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Title:

Comments: The Alaska Department of Fish & Game (ADF&G) has reviewed the U.S. Forest Services (USFS) Draft Environmental Impact Statement (DEIS) for the South Revillagigedo Integrated Resource Project (SRIRP) on the Ketchikan - Misty Fiords Ranger District.

The SRIRP proposes to harvest timber, restore watershed function, enhance and restore fish and wildlife habitat, and develop recreation opportunities in the Shelter Cove, Shoal Cove, and Thorne Arm areas. This would be accomplished by:

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Harvesting up to 46 million board feet (mmbf) of timber from up to 5,500 acres of old-growth forested land and up to 1,000 acres of young-growth over a 15-year period. This would require the construction of 10 miles of new National Forest system (NFS) roads, 80 miles of reconstruction of existing FS roads, 45 miles of new temporary roads, 14 miles of reconstructed temporary roads, and the use of existing log transfer facilities at Shelter Cove and Shoal Cove

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Placing instream and floodplain wood, riparian thinning, blasting a partial fish barrier, managing invasive plants and replacing or removing culverts impeding fish passage

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Moving habitat toward favorable wildlife conditions based on project design and identified needs

Based on the project description we have the following comments to offer.

Wildlife

Deer Habitat

To maintain and enhance deer habitat, the ADF&G supports minimizing old-growth harvest and maximizing the proportion of young-growth in the total timber harvest. Thinning or other young growth treatments such as patch cuts should occur before 25 years post-harvest and should be designed to delay stem exclusion to the maximum extent possible and to enhance deer forage generation. Maintaining forage production in young growth stands likely has little benefit if slash is left in the field and discourages deer from using treated stands. Any treatment of young growth intended to benefit deer should carefully consider slash treatments and the need to facilitate movement of deer within and among favorable habitat patches.

Research on both deer and wolf habitat selection indicated that regenerating clearcuts (<25 years post cut) are selected seasonally, but selection is dependent on winter snow depth. Gilbert et al. (2017) demonstrated that deer selected regenerating clearcuts but avoided older closed canopy second-growth (>25 years post cut) and high-volume old growth during low snow winters. However, during deep snow winters, deer avoided regenerating clearcuts and preferred old-growth forests. These results emphasize the importance of maintaining old growth stands throughout the SRIRP area as critical winter deer habitat. Higher volume productive old-growth forest below 800 feet elevation on south facing slopes should be preserved especially in areas like the SRIRP where previous harvest has been extensive.

Similarly, wolves select regenerating clearcuts during fall and winter in addition to low-volume old-growth forests. Regenerating clearcuts (<25 years post cut) were avoided during wolf denning season and summer. Wolves consistently avoided both thinned and unthinned second-growth forest (>25 years post cut) throughout the year, suggesting that the value of regenerating clearcuts as wolf habitat is short lived. Importantly, closed canopy second-growth forest has little value for wolves. Improved young-growth treatments are needed and should occur early and often to extend the period of favorable conditions for both deer and wolves.

Wolf Habitat

Dens:

ADF&G research supports the following recommendations of the Interagency Wolf Technical Committee (Wolf Technical Committee 2017):

- * Protect the integrity of known wolf dens (active and inactive) with noncircular buffers generally centered around the den in consultation with ADF&G and the United States Fish and Wildlife Service (USFWS).
- * Retain roadless, gently sloping (≤ 25 percent) productive old-growth forest within 330 feet of major lakes and streams (defined in Wolf Technical Committee Report) to preserve denning habitat and den-site options for wolves.
- * Use a mean no disturbance buffer of 2,400 feet in radius (about 0.5 mile) around reproductive wolves at den sites as suggested in Preliminary Wolf Buffer Analysis (ADF&G unpublished data).

Specifically, ADF&G research (Roffler et al. 2018) indicates that wolves select low-volume old-growth forest and open vegetation habitat types (e.g. meadows, grasslands, and muskegs) at low elevation and relatively flat terrain. During denning season, wolves avoided areas of relatively higher road densities ($>0.772 \text{ km/km}^2$). These results underscore the importance of old-growth forests in areas of low human disturbance for wolf denning habitat.

Our current and previous research (Person and Russell 20009) also support the recommendation of the Interagency Wolf Technical Committee to protect habitat surrounding all documented wolf dens in perpetuity. We found that wolves used the same den (or a den nearby, e.g. [asymp]100 m) for multiple sequential years. These results suggest that dens have long-term value for wolf reproductive activities and should be protected so they remain attractive to wolves.

We support excluding any type of development activity within a 0.5-mile radius of known dens but emphasize that this distance should be considered the minimum necessary. Disturbance buffers of 1-6-mile radius have been recommended to reduce disturbance surrounding wolf den sites in British Columbia and the Canadian and U.S. Rocky Mountains (Chapman 1977, Matteson 1992, Fritts et al. 1994, Paquet and Darimont 2002). Those recommendations were derived from observations of wolf behavior and habitat characteristics of den sites. To remain viable as places to successfully raise pups, denning wolves require access to sufficient prey in proximity to the den. During denning season members of reproductive packs foraged on average within 6.8 miles of the den (Roffler and Gregovich 2018). Disturbance and foraging buffer protections should be extended whenever possible and designed to maximize inclusion of the greatest quantity of high-quality deer habitat (e.g. old-growth forest).

The SRIRP suggests the installation of temporary roads that will be closed post logging may benefit wolves. Closing specific roads could minimize the potential for disturbance around dens and would limit access for wolf hunters and trappers. However, collared wolves in GMU 2 demonstrated seasonally flexible response to roads by avoiding areas with a high density of road during the denning season and selecting areas with higher road densities during fall and winter (Roffler et al. 2018).

