

Final Comprehensive Conservation Plan and Environmental Impact Statement: Appendix

*Little Pend Oreille
National Wildlife Refuge*



Volume 2

**APPENDIX FOR THE
FINAL
COMPREHENSIVE CONSERVATION PLAN
AND
ENVIRONMENTAL IMPACT STATEMENT
FOR THE
LITTLE PEND OREILLE NATIONAL WILDLIFE REFUGE**

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Implementation of this Comprehensive Conservation Plan and alternative management actions/programs has been assessed consistent with requirements of the National Environmental Policy Act (42 U.S.C. 4321 et seq.).

APPENDIX TABLE OF CONTENTS

Cover Sheet

Appendices

Appendix A:	Glossary
Appendix B:	References
Appendix C:	Preferred Alternative: CCP Objectives, Projects, & Implementation Strategies
Appendix D:	Summary of Compliance
Appendix E:	Detailed Description and Analysis of Forest Management Pilot Projects
Appendix F:	Compatibility Determinations
Appendix G:	Fire Management Plan
Appendix H:	Wildlife Species List
Appendix I:	Mailing List
Appendix J:	Comments on Draft CCP/EIS and Service Responses
Appendix K:	Noxious Weed Species List

List of Figures

Map E-1.	Appendix E: Forest Management Pilot Projects	E-3
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List of Tables

Table C-1	Primary Entrances and Improvements Needed	C-21
Table C-2	Public Access Roads and Improvements Needed	C-22
Table C-3	Seasonal Public Access Roads and Improvements Needed	C-24
Table C-4	Summary of Wildlife and Habitat Projects	C-28
Table C-5	Summary of Public Use Projects	C-29
Table C-6	Summary of Maintenance and Administration	C-30
Table C-7	Total Project Costs Proposed for the Next 15 Years	C-30

Appendix A: Glossary

ACRONYMS AND ABBREVIATIONS

AUM - Animal Unit Month
BBS - Breeding Bird Survey
CFR - Code of Federal Regulations
CCP- Comprehensive Conservation Plan
EA - Environmental Assessment
EIS - Environmental Impact Statement
FWS - U.S. Fish and Wildlife Service
GAP - Geographic Approach to Planning for Biological Diversity
Little Pend Oreille, The Refuge, LPO - The Little Pend Oreille National Wildlife Refuge
MBF - 1,000 board feet
NEPA - National Environmental Policy Act
NWR - National Wildlife Refuge
Refuge System Improvement Act, The Act - The National Wildlife Refuge System Improvement Act of 1997
Refuge System, System, NWRS - National Wildlife Refuge System
RNA - Research Natural Area
ROD - Record of Decision
RON S - Refuge Operating Needs System
Service - U.S. Fish and Wildlife Service
TEA - Transportation Equity Act
USDA - United State Department of Agriculture
USDI - United States Department of Interior
WAGAP - Washington GAP Team

TERMS

Adaptive Management. Refers to a process in which policy decisions are implemented within a framework of scientifically driven experiments to test predictions and assumptions inherent in management plan. Analysis of results help managers determine whether current management should continue as is or whether it should be modified to achieve desired conditions.

Alternative. 1. A reasonable way to fix the identified problem or satisfy the stated need (40 CFR 1500.2); 2. Alternatives are different means of accomplishing refuge purposes and goals and contributing to the Refuge System mission (Draft Service Manual 602 FW 1.5).

Animal Unit Month. A measure of the quantity of livestock forage. Equivalent to the amount of forage needed to support a 1,000 pound animal (or 1 cow/calf pair) for 1 month.

Biological Diversity. The variety of life and its processes, including the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which

they occur (USFWS Manual 052 FW 1.12B). The Refuge System's focus is on indigenous species, biotic communities and ecological processes. Also referred to as Biodiversity.

Biological Control. The use of organisms or viruses to control weeds or other pests.

Biological Weed Control. The use of undomesticated organisms, usually insects or plant pathogens to reduce the vigor, reproductive capacity, or density of weeds. State and federal permits and public review is required before foreign biological controls can be released, outside of quarantine, into the U.S. Research review of petitions by Biological Control of Weeds Technical Advisory Group is required before insects or plant pathogens can be brought into quarantine-approved laboratories for further research work.

Board Foot. A measurement of timber harvest, the amount of timber equivalent to a piece 1 foot by 1 foot and 1 inch thick (=1/12 cubic foot). MBF is the abbreviation for 1,000 board feet.

Canopy. A layer of foliage; generally the upper-most layer in a forest stand. Can be used to refer to mid- or understory vegetation in multi-layered stands. Canopy closure is an estimate of the amount of overhead tree cover (Also referred to as canopy cover).

Categorical Exclusion (CE, CX, CATEX, CATX). A category of actions that do not individually or cumulatively have a significant effect on the human environment and have been found to have no such effect in procedures adopted by a Federal agency pursuant to the National Environmental Policy Act (40 CFR 1508.4).

CFR. Code of Federal Regulations.

Class A Noxious Weed. Those noxious weeds not native to the state that are of limited distribution or are unrecorded in the state and that pose a serious threat to the state.

Class B Noxious Weed. Those noxious weeds not native to the state that are of limited distribution or are unrecorded in a region of the state and that pose a serious threat to that region.

Class B Designate. These are Class B noxious weeds whose populations in a region or area are such that all seed production can be prevented within a calendar year.

Class C Noxious Weed. Any other noxious weed.

Commercial Thinning. A type of timber harvest that removes merchantable material.

Compatible Use. A wildlife-dependent recreational use or any other use of a refuge that, in the sound professional judgment of the Director, will not materially interfere with or detract from the fulfillment of the Mission of the Refuge System or the purposes of the refuge (Draft Service Manual 603 FW 3.6). A compatibility determination supports the selection of compatible uses and identified stipulations or limits necessary to ensure compatibility.

Comprehensive Conservation Plan (CCP). A document that describes the desired future conditions of the refuge; and provides long-range guidance and management direction for the refuge manager to accomplish the purposes of the refuge, contribute to the mission of the Refuge System, and to meet other relevant mandates (Draft Service Manual 602 FW 1.5).

Concern. See definition of Issue .

Cord (of Firewood). A unit of wood cut for fuel equal to a stack 4 x 4 x 8 feet or 128 cubic feet.

Cover Type. The vegetation of an area.

Cultural Resources. The remains of sites, structures, or objects used by people in the past.

Cultural Resource Inventory. A professionally conducted study designed to locate and evaluate evidence of cultural resources present within a defined geographic area. Inventories may involve various levels, including background literature search, comprehensive field examination to identify all exposed physical manifestations of cultural resources, or sample inventory to project site distribution and density over a larger area. Evaluation of identified cultural resources to determine eligibility for the National Register follows the criteria found in 36 CFR 60.4 (Service Manual 614 FW 1.7).

Cultural Resource Overview. A comprehensive document prepared for a field office that discusses, among other things, its prehistory and cultural history, the nature and extent of known cultural resources, previous research, management objectives, resource management conflicts or issues, and a general statement on how program objectives should be met and conflicts resolved. An overview should reference or incorporate information from a field offices background or literature search described in Section VIII of the Cultural Resource Management Handbook (Service Manual 614 FW 1.7).

Deciduous. Pertaining to any plant organ or group of organs that is shed annually; perennial plants that are leafless for sometime during the year.

Depredation. Damage inflicted upon agricultural crops or ornamental plants by wildlife.

Demography. The quantitative analysis of population structure and trend.

Designated Wilderness Area. An area designated by the United States Congress to be managed as part of the National Wilderness Preservation System (Draft Service Manual 610 FW 1.5).

Disturbance. Significant alteration of habitat structure or composition. May be natural (e.g., fire) or human-caused events (e.g. timber harvest).

Down Wood Material. All woody material, from whatever source, that is dead and lying on the forest floor.

Early Seral Stage. An area that is in the primary stages of ecological succession.

Ecological Succession. The orderly progression of an area through time from one vegetative community to another in the absence of disturbance. For example, an area may proceed from grass-forb through aspen forest to mixed-conifer forest.

Ecosystem. A dynamic and interrelating complex of plant and animal communities and their associated non-living environment.

Ecosystem Management. Management of natural resources using system wide concepts to ensure that all plants and animals in ecosystems are maintained at viable levels in native habitats and basic ecosystem processes are perpetuated indefinitely.

Even-aged Forests. Used to refer to forests composed of trees with a time span of less than 20 years between oldest and youngest individuals.

Endangered Species (Federal). A plant or animal species listed under the Endangered Species Act that is in danger of extinction throughout all or a significant portion of its range.

Endangered Species (State). A plant or animal species in danger of becoming extinct or extirpated in Washington within the near future if factors contributing to its decline continue. Populations of these species are at critically low levels or their habitats have been degraded or depleted to a significant degree.

Endemic Species. Plants or animals that occur naturally in a certain region and whose distribution is relatively limited to a particular locality.

Environmental Assessment (EA). A concise public document, prepared in compliance with the National Environmental Policy Act, that briefly discusses the purpose and need for an action, alternatives to such action, and provides sufficient evidence and analysis of impacts to determine whether to prepare an environmental impact statement or finding of no significant impact (40 CFR 1508.9).

Environmental Impact Statement (EIS). A detailed written statement required by section 102(2)(C) of the National Environmental Policy Act, analyzing the environmental impacts of a proposed action, adverse effects of the project that cannot be avoided, alternative courses of action, short-term uses of the environment versus the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitment of resources (40 CFR 1508.11).

Fauna. All the vertebrate and invertebrate animals of an area.

Federal Trust Resources: A trust is something managed by one entity for another who hold the ownership. The FWS hold in trust many natural resources for the people of the United States of America as a result of Federal Acts and treaties. Examples are species listed under the Endangered Species Act, migratory birds protected by international treaties, and native plant or wildlife species found on a National Wildlife refuge.

Federal Trust Species. All species where the federal government has primary jurisdiction including federally endangered or threatened species, migratory birds, anadromous fish, and certain marine mammals.

Finding of No Significant Impact (FONSI). A document prepared in compliance with the National Environmental Policy Act, supported by an environmental assessment, that briefly presents why a Federal action will have no significant effect on the human environment and for which an environmental impact statement, therefore, will not be prepared (40 CFR 1508.13).

Fire Regime. A description of the frequency, severity, and extent of fire that typically occurs in an area or vegetative type.

Flora. All the plant species of an area.

Forb. A broad-leaved, herbaceous plant; for example, a columbine.

Forest Cover Type. See Vegetation Type.

Fragmentation. The process of reducing the size and connectivity of habitat patches.

Fuel Load. The amount of combustible material present per unit area.

Goal. Descriptive, open-ended, and often broad statement of desired future conditions that conveys a purpose but does not define measurable units (Draft Service Manual 620 FW 1.5).

Geographic Information System (GIS). A computer system capable of storing and manipulating spatial data.

Habitat. Suite of existing environmental condition required by an organism for survival and reproductions. The place where an organism typically lives.

Habitat Type. See Vegetation Type.

Habitat Restoration. Management emphasis designed to move ecosystems to desired conditions and processes, and/or to healthy forestlands, rangelands, and aquatic systems.

Historic Range of Variability (HRV). The natural fluctuation of components of healthy ecosystems over time. In this CCP/EIS, HRV refers to the range of conditions and processes that are likely to have occurred prior to settlement of the project area by people of European descent (approximately the mid-1800s), which would have varied within certain limits over time. Historic range of variability is discussed in this document as a reference point to establish a baseline set of conditions for which sufficient scientific or historical information is available to enable comparison to current condition.

ICBEMP. Interior Columbia Basin Ecosystem Management Project. A multi-agency project to identify resource problems; develop management strategies using a comprehensive approach;

address certain large-scale issues such as biodiversity and species viability; develop scientifically sound, ecosystem-based management strategies; and replace interim management strategies with a consistent long-term management strategy.

Indicator Species. A species of plant or animals that is assumed to be sensitive to habitat changes and represents the needs of a larger group of species. Also referred to as a key species.

INFISH. Interim Inland Native Fish Strategy for the Intermountain, Northern and Pacific Northwest regions (Forest Service). A strategy to protect resident fish outside of anadromous fish habitat on Forest Service and BLM administered lands in eastern Oregon, eastern Washington, Idaho, western Montana, and parts of Nevada.

Inholding. Privately owned land inside the boundary of a national refuge.

Informed Consent. Making a decision based on full knowledge; the grudging willingness of opponents to "to along" with a course of action that they actually oppose (Bleiker).

Integrated Pest Management. The management of undesirable species using an economical and scientifically based combination of biological, physical, cultural, mechanical, educational, and chemical control methods. The approach balances hazards to the environment, efficacy, costs, and vulnerability of the pest.

Integrated Weed Management. Involves the use of principles of integrated pest management for weeds.

Issue. Any unsettled matter that requires a management decision; e.g., a Service initiative, opportunity, resource management problem, a threat to the resources of the unit, conflict in uses, public concern, or the presence of an undesirable resource condition (Draft Service Manual 602 FW 1.5).

Late Seral Stage Forest. A forest in the mature stage of development, usually dominated by large, old trees.

Lethal fire. A wildland fire that kills the overstory vegetation on a site. For example, a lethal fire in a forest would generally kill the overstory trees, either by crown scorch or by basal injury. A lethal fire in a grass/shrub community would kill the overstory of shrubs. Both fires are lethal, but there can be great differences in the actual fire intensity.

Management Alternative. See Alternative.

Management Concern. See Issue.

Management Opportunity. See Issue.

Materially Interfere. Something, especially a use of a refuge, that, in the sound professional judgement of the Service, would hinder or detract from the fulfillment of the mission of the National Wildlife Refuge System or the purposes of the refuge.

Microhabitat. Habitat features at a fine scale; often identifies a unique set of local habitat features.

Mid-Seral Forest. A forest of mid ages, usually characterized by a closed canopy and diameters of greater than or equal to 8" DBH (Tree s diameter at breast height)

Migration. The seasonal movement from one area to another and back.

Mission Statement. Succinct statement of a unit's purpose and reason for being.

Mitigation. Measures designed to counteract environmental impacts or to make impacts less severe.

Mixed Fire. Fires possessing a mosaic of fire intensities which result in intermediate effects that vary across the landscape.

Monitoring. The process of collecting information to track changes of selected parameters over time.

Mountain Bike. A specialized bicycle, typically, with knobby tires, straight handlebars and 18 to 21 gears, capable of being ridden on maintained roads and trails.

National Environmental Policy Act of 1969 (NEPA). An Act that requires all agencies, including the Service, to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA with other planning requirements, and prepare appropriate NEPA documents to facilitate better environmental decision making (from 40 CFR 1500).

National Wildlife Refuge. A designated area of land, water, or an interest in land or water within the National Wildlife Refuge System.

National Wildlife Refuge System. Various categories of areas administered by the Secretary of the Interior for the conservation of fish and wildlife, including species threatened with extinction, all lands, waters, and interests therein administered by the Secretary as wildlife refuges, areas for the protections and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, games ranges, wildlife management areas, or waterfowl production areas.

National Wildlife Refuge System Mission. The mission 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.

Native Species. Species that normally live and thrive in a particular ecosystem.

Neotropical Migratory Bird. A bird species that breeds north of the U.S.-- Mexican border and winters primarily south of this border.

Non-lethal Fire. Rangeland fires in which vegetation structure and composition, three years following the fire, are similar to pre-burn conditions.

Notice of Intent (NOI). In the case of a federal action, such as analyzed in this documentation, an NOI is a notice that an environmental impact statement will be prepared and considered (40 CFR 1508.22). Published in the *Federal Register*.

Noxious Weed. A plant species designated by federal or state law as generally possessing one or more of the following characteristics: aggressive or difficult to manage; parasitic; a carrier or host of serious insect or disease; or non-native, new, or not common to the United States. According to the Federal Noxious Weed Act (PL 93-639), a noxious weed is one that causes disease or had adverse effects on man or his environment and therefore is detrimental to the agriculture and commerce of the United States and to the public health.

Objective. An objective is a concise target statement of what will be achieved, how much will be achieved, when and where it will be achieved, and who is responsible for the work. Objectives are derived from goals and provide the basis for determining management strategies. Objectives should be attainable and time-specific and should be stated quantitatively to the extent possible. If objectives cannot be stated quantitatively, they may be stated qualitatively (Draft Service Manual 602 FW 1.5).

Old Multi-story Forest. Forested areas lacking frequent disturbance to understory vegetation. Also referred to as late-successional multi-story, late-seral multi-story, and old forest multi-story.

Old Single-story Forest. Forested areas resulting from frequent non-lethal prescribed or natural underburning, or other management. Also referred to as late-successional single-story, late-seral single-story, and old forest single-story.

Off-Road Vehicle. Any motorized or non-motorized vehicle capable of, or designed for, travel on or off maintained roads and trails. Includes, but is not limited to, 3-, 4- and 6-wheel all-terrain vehicles, some trucks and motorcycles, and mountain bikes.

Pest Control. Control means, as appropriate, eradicating, suppressing, reducing, or managing invasive species populations, preventing spread of invasive species from areas where they are present, and taking steps such as restoration of native species and habitats to reduce the effects of invasive species and to prevent further invasions.

Planning Area. A planning area may include lands outside existing planning unit boundaries that are being studied for inclusion in the Refuge System and/or partnership planning efforts. It may also include watersheds or ecosystems that affect the planning area.

Planning Team. A planning team prepared the Comprehensive Conservation Plan. Planning teams are interdisciplinary in membership and function. Teams generally consist of a planning team leader, refuge manager and staff, biologists, staff specialists or other representatives of Service programs, ecosystems or regional offices, and other governmental agencies as appropriate.

Planning Unit. A single refuge, an ecologically/administratively related complex of refuges, or distinct unit of a refuge.

Plant Association. A classification of plant communities based on the similarity in dominants of all layers of vascular species in a climax community.

Plant Community. An assemblage of plant species unique in its composition; occurs in particular locations under particular influences; a reflection or integration of the environmental influences on the site -- such as soils, temperature, elevation, solar radiation, slope, aspect, and rainfall; denotes a general kind of climax plant community, i.e., ponderosa pine or bunchgrass.

Primary Use.

Preferred Alternative. This is the alternative determined [by the decision maker] to best achieve the Refuge purpose, vision, and goals; contributes to the Refuge System mission, addresses the significant issues; and is consistent with principles of sound fish and wildlife management.

Prescribed Fire. The skillful application of fire to natural fuels under conditions of weather, fuel moisture, soil moisture, etc., that allow confinement of the fire to a predetermined area and produces the intensity of heat and rate of spread to accomplish planned benefits to one or more objectives of forest management, wildlife management, or hazard reduction.

Prescribed Natural Fire. A fire ignited by natural processes (usually lightning) and allowed to burn within specified parameters of fuels, weather, and topography to achieve specified resource management objectives.

Public. Individuals, organizations, and groups; officials of Federal, State, and local government agencies; Indian tribes; and foreign nations. It may include anyone outside the core planning team. It includes those who may or may not have indicated an interest in Service issues and those who do or do not realize that Service decisions may affect them.

Public Involvement. A process that offers affected and interested individuals and organizations an opportunity to become informed about, and to express their opinions on Service actions and policies. In the process, these views are studied thoroughly and thoughtful consideration of public views is given in shaping decisions for refuge management.

Public Involvement Plan. Broad long-term guidance for involving the public in the comprehensive planning process.

Purpose(s) of the Refuge. The purpose of a refuge is specified in or derived from the law, proclamation, executive order, agreement, public land order, donation document, or administrative memorandum establishing, authorization, or expanding a refuge, refuge unit, or refuge subunit.

Refuge Operating Needs System (RONS). The Refuge Operating Needs System is a national database which contains the unfunded operational needs of each refuge. Projects included are those required to implement approved plans, and meet goals, objectives, and legal mandates.

Refuge Use. Any activity on a refuge, except administrative or law enforcement activity carried out by or under the direction of an authorized Service employee.

Recommended Wilderness. Areas studied and found suitable for wilderness designation by both the Director and Secretary, and recommended for designation by the President to Congress. These areas await only legislative action by Congress in order to become part of the Wilderness System. Such areas are also referred to as "pending in Congress" (Draft Service Manual 610 FW 1.5).

Record of Decision (ROD). A concise public record of decision prepared by the Federal agency, pursuant to NEPA, that contains a statement of the decision, identification of all alternatives considered, identification of the environmentally preferable alternative, a statement as to whether all practical means to avoid or minimize environmental harm from the alternative selected have been adopted (and if not, why they were not), and a summary of monitoring and enforcement where applicable for any mitigation (40 CFR 1505.2).

Refuge Goal. See Goal.

Refuge Purposes. The purposes specified in or derived from the law, proclamation, executive order, agreement, public land order, donation document, or administrative memorandum establishing, authorizing, or expanding a refuge, a refuge unit, or refuge subunit (Draft Service Manual 602 FW 1.5).

Refuge Revenue Sharing. A 1978 Act (Public Law 95-469) which authorizes payments to counties in which Service-owned land is located. The amount of the payment is computed based on things such as the appraised value of Service fee land, number of acres of fee land, and net receipts collected by the Service for certain activities permitted on reserve lands (lands withdrawn from the public domain).

Riparian. Refers to an area or habitat that is transitional from terrestrial to aquatic ecosystems; including streams, lakes wet areas, and adjacent plant communities and their associated soils which have free water at or near the surface; an area whose components are directly or indirectly attributed to the influence of water; of or relating to a river; specifically applied to ecology, riparian describes the land immediately adjoining and directly influenced by streams. For example, riparian vegetation includes any and all plant-life growing on the land adjoining a stream and directly influenced by the stream.

Salvage Harvest. Removal of dead, damaged, or susceptible trees primarily to prevent the spread of pests or pathogens and to promote forest health.

Selective Harvest. A timber cutting method based on removal of individual trees, rather than groups of trees.

Seral Stage. Any plant community whose plant composition is changing in a predictable way; characterized by a group of species or plant community that will eventually be replaced by a different group of species or plant community, for example, an aspen community changing to a coniferous forest community.

Slash. Debris from trees resulting from felling or from wind or fire.

Snags. Standing dead tree from which the leaves and most of the branches have fallen. Many species of wildlife and some plants rely on snags for food and cover.

Special Status Species. Plants or animals which have been identified through either federal law, state law, or agency policy, as requiring special protection or monitoring. Examples include federally listed endangered, threatened, proposed, or candidate species; state listed endangered, threatened, candidate, or monitor species; U.S. Fish and Wildlife Service species of management concern and species identified by the Partners in flight program as being of extreme or moderately high conservation concern.

Species of Management Interest. Those plant and animal species, while not falling under the definition of special status species, that are of management interest by virtue of being federal trust species such as migratory birds, important game species including white-tailed deer, furbearers such as American marten, important prey species including red-backed vole, or significant keystone species such as beaver.

Stand. Any homogenous area of vegetation with more or less uniform soils, land-form, and vegetation. Typically used to refer to forested areas.

Stand Density. The number of trees growing in a given area, usually expressed in terms of trees per acre.

Stand Diversity. The distribution of tree sizes, layers, and ages in a forest. Some stands are all one size (single-story), some are two-story, and some are a mix of trees of different ages and sizes (multi-story).

Stand Initiation. When land is reoccupied by trees following a stand-replacing disturbance. Also referred to as early-successional, early-seral, and regeneration.

Stem Exclusion-open Canopy. Forested areas where the occurrence of new trees is predominantly limited by moisture. Also referred to as mid-successional, mid-seral, and young forest.

Stem Exclusion-closed Canopy. Forested areas where the occurrence of new trees is predominantly limited by light. Also referred to as mid-successional, mid-seral, and young forest.

Step-down Management Plans. Step-down management plans provide the details necessary to implement management strategies identified in the comprehensive conservation plan (Draft Service Manual 602 FW 1.5).

Structural Stage. A description of forests based on the location of the majority of the trees in the diameter distribution of a stand; often described as stages ranging from grass-forb-shrub, seedling/sapling, young forest, mid-aged forest, mature forest, and old forest.

Sound Professional Judgement. A finding, determination, or decision that is consistent with principles of sound fish and wildlife management and administration, available science and resources, and adherence to the requirements of the Refuge Administration Act and other applicable laws.

Strategy. A specific action, tool, or technique or combination of actions, tools, and techniques used to meet unit objectives (Draft Service Manual 602 FW 1.5).

Tiering. The coverage of general matters in broader environmental impact statements with subsequent narrower statements of environmental analysis, incorporating by reference, the general discussions and concentrating on specific issues (40 CFR 1508.28).

Thinning, Precommercial/Noncommercial. The practice of removing some of the smaller trees in a stand so that remaining trees will grow faster.

Threatened Species (Federal). Species listed under the Endangered Species Act that are likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

Threatened Species (State). A plant or animal species likely to become endangered in Washington within the near future if factors contributing to population decline or habitat degradation or loss continue.

Trust Species. Species for which the U.S. Fish and Wildlife Service has primary responsibility, including, most federally list threatened and endangered species, anadromous fish once they enter inland U.S. waterways, and migratory birds. Also see Federal Trust Species .

Underburn. A burn by a surface fire that can consume ground vegetation.

Understory. Any vegetation whose canopy (foliage) is below, or closer to the ground than canopies of other plants.

Understory Reinitiation. When a second generation of trees is established under an older, typically seral, overstory. Also referred to as mid-successional, mid-seral, and young forest.

Unit Objective. See Objective.

U.S. Fish and Wildlife Service Mission. The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people.

Vegetation Type, Habitat Type, Forest Cover Type. A land classification system based upon the concept of distinct plant associations.

Vision Statement. A concise statement of the desired future condition of the planning unit, based primarily upon the Refuge System mission, specific refuge purposes, and other relevant mandates (Draft Service Manual 602 FW 1.5).

Visitor Use Day. A unit of measuring recreation activities, in which one Visitor Use Day equals any portion of a day that an individual spends on the Refuge.

Watershed. The region draining into a river, river system, or body of water.

Wilderness Study Areas. Lands and waters identified through inventory as meeting the definition of wilderness and undergoing evaluation for recommendation for inclusion in the Wilderness System. A study area must meet the following criteria: (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 contiguous roadless acres or is sufficient in size as to make practicable its preservation and use in an unimpaired condition (Draft Service Manual 610 FW 1.5).

Wilderness. See Designated Wilderness Area.

Wildfire. A free-burning fire requiring a suppression response; all fire other than prescribed fire that occurs on wildlands (Service Manual 621 FW 1.7).

Wildland Fire. Every wildland fire is either a wildfire or a prescribed fire (Service Manual 621 FW 1.3).

Wildlife Corridor. A landscape feature that facilitates the biologically effective transport of animals between larger patches of habitat dedicated to conservation functions. Such corridors may facilitate several kinds of traffic, including frequent foraging movement, seasonal migration, or the once in a lifetime dispersal of juvenile animals. These are transition habitats and need not contain all the habitat elements required for long-term survival or reproduction of its migrants.

Wildlife-dependent Recreation. A use of a refuge involving hunting, fishing, wildlife observation and photography, or environmental education and interpretation. The National Wildlife Refuge System Improvement Act of 1997 specifies that these are the six priority general public uses of the System.

Witches Broom. A mass of profuse and densely packed twigs representing abnormal growth of a tree branch. Often results from infection by dwarf mistletoe.

Young Forest Multi-story. Stand development resulting from frequent harvest or lethal disturbance to the overstory. Also referred to as mid-successional, mid-seral, and young forest.

Appendix B: References

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Appendix C. The Preferred Alternative: CCP Objectives, Projects and Implementation Strategies

This appendix, when combined with Chapters 1, 2, and portions of Chapter 3, contains key information that will appear in the final Comprehensive Conservation Plan document. Appendix C summarizes the objectives specific to the preferred alternative E; management philosophy and priorities; implementation strategies; inventory and monitoring plans; projects; staffing needs; and opportunities for partnerships in carrying out the Comprehensive Conservation Plan (CCP).

Refuge Purpose

As a refuge and breeding ground for migratory birds and other wildlife and as an inviolate sanctuary, or for any other management purpose for migratory birds.

- Goal 1:** *Conserve, enhance, and restore native forest, riparian, in-stream, and wetland habitats and their associated fish, wildlife and plants, representative of the native biological diversity of Northeastern Washington.*
- Goal 2:** *Monitor, protect and recover special status plants and animals and species of special concern.*
- Goal 3:** *Provide opportunities for wildlife-dependent recreation and education to enhance public appreciation, understanding, and enjoyment of Refuge wildlife, fish, habitats and cultural history.*

CCP Objectives Summary

The following draft objectives summarize many of the management decisions proposed for the Little Pend Oreille National Wildlife Refuge. Once finalized, these objectives will become the core guidance statements of the Comprehensive Conservation Plan.

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- Dry Forest Stand Structure Objectives:**
- *Restore mature stand structures and fire ecosystem role in dry forest stands on up to 1000 acres per year (or until 90% is under regular fire management). Strive to create open stands dominated by scattered mature pine and larch trees to provide diverse natural habitat for wildlife and to reduce the risk of fire and disease.*
 - *Over the long term (100-200 years) aim for a mosaic of stands of different age and structural classes at approximately the same seral distributions as occurred historically (HRV) within the dry forest zone: ~15 % early seral, ~35 % mid seral, and ~50% old single or old multi-layer (Quigley and Arbelbide, 1997, Vol. II, pp 602-610).*
- Understory Shrub Objective**
- *Increase the percent shrub understory cover in mid and late seral stands; increase shrub crown cover less than five feet in height to 40% or more (applies to forests below 3500 feet).*
- Moist and Cold Forest Objectives:**
- *Protect, restore and maintain the biological integrity and connectivity of the higher elevation forest habitat zones.*
 - *Over the long term (100-200 years) aim for a mosaic of stands of different age and structural classes at approximately the same seral distributions as occurred historically (HRV) within the moist and cold forest zones: ~25 % early seral, ~40 % mid seral, and ~35% old single or old multi-layer (Quigley and Arbelbide, 1997, Vol. II, pp 602-610).*
- Landscape Connectivity Objective:**
- *Maintain or establish mature forest connectivity on a landscape scale with adjoining agencies and landowners*
- Watershed Partnership Objective:**
- *Restore and maintain the health of the Little Pend Oreille River in partnership with the Stevens County Conservation District and various landowners*
- Watershed Health Objective:**
- *Reduce the effect of roads upon water quality and bank stability.*

**Alluvial
Riparian
Restoration
Objectives:**

- *Restore 7 miles of unsatisfactory alluvial riparian habitat along Little Pend Oreille River and Bear Creek, by the year 2015. Re-establish native vegetation and strive to achieve the following characteristics:*
 1. a minimum of 80% stable banks with deep-rooted streambank vegetation (INFISH Standard);
 2. a regular source of large woody debris within 25 feet of the stream banks (available at least every 150 feet of stream length);
 3. a natural mixture of riparian vegetation seral stages including a recruitment source for large trees;
 4. productive (non-weedy) wildlife habitat/native cover in artificial openings
- *Restore mixed-deciduous riparian forest to their natural distribution within the Refuge and restore the native composition of trees, shrubs, sedges, rushes, grasses and forbs within these plant communities.*

**Riparian
Protection
Objective:**

- *Protect and maintain riparian habitats from loss of vegetation and soil integrity throughout the Refuge.*

**Stream Habitat
Objectives:**

- *Improve stream habitat conditions for native fish and other aquatic wildlife, specifically aiming to meet or exceed the standards set for stream habitat components in the federal Inland Native Fish Strategy (INFISH) including: pool frequency, water temperature, large woody debris, bank stability, lower bank angle, and width/depth ratio (USDA, 1995). Adopt newer standard when one is approved.*

Flow objective:

- *Ensure that flows in the original channels of diverted streams take priority over diversion flows.*

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- Marsh Maintenance Objective:**

 - *Maintain or restore at least 100 acres of permanently flooded emergent marsh habitat, to benefit certain wading birds, ducks and amphibians.*

 - Noxious Weed Objective:**

 - *Develop Integrated Weed Management Plan that addresses inventory, treatment and monitoring for existing weeds, and minimizes new weed introductions and conditions that favor weed establishment and spread. Until establishment of this Plan, treat any Class A and B-designates or new invaders with the most effective treatment method and contain spread of existing weeds, Treat 50 roadside miles, 250 acres, of fields, and 250 acres of forest.*

 - Fields Management Objective:**

 - *Maintain approximately 500 acres of fields as openings to provide a diversity of habitat structure, grass, and forage for wildlife, for enhanced viewing opportunities, and to maintain certain cultural resources.*

 - Native Species Conservation Objective:**

 - *Emphasize conservation and recovery of native species, with emphasis on special status species and species of management interest.*

 - Wildlife and Fish Monitoring Objective:**

 - *Build and maintain a professional wildlife inventory and monitoring program. Conduct monitoring guided sufficiently by scientific and statistical principles to confidently determine baseline populations, trends, and habitat associations for key Refuge species.*

 - Fishing Opportunity Objective:**

 - *Provide a range of high quality lake and stream fishing opportunities, providing participants with reasonable harvest opportunities, uncrowded conditions, minimal conflicts with other users, and an opportunity to use various angling techniques, while minimizing disturbances to migratory birds and other wildlife.*

 - Natural Spawning Objective:**

 - *Improve conditions for natural spawning in lakes and streams, particularly for native species.*

 - Hunting Opportunity Objective:**

 - *Promote quality hunting experiences and expand hunting opportunities by opening State seasons for spring turkey, grouse, and deer and elk bow hunts. A quality hunt includes providing participants with reasonable harvest opportunities,*

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- Viewing, Photography, Env. Ed and Interpretation Objective:**
- *Expand opportunities for wildlife viewing, photography, and interpretation. Explore opportunities for expanding an environmental education program.*
- Camping Objective:**
- *Create a Refuge camping program supportive of Refuge System priority uses. Minimize impacts associated with Refuge dispersed camping, especially along riparian areas and during the sensitive winter and spring/summer periods.*
- Horseback Riding Objective:**
- *Produce an equestrian plan in cooperation with riders that minimizes impacts to Refuge resources.*
- Law Enforcement Objective:**
- *Establish and maintain an effective, professional and courteous law enforcement presence to discourage unauthorized uses.*
- Access Control Objective:**
- *Designate nine official entrances.*
- Open Road Density Objective:**
- *Close roads as needed to attain an open road density not exceeding 0.5 miles/square mile per subwatershed during winter and 1.5 miles/square mile per subwatershed during summer.*
- Road Minimization Objective:**
- *Ensure no net increase in the total miles of Refuge roads. No new roads in RNAs or roadless areas.*

**Public Access
Roads
Objective:** • *Employ the following criteria to determine whether roads shall be kept open and maintained for public uses. (Roads not meeting these criteria may still be necessary in some cases for management purposes; these shall continue to meet basic safety standards.)*

1. Traffic has minimal disturbance on wildlife populations.
2. Road has minimal impact on wildlife and fish habitat. (Excessive runoff and sedimentation controlled through proper design and maintenance).
3. Vehicle access is necessary to support primary wildlife-dependent activities of the Refuge including: wildlife observation, hunting, fishing, wildlife photography, environmental education and interpretation.
4. Road is necessary to provide access to Refuge campgrounds
5. Roads meet basic safety standards for road type.
6. Funding is available to make periodic improvements and repairs.
7. Traffic does not adversely affect recreational experience of primary activities.

**Cultural
Resource
Objective** • *Implement a proactive cultural resource management program*

Wildlife, Fish, and Plant Management Implementation

Management priorities will be established to meet the goals and objectives outlined in the CCP. These priorities are driven by Fish and Wildlife Service trust responsibilities (migratory birds, endangered, threatened, and candidate species), the mission of the refuge system, refuge purposes, unique ecosystem components available on this refuge, and desires of the public. The best science available will be used to measure success or failure in achieving goals and objectives.

Mature and older-aged successional forest communities cannot be grown within the 15 year life of this plan. Therefore, the direction provided by the CCP will set the stage for the future of these communities. There are both proximate and ultimate goals to achieve through the CCP. The proximate goal is to improve habitat conditions while the ultimate goal is to have wildlife communities using these habitats.

Native species and diversity management

Refuge staff will emphasize conservation and recovery of native species, and support natural processes, such as fire and predation. At LPO past management focused on game species, particularly white-tailed deer. In early Refuge years, planting nonnative species such as bitter brush and small burnett was intended to benefit deer. Since white-tailed deer are native to the Refuge and portions of the Refuge provide important wintering areas, the Service will continue to provide deer habitat. Management actions favoring other wildlife, including small mammals, birds, and reptiles, and amphibians will also be taken. Over time, the Refuge hopes to gain a better understanding of all living communities. Invertebrates, fungi, or lichens may provide important habitat conditions for wildlife.

Population control of predators deemed a threat to the deer population was practiced regularly in early Refuge years. Hunting, trapping, and poisoning of mountain lions, coyote, and bobcat were accepted as management tools to protect deer from predation. Feeding deer was viewed as necessary for herd management. While some of these techniques may still be used under specific circumstances, a broader view is now taken concerning habitat potential, species needs, and functional roles and focus our actions on habitat management. Hunting will continue as a means to utilize a harvestable surplus of wildlife. Targeted control of predators, rodents or other species may be occasionally necessary to protect human health, protect facilities or to achieve refuge objectives.

In the next 15 years, Refuge management will concentrate on restoring and protecting native plants and animals in terrestrial habitats. Non-native species including elk, wild turkeys, or brook trout may benefit from Refuge habitat management, however, Refuge staff will not actively manage for them or actively manage against them unless their populations are conflicting with native species.

It is the policy of the Service to prevent further introduction of non-native or exotic species on refuges except where a species would have value as a biological control agent (e.g., to manage noxious weeds) and would be compatible with the Refuge objectives. Management of exotics may be permitted only if eliminating the species is impractical or the species has been established and maintained on a non-augmented basis for at least 25 years and does not conflict with Refuge objectives (7 RM 8.1). Species such as ring-necked pheasant or gray partridge may have been introduced in the past and survived because the type of habitat they require was created through land use changes and settlement. The refuge will not manage for habitat conditions for these or other non-native birds.

Non-native undesirable species such as tench will be controlled and eliminated if possible. Tench, a non-native introduced fish species, lives in McDowell Lake and associated wetlands and contributes to lake turbidity and algal blooms. The Refuge will work cooperatively with the WDFW and other interested groups in controlling these undesirable species through trapping, use of rotenone, or using other methods. The method that is most effective and has minimal impact on native fish and wildlife will be favored.

Endangered, threatened, proposed, or candidate species and nongame bird species of management concern

The Refuge will consider reintroducing native wildlife species to the Refuge, when practical or within appropriate recovery zones. Details will be developed in the Population Management step-down plan. The costs and labor of these efforts must be weighed against efforts to retain other species of management concern. The Refuge is located within the designated recovery areas for bald eagle and peregrine falcon. Refuge staff will explore opportunities to participate in the recovery of these species on the Refuge. Every effort will be made to protect and enhance species proposed for listing, such as the Canada lynx, and any candidate species for listing in the future under the Endangered Species Act. This includes altering any portion of the CCP.

Although the Refuge is not within the USFWS designated recovery area of gray wolf and grizzly bear, its close proximity to these areas make it possible for individuals to occur on the Refuge. If these species are detected on the Refuge, appropriate officials and the public will be notified.

Problem animals

In the past, a few problem animals captured by the WDFW have been released on Refuge. These include black bears or mountain lions wandering into areas where they were endangering themselves or humans. The Refuge will consider the relocation of problem animals on a case by case basis with a ceiling of two large predators per year. Safety of Refuge visitors and resident wildlife will be the deciding factors in relocating problem animals.

Inventory and Monitoring

Inventory and monitoring of wildlife, fish and plants on the Refuge will be an ongoing program for the life of the CCP. The first questions to answer in preparing to collect any field data is what information is needed and how will the data be used. The next step will be to develop a database design and sampling protocol in consultation with a biostatistician. Completing an inventory and map showing the distribution of vegetation zones and successional stages will be a high priority during the early life of the plan, tapering off as more is learned of Refuge habitats. GAP Analysis of all Washington national wildlife refuges was completed in 1997 (Cassidy et al 1997). An early step in the inventory and monitoring efforts will be to evaluate the species GAP predicts would occur on the Refuge against field data. Since GAP analysis provides a large-scale look at refuge diversity it does not include small areas, less than 240 acres, that may be disproportionately important to wildlife (for example, small wetlands or aspen stands). Questions of scale are important when placing the information gleaned from site specific data into a regional context to understand the conservation value of refuge habitats.

Ideally, monitoring would occur across several levels of biological organization including genetic, population/species, community/ecosystem, and regional landscapes (Noss and Cooperider, 1994). At each level, information would be evaluated for composition, structure and function. This level of monitoring is not practical, at this time. One of the most important

aspects of monitoring is that it be integrated with management so that information collected affects future management decisions.

Photopoints and phototransects for prescribed fire monitoring will be repeated before and immediately after burns at one, three, and five year intervals. These same points will be used for vertebrate and vegetation monitoring. Pre and post treatment monitoring of vertebrates and vegetation will occur before and after initial forest and riparian treatments to evaluate whether treatments are having desired affects. This monitoring will be high priority and initially will include: Starvation Flat, Minnie Flat, and Biarly Flat, pre-commercial thinning sites, and alluvial riparian restoration sites along Little Pend Oreille River and Bear Creek. Another high priority for monitoring will be areas with past records or suitable habitats for special species (e.g., higher elevations for Canada lynx, suitable marten habitats and headwater streams for Northern goshawk, etc.). Additional effort will be directed at headwater streams, wetlands, and other small but important habitats for wildlife. Any suitable nesting areas for peregrine falcons will be evaluated. All sightings of special status species will be recorded and mapped. Additional effort will be made starting in 2000 to survey for amphibians and bats. All field staff will be trained in identification of special status species.

Emphasis will be placed on assessing the health of forest and riparian bird communities by monitoring population trends and nesting success in relation to habitat features and vegetative condition. Endangered Species Act listed species (ESA), Species of Management Concern (SMCs), and species identified as conservation priorities by the Partners in Flight (PIF) Landbirds Conservation Program will be emphasized in both baseline monitoring and pre and post treatment monitoring.

In addition to special status and pre and post treatment monitoring, annual evaluations will be made on harvested species including deer, grouse, and trout. Waterfowl monitoring will be done to understand how recreational fishing may be affecting bird use of lakes. All nesting boxes will be monitored for use regularly. Carnivores will be monitored using track counts and photopoints. Monitor winter-active mammals along Olson Creek Road and elsewhere. Complete a rare plant survey on the Refuge.

The Refuge will continue to participate and contribute to regional and national avian monitoring programs including the BBS and MAPS. Refuge-specific assessments of forest and riparian avian communities will be addressed using a variety of approaches including 1) stratified point counts, area searches, and target species sampling protocols to assess songbird use, abundance, and diversity; 2) nest monitoring and constant effort mist-netting to evaluate the health of refuge avian communities by assessing key demographic variables; and 3) relating these variables to characteristics of vegetation and habitat conditions to assist in developing habitat management strategies for landbirds conservation. A detailed inventory and monitoring program will be developed by 2005 as part of the step-down habitat management plan.

Initial project descriptions and funding needs for inventory and monitoring include:

Project 1 Landbird surveys. Develop and implement a systematic and habitat-based landbirds monitoring program to:

- 1) Assess the current status of landbirds populations utilizing the NWR;
- 2) Provide baseline data to necessary to assess the effectiveness of land management and restoration efforts, and:
- 3) Provide recommendations for the conservation of native landbirds populations and communities in the primary NWR habitat types (riparian, selected upland forest types). Estimated Cost \$200,000

Project 2 Vertebrate survey. Complete a comprehensive survey of Refuge vertebrates in all five forest vegetation zones and riparian, wetland, and lake habitats. Estimated cost: \$200,000 (\$100,000 for contract and \$100,000 in staff costs).

Project 3 Studies and Investigations. Complete pre-treatment and post-treatment habitat and vertebrate monitoring on Starvation Flat, Minnie Flat, and Biarly Flat areas. Estimated cost \$200,000 contract and 2 staff).

Habitat Management

The step-down Habitat Management Plan will provide additional detail on the distribution and abundance of existing vegetation types, the historic range of variability, disturbance patterns, composition, structure, successional stages, trends, functional roles, and limiting factors.

Project 4 Habitat Management Plan. Inventory and map Refuge habitats and develop a habitat management plan by 2006. Cost includes GIS data development and analysis. Estimated cost: \$80,000; 1 Full Time Staff Person for 1 year. (FTE)

Weed Management

Most Refuge habitats harbor non-native plants. Some of these plants occur incidentally but others have a tendency to invade and displace native plants. These plants are referred to as noxious weeds. Noxious weeds are defined by State Law 17.10.010 as any plant which when established is highly destructive, competitive, or difficult to control by cultural or chemical practices. Noxious weeds are one of the most serious threats to wildlife habitats in the western United States.

The State and counties maintain weed lists which specify the control requirements for several classes of weeds (1999 list in Appendix J). Early detection, prevention, and eradication of newly invading noxious weeds is the goal of weed control efforts. At this time there are no known occurrences of Class A weeds on the Refuge. Class B weed control of seed production and prevention of further spread, and in some cases, control of a buffer strip of at least forty feet in width along boundaries with adjoining landowners and along travel corridors. Weeds in this

class that occur on the Refuge include leafy spurge, plumeless thistle, and yellow hawkweed. For Class B and C weeds prevention of further spread is priority along boundaries with adjoining landowners and along travel corridors. Weeds in these classes which are known to occur on the Refuge include orange hawkweed, diffuse knapweed, and spotted knapweed.

The following strategies were adapted from the 1999 Draft Colville National Forest Weed Preventions Guidelines. Inventory and map noxious weed occurrence for Classes A, B-designates, B and C, as specified by Washington State and Stevens County, by subwatershed. Control weed seed production and spread of all Class A and B-designates, and some Class B and C weeds along travel corridors (roads and trails), areas of high public use, and along Refuge boundaries. Educate staff and refuge visitors and neighbors about weed problems and prevention methods. Incorporate weed prevention measures in all projects that include ground disturbance and in administration of special use permits. Revegetate disturbed areas from natural and human-caused disturbance (prescribed and wildland fire lines, road maintenance, skid trails, etc.). Monitor treated, disturbed, and revegetated areas for effectiveness of treatments. Adjust treatments accordingly.

The Service strives to meet the requirements of State Law 17.10.010 to control all Class A and B-designate weeds and many Class B and C weeds. Weed management occurs along major roadways and in areas of concentrated public use. Chemical, biological, and mechanical methods are used, with most reliance on non-chemical methods. The Fish and Wildlife Service restricts use of certain chemicals and encourages use of mechanical and biological control methods. With additional funding, weed control efforts will be expanded along roads. An integrated pest management plan that details noxious weed management goals and objectives will be prepared within two years. This will be incorporated into the habitat management plan. Forest integrated pest management may be necessary to reduce spread of nonnative insect or other forest pests including but not limited to insects, fungi, mistletoe, etc.

Project 5 Integrated Pest/Weed Management. Develop and implement an integrated pest/weed management plan. Estimated contract cost \$150,000 with .3 FTE.

Native Forest and Upland Habitats

Currently, most Refuge forest land is in second and third growth mixed stands with a tendency toward a higher numbers of stems per acre and a greater percentage of shade tolerant species than what naturally occurred. This can be directly attributed to past timber harvest practices and aggressive fire suppression.

Fire history specific to the Refuge is spotty in the historical record but there is some information and accounts from old newspapers and Forest Service Maps. The ecological role of fire is as complex as the local habitat is diverse. Throughout its range, ponderosa pine, Western larch and, to a lesser degree, Douglas-fir are well adapted to wildfire and the dominance of these species on the LPO dry forests exhibits evidence of regular disturbance by wildfire.

Although specific site data is lacking, the Refuge has had a fire history paralleling that of the surrounding landscape. Prior to pioneer settlement the low elevation ponderosa pine habitat was burned by wildfire about every 5 to 25 years. Mixed stands of Douglas-fir and other species burned at somewhat greater intervals, 10 to 24 years in the drier Doug-fir types and 13 to 26 years in the wetter areas, (Agee, regarding the Okanogan NF, p. 292-293) depending upon topography, aspect, elevation and fuel type. High elevation sub-alpine fir forests have the longest fire intervals of the forest types on the Refuge at 109-275 years (Agee, p.254) depending upon the actual location. Due to the low resistance to fire of the tree species associated with the cold forest zone and the marginal environment in which these trees exist, regeneration and growth after disturbance can be a long and difficult process which may last for decades or centuries. The relative permanence of sub-alpine meadows is largely due to this phenomenon (Agee, p.253).

Fire suppression and logging/clearing operations have resulted in excessively high fuel loadings and conversion of forests from highly fire-resistant and fire-dependant species to shade tolerant, fire sensitive species.

The proposed action initially involves commercial and pre-commercial thinning primarily in the dry forest habitat of the Refuge. Two things will be accomplished with this approach: 1) the fuel loading will be effectively and rapidly reduced thus paving the way for prescribed fire, and 2) the goals of the Refuge to increase natural diversity and restore forest habitats to a healthier and more natural distribution of seral stages with an emphasis on mature forest will be achieved. Thinning and the return of fire will also encourage a diverse understory of native grasses, forbs, shrubs and hardwood trees.

The first of several areas scheduled for forest restoration are Starvation Flats, Durlan Springs, Minnie Flats and Biarly Flats 9 (see Map E-1). Refuge plans call for pre-commercial thinning prior to prescribed fire on approximately 1000 acres of habitat each year on average. The projects are as follows (a detailed description of Starvation, Minnie, and Biarly Flats initial site specific projects is included in Appendix E):

Habitat Restoration Projects:

Project 6 Precommercial Thinning. Due to the interruption of the natural fire regime most of the Refuge's forests are in an overstocked condition. Many of these overstocked stands cannot be managed commercially and require pre-commercial entry. The age and density of these stands along with their proximity to mature forests makes prescribed fire too risky as an initial treatment option. Mechanical thinning will be necessary to prepare approximately 1000 acres for prescribed fire over the next five to ten years.
Estimated cost \$50,000 with 1 FTE; \$25,000 in sub. years with .5 FTE.

