

# Draft Compatibility Determination

## Title

Draft Compatibility Determination for Commercial Timber Harvest on Little Pend Oreille National Wildlife Refuge.

## Refuge Use Category

Agriculture, Aquaculture, and Silviculture

## Refuge Use Type(s)

Tree harvesting (commercial).

## Refuge

Little Pend Oreille National Wildlife Refuge

## Refuge Purpose(s) and Establishing and Acquisition Authority(ies)

“... as a Refuge and breeding ground for migratory birds and other wildlife...”  
(Executive Order 8401, dated May 2, 1939)

“ ... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (16 U.S.C. 715d [Migratory Bird Conservation Act])

“... suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ...” (16 U.S.C. 460k-1) ... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ... 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).

“... for the development, advancement, management, conservation, and protection of fish and wildlife resources ...” (16 U.S.C. 742f(a)(4) “... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ...” 16 U.S.C. 99 742f(b)(1) (Fish and Wildlife Act of 1956).]

“ . . for conservation purposes.” Consolidated Farm and Rural Development Act (7 U.S.C. 2002).

## National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System, otherwise known as Refuge System, is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant

resources and their habitats within the United States for the benefit of present and future generations of Americans (Pub. L. 105-57; 111 Stat. 1252).

## **Description of Use**

Is this an existing use?

Yes. This compatibility determination updates and replaces the 2000 compatibility determination for commercial timber harvest. The use is consistent with the Refuge's 2000 Comprehensive Conservation Plan (CCP) and associated Environmental Impact Statement and Record of Decision (USFWS 2000) and Habitat Management Plan (USFWS 2005).

What is the use?

We propose to allow commercial timber harvest, including commercial thinning, pre-commercial thinning, and selective harvest.

Is the use a priority public use?

No

Where would the use be conducted?

Commercial timber harvest may occur on the main refuge unit, Kaniksu Unit, and Cusick Unit.

Commercial timber harvest on the main unit would occur primarily within approximately 15,000 acres of dry forest zone, consisting of ponderosa pine or mixed conifer forests, to promote forest health, fuels management, and habitat improvement or restoration. An average of approximately 1,000 acres of the Refuge would be subject to timber harvest annually, for a total of 10,000 acres over 10 years. Commercial timber harvest may occur to a lesser extent within the remaining moist and cold forest portions of the refuge to meet similar objectives. Commercial harvest on the forested portions of the Kaniksu (200 acres) and Cusick (50 acres) units would occur for the same reasons.

When would the use be conducted?

Activities related to timber harvest may occur year-round. Timber sale planning and layout, including marking of trees, may occur at any time. Tree harvest occurs in winter, primarily between October 1 and March 30, when the ground is frozen or covered with snow to reduce the potential of ground disturbance and erosion.

How would the use be conducted?

Once a project area is selected, a forester cruises the stand to determine the harvest

prescription that best meets the objectives in the refuge's Habitat Management Plan (HMP) (USFWS 2005) for that area. Based on that prescription, the stand volume is estimated and the appropriate logging areas and haul routes established. Only existing logging roads are reactivated for a new project. No new roads are built. Roads that are reactivated are closed after the sale/harvest is completed.

Most commercial timber harvest projects are designed to be mechanically harvested using cut-to-length equipment. All timber designated for cutting is harvested and processed by cut-to-length harvesters at the stump unless restricted by bole size, terrain, soil conditions, or other limiting factors. Hand falling/bucking may be required for some trees where use of a harvester machine is not feasible. Slash is left and used as a mat to cushion the impact of the equipment on the forest floor. After harvest the permittee is usually required to machine pile the slash to reduce fuel accumulation. The piles are burned, usually one year later, by refuge personnel during the appropriate season.

The forest treatments undertaken will have the objective of increasing stand vigor, increasing the amount of mature forest, maintaining or enhancing the presence of mature forest components, and preparing the stands for the reintroduction of low intensity ground fires. This would be accomplished by removing excess trees, mostly from age classes of less than 70 years old. Trees aged 100 years and older would largely be left standing to continue to develop. In some instances, older trees could be marked for removal where reduced competition and better spacing would enhance the longevity and vigor of neighboring desirable trees. Since a primary component of mature forests is the presence of trees with defects, including broken tops, flattened tops, mistletoe brooms, heart rot, large coarse branches, and decay, all of which are important to wildlife, trees with these kinds of defects would mostly be left standing.

