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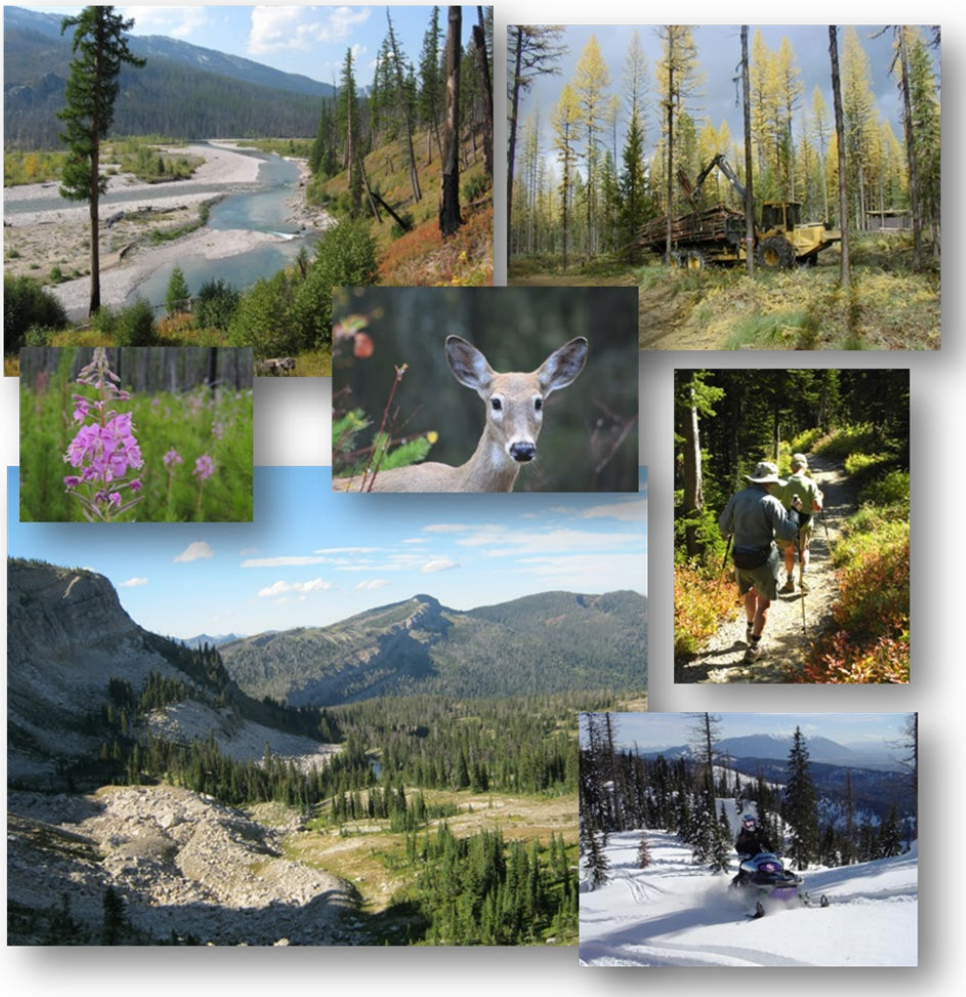
Biennial Monitoring Evaluation Report for the Flathead National Forest (2019-2020)



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About our Plan Monitoring Program

Purpose

The purpose of the biennial monitoring evaluation report (BMER) is to help the responsible official determine whether a change is needed in forest plan direction, such as plan components or other plan content that guide management of resources in the plan area. Providing timely, accurate monitoring information to the responsible official and the public is a key requirement of the plan monitoring program. This BMER is the vehicle for disseminating this information.

The BMER represents one part of the Forest Service's overall monitoring program for this national forest unit. This report is not a decision document—it evaluates monitoring questions presented in the Monitoring Program found in chapter 5 of the Flathead National Forest Plan.

This report briefly summarizes the results of the forest plan monitoring task. Detailed information on how the monitoring was accomplished and the results of the monitoring for each resource area is documented within the individual resource specialist reports. These guides are located in the project record of this BMER.

How Our Plan Monitoring Program Works

Monitoring and evaluation requirements have been established through the National Forest Management Act (NFMA) at 36 CFR 219. Additional direction is provided by the Forest Service in Chapter 30 – Monitoring – of the Land Management Handbook (FSH 1909.12). This direction informed the development of the Flathead National Forest monitoring program during the 2018 revision of the Land and Resource Management Plan (the Flathead Forest Plan). Chapter 5 of the Flathead Forest Plan outlines the monitoring questions and indicators that were selected to inform the management of resources on the plan area. Not every plan component was determined necessary to track [36 CFR 219.12(a)(2)]. See Chapter 5 (Monitoring Program) of the Flathead Forest Plan at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd603502.pdf for a discussion on how the monitoring questions were selected and consistency with the 2012 planning regulations 36 CFR 219.12.

Monitoring evaluation specialist reports have been developed for individual resource areas and are part of the overall plan monitoring program. The specialist reports serve as the primary location for information needed to conduct the monitoring and to record the results. They provide specific direction for implementing the plan monitoring program, and include details on the monitoring questions, indicators, the plan components that are being monitored, the monitoring methods, data sources, and roles and responsibilities.

The monitoring evaluation specialist reports also provide the detailed results of monitoring for the resource area and the discussion of the results. Depending on the resource area, results from multiple monitoring cycles may be included in the specialist reports, enabling past monitoring results and trends to be viewed and readily evaluated.

Monitoring Objectives

The objectives of our plan monitoring plan include:

- Assess the current condition and trend of selected forest resources.
- Document implementation of the Plan monitoring Program
- Evaluate relevant assumptions, changed conditions, management effectiveness, and progress towards achieving the selected desired conditions, objectives, and goals described in the Forest Plan.
- Assess the status of previous recommended options for change based on previous monitoring & evaluation reports.
- Document scheduled monitoring actions that have not been completed and the reasons and rationale why.
- Present any new information not outlined in the current plan monitoring program that is relevant to the evaluation of the selected monitoring questions.
- Incorporate broader scale monitoring information from the Regional Broader Scale Monitoring Strategy that is relevant to the understanding of the selected monitoring question.
- Present recommended change opportunities to the responsible official.

Monitoring Results Summary

This is the first biennial monitoring report since the revised Flathead National Forest Plan was adopted in December of 2018. The results of monitoring are documented in detail within the monitoring evaluation specialist reports for each resource area, which are part of the project record for this biennial monitoring report. Evaluation of the results for the adaptive management finding and recommendations for change, if any, are described in the specialist reports. Table 1 provides a summary of these findings and recommendations for all 76 monitoring items, for line officer consideration. Status Summary Reports for each resource area follow these tables, and provide a brief summary of the monitoring results, as well as further details on the specific recommendations for change. A link to the monitoring evaluation specialist reports for each resource area is provided in the Status Summary Reports.

Table 1. Summary of findings for each plan monitoring item/question

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
AQUATIC ECOSYSTEMS				
MON-WTR-01: What are the changed conditions of instream physical habitat parameters in managed vs. unmanaged sites?	Yes	Yes (E)	No change warranted except to add the following indicators from MON-WTR-05: **IND-WTR-10** (Number of bull trout redds) **IND-WTR-11** (Fish density -number/100 sq meters)	6
MON-WTR-02: To what extent are forest management activities moving towards habitat objectives for native fish?	Yes (with recommended edits)	Yes (E)	**Reword IND-WTR-03**: Number of fish passage barriers removed or created, *and the miles/acres of resource improvement.*	5
			Reword IND-WTR-05: Number of culverts removed or upgraded, *and the miles/acres of resource improvement*	5
			Reword IND-WTR-06: Number of other habitat improvement activities, *and the miles/acres of resource improvement*	5
MON-WTR-03: What vegetation treatment activities have occurred in the riparian management zone?	Yes (with recommended edits)	Uncertain (A)	**Reword ND-WTR-08**: Miles of ~~road entries and road crossings~~ *new road construction and perennial stream crossings* inside riparian management zones	4
MON-WTR-04: What is the condition of water quality in waterbodies?	Yes	Yes (E)	No change warranted	NA
MON-WTR-05: What is the status of native fish populations?	Yes (with recommended edits)	Yes (E)	**Drop this question.** **Move IND-WTR-10** (Number of bull trout redds) **to MON-WTR-01** **Move IND-WTR-1** (Fish density -number/100 sq meters) to **MON-WTR-01** **Drop IND-WTR-12**. ~~Degree of hybridization (MFWP data, red counts)~~	3

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
MON-WTR-06: Do management activities contribute nutrients to Flathead Lake?	No	Modeling results show a very low estimated proportion of nutrients produced from management activities on NFS lands and the unlikelihood of a direct cause and effect relationship between management on FNF lands and conditions in Flathead Lake.	**Drop this monitoring question**. (~~Do management activities contribute nutrients to Flathead Lake?~~)	7
MON-WTR-07: What is the status of streambanks within grazing allotments?	Yes (with recommended edits)	Uncertain (B)	**Drop IND-WTR-15**: (~~Percent stubble height~~). IND-WTR-14 provides sufficient information for evaluation and is consistent with methods/data sources.	5, 7
			Reword IND-WTR-14: Change from "Percent streambank alteration" TO *Percentage of stable streambanks for Squaw Meadows and Griffin Creeks, within the 2 active grazing allotments that have accessible streams*.	5
			Forest Plan Component noted in monitoring plan is incorrect. FW-GDL-05 should be replaced by FS-GDL-GR-04.	8
TERRESTRIAL ECOSYSTEMS and FOCAL SPECIES				

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
MON-TE&V-01: What is the change in key ecosystem characteristics for forest and non-forest vegetation?	Yes (with recommended edits)	Uncertain (B)	**Reword IND-TE&V-06**: Change from "Very large tree presence—proportion of area forestwide and by potential vegetation type" TO *Proportion of area (FW and by PVT) where large and very large tree structural components occur at densities that contribute to ecosystem functions*. **Reword IND-TE&V-07**: Change from "Very large tree density, trees per acre. All species combined as well as for these species groups: cedar, Douglas-fir, larch, ponderosa pine, western white pine, cottonwood" TO *Density (tpa) of very large live trees, by PVT (Snag Analysis Group), Inside and Outside Wilderness/Roadless areas*. **Reword IND-TE&V-08**: Change from "Snag density: Snags per acre ≥ 10 inches d.b.h.; ≥ 15 inches d.b.h.; ≥ 20 inches d.b.h., forestwide and by PVT" TO Snag *density: Snags per acre ≥ 10 inches d.b.h.; ≥ 15 inches d.b.h.; ≥ 20 inches d.b.h. by PVT (Snag Analysis Group)*	1
MON-TE&V-02: What is the change in amount and severity of wildfire and the status of fire regimes?	Yes (with recommended edits)	Uncertain (B)	**Reference to forest plan component FW-DC-TE&V-03 being monitored is incorrect** (should be dropped). Monitoring question does not relate specifically enough to this DC.	8
MON-TE&V-03: What is the change in insect hazard and root disease severity?	Yes (with recommended edits)	Uncertain (B)	**Reword IND-TE&V-10**: DROP western spruce budworm from the indicator: Acres or percent of Douglas-fir beetle hazard, mountain pine beetle hazard, ~~*western spruce budworm hazard*~~, and root disease severity	1

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
			Reference to forest plan component FW-DC-TE&V-03 being monitored is incorrect (should be dropped). Monitoring question does not relate specifically enough to this DC.	8
MON-TE&V-04: How many acres of vegetation treatments are occurring that contribute to maintaining or moving towards achieving desired conditions in the plan?	Yes	Yes (E)	No change warranted	NA
MON-TE&V-05: To what extent have management actions maintained required levels of snags or snag replacement trees within harvest units?	Yes	Uncertain (A)	No change warranted	NA
MON-TE&V Focal-01: What is the change in ecological conditions within the warm-moist and cool-moist PVTs, as indicated by conditions suitable for western white pine?	Yes (with recommended edits)	Uncertain (B)	**Drop IND-TE&V-Focal-02**: ~~Proportion (percentage of total acres) forestwide of forest size classes in the areas where western white pine is present~~	1, 2
MON-TE&V Focal-02: What management actions are contributing to the restoration of western white pine?	Yes	Uncertain (B)	No change warranted	NA
PLANT SPECIES AT RISK/ OF CONSERVATION CONCERN				
MON-PLANT-01: What is the status of water howellia in areas where disturbances (natural or human-caused) have occurred?	Yes (with recommended edits)	Yes (E)	**Add FW-GDL-PLANT-01 to the forest plan components being monitored**	8
MON-PLANT-02: How are ecological conditions in the cold PVT affecting whitebark pine populations and habitats?	Yes (with recommended edits)	Uncertain (B)	**Drop IND-PLANT-04**: (~~Proportion (percentage of total acres) forestwide of forest size classes in the areas where whitebark pine is present.~~)	1, 2
MON-PLANT-03: What management actions are contributing to the restoration of whitebark pine?	Yes	Yes (E)	No change warranted	NA
MON-PLANT DIV-01: What is the status of the known occurrences of plant species of conservation concern?	Yes	Uncertain (B)	No change warranted	NA

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
NON NATIVE INVASIVE PLANTS				
MON-NNIP-01: What is the status of plant communities at highest risk of negative impacts to their system functions from established or new invaders?	Yes (with recommended edits)	Uncertain (B)	**Change wording of monitoring question** to: *What is the status of acres infested on the Forest by non-native invasive plants, and the treatments of invasive plant infestations?* **Reword IND-NNIP-01**: Change FROM "Percent of invasive plant species cover within identified high-risk/high-priority areas. These would include such areas as forests of the warm-dry PVT, dry grassland plant communities, wilderness trailheads, and management area 3b (special areas) TO *Acres infested by invasive plant species.* **Add new indicator IND-NNIP-01a**: *Acres treated for invasive plants.*	1
			ADD forest plan component FW-OBJ-NNIP-01 to the list of plan components that are being monitored by this item	8
MON-NNIP-02: What management actions are contributing to coordination and cooperation with adjacent landowners and partners in managing non-native invasive weeds?	Yes (with recommended edits)	Yes (E)	**Reference to forest plan component FW-DC-P&C-16 is incorrect** (should be instead **FW-DC-P&C-17**)	8
SOIL PRODUCTIVITY				
MON-SOIL-01: To what extent are vegetation management activities not causing irreversible damage to soil conditions?	Yes	Uncertain (B)	No change warranted	NA
MON-SOIL-02: How many miles of temporary road are constructed and rehabilitated?	Yes (with recommended edits)	Uncertain (B)	**Add wording to the monitoring question to read**: "How many miles of temporary road are constructed and rehabilitated, *and was soil function successfully restored as a result*?"	4
FIRE AND FUELS				

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
MON-FIRE-01: What management actions are contributing towards reducing wildland fuels?	Yes	Yes (E)	No change warranted	NA
MON-FIRE-02: To what extent is natural fire used to achieve desired ecological, social, or economic conditions?	Yes	Yes (E)	No change warranted	NA
MON-FIRE-03: To what extent is prescribed fire used to achieve desired ecological, social, or economic conditions?	Yes	Yes (E)	No change warranted	NA
WILDLIFE THREATENED AND ENDANGERED				
GRIZZLY BEAR:				
MON-NCDE-01: Within the NCDE primary conservation area, what is the level of secure core, open motorized route density (> 1 square mile) and total motorized route density (> 2 square miles) within each bear management subunit during the non-denning season?	Yes	Yes (E)	No change warranted	NA
MON-NCDE-02: a) Within the NCDE PCA, what is the number and overnight capacity of developed recreation sites designed and managed for overnight use on NFS lands within each bear management unit, and how does this compare to the baseline? b) Within the NCDE primary conservation area, what is the status of administrative sites, day-use developed recreation sites, and trailheads in each bear management unit?	Yes	Yes (E)	No change warranted	NA
MON-NCDE-03: Within the NCDE primary conservation area, is there a change in the number of allotments? Have conflicts occurred between grizzly bears and livestock on NFS lands?	Yes	Yes (E)	No change warranted	NA

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
MON-NCDE-04: If new leasable and locatable mineral activities occur in the PCA, do the record of decision and permit/plan of operation include a monitoring plan for changes in habitat and/or measures to avoid, minimize, or mitigate environmental impacts to grizzly bears or their habitat?	Yes	Yes (E)	No change warranted	NA
MON-NCDE-05: Within the NCDE primary conservation area, what is the status of grizzly bear subunits that have temporary increases in motorized access due to projects (see glossary)?	Yes	Yes (E)	No change warranted	NA
MON-NCDE-06: Within the NCDE primary conservation area, are projects (see glossary) completed within the five-year time period specified by guideline FW-GDL-IFS-01?	Yes	Uncertain (A)	No change warranted	NA
MON-NCDE-07: In the Salish DCA, what is the density of roads and motorized trails on NFS lands that are open to public use during the non-denning season? In zone 1 outside the Salish DCA, what is the density of roads on NFS lands that are open to public use during the non-denning season?	Yes	Yes (E)	No change warranted	NA
MON-NCDE-08: What is the risk of human disturbance in areas modeled as grizzly bear denning habitat during the den emergence time period (see glossary)?	Yes	Yes (E)	No change warranted	NA
CANADA LYNX:				