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- Project 7** **Starvation Flats Forest Habitat Management - Phases 1-3.** Forest management in 900 acres of the 2,500 acre Starvation Flats area over a five to ten year period will reduce stocking levels, accelerate forest succession, reintroduce fire, improve deer winter range, and enhance habitat for Ponderosa pine dependent forest birds. The methods used will include commercial thinning from below followed by periodic application of prescribed fire.
Estimated cost \$50,000 with 1 FTE; \$25000 with .5 FTE in sub. years.
- Project 8** **Minnie Flat Forest Habitat Management.** Minnie Flats, located south of Refuge HQ, is a well-developed stand of mature Ponderosa pine, western larch, Douglas fir, and lodgepole pine with occasional younger Douglas fir scattered throughout. The lodgepole pine is over mature at 70+ years of age and is increasingly susceptible to insect attack. The stem density of the lodgepole indicates that if beetle populations become established they could easily escalate into epidemic proportions and begin to infest the otherwise healthy Ponderosa pine. By harvesting 100% of the lodgepole pine and selection of a limited number of Douglas fir, this stand could be insulated from insect attack, made more vigorous and readied for prescribed fire.
Estimate cost \$ 50,000; 1 FTE with \$25,000 and . 5 FTE in subsequent years.
- Project 9** **Biarly Flat Forest Habitat Management.** Biarly Flat, southeast of Refuge HQ, in the area formerly known as Biarly, is a well-developed stand of Ponderosa pine, western larch, Douglas fir and lodgepole pine with occasional younger Douglas fir scattered throughout. The lodgepole pine is over mature at 70+ years of age and is increasingly susceptible to insect attack. The stem density of the lodgepole indicates that if beetle populations become established they could easily escalate into epidemic proportions and begin to infest the otherwise healthy Ponderosa pine. Harvesting 100% of the lodgepole pine, and selection of a limited number of Douglas fir in 160 acres would insulate this stand from insect attack, increase vigor and prepare the site for prescribed fire. This area also has a significant deciduous tree component (aspen and birch) which would benefit from removal of some of the competition.
Estimated cost \$50,000 with 1 FTE; with \$25000 and .5 FTE in subsequent years.
- Project 10** **Upland Restoration- Aspen Enhancement.** Use harvest or other disturbance techniques to increase vigor and size of aspen copses in ten specific sites on 50 acres.
Estimated cost \$ 10,000; .2 FTE
- Project 11** **Snag inventory and creation.** Survey selected portions of Refuge to determine snag and large woody debris densities and create snags and downed logs in areas where these habitat components may be limiting.
Estimated cost \$25,000; .3 FTE

Project 12 Wetland Restoration. Restore drained wetlands and hydrology, enhance Berg Lane wetland and expand McDowell Marsh and Long/Daily Lakes through diking, water control structures and vegetation control. Approximately 95 acres will be restored benefitting species such as mallard, ruddy duck, common golden eye, ringneck duck, and redhead duck, snipes, rails, shorebirds, great blue herons, reptiles and amphibians.
Estimated contract cost \$ 92,000 with .5 FTE

Fire Management

A. Prescribed Fire

Perhaps more than any other single event, wildfire, has shaped and profiled the character of forests. Historically, human-caused and lightning-caused fires burned through the entire area of the Refuge with varying degrees of frequency. This repeated disturbance led to the ecological adaptation of various forest communities to degrees of tolerance to fire frequencies and intensities. Low elevation dry sites with greater fire frequencies favored those species which developed deep tap roots, thick exfoliating and insulating bark and good self pruning traits especially as the trees matured. This ensured that the larger, older specimens could survive progressively greater fire intensities due to their high fire resistance and wide spacing and thus, continue to provide seed for many years.

Forest management activities will include prescribed burns throughout the Refuge over the years this plan will be in effect. The thrust of management on the LPO, as it relates to fire, will be to strive for native diversity of existing forest habitats and enhance those elements which have been degraded or lost through past activities such as removal of the mature and old growth forests through land clearing and timber harvest.

The ecological role of fire is as complex as the local habitat is diverse. Throughout its range, ponderosa pine (*Pinus ponderosa*), Western larch (*Larix occidentalis*) and, to a lesser degree, Douglas-fir (*Pseudotsuga menziesii*) are well adapted to wildfire. These three species dominate our forest habitat and exhibit evidence of regular disturbance by wildfire.

Prior to pioneer settlement the low elevation ponderosa pine habitat was burned by wildfire every 5 to 25 years. This relatively high frequency, low intensity fire is essential to maintaining healthy stands of interior ponderosa pine. For this reason, most of the initial fire management activity will be carried out in the ponderosa pine forests. Use of fire, and other management strategies, will result in reduced stocking, increases in average stand diameters and greater vigor in the shrub, grass and forb components all of which are important to wildlife. Restoring the periodic occurrence of fire will also promote deciduous tree species such as aspen, cottonwood and birch which occurred on wet sites in far greater abundance under pre-fire suppression conditions.

Mixed stands of Douglas-fir and other species burned at somewhat greater intervals depending upon topography, aspect, elevation and fuel type. Most of the Refuge forest is dominated by Douglas-fir/mixed forest in both dry and moist settings. The natural periodicity of fire in the dry Douglas-fir is between 10 and 24 years (Agee p.293) while the moist forest is somewhat longer at 13 to 26 years.

Western hemlock/Western red cedar draws and high elevation sub-alpine fir types have the longest fire intervals. Fire may only visit these stands every 109 to 275 years or even longer in some locations.

The moist and cold forest zones will also benefit from occasional prescribed fire. Because the natural fire regime indicates that the fire return interval was greater in these types, the effects of fire exclusion have been proportionally less. Therefore, fire will not be used to the extent anticipated in the dry and moist forest zone, however the application of fire will still be largely guided by the concept of restoring overall forest health and vigor.

B. Fire Suppression

Until the Fire Management Plan (FMP), Appendix G, is completed and approved, all wildfires on, or threatening the Refuge, will be suppressed.

The FMP, once completed may allow for natural starts to burn under well defined conditions (i.e. under prescription); referred to as Prescribed Natural Fire. If a natural start exceeds the conditions as set forth in the prescription, or one of the prescriptive elements changes, then the fire will be suppressed by the best available method.

Riparian and Instream Restoration

Restoration of riparian and instream habitats will include both passive and active approaches. High priority areas for both active and passive restoration will be the alluvial riparian portions of Little Pend Oreille River and Bear Creek that are in unsatisfactory condition. Efforts to restoring flow to Bear Creek began in 1998. Stream diversions will be evaluated yearly, particularly during spring runoff. Minimum flows will be maintained in the natural channels throughout the year. Livestock grazing will be phased out first in pastures that include these alluvial riparian areas. Planting and bank stabilization will be tested in a few locations before an overall strategy is adopted. Dispersed riparian camps will be phased out within two years of CCP completion. Evaluating and correcting problem roads will occur throughout the life of the CCP.

Project 13 Steam Restoration. Rehabilitate 7 miles of alluvial valley habitat on Little Pend Oreille River and Bear Creek. Three of the 7 miles be will passively restored through future exclusion of livestock. Four miles could receive actives restoration techniques including bank reshaping, planting and weed control. Efforts in these areas will be directed at creating deep rooted vegetation to hold banks with long

term riparian cover for shade and woody debris. First priority will be given to upstream segments that are affecting riparian function through bank erosion. Estimated cost: \$240,000 with additional maintenance costs of .5 FTE in subsequent years

Project 14 Hydrologic Restoration, Bear Creek Flow. Modify diversion feeding Potter s Pond and Bayley Lake to restore flow into lower Bear Creek; install flow measuring devices below diversions for Potter s Pond Bayley Lake and McDowell Lake. Estimated initial cost \$15,000; subsequent years \$1000; .2 FTE

Develop a program to monitor the physical, chemical and biological quality of the Little Pend Oreille River and its tributaries within the Refuge.

Artificial Lakes and Habitats

McDowell Lake, Bayley Lake and Potter s Pond provide many benefits to wildlife and people. All three areas were purchased with Duck Stamp dollars. FWS staff monitored waterfowl use of the lakes weekly prior to and after the fishing season opened during 1994 and 1998. Changes in waterfowl use during this time could be attributed to seasonal migratory patterns, predation, or recreational fishing. Duck numbers decreased prior to opening day on April 30 in 1994 and decreased after opening day in 1998. These lakes support some nesting waterfowl but are suspected of being more important as spring and fall migratory stopovers. Recreational fishing may limit use of these lakes by loons, swans or bald eagles. All of these species have been seen on the lakes during spring or fall migration. Refuge regulations allow temporarily suspending fishing by posting when conditions affecting land, water, vegetation, or fish and wildlife populations warrant. Refuge staff will monitor recreation and waterfowl use of Refuge lakes and stipulate measures to reduce wildlife disturbance. Some measures may include altering camping locations, restricting bank fishing, eliminating motorized boats on Potter s Pond, or adjusting the fishing season. More data will be collected annually to clarify the effect of recreational fishing disturbance on Refuge birds. Step-down management plans and public use management plans will recommend a change in use if warranted

Project 15 Fishery Enhancement Project. Evaluate fishery potential and implement spawning habitat projects and other fishery enhancements to enhance fish reproduction and survival. \$109,000 and .25 FTE.

Artificial upland habitats, primarily old fields, that no longer support native plants may be planted with crops to benefit wildlife, allowed to naturally revert back to forest habitat, thinned of encroaching trees, burned, mowed, grazed, idled, or used to interpret the interesting history of the Refuge. The specific tool will depend on the short term objective, which in some cases may simply be weed control. The CCP sets a maximum of 200 acres to be managed as forest openings. Specific numbers of acres and the management techniques prescribed for fields will be identified in the step-down habitat management plan.

Project 16 Old Field Planting. Till and plant 200 acres or less of old fields to be managed as openings to provide additional forage for white-tailed deer and other wildlife, control pest plants, and provide opportunities for wildlife viewing. Weed control included in the Integrated Pest/Weed Management Project. Estimated cost \$9000. (\$ 3,000 per planting , 3 times in the 15 year).

Public Use Management

Priority Wildlife-Dependent Uses

The National Wildlife Refuge System Improvement Act of 1997 affirmed wildlife conservation as the primary purpose of refuges and clarified the primary recreational opportunities as those that are dependent on wildlife including fishing, hunting, wildlife viewing, wildlife photography, interpretation, and environmental education.

Under the preferred alternative, the recreation character of the Refuge will continue to be semi-primitive. Improvements will be limited. Within five years of CCP approval, Refuge staff will begin a Public Use Management Plan that will expand on and provide more detail for Refuge recreation. This step-down plan will include specific projects, site plans and other details and compliance documentation that will allow the Refuge to proceed with construction or conducting of programs.

Project 17 Develop and Implement Public Use Management Plan. Estimated cost \$50,000 with .5 FTE. Additional Public Use and Site planning support required from the Regional Office.

Project 18 Refuge Brochure and Recreation Map. Estimated cost \$10,000.

Fishing Program

Fishing will continue to be an important recreational activity on the Refuge. A specific fishing plan will be developed in cooperation with WDFW , the agency with primary responsibility to set harvest regulations and seasons for resident fish and wildlife species, This plan will be included as part of the step-down Public Use Management Plan. The fishing program will strive to maintain fish population levels appropriate for habitats and provide a quality recreational experience for anglers.

Overall, the fishing program will strive to provide a fishing experience superior to that found on other private and public lands. This includes providing participants with reasonable harvest opportunities, uncrowded conditions, minimal conflicts with other users, and an opportunity to use various angling techniques.

Catchable-sized trout have usually been planted yearly in McDowell Lake, Potter s Pond and Bayley Lake. To reduce reliance on stocking in Bayley Lake, the CCP recommends that WDFW consider making this a catch-and-release only fishery. To provide a diversity of fishing opportunities on the Refuge, Potter s Pond will continue with standard seasons and catch limits. Refuge staff will work with fishing interest groups toward improving conditions for natural spawning and reduce reliance on fish stocking. A cooperative partnership with WDFW will be continued to manage these lakes to provide quality fishing opportunities. Stream habitats will be managed primarily for wild trout, with an emphasis on native species. There will be no stocking of non-native fish in Refuge streams. Fishing access to McDowell Lake will be improved.

Project 19 McDowell Lake Overlook and Access. Improve overlook and fishing access at McDowell Lake. Includes gravel for parking, wood guard rail, trail to shore, bollards, and spotting scope. \$25,000.

Hunting Program

Providing quality hunting opportunities is one key goal of Refuge recreation programs. A specific hunting plan will be developed in cooperation with WDFW. Details of the hunting program will be included as part of a step-down public use management plan. The hunting program will strive to maintain wildlife populations levels appropriate for Refuge habitats and provide a quality recreational experience for hunters.

The hunting plan will strive to provide a hunting experience superior to that found on other private and public lands. This includes providing participants with reasonable harvest opportunities, uncrowded conditions, minimal conflicts with other users, relatively undisturbed wildlife, and limited interference from or dependence on mechanized aspects of the sport.

Wildlife Viewing and Interpretation

Refuge staff will seek partners to assist in developing a Refuge-specific wildlife viewing leaflet. Funding will be requested (TEA-21) to provide an auto tour route with interpretive signs relaying specific themes of Refuge habitats, wildlife, and history. In addition, the historic Winslow logging railroad grade will be considered for use as an interpretive trail. Rails to Trails is one possible source of funds for such a project. Annual events will be staged for International Migratory Bird Day in May, National Wildlife Refuge Week, and other occasions. Refuge staff may also participate in events sponsored by others.

Project 20 Wildlife and Cultural Resource Interpretation. Fabricate and install interpretive signs at key locations on the Refuge. These will be identified in the step down public use plan. This project could include a few road pullouts, but most signs will be located in existing sites including campgrounds, kiosks, fishing lakes. Project may include up to 15 interpretive signs (exterior grade laminate panels, 18" by 24"). Estimated cost \$30,000.

Project 21 Auto Tour Route. Evaluate Rookery Road and other existing roads for potential development as a wildlife viewing tour route. Upgrade selected route to county gravel road standards and develop pull-offs and interpretive signs at key locations. Estimated Cost: \$1,035,000.

Wildlife Photography

Minimal effort will be made in this area since Refuge access is relatively open and there has been little demand for specific photography opportunities.

Environmental Education

A volunteer program would be necessary to support an on-site environmental education program. There has been little demand for this type of program but that could change in the future. In the interim, Refuge staff will provide environmental education programs on an as-requested basis as other priorities and time allow. Participation in environmental education activities off-site will also be conducted. Teacher workshops could be one way to encourage use of the Refuge as a site for learning about habitats and wildlife.

Non-Priority Recreation

Camping

Camping that is associated with wildlife-dependent recreation is most popular in the early part of the fishing season and during the deer rifle-hunting season. There is also considerable camping that occurs between Memorial Day and Labor Day. Many who camp during this time period may fish but that is typically incidental to their primary camping activity. Many horseback riders camp on the Refuge. The Public Use step-down Plan will define the future of camping more specifically but some changes will be implemented prior to completion of that plan. Identifying existing campsites within campgrounds to be moved out of the riparian areas will be addressed in the Public Use Management Plan. Dispersed camps outside of these campgrounds in sensitive wildlife habitats will be eliminated. Some dispersed sites will remain open but dispersed riparian camps within 200 feet of water will be closed. Camping with horses will be limited to designated site(s). When sites fill up, campers with horses will have to go off Refuge to camp. Groups with 25 or more people must apply for a special use permit to camp on the Refuge. Law enforcement patrols of Refuge camps will be made regularly throughout the camping season. Charging a fee for refuge camping will also be addressed in the Public Use Management Plan.

Project 22 Potter s Pond/Bayley Lake Site Improvements.

Campsites at Potter s Pond and Bayley Lake will be consolidated and relocated away from the lakeshore to reduce disturbance to the lake environment. A new location will be selected at the site planning phase. This primitive, family campground will consist of 6-8 pull in camping spots with tent pads, fire grates, accessible pit toilet, and running water. Improvements will also be made at the same time to the roads, the fishing access and parking areas. New signs will be installed to direct and inform visitors. An Environmental Assessment will be

prepared for this project following completion of the site design. Estimated development costs of \$100,000; does not include cost of well development.

Vehicles

Unlicensed off-road motorized vehicles are not allowed on the Refuge. Snowmobile use will be eliminated due to compatibility concerns but travel to and from Calispell Peak on Olson Creek Road (also called Tacoma Rd) will continue until an alternative route can be developed. Refuge staff will work with interested parties to relocate the existing Sno Park.

Horseback Riding

There is considerable horse back riding use of the Refuge. Working with local back country horse groups, Refuge staff will develop an equestrian plan that identifies trail heads, trails, roads open to riding, overnight use and other guidelines to protect Refuge resources. The future of this use relies on the cooperation of riders.

Other Uses

Refuge staff will monitor all forms of recreation, including dog sledding, cross-country skiing, and mountain bike riding for their effects on wildlife and habitat and address any needed changes in the public use management plan.

To reduce conflicts between user groups, the Step-down Public Use Plan will explore separate locations for some user groups such as horseback riders. Groups exceeding 25 people must apply for a special use permit to use the Refuge.

Law Enforcement Program

Protecting refuge resources and the safety of visitors are fundamental responsibilities of refuge management. The Public Use Management plan will assess the protection and enforcement needs of the refuge and make specific program recommendations. The CCP recommends increasing law enforcement staffing to just under a full time position (.8 FTE).

Visitor Entrances and Roads

There are currently 12 entrances or access points to the Refuge. The CCP recommends designating and maintaining nine (9) entrances for public access to the Refuge. Designating and enhancing the major entrances and gating the others that are used infrequently will help management to focus maintenance efforts where they are needed most. The nine major entrances were selected based on amount of use, destination, road condition, and public input. The entrances are distributed around the perimeter of the Refuge to provide ample opportunities for visitor use throughout the Refuge.

Project 23 HQ Kiosk and Highway 20 Kiosks. Design and install two wood information kiosk structures. The project includes site development, pull-off parking, wood

Kiosk shelters with roof, Refuge map, graphic information panels (art and fabrication) and a leaflet dispenser. Estimated cost \$50,000.

Project 24 Entrance and Regulation Signs. Replace and upgrade entrance signs at 5 sites (two major and 3 minor). Estimated costs \$15,000.

The location of the entrances are shown in the Preferred Alternative Map in the Alternatives Chapter of the DEIS and described in the table below.

Table C-1. Primary (Nine) Entrances and Improvements Needed

Entrance Name	Location/Destination/Season	Recommended Facilities
Bear Creek Road-Main Entrance	Primary entrance to the Refuge and headquarters. Open year round.	Major entrance sign, information sign
Narcisse Creek Road	Entrance to McDowell Lake Horse Camp, River Camp and the headquarters. Open year round.	Information sign, leaflet dispenser. Install Gate.
Starvation Lake Road	Secondary entrance; provides access to adjacent DNR land. Open April 15-December 31.	Information sign.
Olson Creek Road NE Entrance	Northeast entrance to the Refuge providing access to Calispell Peak. Relocate existing snowpark.	Small kiosk with information sign and leaflet dispenser in existing parking area.
Olson Creek Road SE Entrance	Southeast entrance to the Refuge from Pend Oreille County and Tacoma Divide	Entrance and information sign.
Buffalo-Wilson Road	Northwest entrance to the Refuge with access to Rym er Ridge.	Information sign.
Cliff Ridge Road	South entrance to the Refuge with access to Bear Creek Campground and Bayley Lake. Closed in winter.	Information sign
Blacktail Mountain Road	East entrance to the Refuge. Closed in winter.	Entrance and information sign and gate
Bear Creek Road (Drummond Entrance)	Southeast entrance to the Refuge. Closed in winter.	Entrance and information sign and gate

Roads

Public and management access throughout the Refuge is an essential consideration in any long term management plan and requires careful deliberation since the primary resource of concern for any Refuge is wildlife. A system of roads will be maintained that provides access for forest management, habitat restoration and visitor use while minimizing negative impacts to the Refuge's natural resources.

The existing system of roads has evolved over many years. Major routes with destinations to campgrounds, lakes and private in-holdings are well established and for the most part will be maintained. A few minor roads and spurs, not necessary for management and public vehicular access, will be closed and allowed to revert to a natural condition. The plan recommends no net increase in the total miles of roads on the Refuge. A Sign Plan will be written to guide the placement, design and content of refuge signs. Road identification signs will not only aid the visitor in finding their way but will help management in conducting and enforcing a safe public use program.

Table C-2. Public Access Roads (open year around) and Improvements Needed

Road Description	Maintenance Responsibility	Improvements Needed
1. Bear Creek Road from Kitt-Narcisse Road to Headquarters.	County/Refuge	Road Improvements needed on this main access to the Refuge. Tea-21 funds requested (\$657k) MMS Project 99003
2. Narcisse Creek Road from Kitt-Narcisse Road to Highway 20.	County	Install New Gate at Entrance
3. Buffalo-Wilson Road from Artman-Gibson Road to end.	County	High Priority: Repair segments to reduce sedimentation.

The following criteria were developed to provide the rationale by which the Refuge road system will be managed under the Comprehensive Conservation Plan.

Criteria for Public Access Roads

Refuge roads open to the public were evaluated for need, environmental and wildlife impacts. Seasonal or periodic closure of certain roads is a typical management practice that will continue to be used in managing public use. Selected roads will be closed during critical times such as nesting season and winter use by white-tailed deer between January 1 and April 15. Other roads

are closed during the winter season because of snow and in the early spring to protect the roadbeds.

Roads will be maintained and open to public vehicular use if the following criteria are met:

1. Traffic has minimal disturbance on wildlife populations.
2. Road has minimal impact on wildlife and fish habitat. (Excessive runoff and sedimentation controlled through proper design and maintenance).
3. Vehicle access is necessary to support primary wildlife-dependent activities of the Refuge: wildlife observation, hunting, fishing, wildlife photography, environmental education and interpretation.
4. Road is necessary to provide access to Refuge campgrounds.
5. Roads meet basic safety standards for road type.
6. Funding is available to make periodic improvements and repairs.
7. Traffic does not adversely affect recreational experience of primary activities.

Table C-3. Seasonal Public Access Roads and Improvements Needed.

(Roads open to street-legal vehicle access from mid-April through December if previously stated criteria are met)

Road Description	Maintenance Responsibility	Improvements Needed
1. Bear Creek Road from Headquarters to Bayley Lake	Refuge: Periodic Clearing and Grading	Bring 4.5 miles up to county standards for gravel roads. TEA-21 funds requested (\$800k) MMS Project 99004
2. Bear Creek Road: Bayley to Cook Ranch	Refuge: Periodic Grading and weed control.	Rehab and relocate portions of Bear Creek road from Bayley Lake cutoff to Cook Ranch. Tea-21 funds requested (\$350k) MMS Project 99006
3. Rookery Road Auto Tour Route (Currently open mid-July - December)	Refuge: Periodic Grading and weed control	Major Improvements needed to bring this road up to county standards for gravel roads. Tea-21 funds (\$1035k) MMS Project 99005
4. Berg Lane	Refuge: Periodic Grading and weed control	High Priority: Repair segments to reduce sedimentation.
5. Cliff Ridge Road	Refuge: Periodic Grading and weed control	Place gravel and install water bars from Bear Creek Road to Refuge boundary.
6. Webking Road	Refuge: Periodic Grading and weed control	General maintenance
7. Lenhart Meadows Road	Refuge: Periodic Grading and weed control	Restore washout and install water bars
8. Pierce Lake Loop Road	Refuge: Periodic Grading and weed control	General Maintenance
9. Starvation Flats Road	Refuge: Periodic Grading and weed control	General maintenance
10. Starvation Lake Road	Close with gate at boundary.	General maintenance
11. Blacktail Mountain Road	Refuge and Stimson Lumber: Periodic Grading and weed control	High Priority: Repair segments to reduce sedimentation. Replace Blacktail Mtn. Road bridge in 5-10 years.
12. Olsen Creek Road	Refuge and Stimson Lumber: Periodic Grading and weed control	High Priority: Repair segments to reduce sedimentation.

Happy Valley, Moran Creek Springs, portions of Moran Creek, Addy Mountain, and portions of Rymer Ridge Roads will be open from October 15 through December if public road access criteria are met.

Refuge Management Roads and Facilities

A network of management roads will be maintained to support habitat monitoring, fire management, habitat restoration and public safety activities. Management roads will be gated and posted with signs indicating Authorized Vehicles Only . Construction of new roads will be minimized through maximum reliance on existing roads. Unnecessary roads will be abandoned and left to revert to a natural condition or obliterated.

Refuge administrative facilities including the headquarters, shop, storage building, residence and Winslow cabin will be maintained in their present locations and updated as necessary. The projects below describe current facility needs and funding requirements.

Project 25 New and Replacement Gates. An estimated 14 new gates are needed to implement the road closures identified in the CCP. Because of a history of vandalism to Refuge gates it is anticipated that gate replacement will be a recurring cost.. An additional 10 gates have been projected for the 15 year life of the plan. \$28,000 and .25 FTE.

Project 26 Initial Road Improvements and Modifications. Upgrade and modify roads on the Refuge that are negatively affecting streams or unsuitable for public traffic. Project includes up to ½ mile of new road and upgrading and repair of 8-9 miles of existing roads. Contract costs of \$300,000 with regional staff support. Refuge staff support necessary of .25 FTE.

Project 27 Major Improvements to Bear Creek Road. Upgrade Bear Creek Road to county standards for gravel roads. TEA-21 funding has been requested for three segments of Bear Creek Road from Kitt Narcisse to Bayley Lake and to Cook Ranch. Total estimate for the three segments is \$1,807,000.

Project 28 Shop Building Rehab. Rehabilitate and expand existing shop to accommodate and protect equipment. Estimated Cost \$400,000.

Project 29 Winslow Cabin Improvements. Repair and Rehab Winslow Cabin to make it safe and functional for utilization by seasonal staff and volunteers. Estimate: \$75,000

Project 30 Northern Boundary Survey. Resurvey and repost northern refuge boundary. Estimate: \$100,000.

Grazing Elimination

The annual livestock grazing program will continue at its present level of intensity for five years following plan approval. Following the fifth year, all annual livestock grazing will cease. During and following that five years, surplus fences will be removed and new fences constructed to prevent trespass by off-refuge livestock.

Project 31 Livestock Facilities-Modification and Removal. Eliminate fences that no longer serve a management need and negatively affect wildlife and recreation. Estimated cost if contracted: \$406,000, including 9 miles of new perimeter and in-holding fence at \$3.00 per foot and 50 miles of removal at \$1.00 per foot. Costs will be spread out over the fifteen year life of the plan.

Cultural Resources

Cultural resources management will be integral component of refuge management for the life of the CCP. Although basic compliance with Section 106 of the National Historic Preservation Act will continue, a modest program of cultural resource inventory, evaluation, site stabilization, and maintenance will be carried out. These projects will permit managers to reduce potential conflicts between cultural resource and habitat or public use projects. The result will be compliance with section 110 of the National historic Preservation Act and progress toward the LPO NWR vision and guiding principles.

Refuge staff will offer to meet with Tribal officials of the Colville and Kalispel tribes yearly. Since very little is known about the prehistory of the Refuge, this area will be a focus of future cultural resource field effort. Outreach to the tribes may present opportunities to learn more about Native American use of the area. Efforts will also be made to reach former landowners from the pre-Refuge era to represent the continuum of human use of the Refuge through time.

Project 32 Cultural Resource Inventory and Evaluation. Conduct a sample inventory for cultural resources, yet focus on habitats, facilities, and areas that are subject to management by other CCP projects. Evaluate a sample of the resources to identify qualities that confer significance or non-significance to the cultural resources. Integrate information into public use materials and habitat management planning. Cost includes fieldwork, analysis, mapping, GIS data, reporting. Estimated cost \$125,000.

Project 33 Historic Property Maintenance and Stabilization. Take actions to arrest the decay and erosion of a sample of significant historic properties. Follow Secretary of Interior Standards as appropriate. Integrate data into public use materials. Estimated cost \$100,000.

Research

Refuge staff will seek funds and partners to study Refuge fish, wildlife, plants, and habitats. Specific projects for research include the effects of eliminating livestock grazing on vegetation and the effects of thinning and prescribed burning on Refuge wildlife. Additional opportunities will develop through time. Most staff effort will focus on projects with management applications.

Project Summary -The Preferred Alternative E

The Comprehensive Conservation Plan identifies 33 projects for development or restoration over the next 15 years (see Table C-4, C-5, C-6, and C-7). The total cost to implement these projects in the Preferred Alternative is estimated at \$7,016,000. This figure includes 2.8 million in major road improvements identified under the Transportation Equity Act funding for the 21st Century (TEA-21). This averages out to a non-salary funding need of approximately \$467,000 per year each year for the next fifteen years. If TEA-21 projects are excluded, this averages to a non-salary funding need of approximately \$279,000 per year each year for the next fifteen years.

The CCP proposes these projects for the next 15 years as a way of identifying funding needs at the time of preparation of the plan. There are no guarantees that additional funds will be available to implement any or all of these projects. All CCP projects will be included in the Refuge Management Information System (RONS - Refuge Operational Needs System or MMS - Maintenance Management System) which is used nationally to identify needs and request funding from Congress.

Table C-4. Summary of Wildlife and Habitat Restoration Projects

CCP Proj. No.	Project Description	RONS/MMS Project No.	Estimated Cost
1	<i>Landbird Surveys</i>	<i>Proposed</i>	\$200,000
2	<i>Vertebrate Survey (Contract)</i>	<i>RONS 97003</i>	\$100,000
3	<i>Studies and Investigations (Contract)</i>	<i>Proposed</i>	\$50,000
4	<i>Habitat Management Plan</i>	<i>Proposed</i>	\$80,000
5	<i>Integrated Pest Management (Contract)</i> <i>(\$10,000/yr)</i>	<i>RONS 97011</i>	\$150,000
6	<i>Precommercial Thinning</i> <i>(Ongoing - \$75,000/yr)</i>	<i>FIREPRO Funds</i>	\$1,125,000
7	<i>Starvation Flats Forest Habitat Management</i> <i>(See Appendix. E)</i>	<i>Proposed</i>	\$50,000
8	<i>Minnie Flat Forest Habitat Management</i>	<i>Proposed</i>	\$50,000
9	<i>Biarly Flat Forest Habitat Management</i>	<i>Proposed</i>	\$50,000
10	<i>Upland Restoration- Aspen Enhancement</i>	<i>Proposed</i>	\$10,000
11	<i>Snag inventory and creation</i>	<i>Proposed</i>	\$25,000
12	<i>Wetland Restoration</i>	<i>RONS 97010</i>	\$92,000
13	<i>Stream/Riparian (Active) Restoration</i> <i>4 miles at 60,000</i>	<i>Proposed</i>	\$240,000
14	<i>Hydrologic Restoration (Bear Creek Flow)</i>	<i>Proposed</i>	\$15,000
15	<i>Fishery Enhancement</i>	<i>Proposed</i>	\$109,000
16	<i>Old field farming (200 Acres)</i> <i>(Replant every 3 years- \$3000 each time)</i>	<i>Proposed</i>	\$9,000
		<i>Total</i>	\$2,355,000

Table C-5. Summary of Public Use Projects

CCP Proj. No.	Description	RONs/MMS Project No.	Estimated Cost
17	<i>Develop and Implement Public Use Plan</i>	<i>RONs 97007</i>	\$50,000
18	<i>Refuge Brochure and Recreation Map</i>	<i>Rons 97013</i>	\$10,000
19	<i>McDowell Lake Overlook and Access</i>	<i>Proposed</i>	\$25,000
20	<i>Wildlife and Cultural Resource Interpretive Signs</i>	<i>RONs 97012</i>	\$30,000
21	<i>Wildlife Viewing Auto Tour Route (TEA-21 funding)</i>	<i>MMS 99005</i>	\$1,035,000
22	<i>Potter s Pond Bayley Lake Site Improvements</i>	<i>Proposed</i>	\$100,000
23	<i>Headquarters and Hwy Kiosk Information Sites (2)</i>	<i>RONs 97014</i>	\$50,000
24	<i>Entrance and Regulation Signs</i>	<i>Proposed</i>	\$20,000
		<i>Total</i>	\$1,320,000

Table C-6. Summary of Maintenance and Administrative Projects

<i>CCP Proj. No.</i>	<i>Description</i>	<i>RONS/MMS Project No.</i>	<i>Estimated Cost</i>
25	<i>New & Replacement Gates</i>	<i>Proposed</i>	<i>\$28,000</i>
26	<i>Initial Road Improvements and Modification</i>	<i>Proposed</i>	<i>\$300,000</i>
27	<i>Major Bear Creek Road Rehab (TEA-21 funding)</i>	<i>MMS 99003 MMS 99004 MMS 99006</i>	<i>\$1,807,000</i>
28	<i>Shop Building Rehab</i>	<i>MMS 96019</i>	<i>\$400,000</i>
29	<i>Winslow Cabin Improvements</i>	<i>MMS 97010B</i>	<i>\$75,000</i>
30	<i>Northern Boundary Survey</i>	<i>MMS 96023</i>	<i>\$100,000</i>
31	<i>Livestock Facilities Modification/Removal</i>	<i>Proposed</i>	<i>\$406,000</i>
32	<i>Cultural Resource Inventory and Evaluation</i>	<i>Proposed</i>	<i>\$125,000</i>
33	<i>Historic Property Maintenance and Stabilization</i>	<i>Proposed</i>	<i>\$100,000</i>
		<i>Total</i>	<i>\$3,341,000</i>

Table C-7. Total Project Costs Proposed for Next 15 Years

	<i>Habitat Projects</i>	<i>\$2,355,000</i>
	<i>Public Use Projects</i>	<i>\$1,320,000</i>
	<i>Maintenance/Administrative Projects</i>	<i>\$3,341,000</i>
	<i>Refuge Total</i>	<i>\$7,016,000</i>
	<i>Refuge Total Without TEA-21 Projects</i>	<i>\$4,174,000</i>

Staffing Recommendations

Currently, the Refuge staff includes eight permanent, full-time positions and approximately nine seasonal positions including:

Permanent, Full Time Staff (7.8 FTEs)

1. Refuge Manager
2. Refuge Operations Specialist/FMO
3. Wildlife Biologist
4. Forester
5. Maintenance Worker
6. Administrative Specialist
7. Prescribed Fire Specialist
8. Fire Crew Foreman

Seasonal, Temporary Staff (4.5 FTEs)

1. Office Clerk
2. Bio-Tech
3. Park Ranger
4. Heavy Equip. Operator
5. Engine Foreman (Firefighter)
6. Firefighter
7. Firefighter
8. Firefighter
9. Firefighter

In addition, the seasonal, temporary positions have also included a four-person Youth Conservation Corps (YCC) crew and adult crew leader. The YCC program has been in operation on the Refuge since 1995. A fire crew of four persons was added to the Refuge in 1997/98.

Funding for six additional permanent staff is needed to implement the Comprehensive Conservation Plan. This includes converting three of the temporary positions to permanent. The CCP recommends the following:

Proposed Additional Permanent Staff

9. Fire Management Officer
10. Law Enforcement Officer
11. Outdoor Recreation Planner
12. Biological Technician
13. Office Automation Clerk
14. Heavy Equipment Operator

The new permanent positions will be necessary to implement the habitat restoration and public use objectives identified in the plan. A significant cost of implementing the preferred alternative includes salaries. The biological technician and the outdoor recreation planner positions would be critical in developing the Habitat Management and Public Use step-down plans. Opportunities to share employees with other federal agencies (Forest Service, National Park Service), will be explored as budgets and other commitments allow.

Additions to the Refuge budget or another funding source would be necessary to support new forestry, wildlife, and maintenance positions. Fire management staff and portions of administrative support staff salaries would be paid through fire suppression and prescribed fire funds.

Any money generated from Refuge projects goes into the general treasury and does not come back to the Refuge. Some money is returned, however, to Stevens and Pend Oreille Counties from the Refuge Revenue Sharing account, which provides in lieu of tax dollars to support schools and other county offices.

To make the Refuge vision a reality, new sources of funds will be tapped and a volunteer program and partnerships established. Annual operating and maintenance funds from Fish and Wildlife Service congressional appropriations will continue to be an important funding source. Other federal sources may include Transportation Equity Act funds (TEA-21), challenge-cost share funds, non-game migratory bird funds, and recreational fishing funds. Outside funding sources will be explored including National Fish and Wildlife Foundation, Bonneville Power Administration Fish and Wildlife Project Funds, and private foundation dollars.

Partnership Opportunities

There are many opportunities to develop partnerships with other agencies, industry, and various interest groups. These opportunities are a key to achieving Refuge goals. Volunteers will be sought to assist with specific jobs. Volunteer programs and partnerships, like any relationship, requires an investment of time and energy. Returns on these investments can be rewarding or disappointing and should motivate their future.

Land Acquisition

Refuge staff will seek opportunities to acquire lands within the approved Refuge boundary (inholdings) from willing sellers. These will be the highest priorities for acquisition. Other lands outside of the boundary will be considered for protection as opportunity arises. Priority for protection outside of the refuge boundary will be lands adjacent to the refuge particularly riparian, wetland, Ponderosa pine and high elevation forest (above 4,000 foot elevation) habitats. Medium priority for protection will be lands adjacent to other Service managed properties in Stevens and Pend Oreille Counties and seasonally flooded agricultural lands within the Colville River floodplain. Other opportunities may be considered to consolidate ownership with other federal or state agencies through land trades. These will only be considered if there is a net positive gain for wildlife.

Land protection methods may include cooperative agreements, conservation easements, fee title acquisition, leases, donations, transfers, and exchanges. Only willing participants will be considered for any of these approaches.

Compliance Requirements for Plan Implementation

Few actions are exempt from compliance requirements. Many management programs require compliance with one or more of the following:

- Joint Aquatic Resource Protection Act with the county and state review
- National Environmental Policy Act documents
- Section 404 of the Clean Water Act
- Endangered Species Act consultation with the Upper Columbia Fish and Wildlife Office
- Cultural Resource clearance
- Consultation with Native American Tribal Governments
- Coordination with neighboring landowners
- Pesticide Use Proposal
- Clean Air Act permits
- Americans with Disabilities Act
- Compatibility Determinations

Additional compliance requirements may be necessary for some actions.

Appendix D: Statement of Compliance

In undertaking the proposed action, the following Executive Orders and legislative acts have been or will be acted upon.

1. Executive Order No. 11593, Protection and Enhancement of the Cultural Environment. If the Service proposes any development activities that would affect the archaeological or historical sites, the Service will consult with Federal and State Historic Preservation Officers to comply with Section 106 of the National Historic Preservation Act of 1966, as amended.
2. Executive Order No. 11988, Floodplain Management. No structures or other barriers that could either be damaged by or significantly influenced the movement of floodwaters are planned for construction by the Service in the project area. The proposal supports the preservation and enhancement of the natural and beneficial values of floodplains.
3. Executive Order No. 11990, Protection of Wetlands. The proposal will help conserve the natural and beneficial values of the wetland habitat. The Service will undertake no activity that would be detrimental to the continuance of the vital wetlands.
4. Executive Order No. 12372, Intergovernmental Review of Federal Programs. The State of Washington and counties that encompass the Refuge were sent copies of the Draft Comprehensive Conservation Plan and Environmental Impact Statement for distribution to State and County agencies and departments. Coordination and consultation is ongoing with local and State governments, Tribes, Congressional representatives, and other Federal agencies.
5. Executive Order No. 12996, Management and General Public Use of the National Wildlife Refuge System. Through the development of the Comprehensive Conservation Plan, the Service has completed compatibility determinations for existing wildlife-dependent recreational activities that will be allowed to continue, in the Final Comprehensive Conservation Plan.
6. Executive Order No. 12898, Environmental Justice in Minority Populations and Low-income Populations. This environmental justice analysis concluded that the socioeconomic, cultural, physical, and biological effects of the proposed alternative does not predict any outcomes that would cause disproportionately high and adverse human health impacts in any population, nor would they result in disproportionately high or adverse impact to low-income or minority populations, nor would any alternative create a greater burden on low-income households.
7. Secretarial Order 3127 (602 DM 2) Contaminants and Hazardous Waste Determination. No contaminants or hazardous waste are known to exist on the Refuge and none will be created.
8. Endangered Species Act of 1973, as amended, Section 7. An internal Section 7 consultation is underway as of the time of the release of this EIS. The Refuge's Biological Assessment found that implementation of the Preferred Alternative would result in no effect to most species and may affect; not likely to adversely affect to other species. The Ecological Services branch of the US Fish and Wildlife Service is expected to concur with the Biological Assessment. The concurrence letter will be summarized in the Record of Decision.
9. Refuge Recreation Act as amended. The CCP is in compliance.
10. National Wildlife Refuge System Act of 1966, as amended. The CCP is in compliance.

Appendix E: Detailed Description and Analysis of Forest Management Pilot Projects

I. Starvation Flats Forest Habitat Management

Present Stand Conditions:

The forest in the Starvation Flats area was harvested between the 1890s to the mid-1930s and the existing stand is dominated by overstocked groups of ponderosa pine, 50 to 70 years old, and scattered, small groups and individual lodgepole pine of similar age. Stress is evident in this age class as represented by slowed growth rates and increasing insect activity. Data indicates that approximately 85% of the unit is composed of ponderosa pine, 15% lodgepole and less than 1% is Douglas-fir and Western larch.

Although most of the true old growth ponderosa pine forest component is long gone from this unit, there are single trees and natural groupings of trees in the >125 year age classes which are beginning to exhibit the desirable characteristics of mature forests. Wildlife species dependent upon, or closely associated with, this type of habitat are expected to benefit from this treatment including, but are not limited to; flammulated owls, white-headed woodpeckers, white-breasted nuthatches, pygmy nuthatches, brown creepers, western bluebirds and the silver-haired, hoary and pallid bats.

There are also well distributed groups of seedling and sapling size ponderosa pine. Actions affecting these age classes are further described below.

Management Objectives:

1. To accelerate the process by which a larger component of the ponderosa pine forests of the Refuge will achieve the characteristics typical of those stands which existed prior to settlement and thus help us attain one of the stated Refuge goals of increasing native diversity
2. To reduce fuel loading and stand density in preparation for returning fire to its natural role in the forest through prescribed burning.
3. To reduce the forest canopy and enhance the production of winter forage and hiding cover (brush) for whitetail deer.
4. To increase the overall stand vigor and growth rate, and reduce susceptibility to insect attack.

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5. To stimulate and encourage the propagation of deciduous tree species, primarily quaking aspen white birch and water birch which were historically much more common than they are today and represent an important component of this forest community.
 6. To reduce competition for available nutrients and resources.

Proposed Treatments for Starvation Flats:

The forest treatments undertaken, particularly in the ponderosa pine stands, would remove excessive stems of merchantable size from age classes less than 70 years. When trees in the < 70 years age category predominate within the stand, those trees between 70 and 125 years would also be considered here. To achieve the objective of promoting stand development towards mature forest, cut-tree selection in older age classes would be based upon those trees exhibiting poor form, vigor, or that pose a significant risk of disease or insect mortality. Leaving the best trees of <125 years, and reducing competition through better spacing will ensure that a significant number of these trees reach maturity.

Ponderosa pine groups and individuals within the treatment area which exceed 125 years of age, will be handled somewhat differently since many of these groups are beginning to show the mature forest characteristics being sought such as larger size and enhanced habitat qualities including broken tops, flattened tops, large coarse branches and hollow boles, all of which contribute to diversifying and augmenting wildlife habitat. For the most part, many of these stands will be left alone to continue to develop.

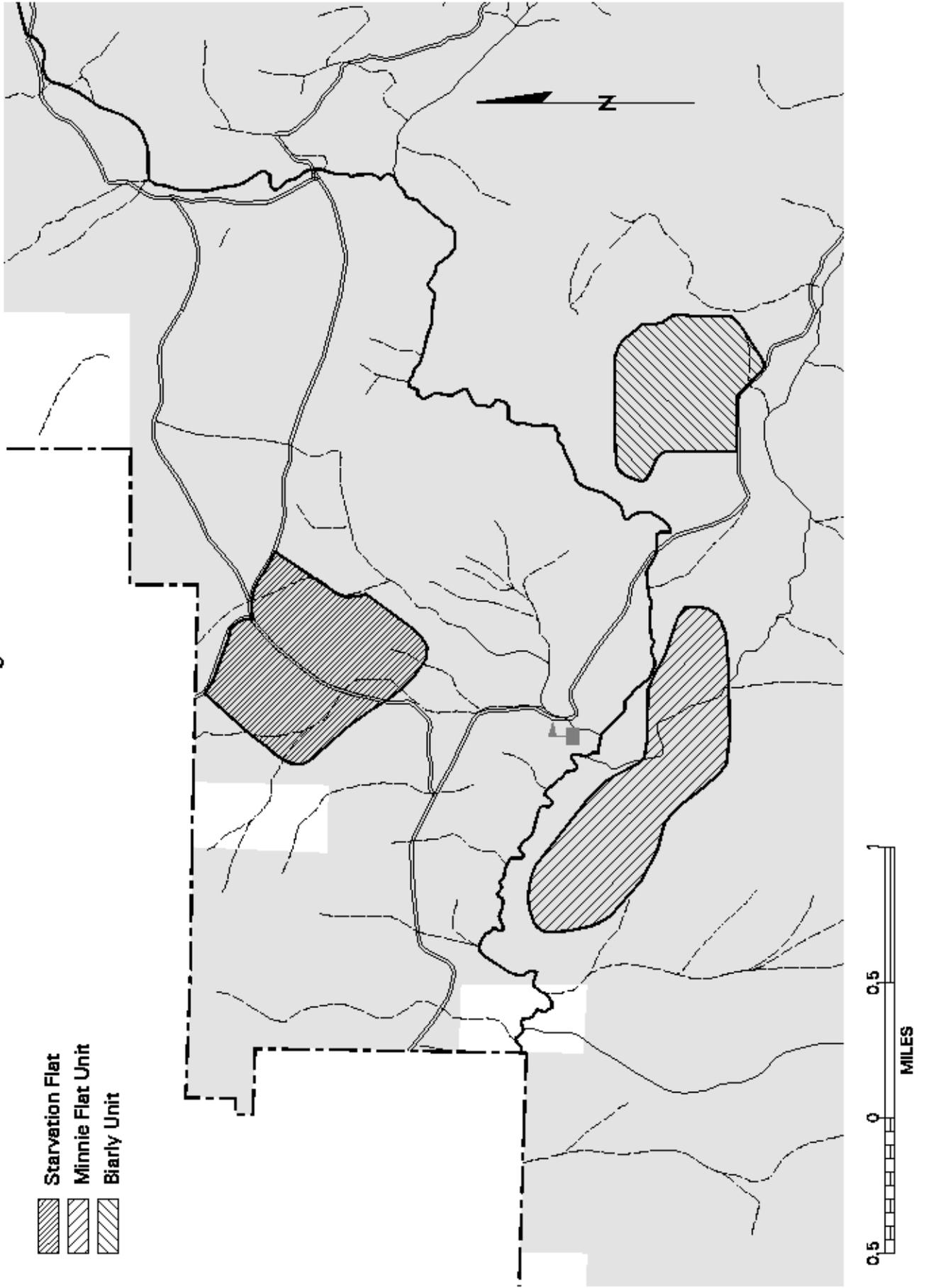
In some instances, these maturing trees will be marked for removal where reduced competition and better spacing will enhance the longevity and vigor of the group. Under these conditions selection criteria normally associated with timber production will be applied secondarily. The fundamental selection criteria will be the trees inherent value to wildlife as described above.

Pockets of regeneration in the seedling to sapling stages will not be affected during the harvest portions of the habitat management activities. These age classes will be dealt with under prescribed fire activities during burn unit preparation (thinning) and actual fire application.

A small amount of Douglas-fir and Western larch exist on the Starvation Flats Unit. These species are confined to microsites that have aspects and moisture regimes conducive to their establishment and growth. Because they contribute to the overall diversity of the unit, none of these species will be removed.

Map E-1. Pilot Forest Management Projects

Little Pend Oreille National Wildlife Refuge



Effects of Treatment on Forest Habitat: The effect of these treatments would be to reduce the overall tree density, favoring the larger, healthier trees under 125 years of age while preserving older age trees and taking advantage of the wildlife qualities they already possess. 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). Thinning and 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 a catastrophic fire that could burn areas and threaten adjacent property and resources. Scientists studying the ecosystems of the Interior Columbia Basin have repeatedly emphasized the importance of restoring natural ecological processes such as regular fire disturbance in this area (Quigley, et. al., 1996). The suppression of natural fire is implicated in several problems widespread across Interior Columbia Basin ecosystems, including severe insect outbreaks and loss of native species diversity.

Suppression of natural fire and past logging have resulted in many stands in similar condition in the Refuge's dry forest types. Returning prescribed fire to these stands will require reducing stocking levels and opening the canopy to condition them for periodic application of fire. Thinning the stand from below will emulate the progression of forest succession by removing a number of stems that are artificially present as a result of fire suppression, improve winter range conditions for deer by increasing forage and enhance habitat for Ponderosa pine-dependent forest birds.

For Starvation Flats, the above described treatments are planned throughout the ponderosa pine forest type over the next 5-10 years. The size of these treatment areas will vary from about 150 to 300 acres. There are about 4500 acres of ponderosa pine habitat on the Refuge.

Size of unit:	300 acres
Size of trees removed:	Average 12 inches
Species of trees removed:	85% Ponderosa pine, 15% lodgepole pine. No larch or Douglas fir will be removed.
Slope:	0 to 25%
Aspect:	flat
Soils:	Virtually all of the soils associated with this area are derived from glacial outwash with granitic base mantled with loess and volcanic ash. Drainage is moderate to excessive throughout. Soils from <u>Stevens County Soil Survey</u> include 30, 31, 46, 48, 77, 207, 216, 221, 223 and 226.

Harvest plans: All operations would be completed between September and mid-February requiring about a three-month period. Trees would be processed at the stump by a mechanical harvester and logs would be moved to existing roads for decking using a mechanical forwarder. Tops and branches will be scattered at the processing site.

Prescribed fire plans: Prescribed burning would be conducted in the succeeding fall, late winter or early spring prior to nesting season. Details will be found in the individual prescription for the unit.

