Nez Perce - Clearwater National Forest

2013 to 2017 Monitoring Report

Wildlife

Clearwater Plan Item No's. 25-30, 32-35; Nez Perce Plan Items 1c and 10, 1e:

Table 1. Summary table of forest plan wildlife monitoring elements.

Habitat/Species	Nez Perce	Clearwater	Acres/Miles	Status	Comments
Big Game Habitat	X			Stable to Decreasing	Depending on species
Elk Habitat		X	W: 138,369 S: 349,635	Stable to Decreasing	Depending on GMU
Elk	X	X		Increasing, Decreasing	Depending on GMU
Moose	X	X		Decreasing	
White-tailed deer		X		Stable to Increasing	
Bighorn sheep	X			Stable to Decreasing	Depending on herd
Belted Kingfisher		X	3,399 miles	Stable	Fish bearing streams
Pileated Woodpecker	X	X	N: 142,779 A F: 425,056 A	Stable	
Northern Goshawk	X	X	N: 52,517 A PF: 280,636 A F: 761,490 A	Stable	
Marten	X	X	1,091,573 A	Stable	
Fisher	X		S: 398,798 W: 772,978	Stable	Acres for NPCNF
Gray Wolf	X	X		Stable to Increasing	Forest-wide
Bald Eagle	X	X	N/A	Increasing	2 Occupied Nests, consistent wintering
Peregrine Falcon	X		N/A	Unknown, likely present	Low densities, few sites
Grizzly Bear	X	X	N/A	No Change	Unoccupied, no verified sightings
Canada Lynx		X	D: 200,794 A G: 481,813 A	No Change	Occupied, but no verified sightings
Canada Lynx	X		D: 270,369 A G: 443,278 A	No Change	Unoccupied, no verified sightings.
Wolverine	X	X	1,361,314 A	Present	Extremely low densities.

W = winter, S = summer, N = nesting habitat, F = foraging habitat, PF = post-fledging area, D = denning habitat, G = general habitat

Table 2: Nez Perce - Clearwater National Forest timber harvest, prescribed fire, and wildland fire acres from 2013-2017 benefiting big game and other species' habitats.

Year	Regeneration Timber Harvest Acres	Prescribed Fire/Hazardous Fuels Acres	Wildfire Acres	Total Acres
2013	1,552	2,812	21,398	25,762
2014	2,553	9,082	32,099	43,734
2015	1,482	4,829	262,742	269,053
2016	780	3,125	17,438	21,343
2017	2,878	2,796	103,620	109,294
Total Acres	9,245	22,644	437,297	469,186
Average (per year)	**1,849**	**4,528**	**87,459**	**93,837**

Elk

Population Trends and Elk Winter/Summer Range

Idaho Department of Fish and Game (IDFG) manages elk, moose, white-tailed deer and Rocky Mountain bighorn sheep populations and harvest levels. The Forest works with IDFG to meet habitat objectives to sustain the population objectives set by the state. IDFG divides the state into Regions, Management Zones, and Game Management Units (GMU). Populations are monitored by IDFG with aerial surveys every 3-5 years. Harvest and hunter success are monitored as well.

IDFG issues annual Progress Reports containing the results of surveys and inventories. Also included in the report are climatic conditions, management objectives, historical perspectives, habitat, biological, inter-specific, and predation issues, and more. These reports can be found at collaboration.idfg.idaho.gov .

The following Elk Management Zones are partially within the Forest: Palouse, Lolo, Dworshak, Elk City, and Selway. Currently, the Palouse and Elk City Management Zones are meeting or exceeding population objectives, the Dworshak Management Zone is stable, and the Lolo and Selway Management Zones are below population objectives.

The Clearwater Basin Collaborative (CBC), a citizen partnership among state, federal, and private collaborators, has promoted research since 2013 evaluating the role of nutritional limitations in elk population declines in the Region. The North Fork Clearwater Study Area in GMU 10, and the Lochsa Study Area in GMU 12, are 2 of 6 study areas selected across the Clearwater Basin in an effort to better understand elk fitness, nutritional status, and habitat use relative to summer forage quantity and quality. Overall, herds in the Basin have relatively low levels of autumn body fat, body size, and pregnancy rates, however, levels were similar to other herds inhabiting dry forest areas of the inland Northwest (Cook et al. 2017). Preliminary results suggest that elk in GMUs 10 and 12 are in relatively better body condition than other herds in the Basin, however, body size and pregnancy rates were lower than expected in GMU 10 based on autumn body fat levels (Cook et al. 2017). This research is ongoing and additional analyses/data collection is needed to understand what might be limiting elk in the zone.

