

Forest Plan
Monitoring and Evaluation Report
FISCAL YEAR 2005
September 2006

Kootenai National Forest



United States
Department
Of Agriculture



Forest Service
Kootenai National Forest



United States
Department of
Agriculture

Forest
Service

Kootenai N.F.

1101 U.S. Highway 2 W.
Libby, MT 59923

File Code: 1920

Date: September 28, 2006

Dear Forest Planning Participant:

This is the Kootenai's Forest Plan Monitoring Report for Fiscal Year (FY) 2005. This report includes information for Forest Plan Monitoring Item C-7 (wildlife and fisheries/threatened and endangered species habitat) as well as information for Forest Plan Monitoring Item C-5 (wildlife and fisheries/old growth habitat). Information in this report is also collected and reported annually to the U.S. Fish & Wildlife Service (USFWS).

If you have any questions regarding this report, please contact Kirsten Kaiser at the Forest Supervisor's Office in Libby at 406-293-6211.

Sincerely,

PAUL BRADFORD
Forest Supervisor
Kootenai National Forest

"The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer."



WILDLIFE & FISHERIES: Old Growth Habitat; Monitoring Item C-5

ACTION OR EFFECT TO BE MEASURED:	Old growth habitat amount and condition.
MONITORING OBJECTIVE:	Maintain habitat capable of supporting viable populations of old growth-dependent species (10 percent old growth in each drainage).
VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION:	Reduction below 10 percent in a drainage which was previously over minimum or any reduction in a drainage previously under minimum.



Purpose: This monitoring item was established to help ensure that an adequate amount of old growth habitat is designated on the Forest. The Forest Plan requires that this item be reported every two years. This item was last published in September of 2005. The expected accuracy and reliability of the information is moderate to high.

Background: The Forest Plan (Volume 1, page II-22) specifies that at any time 10 percent of the KNF land base below 5,500 feet elevation would be managed as old growth habitat for those wildlife species dependent on old growth timber for their needs. The old growth would be spread evenly through most major drainages, and would represent the major forest types in each drainage.

Kootenai Supplement (Supplement 85, 1991) to Forest Service Manual 2400 describes the validation process to be conducted on a compartment basis before the Forest conducts management activities that could affect old growth habitat. Validation, as defined in the Manual, is “on-the-ground verification.” One of the requirements is that a minimum of 10 percent of each third order drainage or compartment (or combination of 3rd order drainages or compartments) be designated as old growth habitat. If 10 percent old growth does not exist within a compartment, designate the best available, soon to be future old growth to bring the total up to 10 percent, or designate additional old growth from an adjacent area to make up the difference.

Mature stands identified as old growth replacement are stands replacing a current deficiency of higher quality (effective) old growth and will provide for old growth habitat in the future as they age and gain the desired attributes. See the Forest Plan Glossary and Appendix 17 of the Plan for more detail on the description of old growth attributes, including desired distribution patterns.

Inventory and Mapping: The KNF has two separate and independent sources of information for old growth. These are:

- 1) Forest Inventory and Analysis (FIA) data used to calculate KNF Forest-wide old growth percentages. FIA old growth results for the KNF are available for the first time this year.
- 2) GIS layer of stands designated or undesignated effective old growth or replacement old growth.

1) Old Growth Estimates from FIA Data

The National Forest Inventory and Analysis (FIA) program provides a congressionally mandated, statistically-based, continuous inventory of the forest resources of the United States. The FIA inventory design is based on the standardized national FIA grid of inventory plots that covers all forested portions of the United States (all ownerships). FIA protocols specify sample plot location within this systematic grid. Both sample plot location and data collection standards are strictly controlled by FIA protocols. The sample design and data collection methods are scientifically designed, publicly disclosed, and

repeatable. Data collection protocols are publicly available on the internet (<http://www.fia.fs.fed.us/>). There are also stringent quality control standards and procedures, carried out by FIA personnel of the Rocky Mountain Research Station. All of this is designed to assure that there is no bias in sample design, plot location, trees selected for measurement, or the measurements themselves.

The FIA provides a statistically sound representative sample designed to provide unbiased estimates of forest conditions at large and medium scales. This inventory design is appropriate for making estimates of old growth percentages at the scale of a national forest, or large areas of forest land. (More detail on the statistical foundation of using FIA data to assess old growth on national forests is found in: *Application of Forest Inventory and Analysis (FIA) Data to Estimate the Amount of Old Growth Forest and Snag Density in the Northern Region of the National Forest System* by Raymond L. Czaplewski, Ph.D. November 5, 2004 [available from Northern Region, US Forest Service]).

FIA estimates for old growth cannot be used to determine whether or not the Forest is meeting the Forest Plan standard for old growth. The FIA estimate is for all forest lands (not only lands <5500 feet in elevation) and does not include lands managed as replacement old growth. The estimate from FIA is helpful, however, in comparing to the old growth GIS layer used by the Forest for managing old growth.

The FIA data used to estimate old growth on the KNF was collected from 1993 to 1995. To account for disturbance since the inventory, those FIA plots having any disturbance (e.g., wildfire) since the date of inventory and up to the year 2003 were coded as not meeting the old growth definition. This may underestimate the amount of old growth, since not all disturbance would necessarily result in a reduction to old growth. FIA data was originally established to be re-inventoried every 10 years. Starting in 2002, the program has re-measured 10% of plots every year, with 40% of the forest re-measured at this time.

2) Stand-level map of old growth

The KNF continues to use a Geographic Information System (GIS) layer to identify stands that are effective or replacement old growth to meet Forest Plan standards. The stand-level old growth layer provides for distribution of old growth across the Ranger Districts and landscape, and serves as a basis for project planning. The acres associated with the old growth layer indicate whether or not Forest Plan standards are being met.

The Forest has been validating portions of its lands for old growth over the past eighteen years (1989-2005), with the exception of the year 2000 (due to extensive wildfire on the Forest). In 2002, in response to litigation, the Forest conducted a forest-wide validation and inventory of old growth, using various survey methods. FIA data for estimating the amount of old growth forest-wide was not available at this time. The mapping of old growth included all of those lands previously validated as old growth, as well as other National Forest lands. This inventory was conducted, in part, to verify that the Forest had an adequate amount of well-distributed old growth habitat to meet the Forest Plan standard (i.e., 10% of the National Forest lands below 5500 feet in elevation), as well as the condition of the old growth (whether it was considered effective or replacement).

Figure C-5-1 displays effective and replacement old growth forest-wide. Figure C-5-2 displays lands designated or undesignated for old growth management forest-wide.

Results: The results from the FIA estimate of old growth are documented in the attached report, “Estimates of Percentage of Old Growth and Snag Density on the Kootenai National Forest” by Renate Bush and Renee Lundberg, dated March 15, 2006. This report indicates the estimated percentage of old growth (effective) on all forested lands on the Kootenai National Forest is 8.8% with a 90% confidence interval of 6.9% to 10.6%.

Acres from the stand level map are summarized forest-wide in Table C-5-1, displaying the total amount of old growth, whether the old growth is considered to be effective or replacement, and if the old growth has been designated or remains undesignated. There are approximately 1,870,000 acres of National Forest lands below 5500 feet in elevation. As of September, 2006, the stand level inventory indicates a total of 297,173 acres (15.9%) of National Forest lands below 5500 feet in elevation are either effective or replacement old growth. Approximately 10.6% (199,109 acres) of those lands were determined to be effective old growth and an additional 5.3% (98,064 acres) identified as replacement old growth.