Roads: No new roads will be developed in unit. Existing roads, railroad grade, or disked lines would be used for fire breaks.

Plans for snags, large woody debris, other important wildlife habitat features: No snags will be removed unless necessary for safety. Because the current stand is a relatively young stand for the species, few snags exist at present. The snag component will increase through natural mortality especially in the greater than 125 year age class. Trees with mistletoe, exfoliating bark, dead tops and other desirable characteristics will not be targeted for harvest as these are important components of wildlife habitat.

Pre-treatment/post-treatment data collected: Currently there exists photo points, bird point counts, small mammal trapping, extensive vegetation monitoring and surveys for northern goshawk. Plans call for an owl survey to be conducted. If a species of interest is discovered (proposed, threatened or endangered) measures will be taken to protect the species according to guidelines delineated in the CCP, the Refuge wildlife management plan and the state priority habitats guidebook governing birds.

Plant species affected/benefitted: Ponderosa pine and its associated species community will be favored. Fire should reinvigorate forbs, grasses, brush and aspen components but may, depending on timing of burn, negatively affect bitterbrush - a planted non-native shrub.

Wildlife species affected/benefitted: Other wildlife species that will be advantaged are found among the neo-tropical migratory birds especially those requiring naturally functioning mature forests and snag dependant species such as flammulated owls. Also resident snag dwelling species such as pileated and white-headed woodpeckers will be benefitted. Shrub nesting neo-tropical migrants, including chipping sparrows and black-headed grosbeaks will profit from the increased woody understory. There may be some limited direct mortality to small mammals and reptiles over the short-term. Increasing average tree diameters and shrub and aspen understories will benefit the wildlife community in general.

Impacts to water: No effects are expected due to the timing (late fall/early winter) and location (no surface water within 600 feet of harvest boundary) of the harvest and the fact that no new roads or skid-trails will be used.

Impacts to soil: Limited due to harvest season and equipment used. Snow and frozen ground will reduce impacts of operation to soil. Equipment used will be the least damaging form of mechanical ground based systems; mechanical harvesters and forwarders.

Impacts to air quality: Short duration smoke during prescribed fire. Burn will not be conducted when smoke may cause adverse impact to smoke sensitive sites downwind. Service policy requires that state smoke management guidelines be adhered to. This will be coordinated and monitored by the responsible state agency. Refer to Refuge Fire Management Plan and State of Washington Smoke Management Plan.

II. Minnie Flats Forest Habitat Management

Present Stand Conditions:

This area located just south of the Refuge Headquarters, and south of the Little Pend Oreille River is a mixed stand dominated by large, high quality ponderosa pine with a large proportion of Douglas-fir, Western larch and over-mature lodgepole pine serving as co-dominants. As a result of fire suppression and past logging activities which removed the very largest trees, this stand is converting to a more shade tolerant mix consisting of Douglas-fir and grand fir.

The lodgepole pine, which constitutes about one third of the stems, is rapidly declining as it has surpassed its maturity of about 70 years of age. Insects and fungal rots are evident in this stand. A build-up of these organisms could result in successful attacks on the otherwise healthy ponderosa pine which is a featured forest community in our management plan that the Refuge is interested in restoring.

Suppression of natural fire and past logging have resulted in many stands in similar condition in the Refuge s dry forest types. Returning prescribed fire to these stands will require reducing stocking levels and opening the canopy to condition them for periodic application of fire. Thinning the stand from below will emulate the progression of forest succession, improve winter range conditions for deer and enhance habitat for Ponderosa pine-dependent forest birds.

Management Objectives:

1. To accelerate the process by which a larger component of the dry forests of the Refuge will achieve the characteristics typical of those stands which existed prior to settlement and thus help us attain one of the stated Refuge goals of increasing native diversity.
2. To increase the overall stand vigor and reduce susceptibility to insect attack.
3. To reduce competition for available nutrients and resources.

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4. To reduce fuel loading and stand density in preparation for returning fire to its natural role in the forest through prescribed burning.
 5. To reduce the forest canopy and enhance the production of winter forage and hiding cover (brush) for whitetail deer.
 6. To stimulate and encourage the propagation of deciduous tree species, primarily quaking aspen white birch and water birch which were historically much more common than they are today and represent an important component of this forest community.

Proposed Treatments for Minnie Flats:

In addition to the lodgepole pine, those shade tolerant species, primarily grand fir, which are encroaching on the unit as a result of fire suppression, would be targeted for removal. Removal of the declining lodgepole, while they are still merchantable, along with a selected number of other species, will allow the Refuge staff the opportunity to sanitize the stand, prepare this area for prescribed fire and enhance the deer winter range.

Thinning from below and removing 100 % of the mature lodgepole and selected other species, will favor the Ponderosa pine, larch and Douglas fir; increase average tree diameter of target species; encourage shrubs and aspen; reduce risk from catastrophic fire; condition the stand for prescribed fire; and reduce risk of pine beetle outbreak in ponderosa pine. Loss of mature lodgepole, which is not a preferred wildlife species, will be offset by returning prescribed fire to the stand and enhancing those aspects of a mature dry forest such as large tree size, greater spacing between stems and increasing the relative proportion of ponderosa pine in the stand.

This treatment would entail cutting all of the merchantable lodgepole pine and grand fir using mechanical harvesters to the limit of their capability (hand falling would be required where trees exceed 20 inches at the stump). Ponderosa pine, Douglas-fir and Western larch would be removed where they are of merchantable size and to achieve a spacing where ladder fuels are reduced and the canopy is opened to allow more light to reach the forest floor thus stimulating understory hardwood trees, shrubs, grasses and other herbaceous growth.

Effects of Treatment on Forest Habitat: The primary effect of this habitat treatment will be to reduce the incidence of shade tolerant species and excessive numbers of small stems. This reduction in competition for resources and renewal of natural fire processes will ensure that the remaining, desirable trees have the best chance of growing to maturity and occupying the site well into old age. Overall forest health will benefit from the likelihood that disease prone trees will be removed and the risk of a stand replacement wildfire will be abated. This will support our objective of increasing the percentage of mature forest on the Refuge.

Opening the canopy and reducing understory trees will also allow more light to reach the ground stimulate the growth of shrubs, forbs and grasses, thus enhancing forage for white-tailed deer. This includes the stimulation of aspen stems which are of great importance to deer, grouse and a wide variety of other species throughout its life cycle. Aspen is declining in many areas where it once flourished due to the encroachment of shade tolerants and competition. Enhancing the shrub component (an important factor in white-tailed deer winter range) is another objective of the Refuge CCP which will be augmented by this action.

Other wildlife species that will be benefitted are found among the neo-tropical migratory birds especially those requiring naturally functioning mature forests and snag dependent species such as flammulated owls. Also resident snag dwelling species such as pileated and white-headed woodpeckers will be benefitted. Shrub nesting neo-tropical migrants, including chipping sparrows and black-headed grosbeaks will profit from the increased woody understory.

Size of unit:	180 acres
Size of trees removed:	Average 12 inches; some larger lodgepole and Douglas-fir will also be removed (see above)
Species of trees removed:	Any species may be removed to achieve objectives described above
Slope:	0-25%
Aspect:	flat
Soils:	Virtually all of the soils associated with this area are derived from glacial outwash with granitic base mantled with loess and volcanic ash. Drainage is moderate to excessive throughout. Soils from <u>Stevens County Soil Survey</u> include 119,146, 207 and 208.

Harvest plans: All operations will be completed between September and mid-February. Trees would be cut by mechanical harvester, or hand felled where necessary, and moved to existing roads using a mechanical forwarder. Logs will be decked on the edge of Webking Road. Tops and branches will be scattered at the stump. Hauling of fill material and grading may be necessary on the Webking Road which serves as the main route into, and out of, this unit.

Prescribed fire plans: Broadcast burn would be conducted in the following late winter, spring, fall or following spring prior to nesting season. Details will be found in the individual prescription unit.

Roads: No new roads will be developed in the unit but some improvement will be needed on haul road to protect water quality and provide safe driving conditions. Some culvert pipe may be needed.

Plans for snags, large woody debris, other important wildlife habitat features: No snags will be removed unless necessary for operator safety. The snag component in the stand will increase through natural mortality. Trees with mistletoe, exfoliating bark, dead tops, etc. will not be targeted for harvest as these are important wildlife habitat components.

Pre-treatment/post-treatment data collected or to be collected: Photo points will be established to assess future stand development and whether objectives have been achieved. Other data may be collected such as bird point counts, snag and small mammal surveys and vegetation assessment for white-tailed deer winter range. Prior to harvest, stands will be surveyed for use by northern goshawk and other raptors, woodpeckers and owl use.

Plant species affected/benefitted: Ponderosa pine, Western larch and Douglas-fir will be favored as leave trees. Reduced competition and fire should reinvigorate grass, forbs, brush, aspen and other hardwood components.

Wildlife species affected/benefitted: There may be some limited direct mortality to small mammals and reptiles from use of fire over the short-term. Increasing average tree diameters and shrub and aspen understories will provide long-term benefits for the wildlife community notably some of the migratory bird species (see above).

Impacts to water: No effects are expected as the harvest unit is on a bench above the Little Pend Oreille River and well out of the floodplain.

Impacts to soil: Limited due to harvest season and equipment used. Snow and frozen ground will reduce impacts of operation to soil. Equipment used will be the least damaging form of mechanical ground based systems; mechanical harvesters and forwarders.

Impacts to air quality: Short duration smoke during prescribed fire. Burn will not be conducted when smoke may cause adverse impact to smoke sensitive sites downwind. Service policy requires that state smoke management guidelines be adhered to. This will be coordinated and monitored by the responsible state agency. Refer to Refuge Fire Management Plan and State of Washington Smoke Management Plan.

III. Biarily Flats Forest Habitat Management

Present Stand Conditions:

This area, located about one mile southeast of the Refuge Headquarters, and south of the Little Pend Oreille River in an area formerly known as Biarily, is a mixed stand dominated by large, high quality ponderosa pine with a large proportion of Douglas-fir, Western larch and over-mature lodgepole pine serving as co-dominants. As a result of fire suppression and past logging activities which removed the very largest trees, this stand is converting to a more shade tolerant mix consisting of Douglas-fir and grand fir.

The lodgepole pine, which constitutes about one third of the stems, is rapidly declining as it has surpassed its maturity of about 70 years of age. Insects and fungal rots are evident in this stand. A build-up of these organisms could result in successful attacks on the otherwise healthy ponderosa pine which is a featured forest community in our management plan that the Refuge is interested in restoring.

Suppression of natural fire and past logging have resulted in many stands in similar condition in the Refuge s dry forest types. Returning prescribed fire to these stands will require reducing stocking levels and opening the canopy to condition them for periodic application of fire. Thinning the stand from below will emulate the progression of forest succession, improve winter range conditions for deer and enhance habitat for Ponderosa pine-dependent forest birds.

Management Objectives:

1. To accelerate the process by which a larger component of the dry forests of the Refuge will achieve the characteristics typical of those stands which existed prior to settlement and thus help us attain one of the stated Refuge goals of increasing native diversity.
2. To increase the overall stand vigor and reduce susceptibility to insect attack.
3. To reduce competition for available nutrients and resources.
4. To reduce fuel loading and stand density in preparation for returning fire to its natural role in the forest through prescribed burning.
5. To reduce the forest canopy and enhance the production of winter forage and hiding cover (brush) for whitetail deer.
6. To stimulate and encourage the propagation of deciduous tree species, primarily quaking aspen white birch and water birch which were historically much more common than they are today and represent an important component of this forest community.

Proposed Treatments for Biarly Flats:

Removal of the declining lodgepole, while they are still merchantable, along with a selected number of other species will allow the Refuge staff the opportunity to sanitize the stand, prepare this area for prescribed fire and enhance the deer winter range. In addition to the lodgepole pine, those shade tolerant species, primarily grand fir, which are encroaching on the unit as a result of fire suppression, would be targeted for removal.

Thinning from below and removing 100 % of the mature lodgepole and selected other species, will favor the Ponderosa pine, larch and Douglas fir; increase average tree diameter of target species; encourage shrubs and aspen; reduce risk from catastrophic fire; condition the stand for prescribed fire; and reduce risk of pine beetle outbreak in ponderosa pine. Loss of mature lodgepole, which is not a preferred wildlife species, will be offset by returning prescribed fire to the stand and enhancing those aspects of a mature dry forest such as large tree size, greater spacing between stems and increasing the relative proportion of ponderosa pine in the stand.

This treatment would entail cutting all of the merchantable lodgepole pine and grand fir using mechanical harvesters to the limit of their capability (hand falling would be required where trees exceed 20 inches at the stump). Ponderosa pine, Douglas-fir and Western larch would be removed where they are of merchantable size and to achieve a spacing where ladder fuels are reduced and the canopy is opened to allow more light to reach the forest floor thus stimulating understory hardwood trees, shrubs, grasses and other herbaceous growth.

Effects of Treatment on Forest Habitat: The primary effect of this habitat treatment will be to reduce the incidence of shade tolerant species, excessive numbers of small stems and prepare the unit for prescribed fire. This reduction in competition for resources and renewal of natural fire processes will ensure that the remaining, desirable trees have the best chance of growing to maturity and occupying the site well into old age. Overall forest health will benefit from the fact that disease prone trees will be removed and the risk of a stand replacement wildfire will be abated. This will support our objective of increasing the percentage of mature forest on the Refuge.

Opening the canopy and reducing understory trees will also allow more light to reach the ground stimulate the growth of shrubs, forbs and grasses thus enhancing forage for white-tailed deer. This includes the stimulation of aspen stems which are of great importance to deer, grouse and a wide variety of other species throughout its life cycle. Aspen is declining in many areas where it once flourished due to the encroachment of shade tolerants and competition. Enhancing the white-tailed deer winter range is another objective of the Refuge management plan which will be augmented by this action.

Other wildlife species that will be advantaged are found among the neo-tropical migratory birds especially those requiring naturally functioning mature forests and snag dependant species such

as flammulated owls. Also resident snag dwelling species such as pileated and white-headed woodpeckers will be benefitted. Shrub nesting neo-tropical migrants, including chipping sparrows and black-headed grosbeaks will profit from the increased woody understory.

Size of unit:	160 acres
Size of trees removed:	Average 12 inches; some larger lodgepole and Douglas-fir will be removed will also be removed see above
Species of trees removed:	Any species may be removed to achieve objectives described above
Slope:	0-25%
Aspect:	predominantly flat with some gentle south and west facing slopes
Soils:	Virtually all of the soils associated with this area are derived from glacial outwash with granitic base mantled with loess and volcanic ash. Drainage is moderate to excessive throughout. Soils from <u>Stevens County Soil Survey</u> include 144,145, 147, and 207.

Harvest plans: All operations will be completed between September and mid-February. Trees would be cut by mechanical harvester, or hand felled where necessary, and moved to existing roads using a mechanical forwarder. Logs will be decked on the edge of Webking Road. Tops and branches will be scattered at the stump. Hauling of fill material and grading may be necessary on the Webking Road which serves as the main route into, and out of, this unit.

Prescribed fire plans: Broadcast burn would be conducted in the following late winter, spring, fall or following spring prior to nesting season. Details will be found in the individual prescription unit.

Roads: No new roads will be developed in the unit but some improvement will be needed on haul road to protect water quality and provide safe driving conditions. Some culvert pipe may be needed.

Plans for snags, large woody debris, other important wildlife habitat features: No snags will be removed unless necessary for operator safety. The snag component in the stand will increase through natural mortality. Trees with mistletoe, exfoliating bark, dead tops, etc. will not be targeted for harvest as these are important wildlife habitat components.

Pre-treatment/post-treatment data collected or to be collected: Photo points will be established to assess future stand development and whether objectives have been achieved. Other data may be collected such as bird point counts, snag and small mammal surveys and vegetation assessment for white-tailed deer winter range. Prior to harvest, stands will be surveyed for use by northern goshawk and other raptors, woodpeckers and owl use.

Plant species affected/benefitted: Ponderosa pine, Western larch and Douglas-fir will be favored as leave trees. Reduced competition and fire should reinvigorate grass, forbs, brush, aspen and other hardwood components.

Wildlife species affected/benefitted: There may be some limited direct mortality to small mammals and reptiles from use of fire over the short-term. Increasing average tree diameters and shrub and aspen understories will provide long-term benefits for the wildlife community notably some of the migratory bird species (see above).

Impacts to water: No affects are expected as the harvest unit is on a bench above the Little Pend Oreille River and well out of the floodplain.

Impacts to soil: Limited due to harvest season and equipment used. Snow and frozen ground will reduce impacts of operation to soil. Equipment used will be the least damaging form of mechanical ground based systems; mechanical harvesters and forwarders.

Impacts to air quality: Short duration smoke during prescribed fire. Burn will not be conducted when smoke may cause adverse impact to smoke sensitive sites downwind. Service policy requires that state smoke management guidelines be adhered to. This will be coordinated and monitored by the responsible state agency. Refer to Refuge Fire Management Plan and State of Washington Smoke Management Plan.

Compatibility Determinations Concurrence Signatures

This signature page provides concurrence for the following compatibility determinations:

- 1) haying
- 2) firewood cutting, Christmas tree harvest
- 3) commercial timber harvest
- 4) hunting
- 5) fishing
- 6) environmental education, interpretation, wildlife observation, and photography
- 7) motorized boating
- 8) camping, swimming, picnicking
- 9) cross country skiing, snowshoeing, dog sledding
- 10) off road vehicles - dirt bikes, all terrain vehicles, snowmobiles
- 11) search and rescue training, hiking, scouting activity
- 12) horseback riding
- 13) berry picking, mushroom gathering, antler collecting
- 14) mountain biking, jogging
- 15) Air Force Survival School training
- 16) livestock grazing

Refuge Determination

Prepared by: Lisa Langelier 3/7/00
(Signature) (Date)

Refuge Manager/
Project Leader
Approval: Lisa Langelier 3/7/00
(Signature) (Date)

Regional Office Concurrence

Refuge Supervisor: Dwight J. Vora 3/10/00
(Signature) (Date)

Refuge & Wildlife
PAR: Catherine B. Sheppard 3/10/00
Acting (Signature) (Date)

Geographic ARD: Brian Shaffer 3/10/00
(Signature) (Date)

Appendix F. Compatibility Determinations

Compatibility Overview

Compatibility is a tool refuge managers use to ensure that recreational and other uses do not interfere with wildlife conservation - the primary focus of refuges. For purposes of this document, uses are any recreational, economic/commercial, military, pest/predator control, or other use of the refuge by the public or a non-Service entity. Compatibility is not new to the Refuge System and dates back to 1918, as a concept. As policy, it has been used since 1962. The Refuge Recreation Act of 1962 (Recreation Act) directed the Secretary of Interior to allow only those public uses of refuge lands that were compatible with the primary purposes for which the area was established. This law also required that adequate funds be available for administration and protection of refuges before opening them to any public uses. Legally, refuges are closed to all public uses until officially opened through a compatibility determination. Hunting and fishing requires a compatibility determination and a notice published in the Federal Register.

The National Wildlife Refuge System Administration Act of 1966 set a compatibility standard which refuge managers will continue to use until new compatibility regulations, required by the National Wildlife Refuge System Improvement Act of 1997 (Refuge System Improvement Act), are adopted. The Refuge System Improvement Act maintains a compatibility standard but provides more detail regarding the standard and the process, and requires the process be promulgated in regulations. It also requires that a use must be compatible with both the mission of the System and the purposes of the individual refuge which helps to ensure consistency in application across the System. The Act also requires that the public have an opportunity to comment on use evaluations.

This Act stipulates that the needs of wildlife must come first and defines a compatible use as a use that . . . in the sound professional judgement of the Director, will not materially interfere with or detract from the fulfillment of the mission of the [NWRS] or the purposes of the refuge. Sound professional judgement is defined as . . . a finding, determination, or decision, that is consistent with principles of sound fish and wildlife management and administration, available science and resources. . . . Compatibility for priority wildlife-dependent uses may depend on the level or extent of a use.

Although it has been a refuge for 60 years, Little Pend Oreille National Wildlife Refuge lacks a set of compatibility determinations for existing uses. The compatibility requirement for refuges was initiated while the Washington Department of Game (now Department of Fish and Wildlife) was managing LPONWR as a wildlife recreation area. Lack of a plan to guide management and a completed set of compatibility determinations placed LPONWR as high priority for comprehensive conservation planning.

In 1978, the compatibility standard was tested in court when recreational uses at Ruby Lake NWR (water skiing and motor boating) were found to be in violation of the Refuge Recreation Act. The court determined that compatibility is a biological standard and cannot be used to balance or weigh economic, political, or recreational interests against the primary purpose of the refuge. This ruling stated that the existence of noncompatible uses on a refuge in the past has no bearing on the compatibility of present uses. In their summary of this case, Coggins et al. (1987) conclude neither poor administration of the Refuge in the past nor prior interferences with its primary purpose, nor past recreational, nor deterioration of its wildlife resources since establishment, nor administrative custom or tradition alters the statutory standard.

The Service recognizes that compatibility determinations are complex. For this reason refuge managers are required to consider principles of sound fish and wildlife management and available science in making these determinations (House of Representatives Report 105-106). Evaluations of the existing uses on Little Pend Oreille NWR are based on the professional judgement of refuge personnel including observations of refuge uses and reviews of appropriate scientific literature.

Refuge managers are responsible for the conservation and protection of wildlife and habitat and increasing demands for opportunities to enjoy wildlife. These responsibilities and the increasing trend in outdoor recreation result in a management challenge at Little Pend Oreille NWR. How can the Refuge balance these two sometimes conflicting mandates? Recreation can degrade land, water, and wildlife by simplifying plant communities, increasing animal mortality, displacing and disturbing wildlife and distributing refuse (Boyle and Samson 1985). Recreation may also contribute to the spread of some noxious weeds.

Wildlife responses to recreational activities are complex and include both direct and indirect effects (Knight and Cole 1995). Direct effects may include death from hunting, trapping or collecting and disturbance which may result in changes in feeding, nesting, or resting behavior, or displacement to less suitable habitats. Recreationist indirectly affect wildlife by modifying habitats and contaminating their habitats with food and trash. Consumptive (e.g., hunting) and nonconsumptive (e.g., bird watching) recreational activities may affect the abundance, distribution, and demographics of some populations (Knight and Cole 1995). These effects are not well known and difficult to study in free-ranging animals. The type of activity (e.g., motorized vs. non motorized), timing of activity (e.g., breeding season vs. other times), location, frequency, and predictability (e.g., consistent vs. erratic) all influence animal responses (Knight and Cole 1991). While some species may be negatively affected by recreational activity, others may show positive responses to these activities. Common and widespread bird and small mammal species were favored by campground developments (Garton et al. 1977, Clevenger and Workman 1977, and Foin et al. 1977).

Recreational activities cannot be viewed in isolation because often, more than one activity is occurring simultaneously at any given location, complicating the evaluation of a use. For example, near Potter s Pond during spring, there may be several activities occurring at the same

time including fishing, camping, wildlife viewing, motorized boating, hiking, and bicycling. Addition of uncontrolled pets or unsupervised children further complicates the situation. While any one activity occurring alone may have limited effects on wildlife, the cumulative effects may be significant and harmful to wildlife.

Management restrictions or stipulations to ensure compatibility may be either direct or indirect (Vaske et al. 1995). Direct approaches include law enforcement; zoning uses; altering availability of access and campsites; requiring reservations or special use permits; restricting types of use, group size, length of stay and prohibiting uses. Indirect approaches include improving or neglecting access, providing information about opportunities or minimal impact approaches, and charging fees. Restricting the timing or spacing of uses may reduce effects to some wildlife. Reducing noise and speed of recreational activity (slow vs. fast moving) may reduce disturbing effects of some recreation to wildlife (Klein 1993, Saab, 1996). Limiting access and localizing use may be more effective than dispersing visitor use for some types of recreational activity (van der Zande et al. 1984). Regardless of the approach used, effective management is necessary to reduce the effects of recreation on wildlife communities.

The compatibility determinations that follow used the Refuge Manual standard (5 RM 20) for evaluating uses and the following format:

1. Station Name:
2. Establishing and Acquisition Authorities:
3. Refuge Purposes:
4. NWRS Mission:
5. Management Goals:
6. Applicable Laws, Regulations, and Policies:
7. Description of Use:
8. Anticipated Impacts on Service Lands, Waters or Interests:
9. Determination:
10. Stipulations to Ensure Compatibility:
11. Justification:

Items 1 through 5 are listed once in this document. This Appendix documents compatibility determinations for both existing uses (No Action) and the agency proposed action (Preferred Alternative in *italics*).

Compatibility determinations follow for these uses:

- 1) haying
- 2) firewood cutting, Christmas tree harvest
- 3) commercial timber harvest
- 4) hunting
- 5) fishing

-
- 6) environmental education, interpretation, wildlife observation, and photography
 - 7) motorized boating
 - 8) camping, swimming, picnicking
 - 9) horseback riding
 - 10) off-road vehicles, all terrain vehicles, snowmobiles
 - 11) cross country skiing, snowshoeing, dog sledding
 - 12) search and rescue training, hiking, scouting activity
 - 13) berry picking, mushroom gathering, antler collecting
 - 14) mountain biking, jogging
 - 15) Air Force Survival School training
 - 16) livestock grazing

Compatibility Determinations

Station Name: Little Pend Oreille National Wildlife Refuge

Establishing and Acquisition Authorities:

The Little Pend Oreille National Wildlife Refuge, located in Stevens and Pend Oreille counties in Washington State, was established on May 2, 1939 by Executive Order 8104. Additional lands were purchased in later years through the Migratory Bird Conservation Act.

Refuge Purpose(s):

For lands acquired under Executive Order 8104, the purpose is . . . as a refuge and breeding ground for migratory birds and other wildlife. . . .

For lands acquired under the Migratory Bird Conservation Act (16 U.S.C., Section 715d), the purpose of the acquisition is . . . for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.

National Wildlife Refuge System Mission

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Management Goals:

- Goal 1: Conserve, enhance and restore native forest, riparian, in-stream, and wetland habitats and their associated fish, wildlife and plants, representative of the native biological diversity of northeastern Washington.
- Goal 2: Monitor, protect and recover special status species and species of management interest.
- Goal 3: Provide opportunities for wildlife-dependent recreation and education to enhance public appreciation, understanding, and enjoyment of Refuge, wildlife, fish, plants, habitats, and cultural history.

1) Haying**Applicable Laws, Regulations, and Policies:**

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Cropland management policy is described in Service Manual 6 RM 4. Haying policy is described in 6 RM 5.6 and 6 RM 9.

Description of Use: Haying

No Action and Preferred Alternative

Two Refuge fields, of approximately 8 and 23 acres, straddle Slide Creek on the southwestern corner of the refuge. These fields have been planted with alfalfa and one crop hayed by a Refuge neighbor through a special use permit for many years. There are several former farm fields, many cleared in the early 1900s, that could be planted to provide forage for wintering deer. This would provide productive habitat as well as reduce noxious weed spread in some fields.

Anticipated Impacts on Service Lands, Waters or Interest:

This use perpetuates non-native species and requires continued planting and may require harvest when certain species are planted. These costs may be outweighed by the benefits of increasing productive wildlife habitat and restoring nutrients to poor quality soils.

Determination:

This use is compatible.

Stipulations to insure compatibility:*Preferred Alternative*

Continue to manage the use through special use permits. Monitor soil productivity and ability of soil to support native species. Use adaptive management to minimize management and farming costs and evaluate if natives can be established.

Justification:

Wildlife use of Refuge alfalfa fields is high, particularly by deer and gallinaceous (chicken-like) and seed-eating birds. Use of legumes adds nitrogen to the soil which may be limiting in some old farm fields.

2) Firewood Cutting, Christmas Tree Harvest**Applicable Laws, Regulations, and Policies:**

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Firewood cutting policy is described in 5 RM 4.8 and 6 RM 3.8.

Description of Use: Firewood cutting, Christmas tree harvest

No Action

In 1998, the refuge issued 40 firewood cutting permits for cutting between August 1 and November 1. Each permittee was allowed to cut up to two cords of downed wood within 200 feet of a designated road. Roads selected had a considerable amount of downed material from the severe winter of 1996/1997 which increased risks of stand replacing fire. Providing firewood permits may be continued if downed wood along roadsides is excessive and increases fire hazard. It may also be used following commercial harvest to clean any excessive debris.

A limited number of permits have been made available for Christmas trees. A local scout troop cuts approximately 200 fir and pine trees from overstocked stands each year. Individual trees may be cut for personal use with a permit.

Anticipated Impacts on Service Lands, Waters or Interest:

No Action.

Firewood cutting permits set specific conditions and locations and minimize negative impacts for this use. Some staff time is necessary to prepare the permits and insure field compliance but this is outweighed by the fire hazard reduction and road maintenance benefits. Christmas tree cutting areas are typically overstocked and in need of thinning.

Determination:

No Action and Preferred Alternative These uses are compatible.

Stipulations to insure compatibility:*Preferred Alternative*

Standing dead trees, which are valuable wildlife habitat components, will not be cut. Locations for cutting will be designated prior to issuing permits. All firewood cutting will be restricted to locations and seasons that have a minimal effect on breeding birds and other wildlife. Institute fee to cover administrative costs of firewood cutting.

Designate areas that require thinning for Christmas tree cutting.

Justification:

Both of these uses provide wildlife habitat and community benefits.

3) Commercial Timber Harvest**Applicable Laws, Regulations, and Policies:**

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Forest management policy for the Refuge System is described in 6 RM 3 and includes commercial contracts.

Description of Use: Commercial Timber Harvest*Preferred Alternative.*

Commercial contractors will be used for some forest management activities including precommercial and commercial thinning and selective harvest. The purposes of each treatment are part of an effort to restore forest structure and composition to more natural conditions and may include any one or more of the following objectives:

- Increasing the proportion of mature forest;
- Maintaining mature forest components;
- Preparing stands for reintroduction of low-intensity prescribed fire; and
- Reducing tree densities in overstocked stands, favoring mature and over-mature trees and promoting diameter and height growth in the remaining stand.

Most trees designated for cutting will be less than 70 years old. For all sales of merchantable timber, the refuge would post a public notice in the newspaper. Special use permits will be issued to successful bidders. See Appendix E of the CCP/EIS for three silvicultural prescriptions for commercial harvest.

Anticipated Impacts on Service Lands, Waters or Interest:

The effects of harvest operations are described in the Environmental Consequences chapter of the draft CCP/EIS. Disturbed sites from commercial timber harvest (skid trails, roads, log loading areas) alter existing vegetation and soil components which are potential sites for the establishment of noxious weeds and other invasive species.

Determination:

This use is compatible.

The following stipulations are required to ensure compatibility:*No Action and Preferred Alternatives*

Special provisions will be developed and enforced through the Special Use Permit process for each sale. All State Forest Practices regulations and Refuge objectives must be followed (e.g., no harvest within 200 feet of streams, etc.). Most sales will occur between September and March to minimize disturbance to breeding and nesting wildlife and minimize soil impacts. Harvest may be postponed during severe winter weather to reduce disturbance to wintering deer.

As part of normal operations, special use permits will require companies to survey and monitor for noxious weeds and invasive species, treat such species using an integrated pest management approach (approved in advance by the Refuge Manager), and follow-up with a site visit to the treated areas within 30-45 days after treatment to determine efficacy and retreat as part of company operation. If noxious weeds and invasive species are present on the site during the follow-up, the company will complete a follow-up treatment (approved in advance by the Refuge Manager). In all cases, use of local ecotype vegetation is preferred.

The best available marking system that fits the prescription shall be used. Only those trees designated for cutting shall be cut and removed. All trees shall be cut as close to the ground as safety, terrain and equipment capabilities allow. Decking and loading shall be accomplished in such a manner that safe management, and general public access shall not be restricted. No clearing shall be permitted for decking and loading. Decking and loading shall occur in existing openings where such operations are feasible and safe. Most decking will occur along existing roads.

Justification:

It is not practical for Refuge staff to complete commercial forest harvest operations to achieve forest management objectives. The specialized equipment, the money to purchase this specialized equipment, or expertise for equipment operation is not available. In addition to equipment, and operational expertise, local contractors have good knowledge of mills, road systems, weather patterns and other factors affecting timing and success of harvest operations.

4) **Hunting**

Applicable Laws, Regulations, and Policies:

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Policy governing hunting on refuges in described in 8 RM 5.

Description of Use: Hunting

No Action.

The area within the LPONWR boundary, north of Bear Creek Road to the Narcisse Creek Road intersection, Narcisse Creek, and Blacktail Mountain Road opens for all established state hunting seasons on September 1 and remains open until December 31. The area south of the preceding boundary opens for all established state hunting seasons on October 1 and remains open until December 31. Legal species include deer, black bear, elk, cougar, grouse, moose, raccoon, bobcat, rabbit, coyote, and migratory waterfowl. Most hunting pressure is associated with grouse, deer, and bear. The Refuge-wide hunting closure, from January 1 through August 31, and the September closure, south of Blacktail Mountain Road, were established for Air Force Survival School training.

Waterfowl hunting is allowed only on Refuge lakes. All streams are closed to waterfowl hunting. There are additional hunting closures within one-quarter mile of headquarters and campgrounds.

Preferred Alternative.

Additional hunting opportunities may be available if the Air Force hunting closure is modified. Refuge will evaluate adding a spring turkey hunt and primitive weapon big game hunts on portions of the Refuge in August and September. These will require additional compatibility reviews and adjustments to Code of Federal Regulations.

Anticipated Impacts on Service Lands, Waters or Interest:

Harvests of big game, grouse, and waterfowl are not expected to have a major effect on Refuge populations. Deer hunts are the most popular Refuge hunts. As an important wintering area, the Refuge often does not harbor the majority of its wintering ungulate (hoofed animals such as deer, elk, and moose) populations until December, after rifle hunts close. Ungulates wintering on LPONWR spend their summers to the north, south, east, and within the Refuge. By harvesting approximately 100 deer per year, deer populations have maintained a relatively stable condition. Monitoring Refuge hunts and hunter harvest requires considerable staff time. Late season hunts may result in excessive hunting pressure, depending on a variety of population or weather factors not possible to predict.

Washington Department of Fish and Wildlife and other state wildlife agencies strive to regulate hunting so that harvest does not reduce populations to unsustainable levels. Hunting may be either compensatory or additive to natural mortality (Anderson 1995). Compensatory mortality describes the effect hunting may have on a population when it substitutes for other forms of mortality (disease, competition, predation, severe weather, road kills, et cetera). Additive mortality describes hunting that compounds natural mortality.

Hunting may alter the ungulate population structure when the largest animals with the biggest racks are targeted by hunters. Animal behavior and distribution may be altered in hunted populations. Conception dates in a heavily hunted elk population in Colorado coincided with hunting dates, indicating that reproductive behavior may be influenced by hunting (Squibb et al. 1986). Nocturnal feeding behavior may become more prevalent in ungulates and waterfowl during hunting seasons (Douglas 1971, Madsen 1988 *In* Knight and Cole, 1995).

Small et al. (1991) found ruffed grouse hunting mortality on public hunting areas to be significantly higher in both adult and juvenile ruffed grouse populations in central Wisconsin than mortality on private land. This was surmised to be due, in part, to increased hunting pressure and better road access on public land.

Modern hunters are using more sophisticated tools to access their quarry. Motorized all-terrain vehicles, high powered rifles and scopes, and global positioning systems are some of the tools that increase the accessibility of habitats to hunting. Disturbance factors from vehicles may add to disturbance associated with hunting.

Harvest of predators including cougar, bobcat, coyote, and perhaps bear may be altering predation which is a natural ecological process. Because relatively few predators are known to be legally taken, it is not clear whether predator prey feedback mechanisms are altered significantly.

Unregulated camping associated with hunting is treated under a separate camping compatibility determination.

Determination:

No Action and Preferred Alternative This use is compatible.

Stipulations to insure compatibility:

Preferred Alternative.

Evaluate road density and its effect on Refuge ungulates and other species. Use road closures as a way to increase animal security, reduce road hunting, improve hunt quality, and allow for immigration of animals from less accessible areas. Enforce restrictions on all-terrain vehicles for able-bodied hunters. Consider more doe harvests if populations warrant. Maintain law enforcement patrols to insure safety and compliance. Collect harvest data using hunter interviews, wing barrels, deer tooth collection and other methods. Modify bag limits or seasons

if population data warrant. Monitor late season deer rifle hunts for excessive pressure. New hunts (turkey, etc.) must be evaluated individually for compatibility. Evaluate potential effects of predator hunting on ecosystem function. Prohibit use of hounds or bait for hunting cougar and bear.

Justification:

The Refuge is a destination white-tailed deer hunting area. A few landowners adjacent to the Refuge complain of crop losses associated with deer depredation on alfalfa fields. Hunting is a legitimate recreational activity when practiced within Refuge guidelines and state seasons and regulations. Except during extremes of weather, most wild animals produce more animals than their habitats can support. These surplus animals are removed by mortality factors that regulate population numbers within the limits of the habitat. Hunting can be used to remove a portion of these excess animals that would otherwise be lost to other factors including diseases, accidents, parasites, and predation. Controlled hunting keeps wildlife populations within the carrying capacity of the habitat and provides game meat and recreation for hunters. Hunting does not conflict with Refuge purposes.

5) Fishing

Applicable Laws, Regulations, and Policies:

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Policy governing sport fishing on refuges is described in 8 RM 6.

Description of Use: Fishing

No Action and Preferred Alternatives

Refuge anglers fish for trout in stocked lakes (Bayley, Potter s, and McDowell) from the last Saturday in April through October. Stream and beaver pond fishing opens on June 1 and extends through October. See Affected Environment Chapter for additional information.

Anticipated Impacts on Service Lands, Waters or Interest:

No Action and Preferred Alternatives

Impacts associated with recreational fishing include vegetation trampling, littering, problems with discarded fishing line, introduction and spread of exotic aquatic and terrestrial plants, and out-of-control dogs. The presence of humans also affects some sensitive fish and wildlife. Humans approaching feeding sites, breeding areas, or resting cover may disturb fish and wildlife. Sensitive species may avoid Refuge lakes due to human disturbance associated with recreational fishing. Despite recreational disturbance, broods of Canada geese, mallards, teal, golden eyes,

mergansers, and red-necked grebes are seen yearly at Refuge lakes. Survival of these broods, however, could be affected by recreational disturbance.

Diving ducks (goldeneye, ruddy duck, mergansers, ring-necked duck, bufflehead, and redhead) tend to be more susceptible to disturbance than dabbling ducks (mallard, teal, pintail, widgeon, shoveler, and wood duck).

Fishing as a solitary and stationary activity tended to disturb terrestrial vertebrates less than hunting or motorized boating (Tuite et al. 1983) but is cited commonly in the literature as disturbing to waterfowl particularly during the breeding season. Waterfowl production, habitat use, and susceptibility to predation may be influenced by the presence of anglers as reported by DeLong and Schmidt (1998) in a literature review of the effects of recreation on wildlife and wildlife habitat. Jahn and Hunt (1964) studied breeding ducks in Wisconsin and learned that despite the presence of suitable nesting habitat, heavy recreation pressure prevented nesting. Surface area of open water may influence waterfowl nesting disturbance with increasing disturbance on small water bodies (Reichholz 1976). In this German study, a single angler prevented ducks from establishing territories and selecting nest sites when the amount of open water was less than 2.5 acres (1 ha).

These studies suggest there may be some reduced habitat value for water birds from recreational fishing at Refuge lakes. The extent of this problem is unclear and may be more of a problem at Potter's Pond than at McDowell Lake and Bayley Lake. The small size, presence of motorized boats and bank fishing may increase disturbance to birds. Motors are not allowed on Bayley or McDowell Lakes. Most anglers use belly boats. These two lakes are larger and have very little shoreline fishing. To assess how much effect recreational fishing has on Refuge lakes, a study of similar lakes without spring fishing seasons is needed.

Stocking non-native fish in Refuge lakes may alter aquatic communities, influence nutrient dynamics and productivity, and modify food webs (Bouffard and Hanson 1997).

Determination:

This use is compatible with stipulations but further study is warranted.

Stipulations to insure compatibility:

Preferred Alternative.

Improve educational and regulatory signs and information near heavy use areas. Eliminate motorized boats on Potter's Pond. Limit bank fishing to the south side of Potter's Pond.

Relocate camping areas a suitable distance away from lakes. Have law-enforcement qualified Refuge staff monitor this use, throughout the season, with priority attention on weekend use.

Evaluate cumulative impacts associated with fishing and camping near lakes and streams.

Control children and pets near lakes and streams. Set up a statistically sound study with controls to evaluate the affect of fishing and other recreational activity on wildlife use at the

lakes. Consider postponing the opening dates of the fishing season on Refuge lakes until waterfowl nesting is complete. Find a source for native fish for Refuge lakes.

Justification:

Most waterfowl use of Refuge waters occurs during spring and fall migration. Waterfowl and waterbird information available to date, does not suggest that the existing fishing program substantially affects breeding birds. If we learn through monitoring that the fishing program significantly affects the potential to support breeding birds, the Refuge must make appropriate changes. If fishing is discovered to negatively effect use of Refuge lakes by waterfowl, modifications to the fishing seasons on Refuge lakes will be necessary.

6) Environmental Education, Interpretation, Wildlife Observation, and Photography

Applicable Laws, Regulations, and Policies:

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Policy governing environmental education, interpretation, wildlife observation, and photography is included in the other recreational uses section of the Refuge Manual (8 RM 9).

Description of Use: Environmental Education, Interpretation, Wildlife Observation, and Photography. Use of the Refuge for environmental education and wildlife photography is limited. The extent of wildlife observation is estimated to be 3,200 visitors annually and the Refuge is included in the Washington State Wildlife Viewing Guide and several state birding guides. More resources will be dedicated to these priority uses in the future. See Implementation section (Appendix C of Final CCP/EIS).

Anticipated Impacts on Service Lands, Waters or Interest:

No Action and Preferred Alternatives

The effects of these activities depend on group size, location, season of use, and duration of the activity. They may cause limited and temporary disturbance to wildlife. As plans are made for site development, compatibility will be reassessed. Areas considered for site development include McDowell Lake Overlook, Winslow Logging Railroad Interpretive Trail, Kiosks at Refuge Headquarters and State Highway 20, and key historic sites in core of Refuge.

Determination:

These uses are compatible.

Stipulations to insure compatibility:

Work closely with school and youth group leaders to build awareness of using the Refuge as an environmental education site. Suggest specific sites, lessons, and activities for group use. Monitor environmental education activity and wildlife photography. Provide wildlife viewing tips to Refuge users.

Inform all Refuge users about ethics and responsibilities of wildlife viewing.

Site development plans will incorporate additional stipulations to insure compatibility.

Justification:

These activities have the potential to gain advocates for wildlife and habitat protection. Ultimately, these activities may expand support for Refuge programs. By encouraging people to learn more about wildlife, the Refuge may be creating new constituents for wildlife protection and enhancement.

7) Motorized Boating

Applicable Laws, Regulations, and Policies:

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Description of Use: Motorized boating

Gas and electric-powered motorized boats are allowed and used on Potter s Pond by anglers.

Anticipated Impacts on Service Lands, Waters or Interest:

No Action.

Gas powered motors are noisy and disturbing to water-dependent birds and some terrestrial wildlife. These traits also increase the potential to disturb other recreationists. They add fossil fuels to the water and can be unpleasant smelling. Electric motors do not add fossil fuels to the lake and are relatively quiet but may disturb birds.

Determination:

No Action. This use is not compatible.

Stipulations to insure compatibility:

Preferred Alternative Eliminate gas-powered motors on Potter s Pond.

Justification:

Potter s Pond is a family fishery attracting primarily seniors and families with children. These users are important. This lake provides some variety of fishing opportunities on the Refuge. Eliminating gas-powered motor boat use on this lake will reduce noise and fuel pollution on the lake but still allow use of electric motors and non-motorized boats.

8) Camping, Swimming, Picnicking**Applicable Laws, Regulations, and Policies:**

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Policy governing camping, swimming, and picnicking is described in the other recreational uses section of the Refuge Manual 8 RM 9.

Description of Use: Camping, Swimming, Picnicking

Camping occurs within campgrounds and in dispersed sites from mid-April through the late deer hunting seasons (November). The Refuge is a popular destination camping area. Many of the people who camp here do not engage in fishing, hunting, or wildlife viewing. They are here primarily to camp. This type of user is most common between Memorial Day and Labor Day weekends, particularly during summer and fall weekends. See CCP Chapter 2 for a description of Refuge camping.

Anticipated Impacts on Service Lands, Waters or Interest:

No Action

The majority of Refuge campers seek a peaceful outdoor experience. However, there are campers who use camping as an opportunity to party. Loud motors, music, and uncontrolled dogs associated with some Refuge camping disturb wildlife and detract from a peaceful outdoor experience for other Refuge users. Irresponsible use of fire and damage to standing live or dead trees is most frequent near campsites. Use of detergent, soap, and toothpaste in streams and lakes harms fish and other aquatic life. Human and animal waste creates unsanitary conditions in heavy use areas. Campers often leave garbage, trash, and other undesirable items (straw, couches, chairs, etc.). Illegal removal of natural objects (plants, antlers, live animals, etc.) and cultural objects may result from camper visits. Creation of improvements (lean-tos, tables, chairs, game poles, etc.) and alteration of the site (trenching) are also byproducts of unregulated camping.

Within the five traditional campgrounds there are two problems occurring: riparian degradation and user-expansion. Pets accompanying campers have the potential to chase and kill wildlife. At three camp areas, users dam the stream to create a swimming hole. During hot summer days,

visitors often place their lawn chairs on the stream bank or in the stream for sunbathing. These areas are also used for dishwashing and bathing.

Unregulated camping results in inappropriate use, tramples vegetation (particularly herbaceous and shrub layers), and devalues some sensitive wildlife habitats. According to Sun and Walsh (1998), if not well-managed, camping can adversely affect the values of natural and semi-natural resources. Recreation can degrade land, water, and wildlife by simplifying plant communities, increasing animal mortality, displacing and disturbing wildlife and distributing refuse (Boyle and Samson 1985). It may also affect wildlife through trampling of habitat (Liddle 1975) and animal disturbance (Ward et al. 1973). One night of camping was sufficient to cause evident impact in four vegetation types (Cole 1995). This author suggests that confining camping to a small number of campsites versus dispersing camps across a larger area reduces the impacts of camping. Another study evaluated the impacts of camping on soil and vegetation in Delaware Water Gap National Recreation Area and found that an open-canopy grassland vegetation type was more resistant to trampling than a forb-dominated forest vegetation type (Marion and Cole 1996). Camping on a military camping area in Missouri (Trumbull et al. 1994) resulted in reduction in the density and species richness of overstory and understory plants, increasing bare ground and reduction in litter accumulation. Camping-induced soil disturbance may provide conditions that favor weed infestations. Food from campsites may increase small mammal densities (Clevenger and Workman 1977 and Foin et al. 1977).

Camping in riparian areas may also result in increased runoff into streams due in part to exposed soil and reductions in vegetation (Green 1998). Water quality in streams, measured by total coliform bacteria counts adjacent to camps, was negatively affected by weekend camp site use that revealed higher coliform counts (Christensen, et al. 1978). In this western Washington study, bacteria were rapidly transmitted to the river water, even in dry periods. This is of concern since all Refuge dispersed riparian camp sites lack sanitary facilities and human waste is deposited on the ground around the site.

In their study comparing avian use of campground and noncampground riparian sites Blakesley and Reese (1988) found that differences in avian community composition appeared related to nesting substrate, cover, and foraging substrate. Species that nest in trees, with a few exceptions, were closely associated with campgrounds while those that nest on the ground, or in shrubs, or forage on the ground were closely associated with noncampground sites. Forest bird species sensitive to human disturbance may avoid campgrounds while more common and widespread species favor them (Garton et al. 1977). In her study of study of land use effects on breeding birds on the Snake River, Saab (1996) found that overall bird abundance was significantly reduced in recreation areas while species richness and composition were similar among land use types.

Picnicking does not appear to create any special problems and is most often associated with other uses, such as camping, hunting, fishing, or wildlife viewing.

Determination:

Uses are compatible with stipulations, listed below.

Stipulations to insure compatibility:

Preferred Alternative.

Camping will be allowed only in the five Refuge campgrounds (Cottonwood, Bear Creek, River Camp, Potters/Bayley, and Horse Camp) outside of established hunting seasons. Dispersed camping may be appropriate during the deer hunting season because vegetation is not actively growing and breeding seasons are complete. Designated dispersed sites will be available to hunters for the rifle deer seasons only. Dispersed sites within 200 feet of meadows, streams, lakes, and wetlands will be closed and naturalized. Improvements to include provision of drinking water and accessible toilets will be made. In campgrounds with user expansion and riparian degradation, steps will be taken to naturalize expansion areas and restore riparian habitats. This will necessitate permanently closing a few campsites within three campgrounds for restoration. Develop a site plan to reduce impact to wildlife from all recreational activity near Potter s Pond and Bayley Lake. This may include eliminating camping at these lakes.

Investigate charging fees for all Refuge camping to support this program. Designated staff will be on-duty during all weekends between the first weekend in April through November to monitor weekend public use. An education campaign addressing appropriate social behavior for Refuge camping will be developed and implemented. This program will reinforce appropriate behavior and eliminate unwanted activities and behaviors disturbing to wildlife and other Refuge users. It will encourage responsible use of camp fires and discourage damage to trees, ground vegetation, stream hydraulics, and terrestrial and aquatic life. Pets must be under control at all times on the Refuge.

In the step-down public use management plan a camping program that supports the wildlife-dependent uses will be developed. This could result in a very different camping program. Recruit volunteers to serve as camp hosts to spread the word about wildlife-friendly camping. Since this use is not dependent on wildlife and does not contribute to the wildlife conservation purpose of the Refuge, its future is dependent, in part, upon its proponents. Refuge staff will seek the cooperation of users and partnerships with interested parties to insure compliance with compatibility stipulations and protection of Refuge resources. Without user compliance, this use will be terminated.

Picnicking will be allowed without restrictions. Swimming will be discouraged in lakes and streams due to waterborne parasites in lakes, and water quality and bank stability issues in streams.

