create them.

Cultural, historical, and tribal resources

CR14 Badger Two Medicine

Concern: Commenters had several requests/suggestions for the management of the Badger Two Medicine area of the Rocky Mountain GA, including:

a. The FS should be in close consultation with the Blackfeet Nation to ensure that the Tribal rights and the cultural, historic, and spiritual values of the Badger Two Medicine area are protected;

b. The Badger Two Medicine area should be a RWA;

c. The Badger Two Medicine area should be co-managed with the Blackfeet Nation;

d. The area should not allow motorized or mechanized travel; and

e. The Blackfeet Nation had several suggestions for plan components.

Response:

a. The Badger Two Medicine Traditional Cultural District would be managed per the National Historic Preservation Act, the Archaeological Resource Protection Act, the Indian Sacred Sites Executive Order 13007, the American Indian Religious Freedom Act of 1978 and their implementing regulations, in addition to the forest plan components. All Federal undertakings within the Badger Two Medicine area would follow government to government consultation protocols as defined in the Forest Service Manual 1500, Chapter 1560 and Forest Service Handbook 1509.13, Chapter 10, as well 36 CFR 800.2 and Executive Order 13175.

b. It was the recommendation of the Blackfeet Nation to not make the Badger Two Medicine area into a RWA.

c. Proposed actions in the Badger Two Medicine area would follow all federal laws and regulations for cultural resources and government to government consultation, in addition to any plan components. Co-management of the Badger Two Medicine area between the Blackfeet Nation and the FS is outside of the scope of the 2020 Forest Plan.

d. Under current travel plans, motorized uses are not allowed in the Badger Two Medicine area. Mechanized means of transport (including mountain biking) are allowed in all areas expect for those areas closed by Congressional action (such as wilderness) or specific area closures. The preferred alternative (alternative F) allocates a primitive ROS to the Badger Two Medicine area and allows mechanized uses to continue.

e. Through consultation with the Blackfeet Nation, many of the suggested plan components were included in the 2020 Forest Plan, please see the Badger Two Medicine section.

CR15 Badger Two Medicine – Bison

Concern: Commenters had comments about livestock grazing and bison in the Badger-Two Medicine Area, including:

a. The Plan should reduce or eliminate any livestock grazing leases that currently exist within the Badger-Two Medicine Traditional Cultural District. Livestock grazing has demonstrated negative effects on riparian zones and other ecosystem processes and may possibly degrade the natural areas within the Badger-Two Medicine area;

b. Restore bison to the Badger-Two Medicine area during the life of the plan; and

c. The FS should acknowledge the special place that bison hold in Blackfeet history, culture, and spirituality and should work with the Blackfeet Nation to re-introduce bison in the Badger Two Medicine area.

Response:

a. The Badger-Two Medicine area contains a large, active cattle grazing allotment with multiple permittees. The permits are in good standing, with conservative stocking rates in place and a flexible AMP that can address resource concerns if they are identified. As long as term grazing permits are in good standing in the Badger-Two Medicine area, the HLC NF would continue to work with all parties including grazing permittees and the Blackfeet Nation, with a vested interest in the area. The 2020 Forest Plan is not a decision document that would reduce, restrict, or eliminate livestock grazing from the Badger-Two Medicine area.

   Administrative processes, which allow for the transfer of grazing preferences to occur between a willing seller and buyer based on the sale of base property or permitted livestock, may occur at any time. If the purchaser of base property or permitted livestock requests a change in class of livestock, the Forest could consider the request and effects to resources through the appropriate level of environmental review.

b. 36 CFR 222.1 defines Livestock as "animals of any kind kept or raised for use or pleasure." Under this definition, the FS would recognize bison as permitted livestock, requiring authorization by written permit for the owner to graze bison on NFS lands. If bison were proposed to be managed as a free-ranging animal recognized as a public wildlife resource, a larger geographic area level plan would need to be developed between MFWP, the Blackfeet Nation, HLC NF, and local private landowners in the Badger-Two Medicine area. Changes from cattle to bison grazing alone, depending on management, may or may not have a beneficial effect in moving towards desired resource conditions. Many variables would need to be considered for riparian areas and mountain meadows, as any type of unmanaged grazing could result in negative ecological effects to the area.

c. The FS acknowledges the historic and cultural significant of American bison to the indigenous Native American peoples. The 2020 Forest Plan includes components to maintain habitat for native wildlife species and support the native flora and fauna on the HLC NF, including habitat that would support American bison and other species of tribal interest. Please see plan components in the vegetation, wildlife, and tribal sections of the 2020 Forest Plan.

CR52 Badger Two Medicine – Other Resources

Concern: Various Badger Two Medicine plan components and other editorial suggestions were provided. These included:

a. Suggestions for additional suitability plan components in the Badger Two Medicine section;

b. Requests for additional components regarding the traditional cultural district;

c. Requests for more collaboration with the Blackfeet Nation, including co-management with the FS; and

d. Requests to not allow mechanized means of transportation in the Badger Two Medicine area.

Response: Changes to plan components were made where appropriate. Please see the Badger Two Medicine section of the 2020 Forest Plan as well as other applicable forestwide sections of the 2020 Forest Plan. Where plan components were not changed per the comment, the Forest determined that the retained plan components were sufficient to meet obligations under the 2012 Planning Rule.

a. Please see the Badger Two Medicine suitability section of the 2020 Forest Plan.

b. All actions within the Badger Two Medicine area would follow all federal laws and regulations for cultural resources and government-to-government consultation, in addition to any plan components.

c. Please see response to CR14.

d. Please see response to CR14.

CR102 Badger Two Medicine – Prohibit Motorized/Mechanized Use

Concern: The FS should prohibit motorized and mechanized uses in the Badger Two Medicine area.

Response: The responsible official has decided not to make travel plan changes within the forest plan revision process. Under current travel plans, motorized uses are not allowed in the Badger Two Medicine area. Mechanized means of transportation (including mountain biking) is allowed in all areas expect for those areas closed by Congressional action (such as wilderness) or specific area closures.

The preferred alternative (alternative F) allocates a primitive ROS to the Badger Two Medicine area and mechanized uses would be suitable.

CR123 Cultural/Historic/Tribal

Concern: Commenters had suggestions for added content to the cultural and historical characteristics sections of the 2020 Forest Plan.

Response: Thank you for your comments. In the 2020 Forest Plan, the HLC NF tried to be concise and only provide a brief history of the cultural/historic features of the planning area. Further information can be found in site records which are housed in the Helena Supervisors Office and the State Historic Preservation Office. Historical information can also be found in the Historic Overview of the Helena and Deerlodge National Forests written by Barb Beck in 1989. Also, some of the historic communities can be found on historic maps that can be found online. Other information about historic or cultural features can be provided to the Forest archaeology staff in Helena or Great Falls.

CR139 Badger Two Medicine and CMA

Concern: Commenters support the designation of the Badger Two Medicine area as a special emphasis area as well as the larger Rocky Mountain Front Conservation Management Area. Requests for suitability plan components were received, as well as requests for additional Conservation Management Areas.

Response:

- The preferred alternative, alternative F, designates the Badger Two Medicine area as a special emphasis area and establishes plan components to protect and/or maintain the special character of the area.
- The Conservation Management Area on the Rocky Mountain Ranger District was signed into law on December 19, 2014 as a part of Public Law 113-291. The preferred alternative, alternative F, further designates these areas as special emphasis areas and establishes plan components to protect and/or maintain the special character for which they were designated.
- Plan components were developed for both the Badger Two Medicine area and the Conservation Management Area to provide clear direction for the management and protection of these special emphasis areas.
- Conservation management areas are designated by Congress through legislation and designating them is beyond the scope of the 2020 Forest Plan.

CR150 Badger Two Medicine – ROS Primitive

Concern: The Forest should assign a Primitive ROS classification to the Badger Two Medicine area.

Response: Based on the DEIS analysis and public comments on this area, the FS agrees. The Badger Two Medicine area has been assigned a primitive ROS classification in the preferred alternative (alternative F) to protect the recreation, environmental, cultural and social values of this area.

CR151 Badger Two medicine – Wilderness Values

Concern: The Forest should protect the wilderness values of the Badger Two Medicine area.

Response: The Badger Two Medicine area has been assigned a primitive ROS classification in the preferred alternative (alternative F) to protect the recreation, environmental, cultural and social values of this area. The preferred alternative does not identify it as a RWA.

Lands

CR79 Lands

Concern: There were several comments related to land status, ownership, land use, and access. One commenter requested that the FS add back into the plan "NFS Boundaries are clearly marked to reduce encroachments and trespass" as a plan component. Another suggested that obtaining access to NFS lands must be a top priority.

Response: Handbook and manual direction requires that the FS clearly mark boundaries. Because this is required by FS regulations, it does not need to be included as a plan component. Improving access to NFS lands is a priority and is addressed in the 2020 Forest Plan through FW-LAND-DC-02, FW-LAND-OBJ-01, and FW-LAND-GDL-01.

CR110 Land Use

Concern: Commenters had concerns regarding land uses, including:

a. Request to add "compatible with other resource desired conditions" and to identify the suitability of areas for the appropriate integration of resource management and uses;
b. National and State recommendations and guidelines should be consulted to minimize the impacts of utility lines and other methods of energy production and delivery on wildlife. Given the great size of the lands to be managed, the objective of acquiring 1 to 5 roads or trail rights-of-way may be too restrictive. Would like to see 1-5 per decade instead;
c. NFS land ownership boundaries are clearly marked to reduce encroachment and trespass; and
d. Are there proposed or pending energy corridors?

Response:

a. Handbook and manual direction require that the FS ensure uses are compatible with the resource management plan prior to authorizing the use. The FS is also required to consult and ensure that uses are not impacting wildlife.
b. These concerns are addressed in FW-LAND-OBJ 01 and 02.
c. In regard to land ownership boundary marking, current FS policy is that all NFS boundary lines shall be located, monumented, marked, and posted to prescribed FS boundary marking standards prior to undertaking land management activities planned near or adjacent to any FS boundary line. This policy is currently documented in FSM 7152.
d. There are no proposed or pending energy corridors.

Infrastructure

CR75 Transportation System/Travel Management Planning

Concern: Many comments were received related to roads, transportation, and travel planning, including:

a. Request for open/closed roads and motorized/non-motorized trail miles;
b. Requests for more road obliteration of single use, user created, not needed roads. Others commented that the FS does not require enough road maintenance and trail maintenance;
c. Inquiries about the connection between Travel Management Planning and Forest Plan Revision;
d. Comments about not using the Travel Analysis Process to remove identified unneeded roads;

e. Comments on RS2477;
f. Comments on Subpart A; and
g. Request to disclose effects of climate change on the road system.

Response:

a. Please refer to the FEIS recreation access and infrastructure sections for miles of open/closed roads and motorized/nonmotorized trails.
b. Objectives for road and trail maintenance, reconstruction, improvement and decommissioning miles are minimums and additional miles would be accomplished as funding allows.
c. The 2020 Forest Plan would guide future travel planning.
d. The Travel Analysis Process was used to develop the Travel Analysis Report which identified "not likely needed for future use" NFS roads. The Travel Analysis Report would guide site-specific projects for road decommissioning in an effort to achieve the desired conditions FW-RT-DC 01 and 02. This process would also support Subpart A in moving the national forest road system in the direction of a safe and cost-effective transportation system.
e. There are no travel plan decisions within the 2020 Forest Plan. Therefore, RS2477 would not apply.
f. Desired conditions FW-RT-DC-01 and FW-RT-DC-04 address a travel system that reduces impacts to wildlife and guideline FW-RT-GDL-12 prioritizes road decommissioning to areas that would benefit fish and wildlife habitat as well as create a more cost-efficient transportation system.
g. The EIS addresses the potential risk to infrastructure from future climate conditions using BASI.

CR105 Transportation Management

Concern: Concerns that road and trail maintenance, construction and decommissioning shall minimize adverse effects to the occupied habitat of threatened, endangered species.

Response: Desired conditions FW-RT-DC-01 and FW-RT-DC-04 address a travel system that reduces impacts to wildlife and guideline FW-RT-GDL-12 prioritizes road decommissioning to areas that would benefit wildlife habitat.

CR118 Monitoring Road/Trail

Concern: Questions were raised about monitoring for changes to the transportation system as well as impacts associated with roads and trails and if they comply with the 2012 Planning Rule requirements. There was also a concern that road miles converted but not decommissioned would remain on the system.

Response: Monitoring desired conditions and objectives would identify progress toward requirements of the 2012 Planning Rule. The number of road miles decommissioned through obliteration and conversion would be tracked independently and recorded for accomplishments as such. Monitoring road and trail miles maintained annually would provide data to evaluate overall transportation system condition. Roads converted to trails would reduce the number of system roads and reduce transportation system maintenance costs as a whole, while maintaining desired public access to the forest. Road to trail conversion decisions would be made on a project by project basis and the transportation system would be evaluated for each project area at that time.

Social and economics

CR68 Social and Economic Impacts

Concern: The values associated with ecosystems, resources, and multiple uses on the Helena Lewis and Clark NF are critical to consider in making a plan decision. There are important values that have not been included, or correctly evaluated, in the DEIS, including but not limited to: recreation and outdoor activities including mountain biking, motorized vehicle use, hiking, and other trail use; resources

including timber and forest products; community proximity to WSA's, RWA's, and other primitive management areas; public health benefits from national forests and recreation in healthy ecosystems; and ecosystem services in general.

In addition, the economic analysis does not fully explore the marginal costs of individual project actions, consider the "Trail Usage and Value: A Helena, Montana Case Study" report from the Montana Office of Tourism, or include scientific references on the public health benefits of National Forests.

Response: Not all human values assigned to national forest resources, ecosystems, and multiple uses can be quantitatively, or otherwise fully analyzed, for the purpose of forest planning. In the HLC NF FEIS, the appropriate analysis, relevant to level of decision being made in forest planning, is provided. In the social and economic analyses, key ecosystem services and the provision of natural resources and recreation opportunities are analyzed to the extent necessary, given the uncertainty with future Forest projects and project-level decisions that will have more direct implications for on-the-ground travel, ecosystem and resource management.

Specifically, in the FEIS, ecosystem services are qualitatively analyzed and are limited to a list of "key" ecosystem services, those being relevant to forest planning decisions. Ecosystem services are described qualitatively in the sections entitled "Benefits to People" and the decision implication for each key ecosystem service is provided in the environmental consequence subsection.

Additionally, recreation and other multiple use economic values are considered and analyzed under the national forest jurisdictional perspective. For example, the economic contribution analyses for recreation on a national forest does not include spending associated with durable goods such as off-road vehicles, or mountain bikes. Instead, only spending directly linked to visitation and travel within a 50-mile radius, and for non-durable goods (e.g. gasoline, hotel rooms, fishing bait, etc.) are used in estimation of the economic contribution from recreation related national forest visitation. Understandably, compared to industry or tourism agency studies, which typically include all durable goods spending, the results appear much different in terms of economic valuation. This difference is not reflective of the difference in opinion of the importance of recreation economics, but rather what is being specifically accounted for in each study.

Regarding public health and health benefits associated with national forests, the FEIS analyzes key ecosystem services, or benefits to people, and specifically describes which ecosystem services are linked to providing public health benefits. Public health is highlighted and documented as part of a key benefit in nine subsections within the analysis of benefits to people.

CR82 Enforcement and Education

Concern: Comments included input about existing and needed enforcement of policies, laws and regulations.

Issues included lack of law enforcement including off-road vehicle abuse and non-compliance in the Little Belts and The Big Belts and live Douglas-fir tree poaching on the middle fork area of Warm Springs Creek Road in Clancy. There was also a suggestion to reduce conflicts with education.

Response: Thank you for your comments, but the specifics of law enforcement are not part of the forest planning process and are not regulated by Forest Plans. Please refer questions and concerns to your local Ranger District office.

CR112 Hunting

Concern: Commenters had concerns about hunting in the planning area, including:

a. The FS should not prohibit hunting in wilderness areas;

b. The FS should conserve intact habitats and backcountry hunting and fishing areas, especially elk and mule deer winter range and wildlife corridors;

c. Preservation of hunting and fishing opportunity/habitat security in specific areas, including the Little Belts (specifically for elk hunting area), and the Big Log, Mount Baldy, and Camas Creek;

d. Requests for additional plan components for timing and location of motorized uses during hunting season;

e. Effects to grizzly bears from hunting;

f. Lack of standards for elk habitat security, especially in winter;

g. Recreational hunting opportunities; and

h. Recognition of wildlife/hunting value of unfragmented backcountry areas a well as the Elkhorns core.

Response:

a. The FS does not have authority to establish hunting regulations or policies on federal lands. Hunting regulations and policies are established by MFWP.

b. The 2020 Forest Plan includes a number of area designations and plan components that would provide for wildlife movement and security during various times of year, including during hunting seasons. RWAs, along with primitive and semi-primitive non-motorized ROS settings would add to designations such as designated Wilderness, WSAs, IRAs, and the Conservation Management Area in limiting the type and amount of access and anticipated human uses in those areas. These designations represent a large portion of the HLC NF (see Designated Areas section in the 2020 Forest Plan and FEIS). The 2020 plan includes components for maintaining connectivity, particularly in some areas identified as of concern, and it includes plan components to maintain areas of seclusion for wildlife. It also includes plan components to limit disturbance to wildlife on winter range or other key seasonal habitats.

c. The preferred alternative designates the Big Log and Mount Baldy areas as RWAs. These RWAs will be managed to protect their wilderness characteristics. The Camas Creek roadless area is an IRA and is currently managed as a semi-primitive non-motorized area. The Little Belts GA includes a WSA in the east-central portion of the mountain range, where motorized travel is largely restricted. As such, these areas remain mostly or entirely unroaded and therefore may provide a high degree of habitat security for elk or other wildlife in all seasons, including hunting seasons. The 2020 Forest Plan includes components that would provide for wildlife habitat security in key seasonal habitats, and that guide managers to work with MFWP regarding management of wildlife habitat.

d. A guideline has been added as a result of discussion with and comments provided by MFWP.

e. The analysis of impacts to grizzly bears has been substantially updated in the FEIS as compared to the DEIS, and reflects changes made during preparation of the Biological Assessment for ESA section 7 consultation with the USFES. Changes include additional discussion and analysis of habitat security. Analysis in the FEIS now includes discussion of existing blocks of security habitat outside of the recovery zone, and includes updates to the discussion of the potential impacts of recreational activity and of management for human uses of wildlife (such as hunting) in the section addressing key drivers and stressors (affected environment) and in the environmental consequences section.

f. Please refer to the response to CR44, which includes detailed discussion of a number of issues regarding elk and big game habitat management. Standards and guidelines for elk and big game in the 1986 plans were primarily intended to provide specific hunting opportunities and to increase elk herd numbers. Since that time issues regarding management of elk populations have changed; elk numbers are above established population objectives throughout most of central MT, and elk are increasingly moving to private lands during hunting season largely because of the lack of hunting pressure combined with availability of high-quality forage (e.g., irrigated crops) on those lands, regardless of levels of hunting pressure or amounts of security on adjacent NFS lands (refer to discussion in the FEIS and to literature cited there, and to CR #44 responses). The 2020 Forest Plan follows recommendations in BASI and recent interagency guidance to refrain from establishing one-size-fits-all numeric standards, but rather to require that managers consider elk habitat needs, including the need

for security during the hunting season or other times of year, based on site-specific and herd-specific needs and issues.

In addition, the 2020 Forest Plan includes desired condition FW-FWL-DC-04 regarding balancing motorized access during the hunting season with desired conditions for wildlife habitat security and other habitat needs. The 2020 Forest Plan also includes an updated guideline (FW-WL-GDL-01) that was included after discussion with MFWP, regarding management of motorized access during the hunting season to consider the potential for displacement of big game from NFS lands during hunting seasons.

g. The 2020 Forest Plan recognizes hunting as a valued and desired activity on national forest system lands. FW-FWL-DC-01 provides direction for Elk and Big game on NFS lands. Recreational shooting, while not specifically named in the Forest Plan, is considered a dispersed recreation activity and could occur anywhere on the Forest, unless specifically prohibited to address safety concerns.

h. The 2020 Forest Plan includes a number of components that guide managers to work with MFWP or other entities regarding management of wildlife habitat. Specifically, the plan includes a goal (FW-FWL-GO-01) and a guideline (FW-FWL-GDL-01) that directs FS biologists to work with MFWP biologists to identify management that would help to achieve desired distribution and hunting opportunity of elk and other big game species during the archery and rifle hunting seasons.

Please refer to the 2020 Forest Plan and to the FEIS sections that discuss designated areas and ROS for discussion of management of areas based on designations such as Inventoried Roadless Area, Recommended Wilderness Area, and primitive and semi-primitive ROS. In the preferred alternative the Elkhorns Core area will be managed to as a primitive ROS, and motorized means of transport will not be allowed in this area. Mechanized means of transportation will continue to be suitable. Discussion of the Elkhorns Wildlife Management Unit, including the value of the Elkhorns Core area, has been updated in the FEIS. Management activities throughout the Elkhorns GA are largely constrained by plan components intended to maintain or enhance wildlife habitat and the needs of species that require seclusion.

Livestock grazing

CR59 Monitoring – Livestock Grazing

Concern: Comments and suggestions regarding monitoring of livestock grazing included:

a. Monitoring of rangeland trend in response to livestock grazing and other disturbances should utilize intensified grid and non-forest plots as well as PIBO plots for data source and repeatability;

b. The monitoring plan should include a review of the HLC's compliance and non-compliance, successes and failures with monitoring, consistence with NFMA, and evaluation of commitments made in the 1986 Forest Plans. These should be disclosed in the FEIS any and all adverse environmental impacts from the noncompliance;

c. Livestock grazing monitoring should include the number of commercial livestock grazing allotments on the national forest and the number of permitted domestic sheep animal months. Inside and outside the Primary Conservation Area, monitor and evaluate allotments for recurring conflicts with grizzly bears; and

d. The DEIS stated that financial and personnel limitations have led to a wide variety of riparian conditions and inconsistencies in permittee accountability. This statement asserts the ranching community has done a less than adequate job of managing livestock and the statement should be removed. The FS should utilize cooperative agreements to address shortages of finances or personnel.

Response:

a. Rangeland trend monitoring (effectiveness monitoring) would continue to utilize methodology which provides managers answers on apparent rangeland vegetation trends over time. Existing protocols and

monitoring methods would be repeated on previously established sites on a rotational basis as much as budgetary constraints allow. During site-specific project development, existing sites would be prioritized for data collection in order to analyze trend and determine movement towards, or departure from desired conditions. If new methodology is developed that is more efficient and effective during the life of the Forest Plan, those methods may be used in the future as long as the information provided could be used for vegetation trend analysis.

Implementation monitoring through allowable grazing use levels (AULs) would provide guidance for livestock management on an annual basis. AULs are the triggers upon when to base livestock moves from pasture to pasture or when to leave the allotment. Allotments on the HLC have AUL triggers built into the majority of AMPs. These AULs are generally forage use levels and bank alteration with some stubble height requirements west of the continental divide. Effectiveness monitoring on a project-level scale would determine if site-specific prescriptions and AULs need to be adjusted over time.

b. The 2020 Forest Plan is a programmatic document and supporting analysis does not focus on individual allotment compliance history. AMP and grazing permit noncompliance and allotment resource concerns are addressed under direction of FSH 2209.13. Impacts from grazing are generally limited to site-specific locations. When grazing effects, outside the sideboards of the existing AMP or annual operating instructions are encountered, FSH 2209.13 direction is followed and adjustments to annual grazing schemes may be implemented.

c. Actual use on sheep and cattle allotments is annually reported in the FS Infrastructure database. Currently, 6,054 head months are permitted on the HLC NF for sheep grazing. Actual use is generally less than full permitted numbers due to annual climatic conditions and the permittee's overall ranch/grazing plan for the year.

Active cattle and sheep grazing allotments within the Primary Conservation Area (PCA) reported in 2011 serve as the baseline for allotments within the Northern Continental Divide Ecosystem PCA on Federal lands. Allotments on the HLC NF included 24 cattle allotments permitted for 7,467 Head Months (9,857 AUMs) and one sheep allotment permitted for 270 sheep head months with ewes and lambs (89 AUMs). Grizzly/livestock conflicts on HLC NF allotments have been rare but are periodically noted if and when they occur.

d. This statement has been clarified in the FEIS regarding riparian monitoring and permit compliance accountability. Due to reductions in range staffing over the past 15 years and other limiting factors, every allotment across the Forest is not monitored for implementation of the annual operating instructions and AULs. A review of compliance history would be an inaccurate portrayal of conditions as not every allotment is monitored annually; however, the Forest has prioritized allotments with identified resource values or concerns that are monitored annually. The Forest relies on rangeland trend to determine if conditions are moving towards, departing from, or are within desired conditions.

Cooperative monitoring with permittees and other interested agencies, academia, or organizations is encouraged and would help make future range management decisions stronger and implementable.

CR95 Livestock Grazing – Domestic Sheep

Concern: Commenter had suggestions related to domestic sheep livestock grazing, including:

a. The HLC NF should coordinate with other entities to close high-risk allotments near historic bighorn sheep habitat, eliminate trailing routes, and reduce likelihood of straying domestic sheep;

b. The HLC NF should engage landowners and other entities to eliminate sheep from the landscape and reduce threats from private operations;

c. The Forest needs to be more proactive at educating the public on the threats of domestic/bighorn interaction; and

d. The Plan fails to analyze the risk cattle pose to bighorn sheep populations.

Response:

a. FW-GRAZ-STD 03 and FW-GRAZ-STD-04 were added following public comment on the DEIS and these commit the HLC NF to applying measures to minimize contact between bighorn and domestic sheep through spatial or temporal separation using the best available scientific information and agency and interagency recommendations. These management actions would be taken during AMP revision, sufficiency reviews, or when considering stocking vacant sheep allotments. Desired conditions BB-WL-DC-01, EH-WL-DC-04, and LB/RM-WL-DC-02, along with standards BB/EH/LB/RM-WL-STD-01 for geographic areas address the potential for comingling of domestic sheep and goats and bighorn sheep on NFS lands. Currently, no agency proposals or public requests have been made to restock vacant sheep allotments with domestic sheep or goats on the HLC NF.

   Active sheep allotments on the HLC NF currently are over 10 miles in distance from occupied bighorn sheep habitat. Domestic sheep allotments are currently considered low risk for the possibility of commingling with bighorn sheep herds in the plan area based on this distance, as well as no observations of commingling or seasonal overlap have been observed to date. If conditions change, plan components would evaluate the risk of contact and determine and apply management actions to maintain separation. Eliminating these domestic sheep allotments would not reduce the possibility of direct contact between domestic sheep and bighorn herds on private lands within or adjacent to active sheep allotments in the plan area.

b. Working outside the forest boundary to discourage domestic sheep production is outside the scope of the 2020 Forest Plan.

c. Plan components for livestock grazing and invasive plants address maintaining separation and preventing contact of domestic and wild sheep. Plan components require that consideration and analysis show that adequate separation is present at the project level between active sheep allotments and occupied bighorn sheep habitat. Please see FW-INV-STD 02, FW-GRAZ-STD-03/04. In addition, BB/EK/LB/RM-WL-STDs provide the guidance to apply separation techniques for all sheep and goat grazing and use in geographic areas containing occupied bighorn sheep habitat. FW-CONNECT-DC-02 emphasizes the Forest to have an education program to inform the public on the forest's various natural resources, which would include livestock grazing and wildlife issues.

d. Additional analysis including updating of the best available scientific information has been completed and can be found in the FEIS. The HLC NF will continue to work with MFWP to follow guidance from the Bighorn Sheep Conservation Strategy (2010).

CR106 Livestock Grazing – Analysis and References

Concern: Commenters had questions/concerns related to the analysis of livestock grazing and associated references/BASI. These included:

a. The FEIS should disclose how many allotments have updated management plans and due dates for the remainder. The FEIS should also disclose a how many are meeting the standards of the existing plans, what the schedule for AMP revision will be, what is the actual use (not just authorized or billed) for each allotment, etc. Without this and additional specific information about the grazing program, it is impossible for the public to determine if the proposed standards and guidelines are capable of ever actually achieving the stated desired conditions;

b. The Forest has a lack of quantitative data in regard to the analysis of the ecological status of rangelands throughout the analysis area. The data is also old and with nothing collected in recent times;

c. The DEIS doesn't analyze or disclose noxious weed spread due to livestock grazing. It doesn't quantitatively estimate soil damage due to livestock grazing. The DEIS doesn't quantitatively estimate riparian habitat damage due to livestock grazing. It doesn't analyze or disclose the interaction between upland vegetation changes due to livestock grazing, fire behavior, and forest composition;

d. "Various analysis from 1995-2004 estimate that livestock grazing may have had an effect on the ecological status on 45 percent of the National Forest System lands and 78 percent of the other ownership acres within the plan area." "May have had an effect on" is not explained;

e. The FS didn't analyze or disclose the expected annual infrastructure maintenance and installation costs paid for by taxpayers for the benefit of livestock grazing; and

f. Commenter questions the use of BASI based on a citation in assumptions section of the livestock grazing section and suggests current, peer reviewed literature be used.

Response:

a. The HLC NF is operating under a schedule to revise and update AMPs that is not driven by forest plan revision. The Rescissions Act of 1995 (Public Law 104-19) Section 504(a) requires each NFS unit to identify all allotments for which NEPA analysis is needed. These allotments must be included in a schedule that sets a due date for the completion of the requisite NEPA analysis. Section 504(a) requires adherence to these established schedules. Since the 1986 plans were completed, and following the Rescissions Act (1995), 158 allotments out of the HLC NF's 240 allotments have had AMPs updated. The remaining 82 allotments require AMP revisions and would follow new forest plan components for livestock grazing. Allotments that have had AMPs revised under the Rescissions Act would still be subject to forest plan direction through administrative modification of the term grazing permit (FSH 2209.13, Chapter 10, Section 11).

b. Large-scale data collection efforts, such as Ecodata, were conducted in the 1990s and provided the most complete ecological assessment for rangelands. Other various vegetation monitoring efforts have occurred but did not have summarized data available at the time of this analysis. FIA plots, FIA intensified grid plots, and Region 1 Vegetation Map are on-going data collection efforts that continue to improve to provide information on apparent vegetation trends, including rangeland vegetation. In addition, several AMP revisions and other site-specific projects were done between 1995 and 2015 across the HLC NF which also provided new and existing trend monitoring sites for rangeland vegetation information. Many repeatable rangeland vegetation transects exist across the Forest which should give managers the ability to collect sufficient data to make informed future resource management decisions under the 2020 Forest Plan.

c. Livestock impacts to weed spread, soils, riparian areas and upland range vary considerably depending on range sites, plant communities, and management conditions. Therefore, these factors are difficult to quantify, but would be considered at a site-specific planning level. Site-specific monitoring, analysis of that data, and a review of literature specific to the issues identified would all be part of developing a new AMP. This approach would determine appropriate management tools that would be effective to move towards desired condition in the quickest timeframe.

d. Grazing is widespread across the Forest as well as other adjacent lands in the plan area. Approximately 1,419,085 acres of the HLC NF's total 2,846,606 acres are within a grazing allotment. Approximately 1,281,000 capable and suitable acres would be found in active grazing allotments, or 45% of the forest area. An estimate of 78% of other lands outside the Forest boundary are grazed by livestock. The statement simply implies that livestock grazing uses have occurred on these lands and vegetation communities have been influenced over time in the presence of grazing and other grazing management practices.

e. Maintenance and installation of rangeland improvement structures are generally the responsibility of grazing permittees. These costs would vary by permittee. FSM 2200 - Range Management, Chapter 2240 - Range Improvements, provides agency policy for funding and constructing rangeland improvement projects. Please see the Social and Economics section in Chapter 3 of the FEIS for more information regarding livestock grazing economics.

f. The assumption acknowledged that livestock can remove plant material, trample soils, and alter water flow patterns. Additionally, a basic principle taught for years in rangeland management is that properly managed rangelands are resilient and able to maintain or recover healthy plant communities. Holling (1973) was tied to discussions of resilience of ecosystems, and the tie to that discussion in the assumption for analysis is that with proper livestock management, these potential effects from livestock grazing would be minor due to the resiliency of the ecosystems. Current literature was

reviewed and Chambers et al, 2019 was incorporated in place of Holling to provide a more recent context for resilience of ecosystems tied to management activities including livestock grazing, and the potential for recovery from those disturbances.

CR108 Livestock Grazing – General

Concern: Commenters have concerns/questions regarding livestock grazing on the HLC NF. Issues included:

a. Livestock grazing is an appropriate use of a renewable resource on NFS lands. Grazing opportunities benefit the economic health and continue the heritage of local agricultural communities. The Forest needs to consider the importance of this multiple use for rural communities. FW-GRAZ-DC) 01 is inappropriate as a desired condition and should be a goal;

b. Balance livestock grazing management with wildlife habitat needs and recreational uses. Grazing should be permitted at levels that keep ranches viable but not affect the health of the land or conflict with the wildlife values NFS lands could provide;

c. Decrease hunting and grazing season overlap, especially for archery hunting opportunities, as much as possible;

d. Decrease livestock and wildlife competition for forage in the Elkhorns GA;

e. Grazing permittees are concerned about conifer encroachment and the loss of suitable rangeland for grazing opportunities. Implementing an alternative with more timber harvest and fuels reduction emphasis will benefit livestock grazing in the lone run. Utilize vacant allotments to manage livestock during years where timber and fuels activities could displace grazing opportunities;

f. The Plan should at the very least contain Goals to increase agency staffing for rangeland administration, collect monitoring data on a timely basis, educate permittees about how to meet allowable use limits, ensure compliance checks on every allotment at least once per grazing season, and to comply with the Rescissions Act schedule for NEPA on grazing allotments;

g. The Plan fails to consider the environmental costs of public lands grazing outweigh the relatively insignificant economic benefits; and

h. Maintain the number and acreages of allotments on the HLC NF.

Response:

a. The 2020 Forest Plan provides forage for domestic livestock and grazing opportunities under all alternatives. The Plan recognizes livestock grazing as a sustainable multiple use. FW-GRAZ-DC-01 formalizes the importance of grazing opportunities in the 2020 Forest Plan for area livestock operations by stating: sustainable grazing opportunities are available for domestic livestock from lands suitable for forage production. Site-specific project development would determine the scope of grazing activities and where (suitable range) they would occur.

b. The 2020 Forest Plan sets goals, objectives, and standards (components) for wildlife habitat needs and livestock grazing. Site-specific analysis identifies issues and areas of conflict for the decision maker to resolve within the sideboards of forest plan components. Wildlife needs are identified during site-specific analysis. If issues are raised and validated through monitoring, adjustments in livestock management are made as necessary.

c. Changes to allotment and livestock management on grazing allotments based on recreational uses of NFS lands are best made at the site-specific level. The HLC NF has made several changes to livestock season of use dates to decrease possible conflicts of use in multiple geographic areas of the Forest through the AMP revision process. Under the 2020 Forest Plan, analysis at the site-specific scale would continue to identify issues and propose alternatives to mitigate overlap of multiple uses.

d. 2020 Forest Plan components for grazing would not specifically address wildlife habitat needs and livestock grazing in the Elkhorns GA. However, plan components would need to be addressed when

Elkhorn grazing AMPs are revised during the lifespan of the 2020 Forest Plan. FW-GRAZ-GO-01 encourages coordination with MFWP biologists to ensure habitat and forage needs are met in conjunction with livestock grazing plans on NFS lands.

e. The 2020 Forest Plan, under FW-VEGT-OBJ-01, strives to treat at least 130,000 acres per decade to maintain, restore, or move vegetation towards desired conditions in both forested and nonforested vegetation communities via a number of activities (see appendix C). Some of these treatments should be favorable to maintaining, improving, or increasing suitable acres for livestock grazing. Increases in suitable range availability would benefit grazing permittees by providing management flexibility and/or increasing livestock distribution on existing grazing allotments. Vacant allotments are generally managed as forage reserves given access and rangeland improvement infrastructure provide a level of operability. These lands can be made available to permittees when natural disaster strikes, such as wildfire, or be used to manage livestock before, during, and after vegetation management treatments to ensure the best opportunities to move towards desired conditions.

f. Agency funding to administer the rangeland management program is beyond the scope of the 2020 Forest Plan. Meetings with permittees to review conditions on allotments and participate in compliance monitoring already occur. Monitoring for compliance with the annual operating instruction and trend data collection would occur at levels and intervals determined adequate for allotment and site-specific needs or AMP prescription.

g. The Social and Economic section in Chapter 3 of the FEIS provides analysis of grazing for the plan area. Livestock grazing on Federal allotments provide for economic opportunity across many Forest communities and contributes to approximately 250 jobs and $8.2 million in labor income annually. Livestock operations are crucial to the tax base for rural counties within the plan area. Plan components are designed to mitigate environmental costs and provide a net social and economic benefit at the project level.

h. The size and number of allotments, as well as the number of suitable acres and permitted head months is the same across all alternatives. Any future changes to allotment management would be made through a site-specific analysis and decision.

CR116 Livestock Grazing – RMZs

Concern: Concerns/comments around livestock grazing in RMZs included:

a. In order for new grazing guidelines to be effective, areas already affected by grazing need to be recognized and have a restoration plan in the final plan. Existing grazing practices that are degrading streams need to be ended and grazing within inner RMZs and wetlands needs to be minimized or reduced;

b. RMZ widths have increased in the new plan and will change the way livestock grazing occurs within these areas. Provide a table of how many acres of RMZs are within grazing allotments;

c. The EIS must base projected future effects on the experience of past effects or explain why we should expect the effects to be different in regards relying on AMP revisions to move towards desired conditions;

d. Fencing of riparian areas may or may not be effective for managing RMZs;

e. Livestock grazing should be considered a management activity, just like timber harvest, in RMZs;

f. PACFISH/INFISH grazing standards will be weakened under the 2020 Forest Plan;

g. Grazing reduces shade canopy, disrupts beaver activity, and alters width-depth ratios. These same impairment related mechanisms often lead to an increase in water temperatures in the stream. An additional grazing related impairment is increased yields and in-channel storage of fine sediments. Grazing also frequently damages springs and wetlands. These factors were not discussed in the suitability analysis. Please cite quantitative data sources regarding livestock impacts upon riparian habitat and at-risk plant species are based; and

h. Both season-long and deferred grazing systems can have negative effects on riparian systems. Plan components should try and reduce riparian impacts from these grazing systems.

Response:

a. Site-specific issues and needs would be identified, and management prescriptions developed through revisions of individual AMPs. Plan components would set the sideboards for what the desired conditions would be and a strategy to move towards those goals. Project level analysis would best determine management changes such as setting allowable use levels or changing the timing and duration of livestock grazing to move towards desired conditions. Closing a grazing allotment or pasture of an allotment or fencing RMZs to exclude livestock use are adaptive management options that may be chosen for a site-specific project. Generally, these options are proposed when other management tools are limited or not effective to move towards desired conditions.

b. RMZ widths have increased under the 2020 Forest Plan based on best available scientific information in order to provide greater protection for riparian function. RMZ widths alone would not trigger more stringent grazing regulations. Site-specific conditions based on monitoring would determine allowable use levels and adjustments to livestock management if departure from desired condition is documented. GIS mapping of RMZs, utilizing the 2020 Forest Plan inner and outer widths within active and vacant allotments for NFS lands only totaled the following: RMZ inner 91,233 acres; RMZ outer 138,522 acres. Site-specific analysis could refine or document changes in RMZ acres at the project level.

c. Diversity of rangeland vegetation and soils across the forest presents challenges for a one-size-fits-all interim grazing standard to be effective at a programmatic level. The deciding official would determine the most effective tools to incorporate into revised AMPs for the fastest movement towards desired conditions. Under the 2020 Forest Plan, more emphasis is placed on improving or maintaining riparian management zones than under either of the individual Forest's 1986 plans. Long-term rangeland trend sites are established in many allotments and key areas on the Forest. If departure from desired conditions is noted, management adjustments may be done to reverse current trends. Once site-specific analysis can be conducted, more prescriptive livestock management adjustments may be implemented that address multiple resource plan components.

d. Fencing of RMZs into enclosures or riparian pastures has been a widely used management tool across the Forest for well over 20 years. Fencing may achieve desired results of improving some riparian reaches, but may have drawbacks including financial cost, maintenance needs, and effects to other resource areas, such as complicating wildlife passage. Plan components stress utilizing adaptive management to best move towards a full array of desired resource conditions. Fencing of RMZs would continue to be a management tool that may be considered at the project level.

e. Livestock grazing is a permitted multiple use, subject to meeting AMP allowable use levels, grazing standards, and following BMPs. If identified, impacts to RMZs from livestock grazing would be identified and mitigated on a case by case basis.

f. Under PACFISH/INFISH, end of season bank alteration and stubble height standards were not specifically established. Instead units were required to establish grazing standards for each pasture and monitor if end of season standards were met. Under the 2020 Forest Plan, allotments would continue to be managed under existing AMPs, which generally have allowable forage use levels and/or bank alteration standards consistent with PACFISH/INFISH. Consultation with the US Fish and Wildlife Service on the 2020 Forest Plan will determine allowable use levels for allotments containing streams with threatened or endangered aquatic species. FW-GRAZ-GDL 01 acknowledges that current ESA consultation documents would be used if they are based on best available scientific information and monitoring data and meet the purpose of achieving riparian desired conditions over time.

g. Livestock grazing effects to riparian areas and stream channel morphology are not suitability criteria that identify suitable rangeland acres. Grazing effects to streams and wetlands would be addressed through plan components that provide project-level sideboards to maintain or move these areas

towards desired conditions. Grazing-related impairments to streams and wetlands can be successfully mitigated with adjustments to livestock management. See standards and guidelines in the livestock grazing section (FW-GRAZ-STD 02, FW-GRAZ-GDL 01, FW-GRAZ-GDL 03, FW-GRAZ-GDL 04, FW-GRAZ-GDL 05, FW-GRAZ-GDL 06 and FW-GRAZ-GDL 07) and the RMZ section (FW-RMZ-GDL 03 and FW-RMZ-GDL 12).

h. Grazing systems are one tool to manage livestock grazing duration, and frequency. Management intensity is the number one factor on whether or not grazing strategies would succeed in maintaining or improving riparian areas. Plan components set the sideboard to guide sound decisions for resource improvement. AMPs carry out the operational direction. FW-GRAZ-STD 01, FW-GRAZ-STD 02, FW-GRAZ-GDL 01, FW-GRAZ-GDL 02, FW-GRAZ-GDL 04, and FW-GRAZ-GDL 05 all provide the guidance to reduce impacts to RMZs within grazing allotments through incorporation of allowable use levels and other management tools, such as grazing systems, on a site-specific level.

CR160 Livestock Grazing – Climate Change

Concern: Several commenters were concerned that the analysis does not adequately address the impacts of livestock grazing to climate change and carbon sequestration. These concerns included:

a. More emphasis should be placed on protecting riparian areas and wetlands from livestock grazing which can increase riparian vegetation structure that could increase stream flow, retention, and maintain cooler water temps to counter the effects of climate change;

b. Adequate baseline conditions of climate are not provided. Climate change that results in warmer weather during the grazing season will put added pressure from livestock on riparian areas and wetlands;

c. The HLC NF failed in using the best available scientific information in the analysis of livestock grazing and climate change in the DEIS. Livestock grazing and grasslands/riparian areas are not analyzed in the context of carbon sequestration; and

d. Permitting livestock grazing to occur on NFS lands is a human activity that leads to increased greenhouse gas emission and should not be considered "suitable".

Response: The carbon and climate analysis was updated to address the impacts of grazing on climate change and carbon sequestration; as well as to analyze the role of nonforested plan communities in the carbon cycle. The methane emissions associated with livestock grazing on the HLC NF are minuscule in the context of global climate change. See the livestock grazing and carbon and climate sections in the FEIS; as well as appendix J of the FEIS.

a. Plan components for livestock grazing and RMZs provide guidance at the project level to increase herbaceous vegetation in riparian areas and move towards desired conditions. Plan components for livestock grazing and RMZs are designed to improve riparian condition by increasing riparian vegetation cover, allowing for natural stream channel morphology, and increasing stream flows where possible.

b. For the DEIS, the carbon baseline report was referenced from the HLC NF assessment. For the FEIS, this work has been updated and included in appendix J. The HLC NF does not dispute that climate change could present challenges to livestock management in the future, with a summary of possible climate change influences on livestock grazing that would occur under any alternative. The impacts to livestock grazing from climate change remain to be fully understood or experienced by permittees on the HLC NF. The FS has administrative tools to adapt to unexpected conditions to short and long-term changes in resource conditions, which could include stocking adjustments and adjusting management practices (FEIS, chapter 3, livestock grazing).

c. Published studies were reviewed and the livestock grazing section of the FEIS updated. Several studies suggest that well-managed rangelands with adaptive management options provide an opportunity to improve ecosystem services and potential carbon sequestration.

d. Livestock grazing is a multiple use provided on portions of the HLC NF in accordance with law. Please see the Suitability/Capability section in the FEIS under livestock grazing. Greenhouse gas emission is not a factor in determining whether or not grazing livestock is an appropriate use of NFS lands for determining rangeland suitability.

CR161 Livestock Grazing – Plan Components

Concern: Various livestock grazing plan component and other editorial suggestions were provided, including:

a. Allowable use levels for managing livestock grazing within riparian management zones are absent. Interim management prescriptions are needed to avoid, minimize, or mitigate impacts associated with livestock grazing to rangeland, riparian areas, and aspen stands. Assumptions that livestock grazing will be managed to meet desired rangeland, and riparian conditions cannot be realized as no enforceable standards or guidelines are present. Plan components fail to constrain management;

b. The HLC NF has limited capacity to manage the grazing program;

c. The plan does nothing to change impacts of grazing and defers all changes to future decisions;

d. The Forest Plan should have components to address non-compliant allotments and permittees;

e. Several comment letters suggested changes to forest plan component wording for managing livestock grazing, including the addition of more goals or objectives; and

f. The DEIS and Draft Forest Plan did not consider scientific information when designing plan components to have grazing management complement other vegetation and fuels management activities.

Response:

a. The 2012 Planning Rule recognizes that Forests need to provide for integrated resource management for multiple uses in plan areas while providing for ecological sustainability. To focus in on that balance, end of season allowable use levels have generally been used on the context of a site-specific setting. Rangelands and riparian areas are highly variable across the HLC NF due to variations in precipitation, elevation, and vegetation type. Therefore, an AMP revision or other NEPA analysis would be the most appropriate mechanism to prescribed management actions to move towards site-specific desired conditions.

b. HLC NF ranger districts have priority allotments which are inspected several times each year because of on-going projects or activities, areas of resource concerns, cases of permittee non-compliance, or the need for meeting ESA consultation requirements. Plan components in the 2020 Forest Plan would help range managers focus on the end goals of desired resource conditions and be more efficient and effective in allotment administration and project implementation for future decisions.

c. The 2020 Forest Plan is a programmatic document. Plan components are designed to accommodate the range of site-specific needs of individual areas, wildlife species, allotments, and plant communities. AMPs for livestock grazing provide specific operational guidance and are the appropriate planning level to implement management tools, such as allowable use levels and adjustments in permitted stocking (FSH 1909.12). Plan components will inform future AMP efforts.

d. Forest Service Handbook 2209.13 provides rangeland management specialists and line officers with the guidance to address permit infractions and issues of non-compliance. Allotment compliance standards would be measured on a project by project (AMP by AMP) basis.

e. After interdisciplinary team discussion, some suggestions were added or implemented, while others were not. In most cases, suggestions made by commenters wanted component wording that would either severely constraint or provide very limited constraints to livestock grazing. No significant changes were noted between Draft and Final EIS documents or Draft and Final Forest Plans.

f. Scientific information was reviewed for a variety of livestock grazing related issues, processes, and plan component development. Information that was considered most relevant to the analysis for the plan area was cited by the resource specialist. A review of the literature submitted from the public is found in the project record and this appendix.

CR162 Livestock Grazing – Aquatics

Concern: Comments regarding livestock grazing and aquatic resources were received, including

a. Grazing levels are too high with too many permitted head months to achieve desired riparian conditions. Without significant livestock reductions, riparian areas will not move toward desired conditions;

b. Scientific support for successful grazing management in riparian zones on federal lands in the western US is dated and weak;

c. FW-GDL-GRAZ 01 (riparian stubble height range of 4-6"); A minimum of a 6-inch stubble height for herbaceous vegetation within the greenline adjacent to streams should be a standard. The 4-inch stubble height does not provide enough protection of sensitive stream channels to allow for much movement toward desired aquatic conditions. Additionally, a bank disturbance limit should be included as a plan component;

d. The timeline and prioritization of updating the AMPs are critical to supporting this DC;

e. Grazing is mentioned as a stressor under FS control. The DEIS describes how some plan components would mitigate effects, but it does not describe how other plan components that promote grazing would cause adverse effects, and it does not disclose what those effects would be. Table 62 ignores those plan components;

f. No mention is made of aquatic species that are not listed or not species of conservation concern. Include wording to show adaptive management is also used to reduce impacts to native and desirable nonnative fishes; and

g. The scientific literature referenced provides a solid basis for the conservation watershed network as a strategy to conserve native bull and westslope cutthroat trout on the HLC NF. I strongly support the addition of this important element to the 2020 Forest Plan.

Response:

a. Stocking rates and changes in livestock management systems would be made at the project level in order to move towards desired conditions on a specific riparian area or at a watershed scale (FW-GRAZ-GDL 04). Adaptive management would be encouraged (FW-GRAZ-GDL 05) to be incorporated into AMPs which would allow range managers to consider a full suite of livestock and range management tools, including reducing stocking rates, in order to meet desired riparian conditions. Forest plan components for livestock grazing are designed to be programmatic, with AMPs providing specific operational guidance (FSH 1909.12). If monitoring at a site-specific level indicated departure from desired conditions, some adjustments in annual stocking levels or season of use could be made through the annual operating instructions, which outline the strategy of the AMP.

b. Scientific literature for management of riparian areas and wetlands was reviewed, with the most relevant documents to the plan area considered in the analysis for rangeland management and livestock grazing. Many studies have been done from the mid-1990s to the present regarding livestock grazing and riparian management. Literature cited is based on multiple use management objectives that can maintain or improve riparian areas and wetlands, and relevant to the analysis areas vegetation types and resources. See the literature reviewed section in the FEIS and this appendix for specific documents provided by commenters, which the interdisciplinary team reviewed and considered.

c. FW-GRAZ-GDL 01 encourages the use of greenline stubble height measurements on low gradient stream reaches to evaluate movement towards desired riparian conditions. The 4 to 6-inch range for stubble height was based on site variability within the HLC NF, grazing standards listed under existing

ESA consultation, and other Forest grazing standards implemented in Region 1 with similar riparian habitats. The range of stubble heights would give the authorized officer the ability to adapt the target up or down based on the improvement needs of a specific riparian area. Other indicators to measure disturbance from livestock grazing could also be implemented if the measures are effective to determine movement or departure from desired riparian conditions. FS-GRAZ-STD 02 states that annual livestock use indicators within inner RMZs shall be set during the AMP planning process at levels that maintain or move towards desired rangeland vegetation, riparian function, and wildlife habitat specific to rangeland sites.

d. The HLC NF is operating under a schedule to revise and update AMPs that is not driven by the forest plan. The Rescissions Act of 1995 (Public Law 104-19) Section 504(a) requires each NFS unit to identify all allotments for which NEPA analysis is needed. These allotments must be included in a schedule that sets a due date for the completion of the requisite NEPA analysis. Section 504(a) requires adherence to these established schedules. Since the 1986 plans were completed, and following the Rescissions Act (1995), 158 allotments out of the HLC's 240 allotments have had management plans updated. The remaining 82 allotments require AMP revisions and would follow new forest plan components for livestock grazing. Allotments that have had AMPs revised under the Rescissions Act would still be subject to forest plan direction with updated plan direction added to terms and conditions in new term grazing permits or permit modifications.

e. In the FEIS, Table 69 lists plan components which affect terrestrial wildlife species associated with aquatic, wetland, and shrub habitats. Livestock grazing was listed as a stressor under FS control. While grazing can damage native plant communities and riparian areas if managed improperly, plan components direct grazing management to be implemented that would move towards desired resource conditions. FW-WL-GDL-03 is a forestwide guideline that would protect western toad breeding sites from livestock trampling by allowing emergent vegetation to be retained at those sites. Other riparian-dependent species, such as amphibians, birds, and small mammals should also benefit from improved habitat. Please see the effects of 2020 Forest Plan components in the aquatics, RMZ, vegetation, livestock grazing and wildlife sections in the FEIS.

f. FW-GRAZ-GDL-04 states that adaptive management should be incorporated into AMPs to allow for range improvement and resource protection, while considering both the needs and impacts of domestic livestock and wildlife. Adaptive management practices used in AMPs include a variety of tools to manage livestock in order to move towards desired resource conditions. Adaptive management could also incorporate conservation measures to protect federally listed plants and animal species and species of conservation concern. If one management strategy did not yield movement towards desired conditions in suitable timeframe, other strategies or tools could be incorporated. Adaptive management would allow for the flexibility to manage livestock for improved wildlife and fisheries needs, including fisheries with desirable introduced fish species.

g. Thank you for your comment. The conservation watershed network is intended to identify important areas needed for conservation and/or restoration, to maintain multi-scale connectivity for at-risk fish and aquatic species, and to ensure ecosystem components needed to sustain long-term high-quality water and persistence of species.

CR163 Livestock Grazing – Wildlife

Concern: Commenters had suggestions or requests relating to livestock grazing and wildlife, including asking the FS to:

a. Restore wildlife habitat through noxious weed control and fence removal on vacant allotments;

b. Consider livestock competition for forage and impacts of range infrastructure on migration routes for wildlife species. AUMs/permitted head months should not be decreased if big game populations grow beyond MFWP objectives;

c. Adopt language similar to Greater Yellowstone Ecosystem National Forests Grizzly Bear Amendments for management of grazing allotments and to be more proactive to reduce or eliminate risk of grizzly/livestock conflicts to ensure habitat connectivity;

d. Minimize conflicts with wolves, including plan components;

e. Consider grazing allotment buyouts where conflicts with wildlife arise;

f. Consider using vacant allotments to give permittees options to avoid grizzly-livestock conflicts;

g. The Plan gives no opportunity to increase AUMs and projects a future decline in grazing; and

h. Threatened, endangered, and SCC and their impact to permitted livestock grazing is a concern for permittees. Grazing permittees also own and regulate private lands that are critical to these species; increased restrictions on federal lands will ultimately cause habitat loss on private lands. This is a trend that needs to be addressed and reversed in the Forest Plan.