Comparison: This is the first year FIA old growth data estimates have been available Forest-wide. For existing old growth, the two separate tools for inventorying and monitoring old growth show similar results. The FIA data estimates old growth forestwide at 8.8% of the forest with a 90% confidence interval of 6.9% to 10.6%. The acres of effective (existing) old growth in the stand-level GIS layer total to 10.6% of forested lands less than 5500 feet in elevation. Although the FIA data shows less old growth at the mean (8.8%) than the stand level map (10.6%), the stand level map results are within the 90% confidence interval for FIA. As stated earlier, these data sources are measures for different land bases. The FIA percentage is forest-wide, while the stand level data is for lands <5500 feet in elevation. Another reason for the difference may be attributed to the age of the FIA data and the assumption that disturbed plots (e.g., FIA plots with any type of wildfire since inventory) do not meet old growth criteria, resulting in a conservative estimate from FIA.

Evaluation: The monitoring and evaluation of old growth habitat continues to indicate that the Forest is meeting its Forest Plan requirement for managing 10% of the forest as old growth habitat well distributed across KNF lands below 5500 feet elevation.

Recommended Actions: Old growth validation (on-the-ground verification) and designation needs to continue as described in FSM 2400. Priority should be to 1) complete validation as soon as practical for areas that have been partially validated and then on areas not validated and 2) designate existing old growth in areas not validated. Project level analyses will continue to use the stand-level GIS layer in their project level assessments.

Table C-5-1 Stand Level Old Growth Summary

Oldgrowth updated September 2006 9/20/2006															
Forestwide Old Growth Below 5500' Elevation															
District	FS ACRES (total FS acres under 5500' minus lakes and highways)	Designated old growth (designated as an old growth MA)*				Undesignated old growth (not in an old growth MA)*			TOTAL EFFECTIVE old growth (designated and undesignated)*		TOTAL REPLACEMENT old growth (designated & undesignated)*	Grand Total ALL TYPES old growth*		FS Acres DESIGNATED as an old growth Management Area*	
		designated and effective (plot, walk, vrec)	designated and effective (pi)	designated and replacement	design unknown (original FP - categorized)	undesignated and effective (plot, walk, vrec)	undesignated and effective (pi)	undesignated and replacement	TOTAL acres effective og	Percent of FS Acres in effective og		Acres of all old growth	Percent of FS Acres as all types old growth	Acres designated as old growth MA	Percent of FS Acres as old growth MA
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
D1	245,632	22,589	322	4,652	275	15,013	817	6,634	38,450	15.65%	11,286	49,736	20.2%	27,838	11.3%
D3	183,772	17,793	2,362	1,252	1,461	17,049	1,764	0	38,194	20.78%	1,252	39,446	21.5%	22,868	12.4%
D4	504,316	37,865	2,372	15,961	1,528	4,283	3,924	3,491	46,842	9.29%	19,452	66,294	13.1%	57,726	11.4%
D5	557,302	43,956	1,569	22,462	621	3,237	4,944	6,799	51,473	9.24%	29,261	80,734	14.5%	68,608	12.3%
D7	378,187	5,072	2,257	16,945	15,939	1,643	10,860	19,868	24,149	6.39%	36,813	60,962	16.1%	40,213	10.6%
Forest Total	1,869,209	127,275	8,882	61,272	19,824	41,225	22,309	36,792	199,109	10.65%	98,064	297,173	15.9%	217,253	11.6%

* All old growth acreages and percents shown in this table include only those stands below 5500' elevation. Not shown are over 19,000 acres of old growth that has been identified above 5500' elevation.

(1) Total FS Acres minus those acres over 5500' elevation, lakes and highways

(2) Designated Effective Old Growth stands - designated as a Management Area (MA) - inventoried by plot, walk-through or visual recon data

(3) Designated Effective Old Growth stands - designated as an MA - inventoried by photo interpreted data - only 60% of this acreage is calculated as effective old growth (reference FP Appendix 17, pg.17-3)

(4) Designated Replacement Old Growth stands - designated as an MA

(5) Designated unknown: Old Growth designated in the original Forest Plan as an MA, not inventoried yet to determine effectiveness - only 60% of this acreage is calculated as effective old growth (reference FP Appendix 17, pg.17-3)

(6) Undesignated Effective old growth - not in an old growth MA - inventoried by plot, walk-through or visual recon data

(7) Undesignated Effective old growth - not in an old growth MA - inventoried by photo interpreted data - only 60% of this acreage is calculated as effective old growth (reference FP Appendix 17, pg.17-3)

(8) Undesignated Replacement stands

(9) TOTAL acres of effective old growth includes column (2) + column (6) and 60% of column (3), (5) and (7) (these columns reflect stands inventoried by photo interpretation: Reference FP Appendix 17, pg 17-3)

(10) PERCENT of Forest Service acres that are effective old growth = TOTAL old growth (column 9) divided by total FS acres (column 1)

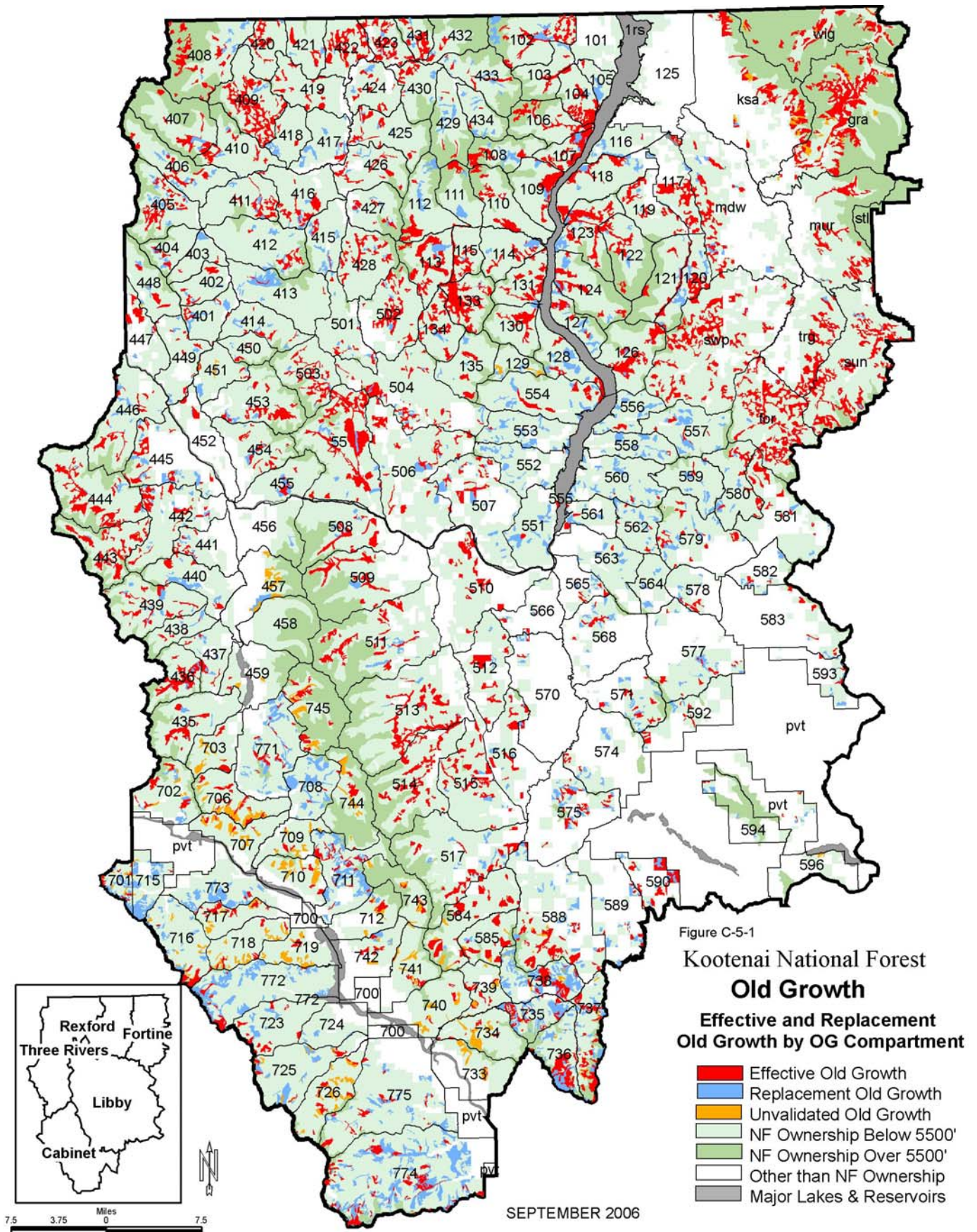
(11) Total Replacement old growth acres = column (4) + column (8)