Mountain Goat Habitat

Mountain goats (*Oreamnos americanus*: goats) select subalpine and old-growth forest during winter (Smith 1986; White et al. 2016). Closed canopy forests intercept snow providing access to forage and reduce energy costs for locomotion (Kirchhoff and Schoen 1987; Fox 1983; White et al. 2009; White et al. 2016). Goats also select habitat with steep rugged terrain (>60-degree slopes) year-round (Fox et al. 1989; White et al. 2012). This steep escape terrain allows them to avoid predators and find forage during winter months on steep wind-swept ridges. Goats are sensitive to disturbance, particularly on their winter range, so a reduction in resource extraction and activities near this critical habitat will ensure a limited disturbance to goats in the project area.

Mountain goat behavior is altered when exposed to mining actions within 1,800 m and to helicopter activity within 2,000 m of goats (White et al. 2016; Cote 1996). Mountain goats were more sensitive to mining activity in winter than the summer (White et al. 2016). Winter is also more energetically stressful to mountain goats in addition to being more susceptible to disturbance. ADF&G suggests limiting winter activity and maintaining a 2000 m distance for helicopters and an 1,800 m distance for all extractive and building activities from critical goat winter

habitat.

Leaving uncut corridors from higher elevations that connect with old-growth and steep and rugged terrain, will benefit mountain goats. The Shoal Cove side of Carroll Inlet has critical goat winter range within the project area.

Mountain goats are also highly susceptible to over harvest which needs to be taken into consideration with the creation of new roads and access to areas previously only accessible by boat.

Bear Safety

The Shelter Cove Area Recreation Master Plan has no mention of plans for including bear resistant food lockers for campers to store food while they are using the facilities planned for the area. It is crucial for camper safety to have options available for safe storage of bear attractants while using the area to reduce human-bear conflicts. Storage lockers such as those at Signal Creek Campground should be installed to facilitate safe storage of attractants for all campers and day use in the area. Providing such infrastructure and promoting safe behavior of visitors through education efforts and signage will help ensure a safe visit.

Hazing management plans exist for bear viewing locations and heavily used areas such as the Ward Lake area near Ketchikan. Adding the proposed Shelter Cove Area into the current bear hazing plan will provide guidance in the case of human-bear conflicts. The semi-remoteness of the area should be considered along with how to respond to "problem bears". Given the distance from Ketchikan, managers should consider training camp hosts in basic bear safety and how to follow the bear hazing plan if deemed reasonable for the individuals. At a minimum, a communication plan between the FS and other agencies should be set in place for dealing with issues.

The creation and enforcement of laws prohibiting campers from leaving attractants available to bears will aid in reducing human-bear conflicts. FS Region 1 created a food storage special order (LC_10_D1_01) to reduce conflicts across multiple National Forests. This may serve as a template to create such an order for Region 10. Without such laws, recreationalists have little encouragement to secure attractants, thus creating human-bear conflicts and hazardous conditions for all recreationalists. Providing infrastructure to secure attractants along with enforcing a special order will reduce human-bear conflicts in the proposed recreation areas at Shelter Cove.

Fisheries

While restoration is frequently initially considered to address local concerns, a watershed approach is often

needed to address potential underlying mechanisms causing the impairments. An understanding of these mechanisms is necessary to develop an effective response. Unless the underlying causes of the degraded condition are addressed, restoration may not be the wisest investment.

The ADF&G supports enhancement of stream and fish habitat however, it is difficult to provide site specific comments since specific projects are not included in the DEIS. Regardless the type of restoration project, some goals to keep in mind for successful restoration projects include:

- * Provide habitat enhancement for anadromous and resident fish, to increase abundance and age class diversity
- * Prevent streambank erosion
- * Restore hydrologic function, including dynamic channel processes
- * Establish a multi-thread channel and companion riparian meadow, from an incised or channelized reach
- * Slow the procession of headcutting in a watershed, to protect upland areas, and to reduce sediment delivery to downstream reaches

To help develop a greater understanding of the effectiveness of any restoration project, the collection and reporting of post-project monitoring data should be priority. Monitoring should be performed to assess fulfillment of project objectives. One of the most important aspects of monitoring streams is to help understand the importance of feedback mechanisms, drawing inferences regarding the impacts of restoration practices.

Fish Stream Crossing Structures

The issue of red pipes has been ongoing for many years. Efforts have been, and are being, made to prioritize red pipes on the Tongass. According to USFS data, hundreds of miles of valuable fish habitat are currently blocked by fish passage structures which do not provide efficient fish passage. Replacing or removing all deficient stream crossing structures blocking fish passage on the reconstruction of 80 miles of National Forest System (NFS) roads and 14 miles of temporary roads should be a priority. In addition, crossing structures along the proposed 45 miles of new temporary road construction should be designed and installed to efficiently pass both resident and anadromous fish species.

Once specific road construction and restoration projects come on line, under the Memorandum of Understanding (MOU) Between the USDA Forest Service and the Alaska Department of Fish and Game Regarding Fish Habitat and Passage (14MU-11100100-015), the ADF&G will work with the FS through the concurrence process to formulate and prioritize enhancement projects.

Unit Card/Map Specific Stream Comments

Unit 21:

Stream 5638 is listed as a Class II stream but is not shown on the unit map.

Stream 3114 is listed as a Class III stream but is shown on the unit map as a Class II.

Unit 44:

The unit card states that only Class IV streams are in the vicinity of the unit however, stream 642 (Class I) and stream 3561 (Class II) border the west side of the unit.

Unit 48:

Streams 6667 (Class II) and 690 Class II) are shown on the map but are not mentioned on the unit card.

Unit 51:

Stream 4903 (Class III) on the unit map is referred to as stream 6576 (Class III) on the unit card.

Unit 52:

Stream 606 (Class I) is shown on the map but not mentioned on the unit card.