Response:

a. Range infrastructure that is no longer needed for livestock management would be removed and identified on a site specific, case by case basis. Fence specifications have evolved over the years, and in general have minimal effects on wildlife. If measurable effects are anticipated for a site-specific project, fence specifications may be modified, or operational requirements made. See FW-WL-GDL 07, 08.

b. The 2020 Forest Plan sets goals, objectives, and standards for wildlife and livestock grazing. FW-GRAZ-GO-01 encourages coordination with MFWP biologists during AMP development to ensure that habitat and forage needs are being addressed on grazing allotments. Site specific analysis identifies issues and areas of conflict for the decision maker to resolve, which may or may not involve adjustments to permitted grazing levels.

c. The HLC NF is already following direction from the NCDE Grizzly Bear Conservation Strategy to support a recovered grizzly bear population. Standards and guides for livestock grazing are already being implemented in annual operating instructions and included in the terms and conditions of grazing permits. Plan components carry forward these standards and guidelines. Plan components are similar to many of the Greater Yellowstone Ecosystem Grizzly Bear standards and guidelines. This NCDE strategy covers the entire plan area and incorporates management requirements and recommendations to minimize grizzly/human conflicts.

d. Within the plan area, wolves have recovered and perhaps reached the extent of their current range due to social tolerance limitations. A conservation strategy or plan components similar to the NDCE plan is not being considered for gray wolves as part of the 2020 Forest Plan.

e. A permit buyout that includes the permanent closing of an allotment would impose restriction on the FS' management prerogatives and cause the FS to relinquish future management options without knowing beforehand what the long-term effects would be on the resources. Financial arrangements made between third parties purporting to determine the status and management of NFS lands will not be acknowledged, sanctioned, or accepted by the FS. Grazing capacity allocations will be determined through the NEPA process, in consideration of rangeland, soil, wildlife, watershed, fisheries, water quality, and other and resource conditions (36 CFR 222.2(c)). If a permittee waives their grazing privileges back to the FS, there can be no guarantee or agreement, whether written or verbal, regarding waived grazing capacity allocation, based upon buyout agreements between permittees, conservation groups, or other outside parties.

f. Vacant allotments are a good management tool to redistribute permitted grazing use to avoid wildlife conflicts, as well as address other resource concerns. Vacant allotments can also be used as a forage reserve to temporarily move permitted livestock from an allotment affected by a natural disaster such as wildfire. The administrative option to authorize grazing use in existing vacant allotments and allotments that may become vacant in the future is preserved in the 2020 Forest Plan. An allotment would only be closed if a site-specific analysis and decision supported that determination.

g. Under the 2020 Forest Plan, the HLC NF anticipates permitted AUMs should remain close to current levels with some annual variation due to climatic conditions. Revisions of AMPs may result in adjustments to permitted head months on some allotments. Current vacant grazing allotments would most likely be used as forage reserves for allotments affected by fire, depredation, threatened and endangered species, or riparian management issues. Therefore, it is unlikely that permitted head months would increase under any alternative (FEIS, 3.28.6 environmental consequences).

h. Providing sustainable grazing opportunities while providing for wildlife habitat and forage needs are desired conditions in the 2020 Forest Plan (FW-GRAZ-DC 01, FW-GRAZ-DC 02). The HLC NF acknowledges that ESA listed species may have habitats that span across a landscape scale outside the Forest boundary. A collaborative effort involving all landowners is generally needed to provide the greatest conservation benefit in terms of the amount and quality of habitat. The 2020 Forest Plan only focuses on NFS lands within the administration of the HLC NF. Management of habitat for ESA listed species on NFS lands is subject to consultation with the USFWS.

CR168 Soil – Grazing/Range

Concern: Commenter had concerns with soil resources and livestock grazing, including lack of soil damage and soil quality standards.

Response: Thank you for your comment. Though grazing monitoring is not applicable under the current Regional soil standards, impacts to the resource from grazing are still addressed through revised AMPs.

CR180 Livestock Grazing – Allowable Use Levels

Concern: Commenters had concerns or suggestions for livestock allowable use requirements, including:

a. The plan does not prescribe allowable use levels or quantitative standards for livestock grazing, such as INFISH, that would help achieve desired resource conditions for rangeland or riparian areas. Plan standards and guidelines should prescribe quantitative measures in which to guide livestock management on Forest Allotments in both existing and revised AMPs;

b. The Draft Forest Plan does not discuss in sufficient detail reductions in permitted head months and/or reduced numbers of livestock that will be needed to meet desired resource conditions in the plan area;

c. Management of livestock grazing practices and enforcement of grazing standards are not described in the plan. No standards, guidelines, goals or objectives provide active direction for achieve desired conditions for upland rangeland or riparian areas within grazing allotments;

d. Given the overwhelming evidence that livestock grazing is having a negative impact on riparian and aquatic ecosystems across the planning area, even in areas where INFISH standards have been in place for two decades, the Forest should develop new and more stringent strategies to improve conditions and implement them as soon as possible. The measurable quantitative objectives of INFISH have been replaced by "descriptive desired conditions" that can only be measured qualitatively. There are no measurable and quantitative allowable use limits and only a single numerical guideline remaining for stubble height that does not identify or require the Forest to apply the standard appropriately using key species. There is no required bank alteration threshold, and no changes will be made to any grazing allotment or authorization until site-specific analysis is completed; and

e. What plan components provide active direction for achieving desired conditions in upland rangeland?

Response:

a. Plan components are designed to accommodate a range of site-specific needs of individual areas, wildlife species, allotments, and plant communities. AMPs provide specific operational guidance and are the most appropriate planning level to implement management tools, such as allowable use levels (FSH 1909.12, Chapter 20). Therefore, allowable use levels and allotment compliance standards would be determined and measured on a project by project (AMP by AMP) basis. Plan components state that AMPs shall provide the site-specific management prescriptions, such as grazing rotations, stocking

rates, and use indicators, to move toward applicable desired conditions (See FW-GRAZ-STD-01, FW-GRAZ-STD-02, FW-GRAZ-GDL-01, and FW-GRAZ-GDL-02).

b. Monitoring and analysis determine management prescriptions and would provide the basis to adjust permitted livestock numbers if necessary, to move towards desired conditions on an allotment-scale level (See FW-GRAZ-GDL-04). AMPs provide specific operational guidance, which could include changes in permitted head months.

c. Direction for corrective actions regarding compliance with term grazing permits and AMPs is provided in Forest Service Handbook 2209.13. Direction provided by AMPs fall within the sideboards of forest plan components. Compliance with management direction outlined in AMPs and annual operating instructions is determined on an annual basis through allotment inspections.

d. Existing AMPs would still be in place under the 2020 Forest Plan, and multiple disturbance indicators, such as allowable forage use and bank alteration found in those AMPs would be retained. Although the 1986 forest plans for both the Helena and Lewis and Clark National Forests were more prescriptive with interim grazing standards listed, allowable use levels (AULs) in AMPs were generally developed at a site-specific level. The 2020 Forest Plan has more specific direction for desired resource condition, especially in RMZs, and could include additional impact indicators if warranted through monitoring. The plan is increasing the available metrics at our disposal to measure impacts, not exchanging or removing them.

   Forest plan components that affect the terms and conditions of the grazing authorization can be made administratively through modification of the term permit (FSH 2209.13, Chapter 10, Section 11 Grazing permits with Term Status) or as new permits are issued. Implementation of FW-GRAZ-GDL 01, which is the measurement of riparian stubble height, would be one addition to grazing permit terms and conditions and be a new indicator measured through allotment monitoring. This guideline would also encourage alternative use and disturbance indicators and values, including those in current ESA consultation documents, to be used if they are based on current science and monitoring data and meet the purpose of maintaining or improving riparian condition. Development of new AMPs would continue to be the primary mechanism to implement management changes at a site-specific level to move toward desired conditions. See appendix C, Management Approaches, and FSH 2209 for permit and allotment administration for additional information.

e. Monitoring, data analysis, and management prescriptions to move towards desired upland range condition would be part of the AMP revision process. Adaptive management options built into AMPs can also be used to address upland rangeland condition. See FW-GRAZ-STD-01 and FW-GRAZ-GDL-02 and FW-GRAZ-GDL-04.

CR185 Livestock Grazing – Suitability/Capability

Concern: Commenters asked for more information/disclosure about the FS grazing suitability/capability determination process. Concerns included:

- More criteria-based guidance needs to be provided to determine areas that are suitable and capable for livestock grazing. No direction for undertaking a scientifically based suitability determination for livestock grazing is given; and
- The plan determined suitability without results of forest plan monitoring.

Response: The capability and suitability analysis and determination is not a decision to graze livestock on any specific area of land, nor is it a decision about or estimate of livestock grazing capacity. The capability/suitability analysis and determination may or may not provide supporting information for a decision to graze livestock on a specific area.

All grazing allotments contain areas that are capable and/or suitable as well as areas that are modeled as being not capable and/or suitable. Since the evaluation is based on a modeling process and is dealing with a variety of complex landscapes, it is inevitable that this intermingling would occur on a land base of any

significant size. Therefore, these capability/suitability determinations are not intended to imply that livestock would be precluded from occasionally being found on lands that may be modeled as noncapable or nonsuitable. Lands modeled as capable but not suitable for grazing would be identified through site-specific analysis of allotments.

Together, the capability and suitability analyses can provide information for both forest plan level analysis as well as project level analysis and subsequent NEPA decisions. At the forest plan level, capability and suitability analysis provides basic information regarding the potential of the land to produce resources and supply goods and services in a sustainable manner, as well as the appropriateness of using that land in a given manner. This information assists the interdisciplinary team and the line officer in evaluating alternatives and arriving as forest landscape level decisions. It also helps in an analysis of alternative uses foregone. At the project level, rangeland capability and suitability may be reviewed, updated, or made more site-specific, if it is an issue for that project or provides information useful to the decisions being made. Monitoring information collected at the site-specific project level would help improve suitability on an allotment by allotment scale.

The requirement to determine rangeland capability and suitability was detailed in the 1982 Planning Rule. The 2012 Planning Rule makes that determination optional rather than required. A GIS exercise was done to establish a base map for capability and suitability analysis. This mapping exercise determined 1,733,332 NFS acres to be capable for cattle grazing and 2,458,980 acres as capable for sheep grazing. Approximately 483,150 acres of NFS lands within the plan area were mapped as suitable for cattle grazing. Mapping and acreage figures would be refined at the project level scale.

CR219 Livestock Grazing – Recommended Wilderness Area/Roadless Areas

Concern: Commenters suggested the following for administrative motorized uses in RWA allocations:

- Commodity uses should not be curtailed in RWAs or roadless areas;
- The 2020 Forest Plan should include clear language that a designation of wilderness or recommended wilderness "will not" prevent the maintenance of existing fence or other livestock improvements; and
- Requiring administration of allotments via no-motorized means is not reasonable, efficient, or effective.

Response: Pre-existing uses prior to RWA designation would continue under the 2020 Forest Plan. Motorized and mechanized means of transportation may be authorized to conduct permitted activities, such as grazing permit administration. Grazing allotment infrastructure would be required to be maintained whether the allotment is within RWAs or designated wilderness. However, RWAs in the 2020 Forest Plan generally overlap with existing IRAs, WSAs, and have few open motorized roads or trails. Therefore, options to use motorized vehicles or equipment are already limited. Clear communication through a written authorization may be needed to document how and when motorized administrative use would occur within RWAs. Each RWA would vary in the need for, and level of administrative motorized use, but all authorizations would have the same intent; to avoid or minimize potential user conflicts.

The additions of RWAs would not change existing travel plans. Rough and steep terrain generally already limits motorized use within RWAs. RWAs should have little, if any, effect on administration of the Forest's range program.

Timber and other forest products

CR227 Firewood

Concern: Commenters had comments about firewood gathering on the Forest.

Response: Various plan components and other editorial suggestions were provided. Changes were made where applicable, please see the applicable sections of the 2020 Forest Plan. Where not changed per the

comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

CR230 Timber – More Logging, Fire/Insect Mitigation

Concern: Commenters had several suggestions/requests regarding logging, including:

a. The FS should do more logging on the landscape, for reasons including economics, fuel reduction and fire risk reduction, reduction of smoke emissions, removal of insect-killed trees, and/or public health and safety;
b. Logging should be done rather than prescribed fire to manage the forest due to smoke and health concerns (and other benefits such as economics and road access/improvements);
c. Alternative E would be the best because of the timber suitability and projected timber volumes;
d. Logging should keep up with growth and mortality;
e. Timber production should take precedence over wilderness consideration;
f. Harvest should occur in roaded areas; however, it should not be done to provide buffers for homes on the forest edge and it is not an effective method to prevent wildfire;
g. Log bug-killed, but not the living trees; and
h. Logging should maintain a healthy and safe forest; reduce fuels; focus on marketable timber, slash removal and site restoration, and removal of dead trees to improve fire suppression opportunities.

Response:

a. Under the action alternatives, timber harvest is a tool for moving vegetation towards desired conditions while contributing to social and economic sustainability. Timber harvest is an allowed use on the Forest and would be used to move the Forest towards desired conditions, consistent with geographic area, and forestwide plan components. An analysis was completed to determine the sustainable level of timber harvest in response to desired conditions and management requirements. The results are outlined in the timber section of the final EIS. The preferred alternative, F, reflects a timber harvest level that is sustainable and that contributes to desired conditions.

   The Forest recognizes that there are many different ideas and opinions concerning how the Forest should be managed and how the multiple uses of the Forest should be applied across the landscape. The EIS considered a range of alternatives that emphasized different multiple uses, such as one that included more recommended wilderness areas (alternative D) and one that included more lands that are suitable for higher levels of timber production (alternative E). All alternatives recognized that vegetation management, including timber harvest, is an important tool to help achieve the desired conditions in the 2020 Forest Plan, including ecological (i.e., wildlife habitat, forest resilience) and social and economic (i.e., providing wood products and employment). The responsible official considers all points of view in making his or her decision, with the intent of providing for an assortment of multiple uses.

   The 2020 Forest Plan recognizes the importance of wood products and timber harvest in reducing fire hazard and improving forest health. See the timber desired condition FW-TIM-DC-02 in the 2020 Forest Plan.

b. Site-specific project development would determine how best to move the forest towards desired conditions and would include smoke emissions as a consideration as well the land allocations identified in the 2020 Forest Plan and all resource and social/economic benefits. It is not the role of the 2020 Forest Plan to prioritize logging activities over prescribed fire programmatically.

c. Alternative E was not selected as the preferred alternative. However, preferred alternative F includes harvest levels that are less than alternative E, but greater than A, B, C, and D, and provides for a balance of lands suitable for timber production.

d. Other resource considerations preclude the ability of the FS to harvest at levels that match growth and mortality; see the timber section of the final EIS for additional discussion.

e. Alternative E represents the alternative where timber opportunities took priority over recommended wilderness allocations. The preferred alternative F includes some recommended wilderness but less than alternatives B/C and D.

f. The 2020 Forest Plan does not determine site-specifically where harvest may occur, but does allow for harvest in many areas, depending on site specific project development and analysis. Mitigating fire risk to private property is permissible as a project purpose and need, and the types of treatment appropriate to achieve those objectives would be determined based on site-specific analysis.

g. Thank you for your comment; however, to meet multiple use objectives, all alternatives allow for the cutting of live trees when consistent with plan components.

h. The 2020 Forest Plan allows for harvest to be used to achieve a variety of resource objectives on both lands suitable and unsuitable for timber production, as described in the benefits to people - timber section of the 2020 Forest Plan.

CR231 Timber – Roads and Infrastructure

Concern: Several comments were received regarding timber management and roads/infrastructure, including:

a. Timber industry and infrastructure is important to help achieve forest management goals;

b. An active logging program is needed to maintain timber industry and infrastructure, including roads. Logging projects are important for maintaining and improving the road system;

c. The potential loss of timber infrastructure and the impacts to achieving desired conditions should be evaluated in the analysis; and

d. If road building can be done in a sustainable manner, it should be done to support forest management.

Response:

a. The importance of wood products and timber harvest in providing timber, jobs, and income to local economies is recognized (FW-TIM-DC-03, 04; FW-TIM-GO-01). An analysis was completed to determine the sustainable level of timber harvest in response to desired conditions and management requirements. The results are outlined in the FEIS and 2020 Forest Plan as the projected timber sale quantity and the projected wood sale quantity. The projected timber sale quantity is the amount of sawtimber that meets utilization standards, whereas the projected wood sale quantity includes all forest products, including posts and poles. Refer to the timber section of the 2020 Forest Plan for the objectives for projected timber sale quantity, projected wood sale quantity, and other direction associated with the production of timber outputs. Sale of stumpage would continue to contribute to the viability of the forest products infrastructure. The social and economic environment section of the final EIS highlights the importance of forest outputs on local economies and communities within the analysis area.

   The preferred alternative (F) reflects the desire for a timber harvest level that provides local jobs and income and generates products for local mills and other forest products businesses to improve forest health within organizational capacity and reasonably foreseeable budgets and while protecting wildlife and other resource values.

b. All alternatives provide for harvest levels that would contribute to maintaining logging industry and infrastructure.

c. Analysis has been added to the timber section of the FEIS addressing the potential losses of timber infrastructure and ramifications to the vegetation desired conditions.

d. The plan allows for road building and maintenance to support forest management in appropriate land allocations.

CR232 Timber – Salvage and Sanitation

Concern: Commenters provided input about salvage and sanitation harvest practices, including:

a. Concerns regarding the definitions, analysis, and potential application of salvage and sanitation harvest practices;

b. Request for additional components that require salvage to occur in a timely manner to best recover economic value;

c. Requests for additional limitations on salvage logging, including limiting cutting areas to 40 acres or less, with buffers, and retaining some standing dead trees for wildlife habitat considerations. It should only be conducted if it causes minimal disturbance (specific concern about roads);

d. Comments on purpose and exceptions allowed for salvage logging; and

e. Requests for more effects analysis and use of the best available scientific information.

Response:

a. The 2020 Forest Plan allows for salvage and sanitation harvest activities, in a manner consistent with the NFMA, the 2012 Planning Rule, and associated directives (FSH 1909.12 chap 60). Salvage and sanitation harvest on the Forest are expected to occur in the future, but since these are opportunistic types of harvest, their location and amount cannot be determined with any certainty. Please see the timber section of the 2020 Forest Plan and FEIS as well as the glossary.

b. Plan components are in place that allow for the use of salvage harvest on both lands that are suitable and unsuitable for timber production. It is not appropriate for plan components to compel action.

c. The standards that limit timber harvest activities in the Timber section of the plan would apply to any type of harvest activity, such as salvage in burned forests or treatments in "green" stands. Salvage logging would follow all 2020 Forest Plan direction as well as other law, regulation and policy, including the NFMA and the 2012 Planning Rule and directives.

d. The 2020 Forest Plan reflects the direction in the NFMA and the 2012 Planning Rule regarding salvage and sanitation harvest and allows this activity to occur on lands suited for timber production as well as some of the lands not suited for timber production.

e. The timber section of the final EIS discusses the effects of salvage logging in more detail and includes additional BASI. Additional analysis would occur at the project level prior to salvage treatments occurring, and that analysis would incorporate the best available scientific information relevant to the project and site conditions.

CR233 Timber – Openings

Concern: Commenters expressed concern or suggestions related to plan components providing for the maximum size of even-aged regeneration harvest openings.

Response: The limitations and exceptions provided for even-aged regeneration harvest are consistent with direction found in the NFMA, 2012 Planning Rule and associated (Forest Service Handbook 1909.12 chap. 60 sec. 64.1). Northern Region Supplement 2400-2016-1 of the Forest Service Manual 2470-Silvicultural Practices was recently approved (Nov. 21, 2016), and it incorporates the direction of the 2012 planning rule for harvest opening size and requirements for public review, which are reflected in standards FW-TIM-STD-08, 09, and 10 in the 2020 Forest Plan. The maximum harvest opening size in the standard is based upon an analysis of the NRV in openings created by stand-replacement fire. The NRV analysis is documented in appendix I, and the development of the plan component is documented in appendix H of the final EIS.

CR234 Timber – Harvest Not Beneficial/Desired

Concern: Some commenters had concerns about timber harvest, including the ideas that:

a. Timber harvest is not desirable or appropriate on the landscape;

b. Logging does not prevent future forest fires, due to the slash left behind; and

c. Logging should be minimal due to climate change and protecting clean water sources. Forests should be protected from corporate logging.

Response:

a. Under all alternatives, in accordance with law, regulation, and policy, timber harvest is an allowable tool to contribute to social and economic sustainability. Timber harvest would be used to move the Forest towards desired conditions, consistent with geographic area and forestwide plan components. An analysis was completed to determine the sustainable level of timber harvest in response to desired conditions and management requirements. The results are outlined in the timber section of the final EIS. The preferred alternative, F, reflects a timber harvest level that is sustainable and that contributes to desired conditions.

   The Forest recognizes that there are many different ideas and opinions concerning how the Forest should be managed and how the multiple uses of the Forest should be applied across the landscape. The EIS considered a broad range of alternatives that emphasized different multiple uses, such as one that included more backcountry and recommended wilderness areas (alternative D) and one that included more lands that are suitable for higher levels of timber production (alternative E). All alternatives recognized that vegetation management, including timber harvest, is an important tool to help achieve the desired conditions in the forest plan, including ecological (i.e., wildlife habitat, forest resilience) and social and economic (i.e., providing wood products and employment). The responsible official considers all points of view in making his or her decision, with the intent of providing for an assortment of multiple uses.

b. The effects of timber harvest on fire risk depends on how logging is conducted and follow-up treatments including prescribed fire. Harvest using whole tree yarding techniques followed by prescribed burning generally results in removal of much of the slash and reduces fire risk. See the Fire and Fuels section of the final EIS for additional discussion.

c. Prior to conducting logging activities, site specific project development and analysis would incorporate all relevant plan components, including those related to the protection of resources such as clean water and carbon sequestration. Plan components and EIS analysis included the influence of a changing climate.

CR235 Timber – Suitability

Concern: Commenters had various recommendations and requests regarding suitability for timber production.

Response: The identification of lands as suitable for timber production, and plan components that allow for harvest on lands unsuitable for timber production, are consistent with the NFMA, 2012 Planning Rule and associated directives (Forest Service Handbook 1909.12 chap. 60 sec. 61). Appendix H provides a discussion of how lands were determined to be suitable for timber production, and the timber section of the FEIS addresses this in more detail with respect to land allocations such as conservation watersheds, municipal watersheds, IRAs, the Elkhorns WMU, CMA, and developed recreation sites. The 2020 Forest Plan allows for harvest on lands unsuitable for timber production based on the direction found in (Forest Service Handbook 1909.12, Chapter 60, section 63). The 2020 Forest Plan and FEIS provide full disclosure on the harvest activities that may occur in lands unsuitable for timber production.

CR236 Timber – Volume Projections, Modeling, and Metrics

Concern: Multiple comments were received regarding timber modeling and timber projections, including:

a. The timber modeling was not done appropriately, and new analysis must be done to display and/or clarify volume projections and harvest levels;

b. The project volume metrics (sustained yield limit, projected timber sale quantity, and projected wood sale quantity) do not include potential salvage harvesting; how would these activities affect long-term soil productivity, and how will lands unsuitable for timber production where salvage occurs provide ecosystem services;

c. There is a contradiction in the assumption that site-specific factors wouldn't materially affect timber yield (assumptions, 3.29.3), when the DEIS also states that site-specific data at the project scale would result in changes to timber suitability and volume outputs (3.29.4);

d. The DEIS should have taken into account the effects of the 2017 fires on timber volumes;

e. It is unclear how wildlife plan components would limit harvest, and yet at the same time not alter expected outputs. Appendix H should better describe how various plan components were factored into timber projections; and specify the magnitude of the effects of those plan components;

f. The EIS must discuss how timber projections were affected by the recent mountain pine beetle outbreak;

g. The role of future wildfire, insects, and disease in determining expected timber yields must be explained; and the modeling for alternatives should be tied to what plan components actually say about future fire suppression;

h. Timber volume projections are overestimated, based on the loss of a proportion of the former timber base to inventoried roadless area designation. The conclusion that potential volumes are higher than what has been produced in recent decades is unsupported;

i. Clarify what factors are not under FS control that are not included in the modeled metrics;

j. The way that the sustained yield limit is calculated is not in compliance with NFMA; it is not based on lands suitable for timber production and does not include a requirement for non-declining even flow as required. It is likely too high;

k. The analysis should address harvest from lands suitable for timber production separately from harvest on lands unsuitable for timber production, because harvest on the former is subject to a non-declining even flow criteria, and harvest on the latter would be more uncertain;

l. Clarify the discussion regarding departure from the sustained yield limit versus a departure from non-declining even flow with respect to NFMA. All of the alternatives depart from non-declining even flow because second decade harvest levels are larger than first decade harvest levels. The FS must disclose why this departure is made; and provide an alternative that does not have this departure;

m. Terminology and interpretation of timber volume may not be changed across alternatives; this is a NFMA violation; the action alternatives are incorrectly formulated and must be made comparable to alternative A;

n. The harvest level assumptions in the modeling related to ROS settings must be disclosed and explained;

o. The plan should allow for timber volumes up to the sustained yield limit, and should not be constrained by budget, because of the potential for partners to increase harvest capacity on the HLC NF;

p. Adjustments should be made to reduce projected harvest in lands unsuitable for timber production; and

q. Effects of timber harvest on specific areas such as conservation watersheds, municipal watersheds; habitat for grizzly bear, lynx, and elk; and wildlife connectivity areas should be included in the timber modeling and reported in the EIS.

Response:

a. The analysis reflects the direction found in the NFMA, the 2012 Planning Rule, and associated directives (Forest Service Handbook 1909.12, Chapter 60).

b. As per FSH 1909.12 Chapter 60, salvage harvest is not included in the sustained yield limit, protected timber sale or wood sale quanties. Additional discussion was added to the timber section of the FEIS to describe potential salvage activities and their effects. Potential salvage projects would be subject to all relevant plan components.

c. Additional text was added in the timber section of the FEIS to clarify these statements.

d. In the analysis for the FEIS, all fire and harvest activity that has occurred through summer 2018 was incorporated.

e. Plan components that could be measured/mapped and that would have an impact on timber outputs were included in the modeling. The effects related to model components are described in the sensitivity analysis in appendix H and the timber section of the FEIS. Other considerations for wildlife plan components would be factored in during site-specific project design and are not expected to alter timber estimates at the broad scale.

f. The effects of the recent mountain pine beetle outbreak are incorporated into the projected timber outputs.

g. Future wildfire and insect outbreaks are reflected in projected timber yields because the expected levels of these disturbances and resulting vegetation conditions are incorporated into the model. The results of fire suppression are represented in the SIMPPLLE model as well. Additional description was added to appendix H and the timber section of the FEIS.

h. The timber modeling reflects potential harvest volumes on the HLC NF based on the most current available data and modeling tools, and incorporates the limitations placed on harvest by IRA designations. Additional clarification was provided in the timber section of the FEIS.

i. The FEIS discussion was clarified; these include factors such as litigation processes, conditions on adjacent private lands, and USFWS direction.

j. The sustained yield limit is calculated per the method described in FSH 1909.12, Chapter 60, Section 64.31, as described in the timber section of the FEIS and appendix H, in a manner consistent with the law and policy. Anticipated sale volume is reflected in the projected timber sale quantity and projected wood sale quantity described in FW-TIM-OBJ-01 and 02, which are considerably lower than the sustained yield limit. Even with an unlimited budget, the anticipated sale volume that could be achieved while still complying with constraints on timber harvest in the 2020 Forest Plan is lower than the sustained yield limit.

k. Appendix C of the 2020 Forest Plan and the timber section of the FEIS disclose the projected timber volume outputs from lands suitable for timber production, versus lands that are unsuitable. The total timber volume was modeled with a non-declining even flow criterion, although not required by the directives.

l. The FEIS contains clarifying discussion. The 2012 Planning Rule and the directives indicate that a plan may provide for departures from the sustained yield limit as provided by the NFMA when departure would be consistent with the plan's desired conditions and objectives. However, the 2020 Forest Plan’s projected timber and wood sale quantities are not departed from the sustained yield limit. There is no requirement in the NFMA for a non-declining even flow of timber. Timber volumes may change from decade to decade as long harvest levels are consistent with management for all multiple uses and do not exceed the capability of the land to sustainably produce timber.

m. The metrics as defined in the 1982 Planning Rule would not apply to the 2020 Forest Plan action alternatives. The allowable sale quantity and long term sustained yield metrics from the 1986 plans are disclosed when discussing alternative A. All alternatives are compared using the metrics required in the FSH 1909.12, in a consistent manner to ensure a proper comparison.

n. The timber model includes calibrations for harvest limitations based on ROS classes. Description was added to the timber section of the FEIS and appendix H to clarify.

o. It is possible that harvest could exceed the projected timber and wood sale quantities, so long as it remains below the sustained yield limit. Footnotes were added to FW-TIM-OBJ-01 and 02 that reflect the volumes that could be achieved with unlimited budgets while still consistent with all plan components and resource constraints. No alternative (with or without a budget constraint) results in volume levels that are the same as the sustained yield limit because sustained yield limit includes what could be produced on all lands that may be suitable for timber production, without considering other multiple uses (FSH 1909.12, 64.31). Projected timber and wood sale quantities are based on the lands determined to be suitable for timber production in each alternative, which is a subset of the lands that may be suitable for which sustained yield limit is calculated.

p. As described in appendix H, the PRISM model was formulated to restrict harvest on unsuitable lands to reflect the differences in management emphasis on those lands.

q. Timber harvest constraints for wildlife species other than lynx were not included in the timber modeling. Potential lynx habitat and grizzly bear habitat were included in the modeling, and therefore summaries of the projected harvest activity can be reported. Analysis was added to the timber and wildlife sections of the FEIS with this information. In addition, the lands suitable for timber production can be compared to municipal watersheds and conservation watersheds; this information was added to the FEIS. However, it is not appropriate to apply projected harvest acres or timber volumes to smaller delineations such as conservation watersheds, municipal watersheds, or wildlife connectivity areas because it is not possible to know site-specifically where harvest activities may occur, and it would be highly speculative to do so. Rather, the effects to these areas are described qualitatively in the FEIS. There are plan components in place that would guide potential harvest in these areas in a manner consistent with the other resource desired conditions.

CR239 Timber – Riparian Management Zones

Concern: Commenters asked the FS to analyze the magnitude of potential activities that may occur in RMZs as a function of meeting vegetation desired conditions. Please describe the vegetation existing and desired conditions within RMZs.

Response: The PRISM model was calibrated to reflect potential harvest levels across the landscape. RMZs are grouped with certain ROS classes to represent a "low or very low" potential harvest management emphasis area. The timber section of the FEIS added verbiage to describe the projected levels of harvest in these areas, although they are not exclusively RMZs. Plan components are in place that would ensure that harvest conducted in RMZs would be done to achieve resource desired conditions and not preclude the desired aquatic conditions (see FW-RMZ section).

The existing condition within RMZs could be estimated by overlaying RMZ boundaries with R1-VMap; however, this would not add value to the analysis because of the wide range of conditions that occur, which would be "washed out" by averaging the conditions across all RMZs. Further, it would not be possible to correlate these appropriately to the forestwide or GA-based vegetation desired conditions. For example, RMZs are linear features and would likely contain more species such as aspen and Engelmann spruce than the broader landscape. The desired conditions for these species at the broader scale would not reflect the appropriate conditions specifically within RMZs. Due to the scale of available data sources and modeling, it is not possible to quantify with accuracy the appropriate desired conditions within RMZs, as is done for vegetation at the broader scale. The existing and desired conditions within RMZs are more appropriately addressed site-specifically at the project level.

CR241 Timber – Effects of Future Harvest

Concern: Requests for clarification on the effects of future timber harvest were received, including:

a. The Plan should determine and control limits of harvest within drainages;

b. There should be an analysis of the actual areas likely to be disturbed by timber harvest, based on future projections;

c. The management strategies in appendix C of the Draft Plan should not be included as assumptions in the effects analysis; and

d. Clarify the effects of timber harvest versus the effects on timber harvest.

Response:

a. The timber modeling does include constraints for the level of harvest that can occur in an individual drainage, as described in appendix H; this ensures that the model projected harvest appropriately distributed across the HLC NF and not concentrated in a few drainages. However, this constraint does not necessarily provide for all of the watershed considerations that would be taken into account at the project scale. It is not possible with a programmatic analysis to establish harvest limits for all of the individual watersheds on the HLC NF. The RMZ plan components would be used at the project scale to constrain any harvest activities that may be planned within the RMZs of individual drainages and watersheds.

b. The analysis for forest planning is programmatic in nature. It is not possible to site-specifically disclose the exact location, type, and timing of potential timber harvest projects, except in the broad land classifications described in appendix H. Within the broad land classifications, constraints on harvest are used to represent plan components. The effects of the expected levels of timber harvest are disclosed programmatically throughout the FEIS.

c. The FEIS no longer includes the management strategies in appendix C of the 2020 Forest Plan as assumptions for the analysis; this was an error in the DEIS and Draft Plan that has been corrected.

d. The timber section of the FEIS contains sections that disclose the effects of plan components for other resources on potential harvest activities, as well as describing the effects of timber harvest. Other resource sections throughout the FEIS disclose the effects of timber harvest on each resource.

CR242 Timber – Budget and Alternatives

Concern: Commenter asked for additional analysis and explanation of the role of budget in timber projections and how it influences the effects and comparison of alternatives.

Response: The timber modeling included two scenarios related to budget: one in which the budget was constrained at reasonably foreseeable levels, and one where there was no budget constraint. As shown in appendix H, the sensitivity analysis on the timber model concluded that budget was one of the most influential constraints on the model results. The timber section of the FEIS discloses the potential harvest levels and effects of both budget scenarios. The 2012 Planning Rule and directives require that plan components reflect a reasonably foreseeable budget level; therefore, for the timber objectives (FW-TIM-OBJ-01 and 02), the projected timber and wood sale quantities reflect the budget-constrained runs. However, it is possible to exceed objectives; for this reason, a footnote to those objectives provides the estimated timber volumes that could be possible with unlimited budget that are also consistent with all other plan components and resource constraints.

CR257 Timber – Law and Policy, Practices

Concern: Commenters had concerns/suggestions regarding Timber Law, policies and practices, including:

a. Regulations for logging should be relaxed;

b. Sustainable harvest is acceptable, but no cutting of old growth trees and no clearcutting should occur; and

c. Logging operations should consider wildlife activity.

Response:

a. The plan components found in all alternatives adhere to current law, regulation, and policy regarding timber harvest on NFS lands. Alternative E was developed with the intent of being as permissible to

timber harvest as possible. The preferred alternative (F) includes less projected harvest than alternative E, but more than the other alternatives. Most of the constraints in the timber section of the 2020 Forest Plan are based on laws such as the NFMA; changes to these requirements are outside the scope of forest plan revision. Other constraints are applied based on multiple use objectives for other resources.

b. Plan components are in place to ensure that harvest is conducted in a sustainable manner, as required by NFMA. With some exceptions, old growth stands would be maintained and promoted under all alternatives (FW-VEGF-DC-05 and FW-VEGF-GDL-04). Clearcutting is a silvicultural tool for vegetation management. Clearcutting is allowed on the Forest only where it is determined to be the method most appropriate to meet the purpose and need of the project (FW-TIM-STD-04). Forest plan direction recognizes the important role that large live trees have in the ecosystem, and a guideline addresses retention of larger-diameter leave trees within harvest units (FW-VEGF-GDL-01). The clearcut harvest method is not allowed within riparian management zones (FW-RMZ-GDL-11).

c. Prior to conducting any logging activity, projects would consider all plan components including those for wildlife species such as lynx, grizzly bear, and wolverine. During implementation, all prescribed design elements and mitigation measures determined to be necessary to be consistent with these plan components would be followed.

CR258 Timber – Editorial

Concern: Various GA plan component and other editorial suggestions were provided.

Response: Changes were made where applicable, please see the Timber section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

Geology, minerals, and energy

CR17 Minerals and Geology

Concern: Commenters had numerous questions/concerns about mining and minerals, including:

a. Requests for additional mapping or information about mining areas in RWAs;

b. Mining should not be allowed in WSAs;

c. Questions about mining policy in the Forest Plan;

d. Suggestions for additional or other edits to plan components;

e. Suggestions for updates/edits to the FEIS;

f. Questions on public involvement of mineral claimants;

g. Comments/request for more regarding mine cleanup and water quality including bonding and reclamation requirements; and

h. Request for restriction on mining/exploration activities.

Response:

a. The existence of certain minerals is not a criteria for analyzing areas for recommended wilderness purposes. RWAs are not compatible with leasable or salable minerals as the disposal of these minerals is discretionary. Locatable mineral prospecting, exploration, and development is allowable in RWAs as these areas are open to mineral entry until they are congressionally declared wilderness areas.

b. WSAs are not compatible with leasable or salable minerals as the disposal of these minerals is discretionary. Locatable mineral prospecting, exploration, and development is allowable as WSA's are open to mineral entry until these areas are congressionally declared wilderness areas.

c. Please see the Regulatory Framework Section (Chapter 3.30.2) of the FEIS for a discussion of mining policy, regulations, and laws.

d. Various GA plan components and other editorial suggestions were provided. Changes were made where applicable, please see the GA section of the 2020 Forest Plan. Where not changed per the comment, the Forest determined that the retained plan components were sufficient to meet our obligations under the 2012 Planning Rule.

e. Please see the Geology, Energy and Minerals section of the FEIS for updates. Where not changed per the comment, the Forest determined that the analysis was sufficient to meet our obligations under the 2012 Planning Rule.

f. As members of the public, minerals claimants had the same opportunities for participation. Please see the Public Involvement Section (Chapter 2.3) of the FEIS that describes the multitude of ways and opportunities to reach out and solicit public participation throughout the planning process.

g. 36 CFR 228 Subpart A is the FS mining regulations for locatable minerals whose purpose is to set forth rules and procedures through which use of the surface of NFS lands in connection with operations authorized by the United States mining laws (30 USC 21-54), which confer a statutory right to enter upon the public lands to search for minerals, shall be conducted so as to minimize adverse environmental impacts on NFS surface resources. Included in these regulations are requirements and procedures for reclamation and bonding.

h. Thank you for the comment. NFS lands on the HLC NF are open for mineral prospecting, exploration, and development unless they are withdrawn from mineral entry.

CR122 Cave and Karst

Concern: Commenters had concerns regarding cave and karst resources on the Forest, including:

a. Concern with White Nose Syndrome and bats and continuing the coordination with interested public and the MT Natural Heritage Program; and

b. Request to have the same protections for cave and Karst in the new Forest Plan that were in the 1986 Lewis & Clark Forest Plan.

Response:

a. Please see FW-WL-GO-07.

b. Please see the Federal Cave Resources Protection Act of 1988. This law provides for protection and preservation of caves on Federal Lands. This law is applicable but does not need to be repeated in the 2020 Forest Plan.

CR175 Elkhorns – No Oil/Gas Leasing

Concern: Commenters had three separate concerns regarding oil/gas leasing that included:

a. Oil and gas drilling should not occur in the Elkhorns Wildlife Management Unit;

b. This area should be withdrawn from mineral entry; and

c. Road construction limitations and reclamation practices are required for any mining activities.

Response:

a. An oil and gas leasing decision will not be included in the 2020 Forest Plan. It is a separate decision and beyond the scope of this analysis. An Oil and Gas Environmental Impact Statement and Record of Decision was released in 1998 for the Helena National Forest and for the Elkhorn Mountains Portion of the Deerlodge National Forest. In 1998 the Helena National Forest Supervisor made the Elkhorn Wildlife Management Unit unavailable for oil and gas leasing. This decision is still in place and the Elkhorns Wildlife Management Unit is still discretionary unavailable for federal oil and gas leasing.

b. A mineral withdrawal is a comprehensive and time-consuming process and it requires a great deal of administrative review, which could take several years of analysis and public engagement before

reaching a final decision. A mineral withdrawal for the Elkhorn Wildlife Management Unit area is beyond the scope of this analysis and will not be included in the 2020 Forest Plan.

c. 3. 36 CFR 228 Subpart A are the US FS mining regulations for locatable minerals whose purpose is to set forth rules and procedures through which use of the surface of NFS lands in connection with operations authorized by the United States mining laws (30 USC 21-54), which confer a statutory right to enter upon the public lands to search for minerals, shall be conducted so as to minimize adverse environmental impacts on NFS surface resources. Included in these regulations are requirements and procedures for reclamation and bonding.

CR197 Oil and Gas Leasing

Concern: Several comments were received that requested the 2020 Forest Plan to specify that there would be no new oil and gas leasing on the forest. Additionally, a request for a mineral withdrawal within the Ten Mile Municipal Watershed was received.

Response: An oil and gas leasing decision is not included in this forest plan revision process. It is a separate decision and beyond the scope of this analysis. An Oil and Gas Environmental Impact Statement and Record of Decision (ROD) was released in 1998 for the Helena National Forest and for the Elkhorn Mountains Portion of the Deerlodge National Forest. An Oil and Gas Environmental Impact Statement and Record of Decision was released in 1997 for the Lewis and Clark National Forest. Both of these decisions are still in place for the HLC NF but may be changed by subsequent new laws and legislation.

A mineral withdrawal is a comprehensive and time-consuming process and it requires a great deal of administrative review, which could take several years of analysis and public engagement before reaching a final decision. A mineral withdrawal for the Ten Mile Municipal Watershed is beyond the scope of this analysis and is not be included in the 2020 Forest Plan.

The 1998 ROD for the Helena National Forest referenced above makes the Ten Mile Municipal Watershed legally unavailable for oil and gas leasing.

CR198 Smith River - Mineral Withdrawal

Concern: Several requests for a mineral withdrawal specific to the Smith River watershed were received.

Response: A mineral withdrawal is a comprehensive and time-consuming process and it requires a great deal of administrative review, which could take several years of analysis and public engagement before reaching a final decision. A mineral withdrawal is beyond the scope of this analysis and is not included in the 2020 Forest Plan.

Carbon and climate

CR47 Climate Change comment Attachments

Concern: Attachments for CR48.

Response: See responses for CR48 related to the themes of the attachments.

Each attachment is reviewed and documented in the response to literature table/spreadsheet.

CR48 Carbon Climate – Vegetation and General

Concern: Many comments were received regarding carbon and climate and vegetation, including:

a. The forest plan and analysis do not adequately take into account the impacts of climate change. The analysis did not include many relevant literature citations important to the topics of climate change, carbon sequestration, and greenhouse gas emissions related to land management activities.

b. The Plan and analysis do not adequately disclose the risk of large-scale forest die-back or ecosystem shifts that may occur due to drought, climate change, and/or megadisturbances.

1. The analysis should further address the risk of limited regeneration potential and reforestation failure; emphasize that monitoring of regeneration will be crucial; and address the potential loss of resilience.
2. The analysis should further address the risk of growth loss and mortality linked to tree size.
3. The DEIS has no scientific basis that treatments will result in sustainable vegetation with climate change. What management strategies could create conditions that are resilient/resistant to disturbances that may be amplified by climate change - irrigation?
4. Please cite the following from Halofsky et al Chapter 5: ""Increasing air temperature, through its influence on soil moisture, is expected to cause gradual changes in the abundance and distribution of tree, shrub, and grass species throughout the Northern Rockies, with drought tolerant species becoming more competitive."

c. The analysis and plan do not adequately provide for ecological integrity in the context of climate change:

1. The analyses do not adequately consider the risk of departure from the NRV due to climate change and mega disturbances using BASI; potential effects such as novel ecosystems should be disclosed.
2. The desired vegetation conditions are not appropriate or may not be attainable; NRV is not a valid metric to use due to changes/uncertainty in future climate conditions.
3. The Forest needs to conduct alternate scenario planning and consider desired conditions ("plan B") not within NRV. Robust scenario planning should be discussed in the Timber and Carbon sections.
4. The analysis does not sufficiently disclose climate scenarios and effects. Please add figure 2 from Millar and Stephenson (2015); and Northern Rockies Adaptation Partnership Report box 3.4 and 3.5.

d. The analysis does not adequately analyze carbon sequestration.

1. The analysis doesn't consider the potential for soils to shift to a carbon source and downplays the importance of forests in sequestering carbon in that context.
2. The analysis doesn't consider that the capacity of forests to sequester carbon is decreasing.
3. The FS has not modeled the carbon flux over time for all proposed stand management scenarios for each of the forest types on the HLCNF.

e. The analysis and plan do not adequately predict and respond to potential species distribution changes due to climate change.

1. The analysis should include probable species distribution projections for tree species. Please add figure 5 from Rocky Mountain Forests at Risk.
2. Allow for the introduction of species that currently do not occur on the HLC NF but are likely to be resilient to drought and climate change, such as bur oak.
3. Assisted migration actions should be included in the plan.
4. A triage approach to conserving species should be considered and discussed. The analysis needs to identify what is "savable".

f. The analysis needs to discuss the positive feedbacks of climate change.

g. The allowable harvest should be adjusted downward to account for climate change.

h. The EIS should disclose the amount of carbon dioxide and other greenhouse gas emissions such as methane and nitrous oxide created by Forest Plan implementation (such as from logging, livestock grazing, recreational motor vehicles). A cumulative emissions analysis should be done taking into

account activities on non-NFS lands and other national forests. Global warming and its consequences may be irreversible, which implicates legal consequences under the NEPA, the NFMA, and the ESA which must be disclosed.

i. The DEIS fails to provide any detailed description of what "warm and dry" means in terms of the climate assumptions used in modeling.

j. The FS misinterprets or ignores best available scientific information on the topics of carbon sequestration and climate change. The FS must undertake the peer review process the agency designed (Guldin et al., 2003).

k. Forest policies must shift away from logging because publicly owned forests should be managed to maintain and increase carbon storage. The impacts to carbon from logging is not adequately analyzed.

1. All old-growth, other forests, and grasslands must be protected and expanded for their carbon storage value. Forests that have been logged should allowed to revert to old-growth condition. National forest should not be considered "suitable" for activities that contribute to climate change.
2. Future regrowth cannot make up for the effects of logging, because carbon storage will lag behind for decades or centuries. In addition, forest recovery (regeneration) is no longer a given.
3. Thinning to reduce potential carbon losses due to wildfire is in conflict with carbon sequestration, and would result in a net emission of CO2 because the amount of carbon removed to change fire behavior is often larger than that saved by changing fire behavior, and more area has to be harvested than will ultimately burn over the period of effectiveness of the treatment. The analysis needs to acknowledge that even intense fires emit only a fraction of the carbon emitted by fossil fuels.
4. The analysis should consider science that describes the adverse impacts that land management practices have on carbon sequestration. The analysis should acknowledge that removing trees and other biomass is a net source of atmospheric CO2; and disclose that when wood losses and fossil fuels for processing and transportation are accounted for, carbon emissions can exceed carbon stored in wood products. Clarification is needed as to how harvesting and regenerating forests can result in net carbon sequestration. Carbon emissions from soil due to logging are significant, yet under-reported.
5. The potential to create warmer conditions through forest removal must be considered.

l. Cattle grazing produces greenhouse gas emissions and reduces soil carbon; this should be analyzed/disclosed; and this use should be minimized or discontinued.

m. The FS provided the public with an unreasonably optimistic outlook on forest persistence; it does not adequately address the economic risk related to our ability to grow and harvest economically important conifers.

n. The FS should maintain vegetation types that will become less tolerant of warm conditions.

1. Mixed mesic conifer and spruce/fir are important given climate change; why is the DC to reduce this?
2. Given climate change, Douglas-fir will be reduced; it is very important for habitat so why do the DCs call for reducing this component?

o. There is concern for funding necessary monitoring, especially related to climate change; please leverage partnerships and citizens in this effort.

p. Drought monitoring tools such as the landscape evaporative response index should be used to provide early warning of droughts.

q. The FS needs to increase its own efficiency of fossil fuel use, use of solar and wind, and carbon sequestration practices.

r. Climate change and carbon sequestration considerations are important for maintaining water quality and quantity; please include the Upper Missouri River Basin Climate Impacts Assessment in the process to address issues of drought, early runoff, and warming temperatures.

s. Commenters asked the FS to build climate change adaptations into the Forest Plan, especially for vegetation and wildlife habitat.

Response:

a. The 2020 Forest Plan and FEIS have taken into account the potential impacts of climate change to the degree that programmatic plan components and management approaches can or should incorporate concepts related to the issue. Vegetation and wildlife plan components in the 2020 Forest Plan address future uncertainties by focusing on the development of landscapes and forests that are resilient and resistant to disturbances and drought. Vegetation modeling incorporated future climate scenarios. Appendix C of the 2020 Forest Plan and appendix J of the FEIS provides a summary of possible management approaches and climate change adaptation strategies supported by the plan.

b. These risks are incorporated into the analysis.

1. The terrestrial vegetation section of the FEIS contains information related to the risks of forest die-back, regeneration failures, and loss of resilience, using many of the references suggested. Reforestation success is included in the monitoring plan (appendix B). Several plan components help ensure reforestation can be assured (FW-VEGT-GDL-02, FW-VEGT-GDL-03, and FW-TIM-STD-02). Regeneration potential was taken into account when identifying the lands suitable for timber production (appendix H); and incorporated in the vegetation modeling.
2. The 2020 Forest Plan calls for managing an array of size classes. While medium-sized trees may be impacted less by drought, it would be inappropriate to adjust the desired abundance of this size class, due to the ecological importance of all classes. The studies provided were not conducted on sites similar to the HLC NF.
3. The 2020 Forest Plan includes plan components related to promoting resilience (including but not limited to FW-VEGT-DC-01, FW-VEGF-GDL-01, FW-TIM-DC-02, FW-TIM-GDL-01, and FW-TIM-GDL-02). The FS does not propose to change moisture regimes through actions such as irrigation. Rather, strategies that could create resilient conditions include thinning to lower tree densities so that there is more water available to remaining trees, and creating stand conditions less susceptible to insects, disease, and stand replacing fire behavior. Management activities can also favor species that are more tolerant of drought and wildfire events which can provide seed post-disturbance. These actions are described in the terrestrial vegetation section of the FEIS.
4. The citation has been incorporated into the terrestrial vegetation section of the FEIS.

c. The analysis and plan follow the 2012 Planning Rule and directives relative to ecological integrity.

1. The Deciding Official recognizes that there are uncertainties associated with future conditions. Discussion is provided in the terrestrial vegetation section of the FEIS regarding NRV, megadisturbances, and potential departures, using some of the literature submitted. The wildlife analysis is based on the terrestrial vegetation analysis. Appendix I and H describe the NRV analysis.
2. The potential effects of climate change, and associated levels of uncertainty, were integral in the development of desired conditions and the effects analysis. Appendix H includes explanation concerning NRV as a basis for desired future conditions; and documents adjustments made to desired conditions using BASI to account for changes in climate.
3. The 2020 Forest Plan does not include a "plan B" of desired conditions because there is insufficient information available to do so. Numerous variables such as topography, microsite conditions, and available seed sources cannot be reflected by the models used

to predict species presence or distribution shifts. However, monitoring is prescribed (appendix B) which would be integral to inform the decision maker on the status and trend of vegetation on the HLC NF. As climate-related changes occur and more localized information becomes available, adjusted desired conditions could be incorporated via forest plan amendments, if necessary.

4. The figures from Halofsky et al 2018 are included in the carbon and climate section of the FEIS. The figure from Millar and Stephenson (2015) is not added but is paraphrased in the terrestrial vegetation section to disclose that more frequent and more extreme disturbance events are projected for some ecosystems. The FS recognizes that changes in frequency and magnitude of disturbances can create novel systems that increase our uncertainty in any projections of future vegetation types or species distributions.

d. Carbon sequestration is analyzed in detail in a manner consistent with BASI.

1. The Deciding Official recognizes the important role that the HLC NF plays in the carbon cycle. As reported in the carbon and climate section of the FEIS, maintaining healthy vegetation is important to ensure the HLC NF continues to sequester carbon. This section places the role of the HLC NF in the context of the global issue of carbon sequestration, and is derived from a carbon assessment white paper (appendix J) which provides a detailed quantitative analysis of baseline carbon stocks and flux on the forest (including soils), carbon storage in harvested wood products, and the relative effects of disturbance and environmental factors on carbon storage over time. It also considers potential carbon and climate effects in the future. This white paper is based on peer-reviewed and published datasets and tools and is provided in the project record.
2. The carbon and climate section of the FEIS and appendix J discloses the past, present, and potential capacity of the HLC NF forests to sequester carbon.
3. An analysis that estimates the carbon flux for specific management scenarios for each forest type on the HLC NF would be too fine scale with the available data and modeling tools. The carbon and climate section of the FEIS uses BASI from the baseline carbon assessment and a disturbance assessment to estimate the maximum potential effects of management alternatives on carbon storage. This section also provides a discussion of these effects and puts them into context of forest dynamics across the national forest as well as national and global emissions. An analysis of the alternatives would likely fail to detect statistically significant differences among the alternatives as uncertainty is very high at such small scales and would not provide meaningful information to the decision given current laws and regulations. The FEIS adequately and accurately describes these potential effects and is warranted in not including a quantitative analysis of the effects of stand management scenarios.

e. Potential species distribution changes and appropriate management responses are disclosed as appropriate.

1. The terrestrial vegetation section of the FEIS discusses the trends and factors that may contribute to changes in tree species distribution. The suggested figure from Rocky Mountain Forests at Risk was not included because it was not needed to convey that species are projected to expand and contract. Modelling changes to climatic factors to project future distribution without modelling other contributing factors is less reliable because it overlooks the interactions of these factors that would affect changes to distribution. The projections for distribution changes are highly uncertain due to uncertainties of interactions among species and disturbance.
2. The FS used the BASI for the HLC NF to inform the desired species compositions over the planning horizon; bur oak or other novel species were not included.