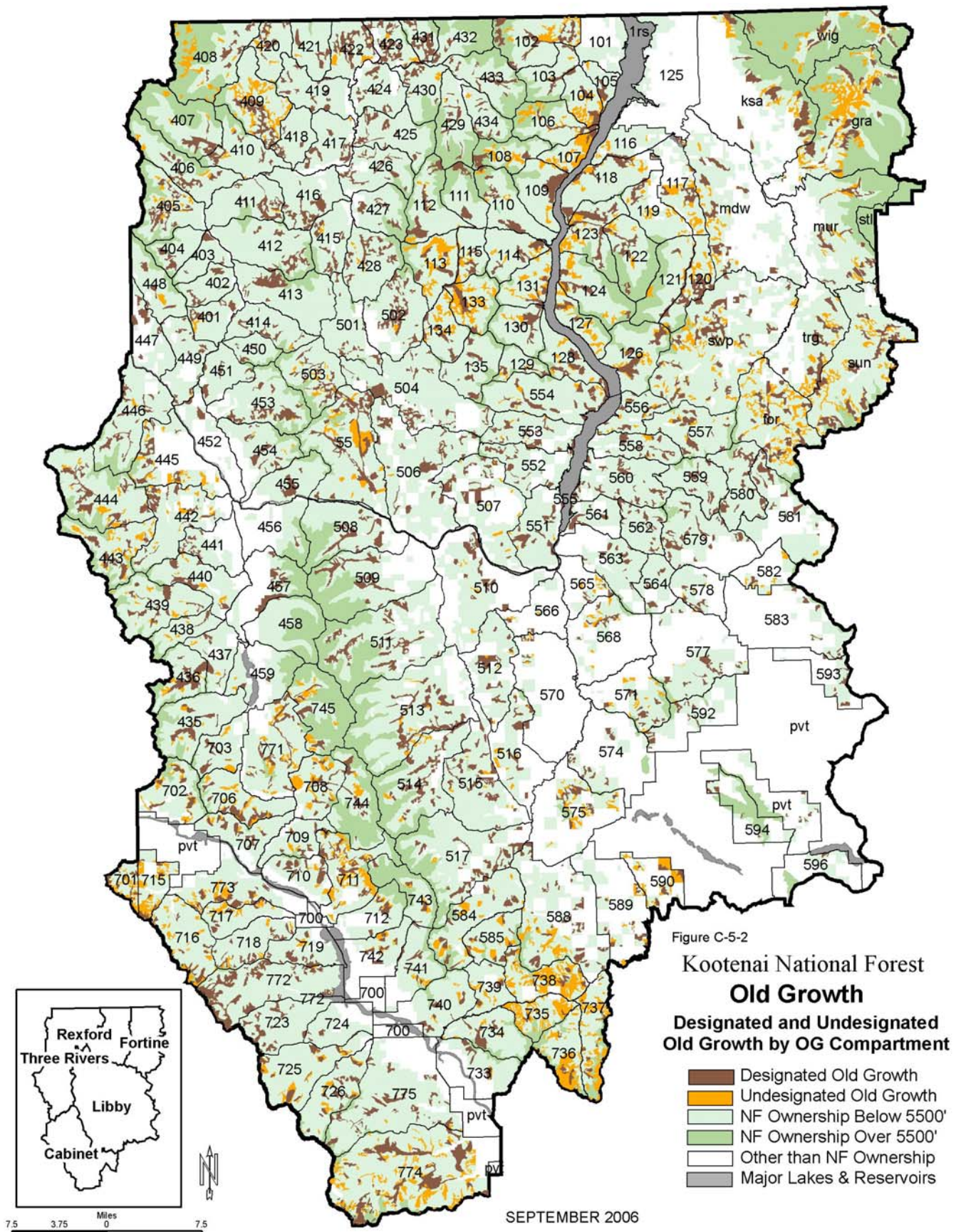
(12) TOTAL all acres of old growth below 5500' = total effective old growth (column 9) + total replacement old growth (column 11)

(13) Percent of Forest Service acres that are effective or replacement old growth below 5500' = Total all acres old growth (column 12) divided by total FS acres (column 1)

(14) Acres and Percent of FS acres Designated as an old growth Management Area (MA). Includes effective and replacement old growth. Does not include designated old growth over

This product is reproduced from geospatial information prepared by the U.S. Department of Agriculture, Forest Service. GIS data and product accuracy may vary. They may be: developed from sources of differing accuracy, accurate only at certain scales, ba





Estimates of Percentage of Old Growth and Snag Density on the Kootenai National Forest

Renate Bush¹
Renee Lundberg²

March 15, 2006

This analysis was done using Forest Inventory and Analysis (FIA) data, see *Application of Forest Inventory and Analysis (FIA) Data to Estimate Amount of Old Growth Forest and Snag Density in the Northern Region of the National Forest System* for an overview of FIA inventory and why this data is appropriate to use for broad-level estimates of old growth and snags. The following are estimates of old growth percentages and snag density for the Kootenai National Forest by as well as by 5th Hydrologic Unit Code (HUC). All forested³ plots that were located on the Kootenai National Forest were used to derive these estimates. Those FIA plots in which wildfire or harvest have occurred since the date of inventory (June 1993 through July 1995) through the year 2003 were coded to not meet the old growth definition or contribute to snag densities. This results in conservative estimates as not all wildfire and harvest activities remove all old growth and snags on the landscape. Because forest characteristics change over time, FIA is continuously updated on a 10-year refreshment cycle, with 10% of the plots remeasured each year.

Percentage of Old Growth on the Kootenai National Forest

Region One's old growth definition⁴ was used in the analysis namely Table 2, Western Montana Zone Old Growth Type Characteristics, columns 1-5. "...Numerous definitions for old growth forests all tend to focus on age, size and successional stage of overstory trees" (Foster et al. 1996)⁵. The four attributes identified by Foster et al. are consistent with the four important attributes in Region One's old growth definition, i.e., *minimum age, diameter, and trees per acre (TPA) over minimum age and diameter, and minimum basal area*. All four of these criteria are used as required attributes to define old growth. Moreover, Foster et al., in agreement Spies and Franklin (1996)⁶, suggest an old growth ecosystem is distinguished by old trees but is not

¹ USDA Forest Service, Region 1, Forest and Range Management, 200 E Broadway, Missoula, MT, 59802.

² Forester, USDA Forest Service, Forest and Range Management, 200 E. Broadway, Missoula, MT, 59802.

³ "...land at least 10 percent stocked, or currently nonstocked but formerly having such stocking, with timber and/or woodland trees, and where human activity on the site does not preclude natural succession of the forest (i.e., the site will be naturally or artificially regenerated)." *Interior West Forest Land Resource Inventory Field Procedures, 1995-1996*.

⁴ Green, P.; J. Joy; D. Sirucek; W. Hann; A. Zack; and B. Naumann. 1992 errata corrected 2/05. Old Growth Forest Types of the Northern Region. Missoula, MT. United States Department of Agriculture, Forest Service, Northern Region. 60 p.

⁵ Foster, D.R., D.A. Orwig, and J.S. McLachlan. 1996. Ecological and conservation insights from reconstructive studies of temperate old-growth forests. *Trends in Ecology and Evolution*. 11:419-424, Harvard Forest, Harvard University, Petersham, Ma.