Timber harvest, prescribed fire, and wildland fire create early successional habitat which can increase elk habitat potential. Road closures or decommissioning have potential to benefit elk through improving elk security. Elk forage can also be improved through spraying for invasive weeds and riparian habitat

restoration. Table 2 lists the acres of elk habitat improved by timber harvest, prescribed and wildland fire. Miles of roads decommissioned and acres of invasive weed treatment are found in other sections of this report. Appendix A is an example of a prescribed fire project co-designed to improve foraging habitat for big game.

Moose

Moose populations increased moderately over the past 20 years, but more recently growth may be declining. Harvest records and hunter reports indicate that moose populations in central Idaho Wilderness and other areas of the Nez Perce - Clearwater are in decline. The Clearwater Region cumulative hunter success rate has had a steady decline. Harvest levels, hunter success, hunter days expended, and non-hunter mortality, all of which reflect population levels, can be found in the annual Statewide Moose Progress Reports. These reports can be found at collaboration.idfg.idaho.gov.

White-tailed Deer

White-tailed deer are widely dispersed and occupy a variety of habitats, most of which is comprised of thick vegetative cover making most population enumeration techniques ineffective. IDFG's best tool for tracking population trends is mandatory harvest reports filed by hunters. IDFG has been monitoring harvest, which is an index to population abundance and distribution, since 1975. Based on harvest reports, white-tailed deer populations in all NPCNF management units appear to be thriving.

Rocky Mountain Bighorn Sheep

Bighorn sheep are distributed across three populations on the Forest, along the Selway, Lower Salmon, and Snake rivers. Lambing and wintering habitat are limiting factors to population expansion. The Selway and Lower Salmon populations are decreasing, and the Snake population is stable to decreasing. Limiting factors include impacts from respiratory diseases associated with domestic sheep and goats, decreased range quality due to noxious and invasive plant species, and forest encroachment due to fire suppression.

Belted Kingfisher

The United States Geological Survey (USGS) Patuxent Wildlife Research Center presents population change information from the North American Breeding Bird Survey for more than 400 species of North American Birds (Sauer et al. 2017). The trend for belted kingfishers from 1966 to 2015 and from 2005 to 2015 for the state of Idaho is slightly declining (-3.14 and -3.03, respectively). The belted kingfisher is common along streams and shorelines across the Forest, feeds almost entirely on aquatic prey, and nests in earthen banks. The protections to riparian habitats provided by PACFISH (Pacific Anadromous Fish Strategy)/INFISH (Inland Fish Strategy) management practices in Riparian Habitat Conservation Areas likely is a benefit to belted kingfisher habitat. The IBO lead a forest funded citizen science monitoring effort for belted kingfisher on the forest in 2016. They surveyed 26 riparian transects and detected kingfisher on 50% of them.

Pileated Woodpecker and Northern Goshawk

The United States Geological Survey (USGS) Patuxent Wildlife Research Center presents population change information from the North American Breeding Bird Survey (BBS) for more than 400 species of

North American Birds (Sauer et al. 2017). The trend for pileated woodpeckers from 1966 to 2015 and from 2005 to 2015 for the state of Idaho is slightly increasing (0.85 and 1.1, respectively).

Landbird surveys are conducted on the Forest by the Intermountain Bird Observatory as part of the Integrated Monitoring in Bird Conservation Regions (IMBCR) program coordinated by Rocky Mountain Bird Observatory (RMBO) and partners. Fifteen transects are surveyed yearly on the CNF beginning in 2010, providing estimates of pileated woodpecker occupancy (White et al. 2013). Additionally, a study of the distribution and area of occupancy of pileated woodpeckers was conducted in 2012 in the Clearwater and Nez Perce NFs within the Selway-Middle Fork Clearwater Collaborative Forest Landscape Restoration project area. Pileated woodpeckers were found to be well distributed throughout the area (Baumgardt et al. 2014). Of a total of 35 units sampled, pileated woodpeckers were detected in 26 units, which leads to a corrected estimated occupancy of 70% (Baumgardt et al. 2014). Intermountain Bird Observatory conducted woodpecker surveys on 72 routes in 2016 and 2017, and detected pileated woodpeckers on 79% of those routes.