3. The 2020 Forest Plan does not preclude the use of assisted migration, but detailed projections relevant at the scale of the HLC NF are not available in terms of introducing novel species. Refer to plan component FW-VEGT-GDL-03. The FS would follow regional seedling transfer guidelines which are continually assessed for climate adaptability. Assisted migration may be a strategy adopted by the HLC NF if and when there is sufficient information to guide this activity.
4. Triage is a difficult approach due to the uncertainty of specific locations that are more or less at risk or of achieving the NRV. The terrestrial vegetation section of the FEIS discusses the general conditions that would contribute to vulnerabilities that would reduce unit's ability to achieve the NRV for certain vegetation types. The 2020 Forest Plan and analysis identify the species that best contribute to future resilience, such as drought tolerant species.

f. Climate change and positive feedback loops are a global phenomenon. Given that greenhouse gases mix readily in the atmosphere it is difficult and very uncertain to ascertain the indirect and cumulative effects of emissions from multiple projects that derive the plan alternatives. Relative to national and global emissions, forest management activities contribute negligibly to overall greenhouse gas emissions and climate effects. Forest management activities may affect only 0.11 Tg of carbon stored in the forest ecosystem each year, which is extremely small compared to the approximately 91 Tg of carbon stored in the forest ecosystem. The action alternatives would not significantly, adversely, or permanently affect forest carbon storage, but would rather achieve a more resilient forest condition that would improve the ability of the HLC NF to maintain carbon stocks and enhance carbon uptake. This is described in the carbon and climate section of the final EIS as well as the supporting carbon assessment (appendix J).

g. Projected timber and wood sale quantities are not minimum or maximum levels of allowable timber production; they are estimates of likely harvest levels and are well below the sustained yield limit because they include all applicable resource constraints. Sustained yield limit does represent a maximum amount of volume production that would be allowed. The timber model indirectly incorporated the possible effects of climate change by including likely disturbance levels, as described in appendix H and the timber and terrestrial vegetation sections of the FEIS. There is no further need to adjust timber metrics based on climate change.

h. The carbon and climate section of the FEIS places the contribution of the HLC NF and its role of sequestering carbon into the context of global carbon and climate trends. This section is supported by a quantitative analysis of forest carbon stocks and factors influencing storage. The 2020 Forest Plan does not make any commitment or authorize any actions on the ground. There is no requirement to conduct a detailed emissions analysis of the activities that may occur during Forest Plan implementation; such an analysis would be speculative. It would also be highly speculative and uncertain to conduct a cumulative analysis to take into account the potential activities on non-NFS lands and other national forests.

i. Appendix H of the FEIS includes clarification on this modeling assumption. The SIMPPLLE model does not include the capacity for detailed climate modeling. Rather, each decade is categorized into general climate trends (warm/dry, normal, cool/moist) that tie to assumptions in the model that reflect the likely outcomes.

j. Relevant and opposing literature was incorporated into the analysis as appropriate (refer to the carbon and climate section of the FEIS and appendix J). A peer review process is not required. Please refer to the response to literature table below for a summary of the FS review of all submitted literature.

k. It is not FS policy to maximize carbon or elevate the consideration of carbon above the many other services that NFS lands provide. In some instances, it is desirable to reduce carbon stocks to ensure the continued provisioning of other ecosystem services and for protecting lives and property. Hazardous fuel reduction treatments lower carbon stocks indefinitely as long as the treatments are maintained.

However, any beneficial effects on carbon by avoiding a high-severity disturbance event, for example, is ancillary or a co-benefit to the primary reason fuel treatments are conducted. In the absence of fuels reduction treatments, the fire-adapted forest where the proposed treatments would take place may be more at risk to large and higher-severity wildfires, resulting in decreased ecosystem services and potentially increased carbon emissions. High-severity fires, especially when they occur repeatedly, can affect human health and safety, infrastructure, and ecosystem services, and can cause delayed regeneration or even a transition of forests to nonforest ecosystems in some areas. By reducing the threat of wildfire, management activities may create conditions more advantageous for supporting forest health in a changing climate and reducing greenhouse gas emissions over the long term. In fact, reducing stand density, one of the goals of this proposed action, is consistent with adaptation practices to increase resilience of forests to climate-related environmental changes.

1. Logging is a suitable use on national forests, as per law and the 2012 Planning rule. As described in the carbon and climate section of the FEIS, there is a relationship between tree removals from a site and greenhouse gas emissions or sequestration and climate change. The Paris Protocol reference to forest reduction is concerned with deforestation at the global scale. Vegetation treatments (or natural disturbances) on NFS lands are not deforestation but rather are an altering of stands to a more open state; or the conversion of forests back to the early successional stage of development and the initiation of new forests through regeneration. The forests on the HLC NF have been cycling through this natural succession process for millennia. Old growth is recognized for its role in sequestering carbon, as described in the old growth section of the FEIS. The plan is explicit in promoting this specific forest condition (FW-VEGF-DC-05, FW-VEGF-GDL-04, 05).
2. See the response to #2a.
3. The amount of carbon expected to be influenced by thinning in the alternatives is very small with respect to the amount of carbon that the HLC NF contains, and expected emissions would be negligible with respect to both national and global greenhouse gas emissions. The biomass removed from the forest in fuels reduction treatments is not immediately emitted to the atmosphere. Rather that material can be used for wood products which substitute for more fossil fuel intensive materials, thus resulting in lower net emissions. The Intergovernmental Panel on Climate Change recognizes wood and fiber as a renewable resource that can provide lasting climate-related mitigation benefits that can increase over time with active, sustainable management.
4. The carbon and climate section of the FEIS addresses the effects of land management practices on carbon sequestration, using BASI. In the absence of timber harvests and thinning, forests thin naturally from mortality-inducing natural disturbances and other processes resulting in dead trees that would decay over time, emitting carbon to the atmosphere. Wood and fiber removed from the forest would be transferred to the wood products sector for a variety of uses. Carbon can be stored in wood products for a variable length of time. Wood can be used in place of other materials that emit more greenhouse gases. Likewise, biomass can also be burned to produce heat or electrical energy or converted to liquid transportation fuels that would otherwise come from fossil fuels. In fact, removing carbon from forests for human use can result in a lower net contribution of greenhouse gases to the atmosphere than if the forest were not managed. The Intergovernmental Panel on Climate Change recognizes wood and fiber as a renewable resource that can provide lasting climate-related mitigation benefits that can increase over time with active management. Reducing stand density may also reduce the risk of more severe disturbances, such as insect and disease outbreak and severe wildfires, which may result in lower forest carbon stocks and greater greenhouse gas emissions.

5. Thinning forests may increase ambient temperatures within those stands for a short period of time, but would make additional moisture and nutrients available, and create conditions more resilient to fire and insect disturbances. Thinning unnaturally dense stands would also help restore forest structure and function and ultimately support long-term carbon uptake and storage. Management activities overall would not increase temperatures in a broader sense.

l. The effects of management activities on nonforest lands, including greenhouse gas emissions from cattle grazing in the HLC NF, are disclosed in the FEIS and the corresponding carbon assessment (appendix J).

m. The terrestrial vegetation and timber sections of the FEIS acknowledge the risk of forest decline and associated impacts to projected timber and economic outputs.

n. The 2020 Forest Plan includes a suite of desired conditions that represent the natural diversity and abundance of vegetation types on the HLC NF. The analysis, as reported in the terrestrial vegetation section of the FEIS, acknowledges those types and species that are vulnerable to warm/dry conditions anticipated with climate change.

1. The desired conditions in the plan include the maintenance of all the vegetation types historically found on the HLC NF, including those that are less tolerant of warm and dry climate conditions. The desired range of spruce and fir forests are important components to ecosystem diversity. GA-level quantitative desired conditions show that the need to increase, decrease, or maintain these cover types varies depending on the specific area. The desired conditions for spruce/fir forests are further described in appendix H and the terrestrial vegetation section of the FEIS.
2. Douglas-fir forests are important, and the desired conditions call for this species to remain prevalent on the HLC NF. Reductions in the Douglas-fir cover type and species extent are desired because there is ample evidence suggesting that the current levels of Douglas-fir are above the NRV levels due to factors such as fire exclusion, as described in Appendices H and I and the terrestrial vegetation section of the FEIS. Forest management actions would be designed to achieve (and maintain) the desired range for Douglas-fir, taking into account the effects of natural processes. Once monitoring shows that this species is present at the desired level, management actions would not be taken to reduce it further.

o. The monitoring plan reflects the reasonably foreseeable fiscal and organizational capacity of the HLC NF. The potential for working with volunteers and partners is one of the goals of the 2020 Forest Plan (FW-CONNECT-GO-04).

p. Monitoring of drought is not specifically included in the HLC NF monitoring plan (appendix B of the 2020 Forest Plan), because this information is available through other data sources and reported by other organizations.

q. The FS has internal policies related the agency's fossil fuel use and energy efficiency which are not part of forest plan revision. Carbon sequestration is addressed in the carbon and climate section of the FEIS. Plan component FW-CARB-DC-01 addresses the provision of this ecosystem service.

r. The HLC NF acknowledges the importance of considering climate change and carbon sequestration and has included robust analyses of these concepts throughout the FEIS. The HLC NF utilizes the work of the Northern Rockies Adaptation Partnership, as summarized in Halofsky et al 2018, to consider the potential effects to watershed functions. The applicable findings in the suggested information source would be consistent and complementary to this BASI.

s. The HLC NF has incorporated a robust range of desired conditions for vegetation which considered resilience and potential climate-related impacts, as described in appendix H and the terrestrial vegetation section of the FEIS. Wildlife habitat plan components also provide additional species-

specific habitat components where needed. Appendix C of the 2020 Forest Plan, and appendix J of the FEIS, also address potential management actions related to climate change adaptations that would be consistent with the 2020 Forest Plan components.

CR126 Fire – Climate Change

Concern: Commenters asked for climate change to be included in the analysis relating to wildland fire. One indicated that fuel treatments do not increase terrestrial carbon stocks.

Response: Climate change is factored into the analysis relating to wildland fire. In the FEIS refer to the Fire and Fuels section, Environmental consequences, Effects common to all alternatives, Climate change. Here it describes how it is expected that climate change is likely the single most important factor influencing fire. Additionally, see Future wildfire and fire regimes in the FEIS under the Fire and Fuels section. This section discusses the influence of climatic variability on fire. Throughout the FEIS it is recognized that fuel treatments can influence carbon storage. See the aquatic ecosystems: wildfire and fuels, effects to all alternatives section in the FEIS. Additionally, carbon storage is discussed extensively in the climate and carbon sequestration section. Within this section it is acknowledged that the forest fluctuates between being a source and a sink of carbon. A large part of this is due to wildfire occurrence.

CR266 Carbon Climate – Recreation

Concern: Commenter disagrees with use of climate change as a reason to eliminate any activities on the Forest, especially motorized recreation. Comments include multiple references that contradict the BASI that the FS used in its analysis.

Response: The HLC NF planning team followed the 2012 Planning Rule in its analysis of environmental consequences of the 2020 Forest Plan. The directives require us to analyze the effects of our activities to the process of carbon sequestration and under the expected climate changes. The carbon and climate section of the FEIS, and an associated whitepaper in the project record, provides this analysis using the BASI. The impacts of various forest uses are disclosed; however, no uses (including motorized recreation) were excluded from the HLC NF on the basis of climate or carbon impacts. Please also see the responses to literature cited by the public, below.

CR267 Carbon Climate – Wildlife

Concern: The plan should address potential climate change impacts on wildlife habitat and should conserve connectivity areas to assure that species can move in response to climate change.

Response: The 2020 Forest Plan includes components that are designed to mitigate the effects of climate change, to the extent possible through management and planning, by promoting ecosystem resilience (e.g. FW-VEGT-DC-01) and habitat connectivity (e.g. FW-VEGT-DC-04, FW-WL-DC-04). A detailed description of how climate change was considered in development of the plan can be found in appendix J of the FEIS, along with potential adaptation strategies that would help sustain native wildlife.

See also the responses to CR48, "Carbon Climate - Veg and General" and CR73, "Wildlife - Connectivity".

Response to Literature Cited by Public

The public cited hundreds of books, publications, articles, websites, etc. as best available scientific information for the team to consider. For all this material, a review was done to determine if and how the information should be used in the 2020 Forest Plan and/or the FEIS. One of the following response codes was used to respond to each citation (Table 2).

Table 2. Response Codes, Description, and number of References Submitted by the Public

Response Code	Description
AUTH	Used another publication by the same author; on a similar topic that is more recent and/or more comprehensive.
CITE	Reference was cited in the DEIS or was reviewed, determined to be relevant, and will be cited in the FEIS.
CON	Subject/topic considered but is addressed by other literature or sources of information that is appropriate or equally relevant
DATED	There is a more up-to-date publication available on the same topic and/or publication was a preliminary/draft report.
GEN	Publication is on a general topic or process which was considered directly or indirectly through the 2012 Planning Rule but not cited.
INC	Study results are inconclusive
IRR	Study is irrelevant to the issues under consideration at spatial and temporal scales appropriate to the plan area and to a land management plan; study does not apply to the HLC NF, or is on species, ecosystems, or conditions not found in the plan area.
LRP	Reference cited is an existing law, regulation or policy
N/A	Link was broken; or publication could not be located; or commenter did not provide context for how the publication was to be used. No detailed review was done.
NOT ACC	Not accurate - Does not estimate, identify, or describe the true condition of its subject matter using unbiased scientific methods.
NOT RLB	Not reliable - Reliability indications peer reviewed or published; repeatable; logical conclusions
POST	New scientific information published after the FEIS was completed.
REF	Incorporated by reference in other works used in the analysis (e.g. cited in NCDE Grizzly Bear Conservation Strategy, Lynx Conservation and Assessment Strategy, Climate Change Vulnerability and Adaptation in the Northern Rocky Mountains)

For the citations coded as “N/A”, no detailed review was done. These include references provided that required a purchase, web links that were no longer operating, and/or publications that were not attached by the commenter and could not be located through an online search.

Table 3 provides a list of each citation that was reviewed, the response code, and a brief rationale supporting the response organized in order of each commenter. Some citations were provided by multiple commenters; in these cases, the citation is only included once in the table, and all of the commenters are listed in alphabetical order in the Commenter column. For brevity, the “N/A” citations are not included in this table, because no detailed review was done. Refer to the project record for a spreadsheet containing more detailed information, including citations coded as “N/A”.

Table 3. Detailed Review and Response to Literature Submitted by the Public, sorted by Commenter Name

Commenter(s)	Citation	Response Code	Rationale
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	2013. Open Letter to Members of Congress from 250 Scientists Concerned about Post-fire Logging.	CON	The HLC NF 2020 Forest Plan includes components that acknowledge the importance of burned forests; and the potential effects of postfire logging are addressed with a variety of literature sources.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	2015. Open Letter to U.S. Senators and President Obama from Scientists Concerned about Post-fire Logging and Clearcutting on National Forests.	CON	The HLC NF 2020 Forest Plan includes components that acknowledge the importance of burned forests; and the potential effects of postfire logging are addressed with a variety of literature sources.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Adler 2016. Climate change, wildfire, and conservation.	GEN	Allowing or not allowing livestock grazing on federal lands is outside the scope of the Forest Plan Revision. The HLC NF is mandated to follow the Law, regulation, policy, including the 2012 planning rule that includes analyzing and providing guidance for livestock grazing.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Allendorf and Ryman 2002. The Role of Genetics in Population Viability Analysis.	CITE	Reference is used to explain current USFS Region 1 sensitive species analysis and incorporated into references specific to that methodology.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Anderson et al 2012. Watershed Health in Wilderness, Roadless, and Roaded Areas of the National Forest System.	CON	The FS has used other references that come to the same conclusion.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Angermeier & Karr 1994. Biological Integrity versus Biological Diversity as Policy Directives.	GEN	The paper suggests a policy shift from "biological diversity" to "biological integrity." The HLC NF 2020 Forest Plan addresses the concept of "ecological integrity" as required and defined in the 2012 planning rule and associated Directives (2015).
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Anonymous 2013. Exploring biocarbon: the road less traveled in climate policy.	IRR	Source is a blog post, which is specific to southeastern forests. The HLC NF analysis uses other literature sources that are more robust and more relevant to the plan area to discuss the role of the carbon cycle and management actions on the Forest.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Arcese & Sinclair 1997. The Role of Protected Areas as Ecological Baselines.	CON	General paper on the benefits of set aside areas to conservation. Similar considerations informed the alternatives to the 2020 Forest Plan, based on the guidance in the 2012 planning rule and associated directives.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Attiwill 1994. The disturbance of forest ecosystems: the ecological basis for conservative management	CON	The FEIS analysis uses other citations that are equally or more relevant to the plan area to discuss the effects of disturbances versus management actions.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Aubry et al 2013. Meta-Analyses of Habitat Selection by Fishers at Resting Sites in the Pacific Coastal Region.	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.

Commenter(s)	Citation	Response Code	Rationale
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Bader 2016. Review of Grizzly Bear Data and Population Estimates for the Northern Continental Divide Ecosystem.	NOT RLB	Unknown report by unknown consultant, lacking peer review.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Baker and Ehle 2001. Uncertainty in surface-fire history: the case of ponderosa pine forests in the western United States.	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Baker and Williams 2015. Bet hedging; dry forest resilience to climate change threats in the western USA based on historical forest structure.	CITE	Citation points out the importance of small trees to resilience, using data from CO, AZ, CA, and OR; they were abundant historically. Desired conditions and terrestrial veg section include small trees in the desirable mix. Analysis uses reliable opposing science (e.g., Fule et al 2013).
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Baker et al 2006. Fire, fuels and restoration of ponderosa pine–Douglas fir forests in the Rocky Mountains, USA.	CITE	Citation refutes the low severity historic fire paradigm for dry forests. Terrestrial vegetation section acknowledges this viewpoint using this citation, but also includes and relies upon other science (e.g., Fule et al 2013).
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Bart et al 2016. Effect of Tree-to-Shrub Type Conversion in Lower Montane Forests of the Sierra Nevada (USA) on Streamflow.	CON	Paper is specific to Sierra Nevada. The potential for vegetation type conversions is addressed in the terrestrial vegetation section of the FEIS using citations more relevant to the project area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Bate et al 2007. Snag densities in relation to human access and associated management factors in forests of Northeastern Oregon, USA.	CON	Paper provides methods for estimating snag quantities. However, the HLC NF estimates snags directly from plot data, and uses other literature such as Bollenbacher (2008) to describe snag trends using information more local to the plan area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Beck and Suring 2011. Wildlife Habitat-Relationships Models: Description and Evaluation of Existing Frameworks.	IRR	General book chapter on modelling approaches; not directly relevant to the forest plan revision analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Belsky & Blumenthal 1997. Effects of Livestock Grazing on Stand Dynamics and Soils in Upland Forests of the Interior West.	CON	Impacts to soil/timber stands from livestock grazing are analyzed in the FEIS, using other references.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Belsky and Gelbard 2000. Livestock Grazing and Weed Invasions in the Arid West.	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Belsky et al 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States.	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Beschta 2016. Adapting to Climate Change on Western Public Lands: Addressing the Ecological Effects of Domestic, Wild, and Feral Ungulates	NOT RLB	This citation shows writer bias against livestock grazing. The topic of livestock grazing is analyzed using other more relevant citations.

Commenter(s)	Citation	Response Code	Rationale
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Beschta et al 2004. Postfire Management on Forested Public Lands of the Western United States.	CITE	This paper is cited in the terrestrial vegetation section of the FEIS, discussing the potential effects of post-fire logging.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Bond et al 2012. A Conservation Strategy for the Black-backed Woodpecker (Picoides arcticus) in California – Version 1.0.	IRR	Generally, the technical report outlines the basic biology of black-backed woodpeckers, information that is inherent in Plan development. Specific references to management may or may not apply as the document was written with the intent of managing the species in California which has very different ecosystems than Montana.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Bond et al 2012. A New Forest Fire Paradigm: The Need for High-Severity Fires.	CON	The natural role and value of mixed and stand replacing fires on the landscape are acknowledged by plan components, and in the analysis using other references equally or more relevant to the plan area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Booth 1991. Urbanization and the natural drainage system- Impacts, Solutions and Prognoses.	CON	General hydrology. The HLC NF agrees that alteration of natural drainage basins is an impact to soil and water resources. The watershed and soil plan components are set up and used to limit and /or mitigate these effects.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Bradley et al 2016. Does increased forest protection correspond to higher fire severity in frequent-fire forests of the western United States?	CITE	Publication is cited in the terrestrial vegetation section of the FEIS, when discussing the effects of recommended wilderness area designations.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Bull and Blumton 1999. Effect of Fuels Reduction on American Martens and Their Prey.	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Campbell et al 2011. Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions?	CON	The EIS and appendix J address the effects of fuel reduction treatments using other literature equally or more relevant to the HLC NF.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Carnex and Frissell 2009. Aquatic and Other Environmental Impacts of Roads: The Case for Road Density as Indicator of Human Disturbance and Road-Density Reduction as Restoration Target; A Concise Review.	CON	Carnefix and Frissell 2009 make a scientific case for including ecologically-based road density standards in forest plans. The HLC NF considered broad allocations of where motorized uses are suitable, via the Recreation Opportunity Spectrum; and other plan components that would inform future travel planning decisions regarding road densities. More specific roads analysis would be done during travel and/or project planning; the HLC NF is not including a desired road density matrix in the 2020 Forest Plan.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Carroll et al 2001. Carnivores as focal species for conservation planning in the Rocky Mountain Region.	INC	The authors did look at the effects of roads on carnivores, but the authors hedge their findings as the findings were not clear, indeed they state: "Although our interpretation is biologically plausible based on species knowledge, a more rigorous evaluation of the effects of road density on these

Commenter(s)	Citation	Response Code	Rationale
			mesocarnivores must await development of systematic survey data sets."
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Center for Biological Diversity 2014. Nourished by Wildfire.	CON	Publication discusses the importance fire has in ecological processes supporting the FEIS that states "Fire is a critical ecological process". The publication highlights concerns with salvage logging after fire which would be evaluated on a case by case basis with site specific NEPA analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Cherry 1997. The Black-Backed and Three Toed Woodpeckrs: Life History, Habitat Use, and Monitoring Plan.	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Clough 2000. Nesting habitat selection and productivity of northern goshawks in west-central Montana.	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Cohen & Butler 2005. Wildfire Threat Analysis in the Boulder River Canyon; Revisited	CON	The general concepts of this paper are considered in the forest plan revision process. The overall desire as cited in the 2020 Forest plan is to see fire on the landscape as discussed in this publication. Additionally, there is a plan goal to work with landowners relating to wildfire risk.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Cohen 1999. Reducing the Wildland Fire Threat to Homes: Where and How Much?	CON	The general concepts of this paper are considered in the forest plan revision process. The overall desire as cited in the 2020 Forest plan is to see fire on the landscape as discussed in this publication. Additionally, there is a plan goal to work with landowners relating to wildfire risk.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Cohen et al 2016. Forest disturbance across the conterminous United States from 1985–2012: The emerging dominance of forest decline.	CITE	The publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Collins & Stephens 2007. Managing natural wildfires in Sierra Nevada wilderness areas.	CON	Publication is specific to allowing fire to function in the Sierra Nevada wilderness areas. Connections can be made from this publication supporting the FEIS and 2020 Forest Plan desire to allow fire to function in its ecological role as much as possible.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Collins and Stephens 2007. Fire scarring patterns in Sierra Nevada wilderness areas burned by multiple wildland fire use fires.	IRR	This study was conducted in the Sierra Nevada, which differs from the HLC NF in terms of topography, species composition, weather patterns, etc. The fire history of the HLC NF, and associated vegetation conditions, are addressed using data and literature sources more relevant to the plan area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Committee of Scientists 1999. Sustaining the People's Lands.	GEN	Based on the requirements in the 2012 planning rule, the HLC 2020 Forest Plan and Monitoring plan are based on reasonably foreseeable budgets. The Forest was also careful to choose monitoring metrics and data sources that would be readily

Commenter(s)	Citation	Response Code	Rationale
			available with or without additional funding from the Forest's budget.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Copeland et al 2007. Seasonal Habitat Associations of the Wolverine in Central Idaho.	AUTH	General reference, inclusive of other references including references from the same author (e.g., Copland et al. 2010)
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Crist et al 2005. Assessing the value of roadless areas in a conservation reserve strategy: biodiversity and landscape connectivity in the northern Rockies.	GEN	The establishment of IRAs is beyond the scope of Revision. 2020 Forest Plan components are consistent with the protections for IRAs as described in the RACR. The plan also recognizes the importance of protections for undeveloped landscapes through the designation of recommended wilderness areas, in context of other allocations such as designated wilderness. The analysis uses other references equally or more relevant to the plan area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Crocker and Bedford 1990. Goshawk Reproduction and Forest Management.	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Darimon et al 2018. Political populations of large carnivores.	GEN	The manuscript outlines the social-ecological challenges of managing large carnivores and supports transparency of understanding, a standard held by the USFS by statue and regulation.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	DellaSala & Hanson 2015. The Ecological Importance of Mixed-Severity Fires: Nature's Phoenix.	CON	Reference provided is a review of the book, not any relevant excerpts. The ecological importance of mixed and high severity fire, as well as the efficacy of fuels treatments, are analyzed in the FEIS using a variety of literature sources relevant to the HLC NF plan area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	DellaSala et al 1995. Forest health: moving beyond rhetoric to restore healthy landscapes in the inland Northwest	CON	The 2020 Forest Plan is consistent with many of the recommendations in this study, including protections for riparian areas and establishment of a network of undeveloped land allocations. The analysis uses other citations to describe the effects of forest management versus natural disturbance, that are equally or more relevant.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	DellaSala et al 2011. Roadless areas and clean water.	GEN	General hydrology. The HLC NF agrees that disturbance to undeveloped lands is an impact to soil and water resources. The watershed and soil plan components are set up and used to limit and /or mitigate these effects.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Depro et al 2008. Public land, timber harvests, and climate mitigation: Quantifying carbon sequestration potential on U.S. public timberlands.	IRR	Citation is not applicable or reliable for several reasons. It assumes that natural mortality would remove timber on a small fraction of actual recent disturbances (Westerling et al 2006). The "business as usual scenario" is based on 1980's harvest and

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			is not consistent with management on the HLC NF. The study underestimates the role of fire, forest insects, and pathogens in the carbon cycle. Attempting to maximize forest carbon storage near the "potential" may be counterproductive because increasing tree density often increases drought stress, vulnerability to mortality from bark beetles, and probability of crown fire (Reinhart 2010). In some forest types, increasing tree density may lead to the loss of old trees and loss of C stocks (Fellows and Goulden 2008). The paper does not account for leakage; where C inventory maintenance or gains in one location results in losses elsewhere due to global market forces (Gan and McCar, 2007; Murray 2008; Wear and Murray 2004).
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	DeVelice and Martin 2001. Assessing the extent to which roadless areas complement the conservation of biological diversity.	CON	General paper on the benefits of set aside areas to conservation. Similar considerations informed the alternatives to the 2020 Forest Plan, based on the guidance in the 2012 planning rule and associated directives.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Dudley and Vallauri 2004. Deadwood – Living Forests	CON	Paper is specific to European forests. The HLC NF revised plan and analysis recognizes the importance of dead wood to the ecosystem but uses other information and citations more relevant to the plan area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Dunne et al 2001. A scientific basis for the prediction of cumulative watershed effects.	GEN	General paper on cumulative watershed effects. The FS is required by law, regulation, and policy (including the 2012 Planning rule) to analyze cumulative effects of management actions. Please see the watershed section of the FEIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Ecosystems and human well-being.	GEN	Letter asks FS to protect roadless areas per this report. The HLC 2020 Forest Plan follows the 2012 planning rule and also the Roadless areas rules for IRA protection.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Espinosa et al 1997. The Failure of Existing Plans to Protect Salmon Habitat in the Clearwater National Forest in Idaho	CON	General paper on effects of management activities on salmon habitat. Somewhat applicable in the bull trout watersheds west of the continental divide; However, the 2020 Forest Plan includes plan components that would help to alleviate these types of issues with limited activities with Riparian Management Zones.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Everett 1994. Volume IV: Restoration of Stressed Sites, and Processes.	GEN	General reference, Regional and national soil quality standards and ecosystem sustainability are factored in to the 2020 Forest Plan and soils analysis in the FEIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Fire Science Brief 2009. Listening to the Message of the Black-backed Woodpecker, a Hot Fire Specialist.	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.

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Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Fly et al 2011. Scriver Creek Road Inventory (GRAIP) Report	CON	General paper on effects sediment delivery from roads on streams. The Forest agrees that this is an important issue and as such plan components are included in the 2020 Forest Plan to address this issue. The implementation of the 2020 Forest Plan as well as subsequent project analysis will be used to reduce the occurrence of this issue. Please see the aquatic ecosystems section of the 2020 Forest Plan and the FEIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Frissell & Bayles 1996. Ecosystem management and the conservation of aquatic biodiversity and ecological integrity.	GEN	The use of NRV as a guiding principle for vegetation desired conditions is consistent with the 2012 planning rule and associated directives (2015); and is also addressed with other more recent literature sources relevant to the plan area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Frissell et al 2014. Ecosystem Management and the Conservation of Aquatic Biodiversity and Ecological Integrity.	CON	General paper on effects of climate changes to the northwest forest plans aquatic conservation strategy. Somewhat applicable in the bull trout watersheds west of the continental divide. However, the 2020 Forest Plan includes plan components that would help to alleviate impacts to aquatic resources by limiting activities within RMZ's.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Gelbard and Harrison 2005. Invasibility of roadless grasslands: an experimental study of yellow starthistle.	IRR	Study (California) conducted on a species not applicable to the HLC NF (starthistle). The potential threats, effects, and drivers of invasive plants is addressed using other citations more relevant to the plan area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Gerber et al 2013. Tackling climate change through livestock.	CON	The topic of methane and climate change is addressed with other citations equally or more relevant to the HLC NF. The livestock grazing on the HLC NF is miniscule compared to industrial meat producers.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Goggans et al 1989. Habitat Use by Three-toed and Black-backed Woodpeckers, Deschutes National Forest.	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Graham 2003. Hayman Fire Case Study.	CITE	In DEIS letter 1159 the referenced part of this publication addresses selecting treatment type and the need to maintain treatments into the future. Selection of treatment type is done under site specific project analysis. Regarding maintaining desired structure there is a plan component for accomplishing this.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Green et al 1992. Old-growth forest types of the northern region.	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Gucinski et al 2001. Forest Roads: A Synthesis of Scientific Information.	CITE	This publication is cited in the analysis.

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Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Guldin et al 2003. The Science Consistency Review A Tool to Evaluate the Use of Scientific Information in Land Management Decisionmaking.	GEN	The HLC forest plan revision analysis was done with the review and guidance of subject matter experts in the Regional office, Washington office, and Rocky Mountain Research Station. This process, consistent with the 2012 Directives, is sufficient to ensure consistency with best available scientific information.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Haines 1993. Wolverine habitat guidelines: for the Malheur National Forest.	DATED	Dated information on the basic ecology/management of wolverines. The analysis includes more up to date citations.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Halverson 2016. Why isn't the U.S. counting meat producers' climate emissions?	CON	The issue of methane and climate change is addressed in the FEIS and appendix J using other citations that are equally or more relevant to the plan area. The livestock grazing that occurs on the HLC NF is not comparable to industrial agricultural uses.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Hammer 2016. Oral and Written Comments Submitted for July 7, 2016, HBRC Workshop	NOT RLB	This is a personal opinion letter, not scientific information.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Hanson 2010. The Myth of Catastrophic Wildfire: A New Ecological Paradigm of Forest Health.	CITE	This citation as added to the analysis regarding the potential for vegetation treatments to increase fire intensity.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Hargis et al 1999. The influence of forest fragmentation and landscape pattern on American martens	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Harmon 2001. Carbon Sequestration in forests: Addressing the Scale Question	CON	The issue of forest age and carbon sequestration is addressed in the EIS and appendix J using literature equally or more relevant to the HLC NF.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Harmon 2009. Oversight hearing on ''the role of federal lands in combating climate change''	CON	The role of carbon sequestration on the HLC NF is addressed with a variety of other literature sources that are equally or more relevant to the HLC NF planning area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Harmon and Marks 2002. Effects of silvicultural practices on carbon stores in Douglas-fir – western hemlock forests in the Pacific Northwest, U.S.A.: results from a simulation model.	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Harmon et al 1990. Effects on Carbon Storage of Conversion of Old-Growth Forests to Young Forests	CON	The EIS and appendix J address the issue of forest age and carbon sequestration using other literature sources equally or more relevant to the HLC NF.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Harris 1984. The Fragmented Forest: Island Biogeography theory and the preservation of biotic diversity.	CITE	Reference is cited in the old growth section of the FEIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Hayes and Lewis 2006. Washington State Fisher Recovery Plan	IRR	General reference on the ecology/management of Fisher; would be inclusive of project specific analysis but is not directly relevant to forest plan revision.

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Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Hayward 1994. Flammulated, Boreal, and Great Gray Owls in the US	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Hayward and Escano 1989. Goshawk nest-site characteristics in western Montana and northern Idaho	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	He et al 2016. Radiocarbon Constraints imply reduced carbon uptake by soils during the 21st century	CON	The EIS and appendix J address the issue of soil carbon using literature sources equally or more relevant to the HLC NF, and acknowledge uncertainty associated with estimates.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Heinemeyer and Jones 1994. Fisher Biology and management: a literature review and adaptive management strategy	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Henjum et al 1994. Interim Protection for Late-Successional Forests, Fisheries, and Watersheds	CITE	The publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Hessburg and Agee 2003. An environmental narrative of Inland Northwest United States forests, 1800–2000.	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Hillis et al 2002. Blackbacked Woodpecker Assessment	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Holbrook et al 2018. Spatio-temporal responses of Canada lynx (Lynx canadensis) to silvicultural treatments in the Northern Rockies, U.S.	CITE	The publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Homan et al 2005. What the soil reveals: Potential total ecosystem C stores of the Pacific Northwest region, USA	CON	The role of soils in the carbon cycle is addressed in the carbon sequestration report using citations equally or more relevant to the HLC NF.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Huck 2000. Chapter 4: Reliability and Validity	CON	Although not specifically cited, the concerns in this paper are addressed with other information sources. The uncertainties associated with the models used and the data sources are disclosed in appendix H of the FEIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Hutto 1995. Composition of Bird Communities Following Stand-Replacement Fires in Northern Rocky Mountain (U.S.A.) Conifer Forests	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.

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Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Hutto 2006. Toward Meaningful Snag-Management Guidelines for Postfire Salvage Logging in North American Conifer Forests.	CITE	Reference is cited in the snag section of the FEIS, when noting literature that cautions the use of post-fire logging and emphasizes the importance of snag retention. However, salvage is permitted under all alternatives and literature sources such as this could be applied more specifically during project analysis and design.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Hutto 2008. The Ecological Importance of Severe Wildfires: Some Like it Hot	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Ingalsbee 2004. Collateral Damage: The Environmental Effects of Firefighting The 2002 Biscuit Fire Suppression Actions and Impacts	CON	Considered and analyzed but addressed by other literature or sources of information that is appropriate or equally relevant.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Jordan 2016. Methane from food production could be wildcard in combating climate change, Stanford scientist says	CON	The issue of methane and climate change is addressed using other citations that are equally or more relevant to the project area. The livestock grazing that occurs on the HLC NF is not comparable to industrial agricultural uses.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Karr 1991. A long-neglected aspect of water resource management	CON	This citation is more applicable towards monitoring. The FS is actively engaged in ecological monitoring even outside of aquatic habitat.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Karr et al 2004. Postfire salvage loggings effects on aquatic ecosystems in the American West.	CITE	This publication is cited in the terrestrial vegetation section of the FEIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Kassar & Spitler 2008. Fuel the Burn: The Climate and Public Health Implications of Off-road Vehicle pollution in California	CON	This paper addresses OHV-related pollution in California. The impacts of OHV use is addressed in the FEIS using information equally or more relevant to the HLC NF.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Kauffman 2004. Death Rides the Forest: Perceptions of Fire Land Use and Ecological Restoration of Western Forests	CON	This citation is similar to other cited publications used that are equally or more relevant to the HLC NF.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Keith et al 2009. Re-evaluation of forest biomass carbon stocks and lessons from the world's most carbon-dense forests PNAs	CON	The role of forests on the HLC NF in the carbon cycle is addressed in the carbon sequestration report using citations equally or more relevant.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Kosterman 2014. Correlates of Canada Lynx Reproductive Success in Northwestern Montana.	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Krebs et al 2007. Multiscale Habitat Use by Wolverines in British Columbia, Canada	CON	General habitat relationships are considered using other cited references (e.g., Copland et al. 2010 and Heinemeyer et al 2017)

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Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Kreutzweiser & Capall 2001. Fine sediment deposition in streams after selective forest harvesting without riparian buffers	CON	General paper on effects sediment delivery from roads on stream litter decay. The Forest agrees that this is an important issue and as such plan components are included in the 2020 Forest Plan to address this issue. The implementation of the 2020 Forest Plan as well as subsequent project analysis will be used to reduce the occurrence of this issue. Please see the aquatic ecosystem section of the 2020 Forest Plan and the FEIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Kuhns & Daniels. Undated. Firewise Landscaping for Utah	CON	Considered and analyzed but addressed by other literature or sources of information that is appropriate or equally relevant.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Kutsch & Werner 2010. Soil Carbon Dynamics: an Integrated Methodology	CON	The role of soils in the carbon cycle is addressed in the carbon sequestration report using citations equally or more relevant to the HLC NF.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Lacy 2001. Our sedimentation boxes runneth over: public lands soil law as missing link in holistic natural resource protection.	GEN	There may seem to be a lack of laws directly addressing soil protection on federal lands, but there is a regulatory framework in place to direct soil management. This includes the Multiple-Use, Sustained-Yield act of 1960, the Forest and Rangeland Renewable Resources Planning Act of 1974, the National Forest Management Act of 1976, FSM 2500- Chapter 2550 -Soil Management, and the Region 1 Soil Quality Standards.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Law & Harmon 2011. Forest sector carbon management, measurement and verification, and discussion of policy related to mitigation and adaptation of forests to climate change	CON	Paper discusses carbon management, measurement, and policy related to the forest sector. Relevant, but the carbon report utilizes a body of other literature more or equally relevant to the HLC NF.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Law 2014. Role of Forest Ecosystems in Climate Change Mitigation and Adaptation	CON	Citation provides information from Pacific NW ecosystems. The issue of the impacts of logging and fuel reduction on carbon stores is addressed in the carbon sequestration section of the EIS using citations more relevant to the HLC NF.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Lecerf & Richardson 2010. Litter decomposition can detect effects of high and moderate levels of forest disturbance on stream condition	CON	General paper on effects sediment delivery from roads and timber harvest. The Forest agrees that this is an important issue and as such plan components are included in the 2020 Forest Plan to address this issue. The implementation of the 2020 Forest Plan as well as subsequent project analysis will be used to reduce the occurrence of this issue. Please see the aquatic ecosystems section of the 2020 Forest Plan and the FEIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	LeQuire 2009. Listening to the Message of the Black-backed Woodpecker, a Hot Fire Specialist	IRR	General manuscript on the ecology/management of the species; this information would be inclusive in project level analysis but is not directly relevant to forest plan revision.

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Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Lertzman & Fall 1998. From Forest Stands to Landscpaes: Spatial scales and the roles of disturbances	CON	The analysis is consistent with the overall points in this chapter, such as the appropriate consideration of scale when considering the role of natural disturbances and landscape pattern; and the utilization of NRV. The effects to terrestrial ecosystems are analyzed with references equally or more relevant to the plan area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Lofroth 1997. Northern Wolverine Project V/olverine Ecology in Logged and Unlogged Plateau and Foothill Landscapes	CON	General information about species ecology; consistent with other citations used in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Lorenz et al 2015. The role of wood hardness in limiting nest site selection in avian cavity excavators	IRR	General manuscript on the ecology/management of the species; this information would be inclusive in project level analysis but is not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Loucks et al 2003. USDA Forest Service Roadless Areas: Potential Biodiversity Conservation Reserves	CON	General paper on the benefits of set aside areas to conservation. Similar considerations informed the alternatives to the 2020 Forest Plan, based on the guidance in the 2012 planning rule and associated directives.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Marcot & Murphy 1992. Population Viability Analysis and Management	GEN	This citation provides general information about analysis approaches for species viability. The 2020 Forest Plan and analysis follow the management approaches required by the 2012 planning rule and associated directives, as well as other law, regulation, and policy, with regards to population viability.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Masson & Delmotte 2018. Global Warming of 1.5' An Intergovernmental Panel on Climate Change Special Report on the impacts of global warming of 1.5' preindustrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.	CON	The impacts of climate change are addressed through other citations, such as the findings of NRAP, using climate information that is downscaled and equally or more relevant to the HLC NF forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Maxell et al 1998. Inclusion of the Boreal toad (Bufo boreas boreas) on the Sensitive Species List for all Region 1 Forests.	IRR	General manuscript on the ecology/management of the species; this information would be inclusive in project level analysis but is not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	May et al 2006. Impact of infrastructure on habitat selection of wolverines	CON	General information about species ecology that is consistent with other citations used in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	McClelland 1977. Relationships Between Hole-Nesting Birds, Forest Snags, and Decay in Western Larch-Douglas-Fir Forests - of the Northern Rocky Mountains	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.

Commenter(s)	Citation	Response Code	Rationale
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	McClelland 1980. Influences of Harvesting and residue management on cavity-nesting birds	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	McClelland 1985. Letter to Flathead National Forest Supervisor Edgar Brannon re: old growth management in draft forest plan	CON	Letter cites concerns to the 1986 FNF forest plan, including site specific information on wildlife observations. The forest types and wildlife referenced are not necessarily consistent with those found on the HLC NF. The HLC NF used other literature equally or more relevant to the plan area to develop the old growth plan components and conduct the old growth analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	McClelland 1999. Pileated Woodpecker Nest and Roost Trees in Montana: Links with Old-Growth and Forest “Health"	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Mcintosh et al 1994. Management History of Eastside Ecosystems: Changes in Fish Habitat Over 50 Years, 1935 to 1992	CON	General paper on effects of management activities on fish habitat. However, the 2020 Forest Plan includes plan components that alleviate aquatic impacts by limiting certain activities within Riparian Management Zones. In addition, the Forest Plan and FEIS analysis rely on a comprehensive monitoring program (PIBO), that collects data across FS and BLM lands in the Interior Columbia Basin and Upper Missouri River Basin. The systematic approach to this monitoring program evaluates land management effects to aquatic resources across the federal lands in the West including, the HLC.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	McKenzie, Donald, Ze’ev Gedalof, David L. Peterson, and Philip Mote. 2004. Climatic change, wildfire, and conservation. Conservation Biology 18:4: 890 -902	REF	The influence of climate change on wildfires is acknowledged and addressed in the EIS. This publication is cited in Halofsky et al 2018, which is used in the analysis to describe potential effects of climate change.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Mealey 1983. Wildlife Resource Planning Assistance to the Payette and Boise National Forests	DATED	Memo outlines a population viability approach; however, significant advances in analyses have occurred since this memo.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Miserendino & Masi 2010. The effects of land use on environmental features and functional organization of macroinvertebrate communities in Patagonian low order streams	CON	General paper on effects sediment delivery from roads and timber harvest on macroinvertebrates. The Forest agrees that this is an important issue and as such plan components are included in the 2020 Forest Plan to address this issue. The implementation of the 2020 Forest Plan as well as subsequent project analysis will be used to reduce the occurrence of this issue. Please see the aquatic ecosystem section of the 2020 Forest Plan and the FEIS.

Commenter(s)	Citation	Response Code	Rationale
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Mitchell et al 2009. Forest fuel reduction alters fire severity and long-term carbon storage. in three Pacific Northwest ecosystems	CON	This study is based in the Pacific Northwest, which differs in vegetation and disturbance regimes. The issue of fuel reduction treatments and carbon storage is addressed in the EIS and appendix J using references equally or more relevant to the HLC NF, such as Halofsky et al 2018.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Montana Bull Trout Science Group 1998. The Relationship Between Land Management Activities and Habitat Requirements Of Bull Trout	GEN	Many aspects of this report were incorporated directly into the Northern Region Bull Trout Conservation Strategy and later, the Columbia Headwaters Recovery Unit Implementation Plan. The 2020 Forest Plan is consistent with these strategies.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Moomaw & Smith 2017. The Great American Stand: US Forests and the Climate Emergency. Why the United States needs an aggressive forest protection agenda focused in its own backyard.	CON	Under the 2020 Forest Plan, native vegetation communities would be maintained and not converted to other uses; and plan components are developed to promote resistance and resilience to climate change. The EIS and appendix J address the issue of climate change using literature sources equally or more relevant to the HLC NF.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Moriarty et al 2016. Forest Thinning Changes Movement Patterns and Habitat Use by Pacific Marten	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Moser and Garton 2009. Short-term effects of timber harvest and weather on northern goshawk reproduction in northern Idaho	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Moyle et al 1996. Management of Riparian Areas in the Sierra Nevada	GEN	This reference was cited as BASI for larger buffers to fish bearing streams. The 2012 planning rule requires the development of Riparian Management Zones. The HLC NF 2020 Forest Plan implements this direction. The BASI used to develop these plan components is referenced in the FEIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Natural Resources Defense Council 2013. NCDE Grizzly Bear Conservation Strategy Comments	NOT RLB	Document is a letter, not scientific literature
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Nesser 2002. Notes from the National Soil Program Managers meeting in Reno as related to soil quality issues.	CON	Other citations are used relative to soil quality issues. The 15% standard in bulk density does not suggest that a 15% increase in bulk density is necessarily detrimental, just that it is the level of change that is detectable given the range in bulk density of soils due to natural variability. While Powers specifically refers to the 15% increase in bulk density, Nesser suggests that it is more appropriate to look at the overall effect of combined impacts on an area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Nie and Schembra 2014. The Important Role of Standards in National Forest Planning, Law and Management	GEN	The 2012 Planning rule requires the FS to use BASI, including input from the public and from the FS research branch. The Forest specialists work in conjunction with the Regional and

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			Washington level specialists to increase consistency in the use of BASI. The 2020 Forest Plan is consistent with the 2012 planning rule for all plan components, including standards.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Noon et al 2003. Conservation Planning for US National Forests: Conducting Comprehensive Biodiversity Assessments	GEN	The 2020 Forest Plan is consistent with the 2012 planning rule, including the requirements for a coarse and fine-filter approach to provide for species viability.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Noss & Lindenmayer 2006. The Ecological Effects of Salvage Logging after Natural Disturbance	CON	Analysis addresses the effects of post-fire logging using other literature sources that are equally or more relevant to the plan area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Noss 2001. Biocentric Ecological Sustainability: A Citizen's Guide	CON	The 2020 Forest Plan and analysis are consistent with the approaches described in the 2012 planning rule and associated directives with respect to biodiversity and ecological integrity; many of these concepts are consistent with this citation but other sources of information are used in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Noss et al 2006. Managing fire-prone forests in the western United States.	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Nott et al 2005. Managing Landbird populations in forests of the pacific northwest: formulating population management guidelines from landscape scale ecological analyses of maps data from avian communities on seven national forests in the pacific northwest	IRR	General manuscript on the ecology/management of the species; this paper would be inclusive in project level analysis but is not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Odion & DellaSala 2011. Backcountry thinning is not the way to healthy forests	CON	The FEIS acknowledges and accepts the need for fire on the landscape. FIES also identifies the need to treat fuels around HVRAs as discussed in this newspaper editorial.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Odion & Hanson 2006. Fire Severity in Conifer Forests of the Sierra Nevada, California	CON	Fire regime and lack of fire are factors discussed in the FEIS using other literature citations equally or more relevant to the HLC NF. Additionally, changes in climate and human activity also influence frequency and severity and are discussed and cited in the FEIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Olson et al 2014. Modeling the effects of dispersal and patch size on predicted fisher (Pekania [Martes] pennanti) distribution in the U.S. Rocky Mountains.	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Page & Dumroese 2000. Soil quality standards and guidelines for forest sustainability in northwestern North America	REF	Paper examining calculated changes in soil carbon, nitrogen, erosion, and cation exchange capacity based on thresholds for several FS regional guidelines. Soils from a variety of climates and geographic areas in R1, R4, and R6. Suggests that site-

Commenter(s)	Citation	Response Code	Rationale
			specific information is important in development of guidelines. This is addressed in the monitoring plan (see DEIS 3.4 and Draft Plan appendix A). Additionally, pre-disturbance and site-specific conditions are considered in project analysis. This paper is cited by the regional soil quality standards, which is part of the regulatory framework for the soils resource.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Pfankuch 1975. Stream reach inventory and channel stability evaluation. USDA Forest Service Northern Region, Montana.	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Pierce et al 2004. Fire-induced erosion and millennial scale climate change in northern ponderosa pine forests	CON	Considered and analyzed but addressed by other literature or sources of information that is appropriate or equally relevant.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Raley et al 2012. Biology and conservation of martens, sables, and fishers: A New Synthesis	IRR	General manuscript on the ecology/management of the species; this would be inclusive in project level analysis but is not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Raley et al 2012. Habitat Ecology of Fishers in Western North America A New Synthesis.	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Reed et al 2003. Estimates of minimum viable population sizes for vertebrates and factors influencing those estimates	CON	Manuscript is a general discussion of analytical approaches and presents an approach to population viability, one of many approaches. The HLC NF approaches population viability as required by law, policy, and regulation, including the 2012 planning rule and associated directives.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Reed, D.H., J.J. O'Grady, B.W. Brook, J.D. Ballou, R. Frankham. 2003. Estimates of minimum viable population sizes for vertebrates and factors influencing those estimates. Biological Conservation 113(2003) 23-34.	CON/IRR	Broad scale evaluation of use of Population Viability Analysis as a tool to establish Minimum Viable Population not directly applicable at scale of forest planning or under 2012 planning rule coarse filter direction.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Reeves et al 2011. Detrimental Soil Disturbance Associated with Timber Harvest systems on National Forests in the Northern Region.	CON	Generally, agreement that detrimental soil disturbance stays below 15% across units in R1. Some sites only had limited amount of data though. The DEIS does cite the results of forest plan monitoring in appendix C (references Soil Monitoring reports from 2012-2017; USDA, 2012-2017). Reeves et al. is a regional analysis that includes data from 1999 to 2009 and does not include data collected using the current monitoring methods. The results from the Helena NF and Lewis and Clark NF are not meaningful due to the very small sample sizes (n=11 and n=4,

Commenter(s)	Citation	Response Code	Rationale
			respectively). The trends from Reeves et al. can be regarded regionally but should not be considered by individual forests due to lack of statistical power.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Reid & Dunne 1984. Sediment Production from Forest Road Surfaces	CON	Other information is used to address the topic of impacts to RMZs from logging and other activities. The sediment production from road surfaces is not directly related to any form of logging or thinning. This work does not describe impacts that would be consistent with the protections provided by RMZ plan components in the 2020 Forest Plan.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Reynolds et al 1992. Management recommendations for the Northern goshawk in the Southwestern United States	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Rhodes & Baker 2008. Fire Probability, Fuel Treatment Effectiveness and Ecological Tradeoffs in Western U.S. Public Forests	CON	Considered and analyzed but addressed by other literature or sources of information that is appropriate or equally relevant.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Rhodes 2007. The watershed impacts of forest treatments to reduce fuels and modify fire behavior	CON	The FEIS addresses the potential impacts of watershed restoration work including vegetation treatments to change fire behavior using literature that is equally or more relevant. This includes addressing the issue of efficacy of hazardous fuel treatments.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Rhodes et al 1994. A coarse screening process for evaluation of the effects of land management activities on salmon spawning and rearing habitat in ESA consultations.	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Rieman et al 1997. Does Wildfire Threaten Extinction for Salmonids? Responses of Redband Trout and Bull Trout Following Recent Large Fires on the Boise National Forest.	CITE	This paper is relevant and will be cited in the FEIS, Chapter 3.5.6 environmental consequences, aquatic ecosystems and soils.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Rieman et al 2001. Evaluation of potential effects of federal land management alternatives on trends of salmonids and their habitats in the interior Columbia River basin	IRR	This paper describes the trend in aquatic ecosystem condition across the Interior Columbian Basin-ICBEMP analysis area. They use a Bayesian Belief Network model based on conditional probability. Given the scale of analysis the relevance of this model is outside the spatial and temporal scope of the plan area. The paper concludes that there is improvement (positive trend) in aquatic ecosystems on federal lands but there is uncertainty in a positive trend in salmonid populations given multiple factors

Commenter(s)	Citation	Response Code	Rationale
			that affect recruitment and viability of fish populations beyond habitat constraints.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Riggers et al 2001. Reducing Fire Risks to Save Fish – A Question of Identifying Risk	NOT RLB	There are recent publications that are more pertinent, literature provided was a preliminary report from a subcommittee meeting-opinion piece. This report was not peer reviewed or published and no conclusive results or discussion.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Ripple et al 2014. Ruminants, climate change and climate policy	NOT RLB	Opinion piece. Related to the concern about livestock grazing and methane emissions. This issue is addressed with other more reliable information sources.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Rowland et al 2003. Evaluation of Landscape Models for Wolverines in the Interior Northwest, United States of America	CON	General reference on the ecology/management of wolverine, in regard to specific issues relating to winter recreation; such issues are covered with other citations (e.g., Heinemeyer et al. 2017)
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Ruggiero 2007. Scientific Independence: A Key to Credibility	GEN	The 2020 Forest Plan and analysis are consistent with the 2012 planning rule and associated directives with respect to the use of best available scientific information.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Ruggiero et al 1994. The Scientific Basis for Conserving Forest Carnivores: American Marten, Fisher, Lynx, and Wolverine in the Western United States.	AUTH	General technical report outlining the basic science and ecology of carnivore species; this information is covered by other citations including other papers by the same authors.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Ruggiero et al 1994. Viability Analysis in Biological Evaluations: Concepts of Population Viability Analysis, Biological Population, and Ecological Scale	CON	Manuscript is a general discussion of analytical approaches and presents an approach to population viability, one of many approaches. The HLC NF approaches population viability as required by law, policy, and regulation, including the 2012 planning rule and associated directives.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Ruggiero et al 2007. Wolverine Conservation and Management.	AUTH	General manuscript outlining the basic science and ecology of wolverine; this information is covered by other citations including other papers by the same authors.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Saab and Dudley 1998. Responses of Cavity-Nesting Birds to Stand-Replacement Fire and Salvage Logging in Ponderosa Pine/Douglas-Fir Forests of Southwestern Idaho.	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Sallabanks et al 2001. Wildlife Habitat relationships in Oregon and Washington	IRR	Report discussion innumerable broad subjects, all of which are focused on Washington and Oregon and not directly applicable to the HLC NF.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Samson 2006. Habitat estimates for maintaining viable populations of the northern goshawk, black backed woodpecker, flammulated owl, pileated woodpecker, American Marten, and Fisher.	CITE	This publication is cited in the analysis.