⁶ Spies, T.A. and Franklin, J.F. (1996) The diversity and management of old growth forests, in *Biodiversity in*

necessarily in the late successional condition nor free of evidence of human activities.” A variety of additional “associated characteristics” have been identified in the 1992 Green et al. paper that can be very useful in determining the quality of Old Growth communities for some specific purposes when developing a fine scale management approach.

Estimated percentage of Old Growth on all forested lands on the Kootenai National Forest is 8.8% with a 90% confidence interval of 6.9% to 10.6%.

Estimates of percentage of Old Growth by 5th Code HUC:

5 th Code HUC	Standard Error	90% Confidence Interval Lower Bound	Percent Old Growth	90% Confidence Interval Upper Bound	Total Num PSUs	Num Forested PSUs
1701010101	10.5	0.0%	19.0%	38.0%	3	3
1701010102	4.3	2.8%	9.5%	17.1%	21	21
1701010103	5.6	0.0%	6.3%	16.8%	10	9
1701010104	8.5	0.0%	12.5%	27.7%	19	16
1701010105	1.5	0.0%	1.0%	4.2%	13	13
1701010106	4.8	3.2%	10.5%	19.0%	19	19
1701010107	3.9	3.0%	8.9%	15.9%	27	24
1701010108	.6	3.5%	12.7%	23.6%	20	17
1701010109	2.5	0.0%	1.7%	7.1%	8	8
1701010110	5.7	0.0%	8.3%	18.5%	13	12
1701010111	3.3	0.0%	4.9%	11.1%	15	15
1701010112	5.5	4.9%	13.4%	23.2%	19	17
1701010201	11.9	0.0%	16.6%	38.0%	6	6
1701010202	14.8	0.0%	17.6%	44.0%	6	6
1701010203	7.8	0.0%	11.9%	26.1%	12	12
1701010204	8.1	0.0%	14.2%	28.5%	12	12
1701010301	4.8	1.1%	8.1%	16.9%	23	21
1701010302	2.3	0.0%	3.5%	7.8%	22	22
1701010303	5.1	0.0%	7.1%	16.4%	18	18
1701010401	1.2	0.0%	19.9%	40.4%	6	5
1701021001	1.6	0.0%	26.1%	53.6%	6	6
1701021301	.0	0.0%	0.0%	0.0%	2	2
1701021307	7.2	0.0%	7.1%	20.6%	12	12
1701021308	.5	0.0%	5.6%	15.0%	10	10
1701021309	15.6	0.0%	20.0%	40.0%	1	1
1701021310	4.1	0.0%	5.2%	12.9%	20	19
1701021311	4.6	0.0%	6.8%	15.2%	14	13
1701021313	1.7	0.0%	1.2%	4.8%	13	13

Density and Distribution of Snags on the Kootenai National Forest

The estimated average number of snags per acre with diameter at breast height (dbh) between 10.0” and 19.9” is 10.0 snags with a 90% confidence interval of 8.3 to 11.7 snags per acre. The average number of snags per acre with dbh 20” and larger is 1.0 snag per acre with a 90% confidence interval of .8 to 1.2 snags per acre.

Estimates of the number of snags per acre by 5th Code HUC and diameter class and associated confidence intervals follow.

5 th code HUC	10.0” – 19.9” DBH				20.0” plus DBH				Total # PSU's	# Forested PSU's
	Standard Error	90% CI Lower Bound	Estimate of Snags / Acre	90% CI Upper Bound	Standard Error	90% CI Lower Bound	Estimate of Snags / Acre	90% CI Upper Bound		
1701010101	11.187	2.8	21.7	40.6	5.228	0	5.1	15.1	3	3
1701010102	3.098	2.8	7.2	12.8	0.191	0	0.2	0.7	21	21
1701010103	3.865	4.1	10	16.8	0.648	0	0.9	2	10	9
1701010104	4.721	0.9	7.7	16.1	0.387	0	0.4	1.2	19	16
1701010105	6.059	0	9.1	19.9	0	0	0.0	0	13	13
1701010106	4.576	2.6	9.4	17.6	0.324	0	0.4	1	19	19
1701010107	4.707	6	12.9	21.2	0.275	0	0.4	1	27	24
1701010108	1.777	1	3.7	6.8	1.887	0.1	2.6	6	20	17
1701010109	3.786	0	5.9	12.4	0.656	0	0.7	1.9	8	8
1701010110	7.425	5.8	16.8	29.9	1.107	0	1.1	3.2	13	12
1701010111	7.176	5.8	16	28.9	1.129	0.3	2.1	4	15	15
1701010112	5.525	8.6	17	26.6	0.652	0.2	1.1	2.3	19	17
1701010201	7.164	0	8.3	21.6	0.917	0	1.0	2.8	6	6
1701010202	7.148	0	9.4	22.3	1.73	0	2.4	5.6	6	6
1701010203	2.893	2	6.3	11.3	0.775	0	1.1	2.6	12	12
1701010204	4.324	2.2	8.1	16	0.482	0	0.8	1.7	12	12
1701010301	3.885	4.2	10.1	17	0.637	0	0.8	2	23	21
1701010302	2.153	2.4	5.8	9.6	0.284	0.1	0.6	1	22	22
1701010303	6.776	4.6	14	26.1	0.979	0.8	2.1	4	18	18
1701010401	24.945	0	29.7	74.4	0	0	0.0	0	6	5
1701021001	4.404	0	5.1	13.1	0.894	0	1.3	3	6	6
1701021301	11.032	4.7	18.4	39.8	1.447	0	1.1	4.7	2	2
1701021307	3.708	1	6	12.9	1.232	0.4	2.2	4.4	12	12
1701021308	4.002	3.4	9.6	16.6	0	0	0.0	0	10	10
1701021309	0	0	0	0	0	0	0.0	0	1	1
1701021310	2.34	2.6	6	10.2	0.385	0	0.6	1.2	20	19
1701021311	6.99	5.1	15.2	27.7	0.379	0	0.6	1.2	14	13
1701021313	3.194	1.8	6.4	12.1	0.357	0	0.3	1	13	13

WILDLIFE & FISHERIES: Threatened & Endangered Species Habitat; Item C-7

ACTION OR EFFECT TO BE MEASURED: Provide habitat adequate to ensure KNF contribution to the recovery of Threatened and Endangered (T&E) Species including: Lynx, Gray Wolf, Bald Eagle, Grizzly Bear, Bull Trout and White Sturgeon.

VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION: Any downward population trend. Any forest-wide decrease in habitat quantity or quality. Failure to meet recovery plan goals for the KNF.

Purpose: This monitoring item was established to help ensure that the KNF contributes to the recovery of listed threatened and endangered species. The Forest Plan requires that this item be reported annually. This item was last published in September of 2005. The expected precision and reliability of the information is high and moderate, respectively.

Evaluation:

Gray Wolf:



The Wolf Recovery Plan (USFWS, 1987) provides guidance for the recovery of the gray wolf. The KNF is part of the Northwest Montana Wolf Recovery Area. The recovery goal for this area is ten wolf packs, which has been met for three consecutive years (USFWS, 2006). Wolves from each of the known packs spend a portion of their time on the Forest and the remainder on other National Forests, State, or private lands.

Following is a summary of the known wolf packs during 2005 (USFWS et.al. 2006).

Candy Mountain Pack - There were five adults and four pups confirmed in 2005. No domestic livestock predations were reported in 2005. This pack's territory is in the Yaak River drainage.

Fishtrap Pack - This pack of at least six adults was confirmed to have reproduced in 2005, producing one pup that survived to the end of the year. The pack size is now at least seven. One collared wolf ceased transmitting in 2005. Confirmed domestic livestock loss from this pack included one cow and one sheep in 2005. The pack occupies an area in the southeast corner (McGinnis Meadows and East Fisher Creek) of the Libby Ranger District but also uses the Fishtrap and main Thompson River drainages on the Plains/Thompson Falls District of the Lolo National Forest.