Habitat relationship models were developed by the Region 1 Forest Service for a conservation assessment for the northern goshawk and pileated woodpecker, in 2005, and amended in 2006 and 2008 (USDA Forest Service 2005, amended 2006, Bush and Lundberg 2008). Habitat estimates were derived from FIA data (The U.S. Forest Service's Forest Inventory and Analysis National Program for data collection on the health of forests) (Berglund et al. 2008, Bush et al. 2006), using these models. The model indicates that the NPCNF has approximately 142,779 acres of nesting habitat, and 425,056 acres of foraging habitat well distributed to support pileated woodpeckers.

The BBS reports the trend for northern goshawk in Idaho from 1966 to 2015 and from 2005 to 2015 is slightly declining (Sauer et al. 2017). However, the sample size for northern goshawks in these surveys is small, so these results are not conclusive.

The Region 1 habitat relationship model for northern goshawk described above, estimates 52,517 acres of nesting habitat, and 761,490 acres of foraging habitat on the NPCNF that is well distributed to support northern goshawk.

A 2005 survey of the frequency of northern goshawk presence in the Northern region found that based on a random sample (n=114) of 12,350 sampling units, goshawks were detected in 39% of available habitat in road-accessible areas in Region 1 (Kowalski 2005, Brewer et al. 2009). The results suggest that goshawks are relatively common and widely distributed in the roaded, managed portions of National Forest lands. In 2001 to 2003, Moser studied northern goshawk reproduction on 21 territories on the Forest (Moser 2007, Moser and Garton 2009).

Intermountain Bird Observatory (IBO) surveyed territory use of 20 historic nest sites in 2017 and found 65% of them to be defended and/or occupied. In a random spatially-balanced survey across the forest, IBO found a goshawk occupancy rate of 67% in high quality habitats in 2016 and 77% in 2017. In addition, project related field inventory work for goshawks has occurred periodically across the Forest throughout 2013-17 in various drainages.

Pine Marten (aka American Marten)

Marten populations are well documented throughout the CNF. Marten population densities and trends are difficult to evaluate and populations often fluctuate, partly due to variable trapping pressure. IDFG manages marten populations primarily using licensing, harvest seasons, and harvest limits. Mandatory harvest reports include Catch-Per-Unit-Effort, which measures the harvest per unit of time and is useful

in predicting population trends. Statewide trends for Catch-Per-Unit-Effort from 2002 to 2012 steadily declined, from 4.14 to 2.15, but have now stabilized from 2013 to 2016 at 2.36.

Range-wide wolverine surveys conducted during winter of 2016-17 documented marten on camera traps on the forest. Multi-species meso-carnivore monitoring initiated on the Forest winter of 2017-18 documented marten at a high percentage of 52 camera locations. IDFG documented additional marten on cameras during winter of 2017-18 in the Selway-Bitterroot Wilderness as part of a fisher monitoring project.

Fisher

In 2017, the USFWS determined that listing the northern rocky mountains (NRM) population segment of the fisher was not warranted.

A species distribution model estimates about 30,000 km^2 (7,413,161 acres) of modelled habitat for fisher in the NRM. To date, population size of the NRM fisher has not been estimated. The forest has 398,798 acres of modelled summer habitat and 772,978 acres of modelled winter habitat.

From 2004 to 2011, 4,813 fisher hair snares (n=4,813) were deployed throughout the NRM fisher population, including on the NPCNF, resulting in 222 fisher detections. Between 2008 and 2010, 659 live traps were deployed, and 61 fishers captured on the forest and surrounding habitats. In winter of 2013, a multi-species meso-carnivore survey was conducted on the southern portion of the forest, deploying 42 hair snares, resulting in 7 fisher detections. In the same winter, in the Middle Fork of the Clearwater and Selway drainage area, 77 hair snares were deployed, and 3 fisher were detected.