Commenter(s)	Citation	Response Code	Rationale
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Sauder 2014. A Dissertation Presented in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy with a Major in Natural Resources in the College of Graduate Studies University of Idaho	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but is not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Sauder and Rachlow 2014. Both forest composition and configuration influence landscape-scale habitat selection by fishers (Pekania pennanti) in mixed coniferous forests of the Northern Rocky Mountains	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Saunois et al 2016. The global methane budget 2000-2012	IRR	Identifies the uncertainties in the methane budget. Not directly applicable to the HLC NF plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Saunois et al 2016. The growing role of methane in anthropogenic climate change	CON	The issue of methane, grazing, and climate change is addressed in the EIS and appendix J using literature sources equally or more relevant to the HLC NF.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Schoennagel et al 2004. The Interaction of Fire, Fuels, and Climate across Rocky Mountain Forests	CON	Considered and analyzed but addressed by other literature or sources of information that is appropriate or equally relevant. Additionally, this publication includes Montana forest and states "dry ponderosa pine forests, it is both ecologically appropriate and operationally possible to restore a low-severity fire regime through thinning and prescribed burning". This finding is supported by Reinhardt Et al 2008 which we cite in the FEIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Schultz 2010. Challenges in Connecting Cumulative Effects Analysis to Effective Wildlife Conservation Planning	CON	Manuscript is a general discussion of analytical approaches and presents an approach to population viability, one of many approaches. The HLC NF approaches population viability as required by law, policy, and regulation, including the 2012 planning rule and associated directives.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Schultz 2012. The U.S. Forest Service's analysis of cumulative effects to wildlife: A study of legal standards, current practice, and ongoing challenges on a National Forest	CON	Manuscript is a general discussion of analytical approaches and presents an approach to population viability, one of many approaches. The HLC NF approaches population viability as required by law, policy, and regulation, including the 2012 planning rule and associated directives.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Schultz et al 2013. Wildlife Conservation Planning Under the United States Forest Service's 2012 Planning Rule	GEN	Paper outlines 2012 Planning Rule and suggests criteria for selecting focal species. The 2020 Forest Plan is consistent with the 2012 Planning Rule with regards to focal species.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Schultz, Courtney. 2010. Challenges in Connecting Cumulative Effects Analysis to Effective Wildlife Conservation Planning. BioScience 60(7):545-551.	CON/IRR	Focuses on project-scale analysis, as well as on use of MIS, which are no longer part of forest planning. Concepts are relevant to the project planning and analysis scale, but not clearly relevant to the scale of a programmatic forest plan.

Commenter(s)	Citation	Response Code	Rationale
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Schultz, Courtney. 2012. The US Forest Service's analysis of cumulative effects to wildlife :A study of legal standards, current practice, and ongoing challenges on a National Forest. Envir. Impact Assess. Review 32 (2012): 74-81.	CON/IRR	Very similar to Schultz 2010 publication; Focuses on project-scale analysis, as well as on use of MIS, which are no longer part of forest planning. Concepts are relevant to the project planning and analysis scale, but not clearly relevant to the scale of a programmatic forest plan.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Schwartz et al 2013. Stand- and landscape-scale selection of large trees by fishers in the Rocky Mountains of Montana and Idaho	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Scrafford et al 2018. Roads elicit negative movement and habitat-selection responses by wolverines (Gulo gulo luscus).	CON/IRR	Study in Scrafford et al. was in far northern area where a heavily-roaded landscape with large scale industrial activity overlaps with key wolverine habitat. This is very unlike HLC NF lands where key wolverine habitat is at high elevation and largely unroaded (refer to FEIS). FEIS analysis used relevant work (e.g. Heinemeyer et al. 2017 and 2019) regarding recreational uses, including motorized travel, on wolverines.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Sherriff et al 2014. Historical, Observed, and Modeled Wildfire Severity in Montane Forests of the Colorado Front Range	CON	Considered and analyzed but addressed by other literature or sources of information that is appropriate or equally relevant. Additionally this publication states "Goals of ecological restoration and wildland fire hazard mitigation are both compatible with management practices, like prescribed fire and thinning to reduce fuels, below approximately 2200 m in our study area, which experienced the greatest increase in fire severity, and likely fuels, since fire exclusion" This finding is supported by Reinhardt et al 2008 which we cite in the FEIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Solomon et al 2007. 2007: Technical Summary. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change	CON	Climate change is addressed through other citations, such as Halofsky et al 2018, using climate information that is downscaled and equally or more relevant to the HLC NF forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Spiering and Knight 2005. Snag density and use by cavity-nesting birds in managed stands of the Black Hills National Forest	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but is not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Squires 2009. Letter to Carly Walker of Missoula County Rural Initiatives	AUTH	This paper provides general information about lynx ecology, which was considered and inclusive of other citations, including some by the same authors.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Squires 2013. Combining resource selection and movement behavior to predict corridors for Canada lynx at their southern range periphery	AUTH	This paper provides general information about lynx ecology, which was considered and inclusive of other citations, including some by the same authors.

Commenter(s)	Citation	Response Code	Rationale
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Squires et al 2006. Lynx Ecology in the Intermountain West.	AUTH	This paper provides general information about lynx ecology, which was considered and inclusive of other citations, including some by the same authors.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Squires et al 2006. The association between landscape features and transportation corridors on movements and habitat-use patterns of wolverines	AUTH	This paper provides general information about lynx ecology, which was considered and inclusive of other citations, including some by the same authors.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Squires et al 2007. Sources and Patterns of Wolverine Mortality in Western Montana	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Squires et al 2010. Seasonal Resource Selection of Canada Lynx in Managed Forests of the Northern Rocky Mountains.	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Stritthold & DellaSala 2001. Importance of Roadless Areas in Biodiversity Conservation in Forested Ecosystems: Case Study of Klamath-Siskiyou Ecoregion of the United States	CON	General paper on the benefits of set aside areas to conservation. Similar considerations informed the alternatives to the 2020 Forest Plan, based on the guidance in the 2012 planning rule and associated directives.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Sullivan et al 2006. Defining and Implementing Best Available Science for Fisheries and Environmental Science, Policy, and Management	GEN	The 2012 Planning rule requires the FS to use BASI in development of its Forest Plans; in that effort, the FS solicits input from the public and we also receive input from the FS research branch. The Forest specialists work in conjunction with the regional and Washington level specialists to increase consistency in the use of BASI.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Sylvester 2014. Off-Highway Vehicles in Montana Popular and a Growing Part of the Economy	IRR	It is not clear how this information would help inform an emissions disclosure regarding this use specific to the HLC NF.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Thompson et al 2009. Forest Resilience, Biodiversity, and Climate Change. A Synthesis of the Biodiversity/Resilience/Stability Relationship in Forest Ecosystems	CON	The topic of the role of old forests in sequestering carbon was considered with other citations equally or more relevant to the HLC NF, in the carbon sequestration section of the EIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Traill et al 2010. Pragmatic population viability targets in a rapidly changing world	CON	Manuscript is a general discussion of analytical approaches and presents an approach to population viability, one of many approaches. The HLC NF approaches population viability as required by law, policy, and regulation, including the 2012 planning rule and associated directives.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Traill, L.W., B.W. Brook, R.R. Frankham, and C.J.A. Bradshaw. 2010. Pragmatic population viability targets in a rapidly changing world. Biological Conservation 143(2020):28-34.	CON	Information related to management of individual populations of species when population numbers can be known; broad scale evaluation not directly relevant to 2012 Planning Rule direction to manage based on retaining key ecosystem characteristics (coarse filter). Also considered contradicting science (e.g.

Commenter(s)	Citation	Response Code	Rationale
			Shoemaker et al. 2013), and literature discussing difficulties of PVA to estimate MVP (e.g. discussion in Reed et al. 2003).
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Trombulak & Frissell 2000. Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities	CON	Manuscript represents a comprehensive review of the possible impacts of roads on fish and wildlife populations. This general information is inclusive of any number of citations that are more current
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Turner et al 1995. A carbon budget for forests of the conterminous united states.	DATED	The role of forests on the HLC NF in the carbon cycle is addressed in the carbon sequestration report using citations equally or more relevant.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Turner et al 1997. The Carbon Crop: Continued	CON	The topic of the effects of harvest on carbon sequestration was considered with other citations equally or more relevant to the HLC NF, in the carbon sequestration section of the EIS.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	United Nations Environmental Programme 2002. Report of the sixth meeting of the conference of the parties to the convention on biological diversity	N/A	The link to the citation does not work; no review was done.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 1987. Old Growth Habitat Characteristics and Management Guidelines	DATED	The HLC uses the BASI to define old growth (Green et al 1992, errata corrected 2011), which is more current than the definitions used in this document (1984). The distributions and patch sizes used by the Kootenai are not necessarily congruent with the ecosystems and wildlife species present on the HLC NF. Some of the citations used in this document, however, are utilized in the HLC NF analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 1997. Evaluation of EIS Alternatives by the Science Integration Team	GEN	All references submitted to the HLC NF were reviewed and added to the analysis as appropriate. Consideration of appropriate geography was also a part of our review.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 2000. Expert Interview Summary for the Black Hills National Forest Land and Resource Management Plan Amendment	IRR	Paper is based on an expert opinion, which can have value; however, the sample size was three, significantly limiting inference, moreover the area of concern was not equivocal to the Plan area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 2000. Forest Service Roadless Area Conservation Draft Environmental Impact Statement Volume 1	GEN	The 2020 Forest Plan is consistent with all law, regulation, and policy for IRAs. The FEIS addresses the impacts of the IRAs located on the HLC NF across all resource areas.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 2000. Forest Service Roadless Area Conservation Final Environmental Impact Statement Volume 1	GEN	The 2020 Forest Plan is consistent with all law, regulation, and policy for IRAs. The FEIS addresses the impacts of the IRAs located on the HLC NF across all resource areas.

Commenter(s)	Citation	Response Code	Rationale
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 2003. Bristow Area Restoration Project Environmental Assessment, Kootenai National Forest	IRR	The EA outlines a general description of the ecology/management of the species. This information is more relevant to a project-level analysis and does directly inform forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 2007. Draft Environmental Impact Statement Grizzly Vegetation and Transportation Management Project Three Rivers Ranger District, Kootenai National Forest	GEN	General document, with findings inclusive in other literature considered (e.g., Grizzly Bear Conservation Strategy)
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 2007. TREGO EA Response to Comments	N/A	The reference could not be located; no review was done.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 2008. Young Dodge chapter 4 - public involvement and response to public comment	CON	Detrimental soil impacts are addressed using other more relevant citations. The 15% detrimental soil disturbance areal limit is defined by the regional soil quality standards. The 15% limit is a benchmark that indicates when changes in soil properties or conditions may result in substantial or permanent impairment of productivity. This is not based on the feasibility of logging methods. Furthermore, bulk density can be used as an indicator of soil compaction; detrimental soil compaction can alter soil function and potentially alter soil productivity.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 2008. YOUNG DODGE; Draft Supplemental Environmental Impact Statement	IRR	The document does not contain the quote cited by the commenter. The 15% standard is based on regional soil quality standards.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 2009. Draft environmental impact statement: Lakeview-Reeder fuels reduction project	GEN	The HLC NF plan revision uses the definition of ecological integrity from the 2012 planning rule and associated directives (2015).
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 2011. Environmental Assessment: Griffin Creek Resource Management Project	IRR	The EA outlines a general description of the ecology/management of the species. This information is more relevant to a project-level analysis and does directly inform forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 2016. Categorical exclusion worksheet: resource considerations soils Smith Shields Forest Health Project	CON	The 2020 Forest Plan is consistent with Region 1 soil quality standards. The FSM 2500 acknowledges that the link between soil quality and productivity is unclear and our understanding will continue to evolve as research continues. Thus, the Washington office is directed to coordinate studies with research and development staff to validate the soil quality indicators to ensure protection of soil productivity.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA 2017. Draft Environmental Impact Statement Pine Mountain Late-Successional Reserve Habitat Protection and Enhancement Project Lake and Mendocino Counties, California	CON	The HLC NF analysis uses a variety of literature sources related to future climate and the use of the natural (historical) range of variability, that are equally or more relevant to the plan area.

Commenter(s)	Citation	Response Code	Rationale
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA FS 2000. Environmental Effects of Postfire Logging: Literature Review and Annotated Bibliography.	CITE	Cited in terrestrial vegetation section (cited as McIver et al 2000).
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA, USDI 1996. Integrated Scientific Assessment for Ecosystem Management in the Interior Columbia Basin and Portions of the Klamath and Great Basins	IRR	This citation is from data collected in the Columbia River basin. Only 1 watershed on the H-LC falls within this area (Blackfoot). The HLC FP uses data collected by the PIBO program to evaluate the influence of roads on fish habitat conditions.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USDA, USDI 1996. Status of the Interior Columbia Basin	IRR	This citation is from data collected in the Columbia River basin. Only 1 watershed on the H-LC falls within this area (Blackfoot). The HLC FP uses data collected by the PIBO program to evaluate both status and trend of aquatic conditions.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	USEPA 1999. Considering ecological processes in environmental impact assessments	CON	Concepts are addressed using other literature sources equally or more relevant to the HLC NF plan area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Vanbianchi 2017. Canada lynx use of burned areas: Conservation implications of changing fire regimes	CON	Findings of Vanbianchi et al. 2017 are out of context as they relate to the plan area and lynx use of burned areas. While it is true the authors found lynx used burned landscapes more often than previously thought, the overall probability of lynx use was low within new (1-6 years post fire), high severity burned areas, and that use within those burned areas occurred within residual, unburned cover patches (ie., fire skips). Research staff out of Region 1 are presently conducting similar research in NW MT. The study is not complete, but preliminary observations of both collared and non-collared individuals (ie., from tracks) indicate that lynx are using unburned patches (fire skips) within wildfire perimeters. And, use was especially notable along fire perimeters (the ecotone between burned and unburned forest) during the first-year post-fire – likely because those areas tended to have higher densities of snowshoe hare. So, it appears that lynx are continuing to use habitat within their previous home ranges.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	VanderWerf 2009. CO2 emissions from forest loss	CON	The impacts of deforestation are addressed in the carbon sequestration section of the EIS, using other equally or more relevant literature citations. No deforestation is planned on the HLC NF; natural vegetation types would be maintained.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Veblen 2003. Key Issues in Fire Regime Research for Fuels Management and Ecological Restoration	CON	The FEIS references numerous publications on fire regimes that are equally or more relevant. Additionally, the FEIS recognizes that fire regime is only one factor to consider in management actions.

Commenter(s)	Citation	Response Code	Rationale
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Verbyla and Litaitis 1989. Resampling Methods for Evaluating Classification Accuracy of Wildlife Habitat Models	IRR	General manuscript on model theory and approach; not directly relevant to the forest plan revision process.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Vizcarra 2017. Woodpecker Woes: The Right Tree Can Be Hard to Find	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Wales et al 2007. Modeling potential outcomes of fire and fuel management scenarios on the structure of forested habitats in northeast Oregon, USA	CON	The HLC NF conducted an NRV analysis that similarly concluded that large diameter trees are less abundant than they were historically; and also conducted modeling to predict future outcomes. The plan and analysis recognize the importance of natural disturbances and used other references equally or more relevant. Supporting publication that management actions should include fire and other active management to restore and maintain ecosystems.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Wasserman et al 2012. Multi Scale Habitat Relationships of Martes americana in Northern Idaho, U.S.A.	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Weir and Corbould 2010. Factors Affecting Landscape Occupancy by Fishers in North-Central British Columbia	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Whitlock et al 20018. Long-term relations among fire, fuel, and climate in the north-western US based on lake-sediment studies.	CITE	This publication is cited in the analysis.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Wilderness Society 2014. Transportation Infrastructure and access on national forests and grasslands. A literature review May 2014	CON	The impacts of the transportation system on the HLC NF is analyzed across resources using information and literature that is equally or more relevant to the plan area.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Williams & Baker 2014. Global Ecology and Biogeography (2014) 23, 831-835 High-severity fire corroborated in historical dry forests of the western United States: response to Fulé et al.	CON	The FEIS or 2020 Forest plan does not identify the need or desire to remove all mixed and/or high severity fire. The FEIS recognizes that all fire types have their place on the landscape. In areas of WUI or other identified values the FEIS and 2020 Forest Plan do provide desired conditions that would seek to limit high severity fire in some areas.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Wisdom et al 2000. Source Habitats for Terrestrial Vertebrates of Focus in the Interior Columbia Basin: Broad-Scale Trends and Management Implications	CON	Paper provides general information, regarding how accessible routes are often snagged out for safety or firewood gathering purposes. This is acknowledged in the analysis.

Commenter(s)	Citation	Response Code	Rationale
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Witmer et al 1998. Forest Carnivore Conservation and Management in the Interior Columbia Basin: Issues and Environmental Correlates	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Woodbridge & Hargis 2006. Northern Goshawk Inventory and Monitoring Technical Guide	IRR	General manuscript on the ecology/management of the species; would be inclusive in project level analysis but not directly relevant to forest plan revision.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Woodbury et al 2007. Carbon sequestration in the U.S. forest sector from 1990 to 2010	CON	Carbon sequestration levels, rates, and trends at the broad scale and at the HLC NF scale are addressed in the carbon sequestration section of the EIS. The HLC NF analysis used more recent citations that provided carbon sequestration data specific to Region 1 and HLC NF using similar methods as this citation.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Wuerthner 2006. WORLD VIEW	GEN	The FS views fire as an essential part of the ecosystem and recognizes management is needed is some areas due to values. The 2012 planning rule and the 2020 Forest Plan reflect a reasoned approach between these 2 paradigms.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Ziemer & Lisle 1993. Evaluating Sediment Production by Activities Related to Forest Uses -A Pacific Northwest Perspective	CON	The HLC NF uses other literature citations equally or more relevant to the plan area to address potential watershed effects from logging.
Alliance for the Wild Rockies; Jeff Juel; Wildlands Defense	Ziemer et al 1991. LONG-TERM SEDIMENTATION EFFECTS OF DIFFERENT PATTERNS OF TIMBER HARVESTING	GEN	General paper on simulated effects of timber harvest on sediment delivery from watersheds and ineffectiveness of BMPs. The Forest agrees that this is an important issue and as such plan components and monitoring requirements General paper on effects sediment delivery from roads and timber harvest. The Forest agrees that this is an important issue and as such plan components are included in the 2020 Forest Plan to address this issue. The implementation of the 2020 Forest Plan as well as subsequent project analysis will be used to reduce the occurrence of this issue. Please see the aquatic ecosystems section of the 2020 Forest Plan and the FEIS are included in the 2020 Forest Plan to address this issue. The implementation of the 2020 Forest Plan as well as subsequent project analysis will be used to reduce the occurrence of this issue. Please see the aquatic ecosystems section of the 2020 Forest Plan and the FEIS.
Alliance for the Wild Rockies; Wildlands Defense; Jeff Juel; Defenders of Wildlife; and Wild Earth Guardians	Aubry et al 2007. Distribution and Broadscale Habitat Relations of the Wolverine in the Contiguous United States	AUTH	General information about the species included in other references, including references by the same authors (e.g., Copeland et al. 2010)

Commenter(s)	Citation	Response Code	Rationale
Alliance for the Wild Rockies; Wildlands Defense; Jeff Juel; Greater Yellowstone Coalition	Schwartz, Charles C., Mark A. Haroldson, and Gary C. White; 2010. Hazards Affecting Grizzly Bear Survival in the Greater Yellowstone Ecosystem	CON	Broad reference to connectivity, roads and other issues affecting grizzly populations. These topics are considered using other literature sources (e.g., draft conservation strategy, Peck et al. 2017)
Backcountry Hunters and Anglers	Gehman et al 2010. Snow-Tracking Surveys on the Helena National Forest, December 2009 — March 2010; By Steve Gehman, Betsy Robinson, and Mike Porco	GEN	The local presence of species across the HLF NF was considered; these surveys in particular are not cited or needed to inform the 2020 Forest Plan or FEIS analysis.
Backcountry Hunters and Anglers	Gehman et al 2012. Snow-Tracking Surveys on the Helena National Forest, December 2011 — March 2012; By Steve Gehman, Betsy Robinson, and Kalon Baughan	GEN	The local presence of species across the HLF NF was considered; these surveys in particular are not cited or needed to inform the 2020 Forest Plan or FEIS analysis.
Backcountry Hunters and Anglers	Gehman, Steve 2014. With support from Kalon Baughan and Betsy Robinson- Wild Things Unlimited; April 2014. Carnivore Surveys in the Ogden Mountain to Nevada Creek Region; Selected Data Summaries and Conclusions	CON	The local presence of species across the HLF NF was considered; these surveys in particular are not cited or needed to inform the 2020 Forest Plan or FEIS analysis.
Backcountry Hunters and Anglers	Pilgrim & Schwartz 2011. Project Report: Helena National Forest Carnivore Surveys. Conducted by Wild Things Unlimited-winter 2010-2011. individual and sex identification	GEN	The local presence of species across the HLF NF was considered; these surveys in particular are not cited or needed to inform the 2020 Forest Plan or FEIS analysis.
Backcountry Hunters and Anglers	Pilgrim 2010. Project Report: Helena National Forest and Beaverhead-Deerlodge National Forest Carnivore Surveys. Conducted by Wild Things Unlimited-winter 2009-2010. Lynx (Lynx canadensis) and wolverine (Gulo gulo) sample results (updated).	GEN	The local presence of species across the HLF NF was considered; these surveys in particular are not cited or needed to inform the 2020 Forest Plan or FEIS analysis.
Backcountry Hunters and Anglers and Defenders of Wildlife	Gehman et al 2014. Snow-Tracking Surveys on the Helena National Forest, December 2012 — March 2013; By Steve Gehman, Betsy Robinson, and Kalon Baughan	GEN	The local presence of species across the HLF NF was considered; these surveys in particular are not cited or needed to inform the 2020 Forest Plan or FEIS analysis.
Bitterroot Backcountry Cyclists	Hendee. “Wilderness Management” by Hendee	GEN	Considerations for wilderness management at the forest plan revision scale include the planning rule, directives, and other FS regulations, which are equally or more relevant than this book.
Bitterroot Backcountry Cyclists	Taylor, Audrey R. and Richard L. Knight. 2003. Wildlife responses to recreation and associated visitor perceptions.	AUTH	Effects of nonmotorized recreation discussed in FEIS (elk and Canada lynx sections, for example) using other more recent and relevant literature.
Capital Trail Vehicle Association; Carroll College	Wang, Linda 2011. Federal Income Tax on Timber; A Key to Your Most Frequently Asked Questions. United States Department of Agriculture, 2011. Revised by Linda Wang USDA Forest Service	CON	The economic considerations for the timber resource is addressed using other literature sources that are equally or more relevant to the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Carroll College	Sylvester, James T. Montana recreational Off-Highway Vehicles Fuel-Use and Spending Patterns 2013; Prepared for: Montana State Parks by James T. Sylvester, Bureau of Business and Economic Research, University of Montana	CON	The economic considerations for various modes of recreation are addressed using other literature sources that are equally or more relevant to the HLC NF.
Capital Trail Vehicle Association; Carroll College; Citizens for Balanced Use	Wilson, John P. and Joseph P. Seney. 1994. Erosional Impact of Hikers, Horses, Motorcycles, and Off-Road Bicycles on Mountain Trails in Montana. Source: Mountain Research and Development, Vol. 14, No. 1 (Feb., 1994), pp. 77-88	CON	This was a specific small study on the Gallatin that found displacement from horses provided the most available sediment. Cannot be expanded to the level of the plan. Soil properties are more important in determining erosion potential, than the method of conveyance. Site specific effects of specific types of recreation on trail erosion is beyond the scope of the Forest Plan Revision.
Capital Trail Vehicle Association; Citizens for Balanced Use	2004. Danskin Mountain (Boise NF)	IRR	Citation is website regarding MVUM for the Boise NF. Not relevant to the HLC NF planning area or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	2006 Public Opinion Poll on Western Colorado Forest Management Issues, Key Findings	IRR	Document shows the results of a poll specifically of users of the GMUG in Colorado. The users and landbase are not necessarily consistent with that of the HLC NF. The HLC NF considered public comments throughout the Forest Planning process associated with desired recreational opportunities.
Capital Trail Vehicle Association; Citizens for Balanced Use	36 CFR Parts 212, 251, 261, and 295; Travel Management; Designated Routes and Areas for Motor Vehicle Use; Final Rule	IRR	Law, regulation, and policy for travel management. The 2020 Forest Plan is not a travel planning document. It is consistent with applicable law, regulation, and policy.
Capital Trail Vehicle Association; Citizens for Balanced Use	A Guide to the Trail (multiple pages within website)	IRR	Examples of urban trails. Not relevant to the HLC NF or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Adams. “Access Denied - Closing Our Forests”.flv ; Carl Anthony Adams	IRR	YouTube video, opinion. Not directly relevant. The 2020 Forest Plan is not a travel planning document.
Capital Trail Vehicle Association; Citizens for Balanced Use	Allen 2015. Alliance for Wild Rockies should work on projects, not lawsuits, DAVID ALLEN, Aug 27, 2015	IRR	Opinion piece on site-specific projects. Not relevant to the HLC NF Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	ALLIANCE FOR THE WILD ROCKIES and NATIVE ECOSYSTEMS COUNCIL, Plaintiffs, vs. ABIGAIL KIMBELL, Regional Forester; UNITED STATES FOREST SERVICE, and UNITED STATES FISH AND WILDLIFE SERVICE, Defendants.	IRR	Article about site-specific project litigation. The 2020 Forest Plan is consistent with all law, regulation and policy. This article does not inform the analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Anderson 2018. Guest view: Green groups rely on dark money too; TERRY L. ANDERSON Jul 6, 2018	NOT RLB	Opinion article, not directly relevant to the HLC NF Forest Plan revision process.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	Arizona Peace Trail, website	IRR	The motorized trails included as examples from Arizona are not directly relevant to the HLC NF or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Arizona State Parks 2003. Economic Importance of Off-Highway Vehicle Recreation to Arizona.	CON	Recreation economics are viewed differently by the National Forest System than by the Industry. Accounting for Forest related visitor use spending, the National Forest only considers non-durable good expenditures within fifty miles of the Forest boundary. This article is contextually considered in that recreation economics were reviewed in the contribution model and are not expected to change as a result of the Forest Plan decision. The spectrum of motorized uses available remains, and visitor patterns remain linked to greater economic and cultural trends, as oppose to management area designation.
Capital Trail Vehicle Association; Citizens for Balanced Use	AWR Files Lawsuit: East Reservoir Project, 5/12/2015	IRR	Article about site-specific project litigation. The 2020 Forest Plan is consistent with all law, regulation and policy. This article does not inform the analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Backus 2004. ATVs banned from some trails in Pioneers; By Perry Backus of The Montana Standard - 05/13/2004	IRR	This article about ATV trail closures on the B-D is not directly relevant to the HLC NF or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Baird 2006. Environmentalists: Court rules issue is settled, suit is moot	IRR	Newspaper article about road conflict in Utah; not directly applicable to the HLC NF or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Baumann 2014. FWP chief says grizzly delisting nearing, By LISA BAUMANN Associated Press, May 16, 2014	DATED	The 2020 Forest Plan is consistent with the latest law, regulation, policy, and scientific information regarding grizzly bears. The analysis uses a body of literature more recent and relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	BBC News 2003. Fire-ravaged Portugal faces erosion	CON	The issue of post-fire erosion is addressed with information more relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Berger Group Inc 2009. Economic Contribution of Off-Highway Vehicle Recreation in Colorado	IRR	The economic contribution of OHV use in the HLC Plan Area has been considered using information relevant to the plan area. This information is specific to Colorado.
Capital Trail Vehicle Association; Citizens for Balanced Use	Blog: July 4, 2017: Coldest July Temperature Ever Recorded In The Northern Hemisphere	NOT RLB	Blog, containing posts refuting climate change. Does not provide literature or context specific to issues relevant to forest plan revision.
Capital Trail Vehicle Association; Citizens for Balanced Use	Bodkin 2017. Climate change not as threatening to planet as previously thought, new research suggests	IRR	Newspaper article. Discusses research that climate is warming more slowly than predicted earlier. Does not provide literature or context specific to issues relevant to forest plan revision.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	Booker 2009. Polar bear expert barred by global warmists	IRR	Polar bear populations are not directly relevant to issues on the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Bosworth 2006. Travel Management, Schedule for Implementation; letter from Chief Bosworth, June 8, 2006	IRR	The 2020 Forest Plan is not a travel planning document.
Capital Trail Vehicle Association; Citizens for Balanced Use	Brown, Reid 2016. GoPro: Trail Master; Published on Nov 27, 2016 Join Reid Brown, an Oregon Forestry Specialist and trail riding enthusiast, as he shows us what it takes to build a sustainable existence for the sport and environment that he and so many love so much.	CON	YouTube video/opinion. The 2020 Forest Plan and FEIS addresses the benefits and effects of various trail uses using information equally or more relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Bunte and Abt 2001. Sampling Surface and Subsurface Particle-size Distributions in Wadable Gravel-and Cobble-bed Streams for Analysis in Sediment Transport, Hydraulics, and Streambed Monitoring.	GEN	Reference deals with physical properties of sediment mobilization. Nothing about trail erosion as noted in the Description. National Core BMPs will be followed.
Capital Trail Vehicle Association; Citizens for Balanced Use	Bureau of Economic Analysis 2018. Outdoor Recreation Satellite Account, Prototype Estimates, 2012-2016.	CON	Recreation economics are viewed differently by the National Forest System, then by the Industry. Accounting for Forest related visitor use spending, the National Forest only considers non-durable good expenditures within fifty miles of the Forest boundary. This article is contextually considered in that recreation economics were reviewed in the contribution model and are not expected to change as a result of the Forest Plan decision. The spectrum of motorized uses available remains, and visitor patterns remain linked to greater economic and cultural trends, as oppose to management area designation.
Capital Trail Vehicle Association; Citizens for Balanced Use	Burr et al 2007. Physiological Demands of Off-Road Vehicle Riding	CITE	This publication has been cited in FEIS in relation to health benefits of recreation.
Capital Trail Vehicle Association; Citizens for Balanced Use	Byron 2002. Following the paper trail; By Eve Byron, IR Staff Writer - 03/11/02	IRR	Article about environmental groups and funding. Not directly relevant to the HLC NF Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Byron 2002. From backpacks to briefcases, for many protecting the environment has become a big bucks business in Montana; By Eve Byron, IR Staff Writer - 03/10/02	IRR	Article about litigation. Not directly applicable to the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Byron 2002. Groups draw money from across the U.S.; By Eve Byron, IR Staff Writer - 03/10/02	IRR	Article about environmental groups and funding. Not directly relevant to the HLC NF Forest Plan Revision process or analysis.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	Byron 2003. Deal cuts plan's size in half, By Eve Byron, IR Staff Writer - 01/23/03	IRR	Newspaper article about a past site-specific logging project. Not relevant to the 2020 Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Byron 2005. Timber sale reduced by 85%, By EVE BYRON - IR Staff Writer - 12/07/05	IRR	Newspaper article about a past site-specific logging project. Not relevant to the 2020 Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Byron 2009. Changing attitudes stymie elk managers, by EVE BYRON; Independent Record - 04/26/2009	IRR	News article; not a scientific paper. Not directly applicable to the forest plan revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Byron 2010. Area forests hazardous to impassable; By EVE BYRON Independent Record; May 28, 2010	NOT RLB	Not peer reviewed. The relative impacts of wildfire and motorized uses on the resources of the HLC NF are analyzed with other literature citations.
Capital Trail Vehicle Association; Citizens for Balanced Use	Byron 2015. Road accessing NF land gated, locked (December 15, 2012 article)	IRR	The 2020 Forest Plan is not a travel management document. This article about a specific gated area is not relevant to the HLC NF Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Cappiello 2008. Grizzlies thriving in Montana, By DINA CAPPIELLO - Associated Press - 09/17/08	DATED	The 2020 Forest Plan is consistent with the latest law, regulation, policy, and scientific information regarding grizzly bears. The analysis uses a body of literature more recent and relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Cates 2014. Public gives input on forest plan; Kristen Cates, kcates@greatfallstribune.com Published 8:07 p.m. MT June 30, 2014	NOT RLB	Opinion article
Capital Trail Vehicle Association; Citizens for Balanced Use	Cates-Carney 2015. Environmental Groups Suing Over Bull Trout Recovery Plan, By Corin Cates-Carney • Oct 7, 2015	IRR	Article about environmental groups suing another agency (FWS) about a bull trout recovery plan. The 2020 Forest Plan is consistent with all law, regulation and policy. This article does not inform the analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	CBS News 2007. Number of Hunters In U.S. Declining September 3, 2007	IRR	News article, not a scientific paper; information is national in scale and not directly applicable to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Census.gov: Age and Sex Composition in the United States: 2012	IRR	The census data provided is not directly applicable to the HLC NF Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Cessford 1995	CON	The impacts of various recreation uses, including motorized and nonmotorized uses, is addressed in the FEIS using information that is equally or more relevant to the HLC NF plan area.
Capital Trail Vehicle Association; Citizens for Balanced Use	Chaney 2014. Judge Clarifies USFS must Analyze New Acres before Logging in Swan, Dec 9, 2014 by Rob Chaney	IRR	Article about site-specific project litigation. The 2020 Forest Plan is consistent with all law, regulation and policy. This article does not inform the analysis.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	Chaney 2017. Glacier Park easing boating restrictions due to mussels, ROB CHANEY rchaney@missoulian.com, 3/17/2017	IRR	Newspaper article about boating restrictions in Glacier NP. Not directly applicable to the HLC NF Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Chavez et al 1993	CON	The impacts of various recreation uses, including motorized and nonmotorized uses, is addressed in the FEIS using information that is equally or more relevant to the HLC NF plan area.
Capital Trail Vehicle Association; Citizens for Balanced Use	Chief Mountain and Silver State Trail Systems	IRR	Exact link not accessible; related to OHV trail system in another area. Not directly relevant to the HLC NF or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Climate Science and Policy Watch website	NOT RLB	The HLC NF uses a body of science related to climate change and potential impacts. Opposing literature is not provided at this site; it is an opinion piece.
Capital Trail Vehicle Association; Citizens for Balanced Use	CO2.earth website	NOT RLB	Cannot locate the information referenced in the letter; website appears to indicate increasing CO2 levels. HLC uses other literature to discuss climate change and carbon.
Capital Trail Vehicle Association; Citizens for Balanced Use	Cole 1991. Changes on Trails in the Selway-Bitterroot Wilderness, Montana, 1978-89; David N. Cole	CON	The potential impacts of various trail uses is addressed in the FEIS using information that is equally or more relevant to the HLC NF plan area.
Capital Trail Vehicle Association; Citizens for Balanced Use	Collins 2000. Locked out of the public lands, Rich folks are blocking the public domain, say hunters and ORV riders. Katharine Collins | April 24, 2000	CON	Motorized access and effects are addressed in the FEIS with information that is equally or more relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Confirmation bias; From Wikipedia, the free encyclopedia	IRR	The 2020 Forest Plan is not a travel plan document. Information is not directly applicable to the HLC NF or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Continental Divide National Scenic Trail Decision Notice and Finding of No Significant Impact, 1989	CON	The 2020 Forest Plan is consistent with law, regulation, and policy related to the CDNST, including the issue of motorized uses. The specific link does not work and the document is not cited.
Capital Trail Vehicle Association; Citizens for Balanced Use	Cordell et al 2005. Off-Highway Vehicle Recreation in the United States, Regions and States: A National Report from the National Survey on Recreation and the Environment (NSRE)	CON	Subject of recreation visitation, motorized and non-motorized, and economic benefits associated with it are summarized and analyzed using current peer reviewed expenditure data, as well as methodology.
Capital Trail Vehicle Association; Citizens for Balanced Use	Cox 2010. How Much of the World is Covered by Cities? | Newgeography.com	CON	The issue of climate change has been addressed with a body of other literature more relevant to the HLC NF and the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Davis, Stacy C., Patricia S. Hu, Lorena F. Truett. 1999. Fuel Used for Off-Road Recreation: A Reassessment of the Fuel Use Model.	CON	The economic contributions of OHV use are acknowledged in the FEIS and Assessment. This publication provides information about OHV fuel use at a statewide level and is over 20 years old; it does not provide additional information critical to the recreation or economics analysis.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	DOJMT Motor Vehicle Registrations 2012	IRR	The HLC NF 2020 Forest Plan and FEIS acknowledge the popularity and contributes of OHV use as appropriate. This document is at a statewide level and is not specifically relevant to the HLC NF or the Forest Plan revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Dr. Roy Spencer website	IRR	Specific article not found. The HLC NF uses other literature to discuss climate change issues.
Capital Trail Vehicle Association; Citizens for Balanced Use	Dubb 2005. Pacific Crest Quest (a 3000-mile motorized route that follows closely to the PCT)	IRR	The motorized trails included as examples from the Pacific Crest Trail area are not directly relevant to the HLC NF or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	East Fork Rock OHV Trail System	IRR	Citation is a website about an OHV trail system in Oregon. Not relevant to the HLC NF planning area or Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	English et al. Tennessee OHV Economic Impact, A $3.4 Billion Industry,	IRR	The economic contribution of OHV use in the HLC Plan Area has been considered using information relevant to the plan area. This information is specific to Tennessee.
Capital Trail Vehicle Association; Citizens for Balanced Use	EPA/USFS Website: Sustainable ATV Trails	IRR	The 2020 Forest Plan is a programmatic document and does not address site-specific trail design.
Capital Trail Vehicle Association; Citizens for Balanced Use	Erb 2018. Volunteers repair fire-damaged Continental Divide National Scenic Trail; JORDAN ERB jerb@helenair.com Jul 12, 2018	IRR	Not relevant to the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	FHA 2017. Connecting Communities: Integrating Transportation and Recreation Networks, how do OHVs connect communities?	CON	Subject of recreation visitation, motorized and non-motorized, and economic benefits associated with it are summarized and analyzed using current peer reviewed expenditure data, as well as methodology.
Capital Trail Vehicle Association; Citizens for Balanced Use	Fish and wildlife management on federal lands: debunking state supremacy, BRIEFING PAPER; 6/1/2017	NOT RLB	USFS follows existing legal requirements.
Capital Trail Vehicle Association; Citizens for Balanced Use	Forsyth 2016. Myths about global warming are not facts	IRR	Opinion newspaper article. Does not provide literature or context specific to issues relevant to forest plan revision.
Capital Trail Vehicle Association; Citizens for Balanced Use	Freddy et al 1986. Responses of Mule Deer to Disturbance by Persons Afoot and Snowmobiles	AUTH	Effects of nonmotorized recreation discussed in FEIS (elk and Canada lynx sections, for example) using other more recent and relevant literature.
Capital Trail Vehicle Association; Citizens for Balanced Use	Fritz et al 1993	CON	The impacts of various recreation uses, including motorized and nonmotorized uses, is addressed in the FEIS using information that is equally or more relevant to the HLC NF plan area.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	FS Environmental Appeal Decisions website	IRR	Website related to FS appeals - not directly relevant to the HLC NF Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Furillo 2017. Sacramento County reeling from jury's $107 million verdict against it in mining case; By Andy Furillo, 3/22/2017 6:47:00 PM	IRR	Article about environmental groups and funding. Not directly relevant to the HLC NF Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Gander & Ingold 1997	CON	The impacts of various recreation uses, including motorized and nonmotorized uses, is addressed in the FEIS using information that is equally or more relevant to the HLC NF plan area.
Capital Trail Vehicle Association; Citizens for Balanced Use	Gaspipe 2006. ATV rider blog, TransAM Trail	IRR	The motorized trails included as examples are not directly relevant to the HLC NF or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Geoft & Alder 2001	CON	The impacts of various recreation uses, including motorized and nonmotorized uses, is addressed in the FEIS using information that is equally or more relevant to the HLC NF plan area.
Capital Trail Vehicle Association; Citizens for Balanced Use	Gevock 2005. Elk kill up 25% By Nick Gevock of The Montana Standard - 11/30/2005	IRR	News article, not a scientific paper. Information is not directly applicable to the forest plan revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Global Warming Petition Project	NOT RLB	Petition/opinion - credentials of signatories are provided but does not provide literature or context specific to issues relevant to forest plan revision.
Capital Trail Vehicle Association; Citizens for Balanced Use	Green Decoys homepage	IRR	Article about environmental groups. Not directly relevant to the HLC NN Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Green Decoys Montana homepage	IRR	Article about environmental groups. Not directly relevant to the HLC NN Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Hamilton 1997. A Partial Literature Review Of The Effects Of Various Human Activities On Wildlife; Compiled By Nora Hamilton, Bureau Of Land Management, National Technical Assistant For Trails, September, 1997.	INC	The information presented is largely dated and the outcomes are less than clear to differentiate the effects of motorized versus nonmotorized recreation on wildlife.
Capital Trail Vehicle Association; Citizens for Balanced Use	Hellmund 1998	CON	The impacts of various recreation uses, including motorized and nonmotorized uses, is addressed in the FEIS using information that is equally or more relevant to the HLC NF plan area.
Capital Trail Vehicle Association; Citizens for Balanced Use	How radical environmentalists are using "sportsmen's" groups as camouflage	IRR	Article about environmental groups. Not directly relevant to the HLC NN Forest Plan Revision process or analysis.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	Idaho Trails interactive map site	GEN	The HLC NF used a collaborative mapping tool to engage the public on existing and desired uses. This example mapping tool is not used or necessary to further inform the revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Idaho Trails mapping tool	GEN	Document is an example map of a trails mapping tool. The HLC NF used a collaborative mapping tool to engage the public on existing and desired uses. This example map is not relevant to the HLC NF and is therefore not specifically cited.
Capital Trail Vehicle Association; Citizens for Balanced Use	Inhofe 2006. Hot & Cold Media Spin Cycle: A Challenge to Journalists Who Cover Global Warming Senator James Inhofe, Chairman, Senate Environment And Public Works Committee; Senate Floor Speech Delivered: Monday September 25, 2006	NOT RLB	The issue of climate change and associated impacts are addressed with a body of literature more relevant to the HLC NF and reliable. This is a speech and not a literature citation.
Capital Trail Vehicle Association; Citizens for Balanced Use	Johnson, EA 2016. 'Global cooling' far more devastating than global warming. Guest View: EA Johnson	NOT RLB	The issue of climate change, including opposing science, has been addressed with a body of other literature more relevant to the HLC NF and the Forest Plan Revision process. This citation is an opinion article, not a peer-reviewed source.
Capital Trail Vehicle Association; Citizens for Balanced Use	Judge: Hebgen Logging Project needs USFWS Assessment for Bears, Lynx, 12/9/2014	IRR	Article about site-specific project litigation. The 2020 Forest Plan is consistent with all law, regulation and policy. This article does not inform the analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Kawashima 1. Neuroscience and Smart Aging, PowerPoint by Ryuita Kawashima; 2. Motorcycles Make You Smarter: Japanese Study Discovers A Link Between Riding and Thinking	CITE	This publication has been cited in FEIS in relation to health benefits of recreation.
Capital Trail Vehicle Association; Citizens for Balanced Use	Koch 2013. Wildfire smoke becoming a serious health hazard	CON	The issue of wildfire smoke and health is discussed in the FEIS using citations equally or more relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Kollmeyer 2005. Timber suit disappointing, By Jane Kollmeyer - 07/17/05 Jul 17, 2005	IRR	Opinion piece about past site-specific salvage sales. Not relevant to the HLC NF Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Kuglin 2014. Law of the land: How litigation has shaped the Forest Service; Tom Kuglin Nov 9, 2014	IRR	Article about litigation. Not directly applicable to the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Lassen Backcountry Discovery Trail, website	IRR	The motorized trails included as examples from the Lassen are not directly relevant to the HLC NF or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Lawsuit Launched for Endangered Species Act Protection of Monarch Butterflies	IRR	Article about ESA litigation. The 2020 Forest Plan is consistent with all law, regulation and policy. This article does not inform the analysis.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	List of non-motorized groups	IRR	Lists of non-motorized groups are not directly relevant to the HLC NF Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Management Guidelines for Off-Highway Vehicle Recreation	IRR	The 2020 Forest Plan is a programmatic document and does not address site-specific trail planning, design, or maintenance.
Capital Trail Vehicle Association; Citizens for Balanced Use	Marion & Wimpey 2007. Environmental Impacts of Mountain Biking: Science Review and Best Practices By Jeff Marion and Jeremy Wimpey	CON	The impacts of various recreation uses, including motorized and nonmotorized uses, is addressed in the FEIS using information that is equally or more relevant to the HLC NF plan area.
Capital Trail Vehicle Association; Citizens for Balanced Use	McKee 2003. Residents turn to wood as natural gas prices soar, Helena IR 2003	CON	The availability of firewood is addressed as appropriate in the Other Forest Products section of the FEIS.
Capital Trail Vehicle Association; Citizens for Balanced Use	Meeting notes from TSH Restoration Collaborative Committee and Wildlife considerations/notes for TSH project	IRR	Meeting notes about a site-specific project. Not relevant to the HLC NF Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Michigan Cross Country Cycle Trail (MCCCT) maps, from Web page of Michigan Cross Country Trail Maps	IRR	Citation is a series of maps from Michigan. Not relevant to the HLC NF planning area or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Michigan cross country trails overview web page	IRR	Citation is a series of maps from Michigan. Not relevant to the HLC NF planning area or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Michigan Dept. of Natural Resources: Designated ORV, ATV, Motorcycle and MCCCT Trails, map	IRR	Citation is a series of maps from Michigan. Not relevant to the HLC NF planning area or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Modoc Backcountry Discovery Trail, website	IRR	The motorized trails included as examples from the Modoc are not directly relevant to the HLC NF or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Montana Environmental Quality Council 2015. Summary of Road Information for Montana's National Forest System. HJ13 Study - Environmental Quality Council	IRR	Information not relevant to the 2020 Forest Plan or plan components.
Capital Trail Vehicle Association; Citizens for Balanced Use	Montana State Parks: RECREATION GRANTS, Recreational Trails Program	IRR	Document is specific to funding and trail programs for the State of Montana and is not applicable to NFS lands or policy.
Capital Trail Vehicle Association; Citizens for Balanced Use	Montana Wilderness Association vs. US Forest Service 2008	GEN	The 2020 Forest Plan is consistent with law, regulation, and policy regarding WSAs.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	Montana Wilderness Association vs. US Forest Service 2011	GEN	The 2020 Forest Plan is consistent with law, regulation, and policy regarding WSAs.
Capital Trail Vehicle Association; Citizens for Balanced Use	Montana Wilderness Association vs. US Forest Service Wilderness Study area decision 2002	GEN	The 2020 Forest Plan is consistent with law, regulation, and policy regarding WSAs.
Capital Trail Vehicle Association; Citizens for Balanced Use	Montana Wilderness Study Area Act of 1977	CITE	The WSA act is included as regulatory framework in the FEIS. The 2020 Forest Plan is consistent with this framework.
Capital Trail Vehicle Association; Citizens for Balanced Use	Moore 1994. Conflicts on Multiple-Use Trails: Synthesis of the Literature and State of the Practice	GEN	Although not specifically cited, the 2020 Forest Plan is generally consistent with the principles presented in this document, to the degree appropriate in a programmatic land management plan.
Capital Trail Vehicle Association; Citizens for Balanced Use	Motor Vehicle Use Map (MVUM) Development in Support of the Travel Management Rule (36CFR212)	IRR	The 2020 Forest Plan is not a travel planning document.
Capital Trail Vehicle Association; Citizens for Balanced Use	MT. Montana State Parks: RECREATION GRANTS Off-Highway Vehicle Program	CON	Not specifically relevant to Forest Plan revision. The economic benefits of motorized uses are acknowledged as appropriate in the FEIS and assessment.
Capital Trail Vehicle Association; Citizens for Balanced Use	MTDOT. Montana Department of Transportation www.mdt.mt.gov Instructions for Agricultural Standard Deduction Refund Application for Montana's Diesel or Gasoline Tax	CON	Not specifically relevant to Forest Plan revision. The economic benefits of motorized uses are acknowledged as appropriate in the FEIS and assessment.
Capital Trail Vehicle Association; Citizens for Balanced Use	MFWP. 2014-2018 Statewide Comprehensive Outdoor Recreation Plan (SCORP)	CITE	This citation has been included in the cumulative effects analysis (other agency land management plans).
Capital Trail Vehicle Association; Citizens for Balanced Use	Multiple websites concerning off-road vehicle tourism.	IRR	The importance of OHV tourism and associated trails on the HLC NF is addressed as appropriate in the FEIS and Assessment using information more relevant to the HLC NF plan area.
Capital Trail Vehicle Association; Citizens for Balanced Use	Multiple websites concerning recreational vehicles and noise.	IRR	Sound is a site-specific issue and beyond the scope of the 2020 Forest Plan.
Capital Trail Vehicle Association; Citizens for Balanced Use	Multiple websites concerning sage grouse.	IRR	There is no occupied sage grouse habitat on NFS lands in the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	National Off-Highway Vehicle Conservation Council home page	IRR	The 2020 Forest Plan is a programmatic document and does not address site-specific trail planning, design, or maintenance.
Capital Trail Vehicle Association; Citizens for Balanced Use	National Off-Highway Vehicle Conservation Council website, reference to Great Trails book	IRR	The 2020 Forest Plan is a programmatic document and does not address site-specific trail planning, design, or maintenance.
Capital Trail Vehicle Association; Citizens for Balanced Use	National Shooting Sports Foundation 2010. Issues Related to Hunting Access in the United States; January 2010 (comment cites November 2010 but couldn't find that one)	CON	The 2020 Forest Plan is consistent with law, regulation, and policy with respect to IRAs. The FEIS uses citations equally or more relevant to address the effects of allowable uses in IRAs.
Capital Trail Vehicle Association; Citizens for Balanced Use	NATIONAL TRAILS SYSTEM ACT (AND RELATED LAWS); [As Amended Through Public Law 106–170, Dec. 31, 1999]	CITE	Law, regulation and policy. This law is considered in the FEIS analysis and the 2020 Forest Plan is consistent with it.
Capital Trail Vehicle Association; Citizens for Balanced Use	NATIVE ECOSYSTEMS COUNCIL ALLIANCE FOR THE WILD ROCKIES WILDWEST INSTITUTE v. Sitz Angus Ranch; Gary L. Clark; Moose Creek Grazing Association; Max L. Robinson, Sr.; Max J. Robinson, Jr.; Montana Stockgrowers Association; Montana Wool Growers Association, Intervenors-Appellees.	IRR	Article about site-specific project litigation. The 2020 Forest Plan is consistent with all law, regulation and policy. This article does not inform the analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	NATIVE ECOSYSTEMS COUNCIL, Plaintiff–Appellant, v. Leslie WELDON, in her official capacity as Regional Forester of Region One of the U.S. Forest DWM Service; United States Forest Service, an agency of the U.S. Department of Agriculture, Defendants–Appellees.	IRR	Article about site-specific project litigation. The 2020 Forest Plan is consistent with all law, regulation and policy. This article does not inform the analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	NATIVE ECOSYSTEMS COUNCIL, Plaintiff--Appellant, v. UNITED STATES FOREST SERVICE, an agency of the U.S. Department of Agriculture; DWIGHT CHAMBERS, acting supervisor, Helena National Forest; KATHLEEN MCALLISTER, Acting Regional Forester for Region One U.S. Forest Service; DALE BOSWORTH, Chief of United States Forest Service, Defendants--Appellees.	IRR	Article about site-specific project litigation. The 2020 Forest Plan is consistent with all law, regulation and policy. This article does not inform the analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	NCAR 2007. US Fires Release Large Amounts Of Carbon Dioxide	CON	Emissions from fire is analyzed in the FEIS including more recent publication from Wiedinmyer.
Capital Trail Vehicle Association; Citizens for Balanced Use	Nie et al 2017. Fish and wildlife management on federal lands: debunking state supremacy	NOT RLB	USFS follows existing legal requirements.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	Nie et al 2017. Fish and wildlife management on federal lands: debunking state supremacy. Power point presentation, 2017	NOT RLB	PowerPoint presentation. USFS follows existing legal requirements.
Capital Trail Vehicle Association; Citizens for Balanced Use	NOHVCC 2018. Presentation: A Trail System for Economic Development, 2017 NOHVCC Conference; Manchester, NH.	CON	Recreation economics are viewed differently by the National Forest System, then by the Industry. Accounting for Forest related visitor use spending, the National Forest only considers non-durable good expenditures within fifty miles of the Forest boundary. This article is contextually considered in that recreation economics were reviewed in the contribution model and are not expected to change as a result of the Forest Plan decision. The spectrum of motorized uses available remains, and visitor patterns remain linked to greater economic and cultural trends, as opposed to management area designation.
Capital Trail Vehicle Association; Citizens for Balanced Use	NVUM ROUND 1 output, forest-level visitation and confidence intervals	GEN	The HLC NF followed the wilderness inventory and evaluation procedure in the FSH 1909.12, Chapter 70.
Capital Trail Vehicle Association; Citizens for Balanced Use	Off-Highway Vehicle Environmental Impact Statement and Proposed Plan Amendment for Montana, North Dakota and South Dakota (3-State OHV) decision	IRR	The HLC NF 2020 Forest Plan is not a travel management document. Land management plan regulations and policy are different between the BLM and FS. Adjacent BLM land management plans were considered in the cumulative effects analysis, which are more recent.
Capital Trail Vehicle Association; Citizens for Balanced Use	Online blog. Crossing Montana to Canada on Dirt Bikes, online blog/forum.	CON	The positive benefits of OHV recreation are addressed as appropriate in the FEIS using information equally or more relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Online blog. Crossing Montana to Canada on Dirt Bikes.	CON	The positive benefits of OHV recreation are addressed as appropriate in the FEIS using information equally or more relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Outdoor Industry Association 2012. The Outdoor Recreation Economy.	CON	Industry wide economic contributions are a much broader economic context than specific expenditures for the purpose of visitation to National Forests.
Capital Trail Vehicle Association; Citizens for Balanced Use	Paiute ATV trail: Web page provides an overview of the trail	IRR	Citation is a website about the Paiute ATV trail. Not relevant to the HLC NF planning area or Forest Plan revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Person, Daniel 2011. Environmental groups no strangers to courthouse, From the Green Town, USA series, By DANIEL PERSON and CARLY FLANDRO, Chronicle Staff Writers, Mar 28, 2011	IRR	Article about site-specific project litigation. The 2020 Forest Plan is consistent with all law, regulation and policy. This article does not inform the analysis.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	Pinchot Institute for Conservation. Protecting front range forest, Watersheds from high-severity wildfires an assessment by the Pinchot institute for conservation funded by the Front range fuels treatment partnership	CON	The EIS analyzes the causal effects of recent insect activity, and potential future activity, using a variety of literature sources equally or more relevant to the plan area; and addresses the effects of land allocations such as wilderness areas.
Capital Trail Vehicle Association; Citizens for Balanced Use	Quadtrek.net: A 10-month ATV adventure through North America	IRR	The motorized trails included as examples are not directly relevant to the HLC NF or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	R.S. 2477: The Legal Battle Continues	CON	General article about trail conflict issues. The HLC NF considered information more relevant to the planning area regarding trail uses.
Capital Trail Vehicle Association; Citizens for Balanced Use	Research: Grizzlies not so dependent on pine nuts, Associated Press, Nov 8, 2013	NOT RLB	The 2020 Forest Plan is consistent with the latest law, regulation, policy, and scientific information regarding grizzly bears. The analysis uses a body of literature more recent and relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Ridge to Rivers website	IRR	Citation is specific to urban and motorized trails in Boise, ID. It is not relevant to the HLC NF or Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Samuelson 2015. Can we set the world's temperature?	IRR	Newspaper article. Focused on renewable energy versus fossil fuels. Not relevant to the issues or the decision being made with forest plan revision on the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Schneider and Schoeneck 2005. All-terrain Vehicles in Minnesota: Economic impact and consumer profile	IRR	The economic contribution of OHV use in the HLC Plan Area has been considered using information relevant to the plan area. This information is specific to Minnesota.
Capital Trail Vehicle Association; Citizens for Balanced Use	Schultz, Richard D., and James A. Bailey 1978. Responses of National Park Elk to Human Activity. The Journal of Wildlife Management, Vol. 42, No. 1 (Jan. 1978), pp. 91-100	IRR	Reference is only relevant to habituated populations (e.g., in a national park).
Capital Trail Vehicle Association; Citizens for Balanced Use	Silberman 2003. The Economic Importance Of Off-Highway Vehicle Recreation, Economic data on off-highway vehicle recreation for the State of Arizona and for each Arizona County Study, Jonathan Silberman, PhD. Prepared by School of Management	IRR	The economic contribution of OHV use in the HLC Plan Area has been considered using information relevant to the plan area. This information is specific to Arizona.
Capital Trail Vehicle Association; Citizens for Balanced Use	Silberman and Anderick 2006. Economic Value of Off Highway Vehicle Recreation 2006.	CON	Subject of recreation visitation, motorized and non-motorized, and economic benefits associated with it are summarized and analyzed using current peer reviewed expenditure data, as well as methodology.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	Simon, Andrew 2006. Evaluation of the Importance of Channel Processes in CEAP-Watershed Suspended Sediment Yields. IN: Proceedings of the Eighth Federal Interagency Sedimentation Conference, April 2-6, 2006. Reno, NV, USA.	IRR	Paper is related to channel bank and edge effects in low gradient agriculture systems (Iowa, Nebraska, etc.)
Capital Trail Vehicle Association; Citizens for Balanced Use	Simon, Ronna J. 2006: Using Multiple Indicators to Detect Geomorphic Channel Changes in Response to Wildfire; Lee H. MacDonald and Peter R. Robichaud 2008: Post-fire Erosion and the Effectiveness of Emergency Rehabilitation Treatments over Time	CON	The topic of soil erosion is covered with other literature sources more relevant to the HLC NF forest plan revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	Social impact analysis (SIA): principles and procedures training course (1900-03), course description	GEN	The 2020 Forest Plan is consistent with the 2012 planning rule.
Capital Trail Vehicle Association; Citizens for Balanced Use	Southeast Federation Mineralogical Societies Inc. webpage on Public Lands Access	IRR	Link does not access the indicated article. Motorized access and effects are addressed in the FEIS with information that is relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	State of CA, OHV Sound Regulations 2003	IRR	The issue of sound is addressed as appropriate in the FEIS using information more relevant to the HLC NF Plan area. The 2020 Forest Plan is consistent with all applicable law, regulation, and policy.
Capital Trail Vehicle Association; Citizens for Balanced Use	Sunding, David; Aaron Swoboda and David Zilberman. 2003. The Economic Cost of Critical Habitat Designation: Framework and Application to the Case of California Vernal Pools. February 20, 2003.	CON	Quantitative valuation of ecosystem services such as habitat are not provided due to incompleteness of potential cost/benefit analysis. Key ecosystem services are reviewed qualitatively by alternative.
Capital Trail Vehicle Association; Citizens for Balanced Use	Swarthout, Elliott C.H. and Robert J. Steidl. 2003. Experimental Effects of Hiking on Breeding Mexican Spotted Owls	IRR	Spotted owls do not occur in the planning area.
Capital Trail Vehicle Association; Citizens for Balanced Use	Swearingen & Johnson 1994. Keeping Visitors on the Right Track - Sign and Barrier Research at Mount Rainer", Park Science 14(4) published in 1994	IRR	The issue of sign usage and visitor damage at Mount Rainer is not directly relevant to the 2020 Forest Plan or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Sylvester 2009. Montana Off-Highway Vehicles 2008. Prepared for Montana Department of Fish, Wildlife, and Parks.	CON	Subject of recreation visitation, motorized and non-motorized, and economic benefits associated with it are summarized and analyzed using current peer reviewed expenditure data, as well as methodology.
Capital Trail Vehicle Association; Citizens for Balanced Use	Sylvester 2014. Montana Recreational Off-Highway Vehicles Fuel Use and Spending Patterns 2013.	CON	Subject of recreation visitation, motorized and non-motorized, and economic benefits associated with it are summarized and analyzed using current peer reviewed expenditure data, as well as methodology.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	The link does not work.	IRR	Link is general to the Sawtooth NF, suggest that it should be to their travel management process. The 2020 Forest Plan is not a travel management document.
Capital Trail Vehicle Association; Citizens for Balanced Use	The Montana Legislature, EQC meeting information	DATED	The 2020 Forest Plan is consistent with the latest law, regulation, policy, and scientific information regarding grizzly bears. The analysis uses a body of literature more recent and relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Tol et al 2006. Opinion: Save the Panel on Climate Change!	NOT RLB	The issue of climate change and associated impacts are addressed with a body of literature more relevant to the HLC NF and reliable. This is an opinion piece.
Capital Trail Vehicle Association; Citizens for Balanced Use	U.S. Forest Service; Departmental Regulation 5600-2	GEN	The 2020 Forest Plan is consistent with all applicable law, regulation, and policy.
Capital Trail Vehicle Association; Citizens for Balanced Use	Uken 2014. Montana suicides continue to creep up; rate remains twice the national average	CON	The issue of the health benefits of outdoor recreation is addressed with other information equally or more relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	United States Supreme Court: DAUBERT v. MERRELL DOW PHARMACEUTICALS, INC., (1993); No. 92-102 Argued: March 30, 1993 Decided: June 28, 1993	DATED	Substantially more research on the effects of motorized vehicles has been conducted with corresponding effects on legal obligations to minimize effects.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA 1993. Sound Levels of Five Motorcycles Travelling Over Forest Trails, Rock Creek ORV Area. Harrison, Makel and Besse. USFS 1993	CON	The issue of sound and recreation experiences is addressed in the FEIS and Assessment using information that is equally or more relevant to the HLC NF plan area.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA 2000. National Survey on Recreation and The Environment (NSRE 2000)	CON	The publication is national in scope, 20 years old, and not specific to the HLC NF. Known information on recreation use types and trends was incorporated as appropriate in the FEIS and/or Assessment. The recreation use numbers presented in this document would not help further inform the recreation analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA 2004. Recreation Statistics Update, Update Report No. 3: Trends and Demographics of Off-road Vehicle Users	CON	The FEIS acknowledges the increase in OHV use in a general fashion, and in context to the HLF NF. The demands for all types of recreation, including OHV use, were considered in the development of the 2020 Forest Plan and in the FEIS analysis. The specific statistics listed in this document are national in scope and are not necessary for inclusion in the FEIS.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA 2005. Finalized Forest Service Rule Improves the Forest Planning Process and Increases Public Involvement--WASHINGTON, DECEMBER 12, 2006 AT 12:00 PM EST	DATED	The 2020 Forest Plan is consistent with the latest law, regulation, and policy.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA 2006. Reference is to letter from RF in Feb. 2006 certifying that part of the CDNST would remain motorized, or alternative routes would be established	CON	The 2020 Forest Plan is consistent with law, regulation, and policy related to the CDNST, including where existing motorized routes are the potential for re-routing the trail. There is no need to cite this specific document.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA 2007. The WEPP Road Batch Model: A Tool for Reducing Erosion from Trails	IRR	Information is not relevant to the Forest Plan Revision process or analysis; site specific trail construction and maintenance are not addressed with this programmatic planning effort.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA 2011. Review of the Forest Service Response: The Bark Beetle Outbreak in Northern Colorado and Southern Wyoming	CON	The EIS analyzes the causal effects of recent insect activity, and potential future activity, using a variety of literature sources equally or more relevant to the plan area; and addresses the effects of land allocations such as wilderness areas.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA 2012. Colorado State FS; 2012 Report on the health of Colorado's Forests, Forest stewardship through active management	CON	The EIS analyzes the causal effects of recent insect activity, and potential future activity, using a variety of literature sources equally or more relevant to the plan area; and addresses the effects of land allocations such as wilderness areas.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA 2015. Meeting notes from TSH Restoration Collaborative Committee and Wildlife considerations/notes for Tenmile South Helena project	IRR	Meeting notes about a site-specific project. Not relevant to the HLC NF Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA Forest Service 2003. Social Assessment of the Beaverhead-Deerlodge National Forest	CON	Both statistics are available in NVUM reports for the Forest.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA FS 2008. National Visitor Use Monitoring Results, USDA Forest Service, National Summary Report, Data collected through FY2007.	CITE	Citation is used in the FEIS.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA FS website: Michigan Cross Country Motorcycle Trail	IRR	The motorized trails included as examples from Michigan are not directly relevant to the HLC NF or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA, Boise NF Motor vehicle use maps Web page of MVUMs	IRR	Citation is a website regarding MVUM for the Boise NF. Not relevant to the HLC NF planning area or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA, Gifford Pinchot NF web page	IRR	Citation is a website about OVH trails on the Gifford Pinchot NF. Not relevant to the HLC NF planning area or Forest Plan revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA, Mendocino NF OHV trails web page	IRR	Citation is a website about OHV trails on the Mendocino NF. Not relevant to the HLC NF planning area or Forest Plan Revision process.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA, Sawtooth MVUMs	IRR	Citation is a website regarding MVUM for the Sawtooth NF. Not relevant to the HLC NF planning area or the Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA, USDI 2001. Off-Highway Vehicle Environmental Impact Statement And Proposed Plan Amendment For Montana, North Dakota And Portions Of South Dakota, USFS/BLM 2001	IRR	The HLC NF 2020 Forest Plan is not a travel management document. Land management plan regulations and policy are different between the BLM and FS. Adjacent BLM land management plans were considered in the cumulative effects analysis, which are more recent than this FEIS which is nearly 20 years old.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA, Wallowa Whitman OHV trails Web page provides a short description of trails and links to more specific trails	IRR	Citation is a website about trails on the Wallowa Whitman. Not relevant to the HLC NF planning area or Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDA, Welcome to the Canfield Mountain Trail System.	IRR	Citation is a website about trails in Idaho. Not relevant to the HLC NF planning area or Forest Plan Revision process.
Capital Trail Vehicle Association; Citizens for Balanced Use	USDI, BLM's Comprehensive Travel and Transportation Management (CTTM) program	IRR	Website regarding a travel management program for the BLM. The 2020 Forest Plan for the HLC NF is not a travel management document. The trends and status of motorized uses are acknowledged in the Assessment and FEIS using sources more relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	USFS Roadless Area Conservation Website	CITE	The law, regulation, and policy for IRAs is utilized in the FEIS as regulatory framework. The 2020 Forest Plan is consistent with this framework.
Capital Trail Vehicle Association; Citizens for Balanced Use	USFS Trails Unlimited website	IRR	Website is for a FS program that supports trail projects. It is not relevant to the Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	USFWP. U.S. Forest Service and Montana Department of Fish Wildlife and Parks Collaborative Overview and Recommendations for Elk Habitat Management on the Custer, Gallatin, Helena, and Lewis and Clark National Forests	CITE	This publication was cited in the analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	USGAO 2009. Enhanced planning could assist agencies in managing increased use of off-highway vehicles	CON	The 2020 Forest Plan provides programmatic strategic planning for motorized uses. The citation provided is national in scope and provides recommendations that are broadly consistent with the forest planning effort. Utilizing specific information from the publication would not help further inform the 2020 Forest Plan or FEIS.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	USGAO 2013. FOREST SERVICE TRAILS: Long- and Short-Term Improvements Could Reduce Maintenance Backlog and Enhance System Sustainability	CON	The HLC NF forest plan revision team considered the existing trail network and the need for the Plan to support all types of recreation uses and maintenance needs over time, including but not limited to leveraging partnerships. Specific information and figures from this document are at a broader scale and would not further inform the Plan or FEIS analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Various websites that display OHV tourism	IRR	The importance of OHV tourism on the HLC NF is addressed as appropriate in the FEIS and Assessment using information equally or more relevant to the HLC NF plan area.
Capital Trail Vehicle Association; Citizens for Balanced Use	Vella et al 2013. Participation in Outdoor Recreation Program Predicts Improved Psychosocial Well-Being Among Veterans With Post-Traumatic Stress Disorder: A Pilot Study	CITE	This publication has been cited in FEIS in relation to health benefits of recreation.
Capital Trail Vehicle Association; Citizens for Balanced Use	Walsh 2014. Photographer retraces Bob Marshall's epic hike in 'spirit'	IRR	The HLC NF followed the wilderness inventory and evaluation procedure in the FSH 1909.12, Chapter 70.
Capital Trail Vehicle Association; Citizens for Balanced Use	Ward & Cupal 1976. Telemetered Heart Rate of Three Elk as Affected by Activity and Human Disturbance	NOT RLB	Preliminary study with very limited sample size; also, very dated.
Capital Trail Vehicle Association; Citizens for Balanced Use	Website: PlayCleanGo: stop invasive species in your tracks	GEN	General best management practices already in place. No further review needed.
Capital Trail Vehicle Association; Citizens for Balanced Use	Websites, OHV use/benefits	CON	The positive benefits of OHV recreation are addressed as appropriate in the FEIS using information equally or more relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Websites, OHV use/benefits	CON	The positive benefits of OHV recreation are addressed as appropriate in the FEIS using information equally or more relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Websites, OHV use/benefits	CON	The positive benefits of OHV recreation are addressed as appropriate in the FEIS using information equally or more relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Websites, OHV use/benefits	CON	The positive benefits of OHV recreation are addressed as appropriate in the FEIS using information equally or more relevant to the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	Websites, OHV use/benefits	CON	The positive benefits of OHV recreation are addressed as appropriate in the FEIS using information equally or more relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Websites, OHV use/benefits	CON	The positive benefits of OHV recreation are addressed as appropriate in the FEIS using information equally or more relevant to the HLC NF.
Capital Trail Vehicle Association; Citizens for Balanced Use	Websites, OHV use/benefits	CON	The 2020 Forest Plan is consistent with law, regulation, and policy related to the CDNST, including the issue of motorized uses. The specific link does not work and the document is not cited.
Capital Trail Vehicle Association; Citizens for Balanced Use	White et al 2005. WILDLIFE RESPONSES TO MOTORIZED WINTER RECREATION IN YELLOWSTONE 2005 ANNUAL REPORT, by P.J. White and Troy Davis Yellowstone Center for Resources & Dr. John Borkowski, Montana State University	IRR	Report focuses on a habituated population; not relevant outside habituated areas as indicated by other literature
Capital Trail Vehicle Association; Citizens for Balanced Use	White, Eric M. and Daniel J. Stynes 2010. Spending Profiles of National Forest Visitors, NVUM Round 2 Update. March 2010.	CON	Recreation economics are viewed differently by the National Forest System, then by the Industry. Accounting for Forest related visitor use spending, the National Forest only considers non-durable good expenditures within fifty miles of the Forest boundary. This article is contextually considered in that recreation economics were reviewed in the contribution model and are not expected to change as a result of the Forest Plan decision. The spectrum of motorized uses available remains, and visitor patterns remain linked to greater economic and cultural trends, as oppose to management area designation.
Capital Trail Vehicle Association; Citizens for Balanced Use	Whitney 2014. Judge Halts Gallatin National Forest Timber Sale, By Eric Whitney • Dec 5, 2014	IRR	Newspaper article about site-specific projects. Not relevant to the HLC NF Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Whitney 2016. Environmental Group Sues Over Cabinet-Yaak Grizzlies, By Eric Whitney • Feb 11, 2016	IRR	Article about environmental groups suing over grizzly bears. The 2020 Forest Plan is consistent with all law, regulation and policy. This article does not inform the analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Wiedinmyer & Neff 2007. Carbon Balance and Management Research: Estimates of CO2 from fires in the United States: implications for carbon management	CON	The impact of fires and fossil fuel emissions to carbon sequestration and climate change is addressed with other literature more or equally relevant to the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
Capital Trail Vehicle Association; Citizens for Balanced Use	WILD WILDERNESS; WINTER WILDLANDS ALLIANCE; BEND BACKCOUNTRY ALLIANCE, Plaintiffs-Appellants, v. JOHN ALLEN, Forest Supervisor of the Deschutes National Forest; UNITED STATES FOREST SERVICE, a federal agency, Defendants-Appellees, and OREGON STATE SNOWMOBILE ASSOCIATION; AMERICAN COUNCIL OF SNOWMOBILE ASSOCIATIONS; KEN ROADMAN; ELK LAKE RESORT, Intervenor-Defendants-Appellees. Appeal from the United States District Court for the District of Oregon; Thomas M. Coffin, Magistrate Judge, Presiding Argued and Submitted October 5, 2016 Portland, Oregon+B256:C269	IRR	The 2020 Forest Plan is not a travel plan. The 2020 Forest Plan is consistent with all applicable law, regulation, and policy. This legal decision from Oregon is not directly relevant to the HLC NF Forest Plan Revision process or analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use	Wind in her hair: 86-year-old Darby woman has been riding motorcycles for 70 years	CITE	This publication has been cited in FEIS in relation to health benefits of recreation.
Capital Trail Vehicle Association; Citizens for Balanced Use	YouTube video, 2012. Dr David Evans on Global Warming	IRR	Does not provide literature or context specific to issues relevant to forest plan revision.
Capital Trail Vehicle Association; Citizens for Balanced Use	YouTube video, 2015. Nobel Laureate Smashes the Global Warming Hoax	IRR	Does not provide literature or context specific to issues relevant to forest plan revision.
Capital Trail Vehicle Association; Citizens for Balanced Use	YouTube video: The Global Warming is a Business. Documentary from 2007	IRR	Does not provide literature or context specific to issues relevant to forest plan revision.
Capital Trail Vehicle Association; Citizens for Balanced Use; and Wild Earth Guardians	Interagency Lynx Biology Team 2013. Canada Lynx Conservation Assessment and Strategy; 3rd Edition, August 2013	CITE	The 2020 Forest Plan retained the direction from the NRMLD, as required by current law, regulation, and policy. This work is cited as appropriate in the analysis.
Capital Trail Vehicle Association; Citizens for Balanced Use; Helena Hunters & Anglers; and Rocky Mountain Elk Foundation	Ranglack, Garron, Rotella, Proffitt, Gude, and Canfield. 2016. Security areas for maintaining elk on publicly accessible lands during archery and rifle hunting seasons in southwestern Montana.	CITE	This publication was cited in the analysis.