The opportunity to harvest the project is awarded through a competitive bidding process. A Special Use Permit (SUP) is issued to the highest bidder outlining the project area, time frames, equipment requirements, accountability procedures, and post-harvest reclamation. Most projects include stewardship projects to be accomplished by the permittee, such as refuge public road improvements. The U.S. Treasury is reimbursed for the sale of wood at a rate outlined in the logging SUP appropriate for the value of trees within the sale.

**Why is this use being proposed or reevaluated?**

Commercial tree harvest at Little Pend Oreille National Wildlife Refuge was previously determined to be compatible (USFWS 2000). Commercial tree harvest is being reevaluated per policy (603 FW 2.11 H.).

## **Availability of Resources**

Existing resources are adequate to administer and monitor the commercial timber harvest program. Commercial timber harvest does incur costs, primarily staff time for timber harvest program administration and management, estimated at \$40,000 annually, and installation of temporary and boundary signage, estimated at \$2,000 annually. However, timber harvest allows important habitat management and fuels reduction to occur. Additionally, incurred costs are offset by receipt of sales from timber harvests returned to the refuge, estimated at \$70,000 annually.

### **Anticipated Impacts of the Use**

This CD includes the written analyses of the environmental consequences on a resource only when the impacts on that resource could be more than negligible and therefore considered an “affected resource.” Flood plains, visitor use and experience, cultural resources and socioeconomics will not be more than negligibly impacted by the action, and have been dismissed from further analyses. Wilderness does not exist on this refuge.

#### **Potential impacts of a proposed use on the refuge's purpose(s) and the Refuge System mission**

Commercial timber harvest is not expected to detract from Refuge purpose or the National Wildlife Refuge System mission. Utilizing commercial timber harvest methods allows the refuge to meet habitat goals in the CCP (USFWS 2000) and HMP (USFWS 2005), as well as fuel reduction goals identified in the Fire Management Plan (FMP) (USFWS 2009). The CCP identifies forests as having important wildlife values. Late-successional forests are rare within the surrounding landscape due to timber harvest and other activities. Due to a history of fire suppression and non-selective or clearcut logging, the regrown forests are denser with shade-tolerant species, less variable in tree size and vegetative structure, dominated by less fire-tolerant species, and have higher fuel loads than historical data suggests (Stine et al. 2014). These factors increase the fire risk and reduce wildlife values of forests.

Appropriately applied commercial timber harvest will help reduce fire hazards while also improving forest health by reducing stand density. Reducing stand density will enhance individual tree vigor and promote development of large, old growth trees in the future. Lower stand density also provides a margin of protection against future insect outbreaks and allows for the reintroduction of light ground fires in a prescribed burning program. Moreover, commercial timber harvest would reduce the likelihood of high-intensity, stand-replacing wildfire, and would reduce risk of sedimentation in streams and loss of thermal cover, benefitting a wide suite of fish and wildlife species. Therefore, in the long term, commercial timber harvest assists in meeting the Refuge’s purposes of providing “... a Refuge and breeding ground for migratory birds and other wildlife...” and “... for the development, advancement,

management, conservation, and protection of fish and wildlife resources ...” as well as the National Wildlife Refuge System mission.

### Short-term impacts

The potential negative impacts of commercial tree harvest include short term soil disturbance from the use of heavy equipment, disturbance to wildlife from tree harvest activities, and the impact on vegetation through removal of targeted trees and physical damage to non-target trees and shrubs resulting from operating logging equipment.

It is expected that within the next 10 years, up to 10,000 acres of the refuge will be subject to potentially ground-disturbing activities. Ground disturbance, including soil disturbance and crushing of vegetation and woody debris on the forest floor, will likely occur while forwarding cut-to-length logs to the landing. Ground disturbance is mitigated by operating on frozen ground as much as possible using tracked forwarders and driving on logging slash to cushion the impact. Impact will also occur during log decking and loading. Most shrubby vegetation crushed by equipment operation rebounds within one growing season. Ground disturbance may increase the risk of invasion by exotic plants (Hobbs and Huennekke 1992). To reduce this risk, all harvesting and heavy equipment must be free and clean of plant material and weed seeds prior to entering the refuge. The Service would use proceeds from timber sales to conduct herbicide treatments the first two years post-harvest on all roads, forwarder trails, and log decks reduces the risk of establishment, followed by seeding native grasses. These treatments will reduce the risk of that non-native invasive plant species will become established and mitigate the site disturbance.