Justification:

Camping is one of the most family-oriented activities occurring on the Refuge. For many families it is their primary means of outdoor recreation and their primary introduction to wildlife

enjoyment. While it is not a wildlife-dependent use, it could provide opportunities for wildlife interpretation and education.

9) Horseback riding

Applicable Laws, Regulations, and Policies:

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Policy governing horseback riding on refuges is covered in the other recreational uses section of 8 RM 9.

Description of Use: Horseback riding

Horseback riding is a one of the most popular recreational activities on the Refuge receiving approximately 1,800 visitors per year. Some riders use the Refuge for day rides while others camp and spend several days. Day use riders park along Refuge roads or in campgrounds. Roads, trails, and cross-country travel are commonly used. Almost all camps, including dispersed sites, have been used by campers with horses. River Camp, Cottonwood Camp and Horse Camp are the most popular camps for horse campers.

There is a yearly ride that has occurred on the Refuge for at least 10 years known as the Arden Old Timer s Rodeo Ride. This ride takes place in mid-May and attracts 100-150 riders. Some of the riders camp in a group camp near Cottonwood Camp while others trailer horses and leave the Refuge at the end of the ride. The Arden Fire Department serves breakfast to riders at the Refuge. This ride follows Refuge roads and trails. A special use permit is issued yearly for the ride.

Anticipated Impacts on Service Lands, Waters or Interest:

Impacts from horses depend on the number of riders and horses, the season of use, and location of use. The shearing force of shod horses on soil and vegetation may be significant in certain soil types. Horses are one of several domestic and wild animal vectors of noxious weed seeds. Impacts may be multiplied when more horses are present. In Refuge campgrounds, where horses may be confined, the impacts include girdling of trees, trampling of vegetation, animal waste, introduction of weeds through hay, and damage to streambanks and lake shores where horses are watered. Tying horses to trees or shrubs or confining them in wet areas has caused some irreparable damage in Refuge camps. Other users may not appreciate some of the by products of horse use. Along Refuge trails in wet areas, horses make large holes in saturated soils. At stream crossings that are not armored by rock, horse use has trampled vegetation, destabilized soils and caused sedimentation. Cutting switch backs or creating several routes to access a trail also occurs near popular riding areas. Cross country riding encourages uncontrolled use and

may spread weed seeds. Some users even ride within streams which affects the stability and integrity of aquatic life.

Determination:

This use is compatible.

Stipulations to insure compatibility:

Preferred Alternative

Develop equestrian plan with the involvement of horse users. Develop partnerships with organized riding groups to offset costs associated with offering this use on the Refuge, including for example, staff and facilities. Encourage participants to take part in Refuge-beneficial projects (for example, planting trees, removing barbed wire, handpicking weeds, removing trash) versus only projects for their benefit (e.g., trail clearing). Develop a fee system or some kind of user-maintained effort to support this use. Eliminate cross-country riding. Avoid trails through wet areas until they are dry. Designate and map roads and trails available for riding from April 15 through October 15. Develop parking areas for day use. Designate and improve one camp for horse users. Require high lines or temporary corrals. Require weed-free hay or pelletized food in horse camps area and recommend feeding these to horses one day prior to riding on Refuge. Restore damaged areas and identify appropriate crossings and watering areas. In concentrated use sites such as horse camps and trailheads, remove unused hay and scatter manure piles. Designate responsible riders for group use monitoring. Limit group size.

Since this use is not dependent on wildlife and does not contribute to the wildlife conservation purpose of the Refuge, its future is dependent, in part, upon its proponents and participants. Refuge staff will seek the cooperation of users and partnerships with interested parties to insure compliance with compatibility stipulations and protection of Refuge resources. Without user compliance, this use will be terminated.

Justification:

This family-oriented use offers a unique way to view wildlife and see the beauty of the Refuge. While it is technically not wildlife-dependent, horseback riding managed consistent with the above stipulations, is not anticipated to interfere with Refuge purposes.

10) Off-Road Vehicles - All Terrain Vehicles, Snowmobiles

Applicable Laws, Regulations, and Policies:

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Policy governing off-road vehicles is covered in the Off-road vehicles section of the Refuge Manual 8 RM 7.

Description of Use: Off-road vehicles, all terrain vehicles, snowmobiles.

With the exception of snowmobiles, off-road vehicles are not allowed on the Refuge. However some off-road vehicle use does occur since there has been little enforcement. Most of this is due to the fact that regulation signs exist at only three entrances.

Snowmobile use has been allowed on Olson Creek Road and Blacktail Mountain Road and is most popular along Olson Creek Road which is the primary route to Calispell Peak, a very popular snowmobile play area. On the Refuge there is a snowpark off Highway 20 at Olson (Tacoma) Creek Road. Permission has been given for grooming Olson Creek Road which includes mixed ownerships including Stimson, DNR, Refuge, and Colville National Forest. Stimson Lumber Company has an easement to use Olson Creek and Blacktail Mountain Roads and frequently haul timber along these roads throughout the year. During moderate to heavy snow years, Blacktail Mountain Road gets regular use by snowmobiles. 1999 estimates of vehicle use on Olson Creek Road suggest that as many as 7,000 vehicles use the road during the four months of snow cover.

Anticipated Impacts on Service Lands, Waters or Interest:

Motorized off-road vehicles are disturbing to wildlife and may have impacts to vegetation and soils when used off of established roads during the growing season. Loud motors detract from the quality of other forms of Refuge recreation.

There are studies showing snowmobile disturbance increases the home range sizes of wintering ungulates and increases deer metabolism. White-tailed deer in Minnesota showed significant displacement and increased movement in response to low-intensity snowmobile activity (Dorrance, et al. 1975), and the response of deer increased with the duration of the disturbance. Huff and Savage (1972) found that snowmobile activity appeared to force deer into less-preferred habitats where nighttime radiant heat loss was increased. This study also found that home range sizes were reduced when deer were exposed to snowmobile traffic. Eckstein et. al (1979) found negligible changes in deer activities and home range resulting from snowmobile activity. Richens and Lavigne (1978) found that deer did benefit by following snowmobile trails where the snow was firmer.

The varying results of these studies reinforce Gutzwiller's caution (1991) that habituation may occur only at specific levels of disturbance and disturbance intensities above or below these levels may be detrimental. Effects of snowmobiling on ungulates may be influenced by the ungulate species, intensity of use, and season (Freddy et al. 1986). Various studies have demonstrated snowmobile impacts to different species of wildlife (see Oliff et al. 1999 for an extensive review). A few examples are cited here. Anderson and Sherzinger (1975) reported winter elk counts falling by 50% when recreational snowmobile activity increased in the Bridge

Creek Game Management Area. Aune (1981) demonstrated elk flights averaging 34 meters in response to approaching snowmobiles.

Snowmobiles can reduce the insulation properties of snow for small mammals (Hammitt and Cole 1987). Snowmobile trails provide access to high elevation habitats for species such as coyotes and bobcats that otherwise would not use these habitats during winter. Increased competition from these predators during late winter may be detrimental to lynx and other forest carnivores dependent on high elevation habitats when food availability is low and lynx are nutritionally stressed (Kohler and Aubrey 1994). The authors of the Lynx Science Report (Ruggiero et al. 1999) believe that the coyote is a potentially formidable competitor with lynx, citing the coyote's wide habitat niche, heavy predation on snowshoe hares, high reproductive rate, great behavioral plasticity, and high tolerance of humans (Ch. 4, p. 9 of Lynx Science Report). Coyote population numbers have increased dramatically in many places over the last few decades, (including a 44X multiplication in Washington state between 1960-1984), using coyote harvests as an indicator.

Ruggiero et al. (1999) also cite several studies showing that coyotes prey heavily on snowshoe hares, especially during snowshoe population highs, and even cycle with snowshoe populations like the lynx (data from both Montana and Alberta; Ch. 4, p. 11 of Lynx Science Report). The authors also cited a study by O Donoghue (1997) which compared densities of lynx, hares and coyotes in Alberta and the Yukon, and showed that in both places, lynx were more abundant where coyotes were less dense, rather than where hares were more dense.

The Lynx Science Report substantiates the claim of coyotes accessing high elevation areas by moving along paths, roads, and even snowshoe hare trails, with several citations. In one Colorado study involving track counts along approximately 725 miles of snow transects within snowshoe hare habitat (7500 - 11,800 feet elevation), coyotes were the second most common carnivore taxon encountered (after weasels). The authors also cite a study by Murray et al. (1994) finding that coyotes were more selective of hard or shallow snow conditions than were lynx, and another study showing that between November and March, coyote use of open habitats increased. This shift was attributed to the greater compactness and load-bearing strength of snow in openings.

The authors of the Lynx Science report conclude, Fragmentation of habitats occupied by lynx (including increased openings, higher road densities, exurban residential development and wider use of snowmobiles and devices that compact snow in areas with deep, soft snow) is a plausible mechanism for the questionable conservation status of the lynx in the contiguous United States. (Ch. 4, p. 13 of Lynx Science Report).

Snowmobile use hinders the solitude of the Refuge for winter visitors. Snowmobiles are noisier and more polluting than snowshoes, cross-country skis, and automobiles. On average (Schubert, 1997), a snowmobile emits 216 grams of hydrocarbons and nitrous oxide and 564 grams of carbon monoxide per hour per horsepower of the machine's engine. A 54 hp engine emits about

360 times as much pollution per hour as an automobile. Effects of such air pollutants to plant communities can result in foliar injury, reduced productivity, tree mortality, decreased growth, altered plant population, modifications in species diversity, and increased susceptibility to diseases and pests (Shaver et al. 1988). Attendant effects may result to aquatic systems when pollutant depositions melt into streams during the spring (Oliff, et al. 1999).

Determination:

These uses are not compatible and will be terminated. However, traditional snowmobile ingress and egress along the four miles of Olson Creek Road that cross the Refuge will be allowed at the current level of use at this time.

Stipulations to insure compatibility:

Not applicable.

Justification:

These uses are not dependent on wildlife and should not be allowed on the Refuge in areas where the Refuge has sole jurisdiction. Along Olson Creek Road, Stimson Lumber Company and Washington State share jurisdiction through a perpetual road use agreement, developed in 1980. On this road, traditional snowmobile ingress and egress to Calispell Peak will be allowed. Mixed ownerships (Refuge, Washington DNR, Stimson Lumber Company, and Forest Service) and this perpetual road use agreement complicate management of this road.

Refuge staff will work with adjacent land managers and recreationists to seek a new snowpark and alternate winter access to Calispell Peak. Law enforcement patrols will be necessary, particularly on weekends. In areas of mixed ownership, work with adjacent property owners to minimize the disturbing effects of these uses. Use informational and regulatory signs and gates. The Refuge will monitor the level of snowmobile use and wildlife use of the road and nearby areas during the winter.

This decision will be reevaluated during development of the public use management plan. Landscape scale management would be necessary to address future lynx conservation.

11) Cross country skiing, Snowshoeing, Dog sledding

Applicable Laws, Regulations, and Policies:

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Policy governing cross country skiing, snowshoeing, and dog sledding is described in the other recreational uses section of the Refuge Manual 8 RM 9.

Description of Use: Cross country skiing, snowshoeing, dog sledding

These uses are variable from year to year, depending on availability of snow. In heavy snow years, we estimate as many as 250 use days per year for skiing, and fewer than 100 use days per year for snowshoeing and dog sledding. Most of this use begins near the county roads which are plowed and occurs in the core of the winter range.

Anticipated Impacts on Service Lands, Waters or Interest:

These activities have the potential to displace wildlife during a time of year when they are most vulnerable. Cross-country skiing has been shown to move elk in Yellowstone across drainages and into steeper less desirable habitats (Cassirer et al. 1992). Little information is available on the effects of dog sledding on wildlife but disturbance from the dogs themselves may be a negative factor.

Determination:

These uses are compatible at their existing levels but could become incompatible if increased significantly.

Stipulations to insure compatibility:

Preferred Alternative

Monitor these uses during moderate to heavy snow years and restrict use when warranted.

Closing gates during months when big game are most vulnerable will reduce disturbance from dog sledding.

Justification:

These uses are not believed to negatively affect the Refuge purposes at the levels they are currently occurring. They could have some negative affects on wintering deer, particularly during severe winters.

12) Search and rescue training, hiking, scouting activity

Applicable Laws, Regulations, and Policies:

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Policy governing search and rescue training is described in 8 RM 15. Hiking policy is covered in 8 RM 9.

Description of Use: Search and rescue training, hiking, scouting activity

Search and rescue training is conducted on the Refuge by two separate groups, one from Spokane and one from Stevens County. Both groups conduct a few training sessions per year and use a Refuge map and compass course. During most weekends when the groups train they use one of the Refuge campgrounds. Hiking occurs along roads and some trails. Scouts use the Refuge in small groups for campouts and merit badge completion.

Anticipated Impacts on Service Lands, Waters or Interest:

These activities, when conducted responsibly, may create minor and temporary disturbances to wildlife. At the current level of use, these activities are not expected to materially interfere with Refuge purposes.

Determination:

These uses are compatible.

Stipulations to insure compatibility:

Preferred Alternative

Develop special use permit or memorandum of agreement for search and rescue groups. Encourage participants to take part in Refuge-beneficial projects (for example, planting trees, removing barbed wire, handpicking weeds, removing trash). Monitor these uses and provide information to users on expectations for appropriate activities and behavior on a wildlife refuge.

Justification:

Having search and rescue groups familiar with the Refuge is very helpful when there is a lost visitor. Scout use in small groups is appropriate and may create advocates for wildlife.

13) Berry Picking, Mushroom Gathering, Antler Collecting

Applicable Laws, Regulations, and Policies:

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Policy governing collecting on refuges is described in 7 RM 13 and 50CFR Ch. 1 subpart E 27.51.

Description of Use: Berry picking, mushroom gathering, antler collecting

The extent of these uses is unknown but is thought to be incidental to other recreational uses such as camping, wildlife viewing, and hiking. There are antler hunters who visit the office each winter but these may amount to less than 10 use days per year. Refuge staff have met children planning to remove frogs or snakes from the Refuge for pets.

Anticipated Impacts on Service Lands, Waters or Interest:

At the levels of use, these collecting activities have minimal impact but do remove important food items for some wildlife.

Determination:

This use is compatible.

Stipulations to insure compatibility:

Incidental collecting will be allowed to continue on the Refuge unless it is found to be compromising to the purposes of the Refuge or negatively affecting Refuge habitats. Collecting antlers will be allowed after April 1.

Justification:

Collecting berries, mushrooms and shed antler is not expected to detract from the purposes of the Refuge at incidental use levels.

14) Mountain Biking, Jogging**Applicable Laws, Regulations, and Policies:**

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Policy governing biking and jogging on refuges is covered in the other Recreational uses section 8 RM 9.6.

Description of Use: Mountain biking, jogging

There are small groups and individuals who ride mountain bikes on the Refuge. Most known use occurs along roads. There is a limited amount of jogging known to occur on the Refuge.

Anticipated Impacts on Service Lands, Waters or Interest:

No Action & Preferred Alternative.

At the existing levels of use, these activities are believed to have minimal impacts. As long as they occur along roads they are not disturbing to Refuge habitats. They may temporarily displace wildlife but not more than other road uses. Some joggers and bikers clear fallen logs from Refuge roads without coordinating with the Refuge Manager. If they were cleared to a specific standard (at least one vehicle width for fire maintenance roads) then staff would have less work opening roads in the spring and summer.

Determination:

These uses are compatible.

Stipulations to insure compatibility:

Preferred Alternative

Monitor the use levels of these activities regularly and provide controls, if warranted. Provide information about where and when riding is allowed. Prohibit cross country and game trail use of bicycles. Discourage users from clearing roads for these uses without permission of Refuge Manager.

Justification:

Neither of these uses is dependent on the presence of wildlife but neither is expected to materially interfere with Refuge purposes.

15) Air Force Survival School Training

Applicable Laws, Regulations, and Policies:

National Wildlife Refuge System Administration Act of 1966, as amended (16 U.S.C.688dd-ee), including amendments contained in the Refuge System Improvement Act of 1997 (P.L.105-57). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c. While these regulations deal primarily with public use management and do not reference military activities specifically, all uses not related to the wildlife conservation mission, including military activity, require a permit or other special authorization. The Service does not have statutory authority to regulate air space over a refuge, however, the referenced helicopter overflights and landings are directly supportive of military ground activity.

Description of Proposed Use: Air Force Survival School Training

The Air Force Survival School has trained air crew personnel and survival school instructors on the Refuge since 1966. Training covers survival (food and water procurement, fire craft, shelter building, and navigation) and evasion techniques. No hunting or discharge of firearms by the public is allowed during these months, through a special hunting closure established by Washington Department of Fish and Wildlife. Historically, training took place between January and September. Since 1997, most training has occurred between July and September. Air Force activity is coordinated with land managers in northeastern Washington through an employee of the Colville National Forest.

During 1994, 405 Air Force personnel used the Refuge over the course of 83 days (3505 use days); 1995 - 779 personnel used the Refuge over the course of 81 days (4900 use days); 1996 - 352 people over 48 days (2540 use days); 1997 - 450 people over 35 days (2700 use days); 1998 - 500 people over 36 days (2995 use days); 1999 estimate - 734 people over 54 days (4562 use days). During any one-week training period there are 60-115 Air Force personnel on the Refuge.

The hunting closure; terrain; road system; availability of natural resources; proximity to the Tacoma Command Post and Fairchild AFB; and access to water, telephone, electrical power, and a building contribute to the Air Force viewpoint of the Refuge as a critically important training area.

Resources used by Air Force personnel include trees for shelter, bedding, and firewood, and wildlife - specifically small mammals, fish, snakes, grouse, deer, and fresh water mussels - when training students in food procurement.

Since 1995, the Air Force Survival School has been authorized to use LPO through an annual special use permit. In recent years, the Air Force has made a concerted effort to reduce the impact of their training on Refuge habitats and wildlife.

For additional information about this use refer to the March 2000 Comprehensive Conservation Plan and Final Environmental Impact Statement (CCP/FEIS).

Anticipated Impacts on Service Lands, Waters or Interests:

The following list summarizes the activities associated with training that are of special concern:

- helicopter flights at low level, helicopter landings
- smoke flares, blank pistols, simulated machine guns
- approximately 50 camps scattered throughout Refuge
- potential for disease introduction from domestic animals (primarily rabbits, but ducks and chickens may be used)
- number of people (average of 82) split into two groups
- widespread use of the Refuge (approximately 22 square miles, on the average)
- repeated use of the same areas for an extended period (August through September)
- cumulative impacts of this and other Refuge uses
- conflicts with wildlife-dependent priority public uses including hunting, fishing, and wildlife viewing
- disturbance to surrounding landowners
- use of vehicles (ATVs, snowmobiles) and roads not available to the public

The most significant potential impacts to wildlife are associated with helicopter support of training which involves low-level flights, hovering and landing; use of certain pyrotechnics and simulated weapons, and effects of disturbance from approximately 80 people scattered over one-third of the Refuge. Resources, uses, and values at risk include migratory birds, wide-ranging forest carnivores, priority public uses, and roadless area values in the more remote portions of the Refuge. Additionally, summer training has resulted in several small fires which pose an additional risk to Refuge forests. In the last five years there has been an average of 2-3 Air Force-caused fires per year. In August 1999, off-duty Survival School instructors accidentally burned a bridge that was on the National Historic Register.

Most Air Force use occurs in the core of the Refuge. This core area is the same area where most wildlife-dependent and other Refuge public uses occur due primarily to the location of popular fishing lakes and public campgrounds. The cumulative disturbance from Air Force and public use reduces habitat integrity for sensitive wildlife species, such as lynx, bald eagles, and other wide ranging carnivores or raptors.

Camping associated with Air Force training has contributed to the 'camp anywhere' legacy at the Refuge. Air Force camps developed near roads have been used by the public or reused by Air Force personnel during off-duty visits to the Refuge. The compatibility determination for camping stipulates that public dispersed camping in designated sites shall only be allowed during and in support of the October through December hunting seasons. This dispersed camping, combined with use of roads closed to public use, sets up two standards for Refuge use. Existing studies of military training effects on wildlife often evaluate very different types and intensities of training on different habitats than that which occurs on LPO. At LPO, we have anecdotal reports and Refuge staff observations of disturbance to species and habitats, but no on-site studies. In the absence of site-specific studies, we have used sound professional judgement, including the best available information.

Air Support of Training

There have been some studies on the effects of noise generated from helicopters and other aircraft on wildlife species and groups. The threat posed by military activities to National Wildlife Refuges was first spotlighted when the General Accounting Office published a report *National Wildlife Refuges: Continuing Problems with Incompatible Uses Call for Bold Action*. Military air exercises were one of the secondary uses most frequently cited as harmful. The Service evaluated military aircraft overflight issues on national wildlife refuges in 1993 (USFWS 1993). The Service determined that overflights can materially interfere with and detract from the establishing purposes of refuges. At the time this 1993 report was prepared, Little Pend Oreille NWR was being managed by the State of Washington and was not included in the evaluation. The report found that overflights disturb nesting or migrating raptors, waterfowl and shorebird populations, as well as mammals.

Startle, flush, or flight behavior was reported for birds from aircraft disturbance at 39 wildlife refuges by Gladwin et al. (1988). Again, Little Pend Oreille NWR was not included in this report. Mancini et al. (1988) compiled a literature synthesis of the effects of aircraft noise and sonic booms on domestic animals and wildlife. Andersen (1997 draft) has compiled a critical review of field studies examining the effects of noise and related human activity on raptors. In addition, Delaney et al. (1997) have published the results of their study examining the effects of helicopter noise on nesting Mexican spotted owls.

Of the three types of aircraft evaluated for their effect on nesting raptors (low level jets, light fixed wing aircraft, and helicopters), helicopters appear to cause the greatest disturbance (Grubb et al. 1992, Watson 1993, Grubb and Bowerman 1997). This may be because helicopters fly slowly and at lower altitudes than other types of aircraft. Also, jet engines produce more noise at

higher pitch and magnitude than do piston aircraft engines. The Air Force typically uses Bell UH-1 Iroquois helicopters (Hueys) for their training activities on the Refuge. This aircraft uses a jet turbine engine.

Reaction to helicopter overflights and similar disturbances varies greatly among species as well as among individuals within a species. Grubb et al. (1997) cites examples of helicopters approaching within 150 meters of bald eagles before eliciting a flush response; while similar studies involving Mexican spotted owls, osprey and peregrine falcons noted that they were all approached to distances of 100 m, 50 m, and 30 m respectively, before flushing. Watson (1993) reports the distance at which individual bald eagles flushed when disturbed by helicopters in northwestern Washington as ranging from less than 30 meters to greater than 120 meters.

Distance seems to be a better predictor of response to helicopter overflights than sound level. An inverse relationship existed between the distance from the helicopter to the subject and the rate of response (Watson 1993, Grubb and Bowerman 1997, Delaney et al. 1997). Grubb and Bowerman (1997) recommend that helicopters stay at least 150 meters from nesting bald eagles, while Watson (1993) recommended greater than 60 meters. Delaney et al. (1997) recommends greater than 105 meters from Mexican spotted owl nests.

Several other factors can influence raptor response to helicopter overflights. Watson (1993) found that the flushing distance of eagles was greater when wind velocities were above 16 kph, when eagles were without their young, and when they were perched farther from their nest. This coincides with observations of bald eagles in Arizona showing eagles on nests being less easily disturbed than foraging eagles. Grubb and King (1991) also found eagles more consistently flushed from perches than from nests. Other factors that influenced flushing rates were duration of disturbance and number of aircraft passes per episode. Increases in either of these factors increased flushing rates (Watson 1993, Grubb and Bowerman 1997, Delaney et al. 1997).

Evidence exists that raptors may become habituated to aircraft disturbance. Indications of this phenomenon were reported in red-tailed hawks (Andersen et al. 1989) and Mexican spotted owls (Delaney et al. 1997). The extent and frequency of this effect are not yet understood.

Findings from several noise disturbance studies suggest aircraft overflights alone have a negligible effect on raptor reproductive success. This includes work with Mexican spotted owls (Delaney et al. 1997); red-tailed hawks (Andersen et al. 1989); peregrine falcons (Ellis 1981 *in* Mancini et al. 1988); and bald eagles, golden eagles, gyrfalcons, and rough-legged hawks (White and Sherrod 1973 *in* Mancini et al. 1988).

Gladwin et al. (1988) reported mammal disturbance from aircraft at 8 wildlife refuges. Most of these mammals species were big game on arid southwestern refuges. Bombay Hook NWR staff in New Jersey reported that Helicopters appear to have a more pronounced impact on waterfowl and big game than repetitious plane overflights. Research on bighorn sheep, barren ground caribou, and pronghorn antelope exist but their findings are difficult to extrapolate to LPO

because these studies were done in habitats that were open and sometimes treeless. Availability of escape cover plays a key role in how disturbing low-altitude aircraft is to wildlife (Manci et al. 1988). Behavioral changes, such as running or other avoidance behavior, caused by sudden loud noise or other alarm stimuli result in increased energy expenditures. This can result in reduced survival and reproduction rates, especially if it occurs in stressful periods such as late winter or during very hot summers.

Sevilleta NWR, in their aerial surveys of mule deer and pronghorn antelope, showed extended alarm responses followed by flight response in over 50% of the animals surveyed. These types of responses raise stress levels dramatically during periods of environmental stress, such as winter and hot summer months, or during the fawning season.

Stockwell et al. (1990), described height of helicopters flying above the ground as a threshold for mountain sheep. No disturbance was noted when flights were greater than 100 meters above the ground. Movement of 2 to 3 times greater than normal and increase in size and shape of home ranges were noted following helicopter surveys of mountain sheep (Bleich et al. 1990). Sheep foraging efficiency was also reduced. Deer and elk exhibited flight/fright behaviors at the approach of helicopters (USFWS Aircraft Overflight Issues Report 1993).

All the information available describing the effects of helicopter and other aircraft on wildlife pertains to overflights and other in air activities. The relatively longer duration of noise associated with the take-offs, taxiing, approaches, and landings being conducted in forest openings and fields on the LPO NWR may impose a substantially greater level of disturbance to wildlife using specific landing zones. Unfortunately, no site-specific information is available describing these potential effects. Since 1997, landing locations have been minimized to one or two sites on LPO.

Aircraft noise also disturbs Refuge visitors who seek quiet and the potential for a wildlife encounter. Campers, bird watchers, horseback riders and hunters have complained about Air Force low-level helicopter flights. Refuge neighbors have also complained about helicopter activity, particularly night flights.

Ground-based Training Activity

US Air Force Survival School ground activity may be more disturbing to some wildlife than the helicopters. All studies of disturbance to raptors that included an analysis of ground activity disturbance found it to have a greater effect on birds of prey than did aircraft. Research conducted on the Army maneuver sites observed a displacement reaction by some wildlife to the training activities. While the intensity of the training conducted on these areas is much greater than that occurring on LPO, the many fold increase in the number of people in the areas, greater vehicular traffic on the roads, operation of ATVs and helicopters, and the use of simulated weapons are variables they have in common.

Research done on nesting bald eagles in Arizona found the strongest response was caused by ground-based disturbances, particularly pedestrians. Within that category, hiking activities were the most disturbing. In addition to pedestrian disturbance, the other disturbances analyzed in decreasing order of severity were: aquatic (tubers, boat, canoes); vehicles, noise (gunshots and sonic booms); and lastly aircraft (Grubb and King 1991). Other researchers have also determined that aircraft overflights were less disturbing than ground-based activities (Awbrey and Bowles 1990 *in* Delaney et al. 1997). Recent work examining the effect of helicopter overflights on nesting Mexican spotted owls in Arizona also measured the owls' response to chain saw noise. Their results indicated this ground-based disturbance elicited a greater flush response than the aerial disturbance caused by helicopters (Delaney et al. 1997). They speculated that spotted owls perceived helicopters as less threatening than chain saws because of the aircraft's shorter duration, gradual crescendo in sound levels, and minimal visibility or association with human activity. They also believed owls would have responded more if individual exposure times to helicopters were increased through slower maneuvers and increased hovering.

The reactions of coyotes and several species of raptors to military training activities were examined in southeast Colorado. Coyotes responded to the increased activity associated with military maneuvers by contracting, expanding, abandoning or not changing their home range. They shifted centers of activity away from military activity and increased their diurnal rate of movement during the maneuvers (Gese et al. 1989). Red-tailed hawks, ferruginous hawks, a golden eagle, and a Swainson's hawk residing in a military training area shifted their home range and activity areas, made movements outside of areas in which they had previously been confined, and increased the size of the area they used during periods when the military was active. Birds in areas not being actively used for maneuvers did not show these reactions (Andersen et al. 1990). Activities associated with these maneuvers included increased ground vehicle traffic including trucks, tanks and artillery; helicopter and fixed-wing overflights; simulated weapons fire; and extensive bivouacs by large numbers of troops. In both studies, most of the displaced individuals returned to their original activity areas after the cessation of the disturbance.

Investigations of white-tailed deer responses to snowmobile traffic found deer changing their home ranges to different areas in response to increasing activity (Dorrance 1975 *in* Gese et al. 1989). Dorrance (1975) found significant displacement and increased movement in response to low-intensity snowmobile traffic. However, researchers noted that deer in dense coniferous cover (probably similar to that found on the LPO NWR) were less likely to flee from snowmobiles than deer in open hardwood stands (Richens and Lavinge 1978, Eckstein et al. 1979, both *in* Gese et al. 1989). Van Dyke et al. (1986 *in* Gese et al. 1989) documented shifts of mountain lion activity peaks to after sunset and movement of home areas away from logging and human activity.

During Survival School emergency situations, particularly when students or instructors are lost or injured, stipulations to protect Refuge resources may be waived. This can result in extensive ground and air searches or helicopter rescues which may further disturb Refuge wildlife. Because the Air Force uses the Refuge for training there is a presumption from other military

entities (National Guard and other Air Force units) that the Refuge is a sanctioned training area for their use, consequently unauthorized training has occurred.

Resources used by the Air Force during training include trees and downed wood, for shelter, bedding, and firewood; and fish and wildlife, including small mammals, fish, snakes, grouse, deer, and mussels, when training student to obtain food.

AF training affects hunting recreation opportunity due to the hunting closure. Statewide hunting seasons for forest grouse, rabbit and hare, dove, cougar, bobcat, black bear, and sometimes waterfowl are open September 1. However the southern portion of the Refuge is closed to hunting until October 1 to protect AF trainees. Seasons on rabbit and hare, coyote, bobcat, and cougar extend through March 15 in eastern Washington, however the whole Refuge is closed to all hunting from January 1 through August 31, again due to AF training. Spring turkey season is also affected by the closure.

For additional detail on the anticipated impacts of the use refer to the Environmental Consequences Chapter of the Little Pend Oreille NWR final CCP/EIS.

Determination:

This use is not compatible.

Stipulations to insure compatibility:

Not applicable.

Justification:

This use conflicts with Refuge purposes, the National Wildlife Refuge System mission, and some priority wildlife-dependent public uses. The cumulative effects of ground and helicopter activity conflict with our primary wildlife conservation mission and conflict with our secondary purpose of providing wildlife-dependent recreational and educational activities. Although the Air Force has made many concessions to reduce their impact on Refuge wildlife and habitats, many unavoidable adverse effects remain. Completely resolving conflicts between Air Force training requirements and our wildlife conservation mission does not appear possible.

Eastern Washington, Idaho and western Montana include many large blocks of undeveloped public, private, and tribal lands that could potentially accommodate this use. Several of the large blocks of public land have multiple purpose legal mandates unlike the primary wildlife conservation mission of the National Wildlife Refuge System. It is recommended that other suitable lands be evaluated or the option to increase the mobility of survival training be evaluated and that this use be phased out within the next five years.

16) Livestock Grazing

Applicable Laws, Regulations, and Policies:

National Wildlife Refuge System Improvement Act of 1997 (P.L.105-57), National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C.688dd-ee). Regulations adopted by the U.S. Fish and Wildlife Service concerning access to and use of refuges are codified in Title 50, Code of Federal Regulations, Chapter 1 subchapter c.

Refuge System policy regarding livestock grazing is described in the Refuge Manual (6 RM 9).

Description of Use: Livestock Grazing

No Action.

Three permittees graze cattle on the Refuge from June 1 through September 30. Grazing occurs on approximately 20 % of the Refuge including riparian areas, meadows, former farm fields, forest openings, and low elevation forest. The Service has continued a rotational grazing program developed by the Soil Conservation Service, Washington Department of Fish and Wildlife, and grazing permittees. The stated primary objectives for the program were to improve forage quality for deer and provide a grazing system for domestic stock.

The most recent inventory of available AUMs on the Refuge was completed in 1983 and totaled 3208 AUMs. This inventory described the total forage available, to wildlife and cattle, on 16 Refuge pastures in 1983. While those were the inventoried AUMs, that total was never made available to cattle. A portion of it was retained for wildlife use and one unit (Starvation Flat) had not been grazed since early Refuge years. Cows are rotated off pastures when pastures have a six-inch stubble height. This height was decided because, in theory, cows shifted from grass and forbs to shrubs around the same time. Between 1994 and 1998 an average of 750 AUMs were used (range from a low of 287 in 1997 to a high of 801 in 1994). Prior to 1994, as much as 1200 AUMs were used. Approximately 70 miles of fence (35 miles of interior and 35 miles of boundary fence) is necessary to maintain the existing grazing program. Permittees have completed most of the fence maintenance since 1995. See Affected Environment Chapter in CCP/EIS for additional information.

Preferred Alternative.

For the first five years, this alternative is the same as Alternative A in that grazing will continue until 2005 and therefore will not be compatible until that year. Grazing may be used as a management tool to achieve specific habitat objectives. The details of how the tool would be used will be developed and discussed in the stepdown Habitat Management Plan scheduled for completion by 2005. Some potential objectives that may benefit from livestock grazing include: improving spring forage quality within winter range for white-tailed deer, limiting seed production and restricting root system growth of noxious weeds (for example, using goats on leafy spurge) or undesirable plants (reed canarygrass), and to manage vegetation on old fields.

Use of grazing as a tool must meet carefully developed criteria as grazing may benefit one species at the expense of another.

Anticipated Impacts on Service Lands, Waters or Interest:

No Action.

Based on a 1996 grazing review, fisheries habitat surveys of the Little Pend Oreille River and Bear Creek in 1996 and 1997, and a riparian condition evaluation on 32 valley units of five Refuge streams in 1996 and 1997, the annual cattle grazing program is having a negative impact on Refuge fish and wildlife habitats. These surveys, conducted by Fish and Wildlife Service staff, suggest that while there may be some positive but unproven effects of grazing on forage quality for deer, the benefits of livestock grazing do not outweigh the negative effects, particularly in riparian and other sensitive habitats.

In the past under State of Washington management, permittees have had long-term permits on the Refuge, ranging from 15 to 60 years. This creates perceived ownership and grazing is restricted under Service policy, which requires regional director approval for grazing privileges that extend more than five years from the original date granted.

In his evaluation of livestock grazing in Western North America, Fleischner (1994) maintained that grazing may have a profound influence on plant community composition, ecosystem functioning, and ecosystem structure. These factors may in turn affect animal populations, due to livestock's effects on habitat structure. Grazing may also contribute to landscape-scale changes in plant and animal species composition.

The existing grazing system results in cattle trespass on Refuge inholdings. In some cases these inholdings provide the only available forage within a given unit.

A key issue in any grazing program is management of cattle. Grazing intensity, stocking rate, grazing season, and movement of animals between pastures all influence the outcome on habitats. Animal unit months and numbers of cattle are not as important at Little Pend Oreille NWR as how cows are managed. Impacts from grazing could be reduced if more effort was devoted to cattle monitoring and herding, more water sources developed, and more forest stands opened up to increase forage. These would all be appropriate if grazing is identified as the preferred tool for meeting a wildlife habitat objective.

Livestock grazing has had a detrimental impact to the alluvial riparian zones of both the Little Pend Oreille River and Bear Creek. Typically riparian areas constitute 1-2 % of the total land area (Ohmart 1996). While exact figures are not yet available for the LPO NWR, that ratio will likely hold true here as well. The importance of riparian areas far exceeds their availability. Birds reach higher breeding densities in these habitats than any other habitat in the contiguous United States. (Carothers et al. 1974 in Ohmart 1996). Many species of small mammals, amphibians and reptiles are dependant on these areas. Large mammals such as deer, moose, elk

and others use them as thermal and hiding cover, travel corridors, and foraging areas. In short, the importance these areas to wildlife cannot be over emphasized.

A survey of the riparian condition of most of Bear Creek and the mainstream of the Little Pend Oreille River as it occurs on the Refuge was conducted in 1996. Approximately 5 of the 8.5 miles of Bear Creek surveyed were classified as being in unsatisfactory condition. Of the approximately 7.5 miles of the Little Pend Oreille River surveyed, about 2 miles were classified as being in unsatisfactory condition. These unsatisfactory areas were mostly in the alluvial, low gradient troughs that comprise more than 50% of the total riparian habitat occurring on the Refuge. Attributes of these riparian areas that usually characterized an unsatisfactory condition included excessive stream bank erosion, deficient channel entrenchment, lowered water table, reduced extent of active flood plain, and a diminished composition of the hydric riparian species expected to occur in a fully functional riparian system (Pyle 1997).

According to Ohmart (1996), the best way to manage riparian habitats is to not graze them. The most striking difference between recovery of riparian areas with total rest by exclusion of cattle and recovery using livestock is the time involved. With managed grazing, riparian healing is twice (16-20 years) and maybe 4 times (32-40+ years) longer than exclusion (Ohmart 1996).

Fish habitat assessments of the Little Pend Oreille River and Bear Creek were conducted in 1996 and 1997, respectively. Twelve reaches were intensively surveyed. Data for the fish habitat assessments were gathered following a modified Hankin-Reeves (1988) stream survey method (USDA 1996). This method was chosen because it identifies and measures key stream characteristics that have been identified as the most critical for defining existing watershed conditions (USDA 1996). These characteristics include: pool frequency, quality, and proportion; amount of woody debris; proportion of fine sediment; bank erosion; entrenchment; sinuosity; width/depth ratio; riparian vegetation species, seral stage, and amount of stream shading; and water temperature. The method meets assumptions for standard statistical analysis, and results are comparable to repeated surveys and surveys of other streams where the same method has been employed. The inventory information can be used to answer many common management questions such as how the stream condition compares to criteria and guidelines that define quality habitat. As part of these studies, stream conditions were compared to criteria and guidelines from the Inland Native Fish Strategy (INFISH), which is current direction for Forest Service and BLM lands located east of the Cascade Crest (USDA 1995), and the ICBEMP standards that were established in the original preferred alternative for the Eastside EIS released in May 1997 (USDA and USDI, 1997). (The Eastside EIS alternatives are currently under revision and this standard is presented here only for informational purposes.)

While there was variation in the scores for each of these parameters in each of the twelve reaches, reach number 2 of the Little Pend Oreille River, which extended from the western boundary of the Refuge to the bridge at Cottonwood Campground, scored below all of the stream condition standards described in INFISH and ICBEMP. This reach coincides with the low gradient alluvial portions of the River found to be in an unsatisfactory condition during the

riparian survey. The substandard condition of this reach is attributed to past logging/clearing of the valley, as well as livestock grazing and deer herbivory. The low percentage of stable banks along reach 2 of the Little Pend Oreille River appeared to be associated with cattle grazing. Cows were present along the stream and there were many areas where their hooves had sheared off the banks. Because of the erosion, banks have down-cut, increasing the entrenchment of the stream and increasing width/depth ratio. Sediment was high in reach 2 and 6 of the LPO River.

Nonnative reed canary grass was present throughout Reach 2. This plant is not as deeply rooted as some native grasses, alders, and willows, thus not as good at stabilizing banks. Reed canary grass tends to establish where native vegetation is disturbed. The upper reaches in the higher gradient and forest areas of the Little Pend Oreille River were in significantly better condition as fish habitat, with livestock grazing, deer herbivory, timber harvest and recreational use all having some limited impact in specific areas along these reaches (Kelly-Ringel 1997).

Five of the six reaches surveyed along Bear Creek and the North Fork of Bear Creek were found to have excessive levels of sediment in stream riffles, and could not meet the INFISH or ICBEMP standard for this parameter. The large percentage of fine substrate is in part a reflection of both local soils, which contain a high percentage of granitic sands, and low stream gradients. There are numerous roads in the watershed. Roads contribute more sediment to streams than any other land management activity (Lee et al. 1997). Other sources of sediment input include livestock grazing, timber harvest and fire. These activities can cause loss of native vegetation, changes in hydrology, and bank instability; all which contribute to sediment input. Although several factors were discussed, the consistent theme in these three riverine reaches were the impacts livestock grazing were having on the stability of streambanks. These reaches coincide with those found to be unsatisfactory during the riparian condition survey.

Based on these two independent habitat surveys, it appears that past and present livestock grazing is having an impact on riparian function and fish habitat, especially in the low gradient alluvial valleys of the Little Pend Oreille River and Bear Creek. This is significant because riparian habitats are preferred by cattle and are grazed at a disproportionately higher intensity (Platts and Nelson 1985 *In* Ohmart 1996). Platts (1990 *In* Ohmart, 1996) concludes that it is extremely doubtful that any grazing can improve riverine-riparian systems or local hydrologic conditions over what nature can do in an ungrazed system.

While there may be disagreement about whether these areas are truly degraded and if that degradation is the result of livestock use, the evidence points to livestock having a negative effect on the condition of these areas. Numerous studies had shown that livestock spend 5-30 times longer in riparian areas than in adjacent uplands because of the lush vegetation, water and shade (Skolvin 1984 *in* Ohmart 1996). Cows concentrating along streams, foraging along the stream banks and crossing the stream cause extensive physical damage to the banks and channel. This, combined with the reduction or removal of sedges, grasses and woody vegetation through grazing and browsing along these banks, results in a degraded stream morphology. As the shape of the stream channel changes, the stream's ability to access its flood plain on a 1-3 year interval

is impaired, diminishing its ability to dissipate its energy during high flow periods as well as recharge ground water. The loss of herbaceous and woody root systems lessens the ability of the bank to hold together and resist erosion, resulting in an increase in the amount of sediment entering the stream.

Another issue is whether livestock grazing has a significant positive impact on either forage quantity or quality for white-tailed deer and other wildlife. One of the early justifications for instituting a grazing program on the LPO NWR was that cattle grazing promoted early green up of grasses in spring and improves forage quality for white-tailed deer. This could be an important consideration especially for deer on winter range since early spring is when deer energy reserves are at their lowest level and it is also when deer diet is heaviest in grasses. Analysis of mule deer diet found that the proportion of the deer's spring diet made up of grasses was more than twice that seen for the other three seasons (Peek and Krausman 1996). The diet of white-tailed deer should be quite similar. Connolly and Wallmo (1981 *in* Teer 1996), discussing the lack of definitive information about the effects of livestock grazing and mule deer and black-tailed deer management stated: Theory abounds, but supportive documentation of effective results is in short supply. Livestock grazing probably is beneficial to deer in some circumstances, but intentional manipulation of livestock to enhance deer range is another matter. In this area much remains to be learned. Teer (1996) believed much the same should be said about the impacts or benefits of livestock grazing on white-tailed deer.

Related to this issue is the potential for competition for food between livestock and big game. Being primarily browsers, deer diets do not significantly overlap that of cattle except during the early spring when deer are trying to recover from their annual low point in energy reserves. This is especially true of females who require increasing amount of food in preparation for fawning. The dietary overlap between cattle and white-tailed deer is generally limited since cattle diets are composed primarily of grasses which deer use sparingly (Teer 1996). Elk show a much greater dietary overlap with cattle than do deer so the competition between cattle and elk for grasses and forbs is more intense year around. However, by about mid summer grass forage becomes scarcer and cattle begin to switch their diet to increasing amounts of browse. This brings them into direct competition with both white-tailed and mule deer, and to lesser extent with elk. Browse is one of the most important food sources for wintering big game with both evergreen and deciduous woody plants comprising more than half the midwinter diet of white-tails in Montana and Idaho (Peek 1984). Since there is a limited amount of grasses available, especially on most of the upland pastures, it is likely that cattle are browsing throughout a large portion of the late summer they spend on these areas. This ultimately reduces that amount of browse available for deer in the winter.

The impact of this browsing by cattle may have negative impacts on other species of wildlife also. In their review of birds and the effects of grazing, Saab et al. (1995) found no studies that specifically evaluated the influence of livestock grazing on neotropical migrants using coniferous forests in the western United States. However, they speculated that birds most likely to be negatively affected by livestock grazing included those species dependant on herbaceous and

shrubby ground cover for nesting and/or foraging. They felt that the reduction in suitable nesting and foraging habitats for ground nesting birds was a likely form of livestock- induced negative impact to migratory land birds within western coniferous forests.

Livestock grazing and browsing can also have a negative effect on ruffed grouse habitat. Ruffed grouse on this part of their range depend very heavily on the flower buds of mature aspens for winter food. Immature aspen as well as other species of woody vegetation are an important fall to spring habitat component providing visual obstruction from predators, especially around drumming sites (Cade and Sousa 1985). This important aspen component, especially the smaller diameter sizes from sprouts to about 4" d.b.h., appears to be in very short supply on the LPO NWR. Observations of aspen groves show a very low rate of reproduction. Almost all of the suckers present have been browsed heavily. While this may be the result of wildlife and domestic livestock browsing as well as other influences, there is little doubt cattle are contributing to the suppression of these stands.

Cattle preferentially graze old homesteads and natural forest openings on both upland and riparian sites. These areas have the greatest potential for expansion and regeneration of aspen and other desirable shade intolerant hardwoods. However, little aspen sprouting is seen in these areas even when parent trees are available for suckering. Sprouts that do appear are being browsed down by livestock and /or deer. These aspen inclusions are valuable habitat for grouse, deer, woodpeckers and other songbirds.

Researchers have detected a significant reduction in small mammal populations in grazed areas when compared to ungrazed. (Fagerstone and Ramey 1996). This is thought to be tied to a loss of cover from cattle foraging resulting in higher predation rates and emigration from grazed areas to ungrazed. In either case, the carrying capacity of the area for small mammals was reduced, which in turn reduces the amount of prey base available to predators such as coyotes, great-horned owls and red-tailed hawks, thereby reducing the areas carrying capacity for these carnivores.

Maintaining a grazing program on the LPO NWR has required the construction of a large number of fences (35 miles of interior fence) throughout the Refuge, especially within the alluvial river bottoms. Many of these fences are in poor condition and are not conducive to deer passage. This, coupled with the fact that most of these fences occur on traditional white-tailed deer winter range, increases their negative impact on deer. In addition, many of these fences are also obstacles to wildlife-dependent and other recreational users such as anglers and horseback riders.

A final concern related to grazing is the impacts brown-headed cowbirds may be having on native bird populations. Brown-headed cowbirds are nest parasites that do not build their own nest but instead lay their eggs in the nests of other passerine birds. The cowbird egg usually hatches earlier than the host eggs. The most likely result of this parasitism is the loss of the host's young. In one study of warbling vireos, 65% of the vireo nest were parasitized by brown

grazing program do not outweigh the negative effects associated with the program. To be used as a secondary objective would require intensive management. Restoration of native forest and riparian ecosystems on Little Pend Oreille NWR may be best achieved without cattle.

Preferred Alternative.

Restoration of native forest and riparian ecosystems on Little Pend Oreille NWR may be best achieved without cattle, however, in altered environments, like old fields where the A soil horizon is gone, livestock grazing may be an effective tool to manage nonnative vegetation. This enables the Refuge to retain grazing as a tool for vegetation management under specific controlled conditions.

Appendix G. Fire Management Plan

LITTLE PEND OREILLE
NATIONAL WILDLIFE REFUGE
FIRE MANAGEMENT PLAN

Note: The Fire Management Plan (90 pages) is not included in this Final EIS. No changes were made to the draft. A copy may be obtained upon request from the Refuge if desired.