Commenter(s)	Citation	Response Code	Rationale
Carroll College	Cronon 1995. The Trouble with Wilderness; or, Getting Back to the Wrong Nature; by William Cronon (William Cronon, ed., Uncommon Ground: Rethinking the Human Place in Nature, New York: W. W. Norton & Co., 1995, 69-90)	IRR	The designation of wilderness is beyond the scope of forest plan revision. Other information relative to recommended wilderness was used.
Carroll College	Felton, Vernon 2015. A Look at Why Bikes Are Banned in Wilderness	CON	The issue of mechanized means of transportation in wilderness is addressed using other information that is equally or more relevant to forest plan revision.
Carroll College	French 2016. Montana No. 2 in nation for wildlife vs. car collisions; By BRETT FRENCH french@billingsgazette.com	IRR	Wildlife collisions are not directly applicable to the forest plan revision process.
Carroll College	Gardner 1998. CITIES TURNING TO BICYCLES TO CUT COSTS, POLLUTION, AND CRIME; by Gary Gardner, 1998	IRR	Publication is focused on health and environmental benefits of bicycle use within city environments.
Carroll College	Goltz 1998. Why Protect Wilderness? James P Goltz New Brunswick Protected Natural Areas Coalition February 1998	IRR	The designation of wilderness is beyond the scope of forest plan revision. Other information relative to recommended wilderness was used.
Carroll College	Larson, Courtney L, Sarah E. Reed, Adina M. Merenlender, Kevin R. Crooks; 2016. Effects of Recreation on Animals Revealed as Widespread through a Global Systematic Review.	AUTH	Effects of nonmotorized recreation discussed in FEIS (elk and Canada lynx sections, for example) using other more recent and relevant literature.
Carroll College	Morgan, Todd A CF. 2017. Montana's Forest Industry Conditions & Outlook 2017	AUTH	The issue of impacts relative to the forest industry is addressed using information that is equally or more relevant, including other publications by this author.
Carroll College	Seney 1991. Erosional impact of hikers, horses, off-road bicycles, and motorcycles on mountain trails, by Joseph Paul Seney. 1991 MSU thesis	IRR	Site specific effects of specific types of recreation on trail erosion is beyond the scope of the Forest Plan Revision.
Carroll College	Teasdale, Aaron. 2017. Do Bikes Belong in Wilderness Areas? No. But hikers and bikers must find a way to come together. By Aaron Teasdale | Dec 20 2017	CON	The issue of mechanized means of transportation in wilderness is addressed using other information that is equally or more relevant to forest plan revision.
Carroll College	Turtenwald 2018. How Does Hunting Affect the Environment? By Kimberly Turtenwald; Updated April 25, 2018	IRR	The regulation of hunting is not within the purview of the USFS; plan components provide the framework needed to support the hunting regulations set forth by the MFWP.
Carroll College	Wagner Undated. Economy; Montana's Economic Performance: Department of Labor and Industry, Research and Analysis Bureau	CON	Economic considerations are addressed using other literature sources that are equally or more relevant to the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
Center for Large Landscape Conservation	GILBERT-NORTON, Lynne, RYAN WILSON, JOHN R. STEVENS, AND KAREN H. BEARD. 2010. Meta-Analytic Review of Corridor Effectiveness	GEN	Paper is a meta-analysis that highlights the general benefit of corridors to wildlife populations, a theme that is extensively covered within the Plan
Center for Large Landscape Conservation	MAWDSLEY, Jonathan R., ROBIN O'MALLEY, AND DENNIS S. OJIMA. 2009. Review of Climate-Change Adaptation Strategies for Wildlife Management and Biodiversity Conservation	GEN	Paper is a general review of strategies for addressing managing under changing climatic conditions, strategies, including connectivity, which are covered broadly within the Plan and DEIS
Center for Large Landscape Conservation	SCHWARTZ, Michael K., JEFFREY P. COPELAND, NEIL J. ANDERSON, JOHN R. SQUIRES, ROBERT M. INMAN, KEVIN S. MCKELVEY, KRISTY L. PILGRIM, LISETTE P. WAITS, AND SAMUEL A. CUSHMAN. 2009. Wolverine gene flow across a narrow climatic niche.	CON	The issue of connectivity for wildlife is addressed with a body of literature that is equally or more relevant to the HLC NF.
Center for Large Landscape Conservation; and Olsen, Lance	Chen, I-Ching, Jane K. Hill, Ralf Ohlemüller, David B. Roy, Chris D. Thomas, 2011. Rapid Range Shifts of Species Associated with High Levels of Climate Warming	CITE	This work is at a broad (global) scale; it is cited in the invasive plants section.
Center for Large Landscape Conservation; and Olsen, Lance	Heller, Nicole E. and Erika S. Zavaleta. 2009. Biodiversity management in the face of climate change: A review of 22 years of recommendations.	GEN	Paper is a general review of strategies for addressing managing under changing climatic conditions, strategies, including connectivity, which are covered broadly within the Plan and DEIS, as per the 2012 planning rule. The HLC NF uses Halofsky et al 2018 and other information to inform forest plan revision.
Citizens for Balanced Use	Heung, J., Benitez, L., et al. 2018. Colorado Outdoor Rx: Elevating Coloradans' Health Through the Outdoors. "OutdoorRx: Elevating Coloradans' Health Through the Outdoors - A Cross-Sector Framework" Denver CO: Colorado Outdoor Recreation Industry Office	CON	The health benefits of recreation are discussed in DEIS, so citation does not add new information
Citizens for Balanced Use	Sugden, Brian D. and Scott W. Woods 2007. SEDIMENT PRODUCTION FROM FOREST ROADS IN WESTERN MONTANA	CITE	This publication is cited in the analysis.
Continental Divide Trail Coalition	USDA 2009. Continental Divide National Scenic Trail Comprehensive Plan	CITE	This citation was used in the FEIS and in the development of the 2020 Forest Plan.
Continental Divide Trail Coalition	USDA 2016. Letter from Regional Foresters to Forest Supervisors on Developing Forest Plan Direction for the Continental Divide National Scenic Trail	CITE	Added to regulatory information in the FEIS in Designated Areas.

Commenter(s)	Citation	Response Code	Rationale
Continental Divide Trail Coalition	USDI 1976. Continental Divide Trail Study Report, USDI, Bureau of Outdoor Recreation, 1976	IRR	This background info on the CDNST is not needed to inform the 2020 Forest Plan or FEIS analysis.
Continental Divide Trail Coalition	USDI 2004. Continental Divide National Scenic Trail Leadership Council Vision and Guiding Principles, Continental Divide National Scenic Trail	GEN	The 2020 Forest Plan and FEIS uses other regulatory guidance for the CDNST.
Continental Divide Trail Coalition	USFS Continental Divide Trail Coalition 2017. CDNST: Optimal Location Review, www.contintaldividetrail.org; 2017	IRR	Development of a CDNST Unit Plan is beyond the scope of the Forest Plan and has been identified as a possible future action in appendix C of the Forest Plan.
Defenders of Wildlife	Anderson, Charles R.; JR., Mark A. Ternent, David S. Moody; 2002. Grizzly bear-cattle interactions on two grazing allotments in northwest Wyoming;	CON	General list of guidelines on reducing livestock depredation, a topic considered in reference to specific species (e.g., grizzly) and covered by appropriate citations (e.g., Grizzly Conservation Strategy)
Defenders of Wildlife	Austin 1998. Wolverine winter travel routes and response to transportation corridors in Kicking Horse Pass between Yoho and Banff National Parks	CON/DATED	the topic was considered and covered by more recent citations
Defenders of Wildlife	Boulanger, John; and Gordon B. Stenhouse. 2014. The Impact of Roads on the Demography of Grizzly Bears in Alberta.	CON	General citation on the effects of roads on grizzly survival, a topic that is considered and covered by appropriate citations (e.g., Grizzly Conservation Strategy)
Defenders of Wildlife	Bowman et al 2010. Roads, logging, and the large-mammal community of an eastern Canadian boreal forest	CITE	Study occurred in northern Canada in eastern boreal forest in highly industrialized landscape. Relevant information cited in FEIS.
Defenders of Wildlife	Breck, Stewart and Tom Meier; 2004. Managing Wolf Depredation in the United States: Past, Present, and Future.	CON	General list of guidelines on reducing livestock depredation, a topic considered in reference to specific species (e.g., grizzly) and covered by appropriate citations (e.g., Grizzly Conservation Strategy)
Defenders of Wildlife	Brodie & Post 2010. Nonlinear responses of wolverine populations to declining winter snowpack.	CON	the topic was considered and covered by alternative citations
Defenders of Wildlife	Cegelski et al 2006. Genetic diversity and population structure of wolverine (Gulo gulo) populations at the southern edge of their current distribution in North America with implications for genetic viability	IRR	Study provides information regarding observed genetic diversity within HLC NF wolverine population and others and indicates need to maintain diversity but does not provide management-oriented information that informs development of plan components nor analysis of impacts to wolverine of the plan or alternatives except in a broad and somewhat speculative sense.

Commenter(s)	Citation	Response Code	Rationale
Defenders of Wildlife	Cook and Olaughlin 2008. Off-highway vehicle and snowmobile management in Idaho	GEN	Paper provides general documentation of trends in recreation
Defenders of Wildlife	Copeland 1996. Biology of the wolverine in central Idaho	DATED/ AUTH	The citation is dated, and other more recent publication cover the same topics, including publications by the same authors
Defenders of Wildlife	Copeland 2009. Investigating the relationship between winter recreation and wolverine spatial use in Central Idaho	CON/AUTH	inclusive of other references including references from the same author
Defenders of Wildlife	Copeland et al 2010. The bioclimatic envelope of the wolverine (Gulo gulo): do climatic constraints limit its geographic distribution?	CITE	This publication is cited in the Biological Assessment for the 2020 Forest Plan.
Defenders of Wildlife	Costello, Cecily M., Richard D. Mace, and Lori Roberts 2016. Grizzly Bear Demographics in the Northern Continental Divide Ecosystem 2004-2014 Research Results & Techniques for Management of Mortality	CITE	This publication is cited in the analysis.
Defenders of Wildlife	Cree et al 2002. Snowmobile Activity and Glucocorticoid Stress Responses in Wolves and Elk	CON/GEN	Paper discusses individual level effects of motorized winter recreation. The topic of snowmobile effects is considered and covered by alternative literature.
Defenders of Wildlife	Croteau, Jill 2016. Alberta bear experts warn of conflicts with cyclists as woman recovers from attack; By Jill Croteau Reporter Global News; 2016	CON	This is a newspaper article used as a singular example of bear/recreation interactions. This issue is addressed by the Grizzly Bear Conservation Strategy and other literature.
Defenders of Wildlife	Dawson et al 2010. Wolverine, Gulo gulo, home range size and denning habitat in lowland boreal forest in Ontario	CON	the paper focuses on the effects of roads on wolverine behavior/distribution, the topic is considered more broadly through incorporation of connectivity and fragmentation, areas that are considered and covered by alternative citations
Defenders of Wildlife	Fisher et al 2013. Wolverines (Gulo gulo luscus) on the Rocky Mountain slopes: natural heterogeneity and landscape alteration as predictors of distribution	CON	The effects of management on wolverine populations and individuals is considered and covered by alternative citations
Defenders of Wildlife	Gates, CC, K Aune. 2008. Bison bison. The IUCN Red List of Threatened Species 2008: Downloaded on 12 January 2016.	CON	The status of bison is considered using other information.
Defenders of Wildlife	Gates, Cormack C., Curtis H. Freese, Peter J.P. Gogan, and Mandy Kotzman 2010. American Bison: Status Survey and Conservation Guidelines 2010	IRR	General statement about the history of bison; does not inform the 2020 Forest Plan or analysis.

Commenter(s)	Citation	Response Code	Rationale
Defenders of Wildlife	Gehring, Thomas M., Kurt C. VerCauteren and Jean-Marc Landry; 2010. Livestock Protection Dogs in the 21st Century: Is an Ancient Tool Relevant to Modern Conservation Challenges?	CON	General list of guidelines on reducing livestock depredation, a topic considered in reference to specific species (e.g., grizzly) and covered by appropriate citations (e.g., Grizzly Conservation Strategy)
Defenders of Wildlife	Heinemeyer et al 2010. Investigating the interactions between wolverines and winter recreation use: 2010 annual report	CON/AUTH	this topic was considered and covered by alternative citations including citations by the same authors
Defenders of Wildlife	Herrero, Stephen and Susan Fleck 1989. Injury to People Inflicted by black, grizzly, or polar bears: recent trends and new insights.	GEN/IRR	Paper analyzes specific causes of bear attacks to humans and identifies certain risk factors that may increase likelihood of danger to individual humans, largely in National Parks. Paper does not analyze nor make recommendations about management of recreation at a landscape scale, nor does it analyze potential impacts to wildlife of non-motorized recreation.
Defenders of Wildlife	Idaho Department of Fish and Game 2014. Management plan for the conservation of wolverines in Idaho	GEN/IRR	General document on the distribution of wolverine in ID and management within the state
Defenders of Wildlife	Idaho Department of Parks and Recreation 2012. Idaho Outside–statewide comprehensive outdoor recreation and tourism plan 2012–2016	GEN/IRR	General document on trends in recreation in ID
Defenders of Wildlife	Inman 2013. Wolverine Ecology and Conservation in the Western United States	CITE	This citation is utilized in the Biological Assessment for the 2020 Forest Plan.
Defenders of Wildlife	Inman et al 2007. Wolverine reproductive chronology. In: Wildlife Conservation Society, Greater Yellowstone Wolverine Program, Cumulative Report, May 2007	AUTH	The topic of wolverine ecology is covered in a body of other literature sources, including other publications by this author.
Defenders of Wildlife	Inman et al 2007. Wolverine reproductive rates and maternal habitat in Greater Yellowstone. In: Wildlife Conservation Society, Greater Yellowstone Wolverine Program Wolverine reproductive rates and maternal habitat in Greater Yellowstone	AUTH	The topic of wolverine ecology is covered in a body of other literature sources, including other publications by this author.
Defenders of Wildlife	Inman et al 2013. Developing priorities for metapopulation conservation at the landscape scale: Wolverines in the western United States	AUTH	The topic of wolverine ecology is covered in a body of other literature sources, including other publications by this author.
Defenders of Wildlife	Johnson et al 2012. Projected range shifting by montane mammals under climate change: implications for Cascadia's National Parks	GEN/CON	General paper on the effects of climate change on high elevation species, an area considered in relation to wolverine and other species and covered by alternative citations

Commenter(s)	Citation	Response Code	Rationale
Defenders of Wildlife	KASWORM, Wayne F; TIMOTHY L. MANLEY. 1990. Road and trail influences on grizzly bears and black bears in northwest Montana.	CON	Reference used to support general statement on bear/roads interactions; this topic is generally considered and included in other citations.
Defenders of Wildlife	Knight and Judd 1983. GRIZZLY BEARS THAT KILL LIVESTOCK; By: RICHARD R. KNIGHT and STEVEN L. JUDD; 1983	CON	Reference used to support general statement on bear/grazing interactions; this topic is considered and included in the analysis using other citations that are equally or more relevant.
Defenders of Wildlife	Kyle and Strobeck 2001. Genetic structure of North American wolverine (Gulo gulo) populations	GEN/CON	paper identifies challenges of managing populations of wolverines due to small effective population size, an area considered more broadly through issues of connectivity and covered by alternative citations
Defenders of Wildlife	Lamb, Clayton T., Garth Mowat, Aaron Reid, Laura Smit, Michael Proctor, Bruce N. McLellan, Scott E. Nielsen, Stan Boutin; 2017. Effects of habitat quality and access management on the density of a recovering grizzly bear population.	CITE	This publication is cited in the analysis.
Defenders of Wildlife	Mace, Richard D.; John S. Waller; Timothy L. Manley; L. Jack Lyon; and Hans Zuuring. 1996. Relationships Among Grizzly Bears, Roads and Habitat in the Swan Mountains Montana; The Journal of Applied Ecology, Vol. 33, No. 6 (Dec., 1996)	CON	Reference used to support general statement on bear/roads interactions; this topic is generally considered and included in other citations.
Defenders of Wildlife	MacKenzie 1989. Alpine countries seek controls on skiers, builders and roads.	GEN	general paper on the effects of development on the environment
Defenders of Wildlife	Magoun and Copeland 1998. Characteristics of wolverine reproductive den sites	CON/AUTH	the topic is considered and covered by alternative citations, including some by the same authors
Defenders of Wildlife	May 2007. Spatial ecology of wolverines in Scandinavia. Ph.D. Dissertation	CON	the topic of wolverine reproductive ecology was considered and covered by alternative citations
Defenders of Wildlife	MFWP 2007. Montana Statewide wolverine harvest and wolverine harvest by county 1997-1998	CON/AUTH	the topic of trapping was considered and covered by alternative citations, including citations by the same authors
Defenders of Wildlife	MFWP 2014. Furbearer Program. Statewide harvest and management report 2012-2013	CON/AUTH	the topic of trapping was considered and covered by alternative citations, including citations by the same authors

Commenter(s)	Citation	Response Code	Rationale
Defenders of Wildlife	MFWP 2015. DRAFT Environmental Impact Statement Bison Conservation and Management in Montana June 2015; MT FWP	CON	The status of bison is considered using other information.
Defenders of Wildlife	MFWP 2015. Montana's state wildlife action plan; Montana fish, wildlife & parks 2015	CITE	This is considered in the cumulative effects analysis.
Defenders of Wildlife	MFWP 2016. Northern continental divide ecosystem, grizzly bear population monitoring annual report – 2016; Prepared By: Cecily M. Costello, Lori L. Roberts, MFWP	CON	General information on grizzly populations and demographics, a topic that is considered and covered by appropriate citations (e.g., Grizzly Conservation Strategy)
Defenders of Wildlife	Murray, C. 2010. Days of the Blackfeet: A Historical Overview of the Blackfeet Tribe for K-12 Teachers. Montana Office of Public Instruction. Helena, MT. 57 pp.	IRR	This history of the Blackfeet is not directly applicable to forest plan revision topics.
Defenders of Wildlife	Musiani, Marco; Tyler Muhly, C. Cormack Gates, Carolyn Callaghan, Martin E. Smith, and Elisabetta Tosoni; 2005. Seasonality and reoccurrence of depredation and wolf control in western North America	CON	General list of guidelines on reducing livestock depredation, a topic considered in reference to specific species (e.g., grizzly) and covered by appropriate citations (e.g., Grizzly Conservation Strategy)
Defenders of Wildlife	Musioani, Marco; Charles Mamo, Luigi Boitani, Carolyn Callaghan, C. Cormack Gates, Livia Mattel, Elisabetta Visalberghi, Stewart Breck and Giulia Volpi; 2003. Wolf Depredation Trends and the Use of Fladry Barriers to Protect Livestock in Western North America	CON	General list of guidelines on reducing livestock depredation, a topic considered in reference to specific species (e.g., grizzly) and covered by appropriate citations (e.g., Grizzly Conservation Strategy)
Defenders of Wildlife	Myrberget 1968. Jervens ynglehi [The breeding den of the wolverine	CON	The effects of management on wolverine populations and individuals is considered and covered by alternative citations
Defenders of Wildlife	Nature Serve, 2016. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia.http://explorer.natureserve.org/servlet/NatureServe?searchName=Bison+bison (Accessed: Aug. 20, 2017).	IRR	General information about bison; does not directly inform the 2020 Forest Plan or analysis.
Defenders of Wildlife	Northern Rockies Adaptation Partnership. 2014. DRAFT Vulnerability Assessment Summaries 2014	GEN/CON	General paper on the effects of climate change on high elevation species, an area considered in relation to wolverine and other species and covered by alternative citations
Defenders of Wildlife	Packila et al 2007. Wolverine road crossings in western Greater Yellowstone. Pages 103–120 in Greater Yellowstone wolverine program	CON	the paper focuses on the effects of roads on wolverine behavior/distribution, the topic is considered more broadly through incorporation of connectivity and fragmentation, areas that are considered and covered by alternative citations

Commenter(s)	Citation	Response Code	Rationale
Defenders of Wildlife	Peacock 2011. Projected 21st century climate change for wolverine habitats within the contiguous United States.	GEN/CON	General paper on the effects of climate change on high elevation species, an area considered in relation to wolverine and other species and covered by alternative citations
Defenders of Wildlife	Proctor, Michael F., David Paetkau, Bruce N. Mclellan, Gordon B. Stenhouse, Katherine C. Kendall, Richard D. Mace, Wayne F. Kasworm, Christopher Servheen, Cori L. Lausen, Michael L. Gibeau, Wayne L. Wakkinen, Mark A. Haroldson, Garth Mowat, Clayton D. Apps, Lana M. Ciarniello, Robert M. R. Barclay, Mark S. Boyce, Charles C. Schwartz, Curtis Strobeck. 2012. Population Fragmentation and Inter-Ecosystem Movements of Grizzly Bears in Western Canada and the Northern United States.	CON	Reference used to support general statement on bear/roads interactions; this topic is generally considered and included in other citations.
Defenders of Wildlife	Rolando et al 2007. The impact of impact of high-altitude ski- runs on alpine grassland bird communities	GEN	General paper on the effects of development on the environment
Defenders of Wildlife	Ruediger 2005. Management considerations for designing carnivore highway crossings	GEN/CON	The paper focuses on the effects of roads on wolverine behavior/distribution, the topic is considered more broadly through incorporation of connectivity and fragmentation, areas that are considered and covered by alternative citations.
Defenders of Wildlife	Ruid, David B., William J. Paul, Brian J. Roell, Adrian P. Wydeven, Robert C. Wiliging, Randy L. Jurewicz, and Donald H. Lonsway. 2009. Wolf—Human Conflicts and Management in Minnesota, Wisconsin, and Michigan. In: A.P. Wydeven et al. (eds.), Recovery of Gray Wolves in the Great Lakes Region of the United States	CON	The issue of human-wildlife conflict is addressed with other literature sources equally or more relevant to the HLC NF.
Defenders of Wildlife	Sagor, Jens Thomas; Jon E. Swenson & Eivin Roskaft; 1997. COMPATIBILITY OF BROWN BEAR Ursus arctos AND FREE-RANGING SHEEP IN NORWAY.	CON	Reference used to support general statement on bear/grazing interactions; this topic is generally considered and included in other citations
Defenders of Wildlife	Schwartz et al 2009. Wolverine gene flow across a narrow climatic niche	GEN/CON/AUTH	Paper identifies challenges of managing populations of wolverines due to small effective population size, an area considered more broadly through issues of connectivity and covered by alternative citations include papers by the same authors
Defenders of Wildlife	Schwartz, Charles C.; Patricia H. Gude, Lisa Landenburger, Mark A. Haroldson & Shannon Podruzny, 2012. Impacts of rural development on Yellowstone wildlife: linking grizzly bear Ursus arctos demographics with projected residential growth.	CON	This is a broad reference to connectivity; this topic is considered using other literature that is equally or more relevant to the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
Defenders of Wildlife	Servheen et al 2017. Board of Review: The death of Mr. Brad Treat due to a grizzly bear attack on June 29, 2016 on the Flathead National Forest. March 3, 2017.	CON/INC/IR R	Referenced document is an incident report of one case of a fatality; is not a scientific publication and its purpose is to make conclusions about a single incident. It provides general recommendations for individuals who choose to recreate in bear habitat but does not make statements or recommendations about overall management of recreation in bear habitat.
Defenders of Wildlife	Shedlock 2016	CON	General list of guidelines on reducing grizzly/human conflict, a topic considered in reference to specific species (e.g., grizzly) and covered by appropriate citations (e.g., Grizzly Conservation Strategy)
Defenders of Wildlife	Tabish, Dillon. 2016. FWP Confirms Bear that Killed West Glacier Cyclist was a Male Grizzly DNA results show the bear involved in the fatal mauling on June 29 was a male grizzly	CON	This is a newspaper article used as a singular example of bear/recreation interactions. This issue is addressed by the Grizzly Bear Conservation Strategy and other literature.
Defenders of Wildlife	USDA 2018. Draft Record of Decision for the Malheur, Umatilla, and Wallowa-Whitman National Forests Revised Land Management Plans; July 2018	GEN	Cited as a need to consider specific habitat attributes in developing strategies for management, a topic that is inclusive of the larger landscape approach to management inherent in a Forest Plan
Defenders of Wildlife	USFWS 2013. Endangered and threatened wildlife and plants: on a petition to list the North American wolverine as endangered or threatened	GEN/LRP	General reference to wolverine petition for listing
Defenders of Wildlife	Weaver 2013. Safe Havens, Safe Passages for Vulnerable Fish and Wildlife: Critical Landscapes in the Southern Canadian Rockies, British Columbia and Montana	GEN/CON	Paper identifies challenges of managing populations of wolverines due to small effective population size, an area considered more broadly through issues of connectivity and covered by alternative citations
Defenders of Wildlife	Weaver 2014. Conservation Legacy on a Flagship Forest: Wildlife and Wildlands on the Flathead National Forest, Montana	CON	Issues of connectivity were considered and covered by alterative citations
Defenders of Wildlife	Wipf et al 2002. Effects of ski piste preparation on alpine vegetation	GEN	General paper on the effects of development on the environment
Defenders of Wildlife	Zedeno, M. N., J. A. M Ballenger, and J. R. Murray. 2014. Landscape Engineering and Organizational Complexity among Late Prehistoric Bison Hunters of the Northwestern Plains. Current Anthropology 55(1): 23-58	CON	General reference on human history in the region; this topic is considered in general using other information sources.
Defenders of Wildlife	Zontak, K. 2007. Bison Nation: American Indian efforts to restore the bison. University of Nebraska Press. Lincoln NE	CON	The status of bison is considered using other information.

Commenter(s)	Citation	Response Code	Rationale
Defenders of Wildlife; Greater Yellowstone Coalition	Proctor, Michael F., Bruce N. McLellan, Gordon B. Stenhouse, Garth Mowat, Clayton T. Lamb, Mark S. Boyce. 2018. Resource roads and grizzly bears in British Columbia and Alberta, Canada	CITE	Cited in updated grizzly bear analysis in FEIS and in BA; background information about grizzly bear habitat security and analysis context regarding road density and habitat security
Defenders of Wildlife; Pew Charitable Trusts	Heinemeyer, Kimberly S., John R. Squires, Mark Hebblewhite, Julia S. Smith, Joseph D. Holbrook, and Jeffrey P. Copeland 2017. Wolverine – winter recreation research project: investigating the interactions between wolverines and winter recreation final report; December 15, 2017.	CITE	The publication is cited in the analysis.
Defenders of Wildlife; Wild Earth Guardians	Banci et al 1994. American Marten, Fisher, Lynx and Wolverine in the Western United States	CITE	This publication is cited in the analysis.
Defenders of Wildlife; Wild Earth Guardians	Krebs et al 2004. Synthesis of survival rates and causes of mortality in North American wolverines	CON	The topic of mortality sources for wolverine is covered by other citations equally or more relevant to the HLC NF.
Defenders of Wildlife; Wild Earth Guardians; and the Wilderness Society	McKelvey 2011. Climate Change predicted to shift wolverine distributions, connectivity, and dispersal corridors	CON	This is a general citation for connectivity; this topic is broadly considered, including the effects of climate change on wolverine, using other literature sources that are equally or more relevant to the HLF NF (e.g., U.S. Department of the Interior, Fish and Wildlife Service, 2013).
Donohoe, Joe	Haber, Jonathan and Peter Nelson; 2015. Planning for Connectivity: A guide to connecting and conserving wildlife within and beyond America's national forests.	CON	Broad reference to connectivity; this topic is generally considered using other literature sources equally or more relevant to the HLC NF.
Donohoe, Joe; and the Greater Yellowstone Coalition	Peck, Christopher P., Frank T. Van Manen, Cecily M. Costello, Mark A. Haroldson, Lisa A. Landenburger, Lori L. Roberts, Daniel D. Bjornlie, and Richard D. Mace; 2017. Potential paths for male-mediated gene flow to and from an isolated grizzly bear population.	CITE	The publication is cited in the analysis.
Dundas, Jim	Cordell, Ken H., Carter J. Betz, Gary T. Green, and Becky Stephens. 2008. Internet Research Information Series (IRIS) Report: Off-Highway Vehicle Recreation in the United States and its Regions and States: An Update National Report from the National Survey on Recreation and the Environment (NSRE); February 2008.	IRR	Travel planning is outside the scope of the Forest Plan Revision
Dundas, Jim	Montana Environmental Council Report. Roads, land, & big game harvest; the environmental quality council house joint resolution NO. 13, 2015-2016	IRR	Travel planning is outside the scope of the Forest Plan Revision
Dundas, Jim	Wilderness at a Glance, weblink	CON	The issue of public use of wilderness is addressed using other information sources.

Commenter(s)	Citation	Response Code	Rationale
Elk Creek Minerals	duBray and Snee. Composition, Age, and Petrogenesis of Late Cretaceous Intrusive Rocks in the Central Big Belt Mountains, Broadwater and Meagher Counties, Montana	CON	The issue of management of minerals within RWAs is addressed using other information; management of RWAs would be in accordance with law, regulation, and policy.
Elk Creek Minerals; Montana Mining Association	Tysdal, R.G., Steve Ludington, and A.E. McCafferty, 1996. Mineral and energy resource assessment of the Helena National Forest, West-Central Montana	CITE	This publication is cited in the analysis.
Environmental Protection Agency	Mikkelson, Kristin; Dr. Eric Dickenson, Prof. Reed Maxwell, Prof. John McCray & Prof. Jonathan Sharp 2013. Bark beetle infestations affect water quality in the Rocky Mountains of North America; Feb 12, 2013; Global Water Forum.	INC	This talk at a conference does not provide science to support the potential impacts on the HLC NF. It is unknown whether or not these trends are only going to occur in the mountainous watersheds of Colorado, or if other bark beetle infested watersheds throughout the world could experience similar changes in water quality.
Form Letter: mountain biking; multiple signatories	Harmon 2015. Multiple articles (several more similar in letter) regarding MT biking in Helena, including Shuttle Fest	NOT RLB	These citations are newspaper articles, not scientific literature. This information is taken as public comment regarding the popularity of mountain biking on the HLC NF.
Glacier Two Medicine Alliance	Tara, Luna 2015. Vascular Plants and Plant Communities of the Blackfeet Reservation and Badger-Two Medicine Area of the Lewis and Clark National Forest. East Glacier Park, Montana.	CITE	No changes to SCC recommended as a result of floristic survey data. Cultural species discussed in appendix A of the at-risk plant's specialists report. Additional species incorporated into appendix A following document review.
Glacier Two Medicine Alliance	Tews, A., M. Enk, S. Leathe, W. Hill, S. Dalbey, and G. Liknes. (2000). Westslope Cutthroat Trout (Oncorhynchus clarki lewisi) In Northcentral Montana: Status and Restoration Strategies. (Special Report by Montana Fish, Wildlife and Parks in collaboration with Lewis and Clark National Forest) (70 pp.)	CITE	This publication has been cited in the analysis.
Great Falls Bicycle Club; John Juras	Biking guide to the Big Snowies	CON	The presence of mountain biking in the Snowies was acknowledged in the analysis based on public comment.
Greater Yellowstone Coalition	Blanchard, B. M. and R. R. Knight. 1991. Movements of Yellowstone grizzly bears, 1975–87.	CON	Information on grizzly bear dispersal is incorporated into the direction for the Grizzly Bear Conservation Strategy; and addressed with other literature that is equally or more relevant.
Greater Yellowstone Coalition	Conservation Strategy for the Grizzly Bear in the Northern Continental Divide Ecosystem; July 2018; MOU: Montana Fish, Wildlife &Parks (MFWP); the Montana Department of Natural Resources and Conservation (DNRC); the Blackfeet Nation; the Confederated Salish and Kootenai Tribes (CS&KT); the National Park Service (NPS); the U.S. Forest Service (USFS); the U.S. Fish and Wildlife Service	CON	Broad reference to connectivity, generally considered using other literature sources (e.g., draft conservation strategy, Peck et al. 2017)

Commenter(s)	Citation	Response Code	Rationale
	(USFWS); the U.S. Geological Survey (USGS); the Bureau of Land Management (BLM); and USDA Wildlife Services.		
Greater Yellowstone Coalition	Crow Indian Tribe Et al vs. USA and State of Wyoming. 2018	CON	Information on grizzly bears is incorporated into the direction for the Grizzly Bear Conservation Strategy; and addressed with other literature that is equally or more relevant to the topic.
Greater Yellowstone Coalition	Cushman, Samual A., Kevin S. Mckelvey, and Michael K. Schwartz; 2009. Use of Empirically Derived Source-Destination Models to Map Regional Conservation Corridors.	CON	Broad reference to connectivity; this topic is considered using information that is equally or more relevant to the HCL NF (e.g., the conservation strategy, Peck et al. 2017)
Greater Yellowstone Coalition	Haroldson, Mark A., Charles C. Schwartz, Katherine C. Kendall, Kerry A. Gunther, David S. Moody, Kevin Frey, David Paetkau; 2010. Genetic analysis of individual origins supports isolation of grizzly bears in the Greater Yellowstone Ecosystem.	CON	Broad reference to connectivity; this topic is considered using information that is equally or more relevant to the HCL NF (e.g., the conservation strategy, Peck et al. 2017)
Greater Yellowstone Coalition	Interagency Grizzly Bear Committee 2018. Five-year (2018-2022) plan goals, objectives and 2018 planned actions	CON	Broad reference to connectivity; this topic is considered using information that is equally or more relevant to the HCL NF (e.g., the conservation strategy, Peck et al. 2017)
Greater Yellowstone Coalition	Mclellan, Bruce N., and Frederick W. Hove; 2001. Natal dispersal of grizzly bears.	CON	Broad reference to connectivity, generally considered using other literature sources (e.g., draft conservation strategy, Peck et al. 2017)
Greater Yellowstone Coalition	MFWP 2006. Grizzly bear management plan for western Montana, draft programmatic environmental impact statement 2006-2016 Prepared by: Arnold Dood, Shirley J. Atkinson and Vanna J Boccadori; Montana Department of Fish, Wildlife and Parks	CON	Broad reference to connectivity; this topic is considered using information that is equally or more relevant to the HCL NF (e.g., the conservation strategy, Peck et al. 2017)
Greater Yellowstone Coalition	MFWP 2013. Grizzly Bear Management Plan for Southwestern Montana 2013; final programmatic environmental impact statement.	CON	Broad reference to connectivity, generally considered using other literature sources (e.g., draft conservation strategy, Peck et al. 2017)
Greater Yellowstone Coalition	Picton, Harold D. 1986. A Possible Link between Yellowstone and Glacier Grizzly Bear Populations.	CON	Broad reference to connectivity, generally considered using other literature sources (e.g., draft conservation strategy, Peck et al. 2017)
Greater Yellowstone Coalition	Primm, Steve, and Seth M. Wilson; 2004. Re-connecting Grizzly Bear Populations: Prospects for Participatory Projects.	CON	Broad reference to connectivity, generally considered using other literature sources (e.g., draft conservation strategy, Peck et al. 2017)

Commenter(s)	Citation	Response Code	Rationale
Greater Yellowstone Coalition	Proctor M., B. McLellan, D. Paetkau, C. Servheen, W. Kasworm, K. Kendall, G. Stenhouse, M. Boyce, and C. Strobeck. 2005. Delineation of sub-population boundaries due to anthropogenic fragmentation of grizzly bears in southwest Canada and northwest USA using genetic analysis. Oral presentation, International Bear Association 16th annual conference, Trentino, Italy.	CITE	This publication is cited in the analysis.
Greater Yellowstone Coalition	Proctor, Michael F., Bruce N. Mclellan, Curtis Strobeck, and Robert M.R. Barclay; 2004. Gender-specific dispersal distances of grizzly bears estimated by genetic analysis.	CON	Broad reference to connectivity, generally considered using other literature sources (e.g., draft conservation strategy, Peck et al. 2017)
Greater Yellowstone Coalition	Servheen, C., T. Manley, D.M. Starling, A. Jacobs, and J. Waller. 2017. The death of Mr. Brad Treat due to a grizzly bear attack June 29, 2016 on the Flathead National Forest. Interagency Board of Review Report.	IRR	Beyond the scope of Forest Plan Revision; this site-specific design information may be useful at the project level.
Greater Yellowstone Coalition	USDI 2006. United States Department of the Interior Bureau of Land Management; record of decision and approved Dillon resource management plan; February 2006	CON	Other land management plans, including the BLM, are considered in the cumulative effects analysis. The Dillon plan is not adjacent to the HLC NF; however, the Butte, Lewistown, and Missoula plans were considered.
Greater Yellowstone Coalition	Walker, Richard and Lance Craighead; 1997. Analyzing Wildlife Movement Corridors in Montana Using GIS	CON	Broad reference to connectivity, generally considered using other literature sources (e.g., draft conservation strategy, Peck et al. 2017)
Gunther, Jake; and Zammit, Tony	Sage and Nickerson 2018. Trail usage and value - a Helena, MT Case Study	CON	These reports were reviewed, but analysis involves multiple ownerships. The objective of the National Forest plan is to identify unique contribution from Forest visitation. Visits and values described in these analyses are statistically incorporated in the visitor use data analyzed by the NFS.
Helena Hunters & Anglers	Avey 2016. Letter from Bill Avey to the Public, withdrawing the Big Game security FP amendment in the Divide Travel Plan area.	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M. Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Helena Hunters & Anglers	Basile and Lonner 1979. Vehicle Restrictions Influence Elk and Hunter Distribution in Montana	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M. Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Helena Hunters & Anglers	Burbridge & Neff 1976. Elk-Logging-Roads Symposium Proceedings	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M.