Between 2013 and 2017, IDFG captured and collared 12 female fisher with GPS collars on the forest to evaluate fine scale habitat selection. Analysis of this large data set has been initiated by the Rocky Mountain Research Institute (RMRS).

Long-term meso-carnivore monitoring was initiated in conjunction with RMRS on the forest during the winter of 2017-18. Fifty-two camera and hair snare locations were sampled, and photo and DNA results are being analyzed. IDFG sampled 14 sites in the Selway-Bitteroot Wilderness on the forest during the winter of 2017-18, and cameras are being recovered, and data will be analyzed.

Gray Wolf

In 2011, the Fish and Wildlife Service removed gray wolves in the portion of the Northern Rocky Mountain Distinct Population Segment (DPS) encompassing Idaho, Montana and parts of Oregon, Washington and Utah from the Federal List of Endangered and Threatened Wildlife. Post delisting monitoring requires each delisted state to submit an annual report to the U.S. Fish and Wildlife Service (USFWS et al. 2012).

IDFG currently oversees management of wolves in Idaho and coordinates among agencies to fulfill obligations under the revised 10(j) rule, Endangered Species Act, and Idaho Wolf Population Management Plan. The Idaho wolf population has continued to expand in size and distribution since initial reintroductions in 1995, reaching Endangered Species Act recovery goals by the end of 2002. Wolf monitoring and management activities have been reported by Wolf Management Zones (WMZs) since 2008. Four WMZs, each of which include several GMUs are partially on the Forest: Dworshak/Elk City, Palouse/Hells Canyon, Lolo, and Selway.

Wolf distribution and pack numbers were monitored across Idaho through multiple detection state and method occupancy models 2009-2014 using non-invasive genetic sampling in predicted rendezvous site habitat, locations of radio-collared wolves, a survey of wolf observations by hunters, and up to nine covariates such as slope, elevation, and forest cover (Ausband et al. 2014).

During 2016, IDFG deployed 196 remote wolf monitoring cameras from southeastern Idaho to the Canadian border, 32 were on the Forest. Wolves were detected during this period on 68 of the 196 cameras. An estimated 81 wolf packs were in Idaho during summer 2016, and an estimated 10-12 packs were on the Forest. A final report on this monitoring is due in fall 2019.

IDFG manages the number of wolves through harvest and control (agency removal and legal take). Statewide progress reports are available at collaboration.idfg.idaho.gov and includes a listing of population and pack numbers by Wolf Management Zone from 2006 to 2016.

Bald Eagle

The Clearwater National Forest Plan (1987) lists the bald eagle as endangered, and a Management Indicator Species. In 1995 the U.S. Fish and Wildlife Service down listed the bald eagle to threatened, and on June 28, 2007 the final decision was made to delist the bald eagle from the Endangered Species Act (USFWS 2007). Midwinter bald eagle surveys have been conducted nationally since the 1980's. The surveys have been conducted under the oversight of several federal agencies including the Bureau of Land Management (1992), National Biological Survey (1993-1996), U.S. Geological Survey (U.S.G.S.; 1997-2007), and most recently U.S. Army Corps of Engineers (U.S.A.C.E.; 2008 to present) (Eakle et al. 2015).

As part of this national effort, the state of Idaho has 78 routes, 3 of which are on the Nez Perce - Clearwater NF. Since 1986 to 2010, the trend of the bald eagle winter population in the state of Idaho has increased by 1.2% (Eakle et al. 2015). Eagles were consistently present on all 3 winter survey routes from 2014 through 2017. BBS data (Sauer et al. 2017) shows a moderate increasing trend in breeding bald eagles in Idaho from 1966 to 2015 and from 2005 to 2015 (5.93 and 8.5, respectively). There are two known bald eagle nests on the forest, located on the Middle Fork of the Clearwater and the Selway rivers. Both nests were occupied in 2016 and 2017.