Appendix H. Birds, Mammals, Amphibians and Reptiles Observed or Predicted to Occur on the Little Pend Oreille National Wildlife Refuge.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal or State Listing</u>	<u>Source</u>
<i>Birds</i>			
Common Loon	<i>Gavia immer</i>	SMC, SC	2
Western Grebe	<i>Aechmophorus occidentalis</i>	SM	2
Red-necked Grebe	<i>Podiceps grisegena</i>	SM	1
Pied-billed Grebe	<i>Podilymbus podiceps</i>		1
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	SM	2
American Bittern	<i>Botaurus lentiginosus</i>	SMC	2
Great Blue Heron	<i>Ardea herodias</i>		1
Turkey Vulture	<i>Carthartes aura</i>	SM	2
Tundra Swan	<i>Cygnus columbianus</i>		2
Trumpeter Swan	<i>Cygnus buccinator</i>		2
Snow Goose	<i>Chen caerulescens</i>		2
Canada Goose	<i>Branta canadensis</i>		1
American Black Duck	<i>Anas rubripes</i>		2
Mallard	<i>Anas platyrhynchos</i>		1
Gadwall	<i>Anas strepera</i>		2
Green-winged Teal	<i>Anas crecca</i>		2
American Wigeon	<i>Anas americana</i>		2
Northern Pintail	<i>Anas acuta</i>		2
Northern shoveler	<i>Anas clypeata</i>		2
Blue-winged Teal	<i>Anas discors</i>		2
Cinnamon Teal	<i>Anas cyanoptera</i>		2
Ruddy Duck	<i>Oxyura jamaicensis</i>		2
Wood Duck	<i>Aix sponsa</i>		1
Canvasback	<i>Aythya valisineria</i>	PIF	2
Redhead	<i>Aythya americana</i>		2
Ring-necked Duck	<i>Aythya collaris</i>		1
Lesser Scaup	<i>Aythya affinis</i>		2
Harlequin Duck	<i>Histrionicus histrionicus</i>	PIF	2
Oldsquaw	<i>Clangula hyemalis</i>		2
Barrow's Goldeneye	<i>Bucephala islandica</i>	PIF	1
Common Goldeneye	<i>Bucephala clangula</i>		2
Bufflehead	<i>Bucephala albeola</i>		2
Common Merganser	<i>Mergus merganser</i>		1
Red-breasted Merganser	<i>Mergus serrator</i>		2
Hooded Merganser	<i>Lophodytes cucullatus</i>	PIF	1
Osprey	<i>Pandion haliaetus</i>	SM	2

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal or State Listing</u>	<u>Source</u>
Bald Eagle	<i>Haliaeetus leucocephalus</i>	FT, ST	2
Golden Eagle	<i>Aquila chrysaetos</i>	SC	2
Northern Harrier	<i>Circus cyaneus</i>		2
Sharp-shinned Hawk	<i>Accipiter striatus</i>		1
Cooper's Hawk	<i>Accipiter cooperii</i>		2
Northern Goshawk	<i>Accipiter gentilis</i>	FC, SC, SMC	1
Red-tailed Hawk	<i>Buteo jamaicensis</i>		1
Swainson's Hawk	<i>Buteo swainsoni</i>	PIF	2
Rough-legged Hawk	<i>Buteo lagopus</i>		2
American Kestrel	<i>Falco sparverius</i>		1
Merlin	<i>Falco columbarius</i>	SC	1
Peregrine Falcon	<i>Falco peregrinus</i>	FE, SE	2
Gyr Falcon	<i>Falco rusticolus</i>	SM	2
Ruffed Grouse	<i>Bonasa umbellus</i>		1
Spruce Grouse	<i>Falcapennis canadensis</i>		1
Blue Grouse	<i>Dendragapus obscurus</i>	PIF	1
Northern Bobwhite	<i>Colinus virginianus</i>		2
California Quail	<i>Callipepla californica</i>	PIF	2
Gray Partridge	<i>Perdix perdix</i>		2
Ring-necked Pheasant	<i>Phasianus colchicus</i>		2
Wild Turkey	<i>Meleagris gallopavo</i>		1
Virginia Rail	<i>Rallus limicola</i>		2
Sora	<i>Porzana carolina</i>		1
American Coot	<i>Fulica americana</i>		1
Killdeer	<i>Charadrius vociferus</i>		1
Greater Yellowlegs	<i>Tringa melanoleuca</i>		2
Lesser Yellowlegs	<i>Tringa flavipes</i>		2
Spotted Sandpiper	<i>Actitis macularia</i>		1
Wilson's Phalarope	<i>Phalaropus tricolor</i>	PIF	2
Common Snipe	<i>Gallinago gallinago</i>		1
Black Tern	<i>Chlidonias niger</i>	FC, SM	1
Rock Dove	<i>Columba livia</i>		2
Mourning Dove	<i>Zenaida macroura</i>		1
Barn Owl	<i>Tyto alba</i>		2
Short-eared Owl	<i>Asio flammeus</i>	SMC, PIF	2
Long-eared Owl	<i>Asio otus</i>		2
Great Horned Owl	<i>Bubo virginianus</i>		1
Barred Owl	<i>Strix varia</i>		1
Great Gray Owl	<i>Strix nebulosa</i>	SM	2
Western Screech-Owl	<i>Otus kennicottii</i>	PIF	1
Flammulated Owl	<i>Otus flammeolus</i>	SC, PIF	1
Northern Pygmy-Owl	<i>Glaucidium gnoma</i>		1
Northern Saw-whet Owl	<i>Aegolius acadicus</i>		1
Common Poorwill	<i>Phalaenoptilus nuttallii</i>		2
Common Nighthawk	<i>Chordeiles minor</i>		1
Vaux's Swift	<i>Chaetura vauxi</i>	SMC, PIF	1

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal or State Listing</u>	<u>Source</u>
White-throated Swift	<i>Aeronautes saxatalis</i>		2
Black-chinned Hummingbird	<i>Archilochus alexandri</i>	PIF	1
Calliope Hummingbird	<i>Stellula calliope</i>	PIF	1
Rufous Hummingbird	<i>Selasphorus rufus</i>	SMC, PIF	1
Belted Kingfisher	<i>Ceryle alcyon</i>		1
Northern Flicker	<i>Colaptes auratus</i>		1
White-headed Woodpecker	<i>Picoides albolarvatus</i>	SC, PIF	2
Lewis's Woodpecker	<i>Melanerpes lewis</i>	SC, SMC, PIF	2
Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>	PIF	1
Downy Woodpecker	<i>Picoides pubescens</i>		1
Hairy Woodpecker	<i>Picoides villosus</i>		1
Three-toed Woodpecker	<i>Picoides tridactylus</i>	SM	1
Black-backed Woodpecker	<i>Picoides arcticus</i>	SC, PIF	1
Pileated Woodpecker	<i>Dryocopus pileatus</i>	SC	1
Eastern Kingbird	<i>Tyrannus tyrannus</i>		1
Western Kingbird	<i>Tyrannus verticalis</i>		1
Olive-sided Flycatcher	<i>Contopus cooperi</i>	FC, SMC, PIF	1
Western Wood-peewee	<i>Contopus sordidulus</i>		1
Say's Phoebe	<i>Sayornis saya</i>		1
Dusky Flycatcher	<i>Empidonax oberholseri</i>		1
Hammond s Flycatcher	<i>Empidonax hammondii</i>	PIF	1
Willow Flycatcher	<i>Empidonax traillii</i>	PIF	1
Cordilleran Flycatcher	<i>Empidonax occidentalis</i>	PIF	1
Northern Shrike	<i>Lanius excubitor</i>		2
Loggerhead Shrike	<i>Lanius ludovicianus</i>	SC, SMC	2
Cassin s Vireo	<i>Vireo cassini</i>		1
Red-eyed Vireo	<i>Vireo olivaceus</i>		1
Warbling Vireo	<i>Vireo gilvus</i>		1
Steller s Jay	<i>Cyanocitta stelleri</i>		1
Gray Jay	<i>Perisoreus canadensis</i>		1
Clark s Nutcracker	<i>Nucifraga columbiana</i>		1
Black-billed Magpie	<i>Pica pica</i>		1
American Crow	<i>Corvus caurinus</i>		1
Common Raven	<i>Corvus corax</i>		1
Tree Swallow	<i>Tachycineta bicolor</i>		1
Violet-green Swallow	<i>Tachycineta thalassina</i>		1
Purple Martin	<i>Progne subis</i>		2
Bank Swallow	<i>Riparia riparia</i>		1
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>		1
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>		1
Barn Swallow	<i>Hirundo rustica</i>		1
Black-capped Chickadee	<i>Poecile atricapillus</i>		1
Mountain Chickadee	<i>Poecile gambeli</i>		1
Chestnut-backed Chickadee	<i>Poecile rufescens</i>	PIF	1
Boreal Chickadee	<i>Parus hudsonicus</i>	SM	2

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal or State Listing</u>	<u>Source</u>
White-breasted Nuthatch	<i>Sitta carolinensis</i>		1
Red-breasted Nuthatch	<i>Sitta canadensis</i>		1
Pygmy Nuthatch	<i>Sitta pygmaea</i>		1
Brown Creeper	<i>Certhia americana</i>		1
House Wren	<i>Troglodytes aedon</i>		1
Winter Wren	<i>Troglodytes troglodytes</i>		1
Rock Wren	<i>Salpinctes obsoletus</i>		2
American Dipper	<i>Cinclus mexicanus</i>	PIF	1
Golden-crowned Kinglet	<i>Regulus satrapa</i>		1
Ruby-crowned Kinglet	<i>Regulus calendula</i>		1
Western Bluebird	<i>Sialia mexicana</i>	SM, PIF	1
Mountain Bluebird	<i>Sialia currucoides</i>		1
Townsend's Solitaire	<i>Myadestes townsendi</i>		1
Veery	<i>Catharus fuscescens</i>		1
Swainson's Thrush	<i>Catharus ustulatus</i>		1
Hermit Thrush	<i>Catharus guttatus</i>		1
Varied Thrush	<i>Ixoreus naevius</i>	PIF	1
American Robin	<i>Turdus migratorius</i>		1
Gray Catbird	<i>Dumetella carolinensis</i>		1
Bohemian Waxwing	<i>Bombycilla garrulus</i>		2
Cedar Waxwing	<i>Bombycilla cedrorum</i>		1
European Starling	<i>Sturnus vulgaris</i>		1
Orange-crowned Warbler	<i>Vermivora celata</i>		1
Nashville Warbler	<i>Dendroica ruficapilla</i>		1
Yellow-rumped Warbler	<i>Dendroica coronata</i>		1
Black-throated Gray Warbler	<i>Dendroica nigrescens</i>	PIF	2
Townsend's Warbler	<i>Dendroica townsendi</i>	PIF	1
Hermit Warbler	<i>Dendroica occidentalis</i>		2
Yellow Warbler	<i>Dendroica petechia</i>		1
Northern Waterthrush	<i>Seiurus noveboracensis</i>	SM	2
MacGillivray's Warbler	<i>Oporornis tolmiei</i>	PIF	1
Wilson's Warbler	<i>Wilsonia pusilla</i>		1
Ovenbird	<i>Seiurus aurocapillus</i>		2
Common Yellowthroat	<i>Geothlypis trichas</i>		1
American Redstart	<i>Setophaga ruticilla</i>		1
Western Tanager	<i>Piranga ludoviciana</i>		1
Spotted Towhee	<i>Pipilo maculatus</i>		1
Song Sparrow	<i>Melospiza melodia</i>		1
American Tree Sparrow	<i>Spizella arborea</i>		2
Chipping Sparrow	<i>Spizella passerina</i>		1
Vesper Sparrow	<i>Pooecetes gramineus</i>		1
Savannah Sparrow	<i>Passerculus sandwichensis</i>		3
Lincoln s Sparrow	<i>Melospiza lincolnii</i>		3
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>		2
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>		2

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal or State Listing</u>	<u>Source</u>
Fox Sparrow	<i>Passerella ilaca</i>		1
Dark-eyed Junco	<i>Junco hyemalis</i>		1
Snow Bunting	<i>Plectrophenax nivalis</i>		2
Lazuli Bunting	<i>Passerina amoena</i>	PIF	1
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	PIF	1
Western Meadowlark	<i>Sturnella neglecta</i>		1
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>		2
Red-winged Blackbird	<i>Agelaius phoeniceus</i>		1
Rusty Blackbird	<i>Euphagus carolinus</i>		2
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>		1
Brown-headed Cowbird	<i>Molothrus ater</i>		2
Bullock s Oriole	<i>Icterus bullockii</i>		3
Pine Siskin	<i>Carduelis pinus</i>		1
American Goldfinch	<i>Carduelis tristis</i>		1
White-winged Crossbill	<i>Loxia leucoptera</i>		3
Red Crossbill	<i>Loxia curvirostra</i>		1
Pine Grosbeak	<i>Pinicola enucleator</i>		2
Common Redpoll	<i>Carduelis flammea</i>		2
Gray-crowned Rosy Finch	<i>Leucosticte tephrocotis</i>		2
Purple Finch	<i>Carpodacus purpureus</i>		2
Cassin's Finch	<i>Carpodacus cassinii</i>		1
House Finch	<i>Carpodacus mexicanus</i>		1
Evening Grosbeak	<i>Coccothraustes vespertinus</i>		1
House Sparrow	<i>Passer domesticus</i>		3

Amphibians and Reptiles

Tiger Salamander	<i>Ambystoma tigrinum</i>	SM	1
Long-toed Salamander	<i>Ambystoma macrodactylum</i>		1
Western Toad	<i>Bufo boreas</i>		1
Pacific Treefrog	<i>Hyla regilla</i>		1
Columbia Spotted Frog	<i>Rana luteiventris</i>	FC, SC	1
Painted Turtle	<i>Chrysemys picta</i>		2
Northern Alligator Lizard	<i>Elgaria coerulea</i>		3
Western Skink	<i>Eumeces skiltonianus</i>		1
Rubber Boa	<i>Charina bottae</i>		1
Racer	<i>Coluber constrictor</i>		3
Gopher Snake	<i>Pituophis catenifer</i>		1
Western Terrestrial Garter Snake	<i>Thamnophis elegans</i>		1
Common Garter Snake	<i>Thamnophis sirtalis</i>		1
Western Rattlesnake	<i>Crotalus viridis</i>		3

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal or State Listing</u>	<u>Source</u>
<u>Mammals</u>			
Masked Shrew	<i>Sorex cinereus</i>		1
Pygmy Shrew	<i>Sorex hoyi</i>	SC	3
Montane Shrew	<i>Sorex monticolus</i>		1
Water Shrew	<i>Sorex palustris</i>		3
Vagrant Shrew	<i>Sorex vagrans</i>		1
California Myotis	<i>Myotis californicus</i>		3
Long-eared Myotis	<i>Myotis evotis</i>	FC, SM	3
Little Brown Myotis	<i>Myotis lucifugus</i>		3
Long-legged Myotis	<i>Myotis volans</i>	FC, SM	3
Yuma Myotis	<i>Myotis yumanensis</i>	FC	3
Hoary Bat	<i>Lasiurus cinereus</i>		3
Silver-haired Bat	<i>Lasionycteris noctivagans</i>		3
Big Brown Bat	<i>Eptesicus fuscus</i>		3
Townsend s Big-eared Bat	<i>Plecotus townsendii</i>	FC, SC	3
Snowshoe Hare	<i>Lepus americanus</i>		1
Nuttall s Cottontail	<i>Sylvilagus nuttallii</i>		2
Yellow-bellied Marmot	<i>Marmota flaviventris</i>		3
Columbian Ground Squirrel	<i>Spermophilus columbianus</i>		1
Golden-mantled Ground Squirrel	<i>Spermophilus lateralis</i>		3
Yellow-pine Chipmunk	<i>Tamias amoenus</i>		1
Red-tailed Chipmunk	<i>Tamias ruficaudus</i>	SM	3
Red Squirrel	<i>Tamiasciurus hudsonicus</i>		1
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>		1
Beaver	<i>Castor canadensis</i>		1
Northern Pocket Gopher	<i>Thomomys talpoides</i>		1
Bushy-tailed Woodrat	<i>Neotoma cinerea</i>		1
Deer Mouse	<i>Peromyscus maniculatus</i>		1
Gapper s Red-backed Vole	<i>Clethrionomys gapperi</i>		1
Long-tailed Vole	<i>Microtus longicaudus</i>		1
Montane Vole	<i>Microtus montanus</i>		3
Meadow Vole	<i>Microtus pennsylvanicus</i>		1
Richardson s Vole	<i>Microtus richardsoni</i>		3
Muskrat	<i>Ondrata zibethicus</i>		1
Heather Vole	<i>Phenacomys intermedius</i>		3
Northern Bog Lemming	<i>Synaptomys borealis</i>	SM	3
Western Jumping Mouse	<i>Zapus princeps</i>		3
Porcupine	<i>Erethizon dorsatum</i>		1
House Mouse	<i>Mus musculus</i>		1
Coyote	<i>Canis latrans</i>		1
Red Fox	<i>Vulpes vulpes</i>		1
Black Bear	<i>Ursus americanus</i>		1
Raccoon	<i>Procyon lotor</i>		1
Marten	<i>Martes americana</i>		3

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal or State Listing</u>	<u>Source</u>
Fisher	<i>Martes pennanti</i>	FC, SC	3
Ermine	<i>Mustela erminea</i>		3
Long-tailed Weasel	<i>Mustela frenata</i>		1
Mink	<i>Mustela vison</i>		1
Wolverine	<i>Gulo gulo</i>	FC, SM	3
Badger	<i>Taxidea taxus</i>		1
Striped Skunk	<i>Mephitis mephitis</i>		1
River Otter	<i>Lutra canadensis</i>		3
Canada Lynx	<i>Lynx canadensis</i>	FT, ST	3
Bobcat	<i>Lynx rufus</i>		1
Elk	<i>Cervus elaphus</i>		1
Mule Deer	<i>Odocoileus hemionus</i>		1
White-tailed Deer	<i>Odocoileus virginianus</i>		1
Moose	<i>Alces alces</i>		1

Status:

FE	Federally listed endangered species
FT	Federally listed threatened species
FP	Species proposed for federal listing
FC	Species of concern (species that could be proposed or listed in the future)
SE	State listed endangered species
ST	State listed threatened species
SC	State listed candidate species
SM	State listed monitor species
MC	USFWS Region 1 species of management concern (birds only)
PIF	Bird species identified by the Partners in Flight program as being of extremely or moderately high conservation concern.

Source:

- 1 Species both projected by GAP analysis to reproduce on the Little Pend Oreille National Wildlife Refuge (LPO) and have been observed on the LPO.
- 2 Species not projected by GAP analysis to reproduce on the LPO, but have been observed on the refuge. *Not necessarily breeding.*
- 3 Species projected by GAP analysis to breed on the LPO, but have not been observed on the refuge.

Appendix I: Mailing List for the Little Pend Oreille National Wildlife Refuge Planning Process

FEDERAL, STATE, AND LOCAL AGENCIES

Col. Stephen Childers, USAF Survival School
Col. Hoover, Commander, USAF Survival School
Major Wells, Randolph AFB
Major Diane L. Williams, Army National Guard
Liana Aker, Bureau of Land Management
Lake Roosevelt District Ranger, National Park Service
Bob Gillaspay, Natural Resource Conservation Service
Jim Gleaton, Natural Resource Conservation Service
Jayne Hague, U.S. Environmental Protection Agency
Richard B. Parkin, U.S. Environmental Protection Agency
Jay Berube, USFS, Colville National Forest
George Buckingham, USFS, Colville National Forest
Michael Hamilton, USFS, Colville National Forest
Jim McGowan, USFS, Colville National Forest
John Ridlington, USFS, Colville National Forest
Rod Smolden, USFS, Colville National Forest
Supervisor, USFS, Colville National Forest
Meredith Webster, U.S. Forest Service
Tom Weinmann, U.S. Forest Service
USFS, Newport Ranger District
Maggie Arend, USFWS-Refuge Planning, AK
Trish Aspland, U.S. Fish & Wildlife Service
Tom Baca, U.S. Fish & Wildlife Service
CA/NV Refuge Planning Office, USFWS
Helen Clough, USFWS-Refuge Planning, AK
Charles Danner, USFWS-Division of Realty
Aaron Johnson, U.S. Fish & Wildlife Service
Kootenai National Wildlife Refuge
Tom Larson, USFWS-Division of Realty

Mid-Columbia River NWR Complex
Nisqually National Wildlife Refuge
Norm Olson, USFWS-Division of Realty
Ridgefield NWR Complex
Carol Taylor, U.S. Fish & Wildlife Service
Donald Tiller, U.S. Fish & Wildlife Service
Turnbull National Wildlife Refuge
Willapa National Wildlife Refuge
Belinda Worthy, U.S. Fish & Wildlife Service
Phil Moyle, U.S. Geological Survey
Rick Schroeder, U.S. Geological Survey
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Patty Murray, U.S. Senator
Doc Hastings, U.S. Representative
George R. Nethercutt, Jr., U.S. Representative
Gary Locke, Governor
Cathy McMorris, State Representative
Bob Morton, State Senator
Bob Sump, State Representative
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Mayor, City of Colville
Mayor, City of Kettle Falls
Fran Besserman, County Commissioner, Stevens County

Mike Hanson, County Commissioner,
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Joel Jacobsen, County Commissioner,
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Fred Lotze, County Commissioner, Stevens County
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Community Colleges Of Spokane
Delta Gun Shop
Fund for Animals
Kettle Falls Chamber of Commerce
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North Country Coop
Northwest Alloys
Northwest Forestry Association
Refuge Reporter
Seattle Audubon Society
Sierra Club Cascade Chapter
Sierra Club NW Office
Washington Environmental Council
Washington Native Plant Society
Wilderness Society- NW Office

Appendix J: Comments on Draft CCP/EIS and Service Responses

Table of Contents

Introduction	J-3
List of Agencies, Groups and Individuals Who Commented on the Draft CCP/EIS	J-3
Summary of Comments Received on the draft CCP/EIS and the Response Process	J-21
COMMENTS AND SERVICE RESPONSES:	
National Wildlife Refuge System	
Refuge Management Authorities	J-27
Refuge Purpose	J-28
Compatibility Determinations	J-35
Refuge Goals and Objectives	J-40
Planning/NEPA	
Planning/NEPA Process	J-43
Public Involvement	J-47
Data, Edits, and General Document Quality	J-54
Economics	J-58
Costs to Implement Plan	J-61
Wildlife and Habitat Management	
Forest Management	J-62
Air Quality	J-77
Fire Management	J-79
Wildlife	J-80
Streams and Riparian Habitat	J-85
Old Fields	J-87
Wilderness and Roadless Areas	J-88
Noxious Weed Management	J-89
Interior Columbia Basin Ecosystem Management Plan and Use of Historic Range of Variability	J-93
Public Uses	
General Comments	J-95
Snowmobiling	J-97
Camping	J-113

Horseback Riding	J-115
Hunting	J-117
Fishing	J-122
Wildlife Observation, Interpretation, and Photography	J-125
Other Recreational Uses: motorboats, dirt bikes, mountain bikes, and dog sledding.	J-127
Roads and Access	J-128
Other Uses	
Livestock Grazing	J-132
Air Force Survival School Training	J-159
Miscellaneous	J-173

INTRODUCTION

This appendix contains all written and phone call comments that were received in response to the Draft Comprehensive Conservation Plan/Environmental Impact Statement (CCP/EIS) for the Little Pend Oreille National Wildlife Refuge during the official public comment period. Public comments on the Draft CCP/EIS were accepted from May 5 to August 31, 1999.

All comments were organized so that an objective analysis and presentation of the comments could be made. Each letter or verbal comment and the person who made the comment were assigned a correspondence identification number (See List of People Who Commented on the Draft CCP/EIS below).

Specific comments within letters and calls were assigned an issue category, and responded to in the Comments and Service Responses section, beginning on page J-27 of this Appendix. The correspondence identification number, displayed in parentheses () at the end of each specific comment, identifies the person or persons who wrote or verbalized the comment. Most comments were directly quoted. If comments were noted from verbal comments, quotation marks were not used. Enough comments are included to ensure that all concerns, agreements and suggestions were addressed in our response.

In cases where a letter pointed out a minor typographical or editorial error in the Draft EIS/CCP, the change was made in the Final EIS, and no response is included in this section.

LIST OF AGENCIES, GROUPS, AND INDIVIDUALS WHO COMMENTED ON THE DRAFT CCP/EIS

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
1	Anderson	Margaret		Kettle Falls	WA
2	Allgood	Tiffany		Coeur d'Alene	ID
3	Berry	James		Spokane	WA
4	Bennett	Missy		Colville	WA
5	McKee	Wendy		Colville	WA
6	McGee	Lloyd		Colville	WA
7	Francis	Kirk H.		Langley	WA
8	Unknown	female caller		Unknown	Unk
9	Anderson	Joan		Spokane	WA
10	Bates	Robert		Spokane	WA
11	Hebb	David H.		Spokane	WA
12	Fosback	Rod		Colville	WA
13	Houghton	Frank		Cheney	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
14	Berrigan	William C.		Kettle Falls	WA
15	Bushey	Rick		Colville	WA
15	Bushey	Valarie		Colville	WA
16	Lamson	Susan R.	National Rifle Association	Fairfax	VA
16	Poole	William	National Rifle Association	Fairfax	VA
17	Tryon	Don		Colville	WA
18	Findlay	Clayton		Spokane	WA
19	Crabtree	Cindy		Colville	WA
20	King	David W.		Colville	WA
21	Meck	David		Spokane	WA
21	Meck	Judy		Spokane	WA
22	Dixon	Steven L.		Spokane	WA
23	Zender	Steve		Chewelah	WA
24	Smith	Glenn		Pacific	WA
25	Phillips	John C.		Spokane	WA
26	Opsal	Harold A.		Loon Lake	WA
27	Sawyer	Terrence V.		Spokane	WA
28	Rivers	Richard	Spokane Audubon Society	Unknown	WA
29	Unknown	Did not sign		Unknown	Unknown
30	Unknown	Did not sign		Unknown	Unknown
31	Peters	Jack		Cusick	WA
31	Peters	Lorna		Cusick	WA
32	Potter	George	Inland Empire Fly Fishing Club	Spokane	WA
33	McLeod	Dale		Colville	WA
33	McLeod	Jeanette		Colville	WA
34	Larkin	Mike		Medical Lake	WA
35	Rodgers	John		Chewelah	WA
36	Miller	Brian		Unknown	Unknown
37	Rumsey	Steven B.		Colville	WA
37A	Murray	Patty	U.S. Senator	Washington	DC
38	Woodard	Shawn		Spokane	WA
39	Base	Dana L.		Colville	WA
40	Clark	Alpha		Colville	WA
41	Deubel, Sr.	Martin F.		Colville	WA
42	Pitts	Jeff		Colville	WA
43	Kurtak	Daniel C.		Chewelah	WA
44	Fowler	Leroy R.		Airway Heights	WA
45	Schultz	Ed		Colville	WA
46	Sager	Hubert B.	Vaagen Brothers Lumber, Inc.	Colville	WA
47	Rose	Ron	Stevens County Cattlemen's Association	Colville	WA
48	Delsman	Mary		Colville	WA
49	Kruse	Hardy		Spokane	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
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51	Klingbeil	Jean		Spokane	WA
52	Williamson	Maurice		Colville	WA
53	Beamer	George		Veradale	WA
53	Beamer	Lauren		Veradale	WA
54	Vial	Maurice		Spokane	WA
55	Borysewicz	Michael A.		Colville	WA
55A	Tryon	Don		Colville	WA
56	McBlair	Bob		Colville	WA
57	Scheibner	Barbee J.		Spokane	WA
58	Fullerton	Karla Kay	WA Cattlemen's Association	Ellensburg	WA
59	Juite*	Howard		Clayton	WA
60	Ogden	Roy		Colville	WA
60	Ogden	Lindy		Colville	WA
61	McLaughlin	Beverly		Colville	WA
62	Jokela	Brian A.		Deer Park	WA
62	Jokela	Mary S.		Deer Park	WA
63	Thomas	Randall		Spokane	WA
63	Thomas	Mrs.		Spokane	WA
63	Leinen	Jeff		Spokane	WA
63	Leinen	Mrs.		Spokane	WA
63	Farmer	Myshel L.		Spokane	WA
64	Windsor	Thomas	Assoc of Okanogan Co Snow mobile Clubs	Okanogan	WA
65	Hoover	Donald L.	Department of the Air Force	Fairchild AFB	WA
66	Fischer	Gloria		Pullman	WA
67	Riley	Diane	ID Division of Environmental Quality	Boise	ID
68	Durnell	Tim		Rice	WA
69	Schott	Stephen		Kettle Falls	WA
69	Schott	Lynn Rigney		Kettle Falls	WA
70	Wilson	Helen P.		Selah	WA
71	Leland	Ryan		Fall City	WA
72	Little	Charlie		Mountlake Terrace	WA
72	Little	Donna		Mountlake Terrace	WA
72	Little	Dustin		Mountlake Terrace	WA
72	Little	Alicia		Mountlake Terrace	WA
73	Boltz	James R.	WA State Motorsports Dealers Association	Lynnwood	WA
74	Clowser	B.R.		Colville	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
75	Green	Fred E.		Colville	WA
76	Hull	Kenneth R.		Addy	WA
77	Kent	Brad		Othello	WA
78	Philpott	Bill		Colville	WA
79	Hurwitz	Dave		Cle Elum	WA
80	Folger	Sara	Predator Project	Bozeman	MT
81	Anderson	Perry	Colville Chamber of Commerce	Colville	WA
82	Miller	Eric		Kettle Falls	WA
83	Burwell	William	WA State Snowmobile Association	Yakima	WA
84	McCambridge	Nancy		Republic	WA
85	Miller	Eileen		Colville	WA
86	Martineau	David E.		Springdale	WA
87	Ringer	Keith		Colville	WA
88	Morton	Bob	WA State Senate	Olympia	WA
89	Whitney	Chris		Addy	WA
90	Warren	Glenn	WA State Snowmobile Association	Dayton	WA
91	Decker	Paul		Spokane	WA
92	Rose	Carey		Colville	WA
92	Rose	Pam		Colville	WA
92	Rose	Levi		Colville	WA
93	Clark	Jay R.		Coeur d'Alene	ID
94	Nelson	Doug		Priest River	ID
95	Vaughn	Tim		Colville	WA
96	Simpson	Terry		Spokane	WA
96A	writing illegible			Priest River	ID
96B	Clark	Arnold		Colville	WA
96C	Cramer	Allan		Sandpoint	ID
96D	Hoerin*	Kelvin*		Chattaroy	WA
96E	Kingsley	David P.		Sandpoint	ID
97	Kirking	Kerry		Spokane	WA
97A	Gray	Tim	Colville Chamber of Commerce	Colville	WA
98	Kessler	Bruce		Colville	WA
99	Garringer	Dick		Colville	WA
100	Mabbott	Mable		Rainier	WA
101	Volkirch	Audrey		Cle Elum	WA
102	Underwood	Richard A.		Selah	WA
103	Gaines	Herb		Puyallup	WA
104	Tadlock	Lyle R.		Colville	WA
105	Rosse	Jennifer K.		Republic	WA
106	Haywood	Fran		Spokane	WA
107	Cenis	Dan		Spokane	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
108	Watkins	Clint		Spokane	WA
109	Cenis	Joanne		Spokane	WA
110	Lyman	Michael C.		Kettle Falls	WA
111	Alderson	Norman		Selah	WA
112	Wheeler	Janice		Colville	WA
113	Forder	Justin		Colville	WA
114	Lane	Amber		Colville	WA
115	Sager	Marjorie A.		Colville	WA
116	Haberlock	Jeff		Vancouver	WA
116	Haberlock	Michelle		Vancouver	WA
117	Prewitt	Gary		Mead	WA
118	Sidwell	Debra J.		Kelso	WA
119	Gotham	Merle W.		Colville	WA
120	Maddox	Brett		Colville	WA
121	Fogle	Steve		Colville	WA
122	Gotham	Loretta A.		Colville	WA
123	Clark	Ray		Colville	WA
123	Clark	Julie		Colville	WA
124	Bacon	Wade		Kettle Falls	WA
124	Bacon	Becky		Kettle Falls	WA
125	Clark	Gary		Colville	WA
125A	McKnight	Kenneth A.		Spokane	WA
126	LeDoux	Keith		Snohomish	WA
126	LeDoux	Julia		Snohomish	WA
127	Squires	Gary A.		Lynnwood	WA
128	Pieper	Teri		Moses Lake	WA
129	Briggs	Howard	WA State Snowmobile Association	Cle Elum	WA
130	Lambert	Carol		Naches	WA
131	Maxwell	Helen		Yakima	WA
132	Elkins	Richard		Mercer Island	WA
133	Rose	Tom		Malo	WA
133	Oulashin	Melissa		Malo	WA
134	Krohn	Randy		Colville	WA
134	Krohn	Kim		Colville	WA
135	Chapman	Evonne		Spokane	WA
136	Barreca	Joseph		Kettle Falls	WA
137	Petersen	Virginia		Republic	WA
138	Peters	Michael A.		Republic	WA
139	Studebaker	Andy		Keller	WA
140	Larson	Guy		Newport	WA
141	Sorby	Sharon L.		Newport	WA
142	Pierone	Sally		Spokane	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
143	Hawkins	Brian		Spokane	WA
144	Rubinson	David L.		Curlew	WA
145	Detweiler	Mary S.		Curlew	WA
146	Taylor	Aileen A.		Colville	WA
147	First	Betty		Spokane	WA
148	Houff	Patricia		Spokane	WA
149	Lawson	Elim		Colville	WA
150	Campbell	Steve		Northport	WA
152	Douglas	John		Spokane	WA
153	Reichert	Cynthia		Colville	WA
154	Fischer	Gloria J.		Pullman	WA
155	Watters	William A.		Battle Ground	WA
155	Watters	Vivian H.		Battle Ground	WA
156	Andrews	John	WA Department of Fish & Wildlife	Spokane	WA
157	Lynds	Dan A.		Colville	WA
158	Lynds	Dan A.		Colville	WA
159	Duffy	Rosemarie		Spokane	WA
160	McNinch	Lee		Colville	WA
161	Sager	Lana		Colville	WA
162	Sager	Richard L.		Colville	WA
163	Chester	Douglas L.		Colville	WA
164	Meslow	E. Charles	Wildlife Management Institute	Corvallis	OR
165	Harrison	Mark		Colville	WA
166	Jokela	Mary S.		Deer Park	WA
167	Zyskowski	Robert E.		Colville	WA
168	Zyskowski	Robert E.		Colville	WA
169	Caldwell	Nicolette		Elk	WA
170	Cwik	Michael J.		Mead	WA
171	Krohn	Randy		Colville	WA
171	Krohn	Kim		Colville	WA
172	Cummings	Tina		Colville	WA
173	Markie	George		Spokane	WA
174	Vaagen	Duane	Vaagen Brothers Lumber, Inc.	Colville	WA
174A	Sager	Richard L.		Colville	WA
175	Mails*	B.		Unknown	Unknown
176	Hernandez	Pete		Unknown	Unknown
177	Haggin	Bart	The Lands Council	Spokane	WA
178	Derr	Thomas C.		Spokane	WA
179	Jokela	Brian A.		Deer Park	WA
179	Jokela	Mary S.		Deer Park	WA
180	Saari	Dawn		Unknown	Unknown
181	Oberst	Kevin		Spokane	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
182	Vail	Curt		Colville	WA
182	Vail	Pam		Colville	WA
183	Lindholdt	Paul		Cheney	WA
184	Murphy	Patrick M.		Elk	WA
185	Schueler	Ray		Colville	WA
186	Billings	Thomas J.		Unknown	Unknown
187	Ross	Darren		Rice	WA
188	Hirsche	Evan	National Audubon Society	Washington	DC
188	Shultz	Ron	National Audubon Society	Washington	DC
189	Beardslee	Larry D.		Republic	WA
190	Fields	Robert C.	National Wildlife Refuge Association	Beaverton	OR
191	Undsderfer	Robert L.		Renton	WA
192	Nooney	Michael D.		Mercer Island	WA
193	Delgado	Tony		Loon Lake	WA
194	Lawson	Elim		Colville	WA
195	Spidell	Melody Rose		Colville	WA
196	Daley	Earline		Colville	WA
197	McLaughlin	Gary		Spokane	WA
197A	Besserm in	Fran	Stevens County Com missioners	Colville	WA
197A	Lotze	Fred	Stevens County Com missioners	Colville	WA
197A	Strong	Vickie L.	Stevens County Com missioners	Colville	WA
198	Playfair	Bob		Chewelah	WA
199	English	Verne		Snohom ish	WA
199	English	Jayleen		Snohom ish	WA
200	Akland	David J.		Anacortes	WA
201	Kiefer	Joe		Chewelah	WA
202	Garr	Donal		Tum Tum	WA
202	Garr	Shirley		Tum Tum	WA
202	Garr	Duane		Tum Tum	WA
202	Garr	Dovina		Tum Tum	WA
202	Garr	Dawn		Tum Tum	WA
202	Garr	Matt		Tum Tum	WA
203	Schroeder	Rick	U.S. Geological Survey	Fort Collins	CO
204	Rodgers	Sue	Backcountry Horsemen of WA, Inc.	Longview	WA
205	Johnson	Dennis		Puyallup	WA
205	Johnson	Denise		Puyallup	WA
206	Davenport	Luma		Colville	WA
207	Sargent	Gene P.		Spokane	WA
207	Sargent	Helen M.		Spokane	WA
208	Laughli *	Helen G.		Unknown	Unknown
209	Johnson	Rolland B.		Unknown	Unknown
210	Elfers	Greg		Renton	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
211	Vaughn	Tim		Colville	WA
212	Graham	Patrick J.		Colville	WA
213	Gritman	Fred		Dayton	WA
213	Gritman	Bettie		Dayton	WA
214	Carey	Larry R.		Unknown	Unknown
215	Lefcort	Hugh		Spokane	WA
216	Hemken*	Tom		Spokane	WA
217	Martin	Linda		Spokane	WA
217	Noland	Stephen E.		Spokane	WA
218	Fisk	Charles P.		Spokane	WA
219	Johnson	James B.		Unknown	Unknown
220	Knott	Alan		Unknown	Unknown
221	Cook	Adena	Blue Ribbon Coalition, Inc.	Idaho Falls	ID
222	LeRolland *	Bret		Rice	WA
223	Miller	John		Colville	WA
224	Coleman	Tim		Republic	WA
224	Coleman	Sue		Republic	WA
225	McMorris	Cathy	WA House of Representatives	Olympia	WA
226	Coyle	Mike R.		Mead	WA
227	Frederick	Lola K.		Spokane	WA
228	Chapin	Clarence		Colville	WA
229	Chapman	Kathleen		Colville	WA
230	Chapman	Bonnie		Colville	WA
231	Chapman	Bryan		Colville	WA
232	Vaught	Robert L.	Colville National Forest	Colville	WA
233	Stuart	John P.		Newport	WA
234	More	Gary		Republic	WA
235	Richardson	Robin		Spokane	WA
236	Parkin	Richard B.	U.S. Environmental Protection Agency	Seattle	WA
237	Hoover	Becky		Spokane	WA
238	Murphy	Jim	Backcountry Horsemen of WA, Inc.	Port Orchard	WA
239	Hoover	Mr R.D.		Spokane	WA
239	Hoover	Mrs R.D.		Spokane	WA
240	Virnig	Susan		Spokane	WA
241	More	Leslie		Republic	WA
242	Cunningham	Ian		Spokane	WA
243	Andersen	Alan		Colville	WA
243	Andersen	Bonnie		Colville	WA
244	Elkins	Richard		Mercer Island	WA
245	Mohler	Wayne		Issaquah	WA
246	Martin	James A.		Kettle Falls	WA
247	Gillis	Robin		Orient	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
248	Ellis	Carol		Spokane	WA
249	Frobe	Russell R.		Spokane	WA
249	Frobe	Marian E.		Spokane	WA
250	Bouchard	Mike		Colville	WA
250	Hubbard	Sheila		Colville	WA
251	Vaagen	Wayne		Colville	WA
252	Davenport	Earl		Colville	WA
253	Wagner	Lorna		Unknown	WA
254	Davis	Frank		Unknown	Unknown
255	Dobbs	Rebecca		Colville	WA
256	Irving	Michael J.		Valley	WA
257	Smith	Peter J.		Carson City	NV
258	Allen	Elizabeth	Kettle Range Conservation Group	Republic	WA
259	Herschelman	Tom	Superior Wilderness Action Network	Sheboygan Falls	WI
260	Hansen	Ann		Colville	WA
261	Hansen	Roger K.		Colville	WA
262	Watson	Keitlyn		Chewelah	WA
263	Gallatin	Mark		Bellingham	WA
263	Gallatin	Faith		Bellingham	WA
264	Skatrud	Mark		Loomis	WA
264	Skatrud	Julia		Loomis	WA
265	Wooten	George		Winthrop	WA
266	Oberst	Julie A.		Spokane	WA
267	Huey	Michael W.		Spokane	WA
268	Cada	Eugene J.		Kettle Falls	WA
269	Coleman	Tim		Republic	WA
269	Coleman	Sue		Republic	WA
270	Coleman	Susan	Kettle Range Conservation Group Petition	Republic	WA
270	Otto	Steven A.		Curlew	WA
270	Coleman	Tim		Republic	WA
270	McCambridge	Nancy		Republic	WA
270	Dhaenens	Ed		Malo	WA
270	Clark	Jill		Bellingham	WA
270	Leiken	Rachel		Republic	WA
270	Mazzetti	Michael		Tonasket	WA
270	Ives	Cleve O.		Republic	WA
270	Jeziarski	Frank		Republic	WA
270	Reese	Anne		Republic	WA
270	Burone	Tony		Republic	WA
270	McCamey	Mary		Republic	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
270	Gutierrez	Karen		Danville	WA
270	Hageman	John		Curlew	WA
271	Martens	Su		Colville	WA
272	Schlegel	Dennis		Ione	WA
272A	Waltman	James R.	The Wilderness Society	Washington	DC
273	Inman	Brent T.		Colville	WA
274	Inman	Larry R.		Colville	WA
275	Inman	Babby		Colville	WA
276	Cada	Connie V.		Kettle Falls	WA
277	Petersen	Mike	The Lands Council	Spokane	WA
278	Uhden	Sallie		Addy	WA
278	Uhden	Ron R.		Addy	WA
278	Uhden	Jason		Addy	WA
278	Anderson	Paula		Addy	WA
278	McAteer	Maudie		Unknown	Unknown
278	Methan	Asakean		Addy	WA
278	Murray	Michael G.		Addy	WA
278	Lindburg*	Patrick		Addy	WA
278	Scherinlzt	Mark		Kettle Falls	WA
278	Janzen	John		Rice	WA
278	Stembt *	Leonard		Kettle Falls	WA
278	Allan	Kim L.		Chewelah	WA
278	Larsen	John L.		Colville	WA
278	Hook	Paul J.		Deer Park	WA
278	Gates	Steven L.		Colville	WA
278	Blanecs *	Brian		Chewelah	WA
278	Huguenin *	Dennis		Chewelah	WA
278	Shoemaker	David M.		Colville	WA
278	Williamson	David M.		Chewelah	WA
278	Manzinga*	Sherman		Colville	WA
278	Vaagen	Stephen G.		Kettle Falls	WA
278	Nob	Ida		Rice	WA
278	Nob	B.		Colville	WA
278	Baney	Scott		Kettle Falls	WA
278	Keaton	Marion		Colville	WA
278	writing illegible			Kettle Falls	WA
278	Davidson	Tame la		Colville	WA
279	Simeone	Robert A.		Colville	WA
279A	Walker	John		Colville	WA
279A	Walker	Marianne		Colville	WA
280	Walker	Marianne		Colville	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
281	Henry	George		Clayton	WA
282	Ahlenslager	Kathy		Colville	WA
283	Ekstrom	Jennifer		Spokane	WA
284	Ridlington	John	Colville National Forest	Colville	WA
285	Loggers	Chris		Colville	WA
286	Hallanger	Cynthia J.		Colville	WA
287	Rose	Ron	Stevens County Cattlemen's Association	Colville	WA
288	Nethercutt, Jr.	George R.	House of Representatives	Washington	DC
289	Hughson	Robert		Seattle	WA
290	Robinson	Eleanor M.	Kettle Range Conservation Group Petition	Spokane	WA
290	Dolle	Lynne A.		Spokane	WA
290	Detweiler	Mary		Curlew	WA
290	Porter	Genna		Tonasket	WA
290	Sorby	Sharon		Newport	WA
290	Gillespie	Stuart R.		Oroville	WA
290	Baise*	Liz		Seattle	WA
290	Black	Krishna		Seattle	WA
290	Rhegiman*	David		Tonasket	WA
290	McNamane	Jessica		Tonasket	WA
290	Gillespie	Geraldine		Oroville	WA
291	Murray	Patty	U.S. Senator	Washington	DC
292	Nethercutt Petition Signers:			Washington	DC
292	Burret	Charles R.		Chewelah	WA
292	Lundquist	C.		Colville	WA
292	Lundquist	Jenny		Colville	WA
292	Quimby	Jennifer		Colville	WA
292	Bruce	Vickie		Colville	WA
292	Keenan	Mike		Kettle Falls	WA
292	Keenan	Vaughn		Kettle Falls	WA
292	Keenan	Michelle		Kettle Falls	WA
292	Clark	Debbie		Kettle Falls	WA
292	Gray	Leroy		Grand Coulee	WA
292	Crewdian*	Bryan K.		Kettle Falls	WA
292	Keenan	Shawn		Evans	WA
292	Ward	W.		Colville	WA
292	McNorell*	Ian		Kettle Falls	WA
292	Simmsin*	Gary W.		Spokane	WA
292	Barber	Ron		Chattaroy	WA
292	Hansen	Mary		Colville	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
292	Gotham	Deb		Colville	WA
292	Duhu*	Clayon K.		Chewelah	WA
292	Gotham	Bryan		Colville	WA
292	Baker	Barbara		Airway Heights	WA
292	Sell	Shirley		Colville	WA
292	Strickland	Lorraine		Chewelah	WA
292	Snider	T.		Kettle Falls	WA
292	Becker	Peter H.		Colville	WA
292	Whitehead	Penelope J.		Addy	WA
292	Gray	Roberta		Grand Coulee	WA
292	Thayer	Tris		Kettle Falls	WA
292	Olson	Sheri		Colville	WA
292	Clark	Kevin		Colville	WA
292	Covey	Betty		Colville	WA
292	Enright	Carol		Colville	WA
292	Enright	Larry		Colville	WA
292	Ward	Gloria		Colville	WA
292	Tweedy	Rebecca		Colville	WA
292	Salzman	Candy		Colville	WA
292	Pratt	Delores		Northport	WA
292	Solman	Don		Colville	WA
292	Giannecchini	Freddie		Colville	WA
292	Giannecchini	Sandra		Colville	WA
292	Pierpoint	Robert		Colville	WA
292	Floener	Mike		Colville	WA
292	Hirdeman	Kara		Colville	WA
292	Ewalt	Fred		Colville	WA
292	Gormon	Paula		Colville	WA
292	writing illegible	Gordan E.		Colville	WA
292	Martindale	J.C.		Kettle Falls	WA
292	Hamilton	Linda H.		Chattaroy	WA
292	Lundquist	Toni		Addy	WA
292	Brown	M.L.		Colville	WA
292	writing illegible	Becca		Colville	WA
292	LeBret	Cameron		Kettle Falls	WA
292	Lundquist	Lena		Addy	WA
292	Brown	Janet		Colville	WA
292	Seitters	Harrietta		Colville	WA
292	Pagano	Joseph		Colville	WA
292	Baskin	David C.		Colville	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
292	Baskin	Taryn E.		Colville	WA
292	writing illegible	Heidi		Kettle Falls	WA
292	Clark	Jennifer		Addy	WA
292	McKinnery	Curt		Addy	WA
292	McKinnery	Vera		Addy	WA
292	McKinnery	Crystal		Addy	WA
292	McKinnery	Corey		Addy	WA
292	Dale	Theresa M.		St. John	WA
292	Brown	Colt		Colville	WA
292	LeBret	Heather		Kettle Falls	WA
292	Burnett	Darci		Deer Park	WA
292	Baskin	Cynthia		Colville	WA
292	Garretson	Willis		Colville	WA
292	Seitters	Jodi		Colville	WA
292	Brown	Alissa		Colville	WA
292	Murrow	Will		Chewelah	WA
292	Firestone	Boyd		Colville	WA
292	Johnson	Janet		Colville	WA
292	Johnson	Hope		Colville	WA
292	Johnson	Duane		Colville	WA
292	Johnson	Tisha		Colville	WA
292	LeBret	Gig		Kettle Falls	WA
292	writing illegible			Colville	WA
292	George	Tim		Colville	WA
292	Davis	Allen		Colville	WA
292	Weimer	Tony		Colville	WA
292	George	David		Colville	WA
292	Rupert	Wade		Colville	WA
292	Robinson	Dave		Colville	WA
292	McLeod	Dale		Colville	WA
292	Vining	Larry		Colville	WA
292	Harris	George		Kettle Falls	WA
292	George	Twilla		Colville	WA
292	Dubell	Becky		Colville	WA
292	Keith	Jacob		Colville	WA
292	writing illegible	Gary		Kettle Falls	WA
292	Dunn	Todd		Colville	WA
292	Pearson	Larry		Colville	WA
292	Pelissier	Gerald		Colville	WA

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292	Fleming	writing illegible		Colville	WA
292	Rose	Randall		Colville	WA
292	Barnhill	Ronald		Colville	WA
292	Durbin	Buck		Kettle Falls	WA
292	writing illegible	Curtis		Colville	WA
292	writing illegible			Colville	WA
292	Mitchell	Jeff		Colville	WA
292	Buckley	Randy		Colville	WA
292	Miland	Mark		Kettle Falls	WA
292	Lent	Chris		Marcus	WA
292	Grub	Colleen		Kettle Falls	WA
292	Weber	John		Colville	WA
292	Lentz	Brad		Colville	WA
292	Boyd	Bob		Colville	WA
292	Johnson	Derek		Colville	WA
292	Hawkins	Duane		Colville	WA
292	Paulson	Andrew		Colville	WA
292	Ginter	Wallace		Kettle Falls	WA
292	Bingman	Verle		Colville	WA
292	McKern	Rod		Colville	WA
292	West	Steven		Kettle Falls	WA
292	Ghramm	Rick		Kettle Falls	WA
292	Gilmore	Verne		Kettle Falls	WA
292	Brown	David		Boys	WA
292	writing illegible	Steve		Colville	WA
292	Rowland	Marsha		Kettle Falls	WA
292	writing illegible	David		Kettle Falls	WA
292	Rathbun	Kathy		Addy	WA
292	McNeil	Johnny		Evans	WA
292	writing illegible			Kettle Falls	WA
292	writing illegible			Colville	WA
292	writing illegible	Robert		Kettle Falls	WA
292	Anderson	Brian		Chewelah	WA
292	Campbell	Mike		Republic	WA
292	Hull	Crystal		Kettle Falls	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
292	Pooh	Jack		Kettle Falls	WA
292	Lindback	Craig		Colville	WA
292	Carr	James		Colville	WA
292	Henderson	R. Brian		Kettle Falls	WA
292	Borders	illegible		Kettle Falls	WA
292	Lathrop	Alan		Kettle Falls	WA
292	Hodgson	Wesley		Kettle Falls	WA
292	Henderson	Marcus		Kettle Falls	WA
292	Bakken	Dan		Kettle Falls	WA
292	Newby	Al		Colville	WA
292	Hawey	Paul		Kettle Falls	WA
292	Fosback	Rod		Colville	WA
292	Cada	Eugene		Kettle Falls	WA
292	Rouleau	Teresa		Colville	WA
292	Rouleau	Joe		Colville	WA
292	Yokum	Shonda		Colville	WA
292	Yokum	Eulas*		Colville	WA
292	Johnson	Edward		Colville	WA
292	Johnson	Maxine		Colville	WA
292	Kitt	Dale		Colville	WA
292	Cada	Connie		Kettle Falls	WA
292	Rose	Ronald		Colville	WA
292	Morgan	Claude		Spokane	WA
292	Morgan	Louella		Spokane	WA
292	Morgan	Monte		Santa Rosa	CA
292	Dupuis	Rodney		Kettle Falls	WA
292	Sells	Pam		Colville	WA
292	Bechtel	Chris		Addy	WA
292	Yarnell	Angela		Addy	WA
292	Catlow	Theodore		Valley	WA
292	Voile	George		Addy	WA
292	Colvin	Ray		Springdale	WA
292	Yaeger	Roy		Colville	WA
292	Blair	Holly		Colville	WA
292	Hall	Doug		Colville	WA
292	Scholz	Robin		Addy	WA
292	Brown	Wanda		Addy	WA
292	Maresca	Pete		Chewelah	WA
292	writing illegible			Springdale	WA
292	Meals	William		Mead	WA
292	Green	Mike		Spokane	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
292	writing illegible	Jim		Spokane	WA
292	Marshall	Fran		Chewelah	WA
292	Miller, Jr.	Ron		Chewelah	WA
292	Kloster	John		Colville	WA
292	Schrader	Larry		Colville	WA
292	Gotham	Brad		Colville	WA
292	Olson	Glen		Addy	WA
292	Olson	Marilyn		Addy	WA
292	writing illegible	Boyd		Addy	WA
292	Sandow	Marvin		Addy	WA
292	Maute	Cynthia		Addy	WA
292	Harvey*	Ralph		Colville	WA
292	Jemar	Brian		Colville	WA
292	Delgado	E. Anthony		Loon Lake	WA
292	Delgado	Marilyn		Loon Lake	WA
292	Paluck	Marilyn		Loon Lake	WA
292	Paluck	Michael		Loon Lake	WA
292	Larsen	Russell		Colville	WA
292	Schwantz	Timothy		Chewelah	WA
292	Ah	Kenneth		Kettle Falls	WA
292	Grant	Jan		Loon Lake	WA
292	Delgado	writing illegible		Loon Lake	WA
292	Paluck	Jennifer		Loon Lake	WA
292	Bruce	Blake		Colville	WA
292	Kelson	Rich		Colville	WA
292	Hunt	Dave		Colville	WA
292	McNamee	Robert		Northport	WA
292	Peterson	Chris		Colville	WA
292	Maniglis	Tony		Colville	WA
292	Knight	Marlene		Colville	WA
292	Knight	George		Colville	WA
292	writing illegible	Suzi		Colville	WA
292	writing illegible	Arlene		Colville	WA
292	Johnson	Jerald		Colville	WA
292	Johnson	Juetta		Colville	WA
292	Brush	Donald		Kettle Falls	WA
292	Willey	Jewell		Colville	WA
292	Willey	Dale		Colville	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
292	writing illegible	Missy		Dayton	WA
292	Bradeen	Sonny & Laure		Kettle Falls	WA
292	writing illegible			Colville	WA
292	Lindquist	Ernest		Addy	WA
292	Clark	Kathy		Addy	WA
292	Manning	Jack		Colville	WA
292	Buhring	Sonja		Evans	WA
292	Pickett	Mary		Colville	WA
292	writing illegible			Evans	WA
292	Pickett	John		Colville	WA
292	Vining	Teres		Chewelah	WA
292	writing illegible	Mike		Kettle Falls	WA
292	Braun	Shirley		Republic	WA
292	Susemihl	Dave		Unknown	WA
292	Roskam	Vicky		Addy	WA
292	writing illegible	Teresa		Colville	WA
292	writing illegible			Colville	WA
292	Mitzner	Arlene		Chewelah	WA
292	Robinson	Stella		Colville	WA
292	Cornwall	Allen		Hunters	WA
292	Cornwall	Jeanette		Hunters	WA
292	writing illegible	Jacqueline		Chewelah	WA
292	Wiley	Deborah		Kettle Falls	WA
292	Hillbrant	Angela		Kettle Falls	WA
292	Lorentz	Merle		Chewelah	WA
292	Schafer	Gerald		Nine Mile Falls	WA
292	Wick	Pat		Four Lakes	WA
292	Wick	Margie		Four Lakes	WA
292	Rucker	Kelli		Kettle Falls	WA
292	Stafford	Robert		Addy	WA
292	writing illegible			Northport	WA
292	Pennybaker	George		Colville	WA
292	writing illegible			Colville	WA
292	Garrison	Kathi & Paul		Colville	WA

ID #	LAST NAME	FIRST NAME	AFFILIATION	CITY	STATE
292	Martin	Charles		Colville	WA
292	Winnop	Sonny		Colville	WA
292	Dotts	Harry		Colville	WA
292	writing illegible			Addy	WA
292	Nash	Jim		Republic	WA
292	Barton	Clarence		Colville	WA
292	Barton	Lucile		Colville	WA
292	Howes, Sr.	Larry		Colville	WA
292	Howes	Kirrice		Colville	WA
292	Hoverter	Kathryn		Colville	WA
292	Rucker	John		Kettle Falls	WA
292	writing illegible	Melanie		Addy	WA
292	Ott	Kelly		Addy	WA
292	Weber	T.		Colville	WA
	* = Spelling may be incorrect due to illegible handwriting.				