Commenter(s)	Citation	Response Code	Rationale
			Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Helena Hunters & Anglers	Cook et al 2004. Nutritional Condition Of Northern Yellowstone Elk	CON	Topic was covered by related literature e.g., J. G. Cook, 2002; J. G. Cook et al., 1996; K. M. Proffitt, Hebblewhite, Peters, Hupp, & Shamhart, 2016; Ranglack et al., 2014; K. M. Stewart, Bowyer, Dick, Johnson, & Kie, 2005
Helena Hunters & Anglers	Cook et al 2005. Thermal Cover Needs of Large Ungulates: A Review of Hypothesis Tests.	CITE	This publication is cited in the analysis.
Helena Hunters & Anglers	Devoe 2018. Evaluating and Informing Elk Habitat Management Relationships of NDVI with Elk Nutritional Resources, Elk Nutritional Condition, and Landscape Disturbance	CITE	Incorporated into FEIS
Helena Hunters & Anglers	John G., Larry L. Irwin, Larry D. Bryant, Robert A Riggs, Jack Ward Thomas; 2004. Thermal Cover Needs of Large Ungulates: A Review of Hypothesis Tests.	CITE	This publication was cited in the analysis; the year was wrong in the comment letter.
Helena Hunters & Anglers	Kolman, Joe 2016. Roads, Land, and Big Game Harvest, HJ13 Study – (MT) Environmental Quality Council Prepared by Joe Kolman, Environmental Analyst	CON	The issue of hunting opportunities was addressed with other information equally or more relevant to the HLC NF.
Helena Hunters & Anglers	Leege 1984. Evaluating and Managing Summer Elk Habitat	CITE	This publication was cited in the analysis.
Helena Hunters & Anglers	Lonner and Cada 1982. Some effects of forest management on elk hunting opportunity, by Terry N. Lonner, Montana Department of Fish, Wildlife and Parks, Bozeman, MT and John D. Cada, Montana Department of Fish, Wildlife and Parks, Bozeman, MT, 1982	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M. Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Helena Hunters & Anglers	Lyon and Canfield 1991. Habitat selections by rocky mountain elk under hunting season stress.	CITE	This publication was cited in the analysis.
Helena Hunters & Anglers	Lyon et al 1985. Coordinating Elk and Timber Management	CITE	This publication was cited in the analysis.
Helena Hunters & Anglers	Lyon, Jack 1979. Influences of logging and weather on elk distribution in western Montana	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M.

Commenter(s)	Citation	Response Code	Rationale
			Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Helena Hunters & Anglers	Lyon, Jack L. 1987. HIDE2: Evaluation of Elk Hiding Cover Using a Personal Computer.	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M. Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Helena Hunters & Anglers	Lyon, Jack L. and Alan G. Christensen, USDA, Forest Service, 1992. A Partial Glossary of Elk Management Terms.	CITE	This publication was cited in the analysis.
Helena Hunters & Anglers	Lyons and Hillis 2013. Letter from Lyons and Hillis to Greg Munther regarding elk-road standards.	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M. Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Helena Hunters & Anglers	Marcm and Lyon 1987. ELK HIDING COVER AS INFLUENCED BY TIMBER STAND THINNING, by C. Les Marcm, School of Forestry, University of Montana and L. Jack Lyon, Intermountain Research Station	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M. Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Helena Hunters & Anglers	McCorquodale, Scott M. 2013. A Brief Review of the Scientific Literature on Elk, Roads, & Traffic.	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M. Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Helena Hunters & Anglers	Montgomery, Robert A., Gary J. Roloff & Joshua J.Millspaugh, 2012. Importance of visibility when evaluating animal response to roads	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M. Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Helena Hunters & Anglers	Montgomery, Robert A., Gary J. Roloff, and Joshua J. Millspaugh, 2013. Variation in Elk Response to Roads by Season, Sex, and Road Type.	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M. Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Helena Hunters & Anglers	MFWP 2013. U.S. Forest Service and Montana Department of Fish Wildlife and Parks: Collaborative Overview and Recommendations for Elk Habitat Management on the Custer, Gallatin, Helena, and Lewis and Clark National Forests, 2013	CITE	This publication was cited in the analysis.

Commenter(s)	Citation	Response Code	Rationale
Helena Hunters & Anglers	MFWP 2015. Elk Refuge Areas and their Impacts.	CITE	This publication was cited in the analysis.
Helena Hunters & Anglers	Naylor, Leslie M., Michael J. Wisdom, and Robert G. Anthony 2009. Behavioral Responses of North American Elk to Recreational Activity.	GEN	Considered but information is not specifically relevant at the scale of the programmatic level decision and analysis. This reference was read and considered along with the body of literature on elk when developing plan components and carrying out analysis.
Helena Hunters & Anglers	Ogara and Dundas 2002. Chapter 2 Distribution: Past and Present	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M. Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979) Montana Fish, Wildlife and Parks 2015.
Helena Hunters & Anglers	Perry and Overly 1976. Impact of Roads on Big Game Distribution in Portions of the Blue Mountains of Washington.	CITE	This publication was cited in the analysis.
Helena Hunters & Anglers	Picton 1991. A Brief History of Elk: The Hunt, Research and Management.	AUTH	Other more recent or relevant literature included in the FEIS to describe the present condition of elk across the plan area, including Hillis et al 1991.
Helena Hunters & Anglers	Proffitt, Kelly M., Mark Hebblewhite, Wibke Peters, Nicole Hupp, and Julee Shamhart, 2016. Linking landscape-scale differences in forage to ungulate nutritional ecology.	CITE	This publication was cited in the analysis.
Helena Hunters & Anglers	Ranglack, Dustin, Bob Garrott, Jay Rotella, Kelly Proffitt and Justin Gude, and Jodie Canfield 2014. Evaluating elk summer resource selection and applications to summer range habitat management.	CITE	This publication was cited in the analysis.
Helena Hunters & Anglers	Rowland, M.M., M. J. Wisdom, B. K. Johnson, and M. A. Penninger. 2005. Effects of Roads on Elk: Implications for Management in Forested Ecosystems. Pages 42-52 in Wisdom, M. J., technical editor, The Starkey Project: a synthesis of long-term studies of elk and mule deer. Reprinted from the 2004 Transactions of the North American Wildlife and Natural Resources Conference, Alliance Communications Group, Lawrence, Kansas, USA.	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M. Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Helena Hunters & Anglers	Rumble, Mark A; and R. Scott Gamo; 2011. Habitat use by elk (cervus elaphus) within structural stages of a managed forest of the northcentral United States.	CITE	This publication was cited in the analysis.
Helena Hunters & Anglers	Tenmile-South Helena, Elk Need Security PowerPoint	CON	Topic was covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M.

Commenter(s)	Citation	Response Code	Rationale
			Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Helena Hunters & Anglers	Thomas et al 1979. Wildlife Habitats in Managed Forests the Blue Mountains of Oregon and Washington.	CITE	The publication was cited in the analysis.
Helena Hunters & Anglers	Trout Unlimited. The Importance of The Roadless Backcountry For Big-Game Hunting Opportunity And Success On Montana Public Lands: What The Science Tells Us; TU, TRCP, MWF, undated	GEN	Summary document of multiple scientific papers, many of which are either included in the current Plan/EIS or the topics presented covered
Helena Hunters & Anglers	USDA FS 2013. Custer, Gallatin, Helena, and Lewis and Clark National Forests Framework for Project-Level Effects Analysis on Elk.	CITE	This publication was cited in the analysis.
Helena Hunters & Anglers	Wisdom, Michael J., Haiganoush K. Preisler, Leslie M. Naylor, Robert G. Anthony, Bruce K. Johnson, and Mary M. Rowland 2018. Elk responses to trail-based recreation on public forests.	GEN	Considered but information is not specifically relevant at the scale of the programmatic level decision and analysis. This reference was read and considered along with the body of literature on elk when developing plan components and carrying out analysis.
Helena Hunters & Anglers; and Montana Fish, Wildlife, & Parks	Christensen, Lyon, and Unsworth 1993. Elk Management in the Northern Region: Considerations in Forest Plan Updates or Revisions	CITE	This publication was cited in the analysis.
Helena Hunters & Anglers; Gayle Joslin	Jellison, B.A. 1998. Rocky Mountain Elk vulnerability within the Bighorn National Forest. Rocky Mountain Elk Foundation (WY 96107), Bow Hunters of Wyoming and Wyoming Game and Fish Department. In a Rocky Mountain elk habitat conservation plan for the WGFD Sheridan region (And Portions of the Cody Region) Wyoming Game and Fish Department Sheridan Region Updated May 2004. 62pp	CON	Elk security and hiding cover are considered at length and covered by other citations that are equally or more relevant to the HLC NF.
Helena Hunters & Anglers; Gayle Joslin	Kite, R., G. Nelson, T. Stenhouse, and C. Derimont. 2016. A movement-driven approach to quantifying grizzly bear (Ursus arctos) near-road movement patterns in west-central Alberta, Canada. Biological Conservation, Vol. 195, March 2016. pp 24-32	CON	Bear security cover is considered at length and covered by other citations that are equally or more relevant to the HLC NF.
Helena Hunters & Anglers; Gayle Joslin; and Montana Fish, Wildlife, & Parks	Hillis, J.M., M.J. Thompson, J.E. Canfield, L.J. Ly n, C.L. Marcum, P.M. Dolan, D.W. Cleery. 1991. Defining elk security: The Hillis Paradigm. in Elk Vulnerability - A Symposium. Montana State Univ., Bozeman, April 10-12, 1991.	CITE	This publication is cited in the analysis.

Commenter(s)	Citation	Response Code	Rationale
Helena Hunters & Anglers; Montana Fish, Wildlife & Parks	Proffitt, Kelly M., Justin A. Gude, Kenneth L. Hamlin, and Matthew Adam Messer, 2013. Effects of Hunter Access and Habitat Security on Elk Habitat Selection in Landscapes with a Public and Private Land Matrix.	CITE	This publication was cited in the analysis.
Johnson, E.A.	USGS 1996. Mineral and energy resource assessment of the Helena National Forest, West-Central Montana	CITE	This publication is cited in the analysis.
Kegley, Brittany	Perkins, Casey. 2018. "Our Chance to Keep It Wild in the Helena-Lewis and Clark National Fore." Wilderness Areas Montana Wilderness Association, 10 July 2018, https://wildmontana.org/wild-word/our-chance-to-keep-it-wild-in-the-helena-lewis-and-clark-national-forest.	CON	The importance of wilderness was considered using the full range of public comments received as well as other information equally or more relevant to the forest plan revision process; this specific paper is not cited in the analysis.
Kegley, Brittany	Sierra Club 2014. Off-Road Use of Motorized Vehicles Use in officially designated wilderness: The Sierra Club reaffirms its support for the Wilderness Act's prohibition of "mechanized modes of transport," including non-motorized vehicles, from entry into designated wilderness.	CON	The issue of motorized use impacts to wilderness is addressed using other information that is equally or more relevant to forest plan revision.
Knowles, Randall	Brown 2018. Driven by climate change, fire reshapes US West; Matthew Brown Associated Press; September 4, 2018	CON	The topics of climate change, wildfire, and road/trail impacts are covered by information sources equally or more relevant to the HLC NF and the forest plan revision process.
Knowles, Randall	Dettmer, Sarah 2018. If nothing else, Montana cares about its outdoor recreation; Sarah Dettmer, Great Falls Tribune, Aug. 20, 2018	CON	The value of outdoor tourism was addressed using information equally or more relevant to the HLC NF and the forest plan revision process.
Knowles, Randall	Elliott 2018. National Parks Pass: The best money you'll ever spend; Christopher Elliott; GF Tribune, 9/19/2018	CON	General information; the 2020 Forest Plan and analysis includes information on the importance of recreation as well as access using other information sources that are equally or more relevant.
Knowles, Randall	Inbody 2018. UM: Wildfires cost Montana $240 million in tourism dollars; Kristen Inbody, GF Tribune, April 2, 2018	CON	The value of outdoor tourism was addressed using information equally or more relevant to the HLC NF and the forest plan revision process.
Knowles, Randall	USDI, USFWS, and USDofCommerce, U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation	CON	General information; the 2020 Forest Plan and analysis includes information on the importance of recreation as well as access using other information sources that are equally or more relevant.
Maryland Ornithological Society	Links to Bird sighting websites, including survey from Vigilante campground	CON	Bird viewing is covered as a general use of the Forest; this specific survey is not cited.
Meagher County Commissioners	Graham, Russell T., Alan E. Harvey, Martin F. Jurgensen, Theresa B. Jain, Jonalea R. Tonn, Deborah S. Page-Dumroese; 1994. Managing Coarse Woody Debris in Forests of the Rocky Mountains.	CITE	This publication has been cited in the analysis.

Commenter(s)	Citation	Response Code	Rationale
Meagher County Commissioners	James K. Brown, James K; Elizabeth D. Reinhardt and Kylie A. Kramer; 2003. Coarse Woody Debris: Managing Benefits and Fire Hazard in the Recovering Forest.	CITE	This publication has been cited in the analysis.
Meagher County Commissioners	Meagher County Wildfire Protection Plan	CITE	All CWPPs are included in the cumulative effects analysis; and by reference as part of existing law and policy (HFRA).
Montana Department of Natural Resource Conservation	Hayes, Steven W. CF, Todd A. Morgan CF, and Chelsea P. McIver. 2014. Montana's Forest Products Industry and Timber Harvest, 2014. Univ. of MT; Bureau of Business and Economic Research	CON	Reference is a poster from the Bureau of Economic Research. The analysis does not necessarily dispute the findings; but places the contribution of the HLC NF timber program in context using other information that is equally or more relevant.
Montana Fish, Wildlife, & Parks	MFWP 2007. Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat Trout and Yellowstone Cutthroat Trout in Montana.	CITE	This publication is cited in the analysis.
Montana Fish, Wildlife, & Parks	MFWP and USDA 2013. U.S. Forest Service and Montana Department of Fish Wildlife and Parks Collaborative Overview and Recommendations for Elk Habitat Management on the Custer, Gallatin, Helena, and Lewis and Clark National Forests	CITE	This publication is cited in the analysis.
Montana Fish, Wildlife, & Parks	Spoon & Canfield 1999. Draft Environmental Assessment Elkhorn Mountains Westslope Cutthroat Trout Restoration Program	REF	The Draft EA mentioned for westslope cutthroat trout recovery efforts in the Elkhorns by the state of MT is programmatic in nature. It defines the scope and intensity of WCT recovery actions in the Elkhorns. These efforts are encouraged or "in-spirit" of the larger MOU for the conservation agreement for WCT and Yellowstone cutthroat trout. The FEIS references the MOU (2007) on pages 75-76 and the importance and plan components in support of WCT recovery efforts.
Montana Fish, Wildlife, & Parks	USDA 2016. Blackfoot Travel Plan Final Environmental Impact Statement Volume 2 – Appendices	CON	Topic was consider covered by related literature, e.g., Christensen, Lyon, & Unsworth, 1993; Henderson, Sterling, & Lemke, 1993; J. L. Lyon & Canfield, 1991; J. L. Lyon & Christensen, 1992; Kelly M. Proffitt et al., 2013; Skovlin, Zager, & Johnson, 2002; Thomas, 1979
Montana Fish, Wildlife, & Parks	USDA FS 2016. Record of Decision: Big Game Security Forest Plan Amendment for the Divide Travel Plan Area.	CON	This is not actually literature nor a true reference, but a request to retain components of a decision that was rescinded in part due to litigation. Although this decision is not directly referenced in the FEIS (in part because it was rescinded), the process it refers to came out of the MFWP/FS 2013 Elk Recommendations documents, which is cited extensively. Discussion in the FEIS and in response to comments (specifically CR44) addresses the issues of existing 'secure areas' as well as the issue of fixed numeric standards for secure habitat.

Commenter(s)	Citation	Response Code	Rationale
Montana Mining Association	Berg, Richard B. 2015. Compilation of Reported Sapphire Occurrences in Montana.	IRR	HLC has diverse geology and mining history. This reference is too detailed for the programmatic level of analysis conducted for forest plan revision.
Montana Mining Association	Cox 2015. 2015 Mining and Mineral Symposium; May 8–10, 2015; Montana Bureau of Mines and Geology; Butte, Montana	GEN	Management of RWAs would be consistent with law, regulation, and policy, and would not preclude valid existing rights.
Montana Mining Association	Foster, F., and Chadwick, T. 1990, Relationship of the Golden Sunlight Mine to the Great Falls Tectonic Zone. In Geology and ore deposits of the Trans-Challis Fault System/Great Falls Tectonic Zone. Edited by F.J. Moye. Fifteenth annual field conference guidebook. Tobacco Root Geological Society, Missoula, Montana, p. 77-81.	IRR	This information is not needed to inform the analysis for forest plan revision. The minerals resource is described using other information sources equally or more relevant to the HLC NF.
Montana Mining Association	Foster, F., and Childs, J.F., 1993, An overview of significant lode gold systems in Montana, and their regional geologic setting: Exploration and Mining Geology, vol. 2, no. 3, p. 217-244.	IRR	This information is not needed to inform the analysis for forest plan revision. The minerals resource is described using other information sources equally or more relevant to the HLC NF.
Montana Mining Association	Lyden, C.J., 1948, The gold placers of Montana: Montana Bureau of Mines and Geology Memoir 26, 151 p.	IRR	This information is not needed to inform the analysis for forest plan revision. The minerals resource is described using other information sources equally or more relevant to the HLC NF.
Montana Mining Association	O'Neill, J.M. and Lopez, D.A., 1990, The Great Falls Tectonic Zone East-Central Idaho and West-Central Montana: In Geology and ore deposits of the Trans-Challis Fault System/Great Falls Tectonic Zone. Edited by F.J. Moye. Fifteenth annual field conference guidebook. Tobacco Root Geological Society, Missoula, Montana, p. 75-76.	IRR	This information is not needed to inform the analysis for forest plan revision. The minerals resource is described using other information sources equally or more relevant to the HLC NF.
Montana Mining Association	Ruppel 1963. Geology of the Basin Quadrangle; Jefferson, Lewis and Clark, and Powell Counties, Montana; By EDWARD T. RUPPEL; 1963	GEN	Management of RWAs would be consistent with law, regulation, and policy, and would not preclude valid existing rights.
Montana Mining Association	Vann Struth Consulting Group Inc. 2013. Employment Projections for the Squamish-Lillooet Regional District; FINAL REPORT June 2013.	IRR	HLC has diverse geology and mining history, which is described using other information sources equally or more relevant.
Montana Wilderness Association	APHA 2013. Improving Health and Wellness through Access to Nature	CITE	This publication is cited in the analysis.
Montana Wilderness Association	Haber, Jonathan 2015. Creating the Next Generation of National Forest Plans (Missoula, MT: Bolle Center for People and Forests, 2015)	GEN	The 2020 Forest Plan is consistent with the 2012 planning rule and associated directives, including the context and format of desired condition plan components.
Montana Wilderness Association	Krueger Undated. The forest as nature's health service (from PNW Juneau Forestry Sciences Lab)	CON	The topic of health and wellness is discussed using other information sources that are equally or more relevant to the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
Montana Wilderness Association	Montana Snowmobile Ass'n v. Wildes, 103 F. Supp. 2d 1239 (D. Mont. 2000)	CON	The 2020 Forest Plan provides clear direction and the FEIS utilizes information sources equally or more relevant to address the impacts of allowable uses in each ROS setting.
Montana Wilderness Association	RUSSELL COUNTRY SPORTSMEN v. UNITED STATES FOREST SERVICE	GEN	The 2020 Forest Plan is consistent with all applicable law, regulation, and policy for WSAs.
Montana Wilderness Association; Sally Cathey	McCool. Does Wilderness Designation Lead to Increased Recreational Use?	IRR	Designated wilderness is beyond the 2020 Forest Plan. Only Congress may designate wilderness. Additionally, the results of the study determined that designation of wilderness did not substantially increase recreation use.
Montana Wilderness Association; Sally Cathey	MWA and MWS 2015. Field Measures of Wilderness Character 2015 Helena--Lewis & Clark National Forest Montana Wilderness Association	CON	The results from this study were considered in the wilderness evaluation for the 2020 Forest Plan. May be a source to reference during site specific project work.
Mountain States Legal Foundation	USDI 2016. Interior Department Disburses $6.23 Billion in FY 2016 Energy Revenues; Federal Revenues Support State, Tribal, National Needs; November 25, 2016 from USDI, Office of Natural Resources Revenue	IRR	The economic considerations of energy development is addressed as appropriate using other literature sources equally or more relevant to the HLC NF.
National Wildlife Federation	Baker, B. W., and E. P. Hill. 2003. Beaver (Castor canadensis). Pages 288-310 in G. A. Feldhamer, B. C. Thompson, and J. A. Chapman, editors. Wild Mammals of North America: Biology, Management, and Conservation. Second Edition.	CON	General reference to history of beavers in North America. Beavers are addressed using literature equally or more relevant to the HLC NF.
National Wildlife Federation	Baldwin, Jeff 2015. Potential mitigation of and adaptation to climate-driven changes in California's highlands through increased beaver populations.	CON	The ecological importance of beaver activity is acknowledged in several plan components. The watershed and wildlife analysis encompasses general effects related to beaver, by their inclusion in the guild of wildlife dependent on riparian and wetland habitats.
National Wildlife Federation	Boyles, Stephanie L. 2006. Report on the Efficacy and Comparative Costs of Using Flow Devices to Resolve Conflicts with North American Beavers along Roadways in the Coastal Plain of Virginia; Stephanie L. Boyles Wildlife Biologist; 2006	IRR	This paper addresses site-specific considerations but does not inform the programmatic analysis for forest plan revision.
National Wildlife Federation	Buckley, Mark 2011. The Economic Value of Beaver Ecosystem Services Escalante River Basin, Utah.	CON	The benefits of beavers to ecosystems is acknowledged in the Plan and in the analysis using information that is equally or more relevant.
National Wildlife Federation	Castro et al 2018. The Beaver Restoration Guidebook; Working with Beaver to Restore Streams, Wetlands, and Floodplains; April 10, 2018; US Fish and Wildlife Service Janine Castro, National Oceanic and Atmospheric Administration Michael Pollock and Chris	CON	The benefits of beavers to ecosystems is acknowledged in the Plan and in the analysis using information that is equally or more relevant.

Commenter(s)	Citation	Response Code	Rationale
	Jordan, University of Saskatchewan Gregory Lewallen, US Forest Service Kent Woodruff		
National Wildlife Federation	Chadwick, Amy, Stephen Carpenedo, and Skip Lisle. Undated. Living with Beavers; Management Solutions for Nuisance Beaver Activity, MFWP. Amy Chadwick, Stephen Carpenedo, MT DEQ Wetland Program, Skip Lisle of Beaver Deceivers International	IRR	General information on beaver management techniques; this information is more appropriate for specific issues and not relevant to Forest Plan
National Wildlife Federation	Fouty 2008. Climate Change and Beaver Activity; How Restoring Nature's Engineers Can Alleviate Problems; Suzanne Fouty 2008	NOT RLB	Manuscript is an anecdotal description of a single stream and the effects of beaver removal. The topic of beavers is covered using citations that are more relevant to forest plan revision.
National Wildlife Federation	Goldfarb 2018. 'Beaver Believers' say dam-building creatures can make the American West lush again; Interview with Goldfarb, 2018	NOT RLB	Interview, not the published work. The topic of beavers is covered using citations that are more relevant to forest plan revision.
National Wildlife Federation	Goldfarb, Ben 2018. BEAVERS, REBOOTED; Artificial beaver dams are a hot restoration strategy, but the projects aren't always welcome; By Ben Goldfarb, in the Scott Valley, California; 2018	CON	The benefits of beavers to ecosystems is acknowledged in the Plan and in the analysis using information that is equally or more relevant.
National Wildlife Federation	Maughan 2013. Beaver restoration would reduce wildfires; More effective and less expensive than logging, beaver also provide fish, wildlife and flood control benefits	NOT RLB	Opinion piece. The topic of beavers is covered using citations that are more relevant to forest plan revision.
National Wildlife Federation	Morelli, Toni Lyn; Christopher Daly, Solomon Z. Dobrowski, Deanna M. Dulen, Joseph L. Ebersole, Stephen T. Jackson, Jessica D. Lundquist, Constance I. Millar, Sean P. Maher, William B. Monahan, Koren R. Nydick, Kelly T. Redmond, Sarah C. Sawyer, Sarah Stock, Steven R. Beissinger; 2016. Managing Climate Change Refugia for Climate Adaptation.	CON	The ecological importance of beaver activity as key to the healthy function and resilience of watersheds and riparian systems is acknowledged in several plan components FW-WTR-DC-09, FW-WTR-GO-04, FW-WTR-GDL-01, and FW-WTR-GDL-03. Similar research and other information supported development of these components. The watershed and wildlife analyses encompass general effects related to beaver within the analysis of the guild of wildlife species dependent on riparian and wetland habitats.
National Wildlife Federation	Schultz, Courtney A., Thomas D. Sisk, Barry R. Noon, Martin A. Nie 2012. Wildlife Conservation Planning Under the United States Forest Service's 2012 Planning Rule.	GEN	Paper outlines 2012 Planning Rule and suggests criteria for selecting focal species. The HLC NF is consistent with the 2012 Planning Rule with regards to focal species.
National Wildlife Federation	Scrafford, Matthew A.; Daniel B. Tyers, Duncan T. Patten, Bok F. Sowell. 2018. Beaver Habitat Selection for 24 Years since Reintroduction North of Yellowstone National Park	CON	The ecological importance of beaver activity as key to the healthy function and resilience of watersheds and riparian systems is acknowledged in several plan components FW-WTR-DC-09, FW-WTR-GO-04, FW-WTR-GDL-01, and FW-WTR-GDL-03. Similar research and other information supported development of these components. The watershed and wildlife

Commenter(s)	Citation	Response Code	Rationale
			analyses encompass general effects related to beaver within the analysis of the guild of wildlife species dependent on riparian and wetland habitats.
National Wildlife Federation	Stabler 1985. Increasing Summer Flow in Small Streams through Management of riparian Areas and Adjacent Vegetation: A Synthesis; by D. Frederic Stabler, 1985	DATED	References to beavers in this manuscript are generally historical and speak to the general benefits of beavers as ecosystem engineers. The topic of beavers is covered with other more recent information sources relevant to the HLC NF.
National Wildlife Federation	State of New Mexico. 2016. Wetland Protection and Beaver Habitat Restoration as Climate Adaptation Tools in New Mexico; State of NM, 2016	IRR	Technical guide referencing a specific program in New Mexico; not directly relevant to the HLC NF forest plan revision.
National Wildlife Federation	USDA 2008. Forest Service Strategic Framework for Responding to Climate Change; 2008	GEN	The HLC NF is consistent with FS policy related to climate change responses and focal species under the 2012 planning rule.
National Wildlife Federation	USFWS 2014. Report of the Climate Change Adaptation and Beaver Management Team to the Joint Implementation Working Group; Implementing the National Fish, Wildlife, and Plant Climate Change Adaptation Strategy; Climate Change Adaptation and Beaver Management Team (Team)	CON	The ecological importance of beaver activity as key to the healthy function and resilience of watersheds and riparian systems is acknowledged in several plan components FW-WTR-DC-09, FW-WTR-GO-04, FW-WTR-GDL-01, and FW-WTR-GDL-03. Similar research and other information supported development of these components. The watershed and wildlife analyses encompass general effects related to beaver within the analysis of the guild of wildlife species dependent on riparian and wetland habitats.
National Wildlife Federation	Wade, A.A., C. Brick, S. Spaulding, T. Sylte, and J. Louie. April 2016. Watershed Climate Change Vulnerability Assessment Lolo National Forest; U.S. Department of Agriculture, Forest Service, Northern Region and Lolo National Forest.	CON	The ecological importance of beaver activity as key to the healthy function and resilience of watersheds and riparian systems is acknowledged in several plan components FW-WTR-DC-09, FW-WTR-GO-04, FW-WTR-GDL-01, and FW-WTR-GDL-03. Similar research and other information supported development of these components. The watershed and wildlife analyses encompass general effects related to beaver within the analysis of the guild of wildlife species dependent on riparian and wetland habitats.
National Wildlife Federation	Whitlock, Cathy; Wyatt F. Cross, Bruce Maxwell, Nick Silverman, and Alisa A. Wade; 2017. 2017 Montana climate assessment	CON	The topic of climate and associated effects is covered using a large body of literature that is equally or more relevant to the HLC NF, including the work of the Northern Rockies Adaptation Partnership.
National Wildlife Federation	Wurtzebach, Zachary and Courtney Schultz; 2016. Measuring Ecological Integrity: History, Practical Applications, and Research Opportunities.	CON	Paper discusses the concept of 'ecological integrity' broadly. The topic of beavers is covered with information sources equally or more relevant to the HLC NF.
Nelson, Danica	Gander, Hans & Paul Ingold. 1997REACTIONS OF MALE ALPINE CHAMOIS Rupicapra r. rupicapra TO HIKERS, JOGGERS AND MOUNTAINBIKERS	IRR	Literature references species not found in plan area.

Commenter(s)	Citation	Response Code	Rationale
Nelson, Danica	Papouchis, Christopher M., Francis J. Singer and William B. Sloan 2001. Responses of Desert Bighorn Sheep to Increased Human Recreation. The Journal of Wildlife Management, Vol. 65, No. 3 (Jul. 2001)	GEN	Paper provides a literature search on effects of mountain biking to soil, vegetation, wildlife, and water. No specific references to effects on wilderness character. Not specifically used in programmatic level analysis, but part of body of science considered in overall planning. Useful for travel planning and other site-specific planning.
Nelson, Danica	Taylor, Audry R. and Richard L. Knight. 2003. Wildlife responses to recreation and associated visitor perceptions	GEN	Paper provides a literature search on effects of mountain biking to soil, vegetation, wildlife, and water. No specific references to effects on wilderness character. Not specifically used in programmatic level analysis, but part of body of science considered in overall planning. Useful for travel planning and other site-specific planning.
Nixon, Brian	Quinn, Michael and Greg Chernoff. 2010. Mountain Biking: A Review of the Ecological Effects, February 2010.	GEN	Rec Review: Paper provides a literature search on effects of mountain biking to soil, vegetation, wildlife, and water. No specific references to effects on wilderness character. Not specifically used in programmatic level analysis, but part of body of science considered in overall planning. Useful for travel planning and other site-specific planning.
Northern Rocky Mountain Grotto; Zach Angstead	Keeler, Ray 2015. Forest Cave and Karst Management Plans— The need to include “How to” Wording.	IRR	The management of these features is regulated by the Federal Cave Resource Protection Act of 1988. The 2020 Forest Plan is consistent with the 2012 planning rule and all other law, regulation, and policy.
O'Connell, Shane	Cawley and Freemuth 1997. A critique of the multiple use framework in public lands decision making: RM Cawley, J Freemuth, In: Western Public Lands and Environmental Politics; 1997	GEN	The 2012 planning rule requires the FS to consider a variety of uses across the Planning Area.
Olsen, Lance	Abatzoglou et al 2014. Seasonal Climate Variability and Change in the Pacific NW of the US	CITE	This publication is cited in the analysis.
Olsen, Lance	Abella & Fornwalt 2015. Ten years of vegetation assembly after a North American mega fire	CITE	This publication is cited in the analysis.
Olsen, Lance	Acuna et al 2014. Why Should We Care About Temporary Waterways?	IRR	Not peer reviewed. HLC NF consideration of waterways includes other regulatory framework.
Olsen, Lance	Adams et al 2009. Temperature sensitivity of drought-induced tree mortality portends increased regional die-off under global change-type drought	IRR	Species does not occur on HLC NF. Topic of drought and potential die-off are covered by other information sources more relevant to the HLC NF.
Olsen, Lance	Allen et al 2010. A global overview of drought & heat-induced tree mortality reveals emerging climate change risks for forests	CITE	This publication is cited in the analysis.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Allen et al 2015. On underestimation of global vulnerability to tree mortality and forest die-off from hotter drought in the Anthropocene	CITE	This publication is cited in the analysis.
Olsen, Lance	Anderegg et al 2012. Consequences of widespread tree mortality triggered by drought and temperature stress	CITE	This publication is cited in the analysis.
Olsen, Lance	Anderegg et al 2013. Drought's legacy: multiyear hydraulic deterioration underlies widespread aspen forest die-off and portends increased future risk	CITE	This publication is cited in the analysis.
Olsen, Lance	Anderegg et al 2015. Tree mortality predicted from drought-induced vascular damage	IRR	Models cannot be implemented for forest plan revision. Aspen is addressed with other citations equally or more relevant.
Olsen, Lance	Anderson and Bows 2011. Beyond 'dangerous' climate change: emission scenarios for a new world	CON	Downscaled climate change models and emissions scenarios that are more relevant to the HLC NF are used in Halfosky et al 2018.
Olsen, Lance	Andrus et al 2018. Moisture availability limits subalpine tree establishment	CITE	This publication is cited in the analysis.
Olsen, Lance	Appendix I: Bur oak (unknown source)	IRR	The species referenced is not native to plan area and the FS is not aware of a study that predicts its future range. FS uses other information sources more relevant to the HLC NF to inform species compositions expected over the planning horizon.
Olsen, Lance	Aragorn 2017. Hunters lived on Tibetan plateau thousands of years earlier than thought	IRR	This paper discussing the Tibetan Plateau is not relevant to forest planning or the plan area.
Olsen, Lance	Araujo and Rahbek 2006. How does climate change affect biodiversity? Science 2006	CON	The general topic of potential future species distributions is covered with other references equally or more relevant to the HLC NF.
Olsen, Lance	Arendal 2019. Climate feedbacks- the connectivity of the positive ice/snow albedo feedback, terrestrial snow and vegetation feedbacks and the negative cloud/ radiation feedback	NOT RLB	This is a graphics website; not a paper or publication. Climate change feedbacks addressed with other citations.
Olsen, Lance	Armsworth et al 2015. Are conservation organizations configured for effective adaptation to global change?	IRR	The organizational structure of the FS as a conservation entity is not within the scope of a forest plan revision.
Olsen, Lance	Arnone et al 2008. Prolonged suppression of ecosystem CO2 uptake after an anomalously warm year	CON	The process of carbon sequestration is addressed in the EIS and appendix J using literature sources equally or more relevant to the HLC NF.
Olsen, Lance	Arrhenius 1896. On the Influence of Carbonic Acid in the Air upon the Temperature of the Ground	DATED	Interesting perspective as one of the first works related to carbon (1896) but far more recent publications are used to analyze carbon and climate in the analysis.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Ault et al 2016. Relative impacts of mitigation, temperature, and precipitation on 21st-century megadrought risk in the American Southwest	IRR	Specific to the Southwest. Topic of drought risk and vulnerability is covered by Halofsky et al 2018 and other citations.
Olsen, Lance	Badolo et al 2015. Climatic Variability and Food Security in Developing Countries	IRR	The FS does not directly impact food security.
Olsen, Lance	Barnosky et al 2012. Approaching a state shift in Earth's biosphere	IRR	Planetary scale risks and societal change/policy needs. Halfosky et al 2018 provides analysis downscaled and more relevant to HLC NF.
Olsen, Lance	Bartumeus & Levin 2008. Fractal reorientation clocks: Linking animal behavior to statistical patterns of search	IRR	Not applied to forest management. Animal movement, connectivity addressed with other citations that are more relevant.
Olsen, Lance	Bataineh & Daniels 2014. An objective classification of large wood in streams	IRR	Classification system is not possible to use to inform the analysis.
Olsen, Lance	Bazzaz & Fajer 1992. Plant Life in a CO2-Rich World	DATED	Magazine article. Halofsky et al 2018 covers this topic using more recent science.
Olsen, Lance	Bearup et al 2014. Hydrological effects of forest transpiration loss in bark beetle-impacted watersheds	CON	Topic of tree mortality effects to watersheds is addressed with other citations that are equally or more relevant to the HLC NF.
Olsen, Lance	Biederman et al 2015. Recent tree die-off has little effect on streamflow in contrast to expected increases from historical studies.	CITE	Publication is cited in the analysis.
Olsen, Lance	Biggs et al 2009. Turning back from the brink: Detecting an impending regime shift in time to avert it	CON	Indicators studied can't be relied on to detect/avoid regime shifts. Other citations used to describe vulnerability of fisheries.
Olsen, Lance	Black et al 2018. Rising synchrony controls western North American Ecosystems	CON	This citation is more relevant to the Pacific Northwest. Not directly applicable to Revision. Concepts of climate change and synchrony of factors sufficiently covered by the use of other citations.
Olsen, Lance	Black et al 2018. Study sees clmate impact on land and at sea	CON	Web article about weather extremes and risks to farms. General topic of climate and weather extremes addressed with other citations more directly relevant to the HLC NF.
Olsen, Lance	Bloomberg et al 2017. Recommendations of the Task Force on Climate-related Financial Disclosures.	REF	Forest Plan decision is not linked to a change in atmospheric temperature; therefore, this type of research is outside the scale of the NEPA decision. Climate concerns relating to National Forests are addressed through our mitigation and climate strategy programs (NRAP) and discussed in the climate section of the FEIS.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Bloomberg et al 2017. Technical Supplement: The Use of a Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities	CON	The HLC incorporates future climate scenarios from other citations and vegetation modeling to disclose climate-related risks.
Olsen, Lance	Bond Lamberty et al 2018. Globally rising soil heterotrophic respiration over recent decades	IRR	This paper describes global trends; the FS does not analyze or monitor at this scale.
Olsen, Lance	Breshears et al 2005. Regional vegetation die-off in response to global-change-type drought	CON	Vulnerabilities for species in plan area are addressed in Halofsky et al 2018 which provides analysis downscaled/relevant to HLC NF.
Olsen, Lance	Breshears et al 2016. Rangeland Responses to Predicted Increases in Drought Extremity	CITE	This work is cited in the analysis. Other citations, such as Halofsky et al 2018, also address expected rangeland responses to drought.
Olsen, Lance	Brienen et al 2015. Long-term decline of the Amazon carbon sink	IRR	Not relevant to the plan area – global scale.
Olsen, Lance	Brooks et al 2009. Eco hydrologic separation of water between trees and streams in a Mediterranean climate	IRR	Conceptual framework. Unclear how this would inform forest plan revision. Similar subject to Evaristo et al, 2015.
Olsen, Lance	Buma et al 2016. Emerging climate-driven disturbance processes: widespread mortality associated with snow-to-rain transitions across 10° of latitude and half the range of a climate-threatened conifer	CON	Species vulnerability is covered for species that occur on the HLC NF in Halofsky et al 2018 and other citations.
Olsen, Lance	Bunnell and Kremsater 2012. Migrating Like a Herd of Cats: Climate Change and Emerging Forests in British Columbia	CON	Potential species shifts are covered by other sources such as Halofsky et al 2018.
Olsen, Lance	Burbrink et al 2016. Asynchronous demographic responses to Pleistocene climate change in Eastern Nearctic vertebrates	IRR	Broad scale (North America) modeling on animal populations. Not directly applicable to forest plan revision on the HLC NF.
Olsen, Lance	Burke et al 2006. Modeling the Recent Evolution of Global Drought and Projections for the Twenty-First Century with the Hadley Centre Climate Model	CON	NRAP provides a synthesis of climate models downscaled to the HLC NF plan area.
Olsen, Lance	Cahill et all 2012. How does climate change cause extinction?	CON	Risks and vulnerabilities to species found on the HLC NF are summarized from other sources such as Halofsky et al 2018.
Olsen, Lance	Carnicer et al 2010. Widespread crown condition decline, food web disruption, and amplified tree mortality with increased climate change-type drought	IRR	Study from Europe. Potential dieback is covered by more local sources in Halofsky et al 2018 and other citations.
Olsen, Lance	Carpenter et al 2011. Early Warnings of Regime Shifts: A Whole-Ecosystem Experiment	INC	Paper notes the need more research to identify indicators of vulnerability.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Charney et al 2016. Observed forest sensitivity to climate implies large changes in 21st century North American forest growth.	CITE	Publication is cited in the analysis.
Olsen, Lance	Choi et al 2017. Newly discovered deep-branching marine plastid lineages are numerically rare but globally distributed	IRR	Does not discuss ecosystems present on the HLC NF.
Olsen, Lance	Clarke et al 2015. Influence of different tree-harvesting intensities on forest soil carbon stocks in boreal and northern temperate forest ecosystems	CON	The issue of soil carbon is addressed in the EIS and appendix J using other citations equally or more relevant to the HLC NF. Additional detail on harvesting intensities is not necessary to illustrate the impacts of alternatives to soil carbon stocks.
Olsen, Lance	Climate Adaptation website: Scenarios Planning for Climate Adaptation	CON	The HLC NF uses Halofsky et al 2018 to inform potential future climate scenarios and incorporates monitoring and adaptive management into the Plan. See also appendix J of the FEIS, which addresses specific strategies.
Olsen, Lance	Colacito et al 2018. Temperature and growth: a panel analysis of the United States.	REF	Forest Plan decision is not linked to a change in atmospheric temperature; therefore, this type of research is outside the scale of the NEPA decision. Climate concerns relating to National Forests are addressed through our mitigation and climate strategy programs (NRAP) and discussed in the climate section of the FEIS.
Olsen, Lance	Coumou et al 2018. The influence of Arctic amplification on mid Latitude summer circulation	CON	Citation provides further evidence of feedback processes that lead to more persistent hot-dry extremes. However, the HLC NF uses Halfosky et al 2018, which considers future climate extremes. This citation is not needed to further enforce the concept of considering future climates.
Olsen, Lance	Creed et al 2016. Hunting on a hot day: effects of temp on interactions between African wild dogs & their prey	IRR	Paper does not discuss issues or species that apply to the HLC NF.
Olsen, Lance	Crowther et al 2016. Quantifying global soil carbon losses in response to warming	CON	The FS located a publication by Crowther, not Crowley as cited in the comment. The publication is related to soils at the global scale. Halfosky et al 2018 provides analysis that is downscaled/relevant to the HLC NF.
Olsen, Lance	Dai et al 2012. Generic Indicators for Loss of Resilience Before a Tipping Point Leading to Population Collapse	IRR	Paper discusses experiment with yeast to demonstrate critical slowing down warning for loss of resilience. Not applicable to forest plan revision on HLC NF.
Olsen, Lance	Dakos & Bascompte 2014. Critical slowing down as early warning for the onset of collapse in mutualistic communities	IRR	Study in South America, indicators of tipping points. Unclear how to relate “critical slowing down” to ecosystems on HLC NF. Publication not relevant to plan area.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Danby and Hik 2007. Variability, contingency and rapid change in recent subarctic alpine tree line dynamics	CON	Citations such as Halofsky et al 2018 identify vulnerabilities to treeline communities and are more relevant to the HLC NF.
Olsen, Lance	Darling and Cote 2018. Insights Magazine-Seeking Resilience in Marine Ecosystems	CON	This work is specific to marine ecosystems and corals. The general topic of resistance to climate change is broadly relevant, but topic is covered with numerous other literature sources more directly related to terrestrial ecosystems.
Olsen, Lance	Dean et al 2016. Conventional intensive logging promotes loss of organic carbon from the mineral soil	CON	The issue of soil carbon is addressed in the FEIS and appendix J using other citations equally or more relevant to the HLC NF. Additional detail on harvesting intensities is not necessary to illustrate the impacts of alternatives to soil carbon stocks.
Olsen, Lance	Dell et al 2013. Temperature dependence of trophic interactions are driven by asymmetry of species responses and foraging strategy	CON	Theoretical model of possible effects of climate change on on a theoretical community and the corresponding dynamics. The resulting consideration of community resilience are inclusive of other citations and generally considered using more empirical examples.
Olsen, Lance	Diffenbaugh and Field 2013. Changes in Ecologically Critical Terrestrial Climate Conditions	CON	Halofsky et al 2018 provides an analysis that is more downscaled/relevant to the HLC NF.
Olsen, Lance	DiMarco & Santini 2015. Human pressures predict species' geographic range size better than biological traits	IRR	Laboratory test of theoretical model, addressing issues at a broader scale than the HLC NF.
Olsen, Lance	Dodson and Root 2013. Conifer regeneration following stand-replacing wildfire varies along an elevation gradient in a ponderosa pine forest, OR, USA	CITE	This publication is cited in the analysis.
Olsen, Lance	Doncaster et al 2016. Early warning of critical transitions in biodiversity from compositional disorder	IRR	Experiment to identify warning of transitions in biodiversity; general and not directly applicable to forest plan revision on the HLC NF.
Olsen, Lance	Drake & Griffen 2010. Early warning signals of extinction in deteriorating environments	IRR	Broader scale issue than the HLC NF.
Olsen, Lance	Dufresne, Saint, Lu 2016. Positive feedback in climate: Stabilization or Runaway, Illustrated by a Simple Experiment.	IRR	Not directly applicable; paper is about the broad theory of climate change and not relevant to the HLC NF forest plan revision process.
Olsen, Lance	Duncan 1999. Dead and dying trees: Essential for life in the forest	CON	Other peer reviewed literature used to describe the function of dead wood, such as Graham et al 1994 and Brown et al 2003.
Olsen, Lance	Duncan 2002. Dead wood all around us: Think regionally to manage locally	CON	Other peer reviewed literature used to describe the function of dead wood, such as Graham et al 1994 and Brown et al 2003.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Duncan 2004. Dead wood, living legacies: habitat for a host of fungi	CON	Other peer reviewed literature used to describe the function of dead wood, such as Graham et al 1994 and Brown et al 2003.
Olsen, Lance	Eby e al 2019. Lifetime of Anthropogenic Climate Change: Millennial Time Scales of Potential CO2 and Surface Temperature Perturbations	CON	Consistent with climate projections used and referenced from Halfosky et al 2018.
Olsen, Lance	Ellison et al 2012. On the forest cover–water yield debate: from demand- to supply-side thinking	IRR	Although there is a direct link to forests and inland precipitation, this study is at too large a scale to demonstrate any effects on the HLC NF.
Olsen, Lance	Emilson et al 2018. Climate driven shifts in sediment chemistry enhance methane production in northern lakes	IRR	Forest plan revision would not affect lake sediments. This work at the global scale is not directly relevant to the HLC NF.
Olsen, Lance	Essl et al 2015. Historical legacies accumulate to shape future biodiversity in an era of rapid global change	IRR	Global in scale; concept not directly applicable to forest planning issues.
Olsen, Lance	Evaristo et al 2015. Global separation of plant transpiration from groundwater and streamflow	IRR	Runoff models should incorporate separation. HLC NF uses BASI for runoff models - Brooks etal, 2009
Olsen, Lance	Ficklin et al 2018. Natural and managed watersheds show similar responses to recent climate change	CON	This citation is broad-scale information on natural and human modified streamflow; large-scale climate trends affect water availability. Broadly relevant but considered with other information sources.
Olsen, Lance	Fields et al 2007. North America. Climate Change 2007: Impacts, Adaptation and Vulnerability	REF	This citation is referenced in Halfosky et al 2018, which provides a basis for HLC NF analysis.
Olsen, Lance	Fiore et al 2012. Global air quality and climate	IRR	Publication not relevant to the plan area.
Olsen, Lance	Flombaum and Sala 2008. Higher effect of plant species diversity on productivity in natural than artificial ecosystems	IRR	Paper specific to Patagonia. The broader concept of biodiversity in natural systems is widely accepted; this citation does not add information needed for forest plan revision.
Olsen, Lance	Ford et al 2011. Can forest management be used to sustain water-based ecosystem services in the face of climate change?	CON	Paper is specific to the Appalachians; concepts in general apply but the HLC uses other references more pertinent to the Rockies.
Olsen, Lance	Foster & Orwig 2006. Preemptive and Salvage Harvesting of New England Forests: When Doing Nothing Is a Viable Alternative	CON	Ecosystems studied are different than HLC. Disturbances and salvage covered in the analysis using other citations that are more relevant.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Foster et al 2016. Energy budget increases reduce mean streamflow more than snow–rain transitions: using integrated modeling to isolate climate change impacts on Rocky Mountain hydrology	CON	Halofsky et al 2018 covered most of what this paper relates to. This paper was trying to tease out the snowpack vs rain in warming climate to help quantify the magnitude of river discharge response. Very localized study.
Olsen, Lance	Franklin and Lindenmayer 2009. Importance of matrix habitats in maintaining biological diversity	IRR	Manuscript discusses recent tests of Island Biogeography Theory; while theoretically important for setting the bounds of management theory, it lacks specificity to the Forest Plan beyond the suggestion that 'islands' and the 'matrix' are managed to optimize habitat conditions, a theme that is consistent with forest planning.
Olsen, Lance	Friedlingstein 2010. Update on CO2 Emissions – to the editor	CON	Global summary of emissions. Other citations such as Halfosky et al 2018 are used to discuss this topic.
Olsen, Lance	Fryxell et al 2008. Multiple movement modes by large herbivores at multiple spatiotemporal scales	CON	General information about elk ecology; this topic is covered by other citations more relevant to the HLC NF.
Olsen, Lance	Funk, Jason and Stephen Saunders et al 2014. Rocky Mountain Forests at Risk: Confronting Climate driven Impacts from Insects, Wildfires, Heat and Drought	CON	The topic of forest mortality in relation to disturbances and drought is important and is discussed using a body of other literature that are equally or more relevant to the HLC NF.
Olsen, Lance	Furness et al 2013. Assessing the Vulnerability of Watersheds to Climate Change	CON	Watershed analysis utilizes Halofsky et al 2018 and other citations to disclose vulnerability of watersheds to climate change.
Olsen, Lance	Ganguly et al 2009. Higher trends but larger uncertainty and geographic variability in 21st century temperature and heat waves	CON	Halofsky et al 2018 covers this topic, which selected the best climate scenario predictions for R1.
Olsen, Lance	Gannett 1888. Do Forests Influence Rainfall?	IRR	Paper discusses Midwest states. General function of rainfall; not relevant to forest plan revision.
Olsen, Lance	Garibaldi et al 2013. Wild Pollinators Enhance Fruit Set of Crops Regardless of Honeybee Abundance.	CITE	This reference is cited in the pollinator specialist report. The effects of native wild pollinators on farming and crop pollination is discussed in the Pollinator Specialist Report.
Olsen, Lance	Gauthier et al 2015. Boreal forest health and global change	IRR	Biome scale, very broad. Topic of forest management is covered with other citations more relevant to the HLC NF.
Olsen, Lance	Golladay et al 2016. Achievable future conditions as a framework for guiding forest conservation and management	CITE	Paper is cited in the analysis. Paper supports approach of modeling and monitoring for the HLC.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Government of BC. Assisted Migration Adaptation Trial	CON	Study doesn't involve Region 1 but does include species present on the HLC NF. Assisted migration is not precluded in the 2020 Forest Plan. HLC would follow Region 1 guidelines for seedling transfer. This topic is covered using other citations in the analysis.
Olsen, Lance	Granados et al 2012. Climate change and the world economy: short-run determinants of atmospheric CO2	REF	Forest Plan decision is not linked to a change in atmospheric temperature; therefore, this type of research is outside the scale of the NEPA decision. Climate concerns relating to National Forests are addressed through our mitigation and climate strategy programs (NRAP) and discussed in the climate section of the FEIS.
Olsen, Lance	Grant 1992. Money of the Mind: Borrowing and Lending in America from the Civil War to Michael Milken.	REF	Forest Plan decision is not linked to a change in atmospheric temperature; therefore, this type of research is outside the scale of the NEPA decision. Climate concerns relating to National Forests are addressed through our mitigation and climate strategy programs (NRAP) and discussed in the climate section of the FEIS.
Olsen, Lance	Grekousis & Mountrakis 2015. Sustainable Development under Population Pressure: Lessons from Developed Land Consumption in the Conterminous U.S.	IRR	Addresses topic of increasing population in open spaces and natural areas. The FS does not convert NFS lands to urban uses.
Olsen, Lance	Hall & Fagre 2003. Modeled Climate induced Glacier Change Clacier NP	IRR	Melting of Glaciers in Glacier NP is an important effect of climate change but not directly applicable to the HLC NF forest plan revision. Impacts of climate change are addressed with other citations.
Olsen, Lance	Halofsky et al 2017. Assessing Vulnerabilities and Adapting to Climate Change in the Northwestern United States.	AUTH	Citation is used in the analysis, in its final published form (Halofsky et al 2018).
Olsen, Lance	Halofsky et al 2018. Northern Rockies Adaptation partnership (Ch. 5 Effects of Climate Change on Forest Vegetation in the Northern Rockies)	CITE	This citation is used in the analysis.
Olsen, Lance	Hansen et al 2005. Effects of Exurban Development on Biodiversity: Patterns, Mechanisms, and Research Needs	IRR	Paper discusses large scale issues with rural development. The FS does not convert NFS lands to urban uses. Population growth is broadly covered in the cumulative effects analysis.
Olsen, Lance	Hartfield et al 2018. A look at 2017; takeaway points from the State of the Climate supplement	CON	Summarizes climate/weather events of 2017 aross the globe. Broadly relevant, but existing and expected climate is covered with other citations such as Halofsky et al 2018 that are downscaled to the HLC NF.
Olsen, Lance	Harvey et al 2016. High and dry: post-fire tree seedling establishment in subalpine forests decreases with	CITE	Publication is cited in the analysis.