Peregrine Falcon

The peregrine falcon was listed as endangered in 1970 by the U.S. Fish and Wildlife Service (USFWS). Peregrine falcons were extirpated from Idaho by 1974 and in 1982, peregrine population restoration was initiated through the release of captive-produced young. Surveys for re-establishing pairs of breeding peregrines began in Idaho in 1988. In 1999, the USFWS delisted the peregrine falcon, removing it from the list of Endangered Species. The USFWS recommended population monitoring under the delisting process in 2003. Of the 96 territories selected at random for monitoring, 9 occurred in Idaho, none were on the forest. The post-delisting monitoring period ended in 2015.

Idaho currently has 51 known (either active or historical) peregrine falcon territories. Of the 51 known territories, 45 were monitored in 2012 and 26 (58%) were found to be occupied. Twenty-six territories were also occupied in 2009, suggesting no net change in number of breeding pairs in the state. Success rates for the peregrine in 2012 were similar to other years since the turn of the century.

BBS data (Sauer et al. 2017) shows a slight increasing trend in breeding peregrine falcons in Idaho from 1966 to 2015 and from 2005 to 2015 (2.99 and 3.25, respectively).

One known nest site occurs on the forest, no monitoring has occurred of this site during this monitoring period due to limited staffing and funding.

Grizzly Bear

The U.S. Fish and Wildlife Service has not documented a population or any female bears on the forest or within the Bitterroot Ecosystem (BE). They view the BE as currently unoccupied as per the definition of a population of grizzly bears in the Bitterroot EIS.

The estimated grizzly bear population size of the Bitterroot recovery zone is 0.

No reports or photos of grizzly bears on the forest have been provided to the forest or partners during the monitoring period.

Canada Lynx

The U.S. Fish and Wildlife Service (FWS) listed Canada lynx as a threatened species under the Endangered Species Act (ESA) in March 2000. While lynx have occasionally been sighted on the Forest, currently, due to the infrequent nature of lynx observations, no evidence exists of a resident lynx population or reproduction on the Nez Perce - Clearwater National Forest.

During winter 2002-2003, the IDFG initiated a pilot study for a statewide monitoring effort to collect basic information on forest carnivore occurrence, distribution, and persistence, using snow track surveys. The surveys were performed throughout the state during the winter of 2003-2004, 2004-2005, and 2005-2006, with variable effort dependent on snow conditions. In the Clearwater Region, no lynx were detected (IDFG 2006).

There have been several additional surveys targeting forest carnivores on the Forest: between 2002 and 2006 fishers were studied in the Clearwater sub basin (Schwartz et al. 2013); Region 1 fisher monitoring in 2004 to 2011 on a systematic 5 x 5 mile grid (Lewis and Hahn 2012); a fisher ecology study from 2006-2010, much of which was on the CNF (Sauder and Rachlow 2014, 2015); and the 2008-2009 Bitterroot Ecosystem systematic survey for grizzly bears, which included parts of the CNF (Servheen and Shoemaker 2010). IDFG also does yearly aerial surveys on the Forest, primarily for big game monitoring. Throughout all of this survey work, there have been only 3 verified occurrences of lynx, all in March of 2005. In 2010 a collared lynx was found dead outside of Kamiah. This animal had been transplanted to Colorado. Otherwise, there has been no evidence of lynx presence on the Forest.

Lynx are wide-ranging animals, and given the extensive surveys for other species using hair snares, snow track surveys, and camera stations conducted on the Nez Perce - Clearwater NF presence of a population should be evident given the vast network of roads and trails. While lynx have occasionally been sited on the forest, currently, due to the infrequent nature of lynx observations, no evidence exists of a resident lynx population or reproduction.

North American Wolverine

The U.S. Fish and Wildlife Service (FWS) listed North American wolverine as a proposed threatened species under the Endangered Species Act (ESA) in 2013. The primary threat identified for wolverine is climate change. Wolverines are an extremely wide-ranging species, dependent upon high elevation persistent snow areas for breeding and foraging. Most wolverine habitat on the forest is in Roadless and Wilderness areas, and is difficult to survey in the winter. A multi-state wolverine survey was

conducted in the winter of 2016-17. Fourteen camera grid cells were surveyed on the forest, and wolverine were documented on 2 cameras.

Multi-species meso-carnivore monitoring was conducted winter 2017-18 and will continue into the future, with wolverines being one of the focal species to monitor for the forest. Not all cameras, photos and DNA samples from the past season have been evaluated yet, however of the 59 cameras recovered, at least two had photos of wolverines (Figure 1).