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
MON-LYNX-01: How much of lynx critical habitat does not yet provide stand initiation snowshoe hare habitat (PCE1a) but is progressing towards providing PCE1a?	Yes (with recommended edits)	Yes (E)	**Drop a word in the monitoring question**: How much of lynx ~~critical~~ habitat does not yet provide stand initiation snowshoe hare habitat (PCE1a) but is progressing towards providing PCE1a? **Drop a word in IND-LYNX-01** and **IND-LYNX-02**: (01) Percentage of lynx ~~critical~~ habitat on NFS lands in each lynx analysis unit that is not yet winter snowshoe hare habitat due to wildfire. (02) Percentage of lynx ~~critical~~ habitat on NFS lands in each lynx analysis unit that is not yet winter snowshoe hare habitat due to vegetation management projects	4, 6
MON-LYNX-02: What is the percentage of lynx critical habitat that has vegetation treatments in stand initiation hare habitat (PCE1a)?	Yes – but this monitoring item is dropped because results are included in another monitoring question (MON-LYNX-05)	NA – monitoring question dropped (results are covered in another monitoring item)	**Drop monitoring question**: data is provided under MON-LYNX-05: What is the percentage of lynx critical habitat that has vegetation treatments in stand initiation hare habitat (PCE1a)? **Drop IND-LYNX-03**: ~~Number of acres of lynx critical habitat on NFS lands in each lynx analysis unit that were pre-commercially thinned using exceptions to VEGS5.~~ **Drop IND-LYNX-04**. ~~Number of acres of lynx critical habitat on NFS lands in each lynx analysis unit that were pre-commercially thinned using wildland-urban interface exemptions to VEGS5~~	3

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
MON-LYNX-03: If modified precommercial thinning techniques are used in lynx critical habitat, do they increase snowshoe hare habitat (PCE1a) and/or its persistence?	Yes (with recommended edits)	Yes (E)	**Drop a word in the monitoring question**: If modified precommercial thinning techniques are used in lynx ~~critical~~ habitat, do they increase snowshoe hare habitat (PCE1a) and/or its persistence? **Drop a word in IND-LYNX-05**: Number of acres of lynx ~~critical~~ habitat that were treated with modified thinning techniques under VEG S5 exception #2 or #3.	4, 6
MON-LYNX-04: What is the percentage of lynx critical habitat that has vegetation treatments in multistoried hare habitat (PCE1a)?	Yes – but this monitoring item is dropped because results are included in another monitoring item (MON-LYNX-05)	NA – monitoring question dropped (results are covered in another monitoring item)	**Drop monitoring question**: data is covered under MON-LYNX-05: ~~What is the percentage of lynx critical habitat that has vegetation treatments in multistoried hare habitat (PCE1a)?~~ **Drop IND-LYNX-07**: ~~Number of acres of multistory hare habitat in lynx critical habitat on NFS lands in each lynx analysis unit that were treated using exceptions to VEGS6~~. **Drop IND-LYNX-08:** ~~Number of acres of multistory hare habitat in lynx critical habitat on NFS lands in each lynx analysis unit that were treated using wildland-urban interface exemptions to VEGS6~~	3
MON-LYNX-05: Are fuel treatment and vegetation management projects compliant with the Canada lynx vegetation standards in the Northern Rockies Lynx Management Direction?	Yes (with recommended edits)	Yes (E)	**Change year in IND-LYNX-09 and IND-LYNX-13**: (-09) "Cumulative total acres of fuel treatment projects in lynx habitat conducted under exemptions to standards VEGS1, S2, S5, and S6 within the WUI (as defined by HFRA), by LAU and forestwide, since the end of ~~2017~~ 2018". (-13) "Cumulative total acres of vegetation treatments conducted under exceptions to VEG S5 and VEGS6 since the end of ~~2017~~ 2018".	5

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
WILDLIFE OTHER SPECIES / HABITAT				
MON-WL-01: What is the status of habitat conditions that support harlequin ducks during the nesting season?	Yes	Uncertain (B)	No change warranted	NA
MON-WL-02: What is the status of habitat conditions that support flammulated owls during the nesting season?	Yes (with recommended edits)	Uncertain (B)	**Reword IND-WL-05**: Change from:" Percentage of the warm-dry PVTs with presence of live trees and dead trees (ponderosa pine preferable) greater than or equal to 15 inches d.b.h." TO: *The conditions of five attributes associated with flammulated owl habitat.* *1. In the warm-dry PVT, acres with presence of live ponderosa pine 15"+ DBH* *2. In the warm-dry PVT acres with presence of dead ponderosa pine 15"+ DBH* *3. In the warm-dry PVT acres with presence of both live and dead ponderosa pine 15"+ DBH* *4. In the Ponderosa pine Dominance type, Acres with canopy cover <=40%* *5. In the Ponderosa pine Dominance type, Proportion (%) with canopy cover <=40%*	1, 5, 6
			Drop IND-WL-07: ~~Density (canopy cover) in the ponderosa pine dominance type forestwide~~ (it is combined into IND-WL-05)	3

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
MON-WL-03: What is the status of habitat conditions that support fisher?	Yes (with recommended edits)	Uncertain (A)	**Reword IND-WL-09**: Change FROM "Percentage of area in the warm-moist PVT where very large live trees and very large dead trees (>=20" DBH) are present" TO the following: **I*ND-WL-09a***. *Percent of NFS lands in the Warm Moist PVT with at least one snag/acre greater than or equal to 20 inches d.b.h. Inside and Outside Wilderness/Roadless areas.* **ADD new indicator IND-WL-09b**: *Density (tpa) of very large live trees in the warm moist PVT, Inside and Outside Wilderness/Roadless areas*. **ADD new indicator IND-WL-9c**: *Proportion of warm moist PVT where large and very large tree structural components occur at densities that contribute to ecosystem functions.*	1, 5
			Reword IND-WL-10: "Acres ~~and percent of area in the warm moist PVT~~ that meets modeled habitat criteria for fisher winter and summer habitat (as classified in the R1 Summary database, using FIA data)".	5
MON-WL-04: What is the status of forest conditions that support wildlife habitat connectivity for fisher and other species?	Yes (with recommended edits)	Uncertain (B)	**Reword IND-WL-11**: In the areas of the Forest ~~where the warm-moist PVT with presence of western red cedar or western hemlock is concentrated~~ modeled as potential fisher habitat, what is the landscape pattern of forests with tree size class 5 inches or greater DBH (small, medium, large and very large forest size classes), and tree canopy cover is greater than 40%?	5
MON-WL-05: What is the status of habitat conditions that support Clark's nutcrackers during the nesting season?	Yes (with recommended	Uncertain (B)	**Reword IND-WL-15**: "Trees per acre of live whitebark pine greater than or equal to 10 inches d.b.h. ~~in the Cold PVT~~."	6

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
	edits)		**Drop IND-WL-16**: ~~Basal area per acre of live whitebark pine greater than or equal to 10 inches d.b.h., in the Cold PVT~~	2
MON-WL-06: What is the status of habitat conditions that support Townsend's big-eared bats and other bat species?	Yes (with recommended edits)	Uncertain (C)	**Reword IND-WL-19**: Change from: "Number of caves or structures (e.g., old buildings) surveyed and number of detections of Townsend's big-eared bats or other bat species." TO the following "*Number of grid cell acoustic surveys and number of detections of each bat species*"	5, 6
MON-WL-07: What is the status of habitat conditions that support common loons on code A territorial nesting lakes?	Yes (with recommended edits)	Yes (E)	**Reference to forest plan component FW-GDL-WL DIV-03** is incorrect (should be instead FW-GDL-WL DIV-05)	8
MON-WL-08: What is the status of habitat for wildlife species associated with hardwood tree habitats on NFS lands?	Yes	Yes (E)	No change warranted	NA
MON-WL-09: What is the status of habitat for wildlife species associated with grass/forb/shrub habitats on NFS lands?	Yes (with recommended edits)	Yes (E)	**Reword IND-WL-27**: Change from "Percentage of NFS lands in the grass/forb/shrub condition class" TO "*Percentage/acres of NFS lands that are grass, forb or shrub non-forest lifeform and percentage/acres of NFS lands that are seedling forest size class.*" **Reword IND-WL-28**: Number of acres treated ~~to promote grass/forb/shrub habitats for wildlife~~ to maintain or restore key ungulate winter grass/forb/shrub habitats.	4

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
MON-WL-10: What is the status of habitat for wildlife species associated with snags and potential live snag replacement trees in the 20-inch-or-greater d.b.h. class?	Yes (with recommended edits)	Uncertain (A)	**Reword IND-WL-30**: Change from: "Percentage of NFS lands with presence of snags greater than or equal to 20 inches d.b.h. in each PVT" TO the following: "Percent of NFS lands with presence of ~~snags~~ *at least 1 snag per acre* greater than or equal to 20 inches d.b.h. in each PVT, *Inside and Outside Wilderness/Roadless areas*." **Reword IND-WL-32**: Change FROM: "Average number of live trees per acre greater than or equal to 20 inches d.b.h. in each PVT" TO the following: "*Density (tpa) of Live trees greater than or equal to 20 inches d.b.h.(tpa) in each PVT, Inside and Outside Wilderness/Roadless areas*."	1
MON-WL-11: What is the status of habitat for wildlife species associated with snags and potential live snag replacement trees in the 10-inch or greater d.b.h. class?	Yes (with recommended edits)	Uncertain (A)	**Reword IND-WL-33**: Change FROM "Percentage of NFS lands with presence of snags greater than or equal to 10 inches d.b.h. in each PVT" TO "*Percent* of NFS lands with presence of ~~snags~~ *at least 1 snag per acre* greater than or equal to 10 inches d.b.h. in each PVT, *Inside and Outside Wilderness/Roadless areas*. **Reword IND-WL-35**: Change FROM "Average number of live trees per acre greater than or equal to 15 inches d.b.h. in each PVT" TO the following: *Density (tpa) of Live trees greater than or equal to 15 inches d.b.h. (tpa) in each PVT, Inside and Outside Wilderness/Roadless areas*.	1
MON-WL-12: What is the status of habitat for wildlife species associated with downed woody material?	Yes	Uncertain (A)	No change warranted	NA

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
MON-WL-13: What is the status of habitat for wildlife species associated with forests burned with moderate- to high-severity wildfire?	Yes (with recommended edits)	Uncertain (B)	**Reword IND-WL-37**: "Forestwide acres burned by wildfire ~~by severity class (low, medium, high)~~ in *the* previous decade	5
			Reword IND-WL-41: For wildfires with salvage harvest, number of *standing and downed* trees per acre greater than 20-inch d.b.h. retained within salvage harvest units that were verified old-growth forest prior to the fire	4
MON-WL-14: What is the risk of human disturbance in areas modeled as wolverine maternal denning habitat during the time period of February 15 to May 15?	Yes	Uncertain (B)	No change warranted	NA
MON-WL-15: What is the status of the breeding season bird community on the Forest (including neo-tropical migratory birds)?	Yes (with recommended edits)	Uncertain (B)	**Reword IND-WL-44**: Bird species ~~presence~~ *observations and occupancy* on the Forest based upon data collected for Integrated Monitoring in Bird Conservation Regions	5
			Reword IND-WL-46: Bird species for which there are statistically significant ~~changes in Bird Conservation Region 10.s~~ *(95% credible interval) population changes (trends- compare FNF with MT-Bird Conservation Region 10*	4
MON-WL-16: What is the status of the aquatic amphibian community on the Forest?	Yes	Uncertain (B) & (C)	No change warranted	NA
MON-WL-17: What is the status of forest mesocarnivores (e.g., lynx, wolverine, fisher) on the Forest?	Yes	Uncertain (A)	No change warranted	NA
RECREATIONAL USES AND TRAILS				
MON-REC-01: What is the status of visitor use?	Yes (with recommended edits)	Uncertain (A)	**Reference to forest plan components should be FW-DC-REC-04, FW-DC-REC-14, and FW-DC-REC-15**	8

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
MON-REC-02: Are facilities maintained to users' satisfaction?	Yes	Uncertain (A)	**Reference to forest plan components should be FW-DC-REC-04, FW-DC-REC-14, and FW-DC-REC-15**	8
MON-REC-03: Are the recreation objectives in the plan being achieved??	Yes (with recommended edits)	Yes (E)	**Reference to forest plan components should be FW-OBJ-REC-01; FW-OBJ-REC-03; FW-OBJ-REC-04; GA-NF-OBJ-02; GA-SV-MA7-Crane-OBJ-01; GA-SM-OBJ-01; GA-SM-OBJ-02; GA-SM-MA7-Blacktailski-OBJ-01**	8
MON-REC-04: Are current recreation settings and opportunities meeting or moving toward desired recreation settings and opportunities?	Yes	Yes (E)	No change warranted	NA
MON-IFS-03: What is the status of the trail system on the Forest?	Yes	Yes (E)	No change warranted	NA
ROAD INFRASTRUCTURE				
MON-IFS-01: Are road closure devices effective at restricting public motorized use?	Yes	Uncertain (B)	No change warranted	NA
MON-IFS-02: What is the status of the road system on the Forest?	Yes (with recommended edits)	Yes (E)	**Reword IND-IFS-08**. Change FROM ~~Number of culverts inspected, assessed, and/or cleaned~~. (See indicator on culvert inspection for Bull Trout in Aquatics section.). TO: *Miles of new road construction*.	3, 6
			Reference to forest plan component FW-GDL-IFS-03 should be dropped	6
WILD AND SCENIC RIVERS, WILDERNESS, & INVENTORIED ROADLESS				
MON-MA2a-01: Are the statutory requirements (outstandingly remarkable values, water quality, and free-flowing conditions) of the three forks of the Flathead Wild and Scenic River being protected?	Yes	Yes (E)	No change warranted	NA

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
MON-MA2b-01: Are the outstandingly remarkable values for which the river was deemed eligible and the free-flowing conditions protected?	Yes	Uncertain (B)	No change warranted	NA
MON-WILD-01: Do management activities in designated wilderness areas preserve and protect wilderness character?	Yes	Yes (E)	No change warranted	NA
MON-RWILD-01: Do outcomes from management activities protect the wilderness characteristics of the recommended wilderness area?	Yes	Yes (E)	No change warranted	NA
MON-IRAs-01: Do outcomes from management actions maintain roadless area characteristics within inventoried roadless areas?	Yes	Yes (E)	No change warranted	NA
SCENERY				
MON-SCN-01: Is the existing condition and trend of the scenic character meeting or moving toward desired conditions??	Yes	Yes (E)	No change warranted	NA
TIMBER PRODUCTION				
MON-TIMB-01: How are management actions contributing to a sustainable mix of forest products in response to market demands?	Yes	Yes (E)	No change warranted	NA
MON-TIMB-02: How are management actions contributing to the recovery of economic value of dead or dying trees on suitable lands?	Yes	Yes (E)	No change warranted	NA
SOCIAL AND ECONOMIC				

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
MON-S&E-01: To what extent is the Forest providing goods and services for local communities?	Yes (with recommended edits)	Yes (E)	**Reword IND-S&E-01**. "Levels of production of *tangible* multiple uses, including timber products, grazing, recreational visits, ~~wilderness hunting and fishing opportunities,~~ and downhill skiing ~~(as measured through day visits, night visits, local and non-local visits, animal unit months, thousand cubic feet of harvest and sales)~~	5
MON-S&E-02: To what extent is the Forest contributing to desired conditions for a stable and functioning local economy?	Yes	Yes (E)	No change warranted	NA
MON-S&E-03: To what extent do opportunities to connect people, including youth, with nature exist across the Forest?	Yes (with recommended edits)	Yes (E)	**Reword monitoring question**. Change FROM: "To what extent do opportunities to connect people, including youth, with nature exist across the Forest?" TO the following: *"To what extent are there opportunities for all people, including youth, to connect with the Forest through conservation education, interpretive and visitor information programs across the Forest?"* **Reword IND-S&E-04**. "Number and type of ~~education and youth programs; national visitor use monitoring report IND-REC-01; visitor center tracking~~ *education, interpretative, visitor info programs*." **Reword IND-S&E-05**. "Number of people, *including* youth, participating in ~~various~~ Forest education, *interpretive and visitor info programs.*"	4
MON-S&E-04: Is the cost of implementing the forest plan consistent with projections?	Yes	Yes (E)	No change warranted	NA
CULTURAL RESOURCES				

Monitoring Item/Question	Plan Monitoring Results [1]	Plan Implementation Status [2]	Recommendation	Reason for Change [3]
MON-CR-01: To what extent are cultural resource objectives being met, and are they trending towards desired conditions to identify, evaluate, and nominate cultural resources for listing in the National Register of Historic Places?	Yes	Yes (E)	No change warranted	NA
MON-CR-02: To what extent are plan components ensuring treaty rights are preserved and trending towards desired conditions for consultation with each tribe?	Yes	Yes (E)	No change warranted	NA

[1] Does the monitoring question/indicator(s) provide the information necessary to understand the status of the associated plan component?

[2] Plan implementation status:

A. UNCERTAIN – Availability of data or Interval of data collection beyond this reporting cycle (indicate date of next time this monitoring item will be evaluated).
B. UNCERTAIN – More time/data are needed to understand status or progress toward achieving plan components.
C. UNCERTAIN – Methods inadequate to assess the status or progress towards achieving plan components.
D. NO - Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired.
E. YES - Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired.

[3] Reasons:

1. Rewording to be consistent with the regionally produced Broad Scale Monitoring Strategy (BSMS) reports, resulting in improved efficiency of forest plan monitoring task.
2. Dropped because of high workload or complexity of analysis required to compile data, and results do not contribute sufficient value to the evaluation of conditions for the resource. Often there are multiple indicators for one monitoring question.
3. Dropped because the data is already very similar or equal to information provided by another monitoring item or indicator.
4. Changes in monitoring item or indicator to clarify purpose/intent.
5. Changes in monitoring item or indicator to be consistent with methods or data sources that are used.
6. Changes in monitoring item or indicator to provide data or results that are more pertinent or meaningful to the evaluation.
7. Dropped because irrelevant, does not provide useful data related to the Forest Plan component being monitored.
8. Typos or errors in identification of the forest plan components that are being monitored by the monitoring item.