SUMMARY OF COMMENTS RECEIVED ON THE DRAFT CCP/EIS AND THE RESPONSE PROCESS

We received 300 total comments (letter, fax, postcard, email, visit, or telephone call) representing 327 persons during the 116 day comment period. These represented comments from the following locations: 42 % Stevens County (129 comments, 164 people), 24 % Spokane area (73 comments, 85 people), 22 % other parts of Washington (68 comments, 95 people), 6 % out of state (19 comments, 21 persons), and 5 % unknown locations (14 comments, 15 people). Sixty three form letters were represented in these comments. We also received three petitions signed by a total of 318 people.

Affiliations

Comments were received from the following entities:

Government Entities

Federal Agencies: Department of the Air Force, U.S. Geological Survey Biological Resource Division, USDA. Forest Service - Colville National Forest, U.S. Environmental Protection Agency
U.S. Congress: Senator Patty Murray, and Congressman George Nethercutt, Jr.
State Agencies: Idaho Division of Environmental Quality, Washington Department of Fish and Wildlife
State Legislators: Washington State Senator Bob Morton, and Washington State Representative Cathy McMorris
County Government: Stevens County Commissioners

Other Entities

Business: Vaagen Brothers Lumber, Inc., Stevens County Cattlemen s Association, Washington Cattlemen s Association, Colville Chamber of Commerce, Arden Tree Farms
Conservation: National Audubon Society, The Wilderness Society, National Wildlife Refuge Association, Spokane Audubon Society, Predator Project, The Lands Council, Wildlife Management Institute, Kettle Range Conservation Group, Superior Wilderness Action Network
Snowmobile: Association of Okanogan County Snowmobile Clubs, Chewelah Sno-Posse, Washington State Motorsports Dealers Association, Washington State Snowmobile Association, and Blue Ribbon Coalition, Inc.
Other: Backcountry Horsemen of Washington, Inland Empire Fly Fishing Club, National Rifle Association

Petitions

We received two petitions within the comment period and a copy of a petition sent to the Colville Office of Congressman George Nethercutt, Jr. This last petition text is: *We, the undersigned, are concerned that U.S. Fish & Wildlife Service is not taking into account the public comments*

& concerns relating to the economic & historic use our communities will suffer as a result of the Refuge s preferred alternative in their new management plan. Therefore, we the undersigned request the removal of the U.S. Fish & Wildlife Service as the land manager for the Little Pend Oreille Game Refuge. Most of the 265 petition signers are Stevens County residents (252 people), 9 are from the Spokane area, 3 from other parts of eastern Washington, and 1 from California; five petition signers also sent letters.

Another petition with 27 signatures read: We the undersigned oppose the United States Fish and Wildlife Service s intention to close parts of the Little Pend Oreille Fish and Wildlife Refuge for recreational use. As taxpayers who fund this area we choose to use it responsibly and without restrictions. All signers were from Stevens County with one exception from Deer Park.

Another petition with 26 signatures read, in part: We, the undersigned, support Wildlife Refuge Manager Lisa Langelier s decision on the proposed Draft Refuge Plan for the Little Pend Oreille. Collectively, we believe that activities that are incompatible with wildlife needs - either by sound from permitted activities and /or direct or indirect habitat degradation - should be discontinued on the Little Pend Oreille. Petition signers came from the following areas: Ferry County - 20, Pend Oreille County - 1, western Washington - 3, Spokane area - 2.

Alternative Support

We received 178 comments, from a total of 229 people who mentioned alternatives. Those people supporting specific alternatives are summarized as follows:

Alternative A	- 20 % (34 comments, 45 people)	Status quo
Alt. A w/modification	- 1 % (1 comment, 2 people)	
Alternative B	- 9 % (21 comments, 21 people)	Restoration of wildlife habitat & management of existing uses
Alternative C	- 1 % (1 person)	Restoration; emphasizing Refuge System priority uses
Alternative D	- 3 % (4 comments, 6 people)	Reserve strategy, reduce human disturbances
Alternative E	- 58 % (97 comments, 133 people)	Agency preferred; Combined B & C
Alt. E w/modification	- 8 % (17 comments, 19 people)	
No Alt. suitable	- 1 % (3 comments, 3 people)	

National Wildlife Refuge System and Compatibility

Eighty-eight comments specifically mentioned or were related to the National Wildlife Refuge System, its laws, regulations and policy. Comments covering multiple use, historical and people-beneficial uses were included in this category. Some voiced their support for multiple uses; criticized our putting wildlife needs before people; advocated that public lands are for public use; and challenged us to prove that public uses have created problems. A few want the Refuge returned to state management or believe this refuge is not needed. Some advocated that changes were needed to bring this refuge more in line with the National System; those who

opposed the plan had economic interests at stake; or suggested that a strong Refuge System was increasingly important.

Sixty- seven comments mentioned compatibility; 49 of these included form letters/postcards. Commenters sought clarification on the compatibility standard; questioned the status of compatibility policy; questioned the draft compatibility determinations, weighed recreational uses against each other or against habitat management activity; stated that the determinations lacked consistency or appeared biased; and sought the definition of compatible . Several voiced support for phasing out or eliminating incompatible uses.

Planning Process

The Service received 32 comments addressing the planning process, including postponing the plan, step-down plans, public involvement, and lack of data. Many of the comments were negative and critical. Several people read or heard about the Refuge System Improvement Act and felt that the planning process was untimely and should be postponed until we have final compatibility regulations and policy. Others stated that five public meetings were insufficient for the public to understand the importance of this process. Additional public involvement and information was requested so that the public can be adequately involved. A few commenters contended that public comments received were generally ignored. Other planning process concerns included the assertion that the plan lacked scientific data or the science selected was biased or not applicable to the local area.

Economics

Eleven people commented on economics. Most of the comments were of a general nature saying that the Refuge is important to the community. Other comments ranged from opinions that the economic analysis was inadequate to economic analysis should not be necessary.

Forest Management

We received 37 comments related to forest management. These included a range of interests from the age of trees subject to harvest, to fine details about the number of acres calculated for a given forest type or proposed for treatments. There were a few definitions of forest health represented in the comments including: 1) forests with young, vigorous, thrifty trees, evenly spaced and maximizing mean annual growth and 2) forests where all natural processes are functioning from regeneration through natural disturbance through senescence and decadence. Several commenters criticized our initial focus on the dry forests, at the expense of the more common moist forests.

Wildlife

Fifteen comments specifically addressed wildlife concerns. Several people expressed support for the Refuge habitat management objectives and stated that the Refuge should focus on providing habitat for all native species. Others reminded us of the Refuge s traditional emphasis on deer and expressed the desire that the Refuge return to this emphasis. One comment indicated that the winter range provided at the Refuge is crucial for a much larger herd ranging through this area.

Several people stated that it appears we have more wildlife now than ever before. Comments specific to lynx habitat management were raised. One person questioned why the lynx is of concern to the Refuge and another questioned our choice of the twelve indicator species and asked us to link it to more clearly defined criteria.

Noxious Weeds

Of the 20 comments addressing noxious weeds received by the Refuge, several supported the goal and objectives proposed in the draft Comprehensive Conservation Plan. Many of these writers also commented on the threat that noxious weeds and other invasive plants have on wildlife habitats.

Interior Columbia Basin Ecosystem Management Project (ICBEMP) and Use of Historic Range of Variability (HRV)

This topic generated comments from fifteen different writers. The majority of those submitting comments disagreed with the use of ICBEMP science and/or standards or disagreed with the use of the concept of HRV. However, a few people supported the use of the ICBEMP science and the use of HRV.

Public Uses - General Comments

Twenty four comments supplied a variety of comments concerning public uses. Comments included wanting some winter-time wildlife activities, better sanitary facilities, and heavy fines for trashing campsites. Some people expressed the thought that the Refuge should be open to uses other than the priority uses and others wanted uses such as snowmobiling, livestock grazing, survival schooling, and hunting to be prohibited or regulated on the Refuge. Some expressed fear of a lock out, that all or most of the Refuge would be closed, or that only rich people would be allowed access.

Snowmobiling

Snowmobiling access on the refuge generated 181 comments. This issue generated several single issue comments with 50 comments, representing 65 people. Of the 181 total comments received, 77 supported the elimination of snowmobiling from the refuge and one petition with a total of 26 signatures supported the draft plan to end snowmobiling on the refuge.

Those supporting continued snowmobiling totaled 102; 63 comments protested the plan's proposal on snowmobiles and 39 additional comments asked the refuge to keep snowmobiling, but with signing and enforcement to keep riders from venturing off the road. Of these 102 letters, 31 were form letters or included portions of form letters.

The following issues were mentioned: impacts to lynx unsubstantiated or negligible; snowmobiling impacts to other wildlife debatable or negligible; snowmobilers appreciate and enjoy wildlife and could assist with environmental education and interpretation; plan disrupts established recreational use; snowmobiling singled out for unfair treatment; elimination of refuge snowmobiling here will only force it elsewhere; grooming access difficult to obtain; manage

more flexibly and adopt rules rather than a blanket closure; negative effect on regional economy; usage numbers questionable; snowmobiling disturbs wildlife; snowmobiles have no place on a wildlife refuge; and snowmobilers have plenty of other areas to ride.

Camping

Twenty people commented on camping. Their comments included: desire for dispersed and/or designated site camping; support for eliminating or mitigating the effects of dispersed camping in riparian areas; continued or more areas for camping; suggested having a camping permit system or camping fees; allow only primitive, no-trace camping; and relocate camping a suitable distance from lakes to reduce impacts to nesting birds and other wildlife.

Horseback Riding

Twenty-one people specifically commented on horseback riding on the Refuge. Several supported continued or increased equestrian use. Some said that horseback recreational use should be regulated. One person wanted to see the future equestrian plan and wants the CCP to be more up-front on the compatibility requirements for horses, such as removal of animal waste products, and one person was against horseback riding on the refuge.

Hunting

Twenty-four comments pertaining to hunting were received. These included support for hunting or opposition to hunting; opposition to hunting predators; support for increased quality hunting; avoiding negative impacts to other species; allowing only as for population control; fear of hunting being eliminated; and expanded opportunities for hunter education.

Fishing

Nineteen comment letters addressed fishing on the Refuge. These included: support for retaining the current fishing regulations; support or opposition to catch and release fishing on the Little Pend Oreille River; support for opening all the lakes to all angling methods; support for improving natural fish reproduction in the lakes; urged the elimination of fish stocking; suggested we delay the lake fishing season to reduce disturbance to waterfowl or investigate that issue more; provide more fishing access for younger and older anglers; involve more outside conservation groups and, aggressively treat the tench problem in McDowell Lake.

Wildlife Observation, Interpretation, and Photography

Twelve people specifically commented on wildlife observation, interpretation, education, and photography opportunities. Some approved of increasing these opportunities and one person wanted no increase. Others questioned the activity figures, and wildlife viewing and road closures.

Other Recreational Uses

Six comments expressed interest in other recreational uses. These included elimination of gas-powered motor boats on Potter s Pond; a definition of dirt bike ; restriction of mountain bikes to open roads; and continued access for dog sledding.

Roads and Access

Twenty-three members of the public commented on roads and access. The majority of the commenters supported the proposal to reduce road density and reduce access points into the Refuge, and offered additional advice for road management. Some questioned the standards that were adopted for open road density, addressed specific road and access points proposed for closure, addressed the proposal to restrict future road construction within 200 feet of a riparian area, or discussed the needs of people with physical limitations.

Grazing

We received 142 comments (including a petition) referencing the proposed elimination of the current annual grazing program on the Refuge. Ninety of the comments favored removing livestock grazing from the Refuge. Forty-three of these were form letters. A petition, containing a total of 26 signatures, supported the elimination of livestock grazing. Thirty three comments did not support phasing out the annual grazing program. Seven commenters supported the continuation of annual livestock grazing if it incorporated proper management. Finally, 10 commenters voiced concerns that not enough data was available or presented to support the elimination of the annual livestock grazing program.

Air Force Survival School Training

122 comments specifically mentioned the Air Force Survival School or military use of refuge lands. Of these 122 comments, 28 supported continuation of Air Force Survival School training, 84 supported removal of this training from the Refuge, and ten mentioned other concerns related to this training. Other concerns included: further study is necessary; inadequate data; agency is biased on this issue; alternatives for this use are too narrow; support alternative B to reduced training, support reduction, and have not addressed shift of use to other lands.

COMMENTS AND SERVICE RESPONSES

NATIONAL WILDLIFE REFUGE SYSTEM

REFUGE MANAGEMENT AUTHORITIES

Management Authorities

Comment: *Although the U.S. Biological Survey may preliminarily have had the authority to manage the LPONWR at its inception, I have yet to see proof of management authority through agency purpose or regulation. I request such documentation. (288)*

Response: Several laws provide the Fish and Wildlife Service with agency purpose and management authority. These include: Federal Migratory Bird Law of 1913; Migratory Bird Treaty Act of 1918; Federal Bird Conservation Act of 1929; Migratory Bird Hunting Stamp Act of 1934; Reorganization Act of 1939; Fish and Wildlife Act of 1956; National Wildlife Refuge System Administration Act of 1966 (Refuge Administration Act); Refuge Recreation Act of 1962; Endangered Species Act of 1973; the National Wildlife Refuge System Improvement Act of 1997 (Refuge System Improvement Act) which amended the Refuge System Administration Act; and the Refuge Volunteer and Community Partnership Act of 1998.

The legislative history of the Refuge, also provides the U.S. Fish and Wildlife Service with the authority to manage the Little Pend Oreille National Wildlife Refuge. In 1939, the U.S. Biological Survey maintained and operated the National Wildlife Refuge System. On May 2, 1939, Executive Order 8014 transferred lands acquired by the Resettlement Administration to the U.S. Biological Survey to create the Little Pend Oreille Wildlife Refuge. That same year the Reorganization Act transferred all national wildlife refuges within the Agriculture Department's Bureau of the Biological Survey to the Interior Department and renamed the agency the Fish and Wildlife Service. In 1956, Federal refuges were managed under the Interior agency called the Bureau of Sport Fisheries and Wildlife. Finally, in 1974, Congress re-designated Interior's Bureau of Sport Fisheries and Wildlife as the U.S. Fish and Wildlife Service.

Comment: *WCA [Washington Cattlemen's Association] requests that you clearly address and answer each of the following questions in writing before adopting any of the proposed management alternatives for the Little Pend Oreille NWR.*

1. [The first question in this letter and its response are located in the Grazing response section.]
2. *What is the precise policy, rule, regulation or law which authorizes this governmental action?*
3. *What is the precise recognition of the property right in land, water, timber, or mineral or any other owned property estate that is affected?*
4. *What, or which, government entities or level intend to enforce the policy, rule, regulations or law?*
5. *What exactly is the desired result and how will it be measured?*
6. *Where and by what method have the vested owners of the resources been consulted, notified and asked for comment?*

7. *What is the cumulative effect of all policies, rules, regulations and laws affecting peoples rights and the natural resources under consideration? (58)*

Response: See response directly above this for answer to question #2. Grazing policy on refuges is described in the Refuge Manual (6RM9).

3. The property transfer deeds from the previous owners to the Fish and Wildlife Service are not restricted by easements, reservations, or exceptions related to land, water, or timber. The only existing property rights on the Refuge include power line, telephone line, underground pipeline, and road access rights of way and scattered mineral rights on some refuge properties. These existing rights are not affected by the preferred alternative of the CCP.

4. The Fish and Wildlife Service staff at the Little Pend Oreille National Wildlife Refuge will be responsible for implementing the final Comprehensive Conservation Plan and any provisions of policy, rules, regulations, or laws governing management of national wildlife refuges.

5. The desired result depends on habitat objectives and strategies and varies with habitats. As a general rule, the desired result for habitats will be fully functioning riparian and forest ecosystems. Fully functioning riparian and forest ecosystems comes in part from interpreting the Purpose of the Refuge and also from language associated with the Mission of the National Wildlife Refuge System. Refer to Appendix C, E, and F for implementation strategies, monitoring plans (which will include measures for desired results), specific pre and post treatment data collection, and stipulations to insure compatibility.

6. Refer to Chapter 5, Sections 5.1 Public Involvement Summary and 5.2 Consultation and Coordination sections in the CCP/FEIS for this answer.

7. Attempting to assess the cumulative effects of all policies, rules, regulations and laws at the federal, state, and local jurisdictional level is outside the scope of analysis necessary for assessing the environmental effects associated with the various management options presented in the CCP/EIS. We have presented appropriate analyses for the scope of federal actions proposed. Refer to Chapter 4 of the CCP/FEIS for effects analysis.

REFUGE PURPOSE

Purpose of a Refuge

Comment: . . . the National Wildlife Refuge System Improvement Act of 1997 has clear provisions that specifically apply to our lease (e.g., grazing) rights on the LPO:

The Act requires that you Shall identify and describe (a) the purposes of each refuge comprising the planning unit. The documented historical purposes that were given for the administration of this refuge to homesteaders and early users of the LPO lands cannot be ignored and in fact provide a foundation for your purpose. We have a strong vested interest in this part of your plan and insist that it be rewritten to comply with this Act, the 1966 Administration Act, the NEPA

provisions, and the early-day administrative plan that was in effect in 1939 when you assumed your responsibilities.

The Act of 1997 specifically states that if a conflict exists between the purposes of a refuge and the mission of the system, the conflict shall be resolved in a manner that first protects the purposes of a refuge and, to the extent practicable that also achieves the mission of the system. (268)

Response: According to the Refuge System Improvement Act, The terms purposes of the refuge and purposes of each refuge mean the purposes specified in or derived from the law, proclamation, executive order, agreement, public land order, donation document, or administrative memorandum establishing, authorizing, or expanding a refuge, refuge unit, or refuge subunit. Executive Order 8104 (May 2, 1939) established LPONWR and defined the purpose to be . . . as a refuge and breeding ground for migratory birds and other wildlife Lands added after 1939 were acquired under the authority of the Migratory Bird Conservation Act . . . for use as an inviolate sanctuary, for any other management purpose, for migratory birds. Neither of these legal or administrative documents mentions grazing as a purpose.

We have conducted a search of Refuge files, Regional Office files and some homestead records. We requested a search of Washington Office files. We have reviewed deeds for lands acquired through the Resettlement Administration (158 tracts) that subsequently became Refuge lands. We have reviewed files for lands acquired after 1939 (at least 30 tracts) and find no references to grazing in these documents. No easements, reservations, or exceptions show grazing was a deeded right of property transfer. We have been unable to find any documentation that defines grazing as a purpose.

Interpreting the Refuge System Improvement Act

Comments: . . . *the wording of this Act leaves considerable room for interpretation during implementation which often results in disagreements. I believe that is what is happening in this case. This Act requires that the Comprehensive Conservation Plan address significant problems that may adversely affect the populations and habitats of fish, wildlife and plants and the actions necessary to correct or mitigate such problems. Before any of the existing uses by the public are eliminated or significantly reduced, you have a serious obligation to prove that the use or uses have created problem (sic) and threaten the purpose and function of the refuge. I do not believe you have successfully done this*

The Organic Legislation of wildlife refuges passed by Congress two years ago provides for consistent management. It allows for current and historic uses to remain as part of future management strategies. I am deeply concerned that you are ignoring this law and eliminating uses that you believe, but haven't proven scientifically, will negatively impact the refuge. (225 similar in 46)

Response: Most of the proposed changes have been made to insure all refuges uses are compatible with the purpose of the Refuge and Mission of the Refuge System. The compatibility

standard does not require that we independently generate data on which to base compatibility determinations.

In 1978, the compatibility standard was tested in court when recreational uses at Ruby Lake NWR (water skiing and motor boating) were found to be in violation of the Refuge Recreation Act. The court determined that compatibility is a biological standard and cannot be used to balance or weigh economic, political, or recreational interests against the primary purpose of the refuge. This ruling stated that the existence of noncompatible uses on a refuge in the past has no bearing on the compatibility of present uses. In their summary of this case, Coggins et al. (1987) conclude neither poor administration of the Refuge in the past nor prior interferences with its primary purpose, nor past recreational, nor deterioration of its wildlife resources since establishment, nor administrative custom or tradition alters the statutory standard.

If we cannot show a use is compatible with the purposes of the Refuge, we cannot allow the use. Using sound professional judgement based on observations over five years, relevant scientific literature, and understanding of the cumulative effects of uses, we have found several current and historic uses to be incompatible. These include Air Force Survival School training, the annual livestock grazing program, unmanaged camping, motorized boating with gas-powered motors, and snowmobiling. Some of these and other traditional uses like horseback riding, will be allowed with protective stipulations. Others will be phased out or eliminated. Some of these uses effect the integrity of Refuge habitats and ultimately the species the Refuge was established to protect. We are charged with protection of the diverse wildlife of this refuge and the processes that sustain them. Until we address these problem uses, we cannot be effective in our primary task of wildlife and habitat conservation.

We are also responsible for managing Little Pend Oreille Refuge as a unit of the National Wildlife Refuge System. The Organic Legislation reference to consistent management pertains to consistent management of the System, nationwide, refuge to refuge. The decisions contained in this FEIS and CCP are consistent with the Mission of the National Wildlife Refuge System.

Wildlife-dependent Recreational Uses and Executive Order 12996

Comment: *Many of my constituents have written and told me of their experiences on the LPONWR. Horseback riding, snowmobiling, camping, fishing, hiking, and backpacking to name a few, have provided many wildlife viewing and educational opportunities for families, parents, 4-H Clubs, Boys Scouts, and Girl Scouts to teach children the value of and respect for nature first-hand. Please explain how the LPONWR has not considered these activities to be compatible wildlife-dependent recreational uses involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation . . . on the LPONWR as outlined in Executive Order No. 12996. (288)*

Response: Executive Order 12996 and the Refuge System Improvement Act identifies six priority public uses of the National Wildlife Refuge System: hunting, fishing, wildlife observation, photography, environmental education, and interpretation. These uses are dependent on wildlife and, when properly managed, are generally considered to be compatible

uses in the National Wildlife Refuge System. By law, all public uses including the six priority uses require compatibility determinations because all refuges are closed to access and use until specifically opened (Refuge System Administration Act).

The Refuge System Improvement Act and the Executive Order do not specify the methods or modes of transportation potentially associated with each of the priority activities. Observation of wildlife can be defined very broadly if it is by bicycle, horse, canoe, snowmobile, cross-country skis or car. Because these activities are not always dependent on wildlife, they are not considered priority uses. The impacts to wildlife can vary for every public use, thus a compatibility determination is required for each regardless of whether it is a priority use or in support of one of the six priority uses. Priority uses are also given enhanced consideration over other (secondary) uses in planning and management (Refuge System Improvement Act).

Many people using the Little Pend Oreille Refuge have had positive wildlife and educational experiences while fishing, horseback riding, camping, and snowmobiling on the Refuge. The Preferred Alternative in the Final EIS/CCP recommends the continuation of the secondary public uses, horseback riding and camping. These secondary uses are compatible with the additional restrictions (stipulations) identified in the Compatibility Determinations. Snowmobiling has been determined to be not compatible however, continued travel on Olson Creek Road would be allowed to provide the desired access to recreation sites on adjacent State and U.S. Forest Service lands until an alternate trail can be developed.

Regarding family and youth education, the Refuge System Improvement Act requires the Service to provide enhanced opportunities throughout the National Wildlife Refuge System for families to experience compatible-wildlife dependent recreation. The family-oriented experience at Little Pend Oreille related to camping and horseback riding, was identified by the public and considered in the decision to allow those secondary activities. Refuge objectives in the draft CCP/EIS call for the expansion of the environmental education program. Details of how environmental education opportunities will relate to camping, horseback riding, and local youth organizations will be explored and specified in the public use management plan that follows the CCP.

Support for National Wildlife Refuge System Management

Comments: Your job to develop a plan that is in the long term best interest of wildlife, not accommodate interests that existed prior to the Fish and Wildlife Service taking control of the Refuge In order to be successful over the long run, National Wildlife Refuges need to stand out as landscapes where different rules apply and different behavior is expected. The National Parks, National Wilderness Preservation System and Wild and Scenic Rivers have become popular greatly because of defined (as opposed to multiple) use. (17)

We can only image the hostility you re confronted by as you do your job in administering this priceless haven for wildlife. So please know how very much we appreciate your determination, your durability and dedication to the NWR principles. (166)

The National Wildlife Refuge System was set aside as a refuge for the nation's wildlife species. Now as development, agricultural use, and other incompatible uses continue to threaten our remaining native wildlife habitat, a strong National Refuge System is even more important. (105 - 110, 133 - 154, 195, 206, 207, 216 - 218, 222 - 224, 233 - 235, 240 - 242, 247, 248, 250, 277)

Given the history of Little Pend Oreille NWR having been managed by the State of Washington for many years, this plan proposes many changes that bring refuge management more closely in line with traditional NWRs. It is always difficult (sic) to make major changes in an area that has enjoyed great freedom of public use and management activities. The changes proposed in the Plan will, however, serve the refuge well. (190)

. . . strongly supports the Alternative E of the U.S. Fish & Wildlife Service's draft Comprehensive Conservation Plan and Environmental Impact Statement proposal that puts wildlife first in the management of the Little Pend Oreille National Wildlife Refuge (LPOWR). Thank you for implementing and enforcing the compatibility requirements of the National Wildlife System at LPOWR. (277)

. . . I believe your agency has the best information and a mandate for protecting the wildlife and its habitat. Most people who oppose the agency position have their personal motivation and while this is understandable - - it is contrary to the mission of a national wildlife refuge. (286)

I am grateful that the staff of the Little Pend Oreille NWR would like to manage the land in accord with the mission of the National Wildlife Refuge System. The needs of wildlife should be the highest priority for the land you are entrusted with; human uses should be secondary. Like myself, I believe there are many in the local area who do not view your draft EIS as a plan for locking up the refuge as some have vocally maintained. I believe the refuge is managed better now than it ever has been and for that you have my support and thanks. (55)

Response: Comments noted.

Wildlife vs. Human Needs; Multiple Uses

Comments: *The human is not adequately considered in the overall management strategies for the Little Pend Orielle (sic) National Wildlife Refuge. This is illustrated in the Compatibility Determinations in Appendix F. . . . in my judgement, the elimination of U.S. Airforce training; the elimination of snowmobiling on the Olson Creek road; the elimination of the snowpark parking lot; and the elimination of berry picking, mushroom gathering, antler collecting, etc. are examples of proposed actions that do not adequately include the human factor. . . . During this planning process, both the wildlife needs and the human needs should have been equally evaluated. . . . Unfortunately, it appears that whenever any doubt or question existed, wildlife needs were given priority. (174)*

I am a resident of Stevens County. I am concerned that federal land management in Northeast Washington continues, through activities such as you are planning for the Little Pend Oreille Game Range, to exclude historical and people-beneficial uses of federal land. (158, 167)

The needs of fish and wildlife have priority over public use of the refuge. It appears the goal is to exclude people altogether at some point. (252)

I believe in true multiple use of our public lands versus your plan's exclusion of public use for every conceivable reason. I further more do not believe you have adequately stated your case for excluding human (sic) from the refuge. You have made generalized assumptions that are currently invoked by the biosentrist philosophy. (157, 230)

We are very concerned that your CCP and DEIS does not adequately consider people as an equal part of the ecosystem. (46)

In my opinion the L.P.O. Game Range was carefully managed in the past to balance the needs of wildlife with the needs of the community. I would like to see that type of management continued. (160)

Over the past 40 years, the Little P.O Game Range has been a shining example of MULTIPLE USE in action. And it has worked well for all concerned. The TAXPAYER OWNED facility has successfully played host to grazing cattle, campers, fishermen, hunters, nature-lovers, snowmobiler and horseback riders plus our good neighbors of the U.S. Air Force Survival School . . . FOR SHAME! If the Fish & Wildlife Service REALLY managed the Game Range on behalf of the owners (taxpayers), more stewardship of the resources and MULTIPLE Use would be a top priority. NOT LOCK UP!! . . . with the dismal options proposed, I will vigorously oppose any phaseouts and lock-ups, so that my heirs and their heirs may also enjoy OUR Game Range as we have for so many years. I will also encourage others to join me. (41)

BASICALLY WHAT I WOULD LIKE TO INTERJECT INTO THE DIALOG IS THAT THERE IS NO REASON WHAT-SO-EVER THAT 40,000 ACRES OF LAND CANNOT BE MANAGED FOR MULTIPLE USE. RECREATION, GRAZING, TIMBER HARVEST HAVE ALL BEEN PART OF THE REFUGE FOR MANY, MANY YEARS. TO SHUT OFF ANY OR ALL OF THE ABOVE WOULD BE TRAGIC IN LIGHT OF EVER INCREASING REGULATIONS ON PRIVATE AND PUBLIC LANDS. (42)

Public lands should be just that; public lands, to be used by the entire public not a select few. (187)

Response: The CCP proposes to use both logging and grazing as tools to achieve specific habitat objectives and continue most existing compatible recreational activities with stipulations to protect wildlife and habitat.

What distinguishes the National Wildlife Refuge System from other public lands is that they are the only system of Federal lands acquired and managed for the conservation of fish, wildlife, plants, and their habitats. While other federal land systems are managed for multiple uses, Refuge System lands are dominant use lands. Wildlife conservation is the dominant use of refuges and, according to the Refuge System Improvement Act, the needs of wildlife are first and foremost. The National Wildlife Refuge System (NWRS or Refuge System) is a large, widespread, and diverse system of Federal public lands. Unlike other Federal lands that are managed under a multiple-use mandate (e.g., national forests administered by the U.S. Forest Service and public lands administered by the U.S. Bureau of Land Management), units of the Refuge System are managed as primary-use areas. They are managed primarily for the benefit of fish, wildlife, and their habitats.

The U.S. Congress has also declared that the following wildlife-dependent public uses are legitimate and appropriate, priority general public uses of the Refuge System: hunting, fishing, wildlife observation and photography, and environmental education and interpretation. These six uses are to receive enhanced consideration in planning and management over all other general public uses of the Refuge System. When compatible, these wildlife-dependent recreational uses are to be strongly encouraged. Simply put, the NWRS is to be managed first and foremost for wildlife, secondarily for priority public uses, and lastly for other general public uses. The entire public may use the Little Pend Oreille National Wildlife Refuge for authorized activities. This fundamental management guidance can be found in the Refuge System's organic legislation, the National Wildlife Refuge System Administration Act of 1966, as amended (amended most recently by the NWRS Improvement Act of 1997, 16 U.S.C. 668dd).

Comment: *The National Wildlife Refuge System Improvement Act of 1997, under New Statutory Mission Statement, concludes "Restoration of the fish, wildlife and plant resources and their habitats within the United States are to be managed . . . for the benefit of present and future generations of Americans." (252)*

Response: The phrase "for the benefit of present and future generations of Americans" could have many interpretations. We interpret it to mean the protection of wildlife is in the public interest and we are to manage these lands to maintain that interest for future generations of Americans. We are also encouraged to provide people with opportunities to participate in compatible wildlife-dependent recreation on System lands and to learn more about the value of and need for fish and wildlife conservation.

COMPATIBILITY DETERMINATIONS

Compatibility and Definitions

Comment: *The word compatible is not defined clearly. (112, similar comment 114)*

Response: A compatible use is defined by the Improvement Act as one, that in the sound professional judgement of the refuge manager, will not materially interfere with or detract from

fulfillment of the Refuge System Mission or refuge purposes. Compatibility determinations are required for all recreational, economic, or other uses of a Refuge by the public or another entity. See Appendix F in DEIS for additional information about the compatibility standard for the National Wildlife Refuge System.

Comment: *No Refuge use may be allowed unless it is determined to be compatible. A compatible use is a use that, in the sound professional judgement of the refuge manager, will not **materially** interfere with or detract from the fulfillment of the mission of the Refuge System or the purposes of the refuge. We feel the term *materially* needs to be better clarified, particularly in reference to the degree of significance, level of interference or amount of detracting to the refuge. (65)*

Response: A definition of *materially interfere with or detract from* that fits every situation does not exist. *Materially interfere with* is considered a threshold for potential effects on wildlife populations or habitat quality and must be evaluated for each use. If the use does not exceed the threshold, it is considered compatible. A use that has a tangible, lingering or adverse effect on refuge resources will *materially interfere with or detract*. Any activity that alters habitat for endangered species or results in take of an endangered species is considered incompatible. Wildlife disturbance of limited scope or duration may not result in tangible, lingering, or continued adverse effects unless it occurs during critical biological times, in critical locations, or is repeated over time. An activity may not, by itself, result in adverse effects but may, when combined with other existing activities, exceed the compatibility threshold. Examples of uses or activities that exceed the threshold include: dune buggy racing on a beach that harbors an endangered shorebird during nesting season; rock climbing near an active peregrine falcon nest; and water skiing on a refuge lake when the purpose of refuge is waterfowl production.

When there is a conflict between uses, refuge managers must reduce or eliminate the conflict. If this cannot be done, one use must be discontinued. When there are conflicts between priority and non-priority uses, priority uses (hunting, fishing, wildlife viewing, wildlife photography, environmental education, and interpretation) take precedence.

Compatibility Policy Status

Comment: *There seems to be confusion on whether there is an existing compatibility policy. Some information indicates that the Refuge Manual has been revoked. The Draft document states that no Refuge use may be allowed unless it is determined to be compatible. The Draft document states that a new compatibility policy is being developed to support provisions of the National Wildlife Refuge System Improvement Act. Without current policy, Appendix F, Compatibility Determinations, is inappropriate and possibly illegal. The entire planning effort should be withdrawn and deferred until the new compatibility policy has been released. (229, 161, similar comments in 115, 244, 246, 243, 131, 70, 72, 77, 263, 229, 161, 45, 46, 52)*

Response: We received several comments stating that the Refuge Manual and its Compatibility Chapter have been revoked. First, the Service has current official Compatibility policy that will remain in effect until superseded. Second, the source of confusion during the Draft EIS review

was identified as a Service Internet home page <http://www.fws.gov/directives/direct.html> that lists Director s Order No. 42 (D.O. 42) which stated that the Refuge Manual is revoked. During the comment period, the Service s home page did not show Amendment 6, that maintains Refuge Manual policies. Amendment 6 is now displayed on the home page with Directors Order 42. See Appendix F for more information about the compatibility standard and its history.

Comments: *Is not a compatibility analysis of each refuge use a prerequisite to any action? If so, how has the LPONWR justified going forward with its CCEIS when the Secretary, under Public Law 105-57, has yet to determine final regulations establishing the process for compatible refuge uses. (288)*

Response: Yes, a compatibility analysis for public, commercial and special uses is a prerequisite to action. For Little Pend Oreille, compatibility determinations are being prepared using the current guidance provided by the Refuge Administration Act of 1966 and the Compatibility Chapter (5 RM 20), as required by the 1997 Act. The sixteen compatibility determinations have also been prepared simultaneously with the preparation of this Comprehensive Conservation Plan/EIS which is also a requirement of Public Law 105-57.

The Service has not adopted final regulations for compatibility determinations based on the 1997 Refuge System Improvement Act. Proposed regulations and policy were available to the public for review and comment from September 9 through December 9, 1999.

Compatibility Stipulations Misleading

Comments: *Finally, I find the plan misleading to the public and special users. For example, the horse users are given the impression that their use is compatible and will be allowed in the future with the development of an equestrian plan developed with the involvement of the horse users. However, it is not emphasized that the horse users should review the Stipulations to insure compatibility section of the Compatibility Determinations in Appendix F. If the horse users do find this small print, they will quickly find that this future use comes with a very high price tag and that some of the required stipulations may not be acceptable. A required stipulation such as remove animal waste products (which must be met to meet compatibility) would appear likely to make the future equestrian plan less than desirable or even feasible. Another example is found under Stipulations for camping where it states in the step-down public use management plan (this would be developed in 5 years) a camping program that supports the wildlife-dependent uses will be developed. This could result in a very different camping program. Bottom line is that an Environmental Impact Statement and Plan is being developed now that will be used to justify future actions and we don t know what the result of these future actions will be. This is unacceptable. (162)*

Response: Existing compatibility policy (5 RM 20) states that Many uses that appear to be incompatible as originally proposed, may be made compatible through modifications that serve to avoid or minimize anticipated adverse impacts. Protective stipulations . . . should specify the manner in which the use may be performed to ensure compatibility. Stipulations might identify where a use is permitted, the times of year and day during which it could be safely conducted, the

routes or forms of access to be used and any restrictions on the types of equipment to be utilized or number of people involved.

Refuges typically do not allow unrestricted horseback riding and camping. We disagree that modifying an existing uncontrolled camping or horseback riding program is unreasonable. We seek to develop refuge recreational programs that are more protective of wildlife and habitat. We will involve the public in development of the equestrian plan and step-down public use management plan where the details of camping and horseback riding will be described and better defined.

Specifically, the stipulations found in the horseback riding compatibility determination are in part from Low Impact Horse Use Techniques and other similar brochures used to describe appropriate horse management practices on Federal lands and in wilderness areas. The stipulation: Remove animal waste products has been changed in the final to: in concentrated horse use sites such as horse camps and trailheads, remove unused hay and scatter manure piles .

Compatibility of hunting versus snowmobiling

Comments: *Now while were speaking of noise, I heard at one of the meetings that a snowmobile was no more disturbing than a hunter parading through the woods. Obviously the individual who made that statement was not a hunter. (44)*

It is difficult to imagine how hunting can be a compatible use for the benefit of the wildlife in the refuge based on the reasoning applied to snowmobiles. Hunting typically includes the use of vehicles on the roadway to come and go. The critique of snowmobiles is that those vehicles cause stress to the wildlife, but this could not be any greater than a hunter s pickup truck. Further, would not a bullet whizzing by a deer, elk or moose put substantially greater stress on those animals? Yet, hunting is a compatible use. (21)

Response: Hunting is one of the six priority public-uses identified in Executive Order 12296 and the Refuge System Improvement Act. Hunting was recognized by Congress, through the Improvement Act, as a traditional wildlife-dependent recreational use which is a legitimate and appropriate use of the National Wildlife Refuge System. Like all other public uses, hunting has to be determined compatible before it can be allowed on a specific refuge. The other priority public uses include fishing, wildlife viewing, environmental education, interpretation and wildlife photography. Refuge managers are encouraged to provide for these priority uses when compatible with the purposes of the refuge. Snowmobiling is not a priority public use and is a vehicle type that is restricted on refuges nationally. Vehicles manufactured for highway use and travel (including pick up trucks) may operate on designated Refuge roads. See comments and responses under Public Uses, Hunting and Snowmobiling for more discussion about these uses.

Comparing Compatibility of Management Activities and Public Uses

Comment: *It is also difficult to imagine how your plan to set prescribed fires, as promoted at the meeting in Spokane, would constitute a compatible use, again applying the reasoning used in the case of snowmobiles. It seems that burning the animals environment and causing them to*

flee the flames in panic would be more devastating. Worse yet, the prospect of burning the animals alive, one would think, would surely cause distress beyond that of a passing snowmobile. Yet, again, burning is determined a compatible use. We doubt anyone has forgotten the Yellowstone debacle of a few years ago. It seems to us that Mother Nature sets plenty of fires and does not need your help.

You have approved camping, firewood cutting and timber harvest as compatible uses. To us, these are much more destructive to the environment and stressful to its occupants than allowing snowmobiles to drive four miles down a road. (21)

Response: Prescribed fires, timber harvest and to some degree, firewood cutting, are tools to achieve a habitat objective. When used properly, they are timed to minimize disturbance to wildlife. Unlike snowmobiling or camping, they are supportive of the goals and objectives of wildlife conservation. Snowmobiling and camping make no contribution to the primary objectives of a refuge or the objectives of the Refuge System.

While destructive in the short term, post fire studies have shown that the Yellowstone National Park fires also rejuvenated wildlife habitats. They are a prime example of the destruction resulting from almost a century of fire suppression. Land managers are using prescribed fire to manage habitats and reduce the risks of stand replacing fires, like that at Yellowstone.

Comment: *Our main concern is your plan to close four miles of Olson Creek Road to snowmobiling. Apparently the reason for this action is that snowmobiling is an incompatible use with the purposes of the refuge. A thorough reading of Appendix F: Compatibility Determinations , reveals that there are many uses which you have deemed compatible. It is clear that the reasons for compatibility would also apply to snowmobiles. Conversely, the reasons given for the exclusion of snowmobiles are incongruent with these other uses. For instance, the statement applying to mountain biking and jogging: At the existing levels of use, these activities are believed to have minimal impacts. As long as they occur along roads they are not disturbing to refuge inhabitants. They may temporarily displace wildlife but not more than other road uses. Does this not also apply to snowmobiles which are only driving down the road without pause to get from one place to another? (21)*

Response: Snowmobiles are used on roads during a time of year when we propose to close roads to other vehicles. Wildlife response to disturbance is influenced, according to Knight and Cole (1991), by the following factors: type of activity (e.g., motorized versus non-motorized); the timing of the activity - during periods of peak activity or vulnerability (e.g., dawn, winter, breeding season); the spatial context of the disturbance relative to the animal (e.g., is the animal above or below the disturbance), the frequency of the disturbance, the predictability of the disturbance, and the characteristics of the wildlife being studied (including species, group size, age, sex, size, and nutritional status).

Of the more than five hundred refuges in the Refuge System, only 11 refuges outside of Alaska allow snowmobiling. On refuges without right-of-way or other restrictions in the north central

region of the United States, snowmobiling is not allowed for the following reasons: compromises the principle of wildlife first; is an off-road vehicle restricted by refuge regulations; impacts of snowmobiles on wildlife; precludes other uses; safety and liability concerns; enforcement burdens; and the availability of other lands where use is allowed. Mixed ownership along Olson Creek Road and terms of a perpetual road use agreement were factors that were considered in our decision to continue to allow use of Olson Creek Road for traveling to and from Calispell Peak until an alternate route can be found.

Compatibility and Collecting

Comments: *One of the Determinations that caught my attention during review, was for berry picking, mushroom gathering, etc. In this Determination, your document points out that the extent of these uses is unknown and that these uses have minimal impact ; however, they were still found not compatible . (45, similar in 46)*

I believe that regulated recreational collecting of shed antlers for non-commercial purposes is a wholly compatible use of at least certain parts if not the entire refuge. There could be tags , antler limits and collecting seasons (63)

What is wrong with mushroom, berry, or antler gathering? If it impacts the area negatively then education on proper ways to do gathering would make more sense than eliminating them altogether. (39)

The elimination of berry picking and mushrooming tend to put animals before people, and the ability for the average individual to understand how these activities are incompatible is next to impossible in explanation, therefore, leaving the assumption that the Draft CCP/EIS is designed to eventually lock out public uses. (81)

Response: This compatibility determination has been revised in the final document to allow some collecting for personal use. Collecting is restricted by agency regulation (50CFR Ch. 1 subpart E 27.51) which states that collecting plants or animals or their parts on national wildlife refuges is prohibited unless permitted. Incidental collecting will be allowed to continue on the Refuge unless it is found to be compromising to the purposes of the Refuge or negatively affecting Refuge habitats. Collecting antlers will be allowed after April 1.

REFUGE GOALS AND OBJECTIVES

Incorporation of Conservation Language from Improvement Act into Goals

Comments: *The 1997 National Wildlife Refuge System Improvement Act included a number of important provisions that are not referenced in the Plan or reflected in the statement of vision, purpose and goals. Among the most important of these are directives to ensure that the biological integrity, diversity, and environmental health of the refuge are maintained and to inventory and monitor the status and trends of fish, wildlife, and plants on the refuge. These two provisions should be incorporated into the Plan's discussion of the 1997 Act in section 1.9 and into the vision and goals of the refuge in sections 1.10 and 1.11*

The Plan states as Refuge Goal #1 to conserve, enhance, and restore native forest, riparian, in-stream, and wetland habitats representative of the native habitat diversity of northeastern Washington. We find this statement generally sound but believe that the word enhance is misplaced in this context. If the Service can conserve and restore the native habitats of the region, what s more to be done? What needs enhancing? We are not sure how one would literally enhance the native habitat diversity of the region except by intentionally introducing exotic species. We therefore urge the deletion of this word. (272A)

Response: Thank you for your close reading of the Act and of the Plan. We did reference the Act s provision regarding biological integrity and diversity in Section 1.5 of the Draft Plan. In the final, we have also included your suggestion to reference the provision regarding inventory and monitoring in Section 1.5 and in Chapter 3 where the monitoring section is discussed.

We did not, however, choose to modify the vision or the goals of the refuge by incorporating the language of the Act as you suggested. We have rewritten Goal 1 to be *Conserve, enhance and restore native forest, riparian, in-stream, and wetland habitats and their associated fish, wildlife, and plants, representative of the native biological diversity of northeastern Washington*) is the key mechanism by which we will ensure maintenance of the biological integrity, diversity, and environmental health here. It represents a much more specific statement of how we will manage Refuge habitats than if we had simply adopted the language that you suggested from the Act.

We feel that Goal 2 incorporates much of the intent to inventory and monitor the status and trends of fish, wildlife, and plants . The monitoring plan, found in Chapter 3 and Appendix C, go into much more detail of exactly how we will inventory and monitor various groups of species at the refuge. In short, we feel that the CCP implements the intent of the Act with regard to inventory and monitoring of wildlife, fish, and plants. The Fish and Wildlife Population Management Step-down Plan (to be completed by 2005) will provide more detail.