Figure 1. Wolverine photo captured 6/25/2018 at camera location 27 on the Nez Perce – Clearwater National Forest.

Appendix A. Prescribed Fire implemented for Elk Habitat.

Barnard Junction Project

On April 24th and 25th, 2018, the North Fork Ranger District completed approximately 250 acres of burning in the Barnard Junction project area. The burns were in the lower elevations of Unit 2C and 6B. These two burns are in key elk winter range areas and elevations (below 3900ft) where no natural disturbance such as fire has occurred since 1919.

With the difficulty of planning around summer and fall burns due to smoke constraints and variable weather from year to year the North Fork Ranger District has been looking at opportunities to increase burn windows. This is the first spring burn focused on elk winter range improvement since the early 1980's on the North Fork Ranger District.

Accomplishing burns like these in the spring has many benefits not just limited to elk habitat improvement:

-Easier to control due to the snow above and wet drainages below the units and only 3-4 personnel needed to complete ignition

-Less impact to recreational activities due to few people being on the district and no trail closures needed.

-Little to no smoke impacts with less resident time for burning fuels and the is smoke less likely to reach populated areas

-Potential resource damage can be reduced due to higher soil moistures, forage growing back over the summer for winter feed, and creating a fuel break to help contain larger summer/fall prescribed burns.

Ignition on April 24th Unit 2C

Unit 2C is 4596 acres and encompasses the Junction Creek drainage. The portion of the unit that was burnt was along the 106 trail near the Junction Pack Bridge. The elevation range was between 3100ft and 3900ft with a southwest aspect. There were pockets of Douglas Fir and Grand Fir averaging between 4-10 inches DBH with some stringers of larger trees. Brush species consisted of service berry, mountain maple, shinny leaf ceanothus, and scouler's willow. Much of the brush had heavy browsing and the remainder had grown mostly out of reach limiting the amount of available feed. Much of the unit also had a good grass component in the lower portions.

Pre Burn (Spring 2017)

Post Burn (Spring 2018)

Pre Burn (Spring 2017)

Post Burn (Spring 2018)

Scouler's Willow sprouting on June 8th 2018

Grass component on June 8th 2018

During the post burn analysis of the unit a previously unknown aspen stand was found that burnt during ignition on April 24th. It was a relatively small aspen clone that was beginning to get encroached by conifer.

Prevalent sprouting was observed in and around the clone, sprouts were seen up to 50ft outside the original aspen's footprint. Mortality in the encroaching conifer was approximately 75%.

Encroaching conifer mortality

Aspen and Scouler's Willow sprouts

Unit 6B is 997 acres and follows the ridge line to the Northwest of Fourth of July Creek. The portion of the unit that was burnt was from 3800ft in elevation down the ridge line towards the mouth of Fourth of July Creek to 2850ft with a south aspect. Along this ridge line is a multi-aged stand of Ponderosa Pine with inter mixed Douglas Fir and Grand Fir. Brush species consisted of service berry, mountain maple, shinny leaf ceanothus, western paper birch, and scouler's willow. Much of the brush had heavy browsing and the remainder had grown mostly out of reach limiting the amount of available feed.

Plot 1 facing East pre and post

Grass sprouting

Conifer mortality

Ponderosa Pine overstory

Mountain Maple

Scouler's Willow

Western Paper Birch

Brush mortality

During ignition of Unit 6B the heavy buildup of pine litter helped carry fire and get the desired effects. The fire behavior produced intensities adequate for mortality in the brush species and also in the sapling and pole sized conifer encroachment. This will help maintain and improve the brush fields and Ponderosa Pine habitat along this ridge line. On June 18th during the post burn inspection of the unit a varied amount of conifer mortality was observed ranging from 25% up to 75%+. This was partially due to the difference in fuel moisture on certain aspects but also in some areas the advanced nature of the conifer. Post burn analysis of the brush species shows very good response and growth. As seen in some of the above photos the Scouler's Willow has sprouts in the upper range of 24+inches. After completing the post burn analysis and seeing the desired effects were met in the Silvicultural prescription both Units 2C and 6B are being considered successful spring burns.

Day of ignition as seen from Fourth of July Pack Bridge