Kootenai South Pack - Originally the "Kootenai Pack," this group of wolves is believed to now be functioning as two different packs. One group remains in Canada (Kootenai North) and the other (Kootenai South) remains in the U.S. The southern pack has seven wolves (five adults and two pups). There were no domestic livestock predations reported from this pack in 2005.

Murphy Lake Pack - This pack's territory is between Eureka and Whitefish. There were three wolves confirmed in 2005. The pack was not counted as a breeding pair this past year. There were no domestic livestock predations reported from this pack in 2005.

Wolf Prairie Pack - There are a total of eight wolves (three adults and five pups) in this pack. The pack's territory is on the eastern edge of the KNF. One wolf mortality occurred in this pack (it was struck and killed by a vehicle on the Wolf Creek Road). One probable wolf predation on a calf occurred about two miles from the pack's den site. The last remaining member of the eight radio-collared wolves that were released near the Caribou Campground in the Yaak River valley in 2001, was killed in 2003 by a vehicle on Highway 56.

Population Trend: Wolf numbers using the Kootenai continue to increase.



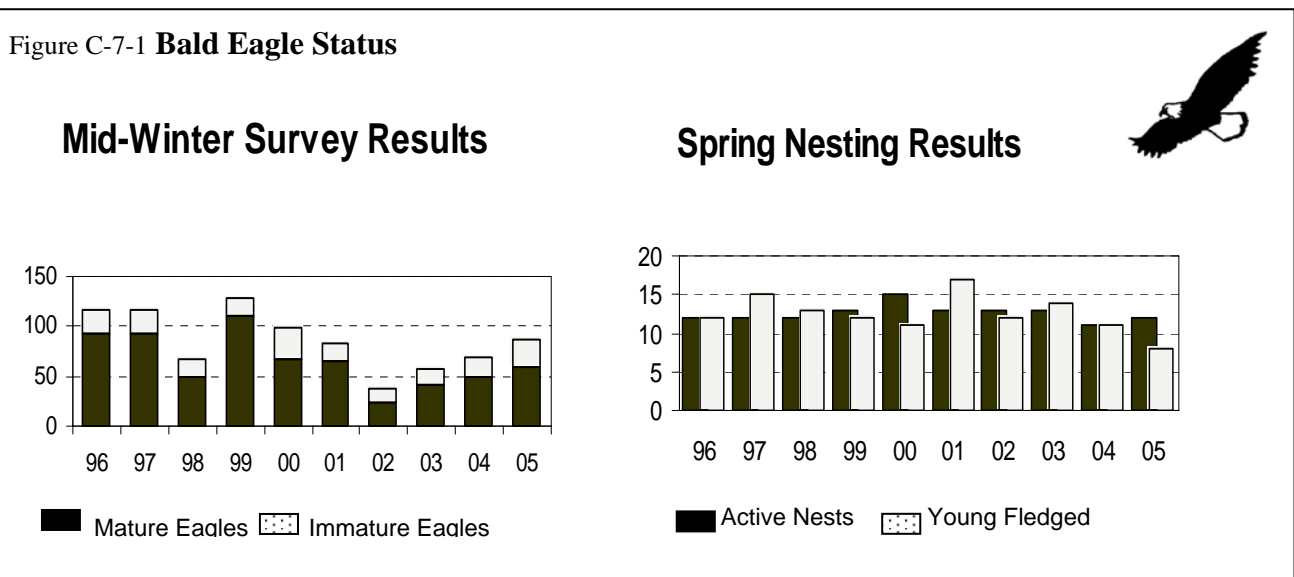
Bald Eagle: The Montana Bald Eagle Management Plan (MBEWG, 1994) and the Pacific States Bald Eagle Recovery Plan (USFWS, 1986) provide guidance for bald eagle recovery. These plans call for the establishment of 52 nesting pairs within Recovery Zone seven, the Montana section of the Upper Columbia River Basin. This recovery zone includes all public and private land west of the continental divide in Montana. The KNF area is about 15 percent of the zone. Based on this percentage, the Kootenai would be providing a minimum of eight nesting pairs (52 x 0.15) toward the recovery goal. Currently there are 19 pair territories on National Forest lands. There are also 17 pair territories on private, state or other federal lands within the KNF area. Twelve pair territories were active on KNF lands in 2005.

Bald eagle habitat is generally within one mile of major lakes and rivers. Habitat quality and quantity on the Kootenai is stable, and may be increasing in the long term as potential nest trees mature.

Figure C-7-1 shows the results of mid-winter bald eagle population surveys. Sightings occur mostly along major watercourses both on the Forest and on adjacent ownerships. Results are highly variable from year to year due to varying weather conditions. The survey results for 2005 show a total of 86 wintering (59 mature and 27 immature) bald eagles. This is below the 20 year (1986-2005) average of 96 wintering eagles.

Numbers of active eagle nests and young eagles fledged are also shown in Figure C-7-1. Nesting surveys show the 2005 nesting eagle population slightly down on National Forest lands. Eight young were fledged (below the 23 year average) from twelve active nests. The overall reproduction (including private land sites) was the second highest production year on record, with 32 fledged. USFWS believes the bald eagle has achieved recovery goals and they've proposed removing them from the threatened species list.

Figure C-7-1 **Bald Eagle Status**





Grizzly Bear: The KNF contains portions of two grizzly bear recovery zones: the Cabinet-Yaak Ecosystem (CYE) and the Northern Continental Divide Ecosystem (NCDE). About 72 percent of the CYE is located on the western portion of the Forest and about four percent of the NCDE is located in the extreme northeast corner of the Forest. Each of these ecosystems is further subdivided into smaller areas for analysis and monitoring, known as bear management units (BMUs) (see map, Figure C-7-1).

The Forest's primary efforts in grizzly bear recovery are in habitat management, cooperating in grizzly bear studies in the Yaak River and Cabinet Mountains areas, and working with local citizens and interest groups to achieve understanding and consensus on grizzly bear management issues.

Recovery goals for each recovery zone are based on the Grizzly Bear Recovery Plan (USFWS, 1993). Three main criteria are used to evaluate grizzly bear recovery: 1) the number of unduplicated sightings of females with cubs averaged over a six-year period; 2) the distribution of females with cubs, yearlings, or two-year-olds measured as the number of BMUs occupied over a six-year period; and 3) the level of known human-caused mortality measured as a percentage of the estimated population average for the past three years. Management of roads is also an important factor in grizzly bear recovery.

Unduplicated Sightings of Females with Cubs: In 2005, there was one credible sighting of unduplicated female grizzly bears with cubs in the Kootenai portion of the CYE, and two in the KNF portion of the NCDE. The Kootenai portion of the NCDE was at the six year average for number of females sighted with cubs, while the CYE was below.

Distribution of Females with Young: Three of the seventeen BMUs on the Kootenai portion of the CYE were occupied by females with young in 2005. The total number of different BMUs occupied over the entire recovery zone during the past six years was twelve, compared to the Recovery Plan goal of eighteen (personal communication: Wayne Kasworm, June 2006). The one BMU in the Kootenai's portion of the NCDE was occupied by four females with young during the year. These numbers are above the six year average for the NCDE and below average for the CYE.

Mortality: There were three human caused grizzly mortalities reported in 2005 for the CYE and none in the Kootenai portion of the NCDE.

Sightings of females with cubs of the year, distribution of females with young and human-caused mortalities are summarized for the past six years in Table C-7-1. These levels do not yet meet recovery goals for the CYE.

Access Management: A Forest Plan amendment (Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones, 2004) has established additional access management direction in the CYE. Identified monitoring parameters include Open Motorized Route Density (OMRD), Total Motorized Route Density (TMRD) and core.