We have chosen to keep the word enhance in Goal 1. The reason is largely to do with the management of some altered habitats on the Refuge -- specifically old fields. The fields were created by early settlers before the area was designated as a National Wildlife Refuge. The fields did not exist prior to settlement. Pre-settlement conditions included occasional openings or gaps in the forest that were created by wildfire, but these generally reverted back to forest within a few years. Many of the fields are now filled with noxious weeds, poor habitat for any native species. We considered the idea of letting all the fields revert to forest under Alternative D. However, a) the fields have cultural value, and b) they are disproportionately used for late winter and early spring forage habitat by white-tailed deer and by several bird species, and finally c) we are not certain native plants would be able to establish and out-compete some of the noxious weeds in every location. Therefore, we have chosen, under the Preferred Alternative E, to maintain some of these in an open habitat condition and even to plant some with perennial or annual crops. This will provide some reliable forage for deer and provide reliable wildlife viewing areas for the public. We realize that this is a slight deviation from Goal Number 1, but it helps us to better accomplish Goals Number 2 and 3.

What is the Long Range Goal?

Comment: *What is the long range goal and is it compatible with other public land use?* (115)

Response: The long range goals of the refuge are described in Chapter 1. There are three specific goals. The objectives and strategies that will be used to implement these goals are described in Chapter 3, and listed again for the Preferred Alternative in Appendix C. The vision statement, also in Chapter 1, is a more wholistic statement of the long-range goal for the Refuge. The Little Pend Oreille National Wildlife Refuge is a part of the National Wildlife Refuge System, and as such, is required to follow the Congressionally approved laws pertaining to the Refuge System. These are not always the same laws governing other public lands (for instance, the Forest Service is subject to the Multiple Use Sustained Yield Act and the National Forest Management Act and we are not. Likewise, we are subject to the National Wildlife Refuge System Improvement Act and the Refuge Administration Act and the Forest Service is not subject to these.) Both agencies are subject to broader mandates such as the Endangered Species Act, the National Environmental Policy Act, and the Clean Water Act.

Active Management May Not Be Necessary

Comment: *Under Goal #1, the Service asserts that Active management to restore and maintain native conditions is desirable. . . . we assume that what the Service finds desirable is the restoration and maintenance of native conditions, not the means to achieve that end (active management .) The Service should not foreclose the possibility that, once native conditions are restored, a lighter management approach such as wilderness designation may be appropriate on large sections of the refuge. For this reason, this phrase should be modified. . . .* (272A)

Response: In the final EIS/CCP we modified the management principle to read: Active and passive management approaches will be used to restore and maintain native conditions. We agree that a variety of approaches ranging from passive to active should be considered. We also agree that the intensity of active management may decrease in time as the refuge moves closer to native conditions. However, this is a fifteen year plan, and active management is one of the key methods we will use to deal with widespread problems that pose high risk to diversity and environmental health. The most pressing problems requiring active management are the needs to deal with overstocked stands and excess fuels and curbing the spread of noxious weeds. Many of the natural forces such as wildfire, that historically occurred will probably not occur at the same frequency and magnitude again. Without these natural forces, ongoing active management to mimic these natural processes at a very small scale will be necessary for the foreseeable future.

Objective Not Attainable If Referenced To Unknown Current Condition

Comment: *. . . the CCP noxious weed objective is to reduce the amount of noxious weed cover on the Refuge by half by the year 2015. Yet the CCP or DEIS does not state the current level of noxious weed infestation or address the rate of spread on the Refuge. How can the CCP reduce noxious weed cover by half when the USFWS does not know how many acres of noxious weeds are on the refuge?* (287)

Response: We appreciate your insight on this issue. We have rewritten the noxious weeds objective to first undertake an inventory of noxious weeds cover on the refuge. We have also rewritten the objective in such a way that it addresses our intent to try to reduce the spread of noxious weeds. Until the inventory s completion, we will keep our objective broad and general and state that we seek to reduce the spread and amount of noxious weeds on the Refuge.

Objectives: Specific and Measurable

Comment: *Several . . . of the objectives contain ambiguous statements and would benefit from additional details. A key to assessing the quality of an objective is to think about how it will be monitored. Monitoring requires something specific to measure, in order to accurately assess progress It would be helpful to clearly define all terms such as stable banks , open stands , scattered mature pine , and diverse natural habitat . . . forest connectivity . . . connection . . . landscape scale . (203)*

Response: Thank you for your comments. We have provided more definitions for several of these terms in the glossary. Others we will define more specifically in the Habitat Management Plan, which will provide more detail on habitat management objectives and strategies to be used on the Refuge.

Objectives and Supporting Science

Comment: *Another concern with several of the objectives is the apparent lack of well documented science to support the objective. The second part of the dry forest objective includes two citations that indicate the source from which the objective was derived. In most others, the scientific support/basis for the objective is not provided. I recommend that the scientific basis for all habitat objectives be documented In cases where there is weak or inadequate data, this can be acknowledged, and provide justification for needed research. Another option is to provide a narrative synthesis of the key information derived from the literature, studies, experts, or on-site data in a separate location in the CCP, or as an Appendix. (203)*

Response: Thank you for your suggestion. We captured much of the background for the objectives, including the current condition, current studies, and agency standards in Chapter 2 (Current Condition). More literature that backs up the objectives are found in the analysis of environmental effects in Chapter 4. However, we have followed your suggestion and added specific supporting references to some of the habitat objectives.

PLANNING/NEPA

PLANNING/NEPA PROCESS

CCP is Incomplete Without Step-down Plans

Comment: *Presently, there are too many gaps in the CCP and DEIS for full public understanding. The "step down" process is only applicable for site specific project planning and not for the development of future major policy or directional documents. We recommend that the Public Use Management Plan, the Wilderness and Special Area Management Plan, the Habitat Management Plan, and the Fish and Wildlife Population Management Plan be completed and*

included in the CCP and DEIS so that the public can understand and comment on the total package being proposed in the new CCP. (52, similar to comment 162)

Response: The CCP is designed to make major programmatic decisions for the Refuge. For Little Pend Oreille, the CCP will decide what programs and uses are compatible with the Refuge and what habitats will receive management priority. Once these major policy and direction decisions are made, then it is appropriate to step-down and provide more detailed plans for individual activities or projects. The compatibility determinations, another key component of the CCP, provide additional stipulations or restrictions for activities to help the reader understand the parameters that will be used in developing the step-down plans such as the public use management plan. We don't agree with the statement that there are too many gaps in the CCP and that the step-down plans need to be completed for full public understanding. See related comments and responses below.

Comment: *Without the Public Use Management Plan, the Wilderness and Special Areas Management Plan, the Habitat Management Plan, and the Fish and Wildlife Population Management Plan, the Draft CCP is incomplete and it does not meet the NEPA requirements for total disclosure of cumulative impacts related to a proposed action. (174)*

Response: We disagree with the commenters' assertion that the cumulative effects analysis is incomplete without the specifics of the step-down plans being known. As stated in Chapter 1 of the EIS, the CCP has been analyzed on a conceptual or programmatic level with specific plans such as the public use management plan and other plans to be tiered from this programmatic document and analyzed when developed at a later date. This approach is consistent with CEQ regulations (40 CFR 1508.28) and other CEQ and Federal Regulations' guidance (48 FR 34263).

Planning Process is Flawed and NEPA Requirements Have Not Been Met

Comment: *In fact, the entire process required before proceeding with final planning is very flawed, but they are continuing with the process anyway. The research data is incomplete. NEPA requirements have not been met, or have been completely ignored. Major recreational uses and public safety issues are not addressed.*

I feel that U.S.F.W. has no choice but to halt this entire process and start over. They need to study winter usage this year (1999-2000 winter), and also study R.V. use year around before continuing on with a compatibility study or final planning. The law requires that public hearings shall be held if there is a substantial change in the usage in this refuge, and the process must be started over to meet this requirement. (272)

Response: The release of the draft CCP/EIS has brought forth additional information related to snowmobiling and other uses from the public. The Service has also gathered additional data and revised the economic analysis with new and more up-to-date visitor use figures. All additional information has been considered in the revision of the Final EIS and Preferred Alternative. It is not unusual for a planning process like this to find new information and continue to gather information during and following a planning process. This doesn't mean that our process is

flawed rather it supports the fact that our public involvement process is doing what it is suppose to do; gather public input. It is our position that all NEPA requirements have been met and major recreational issues have been addressed. There is no law or policy for Refuges outside of Alaska, that requires public hearings. The public meetings and open houses held, are an adequate and acceptable form of public involvement.

Money Controlling the Decision-Making Process

Comment: *I wonder if this is an example of money controlling the decision-making process while pretending to make decisions for the good of the animals. But given the amount of money that the off-road and snowmobile industries hand out to those who control the government s pursestrings, for now I suppose we d best bite our lower lips and carry on. (7)*

Response: The final decisions will be made by the Regional Director of the Fish and Wildlife Service, Anne Badgley. She will sign the Record of Decision based on many factors including the purpose of the Refuge; compatibility analysis; the best available science; public and agency input; and the recommendations of the Refuge Manager. Money does not control the decision-making process.

Kaniksu Unit

Comment: *We don't understand why or how the Kaniksu Unit is a separate but related action. (52)*

Response: The Kaniksu unit is a 716 acre potential addition to the Little Pend Oreille NWR. If acquired and added to the Refuge, this area would be subject to many of the management recommendations provided by the Comprehensive Conservation Plan. A unit plan would be prepare in the future to make management of this area consistent with its purpose, with this CCP and with other factors unique to its acquisition.

Postpone CCP until New Compatibility Direction has Been Issued

Comment: *At this time, I do not feel your document is timely or supportable. I feel further development of the CCP should be delayed until the new National Compatibility Direction has been issued and, more importantly, until the other major directional plans have been completed and considered in this EIS. Frankly, I was surprised that the Improvement Act doesn't require the CCP to be in place until year 2012. Based on the act's requirements, there is adequate time to complete the missing plans, conduct additional public involvement, do further data collection and analysis, and to prepare a more logical and defensible Comprehensive Conservation Plan. (45, similar comments 46, 52, 64, 83, 158, 161, 167, 228, and 268).*

Response: The Refuge System Improvement Act allows until the year 2012 to complete planning for the more than 500 National Wildlife Refuges in the System. The Service s approach nationally, is to complete approximately 25 to 30 plans (for one or more refuge units) nationwide each year as a way of meeting the 15 year goal. Funding and staff limitations prevent concurrent planning for all refuges in the System. Little Pend Oreille was selected as one of the early refuges for planning because it lacked a management plan and a set of compatibility

determinations needed to allow the current uses. The CCP/EIS process was determined to be the best mechanism to involve the public in preparing the plan and compatibility determinations. The Refuge will be in a data collection and step-down planning mode for several years. Making large program related decisions in the CCP (the right components) will enable the public and the Refuge to focus on appropriate activities at the more detailed-management planning level.

Final compatibility regulations and policy being worked on at the national level will not be completed until after the Final CCP/EIS for Little Pend Oreille NWR is released. The new compatibility policy would not affect the decisions made in the CCP for Little Pend Oreille . Until the new regulations are adopted, the Service will use the guidance provided by the Refuge Administration Act of 1966 and the Compatibility Chapter (5 RM 20), as required by the 1997 Act.

Delay or Terminate Plan Because of Inadequate Data

Comment: *Please halt further work on your project until adequate data has been collected to substantiate your assumptions and you have received and adjust for true public comment. Thank you for your attention, I wish to be kept informed as to the progress, hopefully the lack thereof, of the project. (157 similar to comment 112, 115, 158, and 230).*

Response: Releasing the draft plan and its five alternatives is an important step in the public involvement and planning process. The large number of comments received, have given the Refuge manager and the Regional Director sufficient information as to how agencies and interest groups, and the public view the proposals for the Refuge. Since the release of the draft plan, we have continued to collect more information upon which to base the final decisions. New information has been integrated throughout the document. Public input has influenced the changes to the Preferred Alternative.

Data collection will be an ongoing activity for Refuge as indicated in the CCP. Incomplete data and lack of policy are not good reasons to terminate this planning process. Policy and data evolve and frequently change. The CCP is structured to be somewhat flexible so that Refuge staff can adapt or adjust in response to change.

Comment: *Please represent the people fairly without a 'Hidden Agenda' or prejudice position of damaging one's rights to utilize the lands differently from some others who don't partake in the same activity and want it all for only their activity. What happened to fair representation for all the people. As a public official you provide for all activities even though you & others don't participate in those activities. Well, would you like to answer the question? (132)*

Response: As a national wildlife refuge, we can not provide for all activities. We provide for wildlife first, the six priority wildlife-dependent activities and then other compatible activities. There are no hidden agendas. The compatibility process, described in law and in the Plan, is used to determine which activities are compatible and appropriate. In complying with the National Environmental Policy Act, we invite the public to provide input to the decision-making process, however, this law requires the Service to make the final decision.

Stipulations for Activities (camping) in the Compatibility Determination

Comment: *Another example is found under the Stipulations for camping where it states "in the step-down public use management plan (this will be developed in 5 years) a camping program that supports the wildlife dependent uses will be developed. This could result in a very different camping program". Bottom line is that an Environmental Impact Statement and Plan is being developed now that will be used to justify future action and we don't know what the result of these future actions will be. This is unacceptable!* (162)

Response: The stipulations and impacts to resources sections of the compatibility determination statement describes in more detail the criteria for an activity to be compatible with the Refuge. This information will guide the development of the step-down management plans. The stipulations for camping are in response to the negative effects identified in the environmental consequences chapter of this EIS. The basic commitments the Service is making to camping and other activities are also spelled out in these documents. The statement: This could result in a very different camping program, is there to indicate that with the stipulations such as: designated sites for hunters, enforcement, monitoring, education, fees, moving campsites away from streams, site planning, and the use of campground hosts will be different than the camping program in the past.

Viability of Alternative A

Comment: *"Why is option A listed in options as you say by law and your people say at a meeting that it is not an option are you not required to go by the law as we are? So this tells the people that are most affected by your actions that you do not care what their opinion is?"* (279A)

Response: Option or Alternative A is the status quo or existing condition of refuge resources and uses. It is required to be included as an alternative in the environmental impact statement through the National Environmental Policy Act. It is displayed to show the existing situation and to compare the action alternatives to it. It is not considered a viable alternative in itself because it does not meet the purpose and need of the CCP (refer to Chapter 1) and the purpose, goals and objectives of the Refuge. Portions of Alternative A can be desired by the public and recommended for inclusion in one or more of the other action alternatives.

We do care about public opinion, which varies widely. Public opinion is only one of several factors we must consider in managing a refuge. Unfortunately, we cannot please all interests. We are required by law to protect wildlife and habitat, first and foremost.

PUBLIC INVOLVEMENT

Public Comments Have Been Ignored and Public Involvement Has Not Been Adequate

Comment: *It is difficult to understand how the preferred alternative was thus developed since it is basically the preliminary Alt. C (which very few people supported, with or without modification). Only approx. 12 percent of the respondents to the 7/10/98 request for comments favored the original Alt. C. Yet, Alt. E (Agency Preferred) is the same as Alt. C with the following exceptions:*

**eliminates dispersed camping in the 200-foot setback area (old Alt. B) and it doesn't eliminate all camping (old Alt. C).*

**drops the 7/1 fishing season opening in lakes (old Alt. C).*

**allows dispersed camping in designated sites between 10/1 and 12/31 (wasn't in either of the old Alts.)*

**allows development of equestrian plan (old Alt. B) whereas Alt. C eliminated horseback use.*

In summary, it is our conclusion that the public comments received have been generally ignored and that the overall effort in public involvement has not been adequate. (52, similar comments in 115, 174A, and 268)

Response: We believe we have provided extensive public opportunity to be involved in this planning process and public comments have not been ignored. It is important that all substantive comments be given serious consideration. The manner in how substantive comments are incorporated into the plan is guided by Federal laws, regulations and policy.

The four exceptions identified above, were in direct response to public comments received from the preliminary alternatives meetings in July 98. This demonstrates that we have considered and responded to public desires. The preferred alternative allowing horseback riding and camping on a national wildlife refuge is a departure from most refuges in the System. This too is an indication of the influence the public has had on the future management of the Refuge.

Number of Public Meetings

Comment: *There were inadequate public meetings. There were only 5 public meetings held between July 1995 and the issuance of the draft plan. Most of these meetings were held prior to 1999 before the general public understood the importance of the process. (158, similar to 52,167, and 228).*

Response: Five public meetings are typically adequate and more than what usually occurs prior to the release of the draft Plan. In July 1998, the Service held public meetings in Colville and Spokane. These were well publicized meetings that were designed to gather input on a range of preliminary alternatives. With the feedback received, the Planning Team prepared the draft CCP/EIS and the Preferred Alternative. It is not unusual for preparation, internal review and printing of an EIS to take the nine months it took between the July public meetings and the public release of the draft. It is generally not possible to engage the public during the time the document is being prepared for printing because issues, alternatives, objectives and consequences are all linked together. The Service did continue to meet with others late in 1998, including the Air Force, Forest Service, WDFW, and the Klaispel Tribe.

Documentation and Consideration of Comments in Final Decision

Comment: *By the way, do you sincerely want public comment? I noticed no notes being taken during a number of your perfunctory public meetings. Did you hear the Stimson Lumber Co. timber manager state that controlled burns did not make good sense on a property as small as the LPO? Did you hear his comment that old growth timber stands was not synonymous to the large timber environment you are trying to promote? Did you take the letters to the editor in*

consideration during those last few months? Did you include the people who signed a petition saying you were not really interested in their input? A fancy slide show, slick handouts and a career Fish and Wildlife Service facilitator do not build confidence that you really care for public input. (268, similar comment in letter 21)

Response: Yes, we do want public input. Notes are available for most public forums where we have discussed the plan. The exception to this was the May 12, 1999 Colville, WA open house where we attempted to tape record the auditorium portion of the open house, unfortunately, the recording failed. Comments forms were handed out at that meeting and we repeatedly requested that the public submit comments to us in written form during or following the meeting. As a result of public involvement we have received over 300 comment letters on this plan.

Several letters to the editor from the Colville, Washington Statesman Examiner newspapers were sent to the refuge manager as public comments. We are responding to these letters in the final CCP/EIS. The other letters to the editor are part of the planning administrative record. We received copies of three different petitions. All comments will be considered in the final CCP/EIS and record of decision. In addition to public opinion, we must consider that Congress and the American people have directed us to manage LPONWR as a national wildlife refuge.

Public Meeting vs Informational Meetings

Comment: *The U.S.F.W. told us they didn't keep a record or notes of the first two meetings held with the public concerning the refuge studies. This seems extremely unprofessional and reflects an ongoing, unconcerned attitude about public input. I suggest that public, not informational meetings are held, and a recording kept so that our legislators can understand how this agency treats the public. The difference between public meetings and informational meetings is the process of notification and record keeping. (272)*

Response: The CCP meeting held in Colville on May 12, 1999, was structured as an open house format followed by a presentation and opportunity for public questions. Comment sheets were provided and attendees were encouraged throughout the evening to submit their written comments. No written notes were taken by staff because we relied on a tape recording of the auditorium portion of the meeting. Unfortunately, our attempt to tape record the meeting failed. This same meeting format was used in Spokane the following evening with note taking by staff. We will reconsider how future public meetings are conducted and recorded. There is no policy requiring public hearings with a court reporter. For Colville and Spokane we chose a less formal public meeting approach that has worked well in other similar communities.

Notification of Public Meetings

Comment: *We learned of the meetings which you held through Fenton Roskelly's column in the Spokesman-Review. Otherwise, we and many other people would never have known about them. (31)*

Response: Since 1995, we have asked for public input into this planning process. One of several methods has been to work actively with local newspapers to try to get articles written prior to public meetings. We have found this strategy to be effective in getting the word out.

Comment: *I am disappointed that I have not been notified of the limited public meetings and other information concerning the Conservation Plan and the Environmental Impact Statement for this area . . . Who will be actively involved or has been involved in the development of the plan? Basically I do not agree with any of the alternatives. More local public involvement is necessary.*" (115)

Response: As documented in Chapter 5, there have been approximately 27 meetings for the general public, agencies and interest groups related to the draft plan. In addition, five planning updates were mailed out to a mailing list that at the time of the release of the draft, had 500 people on it. Now the mailing list exceeds 900 people. There have been numerous newspaper articles and editorials in local papers and three Federal Register notices. Public involvement and public input has been a major influence on this planning effort and the decisions therein. See related responses below.

Active Involvement and the Plan Work Group

Comment: *The Improvement Act requires that a CCP be in place . . . and that the public have an opportunity for active involvement in plan development and revision. This is a difficult area, but looking at Chapter 5 and my own opportunities for involvement, it is questionable that the public has had an opportunity for "active involvement". It appears that a lot of this effort was designed to be fulfilled by the Plan Work Group convened in 1997. Although this effort looks good on paper, conducting three meetings in 1997, one meeting in 1998, and no meetings since July 1998 makes one question whether this group was effective or whether even they were "actively" involved.* (45)

Response: The Plan Work Group was formed to actively involve a group of people representative of various interests. See Chapter 5. Early in the process, meetings with this group were effective in identifying public and agency issues and concerns. This group also discussed resource evaluation techniques and map development. As this was not a decision-making or even an advisory group, the value of this group waned as the process moved from scoping of issues to management alternatives. Sporadic attendance from many participants also reduced its overall value. With preliminary alternatives we held public open houses. These meetings were designed to allow people, individually or in groups, to actively discuss or provide input into the preliminary alternatives. Active public involvement is an on-going challenge in Federal land planning. We are open to suggestions as to the best ways to involve people in future planning activities at Little Pend Oreille. See related comment below.

Open House Meetings

Comment: *I am not an advocate of the open house format. And last evening reminded me, again, why I rarely attend such meetings anymore. Cadres of special interests dominated discussion at nearly every station. It is increasingly the case that natural resource meetings in*

the west - especially the rural west - are dominated by special interest, hate the government provocateur loudmouths. Sadly, government agents tend to minister to the squeaky wheels in a misguided effort to be "fair", "balanced" or, at least, mollify the discontented. My guess is that most folks are tired of hearing these whiners and avoid meetings where they are subjected to their ballyhoo. (17)

Response: Comment noted.

Comment: *I also attended the public meeting in Colville May 12, 1999 and complement you and the other staff personnel for your presentation of the plans and answers to questions. Obviously the snowmobiling issue and horseback riding dominated the public concern at the meeting. Both those issues are serious but the dominance at the meeting was only because each group organized attendance to show their concerns. In my review of the plan I could see that both of these would be an issue, primarily the snowmobile closure of Olson, since I expected the horsemen would have felt they had been given consideration already. (23)*

Response: Comment noted.

Comment: *I attended your meeting but it seemed like much was decided. (40)*

Response: It is typical for an agency to identify a preferred alternative within a range of alternatives at the time a draft Plan and EIS is released. By this time, several meetings have already taken place, in this case, going back as far as 1995.

Comment: *Generally, the local citizens are looking for flexibility and the ability to negotiate with local Fish and Wildlife staff. This is what local control and input is all about. I support your mission to maintain an effective wildlife refuge, which will attract the public, but any plan needs to be flexible to accommodate local recreational desire. I believe a balance between the two competing interests can be accomplished by a professional staff evaluating these issues as they develop, not by a document that will rule out options. (20)*

Response: We generally agree that a long-range plan needs flexibility. At the Little Pend Oreille Refuge, our studies revealed multiple competing interests often in the same locations. Some of these activities were found to be incompatible with the purposes of the Refuge. The 1997 Refuge System Improvement Act places wildlife first on all national wildlife refuges. With this law, grazing, camping, military training, hunting, horseback riding, cars/roads, and hikers all become secondary to wildlife. The CCP/EIS identifies conflicts and the best management solutions to benefit wildlife. The six priority activities: hunting, fishing, wildlife observation, wildlife photography, environmental education and interpretation are provided for next. These six have preference over other activities such as camping, horseback riding, grazing, and military training. The CCP/EIS lays out this analysis process and when approved, will provide clear management direction that is consistent with all laws, regulations and policies of the National

Wildlife Refuge System. The staff will be in a much better position to evaluate issues as they develop under the guidance of this document.

Want Opportunity to Be More Involved and Informed

Comment: *I do not agree with any of the choices given. I would like to have an opportunity to be more involved and informed on management of the refuge. Please keep me informed. (114, similar to comments 161, 175, and 267)*

Response: There are several ways in which the public will be notified regarding decisions and changes to the Refuge. Comments and responses to the Draft plan will be filed in local libraries and be printed in an Appendix to the Final Environmental Impact Statement (EIS). No permanent changes will occur until a Record of Decision is filed in the Federal Register. A 30 day waiting period is required between the distribution of the Final EIS and the publication of the Record of Decision. A summary of the decisions and changes to the refuge will be described in a planning update that will be distributed to over 900 people on our mailing list. This information will also be provided to local media at the time the Final EIS is released. Over the next five years other planning efforts on refuge step-down plans will take place. The public will be notified of these activities as well. The planning mailing list will be maintained and periodic updates will be sent out in the years ahead.

Attitude of Fish and Wildlife Service Employees

Comment: *The first public discussions were poorly run, and employees of the U.S.F.W. were considered abrasive and rude. I give them credit for making an effort to correct this attitude in a later meeting. The underlying feeling of our community is that these people have a pre-determined use of this refuge, giving no consideration to our community. (272)*

Response: This opinion is not shared by all who attended the first public meetings as evident in letters 17 and 23.

Bias in Decision-Making

Comment: *I have used the Refuge for several years for several recreational purposes and am deeply disturbed by your Draft Plan and find it to be totally unacceptable. As presented, I feel the plan is biased toward preplanned decisions and has not provided adequate support to justify the elimination of these actions in the future. The primary areas that appear to be biased are snowmobile use, Air Force training, grazing, and berry picking/mushroom gathering. (162)*

Response: We are preparing a plan that is consistent with the Refuge System Improvement Act, passed by Congress in 1997. The first priority of the law is wildlife conservation. Second priority are the six activities of the Refuge system (hunting, fishing, wildlife observation, wildlife photography, environmental education and interpretation). The activities: snowmobile use; Air Force training; grazing; and berry picking/mushroom gathering, are not priority activities by law. Support to justify elimination or continuation of all activities is found in Appendix F. No compatibility standards have ever been written for the Refuge. The new compatibility standards

for the above activities propose to modify/restrict snowmobiling and berry picking and eliminate the annual grazing program and use of the Refuge by the Air Force.

Advisory Committee

Comment: *Be original . . . have an advisory commission to the local refuge. People locally. Who are interested in helping. There is a vast resource of local talent knowledgeable about management of timber and wildlife. (212)*

Response: Federal agencies are restricted in use of advisory committees by the Federal Advisory Committee Act of 1972. According to this law, an advisory committee could be established if: 1) there is an essential need for a committee; 2) the committee is terminated when they are no longer carrying out the purposes for which they were established; 3) standards and uniform procedures govern the establishment, operation, administration, and duration of advisory committees; 4) the Congress and the public is kept informed with respect to the number, purpose, membership, activities, and cost of advisory committees; and 5) the function of advisory committees is advisory only, and that all matters under their consideration are determined, in accordance with law, by the official, agency, or officer involved.

We believe that such a committee is not necessary at this time as there are other ways to involve local people in refuge management - a Friends Group, for example.

Petition

Comment: *We the undersigned, are concerned that U.S. Fish and wildlife is not taking into account the public comments & concerns relating to the economic & historic use our communities will suffer as a result of the Refuge s preferred alternative in their new management plan. Therefore, we the undersigned request the removal of the U.S. Fish & Wildlife Service as the land manager to the Little Pend Oreille Game Range. (292)*

Response: We have listened to public input and have made several changes to the CCP/EIS as a result of that input. For example, in 1998, we asked for comments on five preliminary alternatives for managing the Refuge. As a result of the feedback we received in 1998, our Draft CCP/EIS preferred alternative included historic uses such as camping and horseback riding. The economic analysis included in the Draft and Final EIS, also describes the economic effects of the plan on Stevens County. We have revised this analysis and encourage people to reread the economic effects sections.

Our decisions must be based on several factors in addition to public input. These include: the mission of the National Wildlife Refuge System; Refuge purposes, goals and objectives; the National Wildlife System Improvement Act of 1997; compatibility of a specific use with Refuge purposes; positive versus negative impacts on fish, wildlife, and plants; and financial cost of administering the use. We manage national wildlife refuges with the best available science under legal and policy guidance. We invite people, especially those who signed this petition to take the time to learn firsthand about the Refuge, the planning process and the changes to the document as a result of public input.

Neighbors

Comments: The caller felt that there is a lot of animosity and lack of connection between refuge staff and neighbors. The person felt that the staff is against neighbors versus being friends and neighbors; the staff forgets the human element. Examples include neighbors being stopped on ATVs; concern from neighbors who are dog sledders; and neighbors denied firewood collecting. The caller felt that neighbors have less impact on refuge than law breakers and is afraid to use refuge now due to law breakers. The person supports getting rid of problem users; feels that because of law breakers the rest have to suffer, and hopes to be our friends and getting rid of animosity. (196)

Why should people namely your neighbors care about the game range when they will no longer be allowed access that has been traditional since the game range was started. (279A)

Response: The draft plan proposes several changes to traditional use to bring the Refuge more in line with national wildlife refuge laws and policy. Recently, we started to enforce an existing regulation related to off-road vehicles. Street legal vehicles may be used on open refuge roads. Off-road vehicle use, including all terrain vehicles, dirt bikes, and snowmobiles, is prohibited on national wildlife refuges (Title 50) unless allowed through signing or special use permit. All refuge users, including neighbors, will be treated fairly but equally. When firewood permits are available on the Refuge we notify the local media outlets so all interested parties have equal access. Neighbors may have had special privileges in the past but are expected to abide by all Refuge regulations.

We regret that law breakers may limit use of the Refuge by some neighbors. We currently have a seasonal law enforcement park ranger who attempts to monitor all public uses on the refuge and minimize violations. Neighbors are not being singled out in any way and have not received any violation notices.

Proposals Based on Personal Preference Rather Than Scientific Data

Comment: *I am aware of most of the proposals for the future management of the Pend Oreille Range and feel that they are based on personal preference rather than scientific data. (99)*

Response: The Service considers many factors in addition to scientific data in its decision-making. These factors include: Refuge purposes; habitat objectives; public comments; habitat evaluation results; professional/peer review recommendations; habitat assessment results; the National Wildlife System Improvement Act of 1997; compatibility, Refuge System mission; positive versus negative impacts on fish, wildlife, and plants; financial cost of administering the program; and other factors. Interpreting and applying the above is professional judgement. To some this may appear as personal preference .

DATA, EDITS, AND GENERAL DOCUMENT QUALITY

Adequacy of Data Supporting Conclusions, Assumptions and Planned Actions

Comment: *I feel inadequate data was used for the conclusions drawn with regard to items such as exclusion of grazing, snowmobile use and Air Force. (158, similar to comments 174, 179)*

Response: The Service believes it has adequate data supporting the decisions in the CCP/FEIS. This data is documented in the Plan itself, the administrative record, and in Refuge files. Appendix B identifies over 100 sources used in the planning effort. These include literature citations for studies on and off refuge, relevant documents produced by other agencies, personal communications and historical documents produced by refuge staff over the life of the refuge. Also see related responses below.

Local Data vs. References to Off-Refuge Studies

Comment: *Proposed actions must be supported by local data or science that is applicable to the local area. (229, Similar to comment 174a, 179, and 245)*

Response: Law or policy does not require the Service to generate new site-specific data as indicated by this quote from a 1997 Congressional Report: *The Refuge System Improvement Act does not require the Secretary (of Interior/Refuge Manager) to independently generate data on which to base compatibility determinations. For new compatibility determinations, the USFWS shall consider any existing information and data generated by any other State or Federal agency or any other source of relevant data* (House of Representatives, Report on the National Wildlife Refuge System Improvement Act of 1997). The decisions in this CCP/EIS are based on a combination of site-specific data and over one hundred other relevant studies or sources applicable to management issues and the resources at the Little Pend Oreille NWR. Also see related comment and response below.

Comment: *However, the USFWS has had on site management for only the six of the last 34 years and over those six years has collected little in terms of resource analysis and inventory data necessary to complete a competent DEIS or CCP. (287)*

Response: In the past six years, the Service has initiated several studies and data collection efforts specific to the refuge. These include a cultural resources overview, two fish habitat assessments, a riparian evaluation, bird surveys, breeding bird survey, vegetation monitoring, photo point establishment, GAP vegetation study and mapping, camping survey, fish harvest reports, wing surveys for grouse, facility evaluations, grazing review, grazing study; and a Geographic information mapping system (GIS) with over 50 maps. Information from all of these refuge-specific studies has been used in the preparation of this EIS and CCP.

Adequacy of Inventory and Monitoring Data on Health and Trends of Wildlife Populations

Comments: *Also, there doesn't seem to be much information on the overall health and trends of wildlife populations on the refuge over the past sixty years. An investigation as to what may have*

caused any increases or decreases would lend credibility to the study and to the recommendations, if they were soundly based. (245)

The National Wildlife Refuge System Improvement Act of 1997 directs the Secretary of the Interior to "monitor the status and trends of fish, wildlife, and plants on each national wildlife refuge. The Plan acknowledges that very little inventory or monitoring has been done on refuge fish and wildlife. For example, the Plan indicates that little information exists about birds in the moist forest (page 2-34), birds in the cold forest (p. 2-35), deer (p. 2-63), large mammals in general (p. 2-37), amphibians, reptiles, or invertebrates (p. 2-41). The Little Pend Oreille refuge plan should provide a detailed plan on how the refuge will address this shortcoming and implement the inventory and monitoring requirement of the 1997 Refuge Act. The Plan must also include more detail about how the refuge will inventory and monitor the status and trends of fish, wildlife, and plants. (272A)

Response: We recognize that there is a lack of inventory and monitoring data on overall health and trends of wildlife populations on the Refuge. Since 1994, when the U. S. Fish and Wildlife resumed on-site management, several studies were conducted as indicated to response 287. Some were baseline, one time studies useful in indicating current condition of habitat or the presence of a species. Other studies contribute to regional and national monitoring such as the breeding bird survey. Refuge trend data is harder to obtain and sustain. The Refuge has started some of these long term trend studies and is requesting additional funding for designing and implementing an inventory and monitoring plan in the CCP.

The CCP has an inventory and monitoring section in the Implementation Chapter (Appendix C of the CCP/EIS). A more detailed inventory and monitoring strategy will be prepared as part of the Fish and Wildlife Population Management Plan and Habitat Management Plan. These step-down plans will be prepared by 2005.

Document is Overwhelming and Not Easily Understood

Comment: *The document is not easily understood by the general public as per NEPA policy. I cannot determine what the effect of the plan will be on the ecosystem or my local community (economically) due to the use of unfamiliar and vague terminology and concepts. (158, similar to comment 174A and 203)*

Response: The document does present a lot of information some of which may be technical or unfamiliar to the general public. This is due in part to the complexity of managing federal lands; the evolving art and science of conservation planning; and the alternatives and analysis required by NEPA. The document follows a standard NEPA format with alternatives analysis based on public issues and concerns. The glossary is an important appendix which defines those terms and concepts that are less familiar. It is not unusual for a reader to flip back and forth when reading a document like this. In the final EIS, we have expanded the Glossary and edited the document to help the reader. In addition, following the publication of the Record of Decision, the Conservation Plan portion of the document will be separated from the EIS. This will help those who will reference the plan in the future.

The Draft Does a Good Job Presenting Valuable Information

Comment: *Thank you for the opportunity to be involved from the beginning in the development of the Little Pend Oreille National Wildlife Refuge s Draft Comprehensive Conservation Plan (CCP) and Environmental Impact Statement (EIS). The Draft does a good job of providing available information, public input and a discussion of the alternatives. (156, similar to 272A).*

Response: Comments noted.

Specific Editorial Comments

Comment: *Page titled Facts About the Little Pend Oreille National Wildlife Refuge The next to the last sentence in the second paragraph under wildlife states The presence of fisher, marten, wolverine, and gray wolf is unknown . This seems to contradict the earlier statement which implied that fisher were known to occur on the refuge. (36)*

Response: We Agree. The presence of fisher on the Refuge is not known. We deleted the reference to fisher in the first paragraph.

Comment: *Forest Products economics (page S-32) Under Alternative A, 50-250 thousand board feet (MBF) would be harvested annually . . . I thought MBF meant million board feet. What was your intent? (36)*

Response: MBF is the abbreviation for 1000 board feet. This is found in the Glossary of the draft plan under Board Foot. We added MBF to the final Glossary under abbreviations.

Comment: *Within the 1930 Executive Order boundaries of the refuge are approximately 10,000 acres of in-holdings. However it is also stated within the Executive Order boundaries of the Refuge are approximately 6500 acres of in-holdings. Which acreage figure is correct? (52)*

Response: The correct figure is 9437 acres of in-holdings. All reference to this in the document will be corrected.

Comment: *In the Waterfowl discussion, several species such as ring-necked grebes, American dippers, red-winged and yellow-headed blackbirds, great blue heron, ospreys and bald eagles, are mentioned which do not fit the common definition of waterfowl. This section needs clarification. (52)*

Response: Agree. See revision.

Comment: *Your document compares fish habitat assessment ratings for the LPO River and Bear Creek to standards described in the interior Columbia basin Ecosystem Management Project (ICBEMP) . . . it is inappropriate to use or reference the defunct ICBEMPS DEIS and these references should be removed from your document. (52)*

Response: Our draft CCP/EIS only used the INFISH standards (Inland Native Fish Strategy, USDA Forest Service, 1995) for refuge stream habitat objectives (see Draft CCP/EIS page 3-28) and did not make recommendations using ICBEMP standards. We acknowledge your concern that the fish habitat assessment report for the Little Pend Oreille River compared stream conditions to standards which may not be adopted in a Final EIS for the Interior Columbia Basin. We will add language to our Final CCP/EIS recognizing that fact.

The fish habitat assessment you referenced was completed specifically for the Refuge by staff fisheries biologists at our Mid-Columbia Fish and Wildlife Office in Leavenworth, Washington. The assessment was undertaken using a modified Hankin-Reeves (USDA Forest Service, 1996) stream survey method. This method is in wide use throughout the Pacific Northwest and is considered the standard methodology for stream surveys at the present time. In the assessment, the ICBEMP standard was referenced along with INFISH, the currently accepted standard, to evaluate and compare Refuge stream conditions. We believe the use of the draft ICBEMP standard in the context of this scientific assessment was appropriate to compare ecosystem conditions to existing and emerging standards.

Comment: *Map 1, page 1-2 shows an incorrect relationship of the CNF lands to the Refuge on the South side of the Refuge. The National Forest Lands are immediately adjacent to the Refuge lands and there is no gap of private lands between the two. (52)*

Response: Agree. We have changed the map in the final.

Comment: *It is stated that horseback riding and snowmobiling would continue. The document also states remove the snowpark and discontinue snowmobiling on all refuge roads and lands. Which Statement is correct? (52)*

Comment: *The description of Alternative B on page S-6 states, existing uses and recreation activities will be modified but continued. Recreation activities would include hunting, fishing, wildlife observation, camping, horseback riding and snowmobiling . . . Yet the effects to public access and recreation opportunities description on page 31 states, Snowmobile use would be eliminated under Alternatives B, C, D, and E. (221)*

Response: In the Draft EIS, snowmobiling was supposed to be removed from the list of activities on page S-6. All action alternatives should have been consistent with the draft compatibility determination in Appendix F.

In the Final EIS, the document and the compatibility determination will change to allow the use of Olson Creek Road to travel to and from Calispell Peak via snowmobile. Also see response to comments in the snowmobiling section of this appendix.

Comment: *. . . the Draft Vision Statement is exceptionally well written, and should be retained in its entirety. (261)*

Response: Comment Noted

Comment: *Map 10 in the plan should be revised to indicate different road categories. It is not possible to determine which of the roads shown are county roads, management access roads or primary and secondary public use roads. (272A)*

Response: Map 10 has been changed to show which are county roads, management access roads or primary and secondary public use roads.

Comment: *Why do I see words like MAY affect to justify a position? It either does affect or it doesn't, please get off the fence The basis for closure of any area should not be based on MAY HAVE AN AFFECT. (132)*

Response: The reality is that our ability to completely understand ecological processes or affects will always result in varying degrees of uncertainty when planning for species conservation. If we decide that a population is in decline, there will often be uncertainty about the causes of the decline and perhaps additional uncertainty about appropriate restoration efforts. The phrase *may affect* is a professionally accepted term. It indicates we have reviewed the best available science and we are concerned but not absolutely certain about the affects of an action or activity. The CCP contains several objectives and strategies to collect additional information. Supporting research and data collection on the refuge and adjacent lands will help reduce uncertainty related to wildlife conservation.

ECONOMICS

Comments: *I am a strong believer that economic projections don't belong in a wildlife study. Like for dams versus salmon, it politicized the subject and often makes the primary intent secondary. In our case, if one or two cattle operations have to fold, and if there are 180 less calves on the market, so be it. It is not the purpose of a wildlife refuge to prop up the local economy, and the federal government is wrong to do it. (54)*

. . . I believe your agency has the best information and a mandate for protecting the wildlife and its habitat. Most people who oppose the agency position have their personal economic interests as a primary motivation, and, while this is understandable, it is contrary to the mission of a national wildlife refuge. (286)

Response: The DEIS is not a wildlife study; it is a NEPA environmental analysis. The main objective of a NEPA environmental analysis is to disclose the effects of alternative federal actions on the *human* environment, which includes socioeconomic conditions as well as conditions related to natural systems. Effects of LPONWR management alternatives on business activity in Stevens County are relevant to the NEPA analysis.

Comment: *Based on information within the full document itself, by admission, there will be a negative economic recreation impact on the region under Alternatives B, C, D, and E. Page S-*

27 also indicates the overall economic effect to be positive; however, those economic effects come primarily from management costs. Certainly, it would be very difficult to prove or ascertain that increased costs in management compare to recreation economic impact. This is truly a case of comparing apples to oranges. (81)

Response: As shown in the draft CCP/EIS Table 4-4, implementing Alternative B would have a neutral effect on the regional recreation economy. Implementing Alternatives C, D, or E would have small negative effects. Overall economic effects would be positive under Alternatives B and E and negative under Alternatives C and D. As indicated in the comment, the sector accounting for most of the additional regional economic activity is refuge management. Although the socioeconomic effects of changes in activity levels in different sectors of the economy often have qualitative differences, the methodology used to assess such impacts in the EIS provides a reliable and unbiased approach for comparing employment and income effects between sectors.

Comment: *Thousands of visitors to the refuge have contributed great dollar amounts to area retailers. (41)*

Response: Economic activity resulting from retail purchases made by refuge visitors was the basis for assessing economic effects on the recreation sector in the DEIS.

Comments: *The long-term economic sustainability of our region looks to be dependent on tourism. Let us not forget that. (283)*

I am a resident of northeast Washington and have enjoyed the opportunities afforded by significant federal land ownership throughout the area for 48 years. I am concerned that continuing restrictions on people's activities on public lands will affect my quality of life and livelihood. You may be aware that while urban areas in Washington state have enjoyed a 30+ percent increase in economic well being, rural areas such as northeast Washington have experienced a 16 percent decrease. This is largely due to regulations and federal land use policy. (157)

It would be useful if the final document provides and discusses trends in employment and earnings to show how the county's economy has changed over time. Historical data illustrate that employment in services, manufacturing, government, and retail trade have been increasing over the last two decades. Farm employment has declined. Agricultural services, forestry, and fishing; wholesale trade; and mining have consistently provided the least employment. (272A)

Response: The FEIS discusses the increasing importance of tourism to the regional economy. See text addition to page 2-80 in the Economics section of Chapter 2.

Comments: *Have you done an economic study of how this plan will affect Beaver Lodge and other businesses in this area? (279A)*

I want them [Beaver Lodge] to be able to stay in business. (237)

Response: The effects of potential restrictions on refuge snowmobile access on Beaver Lodge were assessed by interviewing the owner/manager of the lodge and other knowledgeable local snowmobilers, and by projecting recreation-related changes in income and employment in Stevens County for each of the planning alternatives. Although restrictions on refuge snowmobile use under Alternatives B, C, and D would definitely reduce winter patronage of the lodge, the lodge owner is unsure whether the lodge would be forced to close seasonally or permanently as a result of this loss of patronage. As described in Chapter 4, the direct economic effects of all recreation changes resulting from implementing Alternative E would include the loss of an estimated 6 jobs and \$90,000 in annual personal income in the region. Approximately half of these job and income losses would be attributable to the elimination of refuge snowmobiling, with the remainder primarily attributable to reductions in camping opportunities. Although this analysis did not identify specific businesses that would be affected, it is likely that Beaver Lodge would incur some of these adverse effects.

Comment: *Knowing that the Washington State ran this game range with a limited budget, it seems hard to justify the millions of dollars you plan to spend and the people you think are necessary to run a 40,000 acre range. (279A, similar comments in 252)*

Response: Between 1965 and 1994, the State of Washington Department of Wildlife (formerly Department of Game) managed LPONWR through a cooperative agreement. During their tenure, the State managed the land as one of their wildlife recreation areas, not as a national wildlife refuge. During the last years of their tenure, the state received between \$90,000 and \$120,000 per year from the U.S. Fish and Wildlife Service to manage LPONWR. This money supported what the Service considers a caretaker operation. In fiscal year 1989-1990 the \$94,000 budget supported 50% of the forester-manager's salary and 75% of the assistant's salary. These employees also worked on two other State-owned wildlife areas.

In 1998, the Service sought public input on five preliminary alternatives for managing LPONWR. One of these alternatives was a caretaker operation. Of the 140 responses received, only one responder supported this alternative and it was dropped from further analysis.

Since resuming on-site management at LPONWR in 1994, Service operating budgets have ranged from \$67,000 to \$365,000. In 1998, 87% of LPONWR's operating budget was used to support salaries for five permanent and nine seasonal employees. The focus of management has grown to include bird and mammal surveys and studies, fire management, comprehensive conservation planning, law enforcement, public use administration, and facilities (facility compliance, roads and buildings) and habitat management (including grazing program administration).

Comment: *No NEPA-required studies were included concerning the economic impact to businesses servicing and selling snowmobiles, nor the effect of lost tourism on our community infrastructure. U.S.F.W.S own rules specifically state that public hearings are required if there*

is a substantial change of use. I would say destroying an entire regional snowmobile area is a substantial change of use, not considering the many other radical changes being proposed for the refuge. (272)

If it were not for the snowmobiles, a lot of the small business places could not make a decent living. (26)

Response: The recreation and economic effects of restrictions on refuge snowmobiling under Alternatives B, C, and D are analyzed and disclosed in the final EIS.

Comment: *National wildlife refuges contribute funds to local counties through two revenue sharing programs. In 1996, for example, the federal government paid Stevens and Pend Oreille counties a total of \$253,944. (277)*

Response: Comment noted.

COSTS TO IMPLEMENT THE CCP

Comment: *The trend in natural resource management is toward fiscal conservatism. My guess is that this trend will continue, at least in the near future. Unfortunately, federal agencies, in a effort to make everyone happy, select preferred planning alternatives which are reasonably expensive to implement and manage. While your economic analysis doesn't address the issue (in the draft anyway), it is pretty clear that E is fairly expensive. Recognize reality and scale down. Some of the elements in D allow you to do that. (17, similar comment in 41)*

Response: It is correct that the Preferred Alternative is more expensive to implement than the other alternatives. More funding is needed for implementation; it will take substantial funding to bring Refuge resource and public use conditions up to suitable levels. Some effort to identify the cost difference between each of the alternatives was provided in the draft and refined in the Final document. The reality is that Alternative D had very little support. The majority of people responding to this process prefer continuation of the recreation and management programs in the other alternatives. The other reality is that not all the needs identified in the CCP will be funded. It would take an extraordinary increase in budget to accomplish all that is required under the preferred alternative. One purpose of the CCP is to identify total need. Funding this need can then be done incrementally over the next 15 years.

Comment: *The overall trend in Federal funding is down. Although there is an upward trend in the US Fish and Wildlife Service funding, there is intense competition for the available funding within the agency. Given your location, it would seem appropriate for you to give serious thought, and effort, to establishing some means of obtaining skills and support from both the Forest Service and DNR. Even though the land management missions are different, many of the necessary skills needed to accomplish the planning and implementation of projects are the same. . . . Unfortunately, nothing like this was in your proposed plan which is another indication of a limited planning scope and a lack of interagency coordination. Future public land management*

must be more efficient and more aware of how the public's tax dollars are being used. There has to be a higher level of accountability, and probably, this is the place to start. (45, similar comment in 46).

Response: Several good points are made in this letter. General partnership opportunities were identified on page C-31 of the draft. The economics sections has been expanded in the final.

WILDLIFE AND HABITAT MANAGEMENT

FOREST MANAGEMENT

Forestry and Logging

Comment: *Logging: While I am in favor of thinning as a management tool for reestablishing the historical range of variability, I feel that regular commercial logging becomes an end rather than a means and results in more roading, stream degradation, and habitat disruption. I am opposed to commercial logging on the Refuge. (256)*

Response: Comments Noted.

Comment: *We would like to see some selective tree farming done so it doesn't end up burned and chard like Yellowstone park. (187)*

Response: Tree farming is outside the scope of Refuge management.

Comment: *Selective logging should be done to help prevent forest fires and insect infestation. (186)*

Response: Selective logging has not been excluded as an option and may be used in achieving habitat management goals.

Comment: *Forest Management*

- *Although Audubon generally does not support commercial logging in wildlife refuge areas, we recognize that commercial logging may sometimes be used as a tool for restoring natural forest structure and composition. Currently, the Starvation Flats lodgepole pine forests are not fire-manageable. Therefore, well-planned commercial logging should be used on a temporary basis, until forests are thinned enough to be managed solely by fire. At that time, commercial logging should be discontinued.*
- *Logging should be planned to minimize environmental impact in all cases. For example, activity can be concentrated in the winter to avoid soil compaction.*
- *The refuge should promote the creation of protected wildlife corridors and buffer zones in cooperation with neighboring landowners and managers. (188)_*

Response: Minimizing logging impacts are addressed in the Plan and will be further delineated in each silvicultural prescription and Special Use Permit as required. Comment regarding wildlife corridors and buffer zones with adjacent ownerships is noted.