Disturbance created by heavy equipment can increase erosion and sediment transport to streams. Increased sedimentation can impact aquatic plant and animal communities, particularly salmonid fishes. To alleviate these potential impacts, timber management activities would take place in the early fall, winter, or late spring when the ground is dry or frozen to avoid ground disturbance resulting in erosion and sediment transport. Treatment in, or adjacent to, riparian habitats, as identified in WAC 222-30, will adhere to and exceed State requirements for the activity proposed.

Some localized, short-term disturbance of wildlife is expected to occur during tree harvest activity, which creates noise in addition to the presence of machinery and people. Some upland birds (songbirds, woodpeckers, grouse, owls, and hawks), mule deer, white-tailed deer, mountain lion, black bear, elk, and coyotes are expected to avoid areas of high activity. However, these species will readily move back into these sites after the disturbance is removed. This level of activity is expected to occur on approximately two percent of the refuge annually. Because the disturbance is localized and temporary, it would not have an adverse effect on overall populations.

In order to assure compatibility of timber harvest with endangered species

protection, consultation will be done on a project-by-project basis as required by Section 7 of the Endangered Species Act for the following federally listed species that occur in proximity to the refuge: Canada lynx (*Lynx canadensis*), threatened; and grizzly bear (*Ursus arctos horribilis*), threatened; yellow-billed cuckoo (*Coccyzus americanus*), threatened; bull trout (*Salvelinus confluentus*), threatened; and whitebark pine (*Pinus albicaulis*), proposed threatened.

Canada lynx have been observed at the refuge, but the refuge is not within designated critical habitat. Some suitable habitat exists in the upper elevations of the refuge. Lynx are restricted to cold, snowy, mesic forests. They are reliant on snowshoe hare populations, which may benefit from timber harvest and natural disturbances to provide appropriate structure and cover. Lynx are able to move long distances in search of prey and have large home ranges (USFWS 2017). Combined with the relatively small area to be harvested per year (an average of 1,000 acres annually), the ability of lynx to use other areas reduces the likelihood of negative effects to lynx.

The refuge is about 20 miles west of the western edge of the Selkirk Grizzly Bear Recovery Zone (USFWS 1993). The intervening distance is mostly heavily forested private and public lands with private farms along the Pend Oreille River valley. There is one recent record of grizzly bear on the main refuge unit. This was a radio collared bear that wandered into the fringes of the refuge in high elevation habitat in July 2017. While it is possible that a wide-ranging animal like the grizzly might wander onto the refuge again, it is expected to be a rare occurrence of short duration restricted to high elevation habitats. Timber practices negatively affect grizzly bear habitat when associated with an increase in road densities and resulting increases in human activity (USFWS 2011). Primary concerns for grizzly bears are mortalities because of interactions with humans. At a landscape scale, habitat and connectivity for grizzly bears may also be lost as result of timber harvest. However, no new roads will be constructed to facilitate timber harvest on the Refuge, and timber harvest activities will not result in an increase in public access. Therefore, it is unlikely that timber harvest activities at the refuge would adversely affect grizzly bears or their habitat.

In Washington, the western yellow-billed cuckoo is part of the Western Distinct Population Segment (DPS) that was listed as a threatened species in November 2014 (USFWS 2014). While once occurring northward into British Columbia, this DPS is considered extirpated as a breeding species from the northern part of its range (Hughes 1999). Virtually all breeding, including critical habitat, occurs in the southwestern USA. In Stevens County, the cuckoo is known from three records on the main refuge unit in 2013, 2017, and 2019. Those birds were presumed to have been transitory and, given the species' current status and known breeding range, it is unlikely to occur on the refuge except as a rare vagrant. Yellow-billed cuckoos primarily inhabit the canopy of riparian forests where they feed on insects; they also primarily inhabit low elevation sites below 5000 feet. If a cuckoo were to occur on the refuge again, it would not likely occur in the dry upland forest where timber harvest takes place. Therefore, it is unlikely that timber harvest activities at the refuge would

adversely affect yellow-billed cuckoo.