Tables C-7-2 A, B, and C display Core, OMRD, and TMRD values by BMU for bear years (BY) 1998 through 2005. Changes in core, OMRD and TMRD in FY05 are the result of management activities, activities on private land, and field verified corrections in road status from bear year (October 1 to October 1) 2004.

Table C-7-1 Grizzly Bear Females with Cubs, Distribution of Females with Young, and Human-Caused Mortalities

Bear Year (BY)	NCDE (KNF Portion)			CYE (KNF portions only)		
	# Females with Cubs of the year	#BMUs Occupied by Females with Young	# Human Caused Mortalities	# Females with Cubs of the year	# BMUs Occupied by Females with Young	# Human Caused Mortalities
2000	2	1	0	2	1	1
2001	2	1	0	1	1	2
2002	2	1	0	4	1	5
2003	0	0	2	2	1	0
2004	4	1	1	1	1	0
2005	2	1	0	1	1	3
Six-year Average	2.0	0.8	0.5	1.8	*1	1.8

*Twelve different BMUs were occupied during the past six years.

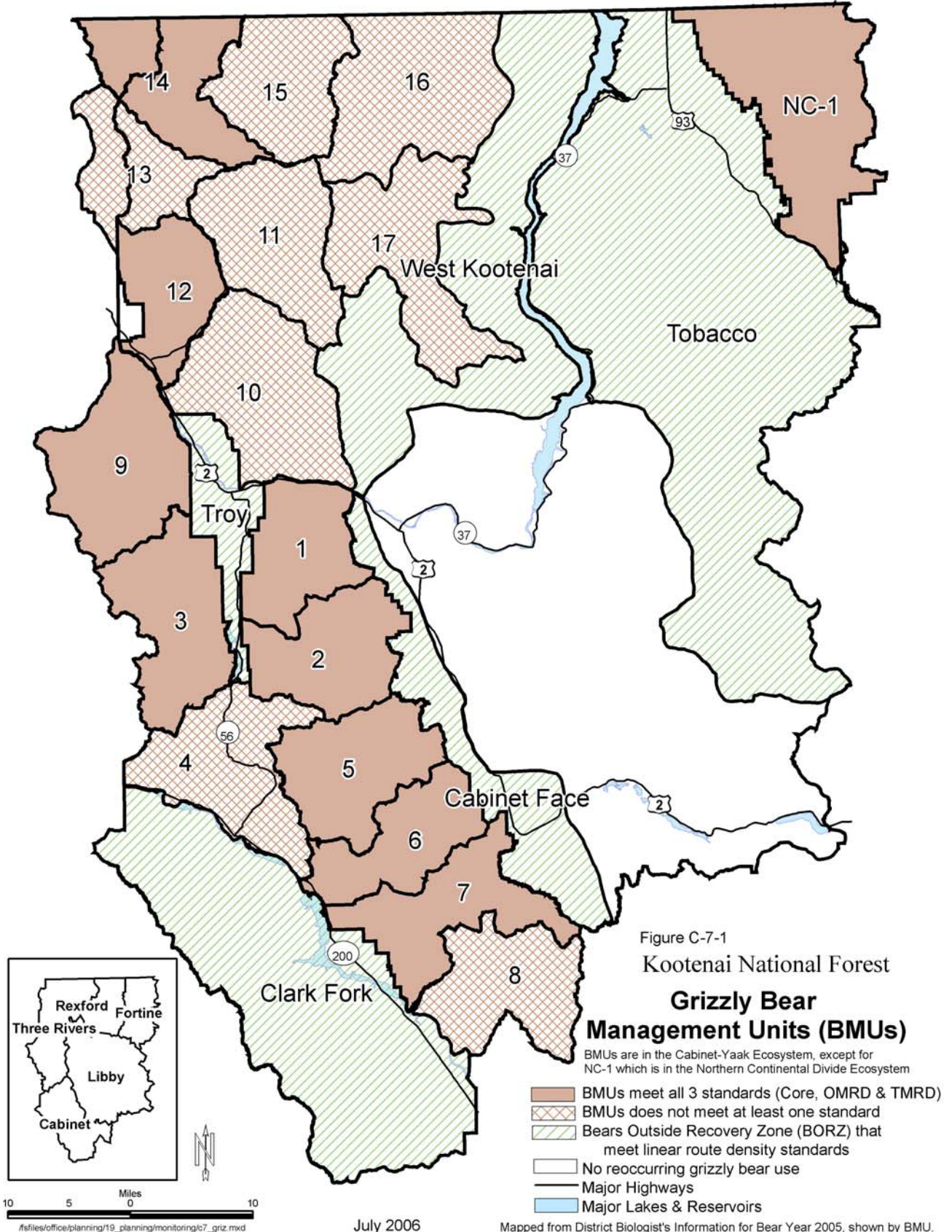


Table C-7-2A Bear Year (BY) (4/1-11/30) Percent Core for the CYE by BMU

BMU	BY 98 %	BY 99 %	BY 00 %	BY 01 %	BY 02 %	BY 03 %	BY 04 %	BY 05 %
1 Cedar	69	84	83	83	83	83	84	85
2 Snowshoe	-	77	78	77	77	78	78	77
3 Spar	-	57	58	61	62	62	63	63
4 Bull	62	61	63	63	62	62	63	63
5 Saint Paul	60	61	62	62	63	60	60	59
6 Wanless	51	51	53	55	55	54	56	54
7 Silver Butte/Fisher	65	66	66	66	66	66	66	67
8 Vermilion	54	57	57	56	56	56	56	56
9 Callahan	-	53	56	57	57	59	60	59
10 Pulpit	42	45	48	49	49	52	52	51
11 Roderick	52	52	55	54	54	53	53	53
12 Newton	-	56	56	57	57	56	56	56
13 Keno	58	56	59	62	62	61	61	61
14 NW Peak	58	60	56	56	56	57	57	56
15 Garver	35	46	48	47	50	50	48 *	46
16 E Fk Yaak	38	40	45	45	45	49	55	54
17 Big Creek	32	42	49	50	50	50	50	49
Average	52	57	58	59	59	59	60	59

Highlighted value does not meet standard established in 2004.

* In BMU 15, percent core change is the result of an error correction in BY03. Correction was made after on-the-ground validation of road status.

Bear Year (BY) Percent Core for the NCDE by BMU

BMU	BY 98 %	BY 99 %	BY 00 %	BY 01 %	BY 02 %	BY 03 %	BY 04 %	BY 05 %
Murphy Lake NC-1	69	69	70	70	72	72	72	72