Comment: *We are concerned that the Plan appears to condone removal of trees up to 125 years of age and in some cases more than 125 years of age. We see no justification for removal of such old trees. (272A)*

Response: Trees aged 125 years or 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. Under some circumstances, such as public safety, older trees may be removed but that would be an exception rather than a regular practice.

Comment: *Logging should be discontinued once the forests are returned to a condition in which they can be managed with fire. (272A)*

Response: To state that any particular management tool will be discontinued at some point in time would be disingenuous and impractical. Restoring fire to Refuge forests is a management goal, but not necessarily the final tool we will ever need. Even in a scenario where fire is chiefly used as a means of maintaining forest habitats it may be necessary to use logging in instances where pathogens, such as certain root diseases, indicate conversion to resistant species is necessary. Logging may be the optimal method to achieve this. This is especially true where species such as grand fir or Douglas-fir exist as a result of prior conversion to shade tolerant tree species due to fire exclusion.

Stands of western white pine, that appear to have a natural resistance to blister rust, exist on the refuge. In keeping with our goal of maintaining native diversity it will be desirable to propagate this mid-seral species by artificial means if we are to maintain it. In many cases the optimum way to accomplish this will be to reduce competition and encourage regeneration by removing other tree species in a variety of age classes through logging.

Logging may also be indicated in situations where trees pose a hazard to visitors (campsites and other high use areas), or where they impose impediments to management and maintenance of Refuge roads, trails or other facilities.

Comment: *Logging, done properly, can be a very effective tool to improve animal habitat. There is no food in a dank, dark, overgrown, shady, area with nothing but duff on the ground. (160)*

Response: The Plan proposes to improve wildlife habitat through the use of timber harvest in combination with other means.

Comments: *The Description of Use statement on pages F12 and F13 starts out well but deviates from my views when it states, . . . each timber sale will be marked for cut trees and most marked trees will be less than 70 years old. Further down on the page, under Stipulations, a comment is made, Sales shall be exclusively cut tree marked.*

The implication here is that, in your view, there must be only one way to achieve the goal of increasing the proportion of, and maintaining, mature forest components. If you implement this strategy, you will have severely limited present and future foresters and wildlife biologists options for achieving such goals, and doing it in a cost-effective manner. Please consider leave tree marking, sample marking with tight contractual prescriptions, as well as all the other tools in a modern forester's kit .

My second comment is about restricting harvest operations during severe winters. (re: pg. F13-Stipulations). The report states, Harvest may be postponed during severe winter weather to reduce disturbance to wintering deer. It has been my experience that during those times, and most other winters as well, the deer will gravitate to a harvest operation to take full advantage of the snow disturbance and the available forage found in lichens and foliage buds from downed timber. Winter logging can actually help the deer - not hurt them. Also, if you need shrub removal, either a summer logging disturbance or a prescribed fire will create the needed stimulation of most shrubs roots. Keep your options for management broader. (14)

I would like to comment on part of the use of the wildlife refuge that is the forest part of managing for wildlife. I feel if you would set some timber up to be logged, not just butchered, in the winter you would have less impact on the land, plus a real benefit for the deer plus other wildlife. (78)

Response: Our forestry staff are aware of the practices and procedures available to us and we will use them as appropriate. There are no plans to discard, ignore or otherwise limit any of the techniques currently used for marking timber sales. Appendix F had been modified to read, The best available marking system, that fits the prescription, will be used.

Your comments about deer foraging on logging slash is a common one. Deer do take advantage of readily available forage in an opportunistic way that decreases their expenditure of effort. This is especially important in late winter when herds are at their peak of stress. However the short term gain provided by snow displacement and logging slash must be weighed against the disruptions caused to wintering deer by the logging activity itself such as increased noise, vehicle movement and presence of people on the winter range. These types of operations incite deer to greater than usual exertion and unnecessary expenditures of energy at a particularly critical time. The more severe the winter, the more critical this exertion becomes. Logging operations require a great deal of effort and planning prior to implementation. It would be impractical for us to attempt to predict which winters would be severe enough to require supplemental feeding and thereby plan for a logging operation.

A further consideration is that the overall microbial fermentation in deer rumen is inhibited by oils present in conifer needles which may affect digestibility. For this reason, other browse must be accessible for consumption even when conifers are otherwise being used as food.

The preferred method of providing adequate forage for wintering deer is through habitat. If the animals go into the winter season in top condition they are better able to withstand the rigors of winter weather and survive. Habitat that provides a good mix of winter thermal cover and browse year after year is favored over a scheme which attempts to feed deer through logging operations. As stated in the Plan, one of our aims is to improve and maintain good deer habitat.

Comment: *Alternative E (Preferred alternative) plans for 1,000 acres of thinning per year for 15 years. Yet it is almost impossible to get an EIS through without an appeal. Therefore, this tool is not available. My question is how do you expect to accomplish this goal? How can bark beetle outbreaks and other potential epidemics be treated?* (6)

Response: The Comprehensive Conservation Plan (CCP) is a combined management plan and EIS. Once it is approved and signed we can begin the specific actions mentioned in the Plan. There is no agency administrative appeal process for CCPs.

The 1000 acres you refer to represent an annual target. The treatments may consist of pre-commercial thinning, commercial thinning, prescribed burning or a combination of these actions. Outbreaks of insect attacks, if deemed significant, can be treated in a variety of ways using bio-controls, chemical sprays and/or stem removal.

Comment: *I would also like elaboration of the proposed commercial thinnings designed to remove excess small trees from the forest understory. When commercial loggers thin a forest they always seem to take the large trees with the highest commercial value and leave the smaller trees; just the opposite of what is proposed for LPO. Will the commercial logging be strictly supervised to insure that only the small trees are removed; not the large ones? Will a commercial logger undertake such a venture; small trees have little or no commercial value? Will the commercial logger be paid for work done rather than via selling the harvested timber?* (36)

Response: We understand your point about many logging operations seemingly taking the best trees and leaving an inferior stand as growing stock and referring to this as thinning. The term foresters use to describe this type of operation is high grading, where the highest quality timber is removed and the remaining growing stock, in many cases, will not be vigorous enough to respond to release from competition or regenerate a new stand. In fact, the residual stand may retrograde into something altogether different such as brush or meadow. Logging of this type occurs on lands where owners are unaware of other harvest options available to them, changes in land use are imminent or where an economic return is the bottom line. All of these may be legitimate positions to justify depending upon ownership and circumstances, but this is not the type of logging we are proposing for the Refuge.

In answer to your questions, on all logging operations oversight will be provided by Refuge personnel to ensure that Special Provisions, as delineated in the Permit, will be adhered to. Trees slated for removal in commercial operations will meet merchantability standards which by definition have commercial value.

There are various ways for timber to be sold from federal lands but it basically boils down to (market value) - (logging costs) = receipts. This money is forwarded to the U.S. Treasury and is not ear-marked, or otherwise identified, to directly benefit the Refuge. A common misconception is that this money can be specifically used for Refuge projects, but this is not the case.

Comment: *As for the forest, why isn't the over-growth thinned, the over-ripe trees harvested and the diseased trees removed.* (41)

Response: We are planning to do both pre-commercial and commercial thinning on the Refuge. If by over-ripe you mean large, mature trees, our intent is to increase this component of the forest because it is in keeping with our goal of enhancing and maintaining habitat diversity. The Plan demonstrates that much of the habitat provided by large trees is missing from the landscape today.

Diseased trees are viewed in much the same way. If disease exists as a direct, or indirect result of fire suppression then we may choose to take a corrective action. Depending upon the nature of the problem this could result in a variety of treatments from bio-control to harvest.

Comment: *I don't see any problem with keeping some open, cultivated areas as an experiment. And it seems like a good idea to try to achieve an older age class, more open, fire resistant forest stand. I would encourage you to use burning rather than logging to achieve that end because: It is the natural thing to do and the probability of success is much higher. There isn't any option of the Refuge hiring certified, minimum impact loggers. After the big war, until the early eighties, a lot of experimental, minimum impact logging was tried and abandoned. Industry opted to keep costs down rather than advance environmentally sensitive technology and methods. From my point of view, that greatly reduces the options for logging in sensitive environments.* (17)

Response: In reference to burning versus logging please see responses below. In our assessment we can achieve results most efficiently using both logging and fire. Plans do call for minimizing logging impacts as mentioned above in response to previous comments.

Comment: *Over stocked stands of timber will be logged to improve wildlife and livestock forage and to support our local economy.* (87)

Response: Logging will be used to benefit wildlife and this will help the local economy in a variety of ways but logging is not planned to produce livestock forage.

Forest Habitat Management

Comment: *Restoring Old Growth Ponderosa forests and riparian habitats that support declining and rare species of plants and animals needs to be an emphasis. (271)*

Response: Restoration of ponderosa pine and riparian habitat is addressed in the Preferred Alternative (E).

Comment: *We are also concerned that the Plan's forest management practices are potentially overly aggressive. Additional information on the status of the forests is necessary before proceeding on the recommended course of action. (272A)*

Response: Comments noted.

Comment: *Tree-ring analysis by Fritts et al., (1979) raises further doubt about the validity of the narrow window of time (1850 to 1900) used by Caraher et al. (1992) to assess the natural range of variability of forest ecosystems in the Blue Mountains.*

As Hoover (pers Comm., M.D. Hoover, Rocky Mountain Research Station (retired)) observed, It may be worth noting that travelers seek open stands. Few trails pass through dense stands by choice. Naturally, early wagon passengers and horsemen saw open stands. Also, photographers and artists favored more open forests and avoided dense stands for their illustrations. This could bias our impression of past conditions. Questioning recommendations that forests be returned to presettlement successional status seems important. Following Hoover's reasoning and pondering literature on the subject, we question how well presettlement conditions are understood.

But what do we know about how these systems actually functioned---their biogeochemistry? Specifics are lacking (Bonnicksen and Stone, 1985). At this stage in maturity of the forest sciences, we should be able to describe --more precisely than merely presettlement --the conditions constituting a healthy forest.

We ask the FWS to take a second look at the proposal for returning the forests to some snapshot in time (258)

Response: While the documents the authors quoted are noteworthy, there may be a mis-perception about our goals for the Refuge. A snapshot in time as you suggest, is not our purpose.

Scientific research is a dynamic process and any given study may be used to reach a number of conclusions about alterations to the landscape, changes to the ecosystem and whether, or not, they are permanent or reversible. We do know that the lands comprising the Refuge have been changed through a variety of manipulations including logging, homesteading and fire exclusion. We also know, based upon current and past aerial photos, local photographs, turn of the century survey notes, logging history and other documentation (see Map 4 of the CCP) that mature forest stands are essentially gone from the local landscape. This being the case we are aiming to

provide more of that missing portion of the forest landscape along with the seral stages necessary to perpetuate mature forests.

We are not as focused on the particulars regarding the appearance of pre-settlement forests as we are on the processes and diversity inherent in those forests. We understand that the precise nature and composition of pre-settlement forests are not expressly known, but we believe that through careful management we can at least approach the level of diversity that once existed.

Comment: . . . and request that the fire-only alternative be given a chance. (258)

Response: The same argument you propose about not using logging as a management tool may also be used against a fire-only strategy since judgements will still have to be made about smoke trajectories, periodicity, size, intensity, values at risk and location for each fire whether the source is natural or management ignited. Official policy and practicality impose limits on our use of fire. For this reason we believe a combination of management strategies must be applied to achieve Refuge goals.

Comment: *Some new information has become available recently which we feel directly pertains to the Little Pend Oreille s prescribed fire and logging proposals for dry sites. Recently, a blind review of the Wenatchee National Forest Dry Forest Strategy and Sand Timber Sale Project was completed by a team of scientists, headed aby Drs. Paul Hessberg and John Lemkuhl of the Wenatchee Forest Service Research Station. (Please see enclosed copy of this document). The fire ecologist who participated in reviewing the Sand EIS stated that fuel levels are not too high and prescribed fire can be used solely for restoration of dry forest sites. This important new information calls for a burn-only alternative-one that could restore all of the Little Pend Oreille Wildlife Refuge, not just the areas to be included for a commercial timber sale. One of the reviewers, a fire ecologist, stated:*

The National Park Service has been using fire for 30 years in dense forests without prior thinning, (see van Wagtendonk 1985), so it is clearly possible to use prescribed fire for fuel reduction without thinning in the Sand Creek ecosystem.

and:

The statement that fuel levels are so high that thinning must take place first before prescribed fire is used is generally not true, As noted above, the NPS has used fire successfully in heavily fueled stands for a long time. (258)

Response: The Fish and Wildlife Service began burning over 60 years ago in the 1930's at St. Marks refuge at about the same time it contracted with H.L. Stoddard as he pioneered prescribed burning for wildlife in the Southeast. These burns were generally conducted under forest canopies without prior thinning. The Service tradition of fire as a tool of wildland management has continued from that time onward with the Fish and Wildlife Service consistently applying fire to significantly more acres annually than any other Department of Interior Agency.

Certainly not every prescribed burn unit requires thinning prior to burning, but neither is every prescribed burn unit alike, nor are the policies and regulations governing various agencies fire

programs identical. In addition to fuels, burn assessments include consideration of habitat objectives, adjacent private forest-lands, property and homes, public concerns and smoke management. After weighing these, and many other factors, we concluded that thinning would be necessary on many of our burn units.

Comment: *The goal of forest management to return the area to a condition more reflective of the early tradition forest in northeast Washington is a good one. This will be a long term effort but now is the time to get started. We like the use of controlled burning to reestablish forest ecosystems but realize this is a controversial and developing concept in many areas, especially with private in holdings and large forested areas adjacent to the refuge. (190)*

Response: We agree.

Comment: *The statement that fuel levels are so high that thinning must take place first before prescribed fire is used depends greatly on the timing of a burn. The National Park Service has successfully burned in places such as Yosemite National Park where similar fire risks exists. We urge you to consider testing the hypothesis that burning dense tree stands during cooler spring or fall weather as an option to logging. (269)*

Response: We agree that not all prescribed burning will need to be preconditioned by thinning. In fact, we prefer to keep pre-commercial thinning costs down wherever possible and practical. Decisions to thin or not thin are made on a case by case basis depending on many variables.

Comment: *. . . and I feel more logging has to be contemplated to produce more forage for all wildlife. (193)*

Response: Comment noted.

Comment: *. . . the realization of the extent of the current Douglas-fir bark beetle epidemic points to the need for management of this habitat type. I realize this outbreak has occurred since you started the Draft EIS process but it is new information that should be addressed in the NEPA process. (158)*

Response: We are staying informed regarding the Douglas-fir bark beetle. If it is determined that we have a problem developing on the Refuge we will explore options available to us including logging.

It should be noted that the Refuge exists to provide wildlife habitat, including snags and downed woody debris, for a variety of species. Since we are not engaged in timber management a snag component is viewed as part of a healthy, properly functioning forest.

Comments: *I am concerned that the plan addressed forest health issues only in low elevation ponderosa pine type. This is not the majority of the land within the Little Pend Oreille Refuge*

and, while it may be important to manage that portion of the refuge, it should not be done so at the exclusion of management for the rest of the property. (228,167,158)

We basically agree with your Forest Habitat Management Objectives and Strategies. However we are concerned that the priority treatment during the first 15 year planning period is limited to only the dry forest stand structure In our judgement, there is a need to plan active treatment in the moist forest structure to accomplish the same objectives e.g. to increase the amount of mature stands, reduce fuel loading, and restore/maintain the forest habitat diversity. This area covers the majority of the Refuge (36,094 acres or 73.24% of the land base) and should receive a high priority for active restoration treatment during the first planning period. Our recommendation is to begin treatments in the moist forest area beginning with the overstocked areas adjacent to or in the near vicinity of the dry forest types. This would result in treating the deer winter range as a total landscape and it will increase the efficiency of planned pre-commercial and commercial thinning operations plus the proposed treatments using fire. (46)

The majority of the Refuge acreage is in the moist forest structure, 73.24% or 36,094.39 acres. This forest type includes rich habitat diversity and supports a wide range of wildlife species. It is evident that there are currently stands overstocked and stands that are converting to more shade tolerant species. Your analysis justifies the need to treat these stands to maintain or improve forest health and biological integrity but there is no established priority for treatments. Why isn't the moist forest structures considered a priority for treatment during the next 15 years? (52)

Response: The moist forest does comprise a major portion of the refuge and exhibits some problems related to overstocking as a result of fire exclusion. The age and general condition of this forest allows greater flexibility in terms of dealing with issues, particularly as they relate to longer fire return intervals.

We felt that the initial emphasis during the 15 year span of this Plan should concentrate on those areas most in need of attention. The nature of the Refuge's dry forests, such as the ponderosa pine type, makes them particularly susceptible to wildland fires and high fire frequency as compared to moist and cold forest types. Add to this the overstocked condition and the fact that only about 3% of the remaining ponderosa pine forests in Washington are being managed for native habitat diversity and wildlife, and it seems logical to attack this problem first. We are not neglecting the other forest types described in this Plan, but will continue to investigate conditions in these forests and take actions as time and opportunity allow. As with most endeavors, the realities of staffing and budgets dictate that we set priorities and adhere to them as much as possible.

Comment: *The other current active People Uses should be evaluated and modified over the next several years by phasing out detrimental uses and replacing them with more wildlife compatible programs. I am finding the areas where we have harvested the timber, broadcast burned and replanted to Ponderosa Pine, Western Larch and Western White pine are being*

actively used by wildlife at all times of the day. The Mosaic of these 3 to 20 acre areas of new forest growth interspersed in the 80-100 yr. old forest mimic Nature.

It is true the smaller the management block, the more fire trails you need but if laid out properly and planted to clover the grouse and deer use them extensively. Your fire prescriptions should emphasize fall burns. This mimics Mother Nature. The Redstem Ceanothus you want to re-establish for deer browse requires this sequence for good germination. Also you cannot get Western Larch to naturally regenerate in desired quantities without fall burns. Spring burns only promote grass growth and kill desirable trees. (198)

Response: Comments Noted.

Comment: *Presettlement conditions described in the EIS are highly subjective and must be considered in the context of an ever changing environment. Anthropogenic fire certainly provided a considerable base of evidence that supports current scientific conclusions with regard to fire periodicity. However, we maintain that many of these conclusions are based on supposition, since written historical accounts by Native Americans are not forthcoming. We question to the validity of fire records based merely on soil carbon sampling. There is simply too much guess work involved.*

Overstocked stands are a result of many factors. Cattle removing forage increases tree seedling growth success due to lessened competition. Abundant seed sources point to a vacancy of seed eaters (squirrels, birds, rodents). There is no justifiable reason that a National Wildlife Refuge should follow an industrial forestry when assessing restoration. Fire is what s missing. Cattle and roads are what historically were not part of the evolution of the ecosystem. Overstocked stands in a early and mid-seral forest are highly likely to occur, especially in the presence of cattle grazing. (269)

Response: Comments Noted.

Comment: *We request that a fire-only restoration/recovery alternative be analyzed as a component of one of the alternatives in the EIS. (258)*

Response: Fire is expected to play an increasingly greater role in Refuge habitat management. We do not view it as practical or desirable to use fire-only strategies in habitat management or restoration and therefore it was not considered as an Alternative in and of itself. See response above. After decades of fire suppression and exclusion, we view a pro-active approach of stem removal and applied fire as the quickest and safest way to get a higher percentage of mature forest back in the Refuge environment.

Comment: *While your plans for the Pine stands are good, I have some doubt about the amount of energy you are putting into the other stands. Your refuge is dotted with Armillaria Root rot, but I find no plans to plant trees . . . such as pine or western larch in those areas to bring back*

the forest. To let the thinning realm fall into your inexperienced summer help might sound good, but to do 1500 acres per year . . . I have reservation about quality and quantity! (212)

Response: *Armillaria mellea* is one of many native root diseases common throughout the region. In fact, *Armillaria* occurs in many regions of the world. We have noticed what appear to be pockets of the disease occurring in the moist forest zones of the Refuge. It does not appear that we have the fungus to any greater, or lesser degree, than any neighboring lands. Root diseases represent a part of the native ecology which works to provide snag habitat and recycle nutrients essential to forest health. In root rot areas, where susceptible species exist as a result of fire exclusion, it may be desirable to convert to a resistant tree species. This would be in concert with our goals of restoration.

We do hire seasonal help to do pre-commercial thinning as a means of preparing prescribed fire units. This is done under the direct supervision of our Prescribed Fire Specialist with consultation provided by our biology and forestry staff to ensure that Refuge goals will be targeted. It would be a mistake to assume that all of our summer personnel are inexperienced since many of the people hired each year have backgrounds in forestry and fire management from previous employment.

Comment: *Alternative E comes closest to expressing my views on programs and issues described in the Draft Comprehensive Conservation Plan and Environmental Impact Statement. In addition, I would ask that hunting, logging and livestock grazing not be allowed on the Refuge.*

The wildlife refuge should be used primarily for the protection and propagation of its natural wildlife and plant communities. Secondly, it should be open to wildlife observation, study, photography, bicycling, and educational hiking. (260)

Response: Comments Noted.

Comment: *. . . the National Park Service (NPS) has been using prescribed fire without prior thinning for several decades. The NPS has political and legal constraints on its use of timber harvest, but the reviewer suggests that the Forest may have occasion to more broadly consider the use of fire alone to reduce stocking. This reviewer also took exception to the statement that fuel levels are so high that thinning must take place before prescribed fire can be used. A fire-only strategy, the reviewer cites, may be involved and expensive, but it can be implemented in a broad range of cases without prior thinning.*

. . . there is ample scientific evidence to support a strategy that uses thinning, pruning, prescribed burning, and fuels treatments to manage tree density and reduce the hazard of stand-replacing fires.

. . . thinning and prescribed burning treatments can scar and damage residual growing stock making such trees potentially more susceptible to certain root pathogens and bark beetles. The

possibilities for these consequences should be acknowledged in the Strategy and potential mitigation measures described.

Reviewer 4 (soils) agreed with reviewer 3 that potential negative impacts of suggested treatments and mitigation measures need more in-depth description. Reviewer 4 suggested that the Strategy in general inadequately considers soils and their protection against compaction and erosion stemming from management treatments, especially erosive, fine-textured soils, and those with varied texture profiles.

The National Park Service has been using fire for 30 years in dense forests without prior thinning (see van Wagtendonk 1985), so it is clearly possible to use prescribed fire for fuel reduction without thinning in the Sand Creek ecosystem.

Thinning can provide more precision and remove the larger of the small size classes more safely than can prescribed fire alone.

. . . (furthermore it is possible that in some stands ecological restoration is difficult using fire alone because some of the too dense trees are of sufficient size that fire alone cannot take them out (without taking almost the whole stand).

A combination of thinning and fire can be a quicker, more cost-efficient, and more ecologically-efficient method of restoration than fire alone). (277)

Response: We note in the information you sent us regarding the Wenatchee Forest's Dry Forest Strategy and the Sand Creek Ecosystem Restoration project that there are unknowns and inconclusive speculations brought up by the reviewers. For example, It is still unknown whether the spatial extent of the treatments is sufficient to significantly lower landscape-scale risk. That is, whole landscape management experiments are in their infancy, and no test of the question of extent of treatment has been made to determine critical thresholds for treatment to dramatically reduce risk of conflagration. This reviewer suggests that severe fire behavior will still occur in untreated areas, and intimates that there is some potential, perhaps due to limited spatial extent of treatments, and treated portions may still be at risk. The essential points here are (1) there is a measure of uncertainty with landscape scale management and (2) there is no established methodology that guarantees freedom from risk of major wildland fires. We are proposing to *reduce the risk* of major fires in an altered landscape in a cost effective and reasonable way that preserves valuable habitat and moves us toward Refuge goals of forest restoration and health.

Much of the documentation included in your letter supports our position to use options in addition to fire:

. . . there is ample scientific evidence to support a strategy that uses thinning, pruning, prescribed burning, and fuels treatments to manage tree density and reduce the hazard of stand replacing fires

and *Thinning can provide more precision and remove the larger of the small size classes more safely than can prescribed fire alone.*

. . . furthermore it is possible that in some stands ecological restoration is difficult using fire alone because some of the too dense trees are of sufficient size that fire alone cannot take them out (without taking almost the whole stand).

A combination of thinning and fire can be a quicker, more cost- efficient, and more ecologically-efficient method of restoration than fire alone.

We recognize that from a purely ecological standpoint forests can, in theory, be restored without resorting to logging. However, we see no compelling reason to simply discard logging as an optional management device in forest restoration projects. We believe we can get fire back into the Refuge landscape more rapidly and with the necessary margins of safety by utilizing a combination of tools.

In regards to thinning prior to application of fire see first response to letter 269, above. The point about thinning and prescribed fire causing damage to residual growing stock is acknowledged, but the same can be said about natural or prescribed fire alone. Mechanical damage from large trees falling into other trees, ice and snow breakage, wind throw and fire are all intrinsic events and, in fact, essential to forest health and regeneration. The damage that ensues is part of the natural process that ensures ecosystem function.

Impact to soils will be minimized by timing of logging projects and type of equipment used. Winter logging will leave less scarring, rutting, vegetation damage and compaction than at other times of the year. Low ground pressure equipment will also help to minimize compaction.

Comment: *Areas for Forest Thinning or Prescribed Fire; I m concerned about the area north of the Blacktail Mountain Road between the LPO River and Blacktail Mountain. This area has good canopy cover under which bear find grasses and kinnikinick and rotting wood to forage. Pileated woodpeckers are there because of the rotting wood too. Deer like to mingle in that area and winter eating much of the witches hair. I wouldn t like to see anything done that would ruin it. Another area on Scrabbler Mountain I m concerned with has already had much commercial logging activity around it and doesn t need any more impact. (12)*

Response: Comments Noted.

Comment: *I hope you ll be very aggressive with the proposed forest management plans. The Refuge should quickly implement plans and become a showplace for low elevation ponderosa pine management. (23)*

Response: We are looking forward to the opportunity.

Comment: *I was impressed with your analysis of and the planned actions for Forest Habitat Management. Based on my own study of the ICBEMP science and my discussions with several Silviculturists and Wildlife Biologists, I concur that we should actively manage the forest structures to maintain/restore the proper stocking levels and the forest habitat diversity. Through this effort you will reduce the overall fuel loading to minimize the future wildlife risk and, at the same time, provide the means to effectively reintroduce low intensity fires. I recommend that you reevaluate this and that you include a portion of the low elevation moist forest structure for treatment in the first period. Looking at the map on page 2-14, it would appear that this is feasible and that you will still be doing priority treatment to improve the deer winter range. (45)*

Response: While management emphasis will remain with the dry forest type it is feasible that we will initiate some management planning and actions in the moist forest during the life of this Plan. This is especially true where moist forest types interface with dry forest areas slated for treatment. Such circumstances will afford greater efficiency of time and lower preparation costs provided benefits to wildlife can be realized.

Comments: *The dry forest area is important and needs treatment to reduce current stocking levels and fuel loading. It is also desirable to move the stands toward a mature stand condition to restore or maintain the forest diversity. Your proposed treatment of 1000 acres per year appears reasonable. Unfortunately, there are only 7943 to 9356 acres of the dry forest type (conflicting acreage figures, see page 2-15 and table 2-3 on page 2-13) and you only plan on continuing treatment until 90% of the area is under regular fire management. Therefore we are only looking at approximately 7000 to 8500 acres of treatment during the first 15 year planning period which is far short of the projected 15,000 acres of treatment. (46)*

In several locations, for example on page 3-24 it states would include conducting pre-commercial thinning , as well as selective harvest on up to 15,000 acres in the dry forest zone It is clear that the intent is to treat approximately 1000 acres per year covering up to 15,000 acres in 15 years of dry forest structure. The question is, since there is only 7,943 acres or 9,356.84 acres of dry forest structure identified on the LPO NWR, where are the other 5,600 to 7,100 acres (acres rounded) coming from? (52)

Response: The proposal to treat *up to* 1000 acres per year is a target we hope to achieve. However, it is only a target figure. We may not reach it in some years while in other years it may be exceeded. Although it is easy to see how someone not versed in forest management might make this mistake, it should not be interpreted to mean that after 15 years we will necessarily have treated 15,000 *separate* acres because over the span of years some acres will be subjected to more than one treatment. For example, if a 200 acre commercial thinning unit is completed in a given year it counts 200 acres toward the 1000 acre annual target. The following year that unit may be planned for a prescribed burn which will count toward the 1000 acres for that year, but the *actual* acres treated is still only 200. Similarly, some of our dry forest units may be prescribed burned three times in a 15 year span. Over the 15 year life of this Plan, if we

are successful in treating an average 1000 acres a year, it will not necessarily be 15,000 separate acres.

The figure of 9,356 acres is the figure we are using for our dry forests. The lesser figure was from an early estimate that did not include all of the dry Douglas-fir type. We apologize for any confusion this may have caused.

Comment: *Page S-27 states that regional timber markets may be flooded with small diameter timber . The statement is misleading and there is o justification to make such a statement. It is not proper to use vague words such as may be in order to include biased opinion or unsupported conclusions. (52)*

Response: In the context of the Plan, where the above quote was taken from regarding small timber possibly depressing market prices, we feel it was a reasonable and accurate assessment.

Comment: *Forest management-As you are aware, your ponderosa pine stands are in need of stocking reduction. I support using thinning (both commercial and pre-commercial), selective harvest techniques, and prescribed fire to restore natural forest structure and composition in these stands. The refuge can and should aim to provide a regionally significant example of mature, park-like ponderosa pine woodlands, an ecotype that is all but gone in the state. These management activities would also reduce the risk of large wildfires and contribute to the local economy. (55)*

Response: Comments Noted.

Comment: *Forest management: I d like to see an increase in the amount of mature and old stands. Prescribed burns are fine. I m opposed to clear-cutting. (68)*

Response: Comments Noted.

Comment: *. . . we believe you have justified the need to move the low elevation, over stocked stands toward a more open mature forest type. We agree that the best way to accomplish this objective is through the use of pre-commercial and commercial thinning and by using either sanitation or selective harvest. We also concur with the re-introduction of fire to reduce the fuel loading and to help reduce and/or maintain forest stocking levels. However, we have three questions in regard to the Refuge acreage and the planned future treatment of vegetation: (A) Acreage figures do not add up and are therefore confusing. The refuge is a 40,000 acre parcel of land which lies within the Colville sub-basin. Today, the Refuge comprises 40,198 acres most of which is timbered. When you add up the acreage shown in Table 2-3 the total is 49,280.29 acres for the LPO NWR. (52)*

Response: 40,198 acres is correct for Refuge ownership, Table 2-3. shows all acres within the current Refuge boundary both public and private.

Comment: (from a telephone conversation) Commentator said they value the refuge for being in a generally natural state. The plant communities are as they should be and the forest has not been heavily logged. This person gave an example of how Forest Service has too many clear cut areas, and has been managed for commercial benefit. (91)

Response: Comments Noted.

Comment: *I know that there are more species of trees than ponderosa pine on the refuge. However, I did not read of any plan for forest health.* (112)

Response: While there is no specific plan for forest health the CCP describes initiatives that will lead to a healthier forest condition through management actions. These actions include increasing the component of mature forest, returning fire to simulate its natural role and eliminating the undesirable impacts of grazing. The precise definition of forest health often depends upon ones viewpoint, but for the Refuge it is a forest where natural processes are encouraged and allowed to function to the extent practicable. These functions include natural regeneration, hydrology, disturbance and senescence.

Comment: *Management of overstocked stands. I like the focus on management of dry, overstocked stands, stands which provide little plant or animal diversity.* (285)

Response: Comments Noted.

AIR QUALITY

Comment: *Under Chapter 4 (Environmental Consequences), the fire scenario modeling conducted for the Interior Columbia Basin project is cited. We submitted the following comment questioning the study methodology: The evaluation method used for the wildfire and prescribed fire modeling scenarios is questionable. How realistic is it to compare smoke emissions from a few very large wildfires to several thousand small prescribed burns spread out randomly over the entire project area? In addition, the concentrations were modeled differently. Larger grid cells used for prescribed fire diluted concentrations while smaller grid cells for wildfire created very high concentrations locally. The results, unsurprisingly, make prescribed fire look relatively good compared to wildfire. This method needs to be subject to rigorous scientific peer-review before it is accepted as a valid method for assessing the tradeoffs between prescribed fire and wildlife impacts. In addition, the DEIS states that these scenarios were used to portray typical rather than worse case scenarios. This is not the traditional approach used in air quality analysis. We recommend that worst case scenarios also be explored.* (67)

Response: In the Interior Columbia Basin project the prescribed fire and wildland fire were not modeled differently. According to Les Hosapple (Hosapple and Snell, 1996) the same size grid cells were used for both. This was 3,445 total grid cells (each approximately 154 square miles) for both the prescribed burn scenario and the wildland fire scenario.

Comment: . . . *the term wildlife is used in the draft CCP/EIS but wildfire is no longer an accepted term under the new definitions.* (67)

Response: Since the undertaking of the development of the CCP/EIS terminology has changed and wildfire is no longer used. Wildland fire is now the accepted term. As policy changes and new terminology is developed Plans will be updated to incorporate these changes.

Comment: *Under Appendix G (Fire Management), if any fire is within prescription, then the fire will be managed as a prescribed fire. Is this true even for human-caused (arson or accidental) fires? According to the new federal fire policies, these type of fires must be suppressed. This should be clarified.* (67)

Response: Currently under the Federal Wildland Fire Management Policy (1995) all human caused fires will be suppressed. Prescriptions will be developed to allow any natural fires that occur to burn as long as resource benefits are met and the fire remains in prescription.

Comment: *Similarly, it is anticipated that prescribed burning and slash disposal would occur on up to 1,000 acres each year. How will these fires be managed if there are any other refuge fires in prescription occurring? How many total acres, then, could occur in a given year? How will they be managed if other federal or state agencies, or private burners are burning nearby in Washington and/or Idaho? A discussion of this should be included.* (67)

Response: The situation you allude to in your question, where prescribed fires exceed our ability to manage, cannot exist by practice and policy. We would not commit ourselves to a *management ignited* prescribed burn if we were already dealing with a naturally occurring prescribed fire. Similarly, if we were engaged with a prescribed burn and another natural start occurred it would very likely be declared a wildland fire whether it was in a prescription unit or not because of the realities of resource availability and logistics.

A fire can only be in prescription so long as it remains within the parameters described in the prescription document. One of the prescriptive elements deals with resources available to manage the burn. If these resources are insufficient to deal with the fire then the fire is not in prescription and will be declared a wildland fire to be managed using suppression tactics. Resources, weather conditions and other factors would all be weighed in making these decisions.

A naturally occurring fire that is in a burn unit accomplishing prescriptive objectives counts toward our goal of 1000 acres treated per year. Any prescribed burning that takes place on the refuge will be done in accordance with the State of Washington Smoke Management Plan. All prescribed burns need to get approval from the State before they can proceed. Before approval is given the State assesses weather conditions, air quality, available resources and other fires either proposed or in progress which may affect, or be affected by, our proposal. For more information on Washington smoke management you may contact the Washington Department of Natural Resources Meteorologist for Smoke Management in Olympia at 360-902-1754.

FIRE MANAGEMENT

Comment: *If the roads are closed and there is a fire that destroys the game range that we all know and love, will we all be the losers?* (186)

Response: As stated in the Plan, public use roads will remain open throughout most of the year and be closed from January 1st thru April 15th for break-up and some will be closed to mid-July for wildlife protection. Wildland fire is not a threat during this period on the Refuge. This restriction is necessary to maintain road integrity and reduce maintenance costs. This is a common practice on the Refuge and is also used by numerous other agencies with public road maintenance responsibilities. There will be little change in the current use of management access roads which will be maintained for fire emergencies and other administrative needs.

Comment: *We believe that cattle grazing has prevented wild fires as there have been no fires that amounted to anything since we moved here. The deer eat a different browse than the cattle and yet the cattle have always been on a controlled plan on the refuge. We are concerned that controlled burns are not under control when the wind carries them further than planned. Much damage has been caused by these burns.* (85)

Response: Fire suppression has limited the size of Refuge fires far more than grazing. Over 99% of the refuge is forested and grazing does not reduce the woody fuel component and significantly prevent wildland fire. Nearly all refuge fires occur in forested areas or at campgrounds. Major fires have occurred on and around the Refuge and can be expected to occur in any given year depending largely upon seasonal and annual weather conditions and circumstances.

Grazing can be used to reduce fuel loadings in grasslands. This is especially useful where great natural grasslands occur such as in the Great Basin area of southern Idaho and Central Utah where livestock is used under prescription to help control grass fuels. The tradeoff is the impact to wildlife. For grazing to be an effective fire preventative the grass must be grazed closely, resulting in an open vegetation situation; however this also results in reduced cover which can negatively affect some species.

Although weather conditions may change during a prescribed burn, efforts are made to account for any forecasted changes. Before a burn is started a spot weather forecast is requested from the National Weather Service that is specific to the burn site. While the burn is taking place additional weather recordings are taken on site to make sure the weather at the burn site is in prescription. There is a contingency plan in the burn plan that addresses the steps to take should a burn go out of prescription.

Comment: *I would like to see suppression of wildfires using low impact techniques added Alt. E from Alt. D. I propose that you consider letting natural fires burn if there is no great threat of it getting out of control.* (98)

Response: Comments Noted.

WILDLIFE

Species Emphasis

Comments: *The management of this winter range is crucial to the success of this deer herd and the summer distribution of deer far beyond the Refuge boundary Many of the forest management strategies to restore forest health are extremely compatible to the management of this winter range. (156)*

I and many more old timers have always understood the refuge was for the Whitetail Deer This is where the emphasis of the refuge should go. Go back to the basics. (212)

We hope that the Refuge management would take very cautious and conservative approach focused on providing habitat for all native species of plants, animals, and fish. (269)

Response: Comments noted. The Refuge is subject by law (P.L. 105-57) to provide for the conservation of fish, wildlife, and plants, and their habitats and ensure that the biological integrity, diversity, and environmental health of the System are maintained. This mandate, together with the Refuge purpose (see Chapter 1) which originates from the Executive Order which originally established the Refuge, provided much of the impetus for the Refuge to focus more broadly on native biological diversity in Goal 1. A management priority for native habitat is the dry forest. Deer winter range is located almost entirely within this habitat type. We believe that our management strategies adopted for the dry forest under Preferred Alternative E will benefit deer as well as other species. Deer remains a species of special management interest and will be managed with the best conservation measures available (enhancement of forage, increased security) as long as these are consistent with the broader goal of maintaining biological integrity and diversity at the Refuge.

Which Indicator or Evaluation Species?

Comments: *Like Turnbull NWR, this refuge makes the mistake of addressing current endangered species in a long range plan. It is inevitable that many species will become endangered in the coming years. Thus the lone Bald Eagle, which is itself at risk of being delisted, has little significance in this study. (54)*

The use of the 12 vertebrate evaluation species appears to conflict with the concept of HRV and the importance of the species noted by Wisdom to have lost habitat. I found the explanation for the logic for using the 12 evaluation species to be a bit confusing. They were chosen to represent the habitat types but not as indicator species. The difference here is not clear to me. It also wasn't clear which other species were considered and rejected and why. In addition Appendix H lists a large number of species that are of special interest and it is not clear how the 12 species selected relate to all of these. (203)

Response: We have clarified the discussion of why we chose these species in Chapter 2. These species were chosen primarily to evaluate and compare the effects of the different alternatives on a range of wildlife. Although it is certainly of concern to follow species that have lost habitat over broad areas, we chose to use a broader set of criteria in keeping with the Refuge Goals 1 and 2.

The Refuge has not yet adopted indicator species. Such species are traditionally adopted in land use management plans to serve as proxies for evaluating management influences on a broader range of wildlife (as we have used them in this document), *and* to serve as the key focus for monitoring in the future. A glance at the projected monitoring plan (Appendix C and Chapter 3) shows that future monitoring of populations and habitats will take many forms, but in general will not be aimed necessarily at these species, but rather at broad suites of similar species. For instance, point counts and MAPS stations will be used to gather information on a wide array of songbirds. Similarly, carnivores will be monitored using track counts and photo point stations. Game species will be monitored. Waterfowl species will be monitored at lakes. This approach of monitoring broad suites of species is to be adopted partly because the survey techniques that return information about many species at once are both useful and cost-effective.

In some cases, the refuge will focus on certain selected species, some of which served as evaluation species. For instance, species on the Endangered Species List, USFWS Region 1 Species of Management Concern list, or Partners in Flight extreme or high conservation concern list (see Appendix H) will be emphasized in both baseline monitoring and pre and post treatment monitoring.

More Wildlife Than Ever Before

Comment: *If it isn't broke, why fix it. We have more wildlife in our fields and woods than we ever had before.* (9)

Response: Comments noted.

Lynx - Seclusion or Foraging Habitat?

Comments: *I don't think it is appropriate to give the impression that seclusion is the critical need to lynx in this area, forage habitat, which may be far more important, was not mentioned.* (23)

Several alternatives suggest limiting human access would be beneficial to lynx. WDFW does not think that this is a serious limiting factor but rather the most critical need of lynx in this area is forage habitat. This has not specifically been addressed and could receive additional consideration in the Preferred Alternative. (156)

. . . the limiting factor for lynx is not forage habitat The following four prerequisites, also submitted by Predator Project, should be followed when determining the need to log for lynx habitat: #1. Early successional forest is limited in supply relative to other important components of lynx habitat; #2. The logging is designed to emulate wildfire as a means to create early

successional stands, and the use of fire itself is not an option; #3. The benefits of foraging habitat 15-25 years into the future, that may not last longer than 5-15 years, outweighs the loss of that habitat to lynx entirely during those first 15-25 years; #4. Mature and old growth stands suitable for denning are protected from logging. (258)

The issue of lynx is very important, as logging, high road densities, and lynx seem incompatible. We support the concept that lynx forage habitat is best obtained with prescribed burning, which still leaves dead trees for hiding cover (277)

I don't expect Alternative D to have the most beneficial effects on lynx. In the area potentially occupied by lynx, you might consider road closures between the first snows and the first thaw sometime in January. Some recent anecdotal information gathered from Canadian and Montana studies suggest that this time might be when lynx have the greatest opportunity to gain weight; the snow is too light for the other carnivores to ascend into higher elevations until the thaw. (285)

Response: As a species proposed for listing under the Endangered Species Act and one that is thought to inhabit the Refuge, the lynx is of special management interest. The Refuge will continue to seek out the best available science to manage habitat and human activities in a way that conserves the Refuge's value for lynx. Since the distribution of the draft CCP/EIS, we have seen the publication of the Lynx Science Report (USDA, 1999), which sets forth a scientific basis for lynx conservation and explores habitat and population dynamics in detail. Until the lynx is added to the endangered species list, the Refuge will continue to rely on key lynx ecology reports that summarize and synthesize key findings from the literature, including:

Ruggiero, et al. 1994. *The Scientific Basis for Conserving Forest Carnivores: American Marten, Fisher, Lynx, and Wolverine in the western United States*. USDA Forest Service GTR RM-254.

Ruggiero, et al. 1999. *The Scientific Basis for Lynx Conservation (The Lynx Science Report)*. USDA Forest Service GTR RMRS-GTR-30.

Washington Department of Natural Resources. 1996. *Lynx Habitat Management Plan for DNR Managed Lands*.

Although we have not attempted to identify any single limiting factor that currently precludes a higher density of lynx on forested lands within this area, we will address the concern that we did not pay enough attention to the influence of forage/cover ratios as a key factor affecting lynx in this area.

Much is being discovered about the factors affecting lynx distribution. As pointed out in the Lynx Habitat Management Plan for DNR Managed Lands (WADNR, 1996), the needs of individual lynx, as well as of the species in general, cover many spatial scales. The eastern portion of the Refuge falls within one of six Lynx Management Zones delineated by the DNR. Known as the Pend Oreille Lynx Management Zone, this LMZ extends from the Canadian border to a few miles south of the refuge. According to WADNR (1996), the southern half of

this narrow and constricted LMZ has been subject to much habitat alteration. Only the northern portion is now thought to be contiguous enough to support lynx The estimated lynx population in this zone is 10-15 animals. The state further delineated smaller Lynx Analysis Units (LAUs) within each LMZ. LAUs average 32 square miles (check) in size and are considered generally large enough to encompass the median home range reported for lynx in north central Washington. On its eastern border, the Refuge incorporates a portion of LAU 18.

Forage cover ratios are thought to be important for lynx population maintenance because of the lynx s extreme dependence on snowshoe hares as prey. The hares themselves are highly linked with early-mid successional stages, which provide an abundance of small diameter woody browse at or near ground level. The WA DNR report placed a high significance on forage habitat availability and built their conservation plan largely around this concept. The Pend Oreille LMZ overall has 5% forage and the state recommends a minimum of 20% per LAU or LMZ. The LAU that the Refuge incorporates (LAU 18) has the highest forage ratio (8%) of the six LAUS in this LMZ.

The DNR report goes on to say that this LMZ probably currently lacks the forage habitat needed to sustain a population of lynx, but that the situation should be improving relatively soon since about 16% of the LMZ is in young forest that will soon develop into foraging habitat. Moreover, if vegetation management proceeds on DNR land in the way described in a model included with the DNR plan, forage will rapidly increase in the second decade; meet or exceed the 20% level recommendation for the majority of the next eight decades; and will reach levels as high as 28% during that time frame.

The authors of the Lynx Science Report (USDA, 1996) challenged the State of Washington s emphasis on forage in the DNR plan. We will quote in detail:

Similarly, conventional wisdom holds that a landscape dominated by coniferous forest will support lynx if it: (1) produces adequate numbers of snowshoe hares, (2) includes a small amount of old forest needed for den sites, and (3) includes a mixture of forest age classes dominated by early successional stands. The key ingredient here appears to be snowshoe hares, and prime hare habitat is described as regenerating, dense young forest. This paradigm enjoys such broad acceptance that many acres of public land will be modified to fit this description in the name of lynx conservation (e.g., Envirodata Systems Inc. 1993; Washington Department of Natural Resources 1996). Based on this concept of lynx habitat, most timber harvest activities would be considered beneficial and, given that trapping no longer occurs in the United States outside Montana, we might expect lynx populations to be stable or increasing throughout their range. It is hard to reconcile this with the perception that lynx numbers and distribution in the United States are so sparse as to warrant listing under the Endangered Species Act.

In summary, because of the trends in the LMZ, the Refuge does not foresee a shortage of forage over the short and long term within the local area likely to be inhabited by lynx. With this in

mind together with the cautions of the authors of the Lynx Science report, we did not choose to embark on a strategy of aggressively creating forage habitat for lynx, though we maintain it as an option in our Plan. The Moist and Cold Forest Objectives for the Preferred Alternative (see Chapter 3 and also Appendix C) call for a mosaic of stands of different age and structural classes at approximately the same seral distributions as occurred historically. Methods to attain these kinds of forested stands, including those typical of denning habitat preferred by lynx, could include thinning and prescribed fire, as described in Chapter 3.

Factors impacting lynx besides the quantity of foraging habitat were noted by the state in the 1996 DNR report. The report acknowledged that the total land base available for lynx in the state is shrinking and fragmenting due to human development and resource extraction activities. The report also recognized that disturbance by snowmobiles may reduce the quality of habitat available for lynx, which may therefore be reflected in the area's potential to support lynx. High quality denning habitat is limited. Finally, the state acknowledges that LAU 18 (that partially intersects the Refuge) is highly accessible by road and recommends future road closures. (WADNR, 1996).

The Refuge wants to avoid the perpetuation of activities that may be implicated in habitat or population declines. The Refuge System's primary mission is to conserve wildlife and their habitat, and one of the goals adopted by the CCP (see Chapter 1) is to monitor, protect, and recover special status species and species of management interest. Wide ranging species like the lynx require landscape scale management. The Refuge seeks to provide the best habitat that may be limited on adjacent lands.

More about lynx and disturbance is discussed in the snowmobiling section of public comments and response.

Migratory Bird Definition

Comment: *What was the definition of migratory birds in Executive Order 8104 (5/2/39)? What is the definition of migratory birds today? What is the Executive Order or law that brings neo-tropical migratory birds under the definition of the 1939 definition of migratory?* (52)

Response: The definition of migratory bird has not changed between 1939 and 1999. The Migratory Bird Treaty Act, first passed in 1918 and amended several times in later years, defined migratory birds to include all migratory species covered by international migratory bird conventions with Great Britain, Canada, Mexico, Russia, and Japan. All migratory bird species that cross international boundaries but use Little Pend Oreille National Wildlife Refuge are protected. Neotropical migratory birds include all bird species that breed in the United States and Canada and winter in Latin America and the Caribbean. These species are included in the 1939 definition of migratory birds.

STREAMS AND RIPARIAN HABITAT

State 303(d) Listed Streams

Comment: *Are any of the creeks/rivers within the refuge currently listed as threatened or impaired on the State s 303 (d) list? If so, is there a plan for removing these water bodies from the list and how will that be accomplished?* (258)

Response: Thank you for bringing this to our attention. This issue was neglected in the draft CCP and EIS but is addressed in the final version.

The Washington Department of Ecology is required under section 303(d) of the federal Clean Water Act to submit to the U.S. Environmental Protection Agency a list of water bodies that fall short of state surface water standards and are not expected to improve within the next two years. The Little Pend Oreille River has been added to the most recent (1998) 303(d) list due to high fecal coliform bacteria levels detected near its confluence with the Colville River. This bacteria is found in sewage and animal waste, and can enter streams through failing septic systems and some agricultural practices.

The LPO NWR manages lands along about 10.6 miles (29%) of the Little Pend Oreille River s 36 mile length. Since no data is available documenting the quality of the water as it enters and leaves the refuge, it is currently impossible to quantify the amount refuge activities are contributing to the fecal coliform load at this time. Private residences and agricultural practices both upstream and downstream of the Refuge also contribute to this problem. Several of the proposed management changes in the preferred alternative occur in riparian areas. These changes should help reduce the amount of fecal coliform entering the river from refuge lands. Specifically, moving campsites at least 200 feet from the stream edge, ending annual livestock