Commenter(s)	Citation	Response Code	Rationale
	post-fire drought and large stand-replacing burn patches		
Olsen, Lance	Healey et al 2008. The Relative Impact of Harvest and Fire upon Landscape-Level Dynamics of Older Forests: Lessons from the NW Forest Plan	CON	Forests and harvest practices differ from HLC. Disturbances and older forests represented by other citations & modeling. Population growth is broadly covered in the cumulative effects analysis.
Olsen, Lance	Hoegh and Guldberg 2018. Chapter 3: Impacts of 1.5 deg C global warming on natural and human systems	CON	The attached citation states “do not cite, quote, or distribute” – draft chapter of the IPCC. Global in scale. Although potentially more recent, publication does not add new info specifically relevant to the HLC NF that is not covered by the literature citations already used, such as Halofsky et al 2018.
Olsen, Lance	Hoerling & Kumar 2003. The Perfect Ocean for Drought	IRR	Global scale. Halofsky et al 2018 summarizes similar information for Region 1 and is more relevant to the HLC NF.
Olsen, Lance	Holden et al 2018. Decreasing fire season precipitation increased recent western US forest wildfire activity	CITE	This publication is cited in the analysis.
Olsen, Lance	Holthaus 2018. Terrified by ‘hothouse Earth’? Don’t despair – do something.	NOT RLB	Opinion piece which supports the importance of climate change mitigation.
Olsen, Lance	Holtsmark 2012. The outcome is in the assumptions: analyzing the effects on atmospheric CO2 levels of increased use of bioenergy from forest biomass	CON	The topic of wood harvest and the carbon cycle are covered by sources such as Halfosky et al 2018 and Region 1 carbon assessments.
Olsen, Lance	Howard 2012. Extreme Weather to Become More Commonplace	CON	Website article summarizing potential for extreme weather due to climate change. Topic covered by other citations, such as Halfosky et al 2018, where relevant to the HLC NF.
Olsen, Lance	Huntingford et al 2013. The Timing of climate change	IRR	Summary article about a study; the summary itself is not relevant. The study itself, (Mora) is assessed separately.
Olsen, Lance	Isaak et al 2011. Climate change effects on stream and river temperatures across the northwest U.S. from 1980–2009 and implications for salmonid fishes.	CON	Other information, such as Halofsky et al 2018, is equally or more relevant, and is used in the EIS to describe stressors and vulnerabilities to fish.
Olsen, Lance	Jackson 2016. Reinventing conservation – again	NOT RLB	Editorial piece.
Olsen, Lance	Jarvis et al 2016. Early warning signals detect critical impacts of experimental warming	IRR	Early warning signals; cannot be directly applied to ecosystems on HLC NF.
Olsen, Lance	Jasechko et al 2013. Terrestrial water fluxes dominated by transpiration	CON	Citation is very broad scale; climate models summarized in Halofsky et al 2018 are more applicable to the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Jenkins et al 2015. US protected lands mismatch biodiversity priorities	IRR	National in scale; the 2020 Forest Plan is consistent with law and policy regarding providing for biodiversity.
Olsen, Lance	Johnson 2016. Looking to the Future and Learning from the Past in our Nat'l Forests	CON	This is a blog. The topic of assisted migration is covered with other literature sources.
Olsen, Lance	Johnson and Wilby 2015. Seeing the landscape for the trees: Metrics to guide riparian shade management in river catchments	IRR	This study was conducted in the United Kingdom. Riparian area vegetation and water temperature is addressed with other more relevant information sources.
Olsen, Lance	Keane et al 2018. Chapter 5 Effects of Climate Change on Forest Vegetation in the Northern Rockies	CITE	This publication is cited in its final version, within Halfosky et al 2018.
Olsen, Lance	Keppel et al 2012. Refugia: identifying and understanding safe havens for biodiversity under climate change	IRR	Paper discusses a global framework to identify refugia; not directly applicable to HLC NF forest plan revision.
Olsen, Lance	Kerr et al 2007. Humans and Nature Duel Over the Next Decade's Climate	IRR	Paper is not peer reviewed. Other influences such as Pacific Decadal Oscillation are more important to climate on the HLC NF.
Olsen, Lance	Kirilenko and Sedjo 2007. Climate change impacts on forestry.	GEN	Subject of economic risk from climate change, ecosystem integrity is a resource specific concern and addressed in the general discussion of climate change and potential resource conditions.
Olsen, Lance	Kirkland 2012. Logging Debris Matters: Better Soil, Fewer Invasive Plants	CON	Study sites differ from HLC NF. Topic of coarse woody debris is addressed with other citations more relevant to the HLC NF.
Olsen, Lance	Klos et al 2009. Drought impact on forest growth and mortality in the southeast USA: an analysis using Forest Health and Monitoring data	IRR	The species in this study are not present on HLC NF. The topic of drought tolerance is covered by other citations for local species.
Olsen, Lance	Kormos et al 2016. Trends and sensitivities of low streamflow extremes to discharge timing and magnitude in Pacific NW mountain streams	REF	Not cited in EIS but is included as a reference in Halofsky et al 2018, which is used to discuss streamflow and climate change.
Olsen, Lance	Kueppers et al 2016. Warming and provenance limit tree recruitment across and beyond the elevation range of subalpine fores.t	CITE	Halfosky et al 2018 provides analysis downscaled/relevant to HLC NF; however, this paper is also cited.
Olsen, Lance	Kulakowski et al 2013. Long-term aspen cover change in the western US.	CITE	The publication was cited in the analysis.
Olsen, Lance	Lambin & Meyfroidt 2011. Global land use change, economic globalization, and the looming land scarcity	CON	Land use change on non-NFS lands is addressed as appropriate using other information sources; NFS land are allocated to maintaining native vegetation.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Leemans & Eickert. Another reason for concern: regional and global impacts on ecosystems for different levels of climate change	CON	Study is very broad scale. Climate change impacts on the ecosystems of the HLC NF are addressed using other literature such as Halofsky et al 2018.
Olsen, Lance	Lehnert et al 2013. Conservation value of forests attacked by bark beetles: Highest number of indicator species is found in early successional stages	IRR	The species discussed in this study are not present on the HLC NF. Forest species and insects that occur on the HLC NF are addressed with other citations.
Olsen, Lance	Leighty et al 2006. Effects of Management on Carbon Sequestration in Forest Biomass in Southeast Alaska	IRR	This study is based on different ecosystem and disturbance regimes than what are found on the HLC NF. Impacts on carbon are covered by other citations.
Olsen, Lance	Leppi et al 2012. Impacts of climate change on August stream discharge in the Central-Rocky Mountains	CON	The watershed section addresses impacts of climate change on stream discharge using Halfosky et al 2018 and other citations.
Olsen, Lance	Lewis et al 2016. Defining a new normal for extremes in a warming world	CON	Halfosky et al 2018 provides information that is downscaled and more relevant to the HLC NF.
Olsen, Lance	Liang et al 2016. Positive biodiversity- productivity relationship predominant in global forests	CON	The 2012 planning rule and HLC NF analysis consider the concepts of biodiversity and potential threats with other literature sources equally or more relevant.
Olsen, Lance	Lindenmayer et al 2011. How to make a common species rare: A case against conservation complacency	IRR	Status/risks to wildlife are addressed with other citations that are more relevant to the HLC NF.
Olsen, Lance	Litzow & Hunsicker 2016. Early warning signals, nonlinearity, and signs of hysteresis in real ecosystems	IRR	Paper discusses early warnings of ecological change broadly; not directly applicable to HLC NF.
Olsen, Lance	Liu et al 2014. Wildland fire emissions, carbon, and climate: wildfire-climate interactions	CITE	This publication is cited in the analysis.
Olsen, Lance	Lloret et al 2012. Extreme climatic events and vegetation: the role of stabilizing processes.	CITE	This publication is cited in the analysis.
Olsen, Lance	Lorente et al 2012. Wildfire and forest harvest disturbances in the boreal forest leave different long-lasting spatial signatures	CON	Topics of fire and harvest are addressed with citations more applicable to the vegetation types and disturbance regimes found on the HLC NF.
Olsen, Lance	Luce & Holden 2009. Declining annual streamflow distributions in the Pacific Northwest U.S., 1948–2006	CON	The watershed section addresses impacts of climate change on stream discharge using Halfosky et al 2018.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	LuoChen 2015. Climate change-associated tree mortality increases without decreasing water availability.	CITE	Publication is cited in the analysis.
Olsen, Lance	Luyssaert et al 2008. Old-growth forests as global carbon sinks	CON	Study is global in scale. The importance of old growth in the carbon cycle is addressed using literature more or equally relevant to the HLC NF.
Olsen, Lance	Maclagan et al 2018. Don't judge habitat on its novelty: Assessing the value of novel habitats for an endangered mammal in a peri-urban landscape	IRR	Not directly applicable to the HLC NF; the FS uses other science regarding habitat of species in the context of climate change.
Olsen, Lance	Madsen & Wilcox 2012. When It Rains, It Pours Global Warming and the Increase in Extreme Precipitation 1948 to 2011	IRR	Paper is national in scale. Precipitation trends relevant to the HLC NF are provided by Halfosky et al 2018.
Olsen, Lance	Magnusson et al 2016. Tamm Review: Sequestration of carbon from coarse woody debris in forest soils	CON	Soil carbon is addressed in the FEIS and appendix J using other literature citations equally or more relevant to the HLC NF. Downed wood is measured and included in the FIA data used by the referenced carbon reports. Additional detail is not needed to demonstrate the differences to carbon across alternatives.
Olsen, Lance	Malmsheiner et al 2008. Forest Management solutions for Mitigating Climate Change in the United States	CON	This topic is addressed using citations more relevant to the HLC NF.
Olsen, Lance	Mantgem et al 2018. Pre-fire drought and competition mediate post-fire conifer mortality in western U.S. National Parks	CITE	This publication is cited in the analysis.
Olsen, Lance	Marris 2007. What to Let Go	IRR	Paper discusses concept of triage broadly and does not inform how this approach might be conducted on species that occur on the HLC NF. Species vulnerabilities covered by other citations such as Halofsky et al 2018.
Olsen, Lance	Marris 2009. Planting the forest of the future	IRR	This citation is a news article, not a peer reviewed source. Potential species shifts & assisted migration are covered by other citations.
Olsen, Lance	Martin et al 2009. Eluding catastrophic shifts	IRR	The model framework presented in this study is not possible to apply for the HLC NF analysis; use other citations such as Halfosky et al 2018 are used to disclose potential shifts.
Olsen, Lance	Martinuzzi et al 2015. Scenarios of future land use change around United States' protected areas	CON	The FS does not convert NFS lands to urban uses. The all lands approach is emphasized in the Directives; cumulative effects address management on adjacent lands. The scenarios presented in this study are broad.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Mazza 2015. Heed the Head: Buffer Benefits Along Headwater Streams	IRR	Study is focused on ecosystems in the Pacific Northwest. Riparian buffers are discussed with citations more relevant to the HLC NF.
Olsen, Lance	McAlester 1970. Animal Extinctions, Oxygen Consumption, and Atmospheric History	CON	Threats to wildlife on the HLC NF are addressed with other citations; and species viability is provided as required by law, regulation, and policy.
Olsen, Lance	McDowell & Allen 2015. Darcy's law predicts widespread forest mortality under climate warming	CON	Study is global in scale; potential vulnerabilities and mortality of vegetation due to climate warming addressed with other citations more or equally relevant to the HLC NF.
Olsen, Lance	McMenamin et al 2008. Climatic change and wetland desiccation cause amphibian decline in Yellowstone NP	REF	This citation is used by Halofsky et al 2018, which discloses species vulnerabilities. The HLC NF incorporates this information.
Olsen, Lance	Meehl & Tebaldi 2004. More Intense, More Frequent, and Longer Lasting Heat Waves in the 21st Century	CON	The topic of temperature changes is addressed using Halfosky et al 2018, which provides downscaled climate predictions for the HLC NF.
Olsen, Lance	Meehl et al 2016. US daily temperature records past, present, and future	CON	The topic of temperature changes is addressed using Halfosky et al 2018, which provides downscaled climate predictions for the HLC NF.
Olsen, Lance	Meyn et al 2009. Relationship between fire, climate oscillations, and drought in British Columbia, Canada, 1920–2000	CON	Relationships between climate, drought, and fires that apply to the HLC are provided by Halfosky et al 2018 and other citations.
Olsen, Lance	Millar & Stephenson 2015. Temperate forest health in an era of emerging megadisturbance	CITE	This publication is cited in the analysis.
Olsen, Lance	Millar et al 2007. Climate Change and Forests of the Future: Managing in the Face of Uncertainty	CITE	This publication is cited in the analysis.
Olsen, Lance	Mooney and Dennis 2018. Climate scientists are struggling to find the right words for very bad news.	CON	Broad concept of climate change is covered by other citations.
Olsen, Lance	Mora et al 2013. The projected timing of climate departure from recent variability	CON	Paper supports notion of departure from historical range of variation, and how to model when the climate will depart. The EIS addresses the potential for these departures using other literature equally or more relevant to the HLC NF.
Olsen, Lance	Mora et al. Suitable Days for Plant Growth Disappear under Projected Climate Change: Potential Human and Biotic Vulnerability	CON	Halfosky et al 2018 provides information that is downscaled and more relevant to the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Muelbauer et al 2014. How wide is a stream? Spatial extent of the potential ‘‘stream signature’’ in terrestrial food webs using meta-analysis	GEN	This reference is a discussion on the importance of biological processes within riparian zones. The "biological signature" often extends beyond the average channel width. The paper found that many important biological exchanges are detected within 50-350 feet of the stream channel thus, buffer distances need to consider biological components as well as hydro-geomorphic metrics. The proposed RMZ widths and accompanying plan components support the importance of adequate riparian zones and stream buffer widths. The 2012 Planning Rule requires the establishment of adequate RMZ widths to protect aquatic resources.
Olsen, Lance	NASA 2018. NASA Satellites Reveal major Shifts in Global Freshwater	CON	Paper addresses freshwater changes on a very broad scale. HLC NF uses other citations to discuss impacts of climate change and water.
Olsen, Lance	Nicholls 2009. Climate science: how the climate is changing and why (and how we know it).	IRR	This citation is a general climate overview. Other citations are used to place climate change issues in context of HLC NF plan revision.
Olsen, Lance	Nicolacida and Costa 2018. New Fed Paper: The consequences of higher temperatures on the US economy may be more widespread than previously thought	REF	Forest Plan decision is not linked to a change in atmospheric temperature; therefore, this type of research is outside the scale of the NEPA decision. Climate concerns relating to National Forests are addressed through our mitigation and climate strategy programs (NRAP) and discussed in the climate section of the FEIS.
Olsen, Lance	Nolan et al 2018. Past and future global transformation of terrestrial ecosystems under climate change	IRR	Paper describes broad ecosystem shifts; not applied to the HLC NF. Halfosky et al 2018 provides analysis downscaled/relevant to HLC NF.
Olsen, Lance	Norris et al 2016. Evidence for climate change in the satellite cloud record	CON	The concept of climate change is described in the EIS using other citations that are more relevant.
Olsen, Lance	North Central Climate Science Center (Colorado State University) website - LERI	IRR	Unclear how this tool would inform the forest plan revision analysis.
Olsen, Lance	Nowak et al 2007. Oxygen Production by Urban Trees in the United States	IRR	This study is specific to urban forests and not relevant to the HLC NF.
Olsen, Lance	Obermeier et al 2016. Reduced CO2 fertilization effect in temperate C3 grasslands under more extreme weather conditions	CON	The role of grasslands in the carbon cycle is addressed in the EIS and appendix J using literature sources equally or more relevant to the HLC NF.
Olsen, Lance	Ofstad et al 2016. Home ranges, habitat and body mass: simple correlates of home range size in ungulates	CON	This citation describes a theoretical test of the effect of interspecific body size and habitat relationships on home range size; this topic is broadly covered by the diverse approach outlined in the Plan.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	O'Gorman & Schneider 2009. The physical basis for increases in precipitation extremes in simulations of 21st-century climate change	IRR	This study was conducted in the tropics. The expected precipitation and climate for the HLC NF plan area is provided in Halofsky et al 2018.
Olsen, Lance	Oliver 2012. Adaptation: Planning for Climate Change and Its Effects on Federal Lands	CON	This study focuses on the Pacific Northwest; other sources are used to address the topic of adaptation and response to climate change.
Olsen, Lance	Olsen, Lance 2018. In A Heating-Up West, Must Business-As-Usual Conservation Be Interrupted? The Movement of protecting ecosystems needs to change its thinking if it wants to save them.	NOT RLB	Opinion piece; used as context for public comment rather than literature. Some of the literature cited within the article is used/reviewed.
Olsen, Lance	Ornes 2018. How does climate change influence extreme weather? Impact attribution research seeks answers.	IRR	Associating climate change to extreme weather events such as hurricanes. Not directly applicable to the forest plan revision on the HLC NF. Climate change impacts addressed using other literature sources.
Olsen, Lance	O'Sullivan et al 2016. Thermal limits of leaf metabolism across biomes	CON	This study is very broad; the topic is covered by Halfosky et al 2018 with more relevance to local species and ecosystems.
Olsen, Lance	Overpeck 2013. The challenge of hot drought	NOT RLB	This citation is an editorial work that is not specific to plan area; the topic of expected drought is covered by other citations.
Olsen, Lance	Oxygen, Carbon Dioxide, and Energy	NOT RLB	Not a peer reviewed study – teacher's lesson aid.
Olsen, Lance	Pace et al 2017. Reversal of a cyanobacterial bloom in response to early warnings	CON	This citation is a general study; the resilience of water bodies is addressed with other citations more relevant to the HLC NF.
Olsen, Lance	Pacific Forest Trust 2016. A risk assessment of California's key source watershed infrastructure	IRR	Conditions different than the HLC. Broad concept is addressed in the EIS using more local information and framework (such as Watershed Condition Framework).
Olsen, Lance	Paltan et al 2018. Global implications of 1.5C and 2C warmer worlds on extreme river flows.	CON	Broad scale implications of temp increase on river flows. Downscaled information regarding climate change effects relevant to the HLC NF is provided in other sources, such as Halofsky et al 2018.
Olsen, Lance	Parmesan & Yohe 2003. A globally coherent fingerprint of climate change impacts across natural systems	CON	This citation is very broad; the topic of climate change is addressed with other studies more applicable to the HLC NF, e.g. Halofsky et al 2018.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Parmesan 2006. Ecological and Evolutionary Responses to Recent Climate Change	CON	This citation is a general study; the threats from climate change and responses by species is addressed by citing Halofsky et al 2018 and other sources.
Olsen, Lance	Pauli et al 2013. Frontiers in Ecology and the Environment: The subnivium: a deteriorating seasonal refugium	IRR	The effects of climate change are broadly addressed using other citations that are equally or more relevant to the HLC NF and the forest planning process. Management suggestions at the end of the paper are appropriate at the site-specific, project planning and analysis scale but not at the framework programmatic scale of the forest plan.
Olsen, Lance	Pect et al 2017. Biodiversity redistribution under climate change: Impacts on ecosystems and human well-being	CON	This citation may be broadly relevant as it relates to the impacts of climate change. However, citations more relevant and local to the HLC NF are used to describe these concepts.
Olsen, Lance	Pederson et al 2009. A century of climate and ecosystem change in Western Montana: what do temperature trends portend?	CITE	Publication is cited in the analysis.
Olsen, Lance	Pederson et al 2011. The Unusual Nature of Recent Snowpack Declines in the North American Cordillera	CON	Some of the data used in this citation is applicable to HLC NF; however, Halofsky et al 2018 also summarizes snowpack changes and provides analysis downscaled/relevant to the HLC NF.
Olsen, Lance	Peng et al 2011. A drought-induced pervasive increase in tree mortality across Canada's boreal forests	CON	The topic of drought influences on tree mortality is covered by other citations equally or more relevant to the HLC NF.
Olsen, Lance	Peterson & Chen 2008. Household Location Choices: Implications for Biodiversity Conservation	CON	Paper refers to a general trend of increasing population near natural areas. This trend is discussed with information more relevant to the HLC NF.
Olsen, Lance	Petrie et al 2017. Climate change may restrict dryland forest regeneration in the 21st century	CITE	Publication is cited in the analysis.
Olsen, Lance	Phillips et al 2009. Drought Sensitivity of the Amazon Rainforest	IRR	Study conducted in the Amazon; the topic of drought impacts is covered by Halfosky et al 2018 and other citations more relevant to the HLC NF.
Olsen, Lance	Pierce et al 2008. Attribution of Declining Western U.S. Snowpack to Human Effects	CON	The topic of declining snowpack is addressed by citing Halofsky et al 2018 and others.
Olsen, Lance	Portner & Farrell 2008. Physiology and Climate Change	IRR	Study is based on ocean fish. Impacts to the HLC NF environment is provided by other more relevant sources.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Powell et al 2014. Climate extremes in the Southeast United States: variability, spatial classification, and related planning	IRR	Modeling and trends in the Southeast; not directly applicable. The HLC NF uses more local sources such as Halfosky et al 2018.
Olsen, Lance	Prein 2018. Convection-Permitting Climate Modeling- A new Era for Water Research	IRR	Powerpoint discussing water climate modeling. Not relevant to forest plan revision on the HLC NF.
Olsen, Lance	Prein et al 2016. Future Intensification of hourly precipitation extremes.	GEN	For climate change scenarios and responses, the 2020 Forest Plan used direction from NRAP.
Olsen, Lance	Pretzsch et al 2018. Wood density reduced while wood volume growth accelerated in Central European forests since 1870.	IRR	Study in Europe. Not clear how it would apply to carbon estimates on the HLC NF. The HLC NF analysis uses other BASI for the local area.
Olsen, Lance	Proffitt et al 2013. Effects of Hunter Access and Habitat Security on Elk Habitat Selection in Landscapes with a Public and Private Land Matrix	CITE	Publication is cited in the analysis.
Olsen, Lance	Prugh et al 2008. Effect of habitat area and isolation on fragmented animal populations	GEN	Manuscript discusses recent tests of Island Biogeography Theory; while theoretically important for setting the bounds of management theory, it lacks specificity to the Forest Plan beyond the suggestion that fragmentation is an issue, a theme that is consistent with forest planning.
Olsen, Lance	Pyne & Poff 2017. Vulnerability of stream community composition and function to projected thermal warming and hydrologic change across ecoregions in the western U.S.	CON	Issues related to climate change and streams are addressed using other literature equally or more relevant to the HLC NF, namely Halofsky et al 2018.
Olsen, Lance	Rasmussen 2018. NASA Finds Amazon Drought Leaves Long Legacy of Damage	CON	Potential effects of drought to the ecosystems on HLC described with other citations that are equally or more relevant.
Olsen, Lance	Raupach et al 2014. The declining uptake rate of atmospheric CO2 by land and ocean sinks	IRR	This citation is a broad discussion of carbon cycles and is not relevant at the plan area scale.
Olsen, Lance	Reese 2018. As countries crank up the AC, emissions of potent greenhouse gases are likely to skyrocket	IRR	Article about emissions caused by air conditioning. Not relevant to forest plan revision on the HLC NF.
Olsen, Lance	Rehfeldt et al 2001. Physiologic Plasticity, Evolution, and Impacts of a changing climate on pinus contorta	CON	Study specific to the impacts of climate change on lodgepole pine. Other Rehfeldt articles are referenced in Halofsky et al 2018.
Olsen, Lance	Reyer et al 2013. A plants perspective of extremes: terrestrial plant responses to changing climatic variability	IRR	General perspective of climate effects on plants, not directly relevant. The effects of climate change and vulnerabilities of

Commenter(s)	Citation	Response Code	Rationale
			plant species found on the HLC NF is addressed with citations such Halofsky et al 2018.
Olsen, Lance	Rich 2018. Losing Earth: The Decade We Almost Stopped Climate Change	IRR	Opinion piece; narrative on past climate change-related policies and inaction.
Olsen, Lance	Rich et al 2008. Phenology of Mixed Woody-Herbaceous Ecosystems Following Extreme Events: Net and Differential Responses	IRR	This study focuses on plant communities not present on the HLC NF; responses of local ecosystems to climate changes are covered by other citations more relevant to the plan area.
Olsen, Lance	Roach 2004. Source of Half Earth's Oxygen Gets Little Credit	IRR	Phytoplankton does not directly inform the HLC NF plan revision.
Olsen, Lance	Roitberg & Mangel 2016. Cold snaps, heatwaves, and arthropod growth	IRR	The theoretical model used in this citation is used to understand the potential relative implications of cold versus heat stress, an issue beyond consideration of forest planning.
Olsen, Lance	Rother & Veblen 2016. Limited conifer regeneration following wildfires in dry ponderosa pine forests of the CO Front Range	CITE	Publication is cited in the analysis.
Olsen, Lance	Roxy et al 2016. A reduction in marine primary productivity driven by rapid warming over the tropical Indian Ocean	IRR	Plankton in the Indian Ocean are not directly applicable to HLC NF forest plan revision.
Olsen, Lance	Safeeq & Hunsaker 2016. Characterizing Runoff and Water Yield for Headwater Catchments in the Southern Sierra Nevada	IRR	This publication is not directly relevant to the plan area. The impacts of climate change on streamflow are addressed with other literature sources more relevant to the HLC NF.
Olsen, Lance	Schaefer et al 2014. The impact of permafrost carbon feedback on global climate	IRR	No permafrost in the region or HLC NF; publication is not relevant.
Olsen, Lance	Scheffer et al 2015. Creating a safe operating space for iconic ecosystems	CON	This citation is global in scale. The concept of management to increase resilience covered by other citations more relevant to the plan area.
Olsen, Lance	Scheffers et al 2016. The broad footprint of climate change from genes to biomes to people	IRR	This broad citation is not relevant to the HLC NF plan area or forest planning.
Olsen, Lance	Schwalm et al 2012. Reduction in carbon uptake during turn of the century drought in western North America	CON	The EIS and appendix J disclose the importance of maintaining forests as forests. Land conversions are not anticipated on the HLC NF. The topic is addressed with other citations equally or more relevant to the HLC NF.
Olsen, Lance	Seekell 2016. Passing the point of no return: Early warning signals indicate impending ecosystem regime changes	IRR	This study is specific to lake ecology and not directly relevant to the plan area or forest planning issues.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Sekerci & Petroviskii 2015. Mathematical Modelling of Plankton–Oxygen Dynamics Under the Climate Change	IRR	This paper addresses global concepts; it is not directly relevant to the HLC NF plan area or revision process.
Olsen, Lance	Service 2004. As the West Goes Dry	CON	The topic of changing snowpack and water availability is covered using Halofsky et al 2018 and other citations that are equally or more relevant to the HLC NF.
Olsen, Lance	Sewell & Sloan 2004. Disappearing Arctic sea ice reduces available water in the American west	CON	This study is broad in scope; the topic of future drought is disclosed using citations more specific to the HLC NF.
Olsen, Lance	Sickinger 2018. Forest policy looms over Oregon's climate change debate	IRR	Opinion piece. In addition, forest conditions and forestry practices differ in type and scope on HLC NF. Logging intensity and methods is not comparable to the HLC NF.
Olsen, Lance	Sivakumar 2006. Climate prediction and agriculture: current status and future challenges.	IRR	Climate projections related to impacts to agriculture; this use does not occur on NFS lands on the HLC NF.
Olsen, Lance	Skliris et al 2016. Global water cycle amplifying at less than Clausius-Clapeyron rate	IRR	Very large-scale paper (Global); water sustainability addressed with other citations such as Halofsky et al 2018.
Olsen, Lance	Slater & Villarini 2016. Recent trends in U.S. flood risk	IRR	This citation addresses specific changes in flood risk that are more applicable to other states. Not relevant to the HLC NF forest plan.
Olsen, Lance	Smith et al 2015. Near-term acceleration in the rate of temperature change	CON	The topic of temperature change is addressed with other literature more or equally relevant to the HLC NF; namely, Halofsky et al 2018.
Olsen, Lance	Snyder et al 2015. Accounting for groundwater in stream fish thermal habitat responses to climate change	IRR	This study was conducted in the eastern U.S. Threats to aquatics on the HLC NF are disclosed w/ other citations more relevant to the plan area.
Olsen, Lance	Sole 2007. Scaling laws in the drier	IRR	The ecosystems in this study are vastly different from those on the HLC NF.
Olsen, Lance	Solomon et al 2009. Irreversible climate change due to carbon dioxide emissions	IRR	This citation is very broad in scale. The topic of climate change is covered by other literatures sources that are equally or more relevant.
Olsen, Lance	Stancil 2015. The Power of One Tree - The Very Air We Breathe	IRR	This source is a blog, not a scientific journal. It does not contain information necessary to inform the analysis.
Olsen, Lance	Steffen et al 2018. Trajectories of the Earth System in the Anthropocene	CON	Broad and global in scale. The EIS and appendix J disclose the concept of climate change and impacts on the ecosystems of the

Commenter(s)	Citation	Response Code	Rationale
			HLC NF, using literature sources that are equally or more relevant.
Olsen, Lance	Stephenson et al 2014. Rate of tree carbon accumulation increases continuously with tree size.	CITE	Publication is cited in the analysis.
Olsen, Lance	Stevens & Rumann 2017. Evidence for declining forest resilience to wildfires under climate change	CITE	This publication is cited in the analysis.
Olsen, Lance	SunVose 2016. Forest Management Challenges for Sustaining Water Resources in the Anthropocene	IRR	Very large-scale paper (Global); water sustainability addressed with other citations such as Halofsky et al 2018.
Olsen, Lance	Tan et al 2015. Ecosystem carbon stocks and sequestration potential of federal lands across the conterminous U.S.	DATED	More recent, local estimates of carbon stocks for Region 1 and the HLC NF are available.
Olsen, Lance	Tan Zhuang 2015. Arctic Lakes are continuous Methane sources to the atmosphere under warming conditions	CON	The topic of methane and climate change is addressed as appropriate using other citations more relevant to the HLC NF.
Olsen, Lance	Tanner et al 2014. Livelihood resilience in the face of climate change.	GEN	Subject of economic risk from climate change, ecosystem integrity is a resource specific concern and addressed in the general discussion of climate change and potential resource conditions.
Olsen, Lance	Tatchell 2008. The oxygen crisis	NOT RLB	This is an editorial piece; it does not provide info to inform the analysis.
Olsen, Lance	Teitelbaum et al 2015. How far to go? Determinants of migration distance in land mammals	CON	This study provides a test of theoretical factors affecting the evolution and phenotypic expression of migration behavior. Information on migration and landscape connectivity relevant to HLC addressed with other citations.
Olsen, Lance	The Economist 2018. In the line of fire: The world is losing the war against climate change	NOT RLB	Magazine article regarding politics and concerns with climate change.
Olsen, Lance	Thomas 2017. Mapping the Future: U.S. Exposure to Multiple Landscape Stressors	CON	Threat maps and stressors in the Pacific Northwest. The broad concepts apply to the HLC NF, but are described using more local, peer-reviewed sources.
Olsen, Lance	Thomas and Gillingham 2015. The performance of protected areas for biodiversity under climate change	CON	The concepts of biodiversity conservation and the role of protected areas are guided by the 2012 planning rule for the HLC NF and addressed in the analysis using literature sources more relevant to the HLC NF.
Olsen, Lance	Thompson 2005. Fanning the flames: climate change stacks odds against fire suppression	IRR	Citation is not peer reviewed and not directly relevant to the HLC NF. Fire suppression and climate addressed with other citations, such as Halofsky et al 2018.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Thompson 2006. Does wood slow down “sludge dragons?” The interaction between riparian zones and debris flows in mountain landscapes	CON	Citation is not peer reviewed. RMZs and debris flows is addressed with Halfosky et al 2018.
Olsen, Lance	Thrush et al 2009. Forecasting the limits of resilience: integrating empirical research with theory	CON	This paper discusses measuring resilience and identifying thresholds. Similar topics are addressed using other citations, primarily Halfosky et al 2018.
Olsen, Lance	Toner 2002. Plankton Declining in Oceans, Study Finds	IRR	Citation discusses plankton in the ocean; it is not relevant to plan area. The forest carbon cycle is addressed with other citations.
Olsen, Lance	Top climate Events of 2017 Climate Signals	IRR	These climate signals are not directly relevant to the Forest Plan revision. Climate change is incorporated using resources such as Halofsky et al 2018.
Olsen, Lance	Trumbore et al 2015. Forest health and global change	CON	Citation is global in scale. The concept of forest health is covered with other citations equally or more relevant to the HLC NF.
Olsen, Lance	Tschakert 2015. 1.5°C or 2°C: a conduit’s view from the science-policy interface at COP20 in Lima, Peru	IRR	This citation discusses global policy and is not directly relevant to the plan area or forest management issues.
Olsen, Lance	Union of Concerned Scientists 2014. Map: Projected changes in suitable ranges for key rocky mountain tree species	CON	See response to comments; figure will not be included. Species distributions are discussed w/ other citations.
Olsen, Lance	Urza & Sibold 2016. Climate and seed availability initiate alternate post-fire trajectories in a lower subalpine forest	CITE	This publication is cited in the analysis.
Olsen, Lance	USDA 2010. National Roadmap for Responding to Climate Change	GEN	This national roadmap is incorporated by following the framework in the 2012 Planning Rule, associated directives and the work of the Northern Rockies Adaptation Partnership.
Olsen, Lance	USDA 2012. Future Scenarios, A Technical Document Supporting the Forest Service 2010 RPA Assessment	REF	Document was used in Halfosky et al 2018, which the analysis cites extensively.
Olsen, Lance	USDA Undated. Quercus macrocarpa	IRR	Bur oak is not present or predicted to become present on HLC NF.
Olsen, Lance	USEPA 2016. Climate Change Indicators: Sea Surface Temperature	NOT RLB	This citation is a series of charts from a website. Climate projections relevant to HLC NF are provided by Halofsky et al 2018.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	VanMantgem et al 2013. Climatic stress increases forest fire severity across the western United States.	CITE	Publication is cited in the analysis.
Olsen, Lance	VanMantgem et al 2018. Pre-Fire drought and competition mediate post-fire conifer mortality in western US National Parks	CITE	This publication is cited in the analysis.
Olsen, Lance	vanNes & Scheffer 2007. Slow Recovery from Perturbations as a Generic Indicator of a Nearby Catastrophic Shift	CON	This citation is very broad. The topic of resilience of ecosystems is addressed with other literature equally or more relevant to the HLC NF.
Olsen, Lance	Vanoni et al 2016. Drought and frost contribute to abrupt growth decreases before tree mortality in 9 temperate tree species.	IRR	This citation is from a study in Switzerland. The impacts of climate on local tree species is covered by other citations more relevant to the HLC NF.
Olsen, Lance	Vose et al 2012. Effects of Climatic Variability and Change on Forest Ecosystems: A Comprehensive Science Synthesis for the U.S. Forest Sector	CITE	This publication is cited in the analysis.
Olsen, Lance	Walther et al 2002. Ecological responses to recent climate change	CON	The topic of ecological responses to climate change is covered by Halofsky et al 2018 and other information sources more specific to the HLC NF plan area.
Olsen, Lance	Weart 2003. The Discovery of Rapid Climate Change	IRR	This citation is an editorial piece exploring the history of climate change science; it is not directly applicable to forest planning issues.
Olsen, Lance	Welch et al 2016. Predicting conifer establishment post wildfire in mixed conifer forests of the N. American Mediterranean-climate zone	CON	Conditions differ from HLC NF; regeneration failures after fire addressed with other citations.
Olsen, Lance	Westerling et al 2011. Continued warming could transform Greater Yellowstone fire regimes by mid-21st century.	CITE	Publication is cited in the analysis.
Olsen, Lance	Wildlife Conservation Society website to consult the latest science on observed and projected climate impacts.	CON	Several guides and adaptation approaches. Broadly relevant, but same topics more directly tied to the issues on the HLC NF are covered by other resources, such as Halofsky et al 2018.
Olsen, Lance	Williams & Dumroese 2016. Planning the Future's Forests with Assigned Migration	CITE	This publication is cited in the analysis.
Olsen, Lance	Williams, A.P.; Allen, C.D.; Macalady, A.D. [et al.]. 2013. Temperature as a Potent Driver of Regional Forest Drought Stress and Tree Mortality. Temperature as a potent driver of regional forest drought stress and tree mortality. Paper and PowerPoint.	REF	This study is referenced by Halfosky et al 2018; this work is used extensively in the analysis to discuss the effects of drought.

Commenter(s)	Citation	Response Code	Rationale
Olsen, Lance	Wobus et al 2018. Re-Framing Future Risks of Extreme Heat in the United States	IRR	Uses CMIP5 data to examine future extreme heat; not related specifically to forests or forest plan issues. Halofsky et al 2018 provides analysis downscaled and relevant to HLC.
Olsen, Lance	Wong & Daniels 2016. Novel forest decline triggered by multiple interactions among climate, an introduced pathogen and bark beetles.	CITE	Publication is cited in the analysis.
Olsen, Lance	Xu et al 2018. Forest drought resistance distinguished by canopy height- (Goldilocks)	CON	Southwestern species and site conditions. Resilience to drought is addressed with other citations that are more relevant to the HLC NF.
Olsen, Lance	Yang et al 2018. Post-drought decline of the Amazon carbon sink	CON	Global scale; example of impacts of drought. Other information more pertinent to the HLC NF is used.
Olsen, Lance	Zhang et al 2015. Gains and losses of plant species and phylogenetic diversity for a northern high-latitude region	CON	This citation focuses on Alberta. Similar vulnerabilities are addressed for local species using citations such as Halofsky et al 2018.
Olsen, Lance	Zhu et al 2018. Limits to growth of forest biomass carbon sink under climate change	CON	The role and future capacity of forests to sequester carbon is addressed in the EIS and appendix J, using literature sources that are equally or more relevant to the HLC NF.
Olsen, Lance	Zorn et al 2012. A regional-scale habitat suitability model to assess the effects of Flow reduction on fish assemblages in MI streams	CON	This citation focuses on Michigan. Fish habitat and future trends and vulnerabilities are addressed with Halofsky et al 2018 and other citations more relevant to the HLC NF.
Olsen, Lance; and Western Watersheds Project	Vose et al 2016. Effects of Drought on Forests and Rangelands in the U.S.: A Comprehensive Science Synthesis USDAFS, GTRWO93b.	CITE	This publication is cited in the analysis.
Patterson, Scott	Outdoor Foundation 2017. 2017 Outdoor Recreation Participation	CON	Backcountry skiing has been recognized as a use on the HLC NF and addressed as appropriate using other information sources equally or more relevant to the HLC NF.
Pew Charitable Trusts	Baker & Bithmann 2005. Snowmobiling in the Adirondack Park: Environmental and Social Impacts; By: Elizabeth Baker and Eric Bithmann; 4/27/05	NOT RLB	Not peer reviewed paper. The topic of snowmobiling is covered using other information sources more relevant to the HLC NF.
Pew Charitable Trusts	Dale. R. Seip, Chris J. Johnson and Glen S. Watts; 2007. Displacement of Mountain Caribou from Winter Habitat by Snowmobiles.	CON	Topic is considered and inclusive of other citations (e.g., Heinemeyer et al. 2017)
Pew Charitable Trusts	Idaho Conservation League 2011. How Off-Road Vehicles and Snowmobiles Are Threatening the Forest Service's Recommended Wilderness Areas.	CON	General reference describing how motorized uses affect RWAs. These impacts are addressed using other information sources that are equally or more relevant.

Commenter(s)	Citation	Response Code	Rationale
Pew Charitable Trusts	Ingersoll 1998. Effects of Snowmobile Use on Snowpack Chemistry in Yellowstone National Park, 1998; By George P. Ingersoll	CON	Nowhere on the HLC do we have use levels close to Yellowstone NP, and emissions from snowmobiles have come a very much improved from 20 years ago.
Pew Charitable Trusts	McClure, M.L., C. Henneman, and B.G. Dickson. 2017. A landscape-level assessment of ecological values for the Helena-Lewis and Clark National Forest; Submitted to: The Pew Charitable Trusts	CON	Provides useful information but does not fully follow the wilderness inventory and evaluation process direction in FSH 1909.12 Chapter 70.
Pew Charitable Trusts	USDI 2000. Air Quality Concerns Related to Snowmobile Usage in National Parks; USDI, 2000	IRR	Nowhere on the HLC do we have use levels close to Yellowstone NP, and emissions from snowmobiles have come a very much improved from 20 years ago.
Pew Charitable Trusts	USFWS 2018. North American Wolverine Species Profile, USFWS ECOS online system. Accessed 2018	CON	The topic of wolverine is covered using other literature sources equally or more relevant.
Rocky Mountain Elk Foundation	Cook, Rachel C., John G. Cook, David J. Vales, Bruce K. Johnson, Scott m. Mccorquodale, Lisa a. Shipley, Robert a. Riggs, Larry l. Irwin, Shannon l. Murphie, Bryan l. Murphie, Kathryn a. Schoenecker, Frank Geyer, p. Briggs hall, rocky d. Spencer, Dave a. Immell, Dewaine h. Jackson, Brett l. Tiller, Patrick j. Miller, Lowell Schmitz, 2013. Regional and Seasonal Patterns of Nutritional Condition and Reproduction in Elk.	CON	Topic is considered, as this manuscript supports previous findings including those currently cited (e.g., J. G. Cook, 2002; J. G. Cook et al., 1996; K. M. Proffitt, Hebblewhite, Peters, Hupp, & Shamhart, 2016; Ranglack et al., 2014; K. M. Stewart, Bowyer, Dick, Johnson, & Kie, 2005).
Rocky Mountain Elk Foundation	Keane et al 2009. Forest Ecology and Management 258 (2009) 1033-1034	CON	The HLC NF revised plan utilizes the concept of natural range of variation (NRV) as defined by the planning rule directives, and discusses this concept using other literature sources equally or more relevant.
Rocky Mountain Elk Foundation	Middleton, Arthur D, Matthew J. Kauffman, Douglas E. Mcwhirter, John G. Cook, Rachel C. Cook, Abigail A. Nelson, Michael D. Jimenez, and Robert W. Klaver; 2013. Rejoinder: challenge and opportunity in the study of ungulate migration amid environmental change;	CON/GEN	Issues in this and other literature considered in developing plan components designed to allow wildlife movement within and among NFS lands; e.g., FW-WL-DC-03 and very specifically FW-WL-GDL-14 regarding consistency in management across administrative boundaries, where possible. Also implicit in plan components for connectivity (refer to DCs in RM, UB, DI, and LB GAs in particular), and Goals to work with FWP regarding habitat issues across administrative boundaries.
Rocky Mountain Elk Foundation	Quigley, T. M., and M. J. Wisdom. 2005. The Starkey Project: Long-Term Research for Long-Term Management Solutions. Pages 9-16 in Wisdom, M. J., technical editor, The Starkey Project: a synthesis of long-term studies of elk and mule deer. Reprinted from the 2004 Transactions of the North American Wildlife	CON	This is a general reference on elk habitat, covering topics outline and cited including more recent citations (e.g., Proffitt et al. 2016; Ranglack et al., 2014, Proffit et al. 2013, Polfus 2011, Ranglack et al., 2014)

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	and Natural Resources Conference, Alliance Communications Group, Lawrence, Kansas, USA		
Rocky Mountain Elk Foundation	Sawyer, Hall; Matthew J. Kauffman, Arthur D. Middleton, Thomas A. Morrison, Ryan M. Nielson and Teal B. Wyckoff; 2013. A framework for understanding semi-permeable barrier effects on migratory ungulates.	CON/GEN	Issues in this and other literature considered in developing plan components designed to allow wildlife movement within and among NFS lands; e.g., FW-WL-DC-03 and very specifically FW-WL-GDL-14 regarding consistency in management across administrative boundaries, where possible. Also implicit in plan components for connectivity (refer to DCs in RM, UB, DI, and LB GAs in particular), and Goals to work with FWP regarding habitat issues across administrative boundaries.
Rocky Mountain Elk Foundation	Swanson, Mark E., Jerry F Franklin, Robert L Beschta, Charles M Crisafulli, Dominick A DellaSala, Richard L Hutto, David B Lindenmayer, and Frederick J Swanson; 2011. The forgotten stage of forest succession: early-successional ecosystems on forest sites.	CON	Although not explicitly tied together, the importance of early successional forage is outlined and supported by other literature, and the role between fire/thinning and early successional habitat is discussed in the Terrestrial Vegetation section of the FEIS.
Rocky Mountain Elk Foundation	Westbrooks, Randy G. 2004. New Approaches for Early Detection and Rapid Response to Invasive Plants in the United States.	CON	Plan components in the 2020 Forest Plan utilize these concepts for weed management, as supported by other literature sources equally or more relevant.
Rocky Mountain Elk Foundation; and Bitterroot Backcountry Cyclists, and Helena Hunters & Anglers	Wisdom, Michael J; Alan A. Ager, Haiganoush K. Preisler, Norman J. Cimon, and Bruce K. Johnson 2005. Effects of Off-Road Recreation on Mule Deer and Elk.	CITE	Publication is cited in the analysis, as part of the "Starkey Project".
Rocky Mountain Elk Foundation; and Helena Hunters & Anglers	Wisdom, Michael J; Haiganoush K. Preisler, Leslie M. Naylor, Robert G. Anthony, Bruce K. Johnson, Mary M. Rowland; 2018. Elk responses to trail-based recreation on public forests.	CITE	The topic of roads, trails, and motorized uses on elk is addressed using other literature that is equally or more relevant to the HLC NF.
Sentz, Gene	Chaney 2017. Wildfire evolution forces Forest Service into new thinking. ROB CHANEY rchaney@missoulian.com Feb 4, 2017	NOT RLB	This is a newspaper article (not peer reviewed) quoting a few presenters at a conference. Topics are covered in the Plan and analysis using more reliable information sources.
Solonex	Office of Natural Resources Revenue 2016. News Release: Interior Department Disburses $6.23 Billion in FY2016 Energy Revenues. Federal Revenues Support State, Tribal, National Needs	IRR	The HLC NF does not have significant revenue sources being generated in sale or leasing of land for development energy resources.
The Wilderness Society	Aplet et al 2000. Indicators of Wildness: Using Attributes of the Land to Assess the Context of Wilderness	CON	The 2020 Forest Plan is consistent with the 2012 Planning Rule, including the wilderness evaluation process. The factors used in the wilderness evaluation are generally consistent with this work, in different terms, and is based on more recent best available scientific information and policy. Several alternatives, including

Commenter(s)	Citation	Response Code	Rationale
			the preferred alternative, include recommended wilderness areas.
The Wilderness Society	Aycrigg et al 2013. Representation of Ecological Systems within the Protected Areas Network of the Continental United States	CON	The 2020 Forest Plan is consistent with the 2012 Planning Rule, including the wilderness evaluation process. Several alternatives, including the preferred alternative, include recommended wilderness areas in which the representation of ecological systems was considered, although this paper was not specifically cited.
The Wilderness Society	Aycrigg et al 2016. The Next 50 Years: Opportunities for Diversifying the Ecological Representation of the National Wilderness Preservation System within the Contiguous United States	CON	The 2020 Forest Plan is consistent with the 2012 Planning Rule, including the wilderness inventory and evaluation processes. As such, opportunities to recommend wilderness were assessed for all lands. The potential representation of ecological systems in recommended wilderness was inherently included in this process, although this work was not specifically cited. The preferred alternative includes recommended wilderness on more than 153,000 acres of the HLC NF.
The Wilderness Society	Belote 2018. Quantifying the Range of Variability in Wilderness Areas: A Reference When Evaluating Wilderness Candidates; Science & Research August 2018 | Volume 24, Number 2 by R. Travis Belote	GEN	All lands on the HLC NF were examined with the wilderness inventory and evaluation process as outlined in the 2012 Planning Rule and associated directives. Their "quality" was not compared to existing wilderness as a factor to determine their inclusion as recommended wilderness in any alternative. Therefore, the process used is consistent with the findings of this paper, although the specific methodology was not used.
The Wilderness Society	Belote et al 2015. Allocating Untreated “Controls” in the National Wilderness Preservation System as a Climate Adaptation Strategy: A Case Study from the Flathead National Forest, Montana	GEN	Addresses the issue of underrepresented ecological types in the current wilderness system, noting their importance for biodiversity in the face of climate change. The HLC NF followed the procedures outlined in the 2012 planning rule and associated directives regarding the identification of recommended wilderness areas.
The Wilderness Society	Belote et al 2016. Identifying Corridors among Large Protected Areas in the United States	CON	General citation for connectivity done at the spatial extent of the United States; the topic of connectivity is covered using other literature sources equally or more relevant to the HLC NF.
The Wilderness Society	Belote, Travis R; Ryan M. Cooper and Rachel A. Daniels, 2017. Contemporary Composition of Land Use, Ecosystems, and Conservation Status along the Lewis and Clark National Historic Trail.	CITE	Included as reference as additional information to show the relative undeveloped nature of the trail on the HLC NF, particularly in the Lewis and Clark pass area, and its significance to populations of grizzly bear.
The Wilderness Society	Carroll et al 2012. Use of Linkage Mapping and Centrality Analysis Across Habitat Gradients to Conserve Connectivity of Gray Wolf Populations in Western North America	CON	General citation for connectivity; topic broadly covered using other literature sources equally or more relevant to the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
The Wilderness Society	Cushman & Languth 2012. Multi-taxa population connectivity in the Northern Rocky Mountains	CON	General citation for connectivity; topic broadly covered using other literature sources equally or more relevant to the HLC NF.
The Wilderness Society	Dietz et al 2015. The world's largest wilderness protection network after 50 years: An assessment of ecological system representation in the U.S. National Wilderness Preservation System	GEN	Citation supports a general statement on the importance of habitat diversity to conservation, a concept which is included in the 2012 planning rule.
The Wilderness Society	Faurby & Svenning 2015. Historic and prehistoric human-driven extinctions have reshaped global mammal diversity patterns	IRR	General topic; the scale of study is worldwide and not directly relevant to the forest plan revision process on the HLC NF
The Wilderness Society	Fisichelli, Nicholas A., Gregor W. Schuurman, Cat Hawkins Hoffman. 2015. Is 'Resilience' Maladaptive? Towards an Accurate Lexicon for Climate Change Adaptation.	CON	The HLC NF 2020 Forest Plan and EIS utilize the definition of resilience as shown in the 2015 directives, as well as other literature sources equally or more relevant (e.g., Millar et al 2007).
The Wilderness Society	Hansen et al 2011. Delineating the Ecosystems Containing Protected Areas for Monitoring and Management	CON	Paper discusses protected areas in national parks. The underlying theme (the importance of a network of protected areas) is addressed with other information equally or more relevant to the HLC NF, which helped inform the selection of recommended wilderness in various alternatives.
The Wilderness Society	Hansen et al 2014. Exposure of U.S. National Parks to land use and climate change 1900–2100.	CON	Paper is specific to national parks. The potential effects of climate change to the lands on the HLC NF, including protected areas, are addressed with a body of other literature equally or more relevant to the plan area.
The Wilderness Society	Noson & Filardi 2012. Field Measures of Wilderness Character, Middle fork Judith River, WSA, 2012. Noson and Filardi, Wilderness Institute, College of Forestry and conservation, Univ. of MT.	CON	The topic of wilderness character, including local conditions, was considered using other information sources. Motorized and mechanized means of transportation would be unsuitable in RWAs under the preferred alternative.
The Wilderness Society	Ripple et al 2014. Status and Ecological Effects of the World's Largest Carnivores	CON	Citation supports a general statement on the role of carnivores in ecosystems; this topic is covered by other information equally relevant to the HLC NF.
The Wilderness Society	Rudnick et al 2012. The Role of Landscape Connectivity in Planning and Implementing Conservation and Restoration Priorities	CON	General citation for connectivity; this topic is broadly covered using other literature sources that are equally or more relevant to the HLC NF.
The Wilderness Society	Theobald 2013. A general model to quantify ecological integrity for landscape assessments and US application	CON	The HLC NF defines and models ecological integrity in a manner consistent with the 2012 planning rule and associated directives (2015); and utilizes landscape modeling tools to conduct the

Commenter(s)	Citation	Response Code	Rationale
			analysis using methods that are equally or more relevant than the methodologies described in this paper.
The Wilderness Society	Theobald et al 2016. Description of the approach, data, and analytical methods used to estimate natural land loss in the western U.S.	IRR	The HLC NF incorporated many considerations in determining appropriate land allocations and uses, for those uses within the discretion of forest planning. NFS lands would not be subject to many of the "land losses" described in this paper (e.g., urbanization, conversion to agriculture"), although some uses described in the paper (e.g., grazing, timber harvest) would occur. The array of multiple uses allowed on NFS lands was described across a range of alternatives and the effects disclosed using literature sources relevant to the plan area.
The Wilderness Society	Watson et al 2016. Catastrophic Declines in Wilderness Areas Undermine Global Environment Targets	GEN	Global in scale; the losses in wilderness were found in the Amazon and Africa. The HLC NF acknowledges the importance of wilderness and adheres to the wilderness inventory and evaluation process required by the 2012 planning rule. None of the alternatives would result in a loss of existing wilderness areas.
The Wildlife Society	Belote 2017. Mapping wildland values to support conservation on the Helena-Lewis and Clark National Forest. Belote 2017	CITE	This paper was specifically was used in development of the alternatives and identifying possible RWAs and ROS categories. It may not be specifically cited in the plan or FEIS but is in the wildlife/connectivity comments and in project file information.
The Wildlife Society	Belote, Travis R., Matthew S. Dietz, Clinton N. Jenkins, Peter S. McKinley,G. Hugh Irwin, Timothy J. Fullman, Jason C. Leppi, and Gregory H. Aplet; 2017. Wild, connected, and diverse: building a more resilient system of protected areas.	GEN	Similar information relevant to the HLC NF was used in the development of alternatives, specifically with respect to recommended wilderness areas in the context of existing wilderness and IRAS. Belote 2017, which is specific to the HLC NF, was used in developing alternatives and considering areas to include as RWAs, and with primitive ROS designations. This paper is broad scale and specifically says it is "not intended to prescribe specific actions", but concepts were used and as such the 2020 Forest Plan and is consistent with the concept of providing connectivity of wild landscapes.
The Wildlife Society	Martin et al 2016. The need to respect nature and its limits challenges society and conservation science	GEN	The subject is generally considered throughout the 2012 planning process
Theodore Roosevelt Conservation Partnership	Freddy, D. J., W. M. Bronaugh, and M. C. Fowler. 1986. Responses of mule deer to disturbance by persons afoot and snowmobiles.	GEN/IRR	This and similar literature considered as a whole in developing plan components to minimize disturbance to ungulates and other wildlife in key seasonal habitats. Scale and nature of information is best applied specifically during analysis of more site-specific actions, including when reviewing travel management decisions and other uses of specific areas.