Status Summary Reports by Resource Area

Status of Aquatic Ecosystems

Summary

Monitoring aquatic ecosystem status is important in the determination of whether a suite of biological and physical attributes, processes, and functions of riparian and aquatic systems are being degraded, maintained, or restored across the Forest. Monitoring water quality and other stream conditions is conducted to ensure healthy and resilient habitat conditions for key native fish species is maintained, particularly bull trout (a federally listed species) and westslope cutthroat trout. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018).

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-WTR-01: What are the changed conditions of instream physical habitat parameters in managed vs. unmanaged sites?	FW-DC-WTR-04
MON-WTR-02: To what extent are forest management activities moving towards habitat objectives for native fish?	FW-OBJ-WTR-01, 02, 03, 04 FW-OBJ-CWN-01
MON-WTR-03: What vegetation treatment activities have occurred in the riparian management zone?	FW-OBJ-RMZ-01 FW-STD-RMZ-02, 05, 06; FW-GDL-RMZ-08, 09, 10, 11, 12, 13, 14, 15 FW-GDL-CWN-01
MON-WTR-04: What is the condition of water quality in waterbodies?	FW-DC-WTR-06
MON-WTR-05: What is the status of native fish populations?	FW-DC-CWN-01
MON-WTR-06: Do management activities contribute nutrients to Flathead Lake?	FW-DC-WTR-17
MON-WTR-07: What is the status of streambanks within grazing allotments?	FW-GDL-GR-04

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the aquatic ecosystem monitoring guide and evaluation of results report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998008.pdf.

Key Results

MON-WTR-01: What are the changed conditions of instream physical habitat parameters in managed vs. unmanaged sites? PIBO data (data collected to address the National PACFISH/INFISH Biological Opinion) indicates that streams in managed watersheds are similar to those in reference watersheds, and that management activities have little impact. INFISH components, as carried forward in the revised forest plan, continues to protect aquatic habitats and move conditions in managed stream segments towards conditions in reference watersheds. It also suggests that INFISH has been an effective management strategy to improve and maintain stream habitat. The PIBO habitat data is reflective of several years of past management. INFISH was established in 1995, so it has had almost 25 years of implementation.

The McNeil core sample data can only be used to assess trends. Without stream morphology data, streams that have core samples cannot be compared to each other or to reference streams. Preliminary analysis suggests that core sample data may not be responsive to management activities. We will continue to keep this indicator until the next monitoring report and determine whether this indicator should be kept, dropped, or modified.

MON-WTR-02: To what extent are forest management activities moving towards habitat objectives for native fish? The Flathead Forest is doing watershed and aquatic improvement work that is consistent with forest plan direction. In most cases, this work is associated with forest health and fuel projects. There were a number of activities that were conducted in 2019 and 2020 that included culvert removals, culvert upgrades, road storage, dam removal, channel reconstruction, etc. New forest health and fuel decisions that were signed after the forest plan was revised are either being implemented at this time or will be in the future – they will be reported in the next monitoring evaluation report.

MON-WTR-03: What vegetation treatment activities have occurred in the riparian management zone? Vegetation management projects that have decisions since adoption of the plan (decisions in 2019 or 2020) are the following: Taylor Hellroaring, Crystal Cedar, Salish Good, March Madness, and Hellroaring Basin Improvements Project (Whitefish Mountain ski area improvements). The proposed treatments within outer and/or inner riparian management zones (RMZ) in the decisions for each of these projects is listed below:

Taylor Hellroaring

- 0 acres

Crystal Cedar

- Outer RMZ: 288 acres intermediate harvest, 35 acres regeneration harvest = 323 acres
- Inner RMZ: 8 acres sapling thin

Salish Good

- Outer RMZ: 2 acres regen, 16 acres understory removal, 45 acres sapling thin, 42 acres hardwood release, 19 ac possible prescribed burning = 124 acres
- Inner RMZ: 16 ac understory removal, 45 acres sapling thin, 8 ac possible prescribed burning, 25 acres hardwood release = 94 acres

March Madness

- Inner and Outer RMZ – 20 acres of salvage

Hellroaring Basin Improvement Project

- 0 acres

The three vegetation management projects with planned treatments in RMZs are still being implemented. Treatments within RMZs have not yet been completed so there is no information at this time for this monitoring report but will be provided in the 2023 forest-wide monitoring report.

MON-WTR-04: What is the condition of water quality in waterbodies? There are currently twelve waterbodies or portions of waterbodies that are listed as impaired in the Montana Department of Environmental Quality (DEQ) integrated report (305b/303d; Table 2). This serves as a baseline for future monitoring cycles, with a goal of reducing the number of listed waterbodies over time. The table below summarizes listed water bodies within, adjacent to, or immediately downstream of NFS lands. Detailed information about each listed water body is provided by the Montana Department of Environmental Quality at https://deq.mt.gov/water. Information and extensive data are available in numerous assessments, non-point source management plans, TMDLs, and model results.

Table 2. Impaired Waterbodies adjacent to, within, or immediately downstream of NFS land. Source: 2020 Integrated Water Quality Report and 303(d) List

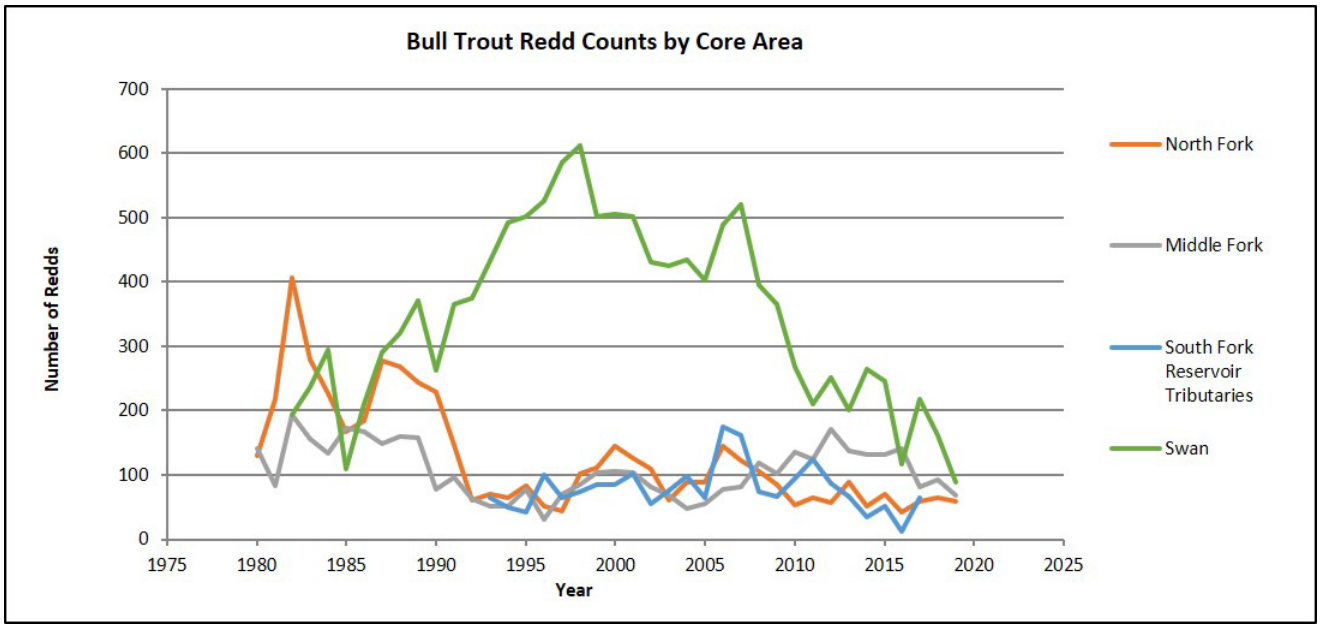
Impaired Waterbody	Cause
Coal Creek, from headwaters to South Fork	Alteration in stream-side or littoral vegetative covers
Coal Creek, from South Fork to mouth North Fork Flathead River	Sedimentation/Siltation
Ashley Creek, from Ashley Lake to Smith Lake	Alternation in streamside or litoral vegetative covers, Chlorophyl-a, dissolved oxygen, total nitrogen, sedimentation/siltation, temperature
Flathead Lake	Mercury, total nitrogen, total phosphorus, poly Chlorinated biphenyls (PCBs)
Lake Mary Ronan	Chlorophyll-a
South Fork Flathead River, from HH Dam to mouth	Flow regime modification
Logan Creek, from headwaters to Tally Lake	Flow regime modification, physical substrate habitat alterations, sedimentation/siltation
Sinclair Creek, from headwaters to Sheppard Creek	Flow regime modification
Sheppard Creek, from headwaters to Griffin Creek	Alternation in streamside or litoral vegetative covers, sedimentation/siltation
Haskill Creek, from headwaters to Whitefish River	Sedimentation/siltation
Swan Lake	Total nitrogen, total phosphorus, sediment oxygen demand, total suspended solids
Goat Creek	Total suspended solids

MON-WTR-05: What is the status of native fish populations? Response to this monitoring item is focused on bull trout because it is a threatened species. Management of fish populations are under the jurisdiction of Montana Department of Fish, Wildlife, and Parks. The Forest Service is responsible for management of fish habitat on NFS lands. The FNF Forest Plan has a desired condition to maintain high-quality habitat and functionally intact ecosystems. These conditions are contributing to and enhancing the conservation and recovery of specific threatened or endangered fish species or aquatic species of conservation concern and providing high water quality and quantity. The watershed conservation network contributes to the conservation and recovery of native fish and other aquatic species and help make habitat conditions more resilient to climate change.

Several factors have contributed to the decline of bull trout across its range. Habitat degradation, interaction with exotic species, over-harvest, and fragmentation of habitat by dams and diversions, are all factors contributing to the decline. In the Flathead River Basin, lake trout are considered the primary threat facing bull trout. Between 1968 and 1976, Opossum shrimp were introduced into 3 lakes within the basin and drifted downstream to Flathead Lake where they were detected in 1981. Numbers peaked in 1986. As a result, lake trout and lake whitefish expanded as juvenile fish benefited from the addition of shrimp to the prey base. It is believed that the expansion of lake trout and lake whitefish contributed to the decline of bull trout in Flathead Lake. This conclusion is substantiated by the fact that local bull trout populations fluctuate similarly across the core area. In the late 1990s, lake trout were detected in Swan Lake which likely explains sharp declines in this core area.

Bull trout populations are monitored through fall redd counts (IND-WTR-10). Index streams are monitored annually, and results are displayed in Figure 1.

Figure 1. Bull trout redd counts



MON-WTR-06: **Do management activities contribute nutrients to Flathead Lake?** This monitoring item was suggested by the Flathead Basin Commission (FBC) during the development of the Flathead Forest Plan. However, FBC's representative and the forest plan revision team were not aware of the Phase II TMDL planning efforts that occurred between 2011 and 2014. Nutrient loading in Flathead Lake has been studied extensively through TMDL planning efforts. TMDL modeling and planning work has been conducted in phases. Phase I was completed in 2001 and Phase II work was put on hold in 2014, pending approval of nutrient standards in the lake. During Phase II, a model was developed and calibrated to characterize hydrology, sediment, and nutrient flux using the Loading Simulation Program in C++ (LSPC). In 2014, MDEQ published a report that summarized LSPC output for nitrogen and phosphorus loading. Unit nutrient production from forest harvest was estimated at 1.20 and 0.07 lbs/acre/year for nitrogen and phosphorus, respectively (MDEQ 2014[1]). Unit production of total nitrogen and total phosphorus from unpaved roads was estimated to be 3.79 and 0.486 lbs/acre/year.

Unit production rates of nitrogen and phosphorus from forest harvest and unpaved roads are necessary for load calculations. In practical terms, it is critical to understand the relative contribution of these land uses compared to natural background levels and other land uses.

The Flathead National Forest makes up 53 percent of the basin area defined by this modeling effort. Timber harvest (on all ownerships) is estimated to contribute roughly 1 percent and 2 percent of the total nitrogen and phosphorus loads, respectively. Unpaved roads (on all ownerships) contribute roughly 5 percent of total nitrogen and 3 percent of total phosphorus. Because these load estimates come from all ownerships upstream of Flathead Lake, it is safe to assume the nutrient contributions from NFS lands are less than the above percentages. When these nutrients are delivered to the forest's stream network, it is difficult to determine how they are absorbed as they move downstream to Flathead Lake. It is highly unlikely that there is a direct cause and effect relationship between management-induced nutrient production on NFS lands and conditions in

[1] US Environmental Protection Agency. 2014. Modeling Hydrology, Sediment, and Nutrients in the Flathead Lake Watershed. US Environmental Protection Agency. Helena, MT. Prepared by TetraTech, Inc. Jackson Hole, WY.

Flathead Lake.

MON-WTR-07: What is the status of streambanks within grazing allotments? The forest's range program has been declining gradually as permittees have sold their base properties or have become too old to run their operations. The forest has 9 active allotments, and 4 of them are vacant. The Lemonade Springs and Island Meadows Allotments are the only ones where livestock have direct access to streams in meadow environments. All other active allotments are forested, and livestock have difficulty reaching streams. Stubble height, a measure of the herbaceous vegetation remaining after grazing, has been widely used in recent years to gage the impacts of grazing use in riparian areas. Maintaining a minimum stubble height helps preserve forage plant vigor, retain sufficient forage to reduce cattle browsing of willows, stabilize sediments, indirectly limit streambank trampling, maintain cattle gains, and provide an easily communicated management criterion. In addition to changing herbaceous vegetation, cattle grazing can result in trampling of streambanks, collapse of overhanging banks providing cover for fish, and/or streambank erosion/stream sedimentation.

This monitoring item is designed to ensure consistency with FW-GDL-GR-04, which provides the following criteria to reduce bank trampling of perennial vegetation on or near the water's edge (i.e., the greenline):

- Do not exceed 20 percent streambank alteration.
- Do not exceed 40 percent utilization of mean annual vegetative production on woody vegetation; and
- Maintain at least 4-6 inches or do not exceed 40 percent utilization of mean annual vegetative production on herbaceous vegetation.

The NEPA decision that authorizes livestock grazing on the Lemonade Springs and Island Meadows Allotments has a monitoring plan for streams. Bank stability is monitored annually at 7 locations along Squaw Meadows Creek and Griffin Creek. The NEPA decision reflects a bank stability average of 85 percent or more among all 7 sites. Bank stability is a direct surrogate to bank alteration and stubble height.

Recommended Changes

MON-WTR-02: To what extent are forest management activities moving towards habitat objectives for native fish?

> ***IND-WTR-03*** (Number of fish passage barriers removed or created), ***IND-WTR-05*** (Number of culverts removed or upgraded) and ***IND-WTR-06*** (Number of activities with stream miles of habitat improvements): In addition to the number of activities identified to improve native fish habitat, these indicators should also record *acres* or *miles* of activities in order to be consistent with the way the aquatic objectives are actually worded.

MON-WTR-03: What vegetation treatment activities have occurred in the riparian management zone?

> ***IND-WTR-08*** (Number of entries and road crossing inside riparian management zones): Clarify language to read: Miles of new road construction and perennial stream crossings inside RMZs.

MON-WTR-05: What is the status of native fish populations?

> ***IND-WTR-10*** (Number of bull trout redds) and ***IND-WTR-11*** (Fish density – number/100 square meters) should be moved to MON-WTR-01. This would allow these indicators to be presented in the context of actual habitat data. ***IND-WTR-12*** (degree of spread of hybridization – MFWP data, redd counts) should

be dropped. Broad trends in hybridization can be described, but the degree of hybridization can vary from stream to stream. At the forest scale, it is not practical to use this indicator due to the wide range of conditions and trends. Montana Fish, Wildlife, and Parks (FWP) has the authority to manage fish populations and associated hybridization. FWP tracks hybridization on the forest. The Forest Service is responsible for managing habitat only.

MON-WTR-06: Do management activities contribute nutrients to Flathead Lake? Recommend dropping this question. Results of an analysis show a very low estimated proportion of nutrients produced from management activities on NFS lands and the unlikelihood of a direct cause and effect relationship between management on FNF lands and conditions in Flathead Lake. For details see the aquatics monitoring specialist report.

MON-WTR-07: What is the status of streambanks within grazing allotments?

IND-WTR-14 (Percent streambank alteration): Change this indicator to read – Percentage of stable streambanks along Squaw Meadows and Griffin Creeks, within the Lemonade Springs and Island Meadows allotments. This would be consistent with the data source, which is the currently ongoing monitoring of the streambank conditions.

IND-WTR-15 (Percent stubble height): Drop this indicator. Bank stability monitoring under IND-WTR-14 is a direct surrogate to bank alteration and stubble height. This indicator is redundant with IND-WTR-14. IND-WTR-14 was revised to use current methods in Squaw Meadows and Griffin Creeks. Both of these streams are within the Lemonade Springs/Island Meadows allotments where livestock have direct access to streams. The method identified in the revised IND-WTR-14 indicator matches the method used along Squaw Meadows and Griffin Creeks that has been used for several years. This method can also be applied to vacant allotments in the event they become stocked again. However, the likelihood of these allotments opening again is very low due to lack of transitory range.

Status of Terrestrial Ecosystems and Focal Species (Western White Pine)

Summary

Monitoring vegetation conditions across the Forest provide insight into the extent that natural processes and management activities are maintaining or trending the vegetation towards desired conditions. Vegetation that meets desired conditions reflects, to the best of our knowledge, a forest and landscape that is resilient and resistant to disturbances and able to adapt in the face of future disturbances and uncertainties. Desired vegetation conditions reflect the diversity of composition and structure that supports and sustains populations of native wildlife species.

The following results reflect updates vegetation conditions from those used in the Forest Plan development (Region 1 Hybrid 2011 FIA database) to the present (Region 1 Hybrid 2015 FIA database). Management activities occurring in 2019 and 2020 are included in the data set for MON-TE&V-04. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018).

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-TE&V-01: What is the change in key ecosystem characteristics for forest and non-forest vegetation?	FW-DC-TE&V-03 FW-DC-TE&V-07, 08, 09, 10 through 15
MON-TE&V-02: What is the change in amount and severity of wildfire and the status of fire regimes?	FW-DC-TE&V-03, 25 FW-DC-FIRE-04
MON-TE&V-03: What is the change in insect hazard and root disease severity?	FW-DC-TE&V-03 and 20
MON-TE&V-04: How many acres of vegetation treatments are occurring that contribute to maintaining or moving towards achieving desired conditions in the plan?	FW-OBJ-TE&V-01, 02, 03, 04
MON-TE&V-05: To what extent have management actions maintained required levels of snags or snag replacement trees within harvest units?	FW-STD-TE&V-03 GA-STD-HH, SF, SV, NF-01 GA-STD-MF, SM-02
MON-TE&V Focal-01: What is the change in ecological conditions within the warm-moist and cool-moist PVTs, as indicated by conditions suitable for western white pine?	FW-DC-TE&V-04, 07
MON-TE&V Focal-02: What management actions are contributing to the restoration of western white pine?	FW-OBJ-TE&V-02

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the terrestrial ecosystems and focal species (western white pine) monitoring guide and evaluation of results report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998020.pdf.

Key Results

MON-TE&V-01: What is the change in key ecosystem characteristics for forest and non-forest vegetation? As a whole, most of these key vegetation conditions related to forest resilience, diversity, and wildlife habitat conditions have experienced little to no change from the baseline Forest Plan conditions. More time will be necessary to ascertain whether trends are progressing.

One of the more notable desired changes is the increase in western larch in the warm-dry potential vegetation type (PVT). Ponderosa pine is also showing a desirable upward trend in the warm-dry PVT, though much smaller amount of increase compared to western larch. Desired upward trends in presence/dominance type for western white pine and whitebark pine are not occurring. Douglas fir has not noticeably changed from baseline, and remains within the desired condition range, except for the warm-dry PVT, where it is still notably above the desired condition. Proportion of subalpine fir has shown an apparent decrease forest-wide and within the cool-moist and cold PVTs, falling below the desired condition in the cool-moist PVT. This is most likely due to the large-scale wildfires that occurred across the forest in the decade 2001-2010. Hardwood species have shown an overall increase, particularly in aspen and birch, which is consistent with desired trend.

Forest-wide there has been an apparent small increase in the small and medium size classes, though conditions remain within the desired condition ranges. The large and very large forest size classes have also shown mostly an increase over the baseline, though generally a smaller increase than that of the small and medium size classes. Proportions in all of the forest size classes will fluctuate over time in response to both natural succession/growth of forests and natural disturbances, such as fire. Desirable decreases in forest density have been occurring, though small in magnitude.

Old growth forest has changed only very slightly over the monitoring period, nearly no change detectable at the forest-wide level. There has been a slight increase apparent in the warm-moist and cool-moist PVTs; a slight decrease in the warm-dry PVT; and the largest decrease (though still small) in the cold PVT.

The changes in the Large/Very Large Tree Structure classes vary, with results generally consistent with the results of old growth monitoring. This, which would be expected as these structure classes are designed to provide another metric identifying identify forest structures with minimum larger tree densities that are ecologically meaningful and contribute to ecosystem functions, such as wildlife habitat (as described under the *Methods* section above). Forest wide there has been nearly no change in the amount of Very Large Tree Structure class, but some changes appear to have occurred within the PVTs. In the cold and warm-dry PVTs decreases in amount of both Large and Very Large Structure classes occur, though relatively small (except perhaps for the Very Large Tree Structure class in the cold PVT). These changes indicate a loss of some of the largest trees (20 inches D.B.H. and above) across portions of the forest, very likely due to fires (large number of acres burned in past 20 years), pathogens such as root disease and bark beetles (very large trees tend to be more vulnerable), and maybe to harvesting in limited areas of the forest. An increase in the Large Tree Structure class in the cool-moist PVT occurs, and the Very Large Tree Structure class in the warm-moist PVT. Forest growth and succession continues to add to the larger tree structure classes over time. All changes are relatively small and several monitoring periods are necessary to determine how consistent these trends are over time.

MON-TE&V-02: What is the change in amount and severity of wildfire and the status of fire regimes? MON-TE&V-03: What is the change in insect hazard and root disease severity? The impacts of the natural ecological processes of fire and insect/disease activity have been relatively minor since the adoption of the Forest Plan in 2018. Slight increases in beetle and root disease activity at the lower intensity levels appear to have occurred,

though more time will be needed to see if this trend is long term. There is not yet a full decade worth of fire data available in order to compare the total acres recently burned by severity class on a decadal basis, as would be necessary to compare to the forest plan desired condition. However, the total amount of acres burned in the years 2015 to 2018, for which data is available, is 185,087 acres, or about 8 percent of the FNF. At this point, this is at the low end of the decadal natural range of variation (NRV) for the total amount of fire on the FNF. These fires burned at a relatively even mix of low, moderate and high severity. It is too early to determine any trends over time.

MON-TE&V-04: How many acres of vegetation treatments are occurring that contribute to maintaining or moving towards achieving desired conditions in the plan? Nearly 31,000 acres of vegetation management actions (harvest, prescribed fire, thinning, planting, invasive weed control, etc.) have occurred during this monitoring cycle, contributing to maintaining/moving towards desired conditions for vegetation. About 10,220 acres of these activities are determined to directly contribute to one or more of the categories that have been identified by the region as key to the overall goal to restore and develop resilient vegetation at the regional level (the *Northern Region Restoration and Resilience Report).*

MON-TE&V-05: To what extent have management actions maintained required levels of snags or snag replacement trees within harvest units? This item applies only to timber sales that have NEPA decisions under the new forest plan (since December of 2018). Few units have been harvested yet within these sales; thus there is no data to report in this monitoring cycle.

MON-TE&V Focal-01: What is the change in ecological conditions within the warm-moist and cool-moist PVTs, as indicated by conditions suitable for western white pine? MON-TE&V Focal-02: What management actions are contributing to the restoration of western white pine? A very slight increase in western white pine presence forest-wide and in the cool-moist PVT appears to occur, though it is very small and uncertain whether it reflects a true increasing trend over time. Similarly, for the slight decrease in the species presence in the warm-moist PVT, where this species is most desirable.

The forest is continuing to conduct activities for the purpose of improving conditions for western white pine and increasing its presence across the Forest over time. These treatments include planting of rust-resistant seedlings and non-commercial thinning in young sapling stands.

Recommended Changes

MON-TE&V-01: What is the change in key ecosystem characteristics for forest and non-forest vegetation?

> ***IND-TE&V-06*** (Very large tree presence—proportion of area (FW and PVT)): Reword the indicator to say "Proportion of area (FW and by PVT) where large and very large tree structural components occur at densities that contribute to ecosystem functions." This is recommended to be consistent with the data source for this indicator, which is the "Large Tree Component" attribute in the FIA data base. Data reported out FW and by PVT in the regional Broadscale Monitoring Strategy (BSMS) reports.
>
> ***IND-TE&V-07*** (Very large tree density, trees per acre. All species combined as well as for this group of species: cedar, Douglas-fir, larch, ponderosa pine, western white pine, cottonwood): Reword the indicator to say "Density (tpa) of very large live trees, by PVT (Snag Analysis Group), Inside and Outside Wilderness/Roadless areas." This is recommended to be consistent with the data source for this indicator, which is a table in the "Snag and Live tree density" report, produced as part of the regional

BSMS.

IND-TE&V-08 (Snag density: Snags per acre ≥ 10 inches d.b.h.; ≥ 15 inches d.b.h.; ≥ 20 inches d.b.h. (FW and PVT)): Reword to say "IND-TE&V-08. Snag density: Snags per acre ≥ 10 inches d.b.h.; ≥ 15 inches d.b.h.; ≥ 20 inches d.b.h. by PVT (Snag Analysis Group)." This is recommended to be consistent with the data source for this indicator, which is a table in the "Snag and Live tree density" report, produced as part of the regional BSMS.

MON-TE&V-03: What is the change in insect hazard and root disease severity?

IND-TE&V-10 (Acres or percent of Douglas-fir beetle hazard, mountain pine beetle hazard, western spruce budworm hazard, and root disease severity): Remove monitoring of western spruce budworm. This is recommended because estimates from the FIA database on defoliator hazard rating have not been sufficiently reviewed and regional insect/disease specialist recommend not using this data.

MON-TE&V Focal 1: What is the change in ecological conditions within the warm-moist and cool-moist PVTs, as indicated by conditions suitable for western white pine?

IND-TE&V-Focal 02 (Proportion (percentage of total acres) forestwide of forest size classes in the areas where western white pine is present): Drop this indicator. This is recommended because this data is not provided in the regionally produced BSMS reports. Other indicators provide sufficient information to monitor condition of focal species.

Status of Plant Species at Risk and Plant Species of Conservation Concern

Summary

Forest plan components support the maintenance or restoration of ecological conditions that support the recovery or long-term persistence of plant species listed as threatened or endangered under the Endangered Species Act, which currently include Spalding's catchfly (*Silene spaldingii*), water howellia (*Howellia aquatilis*), and whitebark pine (*Pinus albicus*). In the case of whitebark pine, monitoring of ecological conditions in the high elevation areas and what restoration actions are being taken helps in assessing the potential for recovery of this species over time.

The following results reflect updates from data collected from 2019-2020. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018).

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-PLANT-01: What is the status of water howellia in areas where disturbances (natural or human-caused) have occurred?	FW-DC-PLANT-01
MON-PLANT-02: How are ecological conditions in the cold PVT affecting whitebark pine populations and habitats?	FW-DC-PLANT-03
MON-PLANT-03: What management actions are contributing to the restoration of whitebark pine?	FW-OBJ-PLANT-01
MON-PLANT DIV-01: What is the status of the known occurrences of plant species of conservation concern?	FW-DC-PLANT DIV-01

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the plants monitoring guide and evaluation of results report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998006.pdf.

Key Results

MON-PLANT-01: What is the status of water howellia in areas where disturbances (natural or human-caused) have occurred? Vegetation management contracts have followed forest plan direction for protection of howellia ponds. There have been no disturbances within 300 feet of known water howellia ponds.

MON-PLANT-02: How are ecological conditions in the cold PVT affecting whitebark pine populations and habitats? MON-PLANT-03: What management actions are contributing to the restoration of whitebark pine? Whitebark pine dominance type shows a downward trend both forest-wide and in the cold potential vegetation type, though the changes are small (<2 percent). This likely reflects the continuing mortality in this species, primarily due to the introduced disease blister rust. Continued monitoring over the long term is needed to see if this trend is consistent over time. The forest continues to prioritize activities for the purpose of improving

whitebark pine conditions across the landscape, with planting of 97 acres in 2019.

MON-PLANT DIV-01: What is the status of the known occurrences of plant species of conservation concern? The ground disturbing management projects that have been completed and that may have potential impact on known plant species of conservation concern (SCC) have not yet been surveyed. Therefore, there is no data available for review in this monitoring cycle.

Recommended Changes

MON-PLANT-01: What is the status of water howellia in areas where disturbances (natural or human-caused) have occurred? Add FW-GDL-PLANT-01 to the list of plan components that are being monitored by the monitoring question.

MON-PLANT-02: How are ecological conditions in the cold PVT affecting whitebark pine populations and habitats?

> ***IND-PLANT-04*** (Proportion (percentage of total acres) forest-wide of forest size classes in the areas where whitebark pine is present): Drop this indicator because this data is not provided in the regionally produced Broadscale Monitoring Strategy (BSMS) reports and thus the data is not readily available. The other indicators for whitebark pine will provide sufficient data for monitoring changes in species conditions over time.

Status of Non-Native Invasive Plants

Summary

Invasive plants are capable of successfully expanding their populations into new ecosystems beyond their natural range and can create lasting impacts to native plant communities. Especially of concern are areas identified as high priority in regards to maintaining native plant diversity and keeping invasive plants at low abundance or non-existent. These high priority areas include wilderness areas, native grassland plant communities, riparian areas (particularly those associated with water howellia ponds), research natural areas (management area 4a), around known populations of plant species of conservation concern[2], and in special areas (management area 3b). Monitoring of these areas is intended to provide information on threats from invasive plants, and if found to prioritize the areas for treatments.

The following results reflect updates from data collected from 2019 and 2020. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018).

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-NNIP-01: What is the status of plant communities at highest risk of negative impacts to their system functions from established or new invaders?	FW-DC-NNIP-01, 02, 04
MON-NNIP-02: What management actions are contributing to coordination and cooperation with adjacent landowners and partners in managing non-native invasive weeds?	FW-DC-P&C-17

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the plants monitoring guide and evaluation of results report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998006.pdf.

Key Results

For this monitoring cycle (2019 and 2020):

MON-NNIP-01: What is the status of plant communities at highest risk of negative impacts to their system functions from established or new invaders? Weed infestations were evaluated in the following high-risk/high-priority habitat type groups: a) warm dry; b) non-forest; c) management areas 1, 2, 3b, and 4a; and d) in areas of known rare plant populations, by reviewing Forest Service databases (NRM). There are currently 33,724 infested acres inventoried, with 2,691 of these infested acres in these high-risk/high-priority areas. That is 8 percent of

[2] Species of conservation concern are identified by the Regional Forester; more information is available at http://bit.ly/NorthernRegion-SCC.

the known infested acres across the forest. No field status surveys in these areas occurred in 2019 or 2020, due to lack of funding/personnel.

MON-NNIP-02: What management actions are contributing to coordination and cooperation with adjacent landowners and partners in managing non-native invasive weeds? The FNF is actively engaged in a variety of partnerships for the control of invasive species. An estimated total of 736 acres of weed management actions were conducted in coordination with a number of different partners, including organizations and private landowners. The number of partnerships involved and number of acres treated significantly contributed to the FNF invasive species program. In addition, many of these partners provided services that are not measured in miles or acres. For example, assistance in determining the presence of biological control agents on the forest was a valuable service provided by the Montana Biological Control Coordinator.

Recommended Changes

MON-NNIP-01: **What is the status of plant communities at highest risk of negative impacts to their system functions from established or new invaders?** Changes are recommended to be consistent with the data source, which is the regionally produced reports under the Broad Scale Monitoring Strategy.

- **CHANGE wording of the monitoring item to:** "What is the status of acres infested on the Forest by non-native invasive plants, and the treatments of invasive plant infestations?"
- **CHANGE wording of indicator IND-NNIP-01** (Percent of invasive plant species cover within identified high-risk/high priority areas. These would include such areas as forests of the warm-dry PVT, dry grassland plant communities, wilderness trailheads, and management area 3b (special areas) to "Acres infested by invasive plant species."
- **ADD Indicator IND-NNIP-01a: "**Acres treated for invasive plants."

Also, forest plan component **FW-OBJ-NNIP-01** should be added to the list of plan components that are being monitored by this item.

MON-NNIP-02: What management actions are contributing to coordination and cooperation with adjacent landowners and partners in managing non-native invasive weeds? The reference to the desired condition that is being monitored should be corrected to read as **FW-DC-P&C-17**, not FW-DC-P&C-16.

Status of Soil Productivity

Summary

Monitoring of soils is intended to address consistency with the forest plan standards FW-STD-SOIL-01 and FW-STD-SOIL-03. These standards specify limits to the amount of detrimental soil conditions that can occur within vegetation management units and specify the restoration of temporary roads when management activities that use these roads are completed. The desired condition in the plan is to conserve function and long-term productivity of soils.

The following results reflect updates from data collected from 2019 to 2020. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018).

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-SOIL-01: To what extent are vegetation management activities not causing irreversible damage to soil conditions?	FW-DC-SOIL-01 FW-STD-SOIL-01
MON-SOIL-02: How many miles of temporary road are constructed and rehabilitated?	FW-DC-SOIL-01 FW-STD-SOIL-03

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the soils monitoring guide and evaluation of results report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998016.pdf.

Key Results

MON-SOIL-01 and MON-SOIL-02: There have been five vegetation management projects that have been approved under the new forest plan (2019 and 2020). These projects are still progressing and not fully completed on the ground; no soil surveys have yet been completed and no results are available to report for this monitoring cycle. Results will be available to report in the next monitoring cycle.

Recommended Changes

MON-SOIL-02: How many miles of temporary road are constructed and rehabilitated? Some language should be added to this monitoring question to clarify the purpose for why we are tracking miles of temporary road constructed/rehabilitated. It is recommended that the monitoring question be re-worded slightly to say: “How many miles of temporary road are constructed and rehabilitated, and was soil function successfully restored as a result?”

Status of Fire and Fuels Management

Summary

Desired conditions in the plan focus on reducing wildland fuels so that expected fire behavior is reduced in areas where wildfires post a threat to communities and community assets (FW-DC-FIRE-02). Forest-wide objective FIRE-01 aims for treatment of approximately 50,000 to 75,000 acres over the life of the plan (15 years), utilizing all available management opportunities that contribute to reducing fire impacts to private property and NFS infrastructure, with an emphasis on the wildland-urban interface.

The following results reflect updates from data collected from 2019 to 2020. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018).

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-FIRE-01: What management actions are contributing towards reducing wildland fuels?	FW-OBJ-FIRE-01 FW-DC-FIRE-02 FW-DC-FIRE-03
MON-FIRE-02: To what extent is natural fire used to achieve desired ecological, social, or economic conditions?	FW-DC-FIRE-03
MON-FIRE-03: To what extent is prescribed fire used to achieve desired ecological, social, or economic conditions?	FW-DC-FIRE-03

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the fire/fuels monitoring specialist report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998011.pdf.

Key Results

MON-FIRE-01: What management actions are contributing towards reducing wildland fuels? A total of approximately 14, 241 acres of fuel reduction treatments occurred inside the wildland urban interface (WUI), consisting of prescribed burns, timber harvesting, mechanical treatments (such as piling or chipping), fuel breaks and pruning. Approximately 7,617 acres of treatment occurred outside the WUI. Priority for fuel reduction treatments continues to be in the wildland urban interface areas across the Forest. While the mechanical and contract work is dependent on funding the amount of prescribed burning has been weather dependent. We have missed three consecutive years of unfavorable fall weather conditions resulting in the relatively low number of acres burned by broadcast. This has left a large number of units uncompleted. We are prepared to take advantage of any opportunities that come open. However, the use of summer burning and wildfires may ultimately be part of the long-term solution considering the unreliable fall burning windows.

MON-FIRE-02: To what extent is natural fire used to achieve desired ecological, social, or economic conditions? MON-FIRE-03: To what extent is prescribed fire used to achieve desired ecological, social, or economic conditions? The Forest has used both natural and prescribed fire to achieve desired conditions, with 10 out of a

total of 85 natural fires and a total of 26 prescribed fire managed for multiply resource reasons (rather than suppression). Given the nature of the last two fire seasons (average to below average conditions) we did take advantage of fires in remote areas for long duration management. We likely missed a few opportunities on fires in the front country. Fall opportunities for prescribed fire was minimal, mainly due to cool and wet conditions in 2019.

Recommended Changes

No recommended changes.

Status of Threatened and Endangered Wildlife Species

Summary

Grizzly bear and Canada lynx habitat monitoring is included in the 2017 biological opinion for the revised forest plan and its 2018 amended Incidental Take Statement and is reported to the U.S. Fish and Wildlife Service (USFWS). Any changes to these monitoring questions require consultation with the USFWS. Additionally, both species are monitored at scales broader than the Flathead National Forest (FNF). The Region 1 (R1) Broadscale Monitoring Strategy (BSMS) is designed to provide a framework to uniformly collect and compile data on indicators and measures (identified by the plan-level monitoring programs) at scales larger than one planning unit for purposes of providing context and relevancy for the biennial plan-level monitoring evaluation reports. NCDE grizzly bear monitoring data are reported for each of the following Northern Continental Divide Ecosystem (NCDE) national forests in R1; Flathead, Kootenai, Lolo, Helena-Lewis and Clark. Habitat monitoring for Canada lynx includes direction associated with the Northern Rockies Lynx Management Direction, incorporated as Appendix A of the Revised Flathead National Forest Plan. Along with parts of four other Forests in R1, most of FNF is designated critical habitat for Canada lynx in unit 3.

Because habitats for these wide-ranging species occur in a dynamic environment, monitoring allows for adaptive management as environmental conditions change. The monitoring questions and indicators listed in the Threatened and Endangered species section of this monitoring report will be used to verify compliance with forest plan standards and guidelines and to evaluate whether conditions are moving towards or achieving desired conditions of the forest plan. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018), so in many cases long-term trends or results of management direction adopted in the plan are not yet available. For more details on monitoring indicators and results, see the wildlife monitoring specialist report in the monitoring record.

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-NCDE-01: Within the NCDE primary conservation area, what is the level of secure core, open motorized route density (> 1 square mile) and total motorized route density (> 2 square miles) within each bear management subunit during the non-denning season?	FW-STD-IFS-02
MON-NCDE-02: a) Within the NCDE PCA, what is the number and overnight capacity of developed recreation sites designed and managed for overnight use on NFS lands within each bear management unit, and how does this compare to the baseline? b) Within the NCDE primary conservation area, what is the status of administrative sites, day-use developed recreation sites, and trailheads in each bear management unit?	FW-STD-REC-01 FW-GDL-REC-01
MON-NCDE-03: Within the NCDE primary conservation area, is there a change in the number of allotments? Have conflicts occurred between grizzly bears and livestock on NFS lands?	FW-STD-GR-05
MON-NCDE-04: If new leasable and locatable mineral activities occur in the PCA, do the record of decision and permit/plan of operation include a monitoring plan for changes in habitat and/or measures to avoid, minimize, or mitigate environmental impacts to grizzly bears or their habitat?	FW-STD-E&M-01 through 08
MON-NCDE-05: Within the NCDE primary conservation area, what is the status of grizzly bear subunits that have temporary increases in motorized access due to projects (see glossary)?	FW-STD-IFS-03
MON-NCDE-06: Within the NCDE primary conservation area, are projects (see glossary) completed within the five-year time period specified by guideline FW-GDL-IFS-01?	FW-GDL-IFS-01
MON-NCDE-07: In the Salish DCA, what is the density of roads and motorized trails on NFS lands that are open to public use during the non-denning season? In zone 1 outside the Salish DCA, what is the density of roads on NFS lands that are open to public use during the non-denning season?	GA-SM-STD-01
MON-NCDE-08: What is the risk of human disturbance in areas modeled as grizzly bear denning habitat during the den emergence time period (see glossary)?	FW-STD-REC-05
MON-LYNX-01: How much of lynx critical habitat does not yet provide stand initiation snowshoe hare habitat (PCE 1a) but is progressing towards providing this habitat?	FW-DC-WL-05
MON-LYNX-02: What is the percentage of lynx critical habitat that has vegetation treatments in stand initiation hare habitat (PCE 1a)?	FW-DC-WL-05
MON-LYNX-03: If modified pre-commercial thinning techniques are used in lynx critical habitat, do they increase snowshoe hare habitat (PCE 1a) and/or its persistence?	FW-DC-WL-05
MON-LYNX-04: What is the percentage of lynx critical habitat that has vegetation treatments in multistoried hare habitat (PCE 1a)?	FW-DC-WL-05
MON-LYNX-05: Are fuel treatment and vegetation management projects compliant with the Canada lynx vegetation standards in the Northern Rockies Lynx Management Direction (revised forest plan Appendix A)?	Forest Plan Appendix A VEGS1, VEGS2, VEGS5, VEGS6

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the threatened and endangered wildlife species monitoring guide and evaluation of results report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998021.pdf.

Key Results

Data tables, figures, and other details of each monitoring question can be found in the T & E wildlife section of the specialist report in the monitoring record and are available to the public upon request. The following sections summarize findings for the 2021 monitoring report.

MON-NCDE-01: **Within the NCDE primary conservation area, what is the level of secure core, open motorized route density (> 1 square mile) and total motorized route density (> 2 square miles) within each bear management subunit during the non-denning season?** Between 2017 and 2019 there were 20 grizzly bear subunits in the primary conservation area that had updates to their "baseline" percentages for Open Motorized Route Density, Total Motorized Route Density, and/or Secure Core. Almost all of these changes were due to corrections or new data and were not on-the-ground changes (see the monitoring record for a subunit-specific list of updates and the reasons for them).

MON-NCDE-02: a) Within the NCDE PCA, what is the number and overnight capacity of developed recreation sites designed and managed for overnight use on NFS lands within each bear management unit, and how does this compare to the baseline? b) Within the NCDE primary conservation area, what is the status of administrative sites, day-use developed recreation sites, and trailheads in each bear management unit? a) Between 2011 and 2018, there were 6 grizzly bear management units (BMUs) in the primary conservation area that had updates to their "baseline" For sites developed for overnight recreation use. Most of these changes were due to corrections or new data and were not on-the-ground changes. One BMU, Hungry Horse, has an increase in the number or capacity of developed recreation sites with overnight use compared to on-the-ground conditions in 2011. This change occurred through consultation with the USFWS before the Revised Forest Plan decision was signed in 2018 and thus this change did not use a one-per-decade per BMU allowed increase. b) The number of day-use recreation trailheads in the primary conservation area declined in one BMU. Other Day-Use Sites declined in two BMUS and increased in one BMU. The number of Administrative Sites declined in one BMU and a vacant administrative site was converted to a cabin rental in another BMU.

MON-NCDE-03: **Within the NCDE primary conservation area, is there a change in the number of allotments? Have conflicts occurred between grizzly bears and livestock on NFS lands?** There are 3 cattle grazing allotments in the grizzly bear primary conservation area. There have been no grazing allotment changes.

MON-NCDE-04: **If new leasable and locatable mineral activities occur in the PCA, do the record of decision and permit/plan of operation include a monitoring plan for changes in habitat and/or measures to avoid, minimize, or mitigate environmental impacts to grizzly bears or their habitat?** There have been no changes in leasable or locatable mineral activities.

MON-NCDE-05: **Within the NCDE primary conservation area, what is the status of grizzly bear subunits that have temporary increases in motorized access due to projects (see glossary)?** There were three NEPA decisions for projects that would result in a temporary increase in OMRD or TMRD or a temporary decrease in secure core percentages. These are the Crystal Cedar, Taylor Hellroaring, and March Madness Projects, with changes in motorized access involving three grizzly bear subunits (Cedar Teakettle, Lazy Creek, and Swan Lake). In each subunit, percent changes in the 10-year-running average for OMRD and TMRD were within the allowed

increases and there would not be a percent decrease in secure core. These projects have not yet been fully implemented.

MON-NCDE-06: **Within the NCDE primary conservation area, are projects (see glossary) completed within the five-year time period specified by guideline FW-GDL-IFS-01?** Decisions for projects signed in 2019 and 2020 have not yet neared a 5-year duration for implementation. The beginning and end dates for these projects will be reported in future monitoring reports.

MON-NCDE-07: In the Salish DCA, what is the density of roads and motorized trails on NFS lands that are open to public use during the non-denning season? In zone 1 outside the Salish DCA, what is the density of roads on NFS lands that are open to public use during the non-denning season? There were no changes in the density of roads open to public motorized vehicle use during the non-denning season in grizzly bear management zone 1. There were also no changes in the density of roads or motorized trails open to public motorized vehicle use during the non-denning season in the Salish demographic connectivity area.

MON-NCDE-08: What is the risk of human disturbance in areas modeled as grizzly bear denning habitat during the den emergence time period (see glossary)? In 2019 and 2020, there were no changes to modeled grizzly bear denning habitat and no decisions to change miles or areas open to public motorized use during the den emergence time period (see Forest plan glossary).

MON-LYNX-01: **How much of lynx critical habitat does not yet provide stand initiation snowshoe hare habitat (PCE 1a) but is progressing towards providing this habitat?** This monitoring question considers the percentage of lynx habitat in each LAU that is not yet hare habitat due to wildfires and vegetation management. This data can be assessed in terms of progress towards desired conditions. In summary, there are 14 of 109 LAUs where the percentage of young regenerating forest is estimated to be in a range of 12-20 percent based upon modeling. This range meets desired conditions for lynx and PCE1a, based upon the best available scientific information. There are currently 5 LAUs estimated to be close to the range of desired conditions, with 20-25 percent of their lynx habitat in or progressing towards a young regenerating forest condition. All but two of these LAUs are in critical habitat. These conditions result from wildfires, vegetation management, or both.

The Haskill Mount and Blacktail LAUs, which do not have critical habitat, have very little wildfire activity in the past 20 years, but have a considerable amount of regeneration harvest. In the Haskill Mount LAU, about 10 percent of lynx habitat was regenerated by vegetation management from 2001-2020. In the Blacktail LAU, about 22 percent of lynx habitat was regenerated by vegetation management from 2001-2020. Some of this harvest occurred before the NRLMD was adopted.

MON-LYNX-02: **What is the percentage of lynx critical habitat that has vegetation treatments in stand initiation hare habitat (PCE 1a)?** Discussion of this monitoring question and associated indicators are included in MON-LYNX-05 below.

MON-LYNX-03: **If modified pre-commercial thinning techniques are used in lynx critical habitat, do they increase snowshoe hare habitat (PCE 1a) and/or its persistence?** There was no pre-commercial thinning in 2019 or 2020 using alternative thinning methods designed to promote multi-storied habitat.

MON-LYNX-04: **What is the percentage of lynx critical habitat that has vegetation treatments in multistoried hare habitat (PCE 1a)?** Discussion of this monitoring question and associated indicators are included in MON-LYNX-05 below.

MON-LYNX-05: **Are fuel treatment and vegetation management projects compliant with the Canada lynx vegetation standards in the Northern Rockies Lynx Management Direction (revised forest plan Appendix A)?** For NEPA decisions under the 2018 Revised Forest Plan, only 4 acres of treatments using exceptions or exemptions to the lynx standards have been accomplished on the ground. Planned treatments in lynx habitat with decisions approved in 2019 and 2020 are located in the following project areas: Taylor Hellroaring, Hellroaring Basin Improvements, and Salish Good Resource Management on the Tally Lake Ranger District, and Crystal Cedar on the Glacier View Ranger District. These projects have planned use of standard VEGS5 and VEGS6 WUI exemption acres that have been through ESA Section 7 Consultation totaling 8,604 acres in 12 LAUs. There were no signed decisions with planned treatments using exception acres outside of the WUI during this time period.

Monitoring question MON-LYNX-01 above discussed the percentage of lynx habitat in each LAU that is not yet hare habitat due to wildfires and vegetation management. This can be assessed in terms of compliance with USFWS terms and conditions for lynx standard VEG S1. The Forest Plan term and condition states that projects allowed per the exemptions or exceptions to VEG S5 and S6 shall not occur in any lynx analysis unit that does not meet standard VEG S1 (of no regeneration harvest in a lynx analysis unit that has more than 30 percent that is not yet snowshoe hare habitat) except for protection of structures. There are 26 of 109 LAUs where the percentage of young regenerating forest is estimated to exceed 30 percent. There are portions of the Forest where three adjacent LAUS have more than 30 percent of lynx habitat in a stand initiation structural state that does not yet provide winter snowshoe hare habitat, but this is not due to vegetation management. These LAUs exceed 30 percent due to wildfire. Where three adjacent LAUS have more than 30 percent of lynx habitat in a stand initiation structural state that does not yet provide winter snowshoe hare habitat, vegetation management that reduces additional snowshoe hare habitat in these LAUs was not conducted.

Recommended Changes

No changes are recommended for any of the grizzly bear monitoring questions.

Changes to the Forest Plan Monitoring Program for the following lynx monitoring questions are recommended:

MON-LYNX-01: How much of lynx critical habitat does not yet provide stand initiation snowshoe hare habitat (PCE 1a) but is progressing towards providing this habitat? And **MON-LYNX-03: If modified pre-commercial thinning techniques are used in lynx critical habitat, do they increase snowshoe hare habitat (PCE 1a) and/or its persistence?** It is recommended modification of wording to include all lynx habitat, not just lynx critical habitat. The word “critical” should also be dropped in the indicators associated with these monitoring questions.

MON-LYNX-02: What is the percentage of lynx critical habitat that has vegetation treatments in stand initiation hare habitat (PCE 1a)? Recommend that this monitoring question and its indicators (IND-LYNX-03 and IND-LYNX-04) be dropped because results are already included in the monitoring question MON-LYNX-05, under monitoring indicators IND-LYNX-09 and -13.

MON-LYNX-04: What is the percentage of lynx critical habitat that has vegetation treatments in multistoried hare habitat (PCE 1a)? Recommend that this monitoring question and its indicators (IND-LYNX-07 and IND-LYNX-08) be dropped because results are already included in monitoring question MON-LYNX-05 under monitoring indicators IND-LYNX-09 and -13.

MON-LYNX-05: Are fuel treatment and vegetation management projects compliant with the Canada lynx

vegetation standards in the Northern Rockies Lynx Management Direction (revised forest plan Appendix A)?

IND-LYNX-09 (Cumulative total acres of fuel treatment projects in lynx habitat conducted under exemptions to standards VEGS!, S2, S5, and S6 within the WUI (as defined by HFRA), by LAU and forestwide, since the end of 2017) and *IND-LYNX-13* (Cumulative total acres of vegetation treatments conducted under exceptions to VEG S5 and VEG S6 since the end of 2017): It is recommended that these indicators should have the year referenced to 2018 instead of 2017 in order to be consistent with the data source for this monitoring item ("……since the end of ~~2017~~2018")

Status of Other Wildlife Species and Habitat

Summary

Monitoring wildlife and their habitat conditions across the Forest provides insight into the extent that natural processes and management activities are maintaining biodiversity, key ecosystem characteristics, and ecological integrity. Some of the wildlife monitoring indicators also keep track of implementation of management guidelines. Public comments received during the planning process expressed a high level of interest in monitoring for wildlife.

Some monitoring is directed at answering questions at the Forest scale, while some is directed at answering questions at a broader scale. For example, bird monitoring is conducted using standardized procedures across multiple bird conservation regions. Monitoring includes groups of species, such as birds, amphibians, bats, and meso-carnivores, as well as key species. Key species were selected for a variety of reasons. For example, the common loon has been monitored for decades and results indicate that conservation efforts by several agencies and private groups have resulted in positive population and reproduction trends.

Forest plan monitoring is intended to determine whether these positive trends continue in the future. The fisher is not known to occur on the Forest, but modeling indicates that habitat will become more suitable for fisher in the future as the climate changes, so the plan has an emphasis on providing connectivity for dispersal from adjacent national forests. In addition, results of aquatic and vegetation monitoring are interpreted with respect to their implications for wildlife and their habitat. The Harlequin duck, for example, was considered for selection as a Species of Conservation Concern (SCC) and is associated with fast-moving streams with high water quality, but information was not sufficient to include it as an SCC. Monitoring is intended to gather more information on the population status and habitat conditions for the Harlequin duck. The Clark's nutcracker is an SCC species that is highly dependent upon mature whitebark pine, a species which has been in decline for decades due to an introduced disease. Monitoring results will help us determine whether management actions are moving the Forest towards desired conditions for increased presence of mature whitebark pine and habitat for Clark's nutcrackers over time.

This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018), so in many cases long-term trends or results of management direction adopted in the plan are not yet available. Most of the following results reflect baseline conditions. For more details on monitoring indicators and results, see the wildlife monitoring specialist report in the monitoring record.

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-WL-01: What is the status of habitat that supports nesting harlequin ducks?	FW-GDL-WL DIV-05
MON-WL-02: What is the status of habitat conditions that support flammulated owls during the nesting season?	FW-DC-WL DIV-01
MON-WL-03: What is the status of habitat conditions that support fisher?	FW-DC-WL DIV-01
MON-WL-04: What is the status of forest conditions that support wildlife habitat connectivity for fisher and other species?	FW-DC-TE&V-19 FW-DC-WL DIV-01 FW-DC-RMZ-06
MON-WL-05: What is the status of habitat conditions that support Clark's nutcrackers during the nesting season?	FW-DC-WL DIV-01 FW-OBJ-PLANT-01
MON-WL-06: What is the status of habitat conditions that support Townsend's big-eared bats and other bat species?	FW-DC-WL DIV-01 FW-GDL-CAVES-03
MON-WL-07: What is the status of habitat conditions that support common loons on code A territorial nesting lakes?	FW-DC-WL DIV-01 FW-OBJ-WL DIV-01 FW-GDL-WL DIV-03
MON-WL-08: What is the status of habitat for wildlife species associated with hardwood tree habitats on NFS lands?	FW-DC-TE&V-09 FW-OBJ-TE&V-03
MON-WL-09: What is the status of habitat for wildlife species associated with grass/forb/shrub habitats on NFS lands?	FW-DC-TE&V-09 FW-OBJ-TE&V-04 FW-OBJ-NNIP-01
MON-WL-10: What is the status of habitat for wildlife species associated with snags and potential live snag replacement trees in the 20-inch-or-greater d.b.h. class?	FW-DC-TE&V-15, 16
MON-WL-11: What is the status of habitat for wildlife species associated with snags and potential live snag replacement trees in the 10-inch-or-greater d.b.h. class?	FW-DC-TE&V-15, 16
MON-WL-12: What is the status of habitat for wildlife species associated with downed woody material?	FW-DC-TE&V-17
MON-WL-13: What is the status of habitat for wildlife species associated with forests burned with moderate- to high-severity wildfire?	FW-DC-TE&V-25 FW-GDL-TIMB-01 through 03
MON-WL-14: What is the risk of human disturbance in areas modeled as wolverine maternal denning habitat?	FW-GDL-REC-04 FW-GDL-WL-04
MON-WL-15: What is the status of the breeding season bird community on the Forest (including neo-tropical migratory birds)? Are we maintaining diverse avian communities?	FW-DC-WL DIV-01
MON-WL-16: What is the status of the aquatic amphibian community on the Forest?	FW-DC-WL DIV-01 FW-DC-WTR-12
MON-WL-17: What is the status of forest meso-carnivores (e.g., lynx, wolverine, fisher) on the Forest?	FW-DC-WL DIV-01

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the wildlife species and habitat monitoring guide and evaluation of results report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998018.pdf.

Key Results

Data tables, figures, and other details of each monitoring question can be found in the wildlife section of the wildlife monitoring specialist report in the monitoring record and are available to the public upon request. The following sections summarize findings for the 2021 monitoring report.

MON-WL-01: What is the status of habitat that supports nesting harlequin ducks? From 2003-2018 the stream habitat index has improved slightly or stayed about the same for all monitored harlequin duck nesting stream reaches except Sullivan Creek (which has gone down slightly). Sullivan Creek is a reference stream, so minimal management occurs upstream. The decline is within the natural range of variation and is likely due to wildfire and/or floods. Macroinvertebrate habitat conditions have remained stable over time, with the exception of two Wilderness streams: Twin Creek (in 2003 & 2008) and Youngs Creek (in 2008). A large wildfire in the Youngs' Creek drainage in 2007 likely impacted macroinvertebrate communities in the following years. Scores for these streams had improved by the time surveys were completed in 2012 and 2013. No significant trends are reported in 2021.

MON-WL-02: What is the status of habitat conditions that support flammulated owls during the nesting season? The R1 flammulated owl habitat model shows that there are 5,471 acres of potential habitat on the FNF. The 2021 monitoring report represents the baseline habitat conditions for flammulated owls and cannot yet be updated. There have not yet been acres treated to improve flammulated owl habitat under the 2018 Forest Plan.

MON-WL-03: What is the status of habitat conditions that support fisher? The R1 Modeled Fisher summer habitat model shows that there are 164,589 acres of potential habitat on FNF. The R1 Modeled Fisher winter habitat model shows that there are 88,235 acres of potential habitat on FNF. The 2021 monitoring report represents the baseline habitat condition for fisher and cannot yet be updated.

MON-WL-04: What is the status of forest conditions that support wildlife habitat connectivity for fisher and other species? Riparian management zones are key in providing connectivity for multiple wildlife species and total about 432,800 acres on the FNF. Acres of tree cover greater than 5" DBH and 40 percent canopy cover in RMZs totals about 249,000 acres or 57.5 percent of the RMZ total. The baseline condition for RMZ connectivity is good across much of the Forest. It is too soon to tell if RMZ connectivity is being maintained under the 2018 Forest Plan. Potential fisher habitat was modeled based upon Olson et al. Modeled habitat was divided into 7 home range sized units to examine the pattern of cover for connectivity. Connectivity is good except for 2 situations: 1) in the North Swan Fisher Unit where alternating sections previously owned by Plum Creek Timber Company were regenerated, and 2) in the South Fork and Hungry Horse North Fisher Units where connectivity of cover was reduced by large wildfires.

MON-WL-05: What is the status of habitat conditions that support Clark's nutcrackers during the nesting season? The Regional BSMS report estimates based on Hybrid FIA 2015 Summary database (data collected on FIA plots 2006-2015) estimate there are 4.79 trees per acre (90 percent CI of 2.14 – 8.42) of live Whitebark pine greater than or equal to 10 inches d.b.h. in the cold potential vegetation type (PVT). The 2021 monitoring report represents the baseline habitat condition for Clark's nutcracker in 2015 and cannot yet be updated. Under the

2018 Forest Plan, about 100 acres were treated in 2019 to improve Whitebark pine and no acres were treated in 2020.

MON-WL-06: What is the status of habitat conditions that support Townsend's big-eared bats and other bat species? Eight bat species were detected from 2014-2016 using acoustic surveys. Townsend's Big-eared bats were detected using acoustic surveys in 2014 and 2015. No acoustic surveys were completed in 2017, 2018, 2019, or 2020. From 2012-2017, four caves were surveyed by the Bigfork High School Caving Club and all four had detections of Townsend's big-eared bats, although each cave was not surveyed each year. There is insufficient data to determine any kind of trend in bat observations. There are no indications of infection with White Nosed Syndrome or other diseases.

MON-WL-07: What is the status of habitat conditions that support common loons on code A territorial nesting lakes? In 2020 there were 12 of 22 known nesting lakes with common loon chick production and the number appears stable when compared with past years. One known nesting territory, Tally Lake, has not had successful production of loon chicks in the past 3 years. Loons have been consistently monitored using standardized Montana Common Loon Working Group protocols for over a decade so there is a high level of confidence in the data.

MON-WL-08: What is the status of habitat for wildlife species associated with hardwood tree habitats on NFS lands? Estimates based on Hybrid FIA 2015 Summary database (data collected on FIA plots 2006-2015) show that the Aspen/Hardwood dominance type occurs on 25,023 acres (12,341 – 45,415 90 percent CI) forest-wide. As of 2020, the aspen/hardwood dominance type occurred on 32,286 acres. The percent of the Forest with presence of aspen also increased slightly. In 2019, 405 acres were accomplished towards meeting FW-OBJ-TE&V-03 to maintain or restore aspen/hardwood habitats.

MON-WL-09: What is the status of habitat for wildlife species associated with grass/forb/shrub habitats on NFS lands? Estimates based on the Hybrid FIA 2011 Summary database (data collected on FIA plots 2003-2011) show that the grass/forb/shrub lifeform occurred on 194,794 acres or 8.8 percent of the Forest acres. The seedling size class occurred on 123,643 acres or 5.26 percent of the Forest acres. Estimates based on Hybrid FIA 2015 Summary database (data collected on FIA plots 2006-2015) show that the grass/forb/shrub lifeform occurred on 232,154 acres or 10.28 percent of the Forest acres, a slight increase. The seedling size class occurred on 149,133 acres or 6.34 percent of the Forest acres, also a slight increase. From 2018, the baseline year, to 2021 there were 634 acres treated towards meeting FW-OBJ-TE&V-04, to maintain or restore grass/forb/shrub habitats. From 2018 to 2021 there were 1587 acres of key big game winter habitat treated for invasive plant infestations towards meeting FW-OBJ-NNIP-01.

MON-WL-10: What is the status of habitat for wildlife species associated with snags and potential live snag replacement trees in the 20-inch-or-greater d.b.h. class? Estimates based on Hybrid FIA 2011 Summary database (data collected on FIA plots 2003-2011) show that estimates for the density of snags per acre >=20" dbh exceed the minimum desired numbers except for the warm-moist PVT. Live trees per acre >=20" dbh are probably sufficient to provide snags as trees die over time, except in the warm moist PVT outside wilderness and in the cold PVT inside wilderness. In these two categories, it is unlikely that trees would die fast enough to produce the desired number of snags. Future project decisions may need to emphasize marking and retention of snags and live trees >=20" dbh if harvesting trees in the warm-moist PVT so that there are sufficient future snags—especially those with heart rot and broken tops, but also including trees that are sound. At next monitoring cycle, updates to the snag and live tree density reports at the regional level will have occurred and results will be discussed.

MON-WL-11: What is the status of habitat for wildlife species associated with snags and potential live snag replacement trees in the 10-inch-or-greater d.b.h. class? Estimates based on Hybrid FIA 2011 Summary database (data collected on FIA plots 2003-2011) show that estimates for the density of snags per acre >=10" dbh exceed the minimum desired numbers except for the warm-moist PVT. Live trees per acre >=10" dbh are probably sufficient to provide snags as trees die over time, except in the warm moist PVT outside wilderness and in the cold PVT inside wilderness. In these two categories, it is unlikely that trees would die fast enough to produce the desired number of snags. Future project decisions may need to emphasize marking and retention of snags and live trees >=10" dbh if harvesting trees in the warm-moist PVT so that there are sufficient future snags. At next monitoring cycle, updates to the snag and live tree density reports at the regional level will have occurred and results will be discussed.

MON-WL-12: What is the status of habitat for wildlife species associated with downed woody material? Regional BSMS report estimates based on Hybrid FIA 2011 Summary database (data collected on FIA plots 2003-2011) show that estimates of downed woody material per acre >3" diameter range from 3.8 tons per acre in the Warm-dry PVT to 11.9 tons per acre in the Cool-moist PVT. We know of no science indicating minimum amounts of downed woody material for wildlife species, only that it is needed. The region has identified a need to update the calculations used to derive downed woody material in the FIA Summary database, to ensure accuracy of the estimates. Monitoring results for this indicator will be updated when this issue has been resolved at the regional level.

MON-WL-13: What is the status of habitat for wildlife species associated with forests burned with moderate-to high-severity wildfire? Approximately 186,000 acres of the Forest were burned by wildfires from 2010-2019, with individual fires ranging from about 7 acres to about 65,000 acres. During this time period most of the acres burned created habitat for wildlife species associated with wildfires of moderate to high severity. Most of the acres burned were in Wilderness on the Spotted Bear and Hungry Horse Ranger Districts. A small percentage of the acres burned were in non-Wilderness areas on the Swan, Spotted Bear, and Hungry Horse Ranger Districts. There have been no project decisions for wildfire salvage harvest in 2019 or 2020.

MON-WL-14: What is the risk of human disturbance in areas modeled as wolverine maternal denning habitat? The Decision for the Hellroaring Basin Improvements Project, signed in 2020, was the only project to occur in modeled wolverine maternal denning habitat in 2019 or 2020. Design features limited the location, season, and duration of helicopter disturbance to reduce the risk to wolverines that may use habitat along Whitefish Divide. The Forest has not yet completed NEPA analysis to add or close routes/areas designated on the MVUMs for motorized over-snow vehicle use based upon revised forest plan suitability. By the next monitoring cycle, a signed decision on updates to motorized over-snow vehicle use maps (MVUMs) may have been made and if so, results will be discussed.

MON-WL-15: What is the status of the breeding season bird community on the Forest (including neo-tropical migratory birds)? Are we maintaining diverse avian communities? The BSMS uses standardized IMBCR datasets and procedures for monitoring bird populations including occupancy, density, and trend estimates that account for detection probability. Results were examined for the FNF and the Montana portion of Bird Conservation Region 10 (MT-BCR10). Transects have been surveyed each year, but the number of transects surveyed on the FNF has varied from 9-13, with 87-133 survey point locations. At the MT-BCR10 scale, survey point locations have ranged from 1099-1600. From 2010-2020 there were 121 diverse bird species detected on FNF transects (see spreadsheet in monitoring record). This compares to 236 species detected across Montana portions of BCR10. More species are detected at larger scales due to factors such as a broader variety of habitats, more transects, timing of surveys, etc. On the FNF there are 3 species with statistically significant upward trends and 5

with downward trends at the 95 percent confidence level. In MT-BCR10 there are 16 species with statistically significant upward trends and 21 with downward trends. There are more statistically significant trends at the scale of MT-BCR10, which is to be expected at larger scales with more samples. At the FNF scale, most trends are unknown at the 95 percent confidence level. Only the Varied Thrush, black-capped chickadee, and Winter Wren show a downward trend at both scales. Only the Orange-crowned Warbler and Tree Swallow show an upward trend at both scales (both of these species are neotropical migratory birds). The Western Flycatcher showed an upward trend on the FNF only. There have been several large wildfires on the FNF in the last 10 years that could be associated with an increasing trend for species such as the Western Flycatcher. Species with a declining trend on the FNF are associated with mesic habitats at relatively low elevations. Some of the wildfires that have occurred in the last 10 years have burned mesic areas, including riparian areas, with high severity.

MON-WL-16: What is the status of the aquatic amphibian community on the Forest? Generally, long toed salamander and Boreal (western) toad tadpoles, followed by spotted frogs, were the most common species observed on the Forest. Pacific Tree Frogs and Pacific Chorus Frogs were also detected. Based upon data collected between 2005-2017 it is hard to detect change in amphibian species presence due to the low confidence in data collected as well as the sporadic nature of the data collection.

MON-WL-17: What is the status of forest meso-carnivores (e.g., lynx, wolverine, fisher) on the Forest? On the FNF, 26 grid cells were surveyed for meso-carnivores from 2018 through 2020. In 2019, 9 cells on the Salish Mountains on the Tally Lake Ranger District and 2 cells in the North Fork on the Glacier View district were surveyed as part of the Regional 1 BSMS. Separately, MT Fish, Wildlife and Parks led the Northern Rockies Fisher Survey which included survey of 12 cells in the Salish Mountains that did not overlap with cells surveyed for the Region 1 BSMS effort. In 2020, 2 grid cells were surveyed in the Swan Valley of the Swan Lake Ranger District. In 2017, the survey for wolverine occurred on the Flathead Forest as part of a Multi-State Wolverine Survey. Nine cells were surveyed explicitly for this effort.

Wolverine was detected in 1 grid cell 2020 on SLRD via game camera. In 2019, marten (species unknown) was detected in 2 grid cells (1 - TLRD, 1 - GVRD). These detections came via eDNA from a sampled snow track. In 2019, the R1 BSMS survey had three unique eDNA lynx detections on the Flathead National Forest (1 - TLRD, 2 - GVRD) near Big Creek, Kletomus Creek, and Martin Creek. Based on the findings, the state of each species did not change from 2018: Wolverine – multiple individuals of all sexes; Lynx – multiple individuals of all sexes; fisher – not present. In 2019, survey was restricted to the Tally Lake Ranger District (TLRD) in the Salish Mountains to explore the question of lynx presence on that particular portion of the Forest. Lynx were detected on TLRD confirming presence in this area of the forest (Multispecies Meso-carnivore Monitoring 2016-2020 Summary Report, 2021). Insufficient information exists for any indication of trend.

Recommended Changes

MON-WL-02: What is the status of habitat conditions that support flammulated owls during the nesting season?

> ***IND-WL-05*** ("Percentage of the warm-dry PVTs with presence of live trees and dead trees (ponderosa pine preferable) greater than or equal to 15 inches d.b.h.") and ***IND-WL-07*** ("Density (canopy cover) in the ponderosa pine dominance type forestwide") are recommended to be combined into **one** (identify as IND-WL-05) which will report the conditions of five attributes associated with flammulated owl habitat, using data from the R1 Summary database (FIA data). These attributes are:

- Acres of Warm/Dry Broad PVT group with presence of live ponderosa pine 15"+ DBH
- Acres of Warm/Dry Broad PVT group with presence of dead ponderosa pine 15"+ DBH
- Acres of Warm/Dry Broad PVT group with presence of **both** live and dead ponderosa pine 15"+ DBH
- Acres of ponderosa pine cover type (dominance type) with canopy cover 40 percent or less
- Proportion of plots with ponderosa pine cover type (dominance type) with canopy cover 40 percent or less

MON-WL-03: What is the status of habitat conditions that support fisher?

IND-WL-09 (Percentage of area in the warm-moist PVT where very large live trees and very large dead trees (>=20" DBH) are present) is recommended to be modified to be consistent with BSMS reports and provide additional information on the conditions of large/very large tree components that contribute to monitoring of fisher habitat over time. The new IND-WL-09 would have three parts as follows:

IND-WL-09a. Percent of NFS lands in the Warm Moist PVT with at least one snag/acre greater than or equal to 20 inches d.b.h. Inside and Outside Wilderness/Roadless areas.

IND-WL-09b. Density (tpa) of very large live trees in the warm moist PVT, Inside and Outside Wilderness/Roadless areas.

IND-WL-9c. Proportion of warm moist PVT where large and very large tree structural components occur at densities that contribute to ecosystem functions.

IND-WL-10 (Acres and percent of area in the warm-moist PVT that meets modeled habitat criteria for fisher winter and summer habitat (as classified in the R1 Summary database, using FIA data) is recommended to be modified as follows: Acres ~~and percent of area in the warm-moist PVT~~ that meets modeled habitat criteria for fisher winter and summer habitat (as classified in the R1 Summary database, using FIA data).

MON-WL-04: What is the status of forest conditions that support wildlife habitat connectivity for fisher and other species?

IND-WL-11 (In the areas of the Forest where the warm-moist PVT is concentrated: landscape pattern of forests where tree size class is 5 inches or greater DBH (small, medium, large and very large forest size classes), and tree canopy cover is greater than 40 percent) is recommended to be changed to: "In the areas of the Forest ~~where the warm-moist PVT with presence of western red cedar or western hemlock is concentrated,~~ *modelled as potential fisher habitat,* what is the landscape pattern of forests with tree size class 5 inches or greater DBH (small, medium, large and very large forest size classes), and tree canopy cover is greater than 40 percent". This change is necessary because we are unable to map areas where western red cedar or hemlock is concentrated in warm-moist PVTs. Instead we modeled potential fisher habitat based upon the Olson binary climate model (Olson et. al. 2014), including areas where the warm-moist PVT is concentrated.

MON-WL-05: What is the status of habitat conditions that support Clark's nutcrackers during the nesting season?

IND-WL-15 (Trees per acre of live whitebark pines treater than or equal to 10 inches d.b.h. in the Cold PVT) is recommended to be changed to "Trees per acre of live whitebark pine greater than or equal to10

inches d.b.h." Since FNF has whitebark pine in the cool PVT we recommend deleting the last portion of the indicator to monitor its presence wherever it may occur.

IND-WL-16 (Basal area per acre of live whitebark pine greater than or equal to 10 inches d.b.h. in the Cold PVT) is recommended to be dropped because it does not provide the specificity that the research data is based on.

MON-WL-06: What is the status of habitat conditions that support Townsend's big-eared bats and other bat species?

IND-WL-19 (Number of caves or structures (e.g., old buildings) surveyed and number of detections of Townsend's big-eared bats or other bat species) is recommended to be modified to be consistent with best available methods and the data that results. Recommend wording is changed to "Number of grid cell acoustic surveys and number of detections of each bat species." Grid cell acoustic surveys for bats are now more reliable than sporadic surveys of caves, buildings, and old mines conducted in the past. Currently, surveys are influenced by the availability of funding, staff, and equipment and many occur on an opportunistic timeline. As a result of these factors a small amount of data has been collected limiting our ability to compare between years with confidence.

MON-WL-07: What is the status of habitat conditions that support common loons on code A territorial nesting lakes? The plan components being monitored should be corrected. FW-GDL-WL DIV-03 should be changed to FW-GDL-WL DIV-05.

MON-WL-09: What is the status of habitat for wildlife species associated with grass/forb/shrub habitats on NFS lands?

IND-WL-27 (Percentage of NFS lands in the grass/forb/shrub condition class) is recommended to be modified as follows to clarify intent and data source: "Percentage/acres of NFS lands in the grass/forb/shrub condition class that are grass, forb or shrub non-forest lifeform and percentage/acres of NFS lands that are seedling forest size class."

IND-WL-28 (Number of acres treated to promote grass/forb/shrub habitats for wildlife) is recommend to be modified as follows to clarify intent and data source: "Number of acres treated to promote grass/forb/shrub habitats for wildlife for the purpose of maintaining or restoring key grass/forb/shrub winter habitats for wildlife."

MON-WL-10: What is the status of habitat for wildlife species associated with snags and potential live snag replacement trees in the 20-inch-or-greater d.b.h. class? AND MON-WL-11: What is the status of habitat for wildlife species associated with snags and potential live snag replacement trees in the 10-inch-or-greater d.b.h. class?

IND-WL-30 (Percent of NFS lands with presence of snags greater than or equal to 20 inches d.b.h. in each PVT) is recommended to be modified to the following to be consistent with the data source: "Percent of NFS lands with presence of at least 1 snag per acre greater than or equal to 20 inches d.b.h. in each PVT, Inside and Outside Wilderness/Roadless areas."

IND-WL-32 (Average number of live trees per acre greater than or equal to 20 inches d.b.h. in each PVT) is recommended to be modified to the following to be consistent with the data source: "Density (tpa) of

Live trees greater than or equal to 20 inches d.b.h. (tpa) in each PVT, Inside and Outside Wilderness/Roadless areas."

IND-WL-33 (Percentage of NFS lands with presence of snags greater than or equal to 10 inches d.b.h. in each PVT) is recommended to be modified to the following to be consistent with the data source: "Percent of NFS lands with presence of at least 1 snag per acre greater than or equal to 10 inches d.b.h. in each PVT, Inside and Outside Wilderness/Roadless areas."

IND-WL-35 (Average number of live trees per acre greater than or equal to 15 inches d.b.h in each PVT) is recommended to be modified to the following to be consistent with the data source: "Density (tpa) of Live trees greater than or equal to 15 inches d.b.h. (tpa) in each PVT, Inside and Outside Wilderness/Roadless areas."

MON-WL-13: What is the status of habitat for wildlife species associated with forests burned with moderate- to high-severity wildfire?

IND-WL-37 (Forestwide acres burned by wildfire by severity class (low, medium, high) in previous decade) is recommended to be modified to be consistent with the data source for this monitoring item so that all fire acres would be reported: "Forestwide acres burned by wildfire in the previous decade".

IND-WL-41 (For wildfires with salvage harvest, number of trees per acre greater than 20-inch d.b.h. retained within salvage harvest units that were verified old-growth forest prior to the fire) is recommended to be modified so that downed tree data will be added to read as: "For wildfires with salvage harvest, number of standing and downed trees per acre greater than 20 inch d.b.h. retained within salvage harvest units that were verified old-growth forest prior to the fire."

MON-WL-15: What is the status of the breeding season bird community on the Forest (including neo-tropical migratory birds)? Are we maintaining diverse avian communities?

IND-WL-44 and ***IND-WL-46*** are recommended to be changed based upon improved understanding of our ability to detect significant changes at the Forest scale. Density varies from year to year, so it is more appropriate to report significant trends in density. ***IND-WL-44*** (Bird species presence on the Forest based upon data collected for Integrated Monitoring in Bird Conservation Regions) is recommended to be changed to the following: "Bird species presence observations and occupancy on the Forest based upon data collected for Integrated Monitoring in Bird Conservation Regions." ***IND-WL-46*** (Bird species for which there are statistically significant changes in Bird Conservation Region 10) is recommended to be changed to the following: "Bird species for which there are statistically significant changes in Bird Conservation Region 10 (95 percent credible interval) population changes (trends). Compare FNF with MT-Bird Conservation Region 10."

MON-WL-16: What is the status of the aquatic amphibian community on the Forest? Monitoring question and indicators are good, but the methods will be changed. Because of the unreliability of the data collected through the opportunistic citizen science program many of the questions could not be answered with certainty. With the new protocol that is being refined, the monitoring questions will likely be answered with more certainty.

Status of Recreational Uses and Trail Infrastructure

Summary

Providing a variety of sustainable recreational opportunities is a desired condition in the Forest Plan. Desired conditions also include managing for a sustainably designed trail system that provides a variety of high-quality motorized and non-motorized recreational opportunities during summer and winter. Monitoring is designed to determine whether these desired conditions and others, such as visitor satisfaction with facilities and meeting or moving toward our recreation objectives, are being met.

Most of the following results reflect updates from data collected from January 2019 through 2020. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018).

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-REC-01: What is the status of visitor use?	FW-DC-REC-13 FW-DC-REC-14, 15 FW-DC-REC-04
MON-REC-02: Are facilities maintained to users' satisfaction?	FW-DC-REC-13 FW-DC-REC-14, 15 FW-DC-REC-04
MON-REC-03: Are the recreation objectives in the plan being achieved?	FW-OBJ-REC-01 FW-OBJ-REC-03 FW-OBJ-REC-04 GA-NF-OBJ-02 GA-SV-MA7-Crane-OBJ-01 GA-SM-OBJ-01 GA-SM-MA7-Blacktailski-OBJ-01 GA-SM-OBJ-02 through 04
MON-REC-04: Are current recreation settings and opportunities meeting or moving toward desired recreation settings and opportunities?	FW-DC-SREC-01 FW-DC-WREC-01 FW-DC-REC-03
MON-IFS-03: What is the status of the trail system on the Forest?	FW-DC-IFS-07 through 09 FW-OBJ-IFS-04 through 06

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the sustainable recreation and trails infrastructure monitoring guide and evaluation of results report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998012.pdf.

Key Results

MON-REC-01: What is the status of visitor use? MON-REC-02: Are facilities maintained to users' satisfaction? National Visitor Use Monitoring (NVUM) data is reported out every five years. The NVUM report spanning the years 2000-2015, but the report for the years 2015-2020 is not yet available. Therefore, evaluation of trends under the revised forest plan is not yet possible. However, some limited anecdotal information is available.

Recreation use and visitation has increased over the last 2 years, in particular FY20. The FY20 increase in use may be an anomaly due to changes in visitor use patterns related to the COVID pandemic. In addition, in 2020 Glacier National Park had the entire east side of the park closed and only 1 campground open for use. This contributed to a noticeable increase in use and areas of the forest used on the Hungry Horse Glacier View RD.

Downhill ski visits on the forest continue to increase, with a 19 percent -22 percent increase in visits over the last 5 years. Anecdotally, pack-rafting use is continuing to increase on the forest. E-bike use and requests are becoming an emerging activity on the forest.

MON-REC-03: Are the recreation objectives in the plan being achieved? The only recreation objective to report during this 2-year monitoring period is related to FW-OBJ-REC-01. The Van Lake Improvement Project (CE Signed 7/12/2019), within the Swan Valley Geographic Area, authorized the improvements and upgrades to the road and 6 existing dispersed campsites. This project satisfies 1 out of the 8-10 Dispersed sites rehabilitated or improved.

MON-REC-04: **Are current recreation settings and opportunities meeting or moving toward desired recreation settings and opportunities?** Decisions on the Crystal Cedar and Taylor Hellroaring projects were approved within the monitoring period (2019-2020) and both decisions address the desired ROS characteristics and incorporate management activities that are consistent with the desired ROS.

MON-IFS-03: **What is the status of the trail system on the Forest?** The general trend of trail infrastructure maintenance and improvements over the 2-year period are flat to somewhat declining, due to the influence of the COVID pandemic in 2020. There were no new miles of motorized or non-motorized NFST trails constructed during this monitoring period. Whitefish Mountain Resort under their Ski Area Special Use Permit constructed several miles of downhill mountain bike trails on NFS lands.

The emphasis for trails infrastructure for this monitoring period continued to focus on maintaining and sustaining the existing trails system on the forest. This is true for motorized and non-motorized trails.

Recommended Changes

MON-REC-01: What is the status of visitor use? AND **MON-REC-02: Are facilities maintained to users' satisfaction?** The plan components being monitored for these two questions should be corrected to the following: FW-DC-REC-04, FW-DC-REC-14, and FW-DC-REC-15.

MON-REC-03: Are the recreation objectives in the plan being achieved? The plan components being monitored should be corrected to the following: FW-OBJ-REC-01; FW-OBJ-REC-03; FW-OBJ-REC-04; GA-NF-OBJ-02; GA-SV-MA7-Crane-OBJ-01; GA-SM-OBJ-01; GA-SM-OBJ-02; GA-SM-MA7-Blacktailski-OBJ-01.

Status of Road Infrastructure

Summary

It is desired that the Forest manages for a sustainable transportation system that serves land management and public needs and purposes (FW-DC-IFS-06). The plan contains objectives for miles of road management activities that would support this desired condition, such as road decommissioning or placing into intermittent stored service; road reconstruction and improvement; and road maintenance. It is also a desired condition that road closure devices on the Forest function effectively (FW-DC-IFS-12). Monitoring will occur to monitor trends in road status and to ensure that road management objectives are being achieved and closure devices remain effective.

The following results reflect updates from data collected from 2019 and 2020. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018).

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-IFS-01: Are road closure devices effective at restricting public motorized use?	FW-DC-IFS-12
MON-IFS-02: What is the status of the road system on the Forest?	FW-DC-IFS-06 FW-OBJ-IFS-01 through 03 FW-GDL-IFS-03

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the infrastructure roads monitoring guide and evaluation of results report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd997996.pdf.

Key Results

MON-IFS-01: Are road closure devices effective at restricting public motorized use? As of the end of 2020, across the Flathead NF there were 867 road closure devices accessed by open roads (this figure does not include administrative gates nor gates/barriers that are found behind other yearlong closures). A total of 1,614 road closure inspections were done in 2019 and 2020, with an overall effectiveness of 92 percent.

Some devices were inspected more than once, and it is possible that some devices were included that should have been screened out. Nevertheless, about half of them were inspected in 2019 and all or nearly all of them were inspected in 2020.

2020 was the first pilot year of a new system for collecting and managing closure effectiveness data. We discovered that many devices were incorrectly recorded as ineffective, such as gates that were properly seasonally open or that were being used by timber sales in accordance with NEPA decisions. The surveying

issues were all or mostly corrected before the 2021 pilot year, and results will be directly comparable from year to year after that point.

MON-IFS-02: What is the status of the road system on the Forest? Following is a summary of total road miles forest-wide by road status:

- Miles of road open year-long (2020) = 1029.11
- Miles of road open seasonally (2020) = 399.02
- Miles of roads maintained (2019/2020) = 315.48/475.91
- Miles of road decommissioned (2019/2020) = 0.4/0
- Miles of roads put into intermittent stored service (2019/2020) = 0/0
- Miles of road reconstruction or improvement (2019/2020) = 4.15/3.45

The Flathead National Forest is accomplishing activities that support a sustainable transportation system serving land management and public needs and purposes and progressing towards achieving the plan objectives.

Recommended Changes

MON-IFS-02: What is the status of the road system on the Forest?

> ***IND-IFS-08*** (Number of culverts inspected, assessed, and/or cleaned) is recommended to be dropped because The Forest Plan Revised Biological Opinion requires the Forest Service to submit an annual report summarizing culvert inspection results from the prior field season to the US Fish and Wildlife Service. This detailed report includes number of culverts inspected, along with detailed information about failure risk and potential consequences to bull trout habitat.. It is recommended to REPLACE this indicator with a new one, changing IND-IFS-08 to read “Miles of new road construction”. This would add an indicator that would be useful in monitoring road infrastructure on the FNF.
>
> ***FW-GDL-IFS-03*** should be removed from the list of forest plan components being monitored.

Status of Wild & Scenic Rivers, Wilderness, and Inventoried Roadless Areas

Summary

The purpose of monitoring is to determine whether activities or uses that may be occurring in these management areas and within Inventoried Roadless Areas are consistent with desired conditions in the plan and, in the case of IRAs, with the Roadless Area Conservation Rule. The DCs for designated and eligible wild and scenic rivers are to protect the free-flowing character and outstandingly remarkable values of the rivers. Desired ecological conditions in wilderness areas are to manage to preserve and protect their wilderness character as directed by the Wilderness Act and each wilderness area's enabling legislation. Wilderness character includes the qualities of untrammeled, undeveloped, natural, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and other features of value (ecological, geological, scientific, scenic, or historic value unique to each specific wilderness area). In recommended wilderness, desired conditions are to maintain and protect the ecological and social characteristics that provide the basis for wilderness recommendation. Recommended wilderness areas are to be characterized by a natural environment where ecological processes such as natural succession, wildfire, avalanches, insects, and disease function with a limited amount of human influence.

The following results reflect updates from data collected from 2019 and 2020. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018).

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-MA2a-01: Are the statutory requirements (outstandingly remarkable values, water quality, and free-flowing conditions) of the three forks of the Flathead Wild and Scenic River being protected?	MA2-DC-01, 02, 06
MON-MA2b-01: Are the outstandingly remarkable values for which the river was deemed eligible and the free-flowing conditions protected?	MA2b-DC-01, 02
MON-WILD-01: Do management activities in designated wilderness areas preserve and protect wilderness character?	FW-MA1a-DC-01 & 02, MA1a-GDL-03
MON-RWILD-01: Do outcomes from management activities protect the wilderness characteristics of the recommended wilderness area?	MA1b-DC-01- 02 MA1b-SUIT-06
MON-IRAs-01: Do outcomes from management actions maintain roadless area characteristics within inventoried roadless areas?	Roadless Area Conservation Rule

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the wild and scenic river, wilderness/recommended wilderness, and inventoried roadless area monitoring guide and evaluation of results report located in the project record

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998019.pdf.

Key Results

MON-MA2a-01: Are the statutory requirements (outstandingly remarkable values, water quality, and free-flowing conditions) of the three forks of the Flathead Wild and Scenic River being protected? During this monitoring period (2019-2020), there have been 2 projects occurring in MA 2a – Polebridge River Access Site Reconstruction Project and Crystal Cedar Project. Both projects occur within the North Fork and Middle Fork of the Flathead WSR corridor. The Polebridge River Access Site project was analyzed and approved under a categorical exclusion and a Section 7 analysis was complete to approve construction of new boat ramp and access site. This project was completed successfully. The Crystal Cedar Project approved vegetation management in four vegetation management units (units 121, 123, 130, and 131) within the North Fork and Middle Fork Flathead River recreation river segments. Through analysis in the EA it was determined that management activities will have no effect to the outstandingly remarkable values identified for these segments of river. The activities were also consistent with the 1980 Flathead River Management plan. None of these activities have been implemented as of the end of 2020. If they are accomplished by the time of the next plan monitoring report (in 2 years), the outcome of the treatments may be evaluated to determine consistency with planned results.

Of note, the current 1980 Flathead River Management Plan does not meet the statutory requirements of Section 3d of the WSRA. The Forest is continuing to work on a Comprehensive River Management Plan that is scheduled to be completed by the end of 2022.

MON-MA2b-01: Are the outstandingly remarkable values for which the river was deemed eligible and the free-flowing conditions protected? No activities have been approved in MA 2b during this monitoring period.

MON-WILD-01: Do management activities in designated wilderness areas preserve and protect wilderness character? The Wilderness Stewardship Performance scoring indicates a slightly increasing to flat score for both the Bob Marshall Wilderness Complex and the Mission Mountain Wilderness. One element of focus that will help to increase the scoring are in invasive species management and focusing on education.

Limits of acceptable change (LAC) monitoring: LAC monitoring for the Bob Marshall Wilderness Complex is on a 5-year reporting basis, and a report is not complete for this Forest Plan monitoring cycle. The Mission Mountains Wilderness area has not had the necessary staff over the last 2 years to be able to complete the LAC monitoring. Swan Valley Connections (non-profit partner) has done some monitoring work over the past years.

Unauthorized motorized use/mechanized transport: Unauthorized motorized use is hard to track and dependent on the level of staffing throughout the year. In 2020 a high profile unauthorized private helicopter landing occurred in the Bob Marshall Wilderness along the South Fork of the Flathead River near Black Bear Cabin. Other possible impacts during the monitoring period include winter unauthorized motorized use, particularly along the Mission Mountains Wilderness front and in the Skyland area near the Great Bear Wilderness.

MON-RWILD-01: Do outcomes from management activities protect the wilderness characteristics of the recommended wilderness area? No projects have occurred within the recommended wilderness areas.

MON-IRA-01: Do outcomes from management actions maintain roadless area characteristics within inventoried roadless areas? One project occurred in the inventoried roadless areas during this monitoring

period - The March Madness Blowdown Salvage Sale on the Swan Lake ranger district. The categorical exclusion decision (October 2020) was for about 1000 acres, with 43 acres occurring in the Bob Marshall Scapegoat Swan IRA. Harvest occurred with mechanized equipment and no roads within IRA were constructed. All activities were consistent with the limitations imposed by the Roadless Area Conservation Rule.

Recommended Changes

No changes are recommended.

Status of Scenic Character

Summary

It is desired that the Forest's scenery provides a range of scenic quality as described by the scenic integrity objectives (FW-DC-SCN-02). FW-GDL-SCN-03 states that vegetation management activities should be designed to reflect natural disturbance regimes and processes to meet or exceed the scenic integrity objective. Monitoring is done to help ensure consistency with forest plan components.

The following results reflect updates from data collected from 2019 and 2020. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018).

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-SCN-01: Is the existing condition and trend of the scenic character meeting or moving toward desired conditions?	FW-DC-SCN-02 FW-GDL-SCN-03

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the scenery management monitoring guide and evaluation of results report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998013.pdf.

Key Results

Scenery analyses were conducted for three vegetation management projects as well as one recreation management project that had decisions in 2019 or 2020. The site-specific analyses and summaries within these documents show that management actions or activities are consistent with or moving towards the desired scenic integrity objectives.

Recommended Changes

There are no changes recommended.

Status of Timber Production

Summary

Production of timber and timber harvest contribute to economic sustainability, providing jobs and income to local economies. Objectives for timber production are as follows:

FW-OBJ-TIMB-01 - Annually, offer timber for sale at an average projected timber sale quantity of 27.3 million board feet (5.5 million cubic feet)

FW-OBJ-TIMB-02 - Annually, offer commercial timber and other products for sale at an average annual projected wood sale quantity of 6.3 million cubic feet

These estimates of timber outputs may be larger or smaller on an annual basis, or over the life of the plan, if legal authorities, management efficiencies, or unanticipated constraints change in the future.

FW-DC-TIMB-05 states that in areas suitable for timber production, sanitation or salvage harvest may occur and contribute to the overall economic benefits of harvest while achieving desired conditions and management direction for other resources (e.g., wildlife habitat, snags) and providing for human safety along open roads and trails.

The following results reflect updates from data collected from 2019 and 2020. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018).

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-TIMB-01: How are management actions contributing to a sustainable mix of forest products in response to market demands?	FW-DC-TIMB-02 FW-OBJ-TIMB-01 and 02
MON-TIMB-02: How are management actions contributing to the recovery of economic value of dead or dying trees on suitable lands?	FW-DC-TIMB-05

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the timber products monitoring guide and evaluation of results report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998010.pdf.

Key Results

To respond to MON-TIMB-01 and MON-TIMB-02, two indicators were identified in the forest plan: IND-TIMB-01 (Million board feet/million cubic feet offered and sold annually) and IND-TIMB-02 (Million board feet/million cubic feet offered and sold annually as salvage harvest). The response to these indicators is found in the following table:

Table 3. Total Volume Sold and Offered (salvage and non-salvage) in 2019 and 2020

IND-TIMB-01			IND-TIMB-02		
Total Volume offered	**2019**	**2020**	**Total Salvage Volume offered**	**2019**	**2020**
Million Board Feet	44.1	48.5	Million Board Feet	22.5	28.5
Million Cubic Feet	8.6	9.9	Million Cubic Feet	4.4	5.8
Total Volume sold	**2019**	**2020**	**Total Salvage Volume sold**		
Million Board Feet	50.6	48.5	Million Board Feet	24.9	28.5
Million Cubic Feet	9.9	9.9	Million Cubic Feet	4.9	5.8

The Forest offered and sold a steady amount of volume over the last two years that exceeded quantities in Objectives FW-OBJ-TIMB-01 and 02. The Forest sold all the volume offered over the monitoring period. This indicates strong demand for forest products off the forest. Timber volume offered and sold exceeded the Periodic Timber Sale Quantity (FW-OBJ-TIMB-01) over the last two years but is well within its annual sustained yield limit of 25.4 MMCF.

Salvage of dead and dying timber accounted for approximately 49 percent of the volume sold in 2019 and approximately 59 percent of the volume sold in 2020. Salvage volume increased in 2020 through the offing of sales with a heavy component of over-mature lodgepole pine. Also, a wind event in March of 2020 created blowdown captured as additional volume in active timber sales.

Recommended Changes

No changes are recommended.

Status of Social and Economic Environment

Summary

As the largest land jurisdiction in Flathead County, the FNF serves as the backdrop for residents and plays a key role in supporting the social and economic sustainability of local communities, the state of Montana, and the broader region. Desired condition FW-DC-S&E-02 in the plan states "Sustainable and predictable levels of goods and services (such as wilderness hunting and fishing opportunities, timber, downhill skiing, and huckleberries) are provided for local communities and contribute to the local economy through the generation of jobs and income while creating products for use both nationally and locally." Monitoring of the more tangible goods and services the forest provides over time will occur to evaluate changes and trends.

The following results reflect updates from data collected from 2019 and 2020. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018).

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-S&E-01: To what extent is the Forest providing goods and services for local communities?	FW-DC-S&E-02 FW and GA objectives
MON-S&E-02: To what extent is the Forest contributing to desired conditions for a stable and functioning local economy?	FW-DC-S&E-02 FW and GA objectives
MON-S&E-03: To what extent do opportunities to connect people, including youth, with nature exist across the Forest?	FW-DC-S&E-03 FW-DC-R&E-01 through 05
MON-S&E-04: Is the cost of implementing the forest plan consistent with projections?	FW-DC-S&E-02 FW and GA objectives

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the social environment monitoring guide and evaluations of results report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998014.pdf and https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998015.pdf.

Key Results

MON-S&E-01: To what extent is the Forest providing goods and services for local communities? MON-S&E-02: To what extent is the Forest contributing to desired conditions for a stable and functioning local economy? MON-S&E-04: Is the cost of implementing the forest plan consistent with projections? For this monitoring period, results indicate that the Flathead NF continues to provide a flow of tangible goods and services, local jobs and income, and payments to state and county. No trends from previous years can be determined at this time. The data produced in this first Flathead Forest Plan Monitoring Report will serve as a baseline for comparing trends in these economic metrics over time.

For the development of Forest Plan objectives, budget levels over the life of the plan were assumed to be constant (inflation adjusted). The budget level reported for this monitoring period will serve as a baseline to compare trends over time in Forest annual budgets (adjusting for inflation).

MON-S&E-03: To what extent do opportunities to connect people, including youth, with nature exist across the Forest? The information collected follows what is reported annually in the Forest Service national NatureWatch, Interpretation, Conservation Education (NICE) database. NICE is the Forest Service database of record for reporting outreach and education activities and sharing accomplishments with the public, partners, and leadership.

Flathead National Forest has collected and reported information into the NICE database since 2008. Over an eleven-year period from 2008 to 2018, the estimated annual average for total number of people participating in programs is 22,900 and for youth 3,350 (10-year average – data not reported for 2014). Through time as the NICE program has improved so has forest-wide data collection and reporting.

For this monitoring period (2019-2020) the following conservation education, interpretation and visitor info programs were recorded in NICE:

- 2019: 25 NICE entries, with the top three delivery methods being Presentations/Demos (80 percent); Hands-on Activity (24 percent); and Staff table/exhibit (20 percent). A total of 21,212 people participated, with 3,334 of those being youth.
- 2020: 14 NICE entries, with the top delivery methods being Presentations/Demos (57 percent); Hands-on activity (28 percent); Staff table/exhibit (14 percent); Training (14 percent); and Multi-media (14 percent). A total of 50,250 people participated, with 1,490 of those being youth.

Seven months of the 2020 program year were within the COVID-19 pandemic period. Spring and many summer community events that the Forest traditionally participated, were cancelled, including Earth Day and Arbor Day and the Family Forestry Expo. With schools closed, traditional annual classroom visits did not take place and for safety concerns the Forest did not participate in the annual NW Montana Fair. Other Forest programs were postponed to 2021 including the Artist-Wilderness-Connection, artist-in-resident program. The Summit Nature Center project continued though at a reduced capacity, moving operations outdoors for the summer.

The larger number of people reached in 2020 reflects the reporting of 21 fire safety/prevention educational posts on the Flathead National Forest Facebook page with an audience reach of 40,000.

2020 was the first year for recording specific social media educational posts as part of the Forest's outreach efforts. Previous year's recorded accomplishments focused on traditional outreach methods, in-person programs, and limited reporting of print media, publications (e.g. news and magazine articles, brochures), static media such as signing and curriculum materials. This last year, the NICE database expanded non-personal delivery categories to better account for electronic media.

Recommended Changes

MON-S&E-01: To what extent is the Forest providing goods and services for local communities?

> ***IND-S&E-01*** (Levels of production of multiple uses, including timber products, grazing, recreational visits, wilderness hunting and fishing opportunities and downhill skiing (as measured through day visits, night visits, local and non-local visits, animal unit months, thousand cubic feet of harvest and sales): It is

recommended to change the wording in this indicator to be consistent with the data source and the indicator should read as follows: “Levels of production of tangible multiple uses, including timber products, grazing, recreational visits and downhill skiing.”

MON-S&E-03: To what extent do opportunities to connect people, including youth, with nature exist across the Forest? This monitoring question is recommended to be modified slightly to be more specific with how the forest is connecting to all people with nature: “To what extent are there opportunities for all people, including youth, to connect with the Forest through conservation education, interpretive and visitor information programs across the Forest?”

IND-S&E-04 (Number and type of education and youth programs; national visitor use monitoring report IND-REC-01; visitor center tracking) is recommended to be modified to clarify the intent is the importance of the monitoring question is connecting with all people: “Number and type of education, interpretative, visitor info programs.”

IND-S&E-05 (Number of youth participating in various Forest education and youth programs, including employment) is recommended to be modified to “Number of people, including youth, participating in Forest education, interpretive and visitor info programs.”

Status of Cultural and Tribal

Summary

Cultural resources include buildings, sites, districts, structures, and objects that have scientific, cultural, or social values. The plan has objectives related to completing inventories and evaluations of cultural resources, and if eligible to nominate to the National Register of Historic Places. Cultural resources include significant areas identified by tribes, with desired conditions to ensure that that protection of these resources occurs. This monitoring item tracks how well these forest plan objectives and desired conditions are met.

The following results reflect updates from data collected from 2019 and 2020. This is the first report of Forest Plan monitoring results since adoption of the Flathead Forest Plan (December 2018).

Monitoring Questions

Monitoring Item/Question	Plan Component Monitored
MON-CR-01: To what extent are cultural resource objectives being met, and are they trending towards desired conditions to identify, evaluate, and nominate cultural resources for listing in the National Register of Historic Places?	FW-OBJ-CR-01 through 03
MON-CR-02: To what extent are plan components ensuring treaty rights are preserved and trending towards desired conditions for consultation with each tribe?	FW-DC-CR-02 FW-OBJ-TRIB-01, 02

Details of the results of monitoring, as well as the full text of the plan components being monitored can be found in the cultural monitoring guide and evaluation of results report located in the project record https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd998009.pdf.

Key Results

MON-CR-01: **To what extent are cultural resource objectives being met, and are they trending towards desired conditions to identify, evaluate, and nominate cultural resources for listing in the National Register of Historic Places?** The Heritage program has been on an upward trend regarding developing the components identified in MON-CR-01. This has included numerous thematic studies associated with Priority Heritage Assets such as the Spotted Bear Ranger Station, Ford Schoolhouse, and China Basin Trappers Cabin. These Thematic studies often lead into development of a National Register nomination, which will be the case with Ford Schoolhouse, and Property Preservation Plans, which is planned for China Basin Cabin.

The Forest completed monitoring on six Priority Heritage Assets (PHA) in 2019 and 15 in 2020 indicating an upward trend. This work also included adding 3 new archaeological sites to the PHA list.

The Flathead NF Heritage Program has actively pursued public outreach opportunities and interpretive projects. These opportunities include projects that involve local youth such as the Montana Forestry Expo and presentations to local historical societies including the Columbia Falls Historical Society and Flathead County

Posse of Westerners. Interpretive efforts include the creation of an interpretive plan for the National Register listed Spotted Bear Ranger Station. We have engaged numerous volunteer partnership efforts such as Passport In Time, the Northwestern Firefighter Lookout Association, and the local North Fork Homeowners Association to encourage cooperation and work in preserving important local cultural resources. Due the onset of the COVID pandemic, these opportunities were drastically limited in 2020, but reporting in the last two years shows that volunteer work, partnerships, public outreach, and interpretation opportunities are on an upward trend.

MON-CR-02: **To what extent are plan components ensuring treaty rights are preserved and trending towards desired conditions for consultation with each tribe?** Informal Tribal consultation protocols have been developed with applicable Native American tribes who have ancestral ties to lands managed by the Flathead NF. Protocols include routine open communication regarding all proposed activities that have a potential to impact native archaeological sites and natural resources protected by treaty rights. Consultation protocols include an annual face-to-face meeting with the Tribal Historic Preservation Office (THPO) of the Confederated Salish and Kootenai Tribes. We also directly correspond annually with the THPO of the Blackfeet Nation. During the last two years of consultation, 51 projects have been discussed for any potential tribal concerns form these tribes. As a program, we cooperate routinely with tribal partners for help with educational outreach opportunities and archaeological monitoring work around Hungry Horse Reservoir.

Due to the onset of the COVID pandemic, we were unfortunately not able to have a face-to-face consultation meeting with tribal partners in 2020. A formal consultation plan is being developed with those tribes we routinely consult with. A formal consultation plan would enhance the existing processes we go through to communicate with local tribal entities. Existing consultation over the last two years has been engaging and positive and our program works to continue building strong relationships with our tribal partners.

Recommended Changes

There are no recommended changes.