No known records exist for bull trout on the refuge, and Meyers Falls creates an impassible barrier on the Colville River preventing bull trout from occurring in the tributary Little Pend Oreille River watershed. Whitebark pine is a high elevation species found near tree line (USFWS 2020). This species is not known to occur on the refuge, and no suitable habitat is known to occur within areas to be commercially thinned. Therefore, commercial timber harvest would have no effect to bull trout or whitebark pine

If tree harvest occurs during the summer months, foliage roosting bats, such as silver haired bats (*Lasionycteris noctivagans*) and hoary bats (*Lasiurus cinereus*), may be dislodged from roost trees or killed if roost trees are felled (Hayes 2003, Hayes and Loeb 2007). Timber management activities may also affect the abundance, distribution, and quality of roosting sites for these species (Hayes 2003). Mature trees with defects would be retained during the timber harvest process to the extent practicable, thereby preserving as much of the optimal roosting habitat as possible. Most bats, particularly the foliage-roosting bats, migrate further south for winter and would not be present for timber harvest activities occurring during winter months (J. Barnett, pers. comm.).

Tree harvest activities occurring during the nesting season can directly impact both ground and foliage nesting birds. Delaying timber management until the fall or winter greatly reduces these impacts (Altman 2000). Cavity nesting birds may be impacted if snags or dead top trees are removed (Mannan et al. 1980; Zarnowitz and Manuwal 1985); however, snags would not be cut.

Almost all tree harvest projects require either broadcast or slash pile burning to dispose of the fuels produced as a byproduct of the harvest. Air quality is impacted by the resulting smoke, but is mitigated by the requirements to coordinate with the Washington Department of Ecology before ignitions to minimize smoke impacts on the public.

While some short-term negative effects on wildlife and habitats result from tree removal, timber management activities will be limited in scale, scope, and season in such a way that those negative effects will be limited. The long-term benefits to species and stand vigor outweigh the temporary negative impacts of tree removal.

## Long-term impacts

The long-term intent of the treatments is to rehabilitate the forest structure and composition to create conditions more closely resembling those present just prior to Euro-American settlement, and increase resilience of forest stands to wildfire and insect outbreaks. The forest treatments undertaken will have the objective of increasing stand vigor, increasing the amount of mature forest, maintaining or enhancing the presence of mature forest components, and preparing the stands for the reintroduction of low intensity ground fires. These would lower the probability of

the occurrence of high intensity stand-replacing wildfires.

The effect of these treatments would be to reduce the overall tree density, generally favoring the larger, older trees with characteristics favorable to wildlife that are dependent on old growth trees and an open canopy structure. Such treatments are considered to be particularly effective at promoting the diameter and height growth of the remaining stand, thus speeding the development of mature and old growth characteristics, such as large boles, large limbs, and robust canopies (Oliver and Larson 1990).

The US Fish and Wildlife Service List of “Bird Species of Conservation Concern” (USFWS 2021) lists six species in the region that are dependent on late-successional coniferous forest types and are in decline: flammulated owl, Williamson’s sapsucker, Lewis’s woodpecker, olive-sided flycatcher, evening grosbeak, and Cassin’s finch. Each of these are rare and generally declining on the refuge as shown in annual point counts and are expected to benefit from thinning projects. Flammulated owl, olive-sided flycatcher, and Cassin’s finch have increased in previously treated dry forest types on the refuge. Moreover, upland birds (songbirds, woodpeckers, grouse, owls, and hawks), mule deer, white-tailed deer, mountain lion, black bear, elk, and coyotes would benefit in the long term from an increase in forage, seeds, and the resultant rodents.

The proposed timber harvest is part of hazardous fuels reduction on a landscape scale which intends to reduce the risk of wildfire to not only terrestrial wildlife, but fish and their aquatic habitat as well. The Refuge currently manages 9.9 miles of instream habitat along the Little Pend Oreille River, and 14.6 miles along the main and North forks of Bear Creek. Native fish present within these reaches include rainbow and cutthroat trout, redbreast shiner, and sculpin. Non-native brook and brown trout are present within the Refuge, and according to some anglers isolated yellow perch and large-mouth bass as well. Wildfire and the resulting increase in stream sedimentation and reduction in thermal cover would pose significant risks to habitat for these fish and a variety of aquatic species present within the refuge. Any reduction in wildfire scope or intensity will benefit fish, wildlife and their habitats.

Some species that depend on early successional forest may be negatively impacted and are expected to decline on treated units. However, most of these species are already quite common in the region, since early successional forest habitats are abundant both on the refuge and in the public and private lands surrounding the refuge. For example, “Bird Species of Conservation Concern” (USFWS 2021) lists only one species in the Northern Rocky Mountain Region that is dependent on early successional forest: the calliope hummingbird. This species is abundant over much of the refuge.