Commenter(s)	Citation	Response Code	Rationale
Theodore Roosevelt Conservation Partnership	Merrill, E. H., T. P. Hemker, K., K. P. Woodruff, L. Kuck. 1994. Impacts of mining facilities on fall migration of mule deer.	GEN	Issues in this and other literature considered in developing plan components designed to allow wildlife movement within and among NFS lands, limit impacts to connectivity in some areas, and limit disturbance to wildlife on key seasonal ranges.
Theodore Roosevelt Conservation Partnership	Sawyer, H. M.J. Kaughman, and R.M. Nielson. 2009. Influence of Well Pad Activity on Winter Habitat Selection Patterns of Mule Deer.	GEN	Issues in this and other literature considered in developing plan components designed to allow wildlife movement within and among NFS lands, limit impacts to connectivity in some areas, and limit disturbance to wildlife on key seasonal ranges.
Theodore Roosevelt Conservation Partnership	Sawyer, H. R. M. Nielson, F. Lindzey, and L. L. McDonald. 2006. Winter habitat selection of mule deer before and during development of a natural gas field.	GEN	Issues in this and other literature considered in developing plan components designed to allow wildlife movement within and among NFS lands, limit impacts to connectivity in some areas, and limit disturbance to wildlife on key seasonal ranges.
Theodore Roosevelt Conservation Partnership	Sawyer, H., F. Lindzey, D. McWhirter, and K. Andrews. 2002. Potential Effects of Oil and Gas Development on Mule Deer and Pronghorn Populations in Western Wyoming.	GEN	Issues in this and other literature considered in developing plan components designed to allow wildlife movement within and among NFS lands, limit impacts to connectivity in some areas, and limit disturbance to wildlife on key seasonal ranges.
Theodore Roosevelt Conservation Partnership	Wyoming Game and Fish Department 2009. Recommendations for Development of Oil and Gas Resources within Important Wildlife Habitats.	GEN	Issues in this and other literature considered in developing plan components designed to allow wildlife movement within and among NFS lands, limit impacts to connectivity in some areas, and limit disturbance to wildlife on key seasonal ranges.
Thornton, Cheri	It's hella fast in Helena, Mountain biking MacDonald and Bear Trap Gulch	NOT RLB	This citation is not a scientific paper; the issue of mechanized means of transportation is addressed with other information.
Trout Unlimited	Earthworks Undated. Protect Montana's Smith River From Mine Pollution and Dewatering	IRR	A mineral withdraw is beyond the scope of this analysis and will not be included in this Forest Plan Revision.
Trout Unlimited	Geer and Greer 2001. Rock Art of the Smith River; M. Greer, J. Greer, 2001	IRR	General information. The Smith River corridor is recognized in the 2020 Forest Plan as a special emphasis area and is also an eligible wild and scenic river. A mineral withdrawal is a comprehensive and time-consuming process and it requires a great deal of administrative review, which could take several years of analysis and public engagement before reaching a final decision. A mineral withdrawal is beyond the scope of this analysis and will not be included in this Forest Plan Revision.
Trout Unlimited	Gestring, Bonnie 2012. The track record of water quality impacts resulting from pipeline spills, tailings failures and water collection and treatment failures. JULY 2012 (REVISED 11/2012). By Bonnie Gestring	IRR	A mineral withdraw is beyond the scope of this analysis and will not be included in this Forest Plan Revision.
Trout Unlimited	Grant et al 2016. Smith River Fish Behavior Study; By: Michael Lance and Al Zale - Montana Cooperative Fishery Research Unit, Montana State University, Bozeman, MT; Grant Grisak, Jason Mullen, and Dylan	IRR	Literature was provided specifically in support of the Smith River Headwaters Withdrawal Request. Mining withdrawals are a comprehensive process, which, require a great deal of

Commenter(s)	Citation	Response Code	Rationale
	Owensby - Montana Fish, Wildlife and Parks, Region 4, Great Falls, MT; Summer 2016 Progress Report		administrative review and public engagement that are beyond the scope of this analysis.
Trout Unlimited	GREER, Mavis Ann Loscheider 1995. Archaeological analysis of rock art sites in the smith river drainage of central Montana; Dissertation-University of Missouri-Columbia	IRR	General information, The Smith River corridor is recognized in the 2020 Forest Plan as a special emphasis area and is also an eligible wild and scenic river. A mineral withdrawal is a comprehensive and time-consuming process and it requires a great deal of administrative review, which could take several years of analysis and public engagement before reaching a final decision. A mineral withdrawal is beyond the scope of this analysis and will not be included in this Forest Plan Revision.
Trout Unlimited	Grisak 2012. An Evaluation of Trout Movements in the Upper Smith River Basin; Final Report; By Grant Grisak Montana Fish, Wildlife & Parks. 2012	IRR	General information. The Smith River corridor is recognized in the 2020 Forest Plan as a special emphasis area and is also an eligible wild and scenic river. A mineral withdrawal is a comprehensive and time-consuming process and it requires a great deal of administrative review, which could take several years of analysis and public engagement before reaching a final decision. A mineral withdrawal is beyond the scope of this analysis and will not be included in this Forest Plan Revision.
Trout Unlimited	Grisak et al 2012. Rainbow Trout and Brown Trout Movements Between the Missouri River, Sun River and Smith River, Montana; By: Grant Grisak, Adam Strainer and Brad Tribby-Montana Fish, Wildlife & Parks; 2012	IRR	Literature was provided specifically in support of the Smith River Headwaters Withdrawal Request. Mining withdrawals are a comprehensive process, which, require a great deal of administrative review and public engagement that are beyond the scope of this analysis.
Trout Unlimited	Grisak, 2013. Spawning Times and Locations of Rainbow Trout and Brown Trout in Tributaries to the Smith River, Montana; Prepared by Grant Grisak Montana Fish, Wildlife & Parks; 2013	IRR	Literature was provided specifically in support of the Smith River Headwaters Withdrawal Request. Mining withdrawals are a comprehensive process, which, require a great deal of administrative review and public engagement that are beyond the scope of this analysis.
Trout Unlimited	Kluz 2014. SMITH RIVER STATE PARK AND RIVER CORRIDOR; Visitor Use & Statistics Monitoring Report 2014	IRR	General information. The Smith River corridor is recognized in the 2020 Forest Plan as a special emphasis area and is also an eligible wild and scenic river. A mineral withdrawal is a comprehensive and time-consuming process and it requires a great deal of administrative review, which could take several years of analysis and public engagement before reaching a final decision. A mineral withdrawal is beyond the scope of this analysis and will not be included in this Forest Plan Revision.

Commenter(s)	Citation	Response Code	Rationale
Trout Unlimited	Kluz 2016. MT State Parks: Smith river state park and river corridor, Visitor Use & Statistics Monitoring Report, 2016	IRR	General information. The Smith River corridor is recognized in the 2020 Forest Plan as a special emphasis area and is also an eligible wild and scenic river. A mineral withdrawal is a comprehensive and time-consuming process and it requires a great deal of administrative review, which could take several years of analysis and public engagement before reaching a final decision. A mineral withdrawal is beyond the scope of this analysis and will not be included in this Forest Plan Revision.
Trout Unlimited	Kuipers, J.R., Maest, A.S., MacHardy, K.A., and Lawson, G. 2006. Comparison of Predicted and Actual Water Quality at Hardrock Mines; The reliability of predictions in Environmental Impact Statements	IRR	Tintina proposal is not a FS project, but a State of MT MEPA process. This is outside the scope of forest plan revision.
Trout Unlimited	Maxell, Bryce Alan 2009. State-wide assessment of status, predicted distribution, and landscape-level habitat suitability of amphibians and reptiles in Montana. The University of Montana.	CON/GEN	The values of the Smith River are acknowledged via the creation of the Smith River Corridor emphasis area in the 2020 Forest Plan. Its ecological values are broadly encompassed using other information sources related to riparian ecosystems and wildlife in the FEIS. Information regarding habitats required by amphibians and reptiles was considered in the WSR evaluation process and in development of plan components for various wildlife habitats.
Trout Unlimited	MDTEQ 2016. Montana Final 2016 Water Quality Integrated Report, MT DEQ, 2016	CITE	The publication is cited in the analysis.
Trout Unlimited	Montana online Field Guide. Westslope Cutthroat Trout	CON	The analysis addresses weststlope cutthroat trout using other literature sources equally or more relevant. This species has been added to the SCC list.
Trout Unlimited	MFWP 2005. Environmental assessment: westslope cutthroat trout restoration: transfer of live fish from north fork deep creek to middle fork camas creek	IRR	Literature was provided specifically in support of the Smith River Headwaters Withdrawal Request. Mining withdrawals are a comprehensive process, which, require a great deal of administrative review and public engagement that are beyond the scope of this analysis.
Trout Unlimited	MFWP 2016. Sheep Creek WCT Distribution and Sampling Map, MFWP 2016	IRR	Literature was provided specifically in support of the Smith River Headwaters Withdrawal Request. Mining withdrawals are a comprehensive process, which, require a great deal of administrative review and public engagement that are beyond the scope of this analysis.
Trout Unlimited	MFWP Undated. Deer Hunting Data spreadsheet	IRR	General information. The Smith River corridor is recognized in the 2020 Forest Plan as a special emphasis area and is also an eligible wild and scenic river. A mineral withdrawal is a comprehensive and time-consuming process and it requires a great deal of administrative review, which could take several

Commenter(s)	Citation	Response Code	Rationale
			years of analysis and public engagement before reaching a final decision. A mineral withdrawal is beyond the scope of this analysis and will not be included in this Forest Plan Revision.
Trout Unlimited	MFWP Undated. Elk Hunting Data Spreadsheet	IRR	General information. The Smith River corridor is recognized in the 2020 Forest Plan as a special emphasis area and is also an eligible wild and scenic river. A mineral withdrawal is a comprehensive and time-consuming process and it requires a great deal of administrative review, which could take several years of analysis and public engagement before reaching a final decision. A mineral withdrawal is beyond the scope of this analysis and will not be included in this Forest Plan Revision.
Trout Unlimited	Ritter 2015. CONNECTIVITY IN A MONTANE RIVER BASIN: SALMONID USE OF A MAJOR TRIBUTARY IN THE SMITH RIVER SYSTEM; by Thomas David Ritter, Master's thesis, MSU, 2015	IRR	Literature was provided specifically in support of the Smith River Headwaters Withdrawal Request. Mining withdrawals are a comprehensive process, which, require a great deal of administrative review and public engagement that are beyond the scope of this analysis.
Trout Unlimited	Shepard 1997. Fish Resources within the Tenderfoot Experimental Forest Montana: 1991-95, Final Report, 1997; Shepard and White	IRR	Literature was provided specifically in support of the Smith River Headwaters Withdrawal Request. Mining withdrawals are a comprehensive process, which, require a great deal of administrative review and public engagement that are beyond the scope of this analysis.
Trout Unlimited	Swanson 2012. Future Job Growth in Montana Aligning Education and Workforce Development with Expected Future Job Growth; July 2012; A Report by Larry Swanson	IRR	General information. The Smith River corridor is recognized in the 2020 Forest Plan as a special emphasis area and is also an eligible wild and scenic river. A mineral withdrawal is a comprehensive and time-consuming process and it requires a great deal of administrative review, which could take several years of analysis and public engagement before reaching a final decision. A mineral withdrawal is beyond the scope of this analysis and will not be included in this Forest Plan Revision.
Trout Unlimited	USDI 2016. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MINING CLAIMS Customer Information WITH Serial No. and Claim Name, Tintina. 2016	IRR	A mineral withdraw is beyond the scope of this analysis and will not be included in this Forest Plan Revision.
Trout Unlimited	USDI 2017. BLM ANNOUNCES SOUTHWEST OREGON WITHDRAWAL. More than 100,000 acres of federal lands will be protected to safeguard critical watersheds. Joint News Release, Forest Service Pacific Northwest Region & Bureau of Land Management Oregon/Washington. 2017	IRR	A mineral withdraw is beyond the scope of this analysis and will not be included in this Forest Plan Revision.
Trout Unlimited	VanGenderen 2009. SMITH RIVER STATE PARK AND RIVER CORRIDOR RECREATION	CON	General information. The Smith River corridor is recognized in the 2020 Forest Plan as a special emphasis area and is also an eligible wild and scenic river based on other information sources.

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	MANAGEMENT PLAN Updated July 20, 2009, MT FWP		
Walch, Len	Haak, Amy L. Jack E. Williams, Helen M. Neville, Daniel C. Dauwalter, and Warren T. Colyer. 2010. Conserving Peripheral Trout Populations: The Values and Risks of Life on the Edge.	CON	The status of westslope cutthroat trout is addressed with other literature sources. Westslope cutthroat trout has been identified as an SCC by the Regional Forester.
Warren, Greg	Clark and Stankey 1979. The Recreation Opportunity Spectrum: A Framework for Planning, Management, and Research; General Technical Report, PNW-98 December 1979; Roger N. Clark and George H. Stankey	GEN	Travel planning is outside the scope of the Forest Plan Revision. The concept of ROS was applied and analyzed as described in the 2012 Planning Rule and associated directives.
Warren, Greg	Stankey, George H., Gregory A. Warren, and Warren R. Bacon 1986. Recreation Opportunity Spectrum as a Management Tool, 1986.	GEN	Travel planning is outside the scope of the Forest Plan Revision. The concept of ROS was applied and analyzed as described in the 2012 Planning Rule and associated directives.
Warren, Greg	Warren 2018. Continental Divide National Scenic Trail Planning Handbook, By Greg Warren, 2018	GEN	This topic or process was considered (directly or indirectly through the 2012 planning rule) but not specifically cited.
Western Watersheds Project	Ames 1977. Wildlife conflicts in Riparian Management: Grazing, Charles R. Ames, 1977	DATED	Other more recent citations were used relative to the topic of wildlife and grazing conflicts in riparian areas.
Western Watersheds Project	ANDERSON, Jay E. AND KARL E. HOLTE; 1981. Vegetation Development over 25 Years without Grazing on Sagebrush-dominated Rangeland in Southeastern Idaho	IRR	Publication is focused in Idaho. Sagebrush systems are addressed using information sources more relevant to the HLC NF.
Western Watersheds Project	ANDERSON, Jay E. AND RICHARD S. INOUYE. 2001. LANDSCAPE-SCALE CHANGES IN PLANT SPECIES ABUNDANCE AND BIODIVERSITY OF A SAGEBRUSH STEPPE OVER 45 YEARS	CON	The topic of sagebrush communities and grazing is broadly considered using other information sources.
Western Watersheds Project	Barnett, J. F. and J. A. Crawford. 1994. Pre-laying nutrition of sagegrouse hens in Oregon. J. Range Manage. 47: 114-118.	IRR	There is no occupied sage grouse habitat on NFS lands on HLC NF. Similar information on grazing management practices is covered in other sources more relevant to the HLC NF.
Western Watersheds Project	Beck, J. L. and D. L. Mitchell. 2000. Influences of livestock grazing on sage grouse habitat. Wildl. Soc. Bull. 28(4): 993-1002.	IRR	There is no occupied sage grouse habitat on NFS lands on HLC NF; similar information on grazing management practices cited in other sources more relevant to the HLC NF.
Western Watersheds Project	Beschta, Robert L., Debra L. Donahue, Dominick A. DellaSala, Jonathan J. Rhodes, James R. Karr, Mary H. O'Brien, Thomas L. Fleischner, and Cindy Deacon Williams. 2013. Adapting to Climate Change on	CON	The topic of grazing and climate change was covered using other literature citations equally or more relevant to the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
	Western Public Lands: Addressing the Ecological Effects of Domestic, Wild, and Feral Ungulates.		
Western Watersheds Project	Best, Louis B. 1972. First-year effects of sagebrush control on two sparrows. Journal of Wildlife Management. 36:534- 544;	DATED	Sagebrush habitat is addressed with more recent information sources.
Western Watersheds Project	Blackburn, W.H. 1984. Impact of grazing intensity and specialized grazing systems on watershed characteristics and responses. In: Developing strategies for range management. Westview press: Boulder, CO	DATED	More recent studies on grazing and grazing systems to infiltration and soil impacts or benefits are used.
Western Watersheds Project	Blaisdell, James P.; Murray, Robert B.; McArthur, E. Durant. 1982. Managing Intermountain rangelands--sagebrush-grass ranges. Gen. Tech. Rep. INT-134. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station	IRR	There is no occupied sage-grouse habitat on NFS lands on the HLC NF.
Western Watersheds Project	Bock, C.E., V.A. Saab, T.D. Rich, and D.S. Dobkin. 1993. Effects of livestock grazing on Neotropical migratory landbirds in western North America. Pages 296-309 in D.M. Finch, and P.W. Stangel, editors. Status and management of Neotropical migratory birds. General Technical Report RM-229. Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.	CON	The concept of grazing impacts on wildlife is addressed using other literature sources that are equally or more relevant to the HLC NF.
Western Watersheds Project	Burkhardt, Wayne J.; Tisdale, E. W. 1976. Causes of juniper invasion in southwestern Idaho. Ecology. 57: 472-484	CON	General concepts; older citation specific to southwestern Idaho. The topic of nonforested systems, fire, grazing, exotic annuals, etc. are covered by other more recent references relevant to the HLC NF.
Western Watersheds Project	Call, M. W. and C. Maser. 1985. Wildlife habitats in managed rangelands – the Great Basin of southeastern Oregon: sage grouse. Gen. Tech. Rep. PNW-187. U.S. Forest Service, Pacific Northwest Forest and Range Exp. Stn. Portland, OR.	IRR	Citation specific to Oregon and sage-grouse. There is no occupied sage grouse habitat on the HLC NF. The topics of nonforested systems and the impacts of grazing are addressed with other citations more relevant to the HLC NF.
Western Watersheds Project	CAMERON L. ALDRIDGE and R. MARK BRIGHAM, 2003. Distribution, Abundance, and Status of the Greater Sage-Grouse, Centrocercus urophasianus, in Canada.	IRR	Sage-grouse do not occupy NFS lands in plan area; study based in Canada on small isolated population

Commenter(s)	Citation	Response Code	Rationale
Western Watersheds Project	Charles R. and Bruce B. Carpenter, 2005. Stocking Rate and Grazing Management	CON	The issue of drought and grazing is addressed using other information sources that are equally or more relevant to the HLC NF. The techniques recommended in this paper could be applied through adaptive management or administrative actions.
Western Watersheds Project	Christensen, N.L. et. al. 1996. The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management. Ecological Applications 6:665-691	CON	The topic of sagebrush communities and grazing is broadly considered using other information sources.
Western Watersheds Project	Coates, P. S. 2007. Greater Sage-grouse (Centrocercus urophasianus) nest predation and incubation behavior. Ph.D. Diss. Idaho State Univ. Pocatello, ID.	IRR	There is no occupied sage-grouse habitat on NFS lands on HLC NF. Similar information on grazing management practices cited in other sources more relevant to the HLC NF.
Western Watersheds Project	Coggins, K. A. 1998. Relationship between habitat changes and productivity of sage grouse at Hart Mountain National Antelope Refuge. Oregon. M.S. thesis. Oregon State University. Corvallis	IRR	There is no occupied sage-grouse habitat on NFS lands on HLC NF. Similar information on grazing management practices cited in other sources more relevant to the HLC NF.
Western Watersheds Project	Connelly, J. W. and C. E. Braun. 1997. Long-term changes in sage-grouse Centrocercus urophasianus populations in western North America. Wildl. Biol. 3: 229-234	IRR	There is no occupied sage-grouse habitat on NFS lands on HLC NF. Similar information on grazing management practices cited in other sources more relevant to the HLC NF.
Western Watersheds Project	Connelly, J. W., S. T. Knick, M. A. Schroeder, S. J. Stiver. 2004. Conservation assessment of Greater Sage-grouse and sagebrush habitats. Western Association of Fish and Wildlife Agencies. Cheyenne, WY.	IRR	There is no occupied sage-grouse habitat on NFS lands on HLC NF. Similar information on grazing management practices cited in other sources more relevant to the HLC NF.
Western Watersheds Project	Davis, J.W. 1982. Livestock vs. riparian habitat management--there are solutions. Pages 175-184 in L. Nelson, J.M. Peek, and P.D. Dalke, editors. Proceedings of the wildlife-livestock relationships symposium. Forest, Wildlife, and Range Experiment Station, University of Idaho, Moscow, Idaho.	CON	General range management concepts; this topic is covered using other citations equally or more relevant to the HLC NF.
Western Watersheds Project	Dyksterhuis, E. J. 1949. Condition and management of range land based on quantitative ecology. Journal of Range Management 2:104-115.	CON	This citation may be a source to consider for site specific projects. The broad topic of rangeland conditions is addressed using other citations more relevant to the forest plan revision process for the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
Western Watersheds Project	Earnst, Susan L., Jennifer A. Ballard, and David S. Dobkin. 2004. Riparian songbird abundance a decade after cattle removal on Hart Mountain and Sheldon National Wildlife Refuges. USDA Forest Service PSW-GTR-191.	IRR	Study is located in an area that differs from the HLC NF; and cattle management practices that may not be consistent with those of the FS.
Western Watersheds Project	Eckert, Richard E. Jr., and John S. Spencer.1986. Vegetation response on allotments grazed under rest-rotation management. Journal of Range Management. 39:166-174	CON	The topic of sagebrush communities and grazing is broadly considered using other information sources.
Western Watersheds Project	Elmore, W., and B. Kauffman. 1994. A Riparian and Watershed Systems: Degradation and Restoration In M. Vavra, W.A. Laycock, and R.D. Pieper (eds), Ecological Implications of Livestock Herbivory 1994 West. Soc. Range Management: Denver, CO.	CITE	Grazing can occur while streams are improving if all ecological components are linked. This publication is cited in the analysis.
Western Watersheds Project	Feist, Francis G. 1968. Breeding-bird populations on sagebrush-grassland habitat in central Montana. Audubon Field Notes. 22:691-695	DATED	Sagebrush habitat is addressed with more recent information sources.
Western Watersheds Project	Flather, C.H., et.al. 1994. Species endangerment patterns in the United States. USDA Forest Serv. Gen. Tech. Rep. RM-241.	CON	The topic of impacts of grazing on wildlife is addressed using other information sources equally or more relevant to the HLC NF.
Western Watersheds Project	Galt, Dee, Francisco Molinar, Joe Navarro, Jamus Joseph and Jerry Holechek. 2000. Grazing capacity and stocking rate. Rangelands 22(6):7-11.	CON	The topic of grazing capacity/stocking is addressed using other information sources equally or more relevant to the HLC NF.
Western Watersheds Project	Grinnell, J Et Al, 1930. Vertebrate Natural History of a Section of Northern California through the Lassen Peak Region. University of California publications in zoology. 35:1-594.	DATED	This is a large book from 1930, cited as general reference, with no specific section identified in the comment. Sagebrush habitat is addressed with more recent information sources.
Western Watersheds Project	Hodgkinson, Harmon S. 1989. Big sagebrush subspecies and management implications.	CON	The general topic of sagebrush habitat is covered using other information sources equally or more relevant to the HLC NF.
Western Watersheds Project	Holechek, Jerry L., and Thor Stephenson. 1983. Comparison of big sagebrush vegetation in northcentral New Mexico under moderately grazed and grazing excluded conditions.	IRR	Study is specific to New Mexico. Sagebrush is addressed using other citations more relevant to the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
Western Watersheds Project	Holechek, Jerry L., Hilton Gomez, Francisco Molinar and Dee Galt. 1999. Grazing studies: what we've learned.	IRR	This reference would be more appropriate for a site-specific analysis; not directly relevant to forest plan revision.
Western Watersheds Project	Holloran, M. J. and S. H. Anderson. 2005. Spatial distribution of Greater Sage-grouse nests in relatively contiguous sagebrush habitats.	IRR	There is no occupied sage-grouse habitat on NFS lands on the HLC NF.
Western Watersheds Project	Hutchings, S.S. and G. Stewart. 1953. Increasing forage yields and sheep production on Intermountain winter ranges. U.S. Department of Agriculture Circular 925	CON	Somewhat dated information; this topic is covered by other citations equally or more relevant to the HLC NF.
Western Watersheds Project	Jones, K.B. 1981. Effects of grazing on lizard abundance and diversity in western Arizona. Southwestern Naturalist 26: 107-115.	IRR	Study is specific to lizards and habitat conditions in Arizona.
Western Watersheds Project	Knick, S. T., A. L. Holmes, R. F. Miller. 2005. The role of fire in structuring sagebrush habitats and bird communities. FIRE AND AVIAN ECOLOGY IN NORTH AMERICA. Studies in Avian Biology, no. 30.	CITE	Cited in the Livestock Grazing analysis in the Fire and fuels section.
Western Watersheds Project	Knick, S. T., D. S. Dobkin, J. T. Rotenberry, M. A. Schroeder, W. M. Vander Haegen, C. van Riper. 2003.Teetering on the edge or too late? Conservation and research issues for avifauna of sagebrush habitats. Condor 105(4): 611-634.	CON	The topic of sagebrush communities and grazing is broadly considered using other information sources.
Western Watersheds Project	Knick, S.T. 1999. Requiem for a Sagebrush Ecosystem? Northwest Science 73:53-57	CON	The topic of sagebrush communities and grazing is broadly considered using other information sources.
Western Watersheds Project	Knick, Steven T. and John T. Rotenberry. 1995. Landscape characteristics of fragmented shrub steppe habitats and breeding passerine birds.	IRR	The general concepts in this paper may apply; but the HLC NF plan area supports different sagebrush habitats than this study. Fuels and vegetation treatments on the HLC NF are geared towards conifer encroachment issues which threaten conversion of shrublands to woodlands.

Commenter(s)	Citation	Response Code	Rationale
Western Watersheds Project	Kovalchik, B.L., and W. Elmore. 1992. Effects of cattle grazing systems on willow-dominated plant associations in central Oregon. Pages 111-119 in W.P Clary, E.D. McArthur, D. Bedunah, and C.L. Wambolt, compilers. Proceedings--Symposium on ecology and management of riparian shrub communities. General Technical Report INT-289. Forest Service, Intermountain Research Station, Ogden, Utah.	CITE	Information regarding grazing systems and utilization; relationship to streambank stability and effective riparian veg., riparian areas production estimates. Publication is cited in the analysis.
Western Watersheds Project	Krueper, David, Jonathan Bart and Terrell D. Rich. 2003. Response of vegetation and breeding birds to the removal of cattle on the San Pedro River, Arizona (U.S.A.). Conservation Biology 17(2):607-615	IRR	Study specific to Arizona; found increase in bird numbers with increase in cover. The impacts of grazing on wildlife is covered using other information more relevant to the HLC NF.
Western Watersheds Project	Medin, Dean E., Bruce L. Welch and Warren P. Clary. 2000. Bird habitat relationships along a Great Basin elevational gradient. USDA Forest Service Rocky Mountain Research Station Research Paper RMRS-RP-23.	IRR	Study specific to Pocatello area; the topic of riparian species is broadly covered using information sources equally or more relevant to the HLC NF.
Western Watersheds Project	Miller, R. F., S. T. Knick, D. A. Pyke, C. W. Meinke, S. E. Hanser, M. J. Wisdom, A. L. Hild. 2011. Characteristics of sagebrush habitats and limitations to long-term conservation. Pages 145-184 in S. T. Knick and J. W. Connelly (eds). Greater Sage-Grouse: Ecology and Conservation of a Landscape Species and its Habitants. Studies in Avian Biol. Series, vol. 38.	CON	The issue of invasive grasses and livestock is addressed using other citations equally or more relevant to the HLC NF.
Western Watersheds Project	Mosconi, S.L., and R.L. Hutto. 1982. The effect of grazing on the land birds of a western Montana riparian habitat. In L. Nelson, J.M. Peek, and P.D. Dalke, editors. Proceedings of the wildlife-livestock relationships symposium. Forest, Wildlife, and Range Experiment Station, University of Idaho, Moscow, Idaho.	CON	General concepts of higher cover equals higher diversity. Other references used to cover this topic that are equally or more relevant to the HLC NF.
Western Watersheds Project	Mueggler, W. F. 1985. Vegetation associations. In: DeByle, Norbert V.; Winokur, Robert P., eds. Aspen: ecology and management in the western United States. Gen. Tech. Rep. RM-119.	CON	Mueggler 1985 is used as a basis for the nonforested vegetation classification used (see appendix D of the 2020 Forest Plan). The topics of grazing, sagebrush, and aspen are covered with other literature sources.

Commenter(s)	Citation	Response Code	Rationale
Western Watersheds Project	Nick, S. T., S. E. Hanser, R. F. Miller, D. A. Pyke, M. J. Wisdom, S. P. Finn, E. T. Rinkes, C. J. Henny. 2011. Ecological influence and pathways of land use in sagebrush. KPages 203-251 in S. T. Knick and J. W. Connelly (eds). GREATER SAGE-GROUSE: ECOLOGY AND CONSERVATION OF A LANDSCAPE SPECIES AND ITS HABITATS. Studies in Avian Biol. Series, vol. 38.	CON	The topic of sagebrush communities and grazing is broadly considered using other information sources.
Western Watersheds Project	Noss, Reed, et.al. 1995. Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation. Biological Report 28. National Biological Service,	CON	The topic of sagebrush communities and grazing is broadly considered using other information sources.
Western Watersheds Project	Parrish, Jimmie R., Frank Howe and Russell Norvell. 2002. Utah Partners in Flight Avian Conservation Strategy Version 2.0. Utah Division of Wildlife Publication No. 02-27.	CON	Study is specific to Utah; wildlife habitat conditions and impacts are addressed with other literature sources more relevant to the HLC NF.
Western Watersheds Project	Pearson, L.C. 1965. Primary production in grazed and ungrazed desert communities of eastern Idaho. Ecology. 46:278-285	CON	The topic of sagebrush communities and grazing is broadly considered using other information sources.
Western Watersheds Project	Pederson, E. K., J. W. Connelly, J. R. Hendrickson, W. E. Grant. 2003. Effect of sheep grazing and fire on sage grouse populations in southeastern Idaho.	IRR	There is no occupied sage grouse habitat on NFS lands on the HLC NF.
Western Watersheds Project	Peek, James M.; Riggs, Robert A.; Lauer, Jerry L. 1979. Evaluation of fall burning on bighorn sheep winter range. Journal of Range Management. 32(6): 430-432	IRR	Citation is dated and more applicable to site-specific projects; not directly relevant to the forest plan revision process.
Western Watersheds Project	Petersen, Kenneth L. and Louis B. Best. 1985. Nest-site selection by sage sparrows. Condor. 57:217-221.	IRR	The general concepts in this paper may apply; but the HLC NF plan area supports different sagebrush habitats than this study. Fuels and vegetation treatments on the HLC NF are geared towards conifer encroachment issues which threaten conversion of shrublands to woodlands.
Western Watersheds Project	Petersen, Kenneth L. and Louis B. Best. 1986. Diets of nesting sage sparrows and Brewer's sparrow in an Idaho sagebrush community. Journal of Field Ornithology. 57:283-294	IRR	The general concepts in this paper may apply; but the HLC NF plan area supports different sagebrush habitats than this study. Fuels and vegetation treatments on the HLC NF are geared towards conifer encroachment issues which threaten conversion of shrublands to woodlands.

Commenter(s)	Citation	Response Code	Rationale
Western Watersheds Project	Petersen, Kenneth L. and Louis B. Best. 1991. Nest site selection by sage thrashers in southeastern Idaho. Great Basin Naturalist. 51:261-266	IRR	The general concepts in this paper may apply; but the HLC NF plan area supports different sagebrush habitats than this study. Fuels and vegetation treatments on the HLC NF are geared towards conifer encroachment issues which threaten conversion of shrublands to woodlands.
Western Watersheds Project	Peterson, Joel G. 1995. Ecological implications of sagebrush manipulation – A literature review. Montana Fish wildlife and Parks, Wildlife Management Division, Helena, MT	CON	The topic of sagebrush communities and grazing is broadly considered using other information sources.
Western Watersheds Project	Platts, William S. 1981. Influence of Forest and Rangeland Management on Anadromous Fish Habitat in Western North America – Effects of Livestock Grazing. General Technical Report PNW 124, USDA Pacific Northwest Forest and Range Experiment Station, Boise, ID	CON	The topic of livestock grazing impacts is addressed with other literature that is equally or more relevant to the HLC NF.
Western Watersheds Project	Quinn, M.A., and D.D. Walgenbach. 1990. Influence of grazing history on the community structure of grasshoppers of a mixed-grass prairie. Environmental Entomology 19: 1756-1766	CON	The topic of grazing and native plants is addressed using other citations that are equally or more relevant to the HLC NF.
Western Watersheds Project	Rampton, J. 1993. National Wildlife Federation v. BLM, No. UT-06-91-01 US Dep't of Interior, Office of Hearings & Appeals, Hearings Div. p. 23, the "Comb Wash Allotment" decision	IRR	The 2020 Forest Plan and analysis are consistent with law, regulation, and policy related to livestock grazing and multiple uses.
Western Watersheds Project	Reisner, Michael D.; Grace, James B.; Pyke, David A.; Doescher, Paul S. 2013. Conditions favoring Bromus tectorum dominance of endangered sagebrush steppe ecosystems. Journal of Applied Ecology.	CITE	This publication is cited in the invasives and grazing sections.
Western Watersheds Project	Reynolds, Timothy D. and Charles H. Trost. 1980. The response of native vertebrate populations to crested wheatgrass planting and grazing by sheep. Journal of Range Management. 33:122-125	IRR	The general concepts in this paper may apply; but the HLC NF plan area supports different sagebrush habitats than this study. Fuels and vegetation treatments on the HLC NF are geared towards conifer encroachment issues which threaten conversion of shrublands to woodlands.
Western Watersheds Project	Reynolds, Timothy D. and Charles H. Trost. 1981. Grazing, crested wheatgrass, and bird populations in southeastern Idaho. Northwest Science. 55:225-234	IRR	The general concepts in this paper may apply; but the HLC NF plan area supports different sagebrush habitats than this study. Fuels and vegetation treatments on the HLC NF are geared towards conifer encroachment issues which threaten conversion of shrublands to woodlands.

Commenter(s)	Citation	Response Code	Rationale
Western Watersheds Project	Rich, Terrell D. 2002. Using breeding land birds in the assessment of western riparian systems. Wildlife Society Bulletin 30(4):1128-1139	IRR	Not directly applicable to the forest plan revision process.
Western Watersheds Project	Schwan, H.E., Donald J. Hodges and Clayton N. Weaver. 1949. Influence of grazing and mulch on forage growth. Journal of Range Management 2(3):142-148	DATED	The general concept of grazing and forage is addressed with more recent and relevant information sources.
Western Watersheds Project	Szaro, R.C. 1989. Riparian forest and scrubland community types of Arizona and New Mexico. Desert Plants 9 (3-4): 69-138	IRR	Paper focuses on southwestern plant communities. General grazing concepts and riparian management captured with other information sources more relevant to the HLC NF.
Western Watersheds Project	Szaro, R.C., S.C. Belfit, J.K. Aitkin, and J.N. Rinne. 1985. Impact of grazing on a riparian garter snake. Pages 359-363 in R.R. Johnson, C.D. Ziebell, D.R. Patton, P.F. Ffolliott, and F.H. Hamre, technical coordinators. Riparian ecosystems and their management: reconciling conflicting uses. General Technical Report RM-120.	CON	General topic of grazing impacts on wildlife is covered using other citations that are equally or more relevant to the HLC NF.
Western Watersheds Project	Taylor, Daniel M. 1986. Effects of cattle grazing on passerine birds nesting in riparian habitat. Journal of Range Management 39(3):254-258	CON	The impacts of grazing on wildlife habitat is addressed using other literature sources more relevant to the HLC NF.
Western Watersheds Project	Trimble, S.W., and A.C. Mendel. 1995. The Cow as a Geomorphic Agent, A Critical Review. Geomorphology 13: 1995.	CON	These general concepts are covered by other references used that are equally or more relevant to the HLC NF.
Western Watersheds Project	USDI 2012. The Department of the Interior's Economic Contributions: Fiscal Year 2011, July 9, 2012, 152	CON	The topic of the relative economic benefits of recreation and livestock grazing is addressed as appropriate using information sources more relevant to the HLC NF.
Western Watersheds Project	USGAO 1998. Public Rangelands: some riparian areas restored, but widespread improvement will be slow. U.S. General Accounting Office. 1988.	CON	The topic of livestock grazing impacts is addressed with other literature that is equally or more relevant to the HLC NF.
Western Watersheds Project	Vallentine, J. F. 1990. GRAZING MANAGEMENT. Academic Press. San Diego, CA.	CON	The economic considerations of livestock grazing are addressed with other information sources relevant to the HLC NF.

Commenter(s)	Citation	Response Code	Rationale
Western Watersheds Project	Wagner, F.H. 1978. Livestock grazing and the livestock industry. Pages 121-145 in H.P. Brokaw, editor Wildlife and America. Council on Environmental Quality, Washington, D.C.	DATED	Publication is dated; more recent information is used to consider the impacts of grazing on wildlife.
Western Watersheds Project	WALCHECK, Kenneth C. 1970. Nesting bird ecology of four plant communities in the Missouri river breaks, Montana	IRR	Considerations for sagebrush habitat is based on other literature relevant to the HLC NF.
Western Watersheds Project	Wambolt Carl L. and Harrie W. Sherwood. 1999. Sagebrush response to ungulate browsing in Yellowstone. S Journal of Range Management. 52:363-369.	IRR	Publication describes heavy browse pressure from big game especially elk on northern winter range; this is a different scenario than the sagebrush habitat in the Plan area.
Western Watersheds Project	Wambolt, C. L.; Creamer, W. H.; Rossi, R. J. 1994.Predicting big sagebrush winter forage by subspecies and browse form class. Journal of Range Management. 47(3): 231-234	CON	The topic of sagebrush communities and grazing is broadly considered using other information sources.
Western Watersheds Project	Wambolt, Carl L. 1995. Elk and mule deer use of sagebrush for winter forage. Montana Ag Research. 12(2): 35-40	IRR	Study focuses on wildlife dependency of sagebrush on winter range; there are different issues of scope within the plan area.
Western Watersheds Project	Wambolt, Carl L. 1996. Mule deer and elk foraging preference for 4 sagebrush taxa. Journal of Range Management. 49(6): 499-503	IRR	Study focuses on wildlife dependency of sagebrush on winter range; there are different issues of scope within the plan area.
Western Watersheds Project	Wambolt, Carl L. and Myles J. Watts. 1996. High stocking rate potential for controlling Wyoming big sagebrush. In: Barrow, Jerry R. et. al. comps. Proceedings: shrubland ecosystems dynamics in a changing environment. 1995 May 23-25; Las Cruces, NM. Gen. Tech. Rep. INT-GTR-338. Ogden, UT: USDA Forest Service, Intermountain Research Station	CON	The topic of sagebrush communities and grazing is broadly considered using other information sources.
Western Watersheds Project	Welch, Bruce L. and Craig Criddle. 2003. Countering Misinformation Concerning Big Sagebrush. USDA Forest Service Rocky Mountain Research Station RBRS-RP-40.	NOT RLB	Paper has some good general information to consider for sagebrush range sites and is a FS document, but also has some writer bias. Regional Forester's letter accompanies document as a disclaimer. Non-scientific, more of an opinion article.

Commenter(s)	Citation	Response Code	Rationale
Western Watersheds Project	Welch, Bruce L.; Briggs, Steven F.; Johansen, James H. 1996. Big sagebrush seed storage. Res. Note INT-RN-430. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station	CON	The topic of sagebrush habitat is covered using other literature sources equally or more relevant to the HLC NF.
Western Watersheds Project	Welch, Bruce L.; Wagstaff, Fred J.; Roberson, Jay A. 1991. Preference of wintering sage-grouse for big sagebrush. Journal of Range Management. 44(5): 462-465.	IRR	There is no occupied sage grouse habitat on NFS lands on the HLC NF.
Western Watersheds Project	West, Neil E. 1988. Intermountain deserts, shrub steppes, and woodlands. In: Barbour, Michael G.; Billings, William Dwight, eds. North American terrestrial vegetation. Cambridge; New York: Cambridge University Press: 209-230.	IRR	Sagebrush systems and grazing impacts are addressed using information sources more relevant to the HLC NF.
Western Watersheds Project	Winter, B. M. and Louis B. Best. 1985. Effect of prescribed burning on placement of sage sparrow nests. Condor. 87:294-295.	CON	The concepts of cover needs are captured in other information sources equally or more relevant to the HLC NF.
Western Watersheds Project	Wisdom, M. J., M. M. Rowland, R. J. Tausch. 2005. Effective management strategies for sage-grouse and sagebrush: a question of triage? Trans. N. Wildl. Nat. Res. Conf. 70: 206-227	IRR	Publication is focused in the Great Basin; there is no occupied sage grouse habitat on NFS lands on the HLC NF.
Western Watersheds Project	Woodyard, John, Melissa Renfro, Bruce L. Welch and Kristina Heister. 2003. A 20-year recount of bird populations along a Great Basin elevational gradient. USDA Forest Service Rocky Mountain Research Station Research Paper RMRSRP-43.	IRR	Study is specific to Nevada.
Wild Earth Guardians	456 F3d 955 Great Basin Mine Watch v. Hankins Usa	IRR	The cumulative effects analysis for the HLC NF forest plan revision is consistent with existing law, regulation, and policy.
Wild Earth Guardians	Birdsall et al 2012. Roads Impact the Distribution of Noxious Weeds More Than Restoration Treatments in a Lodgepole Pine Forest in Montana, U.S.A.	CON	The impacts of roads are covered as appropriate using information sources equally or more relevant to the HLC NF plan revision process.
Wild Earth Guardians	Chase 2016. What Happens to Lynx When Beetles Eat the Forests?	CON	The influences of mountain pine beetle and other disturbances on lynx habitat conditions is considered using other information equally or more relevant to the HLC NF, at the programmatic level. For example, vegetation modeling incorporated current and potential future infestations.

Commenter(s)	Citation	Response Code	Rationale
Wild Earth Guardians	CONNER v. BURFORD 1988	IRR	The effects analysis for the HLC NF forest plan revision is consistent with existing law, regulation, and policy.
Wild Earth Guardians	Copeland et al 1996. Seasonal Habitat Associations of the Wolverine in Central Idaho	CON	Heinemeyer et al. 2017 is cited which covers this topic.
Wild Earth Guardians	Cottonwood Environmental Law Center v. United States Forest Service 2015	GEN	Plan components are consistent and in support of bull trout recovery efforts. The FEIS (pg. 60 and 109) and 2020 Forest Plan mention forest requirements under the Northern Region Bull Trout Conservation Strategy specifically, obligations of the HLC under the bull trout Columbia Headwaters Recovery Unit Implementation Plan.
Wild Earth Guardians	Executive Order 11644 - Appendix A – Executive Orders	IRR	The 2020 Forest Plan and associated analysis for the HLC NF forest plan revision is consistent with existing law, regulation, and policy.
Wild Earth Guardians	Executive Order 13653 --Preparing the United States for the Impacts of Climate Change	IRR	Executive order "Promoting Energy Independence and Economic Growth" (March 2017) rescinded Executive Order 13653 (Preparing the U.S. for the Impacts of Climate Change).
Wild Earth Guardians	French & Harper 2016. Clarification on Conservation Watersheds in Land Management Plans	GEN	The 2020 Forest Plan and associated analysis for the HLC NF forest plan revision is consistent with existing law, regulation, and policy, including direction on conservation watersheds in the 2012 planning rule.
Wild Earth Guardians	FRIENDS OF WILD SWAN, INC. v. U.S. FOREST SERVICE	GEN	Plan components are consistent and in support of bull trout recovery efforts. The FEIS (pg. 60 and 109) and 2020 Forest Plan mention forest requirements under the Northern Region Bull Trout Conservation Strategy specifically, obligations of the HLC under the bull trout Columbia Headwaters Recovery Unit Implementation Plan.
Wild Earth Guardians	Heinemeyer et al 2001. Aerial Surveys for Wolverine Presence and Potential Winter Recreation Impacts to Predicted Wolverine Denning Habitats in the Southwestern Yellowstone Ecosystem.	AUTH	A more recent work on this topic, by this author, is cited (Heinemeyer et al. 2017).
Wild Earth Guardians	Heinemeyer et al 2014. Recovery of Wolverines in the Western United States: Recent Extirpation and Recolonization or Range Retraction or Expansion.	AUTH	A more recent work on this topic, by this author, is cited (Heinemeyer et al. 2017).

Commenter(s)	Citation	Response Code	Rationale
Wild Earth Guardians	Heinemeyer, Kim and Jeff Copeland 1999. Wolverine Denning Habitat and Surveys on the Targhee National Forest 1998-1999 Annual Report Kim Heinemeyer and Jeff Copeland	INC	This is a preliminary study; page 20 of 22 paragraph 1: "It is preliminary to draw conclusions on potential impacts to wolverine based on a single survey effort."
Wild Earth Guardians	Horan 2016. DEFENDERS OF WILDLIFE V. JEWELL (D. MONT. 2016)	CON	The topic of wolverine habitat was considered using other literature more relevant to the HLC NF forest plan revision process.
Wild Earth Guardians	Hornocker and Hash 1981. Ecology of the wolverine in northwestern Montana.	CITE	This publication is cited in the analysis.
Wild Earth Guardians	Landa et al 1998. Active wolverine Gulo gulo dens as a minimum population estimator in Scandinavia	CON	Heinemeyer et al. 2017 is cited which covers this topic.
Wild Earth Guardians	McKelvey 2016. Sampling large Geographic areas for rare species using environmental DNA: a study of bull trout Salvinenus confluenctus occupancy in Western Montana	CITE	Environmental DNA is an accepted tool for inventory and monitoring or rare species such as bull trout distribution. This was incorporated in the FEIS on page 58 of the FEIS.
Wild Earth Guardians	Olliff 1999. Effects of winter recreation on wildlife of the Greater Yellowstone area: a literature review and assessment	IRR	Broad review of potential winter recreation effects on wildlife population; the effects are more appropriate when considering local actions (i.e., specific trail or access locations) rather than forest plan revision.
Wild Earth Guardians	Paulsen v. Daniels 2005.	IRR	The 2020 Forest Plan and associated analysis for the HLC NF forest plan revision is consistent with existing law, regulation, and policy.
Wild Earth Guardians	Ruggierio et al 2000. Wolverine Conservation and Management	CON	Citation is a reference to general description of natural history; this topic is covered by other information sources equally or more relevant to the HLC NF.
Wild Earth Guardians	The Wilderness Society 2014. Transportation Infrastructure and Access on National Forest and Grasslands: A Literature Review	Gen	The forest is managed for multiple resource benefits and to manage all resources, roads are required for access. Plan components within the Forest Plan address the need to limit the road system to roads required for that access and roads no longer needed for that purpose will be decommissioned on a project by project basis to benefit fish and wildlife habitat as well as other resources.
Wild Earth Guardians	USDA 2012. Travel Management, Implementation of 36 CFR, Part 202, Subpart A (36 CFR 212.5(b))	Gen, LRP	The Travel Analysis Report (TAR) for the Helena NF was completed September 8, 2015 and for the Lewis and Clark NF was completed September 21, 2015.

Commenter(s)	Citation	Response Code	Rationale
Wild Earth Guardians	USDA 2014. US Department of Agriculture Climate Change Adaptation Plan	GEN	Executive order "Promoting Energy Independence and Economic Growth" (March 2017) rescinded Executive Order 13653 (Preparing the U.S. for the Impacts of Climate Change), which impacts the USDA 2014 Adaptation Plan that required the development of adaptation plans. The HLC NF does not have an adaptation plan for a resilient road system but does incorporate plan components for water and infrastructure that provides for infrastructure sustainability.
Wild Earth Guardians	USFWS 1998. BIOLOGICAL OPINION for the Effects to Bull Trout from .Continued Implementation of Land and Resource Management Plans and Resource Management Plans as Amended by the Interim Strategy for Managing Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, Western Montana, and Portions of Nevada (INFISH), and the Interim Strategy for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH).	GEN	Plan components are consistent and in support of bull trout recovery efforts. The FEIS (pg. 60 and 109) and 2020 Forest Plan mention forest requirements under the Northern Region Bull Trout Conservation Strategy specifically, obligations of the HLC under the bull trout Columbia Headwaters Recovery Unit Implementation Plan.
Wild Earth Guardians	USFWS 2016. Species Status Assessment for the Canada Lynx	GEN	Report gives a 'Draft' assessment of lynx in contiguous U.S., with the smallest consideration at the distinct population segment which is a scale much greater than HLC, moreover, the issues presented in the document are considered within existing laws, regulations, and policies governing lynx management. The BA for Canada Lynx cites the species status assessment from 2017.
Wild Earth Guardians	USFWS. Biological Opinion on the proposed Divide Travel Plan (Travel Plan), pursuant to Section 7 of the Endangered Species Act of 1973. Effects	IRR	The Divide Travel Plan Biological Opinion pertains to a specific project area outside the spatial and temporal scale appropriate for the plan area/land management plan. Plan components are consistent and make mention of forest obligations for bull trout recovery under the Northern Region bull trout conservation strategy and the Columbia Headwaters Recovery Unit Implementation Plan.
Wild Earth Guardians	Wild Earth Guardians 2015. Letter to the Acting Flathead NF Forest Supervisor, re: NOI amending Forest Plan incorporating the NCDE Grizzly Bear Plan	IRR	Information is specific to the Flathead NF; not directly applicable to the HLC NF forest plan revision process.

Commenter(s)	Citation	Response Code	Rationale
Wild Earth Guardians	Wild Earth Guardians 2016. DEIS Comments re: Forest Plan Revision of the Flathead NF and the NCDE Grizzly Bear Conservation Strategy	GEN	Plan components are consistent and in support of bull trout recovery efforts. The FEIS (pg. 60 and 109) and 2020 Forest Plan mention forest requirements under the Northern Region Bull Trout Conservation Strategy specifically, obligations of the HLC under the bull trout Columbia Headwaters Recovery Unit Implementation Plan.
Wild Earth Guardians	WildEarth Guardians v. Montana Snowmobile Association	IRR	Not scientific information that would inform forest plan revision.
Wild Earth Guardians	Wilderness Society 2016. Achieving Compliance with the executive order "Minimization Criteria" for Off Road Vehicle Use on Federal Public Lands: Background Cases, and Recommendations	IRR	Complying with executive orders would be required as part of existing law, regulation, and policy. The more specific recommendations in the paper are related to travel planning and implementation, which is outside the scope of the HLC NF forest plan revision process.
Wild Earth Guardians	Winter Wildlands Alliance v. US Forest Service	Gen	Over snow vehicle use and the areas that pertain to them were considered the analysis for Recreation Access in the FEIS. Site-specific recommendations for travel plan closures is beyond the scope of the analysis for the 2020 Forest Plan.
Wildlife Conservation Society	Redford, Kent H. and Eva Fearn 2007. Protected Areas and Human LIVELIHOODS.	IRR	Broad in scope; not directly relevant to the forest plan revision process on the HLC NF.
Winter Wildlands Alliance	Gehman 2016. Winter Wildlife Surveys in the Little Prickly Pear Creek area of the Helena National Forest, Year Two. Report prepared by Steve Gehman, Wild Things Unlimited. May 2016.	CON	These surveys were not specifically cited, but specialist knowledge of this information and the associated public comments were taken into consideration when including the Nevada Mountain RWA in several alternatives, including the preferred alternative.
Winter Wildlands Alliance	Outdoor Foundation 2016. Outdoor Recreation Participation Topline Report.	CON	Report is nationwide in scale. Levels of use and expected trends for recreation activities, including backcountry skiing, was considered using information more relevant to the HLC NF plan area. The 2020 Forest Plan provides the appropriate programmatic framework for supporting this use sustainably on the landscape.

Commenter(s)	Citation	Response Code	Rationale
Winter Wildlands Alliance	Switalski 2016. Journal of COnservation Planning Vol. 12 (2016) 1-7; Snowmobile Best Management Practices for Forest Service Travel Planning: A Comprehensive Literature Review and Recommendations for Management- Introduction to Snowmobile Management and Policy	CON	The potential impacts from, and management strategies for, snowmobile use were considered in the analysis for ROS settings in the 2020 Forest Plan, which specify broadly whether winter over-snow motorized uses are suitable or not in a given area. At the Forest Planning level, this analysis is general in nature and the Forest Plan does not include site-specific travel management, which is addressed by travel plans.
Winter Wildlands Alliance	USDA 2009. Winter Recreation Sustainability Analysis, Deschutes National Forest, 2009	IRR	The 2020 Forest Plan follows the national definitions and guidance for assigning ROS classes, as required by the 2012 Planning Rule and associated directives.
Zammit, Tony	MFWP Montana Statewide Elk Management Plan	CITE	The publication was cited in the analysis.