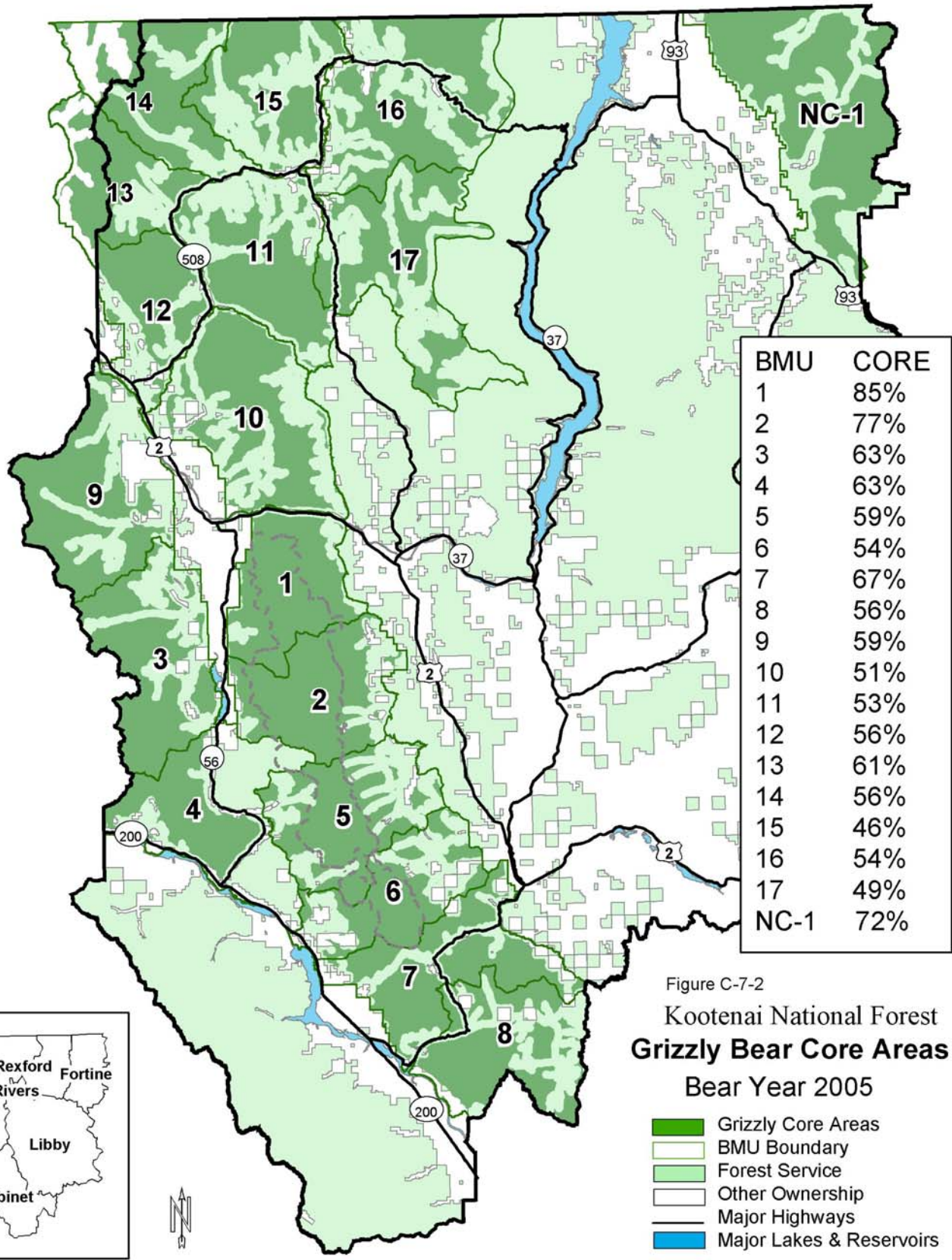


Figure C-7-2

**Kootenai National Forest
Grizzly Bear Core Areas
Bear Year 2005**

- Grizzly Core Areas
- BMU Boundary
- Forest Service
- Other Ownership
- Major Highways
- Major Lakes & Reservoirs

Mapped from District Biologist's Information for Bear Year 2004, shown by BMU.



#sfiles/office/planning/19_planning/monitoring/c7_grizcore.mxd

July 2006

Table C-7-2B Bear Year (BY) OMRD Conditions (% BMU > 1 mi/mi²) for the CYE by BMU

BMU	BY 98 %	BY 99 %	BY 00 %	BY 01 %	BY 02 %	BY 03 %	BY 04 %	BY 05 %
1 Cedar	23	13	12	12	12	12	13	14
2 Snowshoe	-	18	17	17	17	17	17	19
3 Spar	-	23	24	26	27	24	25	26
4 Bull	39	39	36	36	36	36	37	37
5 Saint Paul	29	28	27	27	26	27	26	27
6 Wanless	37	32	34	34	33	37	33	35
7 Silver Butte/Fisher	27	23	23	23	23	23	23	24
8 Vermilion	32	11	32	32	32	32	32	32
9 Callahan		36	32	32	32	26	26	28
10 Pulpit	50	50	45	41	41	41	41	42
11 Roderick	32	33	29	29	31	30	29	28
12 Newton	-	43	45	43	43	41	41	42
13 Keno	34	37	34	33	28	33	33	34
14 NW Peak	31	32	28	35	28	27	28	28
15 Garver	32	30	31	31	31	31	29	33
16 E Fk Yaak	38	36	31	28	29	28	31	28
17 Big Creek	43	37	32	32	31	31	31	29
Average	34	29	28	30	31	31	31	30

Highlighted value does not meet new standard established in 2004.

Bear Year (BY) OMRD Conditions (% BMU > 1 mi/mi²) for the NCDE by BMU

BMU	BY 98 %	BY 99 %	BY 00 %	BY 01 %	BY 02 %	BY 03 %	BY 04 %	BY 05 %
Murphy Lake NC-1	23	23	20	20	19	19	20	20

Table C-7-2C Bear Year (BY) TMRD Conditions (% BMU > 2 mi/mi²) for the CYE by BMU

BMU	BY 98 %	BY 99 %	BY 00 %	BY 01 %	BY 02 %	BY 03 %	BY 04 %	BY 05 %
1 Cedar	16	9	11	11	10	11	10	8
2 Snowshoe	-	15	14	14	14	14	14	14
3 Spar	-	31	30	27	26	26	24	24
4 Bull	28	27	26	26	26	26	26	26
5 Saint Paul	23	21	21	21	21	21	21	24
6 Wanless	35	34	33	32	32	32	31	31
7 Silver Butte/Fisher	22	19	20	20	20	20	21	20
8 Vermilion	23	21	21	23	23	23	23	23
9 Callahan	-	31	28	27	27	26	26	26
10 Pulpit	41	37	34	32	32	30	31	29
11 Roderick	31	31	27	28	28	28	29	29
12 Newton	-	28	31	29	30	31	31	31
13 Keno	23	26	24	24	24	24	23	24
14 NW Peak	24	22	26	26	26	25	26	26
15 Garver	45	34	32	32	30	29	29	34
16 E Fk Yaak	45	42	38	38	38	30	25	26
17 Big Creek	44	33	27	26	26	25	25	25
Average	31	27	26	26	24	25	24	25

Highlighted value does not meet new standard established in 2004.

Bear Year (BY) TMRD Conditions (% BMU > 2 mi/mi²) for the NCDE by BMU

BMU	BY 98 %	BY 99 %	BY 00 %	BY 01 %	BY 02 %	BY 03 %	BY 04 %	BY 05 %
Murphy Lake NC-1	15	15	12	12	6	6	6	6

Bears Outside the Recovery Zone (BORZ)

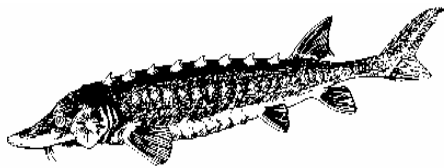
In addition to the monitoring items inside the recovery zone, the 2004 Forest Plan Amendment established access standards for areas outside the recovery zones that were occupied by grizzly bear. The standards for bears outside the recovery zone (BORZ) polygons are: no increases in linear open route density above baseline conditions and no permanent increases in linear total route densities above baseline conditions. Table C-7-3 shows the baseline conditions established as of 2003 and corrected in 2005 and current year status.

Table C-7-3 Linear Open and Total Route Densities (miles/mile²) by BORZ Polygon

BORZ Polygon	Baseline Linear Open Road Density (ORD)	FY 04	FY 05	Baseline Linear Total Road Density (TRD)	FY 04	FY 05
Clark Fork	0.9	0.9	0.9	2.6	2.6	2.6
Troy	1.2	1.1	1.1	2.6	2.5	2.5
Cabinet Face	2.2	2.2	2.2	3.9	3.9	3.9
West Kootenai	1.3	1.3	1.3	3.0	3.0	3.0
Tobacco	2.0	1.8	2.0	3.0	3.3	3.0
Libby	1.9	1.9	1.9	3.4	3.4	3.4
Fisher	1.0	1.0	1.0	2.7	2.7	2.7

Summary: Sightings of female grizzly bears with cubs in FY05 were the same as FY04, and the six year average has slightly increased. Females with young occupied fewer BMUs than in the previous year, but the number was average for the CYE. There were three human caused grizzly mortalities in 2005. Overall, open and total route densities declined slightly during the year. The amount of total core area in grizzly habitat decreased slightly over last year (see Figure C-7-2A). The grizzly bear population trend in the CYE has about a 75% probability that it is declining (Wakkinen and Kasworm 2004).