Thinning and the use of prescribed fire is also intended to promote conditions that would be favorable to reintroduction of a more natural fire disturbance regime over the long term, thus lessening the likelihood of large, stand-replacing wildfires. Thus,



agricultural tree harvest as described in this CD would promote the development and perpetuation of old growth forest characteristics that would benefit a wide suite of species that are dependent on this type of habitat.

## **Public Review and Comment**

The draft compatibility determination will be available for public review and comment for 15 days. A hard copy of this document will be posted at the Refuge Headquarters at 1310 Bear Creek Road, Colville, WA. It will be made available electronically on the refuge website at [https://www.fws.gov/refuge/little\\_pend\\_oreille/](https://www.fws.gov/refuge/little_pend_oreille/). Please let us know if you need the documents in an alternative format. Concerns expressed during the public comment period will be addressed in the final CD.

## **Determination**

Is the use compatible?

Choose an item.

### **Stipulations Necessary to Ensure Compatibility**

1. Equipment must meet refuge specifications included in the Special Use Permit associated with each commercial timber harvest project.
2. Harvesting and heavy equipment use will be limited to periods of time when soils are either frozen or the soil moisture is just enough to cushion the ground but be neither soggy nor powder dry. The Refuge Manager or FWS forester will make the determination whether or not the ground conditions are right for operation.
3. All timber designated for cutting shall be harvested and processed by cut-to-length harvesters at the stump unless restricted by bole size, terrain, soil conditions or other limiting factors.
4. No new road construction will be allowed.
5. Existing road access will be improved if necessary to allow specific harvest equipment to be hauled to the harvest and landing sites so that road surface degradation can be avoided.
6. Loading shall occur in existing openings where such operations are feasible and safe.
7. No roads may be blocked or made inaccessible for a length of time in excess of that required to load log trucks or equipment for hauling.
8. Limited tree harvest activities may be allowed during the spring or summer due to special circumstances. The determination will be made by the Refuge Manager as to location and quantity of harvest allowed during this period.

9. All existing border fences, corners and monuments shall be protected.
10. No snags shall be felled. Mature trees with defects would be retained during the timber harvest process to the extent practicable, thereby preserving as much of the optimal roosting habitat as possible.
11. All springs, meadows, seeps and riparian areas shall be protected from damage caused by falling, forwarding, skidding, loading, hauling, and all other logging operations.
12. Riparian buffer widths will meet or exceed requirements identified in WAC 222-30, based on stream type.
13. The Service will comply with current policies and procedures related to cultural resource protection and perform mitigation required through a cultural resources review. Special Use Permits will be designed to avoid known cultural resource areas. Known cultural resource areas will not be disturbed. If new cultural resource sites are discovered during permitted activities, modifications will be undertaken to avoid further ground disturbance in the area.
14. Excessive disturbance of wildlife and disturbance to sensitive areas and cultural resources will result in suspension of operations.
15. All harvesting and heavy equipment must be free and clean of plant material and weed seeds prior to entering the refuge.
16. The Service will provide the logger with maps of cultural, historical, or ecological sensitive areas.

## **Justification**

Commercial timber harvest, as outlined in this compatibility determination, would not conflict with national policy to maintain the biological diversity, integrity, and environmental health of Little Pend Oreille NWR. Based on the stipulations outlined above, it is anticipated that wildlife populations will find sufficient food resources and resting places such that their abundance and use of the refuge will not be measurably lessened as a result of allowing commercial timber harvest on the refuge. The relatively limited number of individual animals expected to be adversely affected as a result of commercial timber harvest will not cause wildlife populations to materially decline, the physiological condition and production of species present will not be impaired, their behavior and normal activity patterns will not be altered dramatically, and their overall welfare will not be negatively impacted. Based on available science and best professional judgement, the Service has determined that commercial timber harvest at Little Pend Oreille NWR, in accordance with the stipulations provided here, would not materially interfere with or detract from the National Wildlife Refuge System mission or the purposes of the refuge. Rather, appropriate and compatible commercial timber harvest would be a use of Little Pend Oreille NWR through which

refuge habitats can be restored.

## Signature of Determination

Refuge Manager Signature and Date

## Signature of Concurrence

Assistant Regional Director Signature and Date

## Mandatory Reevaluation Date

2032

## Literature Cited/References

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