ESTIMATES OF SNAG HABITAT ON THE CARIBOU NATIONAL FOREST

Tom Silvey, Forester 2018

BACKGROUND

The Revised Forest Plan of the Caribou National Forest Plan (RFPCNF) has management standards and guidelines to maintain snag/cavity nesting habitat across the Forest. This report is to provide updated information on snag/cavity nesting habitat on the Caribou National Forest and provide any management recommendations for providing for snag/cavity nesting habitat.

The RFPCNF adopted concepts and principals of cavity nesting habitat and management outlined in Thomas (1979) as well as the analysis and process in Process Paper D of the Revised Forest Plan of the Targhee National Forest (RFPTNF). The main concept in Thomas (1979) is the number and size of available snags affect the presence or absence of snag-dependent wildlife but also wildlife population levels. The Final Environmental Impact Statement for RFPCNF (FEIS RFPCNF) did an assessment of primary cavity nesters present on the Caribou National Forest, primary forest types used by each, number of cavities used per year, and the size of territories, etc. This information was utilized to determine the size and number of snags to meet a maximum population level or 100% biological potential for woodpeckers per 100 acres. Figure 1, 2 and 3 (below) are from the FEIS RFPCNF Appendix D Table 13, 14 and 15 which is all the information summarized to determine the snag requirements to achieve a maximum population level or 100% biological potential for woodpecker species. Knowing the 100% biological potential, varying woodpecker population levels can then be managed according to Thomas (1979). Figure 4 is Table 3.3 in the RFPCNF which shows the snag requirements for varying levels of biological potential ranging from 20% to 100% biological potential or population level given on 100 acre unit of measure.

Table 13. Major Forest Types Used by Woodpeckers on the Caribou NF.

Major Forest Types Used (of types found on the Caribou NF)	Aspen	Mixed conifer and Douglas-fir and spruce/fir	Lodgepole pine
Lewis' Woodpecker	X	X	
Red-naped sapsucker	X	X	X
Williamson's sapsucker	X	X	X
Downy woodpecker	X	X	X
Hairy woodpecker	X	X	X
Three-toed woodpecker	X	X	X
Northern flicker	X	X	X

Figure 1. Table 13 from FEIS RFPCNF Appendix D.

Table 14. Woodpecker Habitat Requirements.

	Snag DBH (inches)	Snag Height (feet)	No. of Cavities /Year	Territory Size (Acres)*	No. of Snags Per Acre for 100% Biological Potential*
Lewis woodpecker	12-27"	5-170'	1	0-15 (15)	.48-1.01 (1.01)
Red-naped sapsucker	9-47"	15+'	1	5.1-12 (10)	1.5 (1.5)
Williamson's sapsucker	12-37"	15+'	1	10-12 (10)	.33-1.5 (1.5)
Downy woodpecker	6-14"	6-50'	2	5-50 (10)	.16-5 (3)
Hairy woodpecker	9-29"	15+'	3	6-25 (25)	.6-1.92 (1.8)
Three-toed woodpecker	7-19"	15+'	3	35-200 (75)	.06-.6 (.59)
Northern flicker	10-51"	6+'	1	8-500 (40)	.38-.48 (.38)

* No. in ( ) indicates territory sizes and number of snags used for analysis purposes on the Targhee NF.

Figure 2. Table 14 from the FEIS RFPCNF Appendix D.

Table 15. Snag Requirements to Achieve 100% Biological Potential for Each Woodpecker Species per 100 Acres.

Species	Aspen	Douglas-fir, spruce/fir	Lodgepole pine
Lewis' woodpecker	101	101	na
Red-naped sapsucker	150	150	150
Williamson's sapsucker	na	150	150
Downy woodpecker	300	300	300
Hairy woodpecker	180	180	180
Three-toed woodpecker	59	59	59
Northern flicker	38	38	38
Total hard snags per 100 acres	828	978	877

Figure 3. Table 15 from the FEIS RFPCNF Appendix D.

■ **Table 3.3 Biological Potentials by Forested Vegetation Type.**

Percent of Biological Potential	Number of Snags per 100 Forested Acres[1]		
	Aspen	Douglas-fir Spruce/Fir	Lodgepole
100	828	978	877
80	662	782	702
60	497	587	526
40	331	391	351
20	166	196	175

[1] IN MIXED SPECIES STANDS, USE THE AVERAGE NUMBER OF SNAGS FOR DOMINANT FOREST TYPES.

Figure 4. Table 3.3 from the RFPCNF.

The snag requirements to achieve 100% biological potential in the RFPCNF are elevated above what would be required utilizing all the concepts in Thomas (1979). Thomas (1979) considered three concepts: 1) the same snag can be used by several cavity excavating species; 2) birds of the same species will not usually excavate twice in the same snag; and (3) larger snags can be substituted for smaller snags-however, the reverse is not true. Table 1 show the snag requirements to achieve 100 biological potential for all species according to the RFPCNF. The primary concept the RFPCNF did not consider when calculating snag requirements for 100% biological potential was the same snag can be used by several cavity excavating species. Snag requirements for individual species were added together cumulatively and the consideration that the same snag can be utilized by different species was not

accounted for. This elevated the total snag requirements in the RFPCNF needed to meet all levels of biological potentials. Snag numbers per 100 acres in the RFPCNF, require a range from 828 to 978 depending on the forest type. Table 2 demonstrates if the biological considerations in Thomas (1979) were followed, only three diameter classes would need to be considered and a total of 300 snags per 100 acres would be needed to meet 100 percent biological potential or maximum population levels for cavity nesting species on the Caribou National Forest. The effect of this is that the snag requirements needed for 40% biological potential and higher in the CNRFP are actually at the 100% biological potential or maximum population level according to Thomas (1979).

Table 1. Snag Requirements to Achieve 100% BP for Each Woodpecker Species per 100 forested acres. Adapted from Table 14 and Table 15 in the FEIS RFPCNF Appendix B.

Species	Minimum Snag DBH (inches)	Aspen	Douglas-fir, spruce/fir	Lodgepole pine
Lewis woodpecker	>= 12	101	101	n/a
Williamson's sapsucker	>= 12	n/a	150	150
Northern flicker	>= 10	38	38	38
Hairy woodpecker	>= 9	180	180	180
Red-naped sapsucker	>= 9	150	150	150
Three-toed woodpecker	>= 7	59	59	59
Downey woodpecker	>= 6	300	300	300
TOTAL		**828**	**978**	**877**

Table 2. Snag Requirements to achieve 100% biological potential for each woodpecker species per 100 acres utilizing Thomas (1979) adapted from FEIS RFPCNF Appendix D Table 14. These snag requirements followed the methodology from Thomas (1979) on pages 70 and 71.

Minimum Snag DBH (inches)	Aspen	Douglas-fir, spruce/fir	Lodgepole pine
>= 12	101	150	150
>= 9	79	30	30
>= 6	120	120	120
Total	**300**	**300**	**300**

The FEIS RFPCNF evaluated Bull, et al (1997) which identified concerns with the concepts and methodology in Thomas (1979). Bull et al (1997) suggested that snag numbers should be revised upward from the Thomas (1979) snag numbers. The RFPCNF snag requirements are elevated upward and address the concerns Bull et al (1997) identifies. In addition, green tree retention standards were based upon using the elevated levels in the RFPCNF. Therefore, the RFPCNF has provided additional requirements for the cavity nesting species then what is necessary to meet the populations levels identified in Thomas (1979) and addresses the concerns in Bull et al (1997).

The RFPCNF assigned a biological potential or population level to each management prescription area. In prescription areas where timber harvest or vegetation treatments are allowed and products may be removed, guidelines for maintaining cavity-nesting habitat were assigned. In prescription areas such as recommended wilderness, where no product removal would occur, no guideline was established. It assumed that the existing condition for cavity nesting habitat capability in these areas would be 100 percent. In management prescription areas where concentrated human use occurs, snags are usually removed due to safety concerns; in these area the biological potential is assigned at zero. Figure 4 is a snapshot of Table 23 from Appendix D of the FEIS RFPCNF which shows the assigned biological potential to each management prescription area. Using the acres by management prescription in Figure 4, the snag management level across the forest would be approximately 66%. Snag management level is the biological potential times the percent of total acres (Thomas 1979). According to Figure 41 in the Thomas 1979 anything above 40% would maintain viable populations. Snag management levels above 60% would maintain highly viable populations. Due to the RFPCNF elevated snag requirements, the actual snag management level across the Forest is much higher. Table 3 shows the amount of snags by diameter class for each forest cover type required by the RFPCNF to achieve the biological potential assigned. Comparing the biological potential snag requirements in the RFPCNF to Table 2 which is the snag requirements when utilizing Thomas 1979 biological considerations, all management prescriptions are managed at a 100% biological potential except in management prescriptions where no biological potential was assigned.

Figure 4. Table 23 from Appendix D of the FEIS RFPCNF. Assigned biological potential for each prescription area.

Table 23. Prescription Areas on the Caribou NF.

Prescription	Acres	% Biological Potential Assigned
1.3	38,800	Natural levels
2.1.1 – 2.1.5	38,700	Natural levels
2.2, 2.5	7,100	Natural levels
2.7.1, 2.7.2	219,400	Natural levels
2.8.3	63,700	Greater than 80 percent
3.1	41,200	Natural levels
3.2	165,500	Greater than 60 percent
3.3	65,200	Greater than 60 percent
4.1, 4.2, 4.3	5,000	Not assigned (0)
5.2	160,900	Greater than 40 percent
6.2*	226,900	Greater than 40 percent
8.1, 8.1u, 8.2.2	9,800	Not assigned (0)

* While this prescription is rangeland vegetation management, the vegetation does include some forested stands.

Table 3. Snag requirements by diameter class for maintaining various percentages of biological potential for woodpecker populations (snags per 100 acres) according to the RFPCNF.

	Aspen (% Biological Potential)				**Douglas-fir, spruce/fir** (% Biological Potential)				**Lodgepole pine** (% Biological Potential)			
DBH (inches)	40%	60%	80%	100%	40%	60%	80%	100%	40%	60%	80%	100%
>= 12	40	61	81	101	100	151	201	251	60	90	120	150
>= 10	15	23	30	38	15	23	30	38	15	23	30	38
>= 9	132	198	264	330	132	198	264	330	132	198	264	330
>= 7	24	35	47	59	24	35	47	59	24	35	47	59
>= 6	120	180	240	300	120	180	240	300	120	180	240	300
Total Snags	**331**	**497**	**662**	**828**	**391**	**587**	**782**	**978**	**351**	**527**	**702**	**877**

In Appendix D of the FEIS RFPCNF an existing condition analysis was done on snags. It utilized 197 Continuous Forest Inventory (CFI) plots that were measured in 1993. In the analysis, it utilized the snag information in the 12 inch and larger diameter class (11 to 12.9 inch and larger). This size class meets the minimum size requirements for all seven woodpecker species and larger snags can be substituted for smaller snags according to Thomas (1979). The analysis of smaller snags was not analyzed and therefore the plan did not account for the contribution of smaller snags to the overall biological potential. This likely underestimated the amount of snags that contribute to cavity nesting habitat since information on the largest snags (12 inches and greater) was utilized. The CFI plots that were utilized in the plan analysis are no longer used by the Forest Inventory and Analysis group in the Forest Service. The sampling method and plot methodology has changed and therefore we do not have the information to directly compare the changes on these plots since 1993.

MONITORING

Based upon the background information presented, the monitoring will focus on utilizing the best information available to address the snag/cavity nesting habitat on Caribou National Forest. Evaluate estimates of snag densities within management prescription areas where timber harvest may occur and snag densities by cover type forest wide. This will meet the intent of the RFPCNF monitoring requirement to look at snag recruitment and losses from treatment and assist in site specific project analysis. Also address the intent of the CNFRFP monitoring to look at snag recruitment and losses from treatment. The main method utilized to address this is Forest Inventory Plots.

FOREST INVENTORY PLOT METHODOLGY

To estimate snag/cavity nesting habitat we utilized Forest Inventory & Analysis (FIA) plots and intensified grid plots on the forest. Information from 185 FIA plot locations and 983 intensified grid plots were used. Information on these plots were collected between 2005 and 2014 for FIA plots and for information for intensified plots were collected from 2009 to 2014.

The primary objective for the FIA and intensified grid plots was to assess forest structure by ecological subsection. Secondary objective were to estimate snag densities, wildlife habitat and other habitat characteristics.

The sampling design intended to balance several competing factors: sample size, sample variance, representation of the subsection, cost, and utilizing existing Forest Inventory plots. The plots established and methodology used mimics current FIA inventory techniques.

Since the objective was to evaluate each ecological subsection, the Caribou National Forest was stratified by ecological subsection. Each ecological subsection has unique and uniform ecological potentials. The Caribou National Forest encompasses part or all of the seven subsections (See Appendix B Figure 1). A description of each of the subsections is described in the RFPCNF pages RFP 4-1 thru RFP 4-11.

The FIA and intensified sampling frame uniformly covers all forest lands by subsection. As a result, spatial data sets can be intersect with the plots to estimate snag density.

All forested plots were field sampled. Field sampling procedures for establishing plots are documented in Forest Inventory Intensification Using CSE Protocols. Sample locations where the FIA plot was used the FIA subplot 1 field collection information was utilized in this inventory. See http://www.fs.fed.us/rm/ogden/data-collection/field-manuals.shtml for information on FIA data collection. Plot size was equal to the size of 1 FIA subplot or 1/24th acre with a 1/300th acre microplot.

To be most useful for project analysis we post stratified the plots using the 2015 Existing Vegetation GIS coverage (Cstands). This stratification was used to determine the Society of American Foresters (SAF) cover type for each plot to calculate snag densities and biological potential for the cover type within the ecological subsection. Additional strata such as management prescriptions were also used. Table 4 shows the acres of SAF forest cover type by ecological subsection.

Table 4. Acres of SAF cover type by ecological subsection.

Society of American Foresters (SAF) Cover Types	Basin and Range Transitional Mtns	Bear River Karst Highlands	Cache Valley Front	Caribou Range Overthrust Mtns	Portneuf Uplands	Pruess Ridges and Hills	Webster Ridges and Valleys	*Total SAF Cover Types Acres*	*%Total SAF Cover Types*
Engelmann Spruce - Subalpine Fir (206)	1,327	24,813	870	22,129	840	953	5,433	**56,365**	**10%**
Douglas-fir (210)	35,911	49,700	31,493	65,860	15,856	20,892	64,275	**283,987**	**49%**
Aspen (217)	13,635	25,475	8,100	25,777	19,292	19,358	49,848	**161,485**	**28%**
Lodgepole pine (218)	-	22,764	1,224	22,687	-	5,239	24,347	**76,260**	**13%**
Limber pine (219)	203	2,415	95	4	178	-	20	**2,915**	**1%**
Ponderosa Pine (237)	63	-	-	-	-	-	-	**63**	**0%**
Subsection Total Acres	**51,139**	**125,167**	**41,781**	**136,457**	**36,166**	**46,442**	**143,922**	**581,075**	**100%**
% Of Subsection Acres	**9%**	**22%**	**7%**	**23%**	**6%**	**8%**	**25%**	**100%**	

Table 5 below shows how plots were distributed by SAF cover type and ecological subsection. As the table demonstrates, SAF cover types that are well represented within the ecological subsection have higher plot sampling rates compared to SAF cover types with smaller representation. In most cases, the more sampling the better the reliability of the estimate.

Table 5. Number of plots by forest cover type and ecolgical subsection.

Society of American Foresters (SAF) Cover Types	Basin and Range Transitional Mtns	Bear River Karst Highlands	Cache Valley Front	Caribou Range Overthrust Mtns	Portneuf Uplands	Pruess Ridges and Hills	Webster Ridges and Valleys	*Total Plots*
Engelmann Spruce - Subalpine Fir (206)	1	22	2	15	3	0	4	**47**
Douglas-fir (210)	46	41	50	37	39	26	50	**289**
Aspen (217)	19	18	11	16	48	30	44	**186**
Lodgepole pine (218)	0	26	5	15	0	4	19	**69**
Limber pine (219)	0	0	0	0	1	0	0	**1**
Ponderosa Pine (237)	0	0	0	0	0	0	0	**0**
Total Plots	**66**	**107**	**68**	**83**	**91**	**60**	**117**	**592**

Table 6. Number of plots in SAF forest cover type in each management prescription area by ecological subsection where a biological potential is assigned.

Caribou Management Prescription		Basin and Range Transitional Mtns	Bear River Karst Highlands	Cache Valley Front	Caribou Range Overthrust Mtns	Portneuf Uplands	Pruess Ridges and Hills	Webster Ridges and Valleys	*Total*
3.2	**Plots**	14	30	22	24	24	3	21	**138**
	%Acres	8%	25%	11%	28%	6%	1%	20%	**100%**
	Acres	10,360	32,357	14,215	36,505	8,189	1,906	26,591	**130,122**
3.3	**Plots**	0	25	4	3	4	0	2	**38**
	%Acres	2%	65%	6%	20%	5%	0%	3%	**100%**
	Acres	802	34,436	3,070	10,494	2,480	-	1,751	**53,034**
5.2	**Plots**	8	42	17	0	13	4	55	**139**
	%Acres	4%	36%	5%	0%	4%	4%	48%	**100%**
	Acres	4,785	47,978	7,041	-	4,882	4,806	64,878	**134,370**
6.2	**Plots**	31	1	2	16	32	26	19	**127**
	%Acres	23%	2%	2%	20%	12%	19%	21%	**100%**
	Acres	25,082	2,285	2,073	22,012	13,360	20,761	22,286	**107,859**
2.8.3	**Plots**	7	11	4	9	8	6	11	**56**
	%Acres	10%	13%	5%	37%	6%	8%	20%	**100%**
	Acres	5,530	7,130	2,765	20,266	3,513	4,149	10,924	**54,276**

Table 6 shows the amount of plots and SAF forest cover type acres in each management prescription area by ecological subsection where a biological potential was assigned. Management prescriptions where no biological was assigned and no timber harvest is expected to occur were excluded. Management prescription 2.8.3 was analyzed as its own strata. Management prescription 2.8.3 is Aquatic Influence Zone (AIZ) areas on the Forest. In most cases the establishment of these areas are based on site specific information. As new site specific information is gathered AIZ buffers could change based on site conditions. The strata used in this assessment is the best information we have to estimate AIZ's forest wide. It is anticipated that a new estimate of AIZ's will be determined in the future. Due to these conditions, it was decided to treat management prescription 2.8.3 as its own strata.

RESULTS

The forest inventory information will give us estimates of all the size classes of snags utilized by woodpeckers on the Caribou National Forest which range from 6 inches to 12 inches and larger diameter classes. The Forest Inventory plots measure snags on a per acre basis. Snag requirements per 100 acres can be modified by simply dividing the snags required by 100 to get a unit of measure on a per acre basis. Estimated mean snag densities by ecological subsection and 90% confidence intervals were

calculated for the different strata such as forest cover types and management prescriptions. At a confidence level of 90%, there is 1 –in- 10 chance that the mean does not fall within the interval. A weighted average was calculated for the whole Caribou National Forest area by the different strata. A weighted average is a mean calculated by giving values in a data set more influence according to some attribute. In this case, it is the amount of area the strata has.

Appendix A contains all the snag density estimates and tables with snag estimates and confidence intervals by individual strata. Table 1 in Appendix A is the average number of snags/acre for all SAF Forest Cover types by ecological subsection and the weighted by area average snags/acre for all the subsections. Appendix A Table 2 thru Table 5, are snag estimates by SAF cover types. Utilizing Table 2 thru 5 in Appendix A, a biological potential for cavity nesting species by forest cover type was calculated using the number of snags/acre by diameter class. In determining biological potential larger snags can be substituted for smaller snags but the reverse is not true. Evaluating the weighted averages by each SAF cover type (Tables 2 thru Tables 5 in Appendix A), all snag requirements, according to the CNFRFP, are being met at 100 percent biological potential. In individual subsections, the biological potential for certain snag diameters in a specific cover type may vary and be less than 100 percent biological potential but over the whole forest, in each cover type, we meet 100 percent biological potential. Due to the small area of certain cover types in ecological subsections low sampling occurred and wide confidence intervals resulted.

Tables 6 thru 10 in Appendix A show snag estimates by individual management prescriptions where a biological potential was assigned and timber harvest is allowed to occur. Due to the limited area and sample size we did not stratify out forest cover types in this analysis. Therefore, these estimates are for all forest cover types together into one strata. For a conservative estimate of biological potential we compared the snag requirements for Douglas-fir and Spruce/Fir forest cover types. These cover types require the highest number of snags. Evaluating Tables 6 thru 10 in Appendix A, all management prescriptions meet the requirements for 100% biological potential for all forest cover types according to the RFPCNF. Within each ecological subsection the results vary. In some cases in ecological subsections a very low sampling rate occurred and therefore wide confidence intervals resulted.

DISCUSSION

Based on the above the results, snag/cavity nesting habitat appears to be adequate and meeting Forest Plan guidance for cavity nesting species. It is difficult to determine a trend between the analysis in the FEIS RFPCNF and the current data presented. This is due to stratification and sampling scheme between the data sets. However we can compare some of the FEIS RFPCNF forest cover types to the current data to get a general trend or change. The Douglas-fir and Douglas-fir/Aspen cover types averaged 1.9 and 2.4 snags/acre greater than 12 inches in the FEIS RFPCNF in Appendix D. The current inventory data presented shows the Douglas-fir cover types at 3.3 snags/acre greater than 12 inches. The FEIS RFPCNF Appendix B estimates for lodgepole pine were 6.8 snags/acre. The current inventory data presented shows lodgepole pine at 6.1 snags/acre greater than 12 inches. In the subalpine fir/spruce cover type in the FEIS CNFRFP, 8.2 snags/acre greater than 12 inches were accounted for. Current inventory presented for the Engelmann spruce and subalpine fir cover type shows 4.8 snags/acre greater than 12 inches. In the aspen cover type in the FEIS CNFRFP, less than 1 snag/acre greater than 12 inches was found. The current inventory for the aspen cover type is 2.1 snags/acre greater than 12 inches. Since there is not a direct comparison between the inventory methods it is hard to determine an exact trend.

However, it appears overall that snags greater than 12 inches tend to be maintaining or increasing in all cover types except for the subalpine/Engelmann spruce cover type from the data presented.

The FEIS RFPCNF did not analyze the amount of snags by prescription area so no trend data can be determined at this time. The FEIS RFPCNF in Appendix D did analyze snags by watershed. However, with the limited sample size at this level a trend would be hard to determine.

The FEIS RFPCNF predicted the effect of harvest treatments on snags. In Table 22 in Appendix B of the FEIS RFPCNF it predicted approximately 14,000 forested acres harvested. The Timber Information Manager (TIM) database was queried and looked at cutting unit acres by timber sales from 2003 to 2015. Only 3,627 acres or 0.6% of the forested lands have been harvested. This is significantly less than 14,000 acres. There is approximately 581,075 acres of forested lands. Timber harvest from 2003 to 2015 has not had a measurable effect on the amount of snags on the landscape. The FEIS RFPCNF highlighted that the selected Forest Plan alternative would rate high on insect and hazard rating and moderate to high wildfire risk. With the significantly lower harvest acres to date, these disturbances will likely be the primary drivers for the creation of cavity nesting habitat and timber harvest will continue to have a very limited effect on cavity nesting habitat forestwide. Based on this assessment the RFPCNF standards and guidelines are maintaining adequate amount of cavity nesting habitat.

REFERENCES

Bull, E.L., C.G. Parks, and T.R. Torgersen. 1997. Trees and Logs Important to Wildlife in the Interior Columbia River Basin. USDA Forest Service, Pacific Northwest Research Station, PNW-GTR-391. La Grande, Oregon.

Thomas, J.W. (ed). 1979. Wildlife Habitats in Managed Forests: the Blue Mountains of Oregon and Washington. Agricultural Handbook No. 553, USDA Forest Service.

Targhee National Forest. (1997). Process Paper D; Wildlife Analysis for the Targhee Forest Plan Revision.

Caribou National Forest. (2003). Revised Forest Plan Caribou National Forest.

Caribou National Forest. (2003). Final Environmental Impact Statement Caribou National Forest.

Appendix A

All data used in creating this analysis is stored in electronic files at the Caribou-Targhee National Forest Headquarters Office. 2013 Versions of Microsoft Excel and Access software were utilized and store the tabular data. ESRI ArcGIS software contains the spatial data used.

In order to protect the integrity of the FIA sample, the exact coordinates of our sample plot locations are kept confidential. This protects the privacy of landowners who allow FIA field crews on their land, as well as protects the plots from any tampering. In fact, this policy of location confidentiality is incorporated into law through the Fiscal Year 2000 Consolidated Appropriations Bill (PL 106-113) which amended the Food Security Act of 1985 (7 U.S.C. 2276(d)) to include FIA data to the list of items that require confidential treatment.

Table 1. Estimates of snags and associated 90% confidence intervals, by diameter class, for Caribou National Forest Ecological subsections, and weighted area average.

All SAF Cover Types																											
Ecological Subsection	# of Plots	Snags/Acre																									
		6"+ DBH				7"+ DBH				8"+ DBH				9"+ DBH				10"+ DBH				11"+ DBH				12"+ DBH			
		Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.		
			(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up
Basin	66	17.5	7.4	10.1	24.9	10.2	4.5	5.7	14.7	5.8	2.8	3.0	8.7	4.4	2.4	2.0	6.8	3.3	2.2	1.0	5.5	3.3	2.2	1.0	5.5	2.9	2.0	0.9	4.9
Bear River	107	22.0	4.4	17.6	26.4	14.6	3.7	11.0	18.3	12.6	3.4	9.2	16.0	10.6	2.9	7.7	13.5	9.0	2.6	6.4	11.6	6.5	2.2	4.3	8.7	5.4	1.9	3.5	7.3
Cache	68	18.1	6.4	11.6	24.5	14.9	5.7	9.2	20.6	11.0	5.0	6.0	16.0	8.5	3.6	4.9	12.1	7.4	3.0	4.4	10.5	5.3	2.6	2.7	7.9	3.9	2.0	1.9	5.9
Caribou Range	83	13.3	4.0	9.3	17.4	9.9	3.7	6.1	13.6	9.3	3.6	5.6	12.9	7.5	3.0	4.5	10.6	5.8	2.6	3.2	8.4	4.1	2.1	1.9	6.2	2.9	1.7	1.2	4.6
Portneuf	91	12.4	4.0	8.5	16.4	6.9	2.6	4.2	9.5	5.6	2.2	3.4	7.7	3.2	1.5	1.6	4.7	2.4	1.4	1.0	3.8	2.4	1.4	1.0	3.8	1.1	0.9	0.2	1.9
Pruess	60	31.3	11.3	20.0	42.6	17.3	7.4	9.8	24.7	12.8	7.1	5.8	19.9	10.8	6.5	4.4	17.3	8.4	5.3	3.1	13.7	5.2	3.7	1.6	8.9	3.6	2.9	0.7	6.6
Webster	117	26.1	6.5	19.6	32.7	16.5	5.1	11.4	21.5	13.0	4.2	8.7	17.2	9.5	3.6	5.9	13.1	7.6	3.2	4.4	10.8	5.6	2.5	3.1	8.0	3.3	1.9	1.4	5.1
Weighted by Area Average	**592**	**20.5**				**13.3**				**10.8**				**8.5**				**6.8**				**5.0**				**3.6**			

Table 2. Estimates of snags and associated 90% confidence intervals, by diameter class, for Caribou National Forest Ecological Subsections, and Forestwide weighted average for Engelmann spruce – subalpine fir cover type.

Engelmann spruce - Subalpine fir (206) SAF Cover Type																											
Ecological Subsection	# of Plots	Snags/Acre																									
		6"+ DBH				7"+ DBH				8"+ DBH				9"+ DBH				10"+ DBH				11"+ DBH				12"+ DBH			
		Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.		
			Low	Up			Low	Up			Low	Up			Low	Up			Low	Up			Low	Up			Low	Up	
Basin	1	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Bear River	22	17.5	8.8	26.2		12.0	3.5	20.6		10.9	3.7	18.2		8.8	2.6	14.9		8.8	2.6	14.9		6.6	1.9	11.2		6.6	1.9	11.2	
Cache	2	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Caribou Range	15	14.4	5.1	23.7		11.2	3.6	18.8		11.2	3.6	18.8		11.2	3.6	18.8		9.6	3.2	16.1		6.4	1.7	11.1		4.8	0.6	9.0	
Portneuf	3	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Pruess	0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Webster	4	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Weighted by Area Average	**47**	**13.4**				**9.7**				**9.2**				**8.3**				**7.6**				**5.4**				**4.8**			

Table 3. Estimates of snags and associated 90% confidence intervals, by diameter class, for Caribou National Forest Ecological Subsections, and Forestwide weighted average for Douglas-fir cover type.

Douglas-fir (210) SAF Cover Type																															
Ecological Subsection	# of Plots	Snags/Acre																													
		6"+ DBH				7"+ DBH				8"+ DBH				9"+ DBH				10"+ DBH				11"+ DBH				12"+ DBH			
		Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.		
			(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up
Basin	46	14.7	6.9	7.7	21.6	8.9	4.3	7.7	21.6	7.3	3.9	3.5	11.2	6.3	3.4	2.9	9.6	4.7	3.2	1.5	7.9	4.7	3.2	1.5	7.9	4.2	2.8	1.4	7.0
Bear River	41	20.0	6.5	13.5	26.4	13.5	5.7	13.5	26.4	11.2	5.4	5.8	16.5	10.0	4.6	5.4	14.6	7.6	3.8	3.9	11.4	5.3	3.2	2.0	8.5	3.5	2.6	0.9	6.1
Cache	50	14.0	5.8	8.2	19.7	11.1	4.7	8.2	19.7	8.2	4.2	4.0	12.4	7.7	3.7	4.0	11.4	6.7	3.0	3.7	9.7	4.8	2.5	2.3	7.3	3.9	2.1	1.8	5.9
Caribou Range	37	11.1	5.0	6.1	16.1	7.2	4.0	6.1	16.1	7.2	4.0	3.1	11.2	5.9	3.6	2.3	9.4	4.6	3.4	1.2	7.9	3.9	3.3	0.6	7.2	2.6	2.6	0.0	5.2
Portneuf	39	9.3	5.6	3.7	14.8	4.3	3.5	3.7	14.8	3.7	2.7	1.0	6.4	3.1	2.1	0.9	5.2	1.9	1.7	0.1	3.6	1.9	1.7	0.1	3.6	0.6	1.0	0.0	1.6
Pruess	26	9.3	5.8	3.4	15.1	5.6	4.6	3.4	15.1	2.8	3.4	0.0	6.1	1.9	2.1	0.0	4.0	1.9	2.1	0.0	4.0	1.9	2.1	0.0	4.0	0.9	1.5	0.0	2.4
Webster	50	31.8	12.4	19.4	44.2	22.1	9.7	19.4	44.2	17.3	7.8	9.5	25.2	12.5	6.5	6.0	19.0	10.1	6.1	4.0	16.2	7.2	4.8	2.4	12.1	4.3	3.7	0.6	8.0
Weighted by Area Average	**289**	**17.8**				**12.0**				**9.8**				**7.9**				**6.3**				**4.8**				**3.3**			

Table 4. Estimates of snags and associated 90% confidence intervals, by diameter class, for Caribou National Forest Ecological Subsections, and Forestwide weighted average for Aspen cover type.

Aspen (217) SAF Cover Type																															
Ecological Subsection	# of Plots	Snags/Acre																													
		6"+ DBH				7"+ DBH				8"+ DBH				9"+ DBH				10"+ DBH				11"+ DBH				12"+ DBH			
		Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.		
			(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up
Basin	19	25.3	19.7	5.6	45.1	13.9	11.8	2.1	25.8	2.5	2.9	0.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bear River	18	17.4	7.7	9.7	25.1	9.4	5.7	3.7	15.0	9.4	5.7	3.7	15.0	8.0	5.5	2.5	13.6	6.7	5.4	1.3	12.0	4.0	3.6	0.4	7.6	4.0	3.6	0.4	7.6
Cache	11	28.4	21.9	6.6	50.3	28.4	21.9	6.6	50.3	19.7	17.6	2.1	37.3	10.9	11.2	0.0	22.1	8.8	8.0	0.7	16.8	4.4	4.8	0.0	9.2	2.2	3.6	0.0	5.8
Caribou Range	16	10.5	6.2	4.3	16.8	6.0	5.7	0.3	11.7	3.0	3.4	0.0	6.4	1.5	2.5	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Portneuf	48	16.0	5.9	10.1	22.0	9.5	4.0	5.5	13.6	7.5	3.4	4.2	10.9	3.5	2.4	1.2	5.9	3.0	2.2	0.8	5.3	3.0	2.2	0.8	5.3	1.5	1.4	0.1	2.9
Pruess	30	43.3	18.0	25.3	61.4	22.5	11.5	10.9	34.0	16.0	11.0	5.1	27.0	13.6	10.5	3.1	24.2	10.4	9.0	1.4	19.5	6.4	6.6	0.0	13.0	5.6	5.6	0.0	11.2
Webster	44	19.7	7.0	12.7	26.7	8.2	3.8	4.4	12.1	6.0	3.4	2.6	9.5	5.5	3.4	2.1	8.8	4.4	3.0	1.4	7.3	3.3	2.4	0.8	5.7	1.6	1.5	0.1	3.2
Weighted by Area Average	**186**	**21.2**				**11.4**				**7.8**				**5.8**				**4.5**				**3.0**				**2.1**			

Table 5. Estimates of snags and associated 90% confidence intervals, by diameter class, for Caribou National Forest Ecological Subsections, and Forestwide weighted average for Lodgepole pine cover type.

Lodgepole Pine (218) SAF Cover Type																															
Ecological Subsection	# of Plots	Snags/Acre																													
		6"+ DBH				7"+ DBH				8"+ DBH				9"+ DBH				10"+ DBH				11"+ DBH				12"+ DBH			
		Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.			Mean	90% C.I.		
			(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up		(+/-)	Low	Up
Basin	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bear River	26	32.4	11.6	20.8	44.0	22.2	8.8	13.5	31.0	18.5	8.6	9.9	27.1	14.8	7.0	7.8	21.8	13.0	6.3	6.7	19.3	10.2	5.9	4.3	16.1	8.3	4.9	3.4	13.2
Cache	5	43.3	44.1	0.0	87.4	28.9	38.4	0.0	67.3	24.1	39.6	0.0	63.7	14.4	23.8	0.0	38.2	14.4	23.8	0.0	38.2	14.4	23.8	0.0	38.2	9.6	15.8	0.0	25.5
Caribou Range	15	20.9	14.9	6.0	35.8	19.3	15.1	4.2	34.3	19.3	15.1	4.2	34.3	14.4	11.5	3.0	25.9	11.2	9.4	1.9	20.6	6.4	7.2	0.0	13.6	4.8	5.7	0.0	10.5
Portneuf	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pruess	4	84.2	74.9	9.3	159.2	54.2	56.9	0.0	111.0	54.2	56.9	0.0	111.0	48.1	48.5	0.0	96.6	36.1	34.3	1.8	70.4	18.1	19.0	0.0	37.0	6.0	9.9	0.0	15.9
Webster	19	31.7	16.3	15.4	48.0	24.1	14.5	9.6	38.6	20.3	12.9	7.3	33.2	12.7	11.5	1.2	24.1	10.1	8.7	1.4	18.9	7.6	6.1	1.5	13.7	5.1	4.9	0.2	9.9
Weighted by Area Average	**69**	**32.5**				**24.2**				**21.8**				**16.3**				**13.2**				**8.8**				**6.1**			

Table 6. Estimates of snags and associated 90% confidence intervals, by diameter class, for Caribou National Forest Ecological Subsections, and Forestwide weighted average for Management Prescription 3.2.

Management Prescription 3.2																							
Ecological Subsection	# of Plots	Snags/Acre																					
		6"+ DBH			7"+ DBH			8"+ DBH			9"+ DBH			10"+ DBH			11"+ DBH			12"+ DBH		
		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.	
			Low	Up		Low	Up		Low	Up		Low	Up		Low	Up		Low	Up		Low	Up
Basin	14	17.2	0.0	37.3	10.3	0.0	22.6	1.7	0.0	4.5	1.7	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bear River	30	28.9	20.7	37.0	20.9	13.1	28.6	17.7	10.3	25.0	15.2	8.8	21.7	12.8	7.6	18.1	9.6	5.1	14.1	8.8	4.8	12.8
Cache	22	18.6	9.6	27.6	14.2	7.0	21.4	8.8	3.2	14.3	6.6	1.2	11.9	5.5	1.0	9.9	3.3	0.3	6.2	2.2	0.0	4.7
Caribou Range	24	18.1	8.2	28.0	15.0	5.0	25.1	14.0	4.2	23.8	10.0	2.5	17.5	8.0	1.9	14.2	5.0	0.3	9.8	3.0	0.0	6.6
Portneuf	24	12.0	3.8	20.3	6.0	1.7	10.3	4.0	0.9	7.1	3.0	0.3	5.7	3.0	0.3	5.7	3.0	0.3	5.7	1.0	0.0	2.7
Pruess	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Webster	21	34.4	13.8	54.9	25.2	6.8	43.6	19.5	3.6	35.3	14.9	1.4	28.4	13.8	1.1	26.4	10.3	1.4	19.2	5.7	0.3	11.1
Weighted by Area Average	**138**	**23.4**			**17.3**			**13.7**			**10.7**			**9.0**			**6.5**			**4.5**		

Table 7. Estimates of snags and associated 90% confidence intervals, by diameter class, for Caribou National Forest Ecological Subsections, and Forestwide weighted average for Management Prescription 3.3.

Management Prescription 3.3																							
Ecological Subsection	# of Plots	Snags/Acre																					
		6"+ DBH			7"+ DBH			8"+ DBH			9"+ DBH			10"+ DBH			11"+ DBH			12"+ DBH		
		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.	
			Low	Up		Low	Up		Low	Up		Low	Up		Low	Up		Low	Up		Low	Up
Basin	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bear River	25	21.2	13.5	28.9	12.5	6.0	19.0	12.5	6.0	19.0	10.6	4.5	16.7	9.6	3.6	15.7	7.7	2.2	13.2	6.7	1.9	11.6
Cache	4	12.0	0.6	23.5	12.0	0.6	23.5	12.0	0.6	23.5	12.0	0.6	23.5	12.0	0.6	23.5	12.0	0.6	23.5	6.0	0.0	15.9
Caribou Range	3	16.0	0.0	42.4	16.0	0.0	42.4	16.0	0.0	42.4	16.0	0.0	42.4	16.0	0.0	42.4	16.0	0.0	42.4	8.0	0.0	21.2
Portneuf	4	12.0	0.6	23.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pruess	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Webster	2	60.2	40.4	80.0	36.1	16.3	55.9	12.0	0.0	31.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Weighted by Area Average	**38**	**20.2**			**13.2**			**12.4**			**10.7**			**10.1**			**8.9**			**6.3**		

Table 8. Estimates of snags and associated 90% confidence intervals, by diameter class, for Caribou National Forest Ecological Subsections, and Forestwide weighted average for Management Prescription 5.2.

Management Prescription 5.2																							
Ecological Subsection	# of Plots	Snags/Acre																					
		6"+ DBH			7"+ DBH			8"+ DBH			9"+ DBH			10"+ DBH			11"+ DBH			12"+ DBH		
		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.	
			Low	Up		Low	Up		Low	Up		Low	Up		Low	Up		Low	Up		Low	Up
Basin	8	6.0	0.0	15.9	3.0	0.0	8.0	3.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bear River	42	21.8	13.7	29.9	14.9	8.7	21.1	12.0	6.4	17.6	9.7	5.5	14.0	8.0	4.1	12.0	5.2	2.0	8.3	3.4	0.9	6.0
Cache	17	32.6	14.0	51.1	26.9	9.3	44.5	18.4	2.7	34.2	12.7	3.1	22.4	11.3	2.9	19.7	7.1	0.0	14.5	5.7	0.3	11.1
Caribou Range	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Portneuf	13	9.3	2.1	16.4	3.7	0.0	7.8	1.9	0.0	4.9	1.9	0.0	4.9	1.9	0.0	4.9	1.9	0.0	4.9	1.9	0.0	4.9
Pruess	4	18.1	8.2	28.0	6.0	0.0	15.9	6.0	0.0	15.9	6.0	0.0	15.9	6.0	0.0	15.9	6.0	0.0	15.9	0.0	0.0	0.0
Webster	55	24.9	15.0	34.9	14.4	7.6	21.3	11.8	6.3	17.3	8.8	4.4	13.2	7.0	3.1	10.9	5.3	1.7	8.8	3.5	0.3	6.7
Weighted by Area Average	**139**	**22.7**			**14.2**			**11.4**			**8.7**			**7.1**			**5.0**			**3.3**		

Table 9. Estimates of snags and associated 90% confidence intervals, by diameter class, for Caribou National Forest Ecological Subsections, and Forestwide weighted average for Management Prescription 6.2.

Management Prescription 6.2																							
Ecological Subsection	# of Plots	Snags/Acre																					
		6"+ DBH			7"+ DBH			8"+ DBH			9"+ DBH			10"+ DBH			11"+ DBH			12"+ DBH		
		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.	
			Low	Up		Low	Up		Low	Up		Low	Up		Low	Up		Low	Up		Low	Up
Basin	31	21.7	11.3	32.2	14.8	7.3	22.3	9.3	3.9	14.7	7.8	3.1	12.4	6.2	1.7	10.7	6.2	1.7	10.7	5.4	1.5	9.4
Bear River	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cache	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Caribou Range	16	12.0	3.2	20.9	7.5	0.6	14.5	7.5	0.6	14.5	7.5	0.6	14.5	6.0	0.3	11.7	3.0	0.0	6.4	3.0	0.0	6.4
Portneuf	32	17.3	9.5	25.1	10.5	5.2	15.8	9.8	5.1	14.4	4.5	1.2	7.8	3.0	0.1	6.0	3.0	0.1	6.0	1.5	0.0	3.2
Pruess	26	33.3	18.1	48.6	22.2	9.2	35.2	15.7	2.9	28.5	13.9	1.6	26.1	12.0	1.2	22.8	7.4	0.0	14.9	6.5	0.1	12.9
Webster	19	26.6	13.4	39.8	13.9	4.7	23.2	10.1	3.8	16.4	5.1	0.2	9.9	2.5	0.0	5.4	2.5	0.0	5.4	1.3	0.0	3.4
Weighted by Area Average	**127**	**21.6**			**13.4**			**10.0**			**7.6**			**5.9**			**4.4**			**3.6**		

Table 10. Estimates of snags and associated 90% confidence intervals, by diameter class, for Caribou National Forest Ecological Subsections, and Forestwide weighted average for Management Prescription 2.8.3.

Management Prescription 2.8.3																							
Ecological Subsection	# of Plots	Snags/Acre																					
		6"+ DBH			7"+ DBH			8"+ DBH			9"+ DBH			10"+ DBH			11"+ DBH			12"+ DBH		
		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.		Mean	90% C.I.	
			Low	Up		Low	Up		Low	Up		Low	Up		Low	Up		Low	Up		Low	Up
Basin	7	3.4	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bear River	11	10.9	0.0	25.4	8.8	0.0	23.1	8.8	0.0	23.1	6.6	0.0	17.4	4.4	0.0	11.6	2.2	0.0	5.8	2.2	0.0	5.8
Cache	4	42.1	0.0	99.0	36.1	0.0	83.2	36.1	0.0	83.2	24.1	0.0	52.1	24.1	0.0	52.1	24.1	0.0	52.1	18.1	0.0	37.0
Caribou Range	9	13.4	3.8	23.0	8.0	0.0	17.4	8.0	0.0	17.4	8.0	0.0	17.4	8.0	0.0	17.4	8.0	0.0	17.4	2.7	0.0	7.1
Portneuf	8	6.0	0.0	12.5	3.0	0.0	8.0	3.0	0.0	8.0	3.0	0.0	8.0	3.0	0.0	8.0	3.0	0.0	8.0	3.0	0.0	8.0
Pruess	6	4.0	0.0	10.6	4.0	0.0	10.6	4.0	0.0	10.6	4.0	0.0	10.6	4.0	0.0	10.6	4.0	0.0	10.6	0.0	0.0	0.0
Webster	11	19.7	9.3	30.1	8.8	2.7	14.8	6.6	1.0	12.1	4.4	0.0	9.2	4.4	0.0	9.2	4.4	0.0	9.2	2.2	0.0	5.8
Weighted by Area Average	**56**	**13.6**			**8.2**			**7.8**			**6.5**			**6.2**			**5.9**			**2.8**		

APPENDIX B

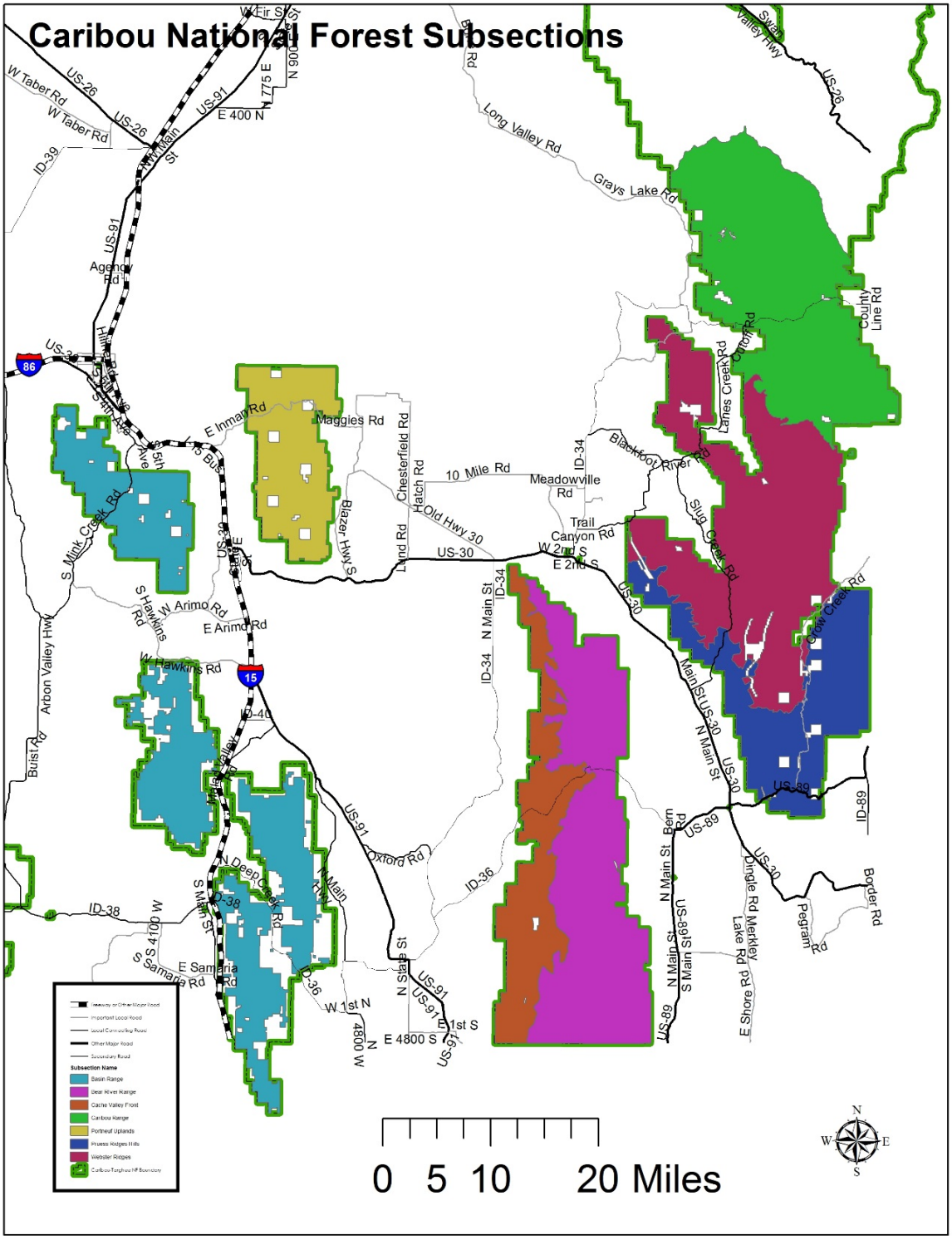

Figure 1. Caribou National Forest Ecological Subsections.