Lynx – The Canada lynx was listed as threatened in March, 2000. The KNF currently manages for lynx habitat using the Canada Lynx Conservation Assessment and Strategy (LCAS) (Ruediger et. al. 2000). The Forest Service Northern Region is in the process of completing a Region wide amendment to Forest Plans for all forests in R-1 with lynx or lynx habitat. In compliance with the LCAS the Forest delineated 47 Lynx Analysis Units (LAUs) which approximate a lynx home range size. At the end of 2005 all LAUs except one (# 14104) met the LCAS habitat standards ($\geq 10\%$ denning habitat, $\leq 30\%$ unsuitable condition, and $\leq 15\%$ changed to unsuitable condition in last 10 years). One LAU does not meet the unsuitable condition standard as it has 32% lynx habitat in an unsuitable condition. This LAU does not meet the standard due to natural wildfire events. Nineteen of the 47 LAUs were known to be occupied by lynx in 2005.



White Sturgeon -- White Sturgeon -- The US Fish and Wildlife Service (FWS) Recovery Plan for the Kootenai River white sturgeon was signed on September 30, 1999. The short-term goals of the Plan are to re-establish natural reproduction and prevent extinction of the species. Long-term goals include providing suitable habitat conditions and restoring a natural age-class

structure and an effective population size. This stock of fish will be considered for down listing to threatened status after 10 years only if natural reproduction occurs in three different years; the estimated population is stable or increasing; enough captive-reared juveniles are added to the population for 10 consecutive years that 24 to 120 juveniles survive to maturity; and a long-term Kootenai River Flow strategy is implemented that ensures natural reproduction. Delisting of this population is estimated to take at least 25 years following the approval of the Plan.

Recovery of white sturgeon is managed by Idaho Fish and Game, Kootenai Tribe of Idaho, and Montana

Fish, Wildlife and Parks. The Recovery Plan for the white sturgeon outlines a comprehensive set of actions needed to begin the recovery process. The Plan does not identify actions or objectives that directly affect management of the Kootenai National Forest. However, under the Endangered Species Act (Section 7(a)(1)), the Forest is obligated to use its authorities to aid in the recovery process and to consult with the USFWS on all proposed or authorized activities. All proposed projects and activities evaluated by the Forest in FY05 were found to have No Effect on the species.

In December 2000, the FWS issued a biological opinion stating that Libby Dam is the primary factor affecting the Kootenai River white sturgeon. The FWS also designated 11.2 miles of river below Bonners Ferry, Idaho as critical habitat.

Ongoing population research on the white sturgeon determined that while there has been successful spawning in 1997, estimates of the adult population have been reduced. The most recent population estimate in 1999, from the Idaho Department of Fish and Game indicates there are approximately 600 adult sturgeons in the population. Natural reproduction has been confirmed in the Kootenai River. Currently the majority of juvenile fish in the population are hatchery reared fish.

Bull trout -- The Kootenai National Forest continues to consult with the USFWS on activities under Section 7(a)(2) of the Endangered Species Act. During FY05 the Forest consulted on all proposed activities. The Forest continues to work closely with the five other western Montana National Forests, Bureau of Land Management and the USFWS to implement Programmatic Biological Assessments and maintain consistency for consultation standards.



There were two new small suction dredge permits evaluated by the Forest in FY05. Findings for these projects were: May Affect and are Likely to Adversely Affect bull trout. The O'Brien Creek Enhancement Project, covered under a Regional FWS 10(a)(1)(A) permit, was completed in FY05. This work included instream channel work, placement of large wood aggregates, rock structures, and armoring at the base of an unstable slope to isolate a chronic sediment source upstream of known bull trout spawning habitat. The Forest continues to work closely with Montana Fish Wildlife and Parks and the USFWS to determine distribution and abundance of bull trout within the boundaries of the Kootenai National Forest. Bull trout were found in Deep Creek, a tributary to the Tobacco River, in 2005.

Redd counts completed for 2005 identified 40 redds in West Fisher Creek which is an increase from past years. Redd counts for Pipe Creek were down for FY05; however, positive impacts from the restoration projects completed in Pipe Creek are expected in 2008-2010. Bull trout populations on the Forest appears to be stable with higher redd count numbers in West Fisher Creek. Bull trout redd count numbers on the Forest were somewhat reduced from previous years with a drop from the recent high numbers in Grave Creek.

Recommended Actions: Based upon the best available information, populations of all threatened or endangered terrestrial species, except grizzly bear, on the Kootenai are stable or increasing. The bald eagle is proposed for removal from the threatened and endangered list. All of the threatened and endangered species' habitats being monitored appear to be maintaining or improving. Information shows that the Kootenai National Forest is progressing toward providing adequate habitat for threatened and endangered species recovery. Based on review of this item, specific changes to Forest Plan direction are not needed at this time. It is recommended that the Forest continue to implement recovery actions and actively seek to improve habitat conditions for listed species populations. It is further recommended that the Forest increase information and education efforts related to grizzly bears, especially food attractants. It is also recommended that the Forest increase cooperative efforts with county officials to place bear

resistant dumpsters to reduce grizzly bear mortality risks due to food attractants.

Lastly, it is recommended that the Forest continue to implement recovery actions under section 10(a)(1)(A) and actively seek to improve connectivity of bull trout populations.

Literature Cited:

MBEWG. 1994. Montana Bald Eagle Management Plan. Montana Bald Eagle Working Group. Bureau of Reclamation, Billings, MT. 104 pp.

Ruediger, Bill et.al. 2000. Canada Lynx Conservation Assessment and Strategy. USDA Forest Service, USDI Fish & Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Forest Service Publication #R1-00-53, Missoula, MT. 142 pp.

USFS. 2004. Record of Decision Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones. USDA Forest Service, Kootenai, Idaho Panhandle, Lolo NF.90 pp.

USFWS. 1986. Recovery Plan for the Pacific bald eagle. U.S. Fish and Wildlife Service, Portland, OR. 160 pp.

USFWS. 1987. Northern Rocky Mountain wolf recovery plan. U.S. Fish and Wildlife service, Denver, CO. 67 pp.

USFWS. 1993. Grizzly Bear Recovery Plan. U.S. Fish and Wildlife Service, Missoula, MT. 181 pp.

USFWS. 2006. Rocky Mountain Wolf Recovery 2005 Interagency Annual Report. C.A. Sime and E.E. Bangs eds. USFWS Ecological Services, 585 Shepard Way, Helena, MT 130 pp.

USFWS. 2006. Personal communication between Wayne Kasworm (USFWS Grizzly Bear Coordinator) and Wayne Johnson (KNF Forest Wildlife Biologist) in June 2006. Distribution of females with young. 1 pp.

Wakkinen, Wayne L. and Wayne F. Kasworm. 2004. Demographics and population trends of grizzly bears in the Cabinet-Yaak and Selkirk Ecosystems of British Columbia, Idaho, Montana, and Washington. Ursus 15(1) Workshop Supplement: 65-70 (2004).

MDFWP. 2005. Personal communication between Kent Laudon (MDFWP wolf coordinator) and Wayne Johnson (KNF Forest Wildlife Biologist) on 1/21/2005. Status of wolf packs using the Kootenai National Forest in 2004. 1 pp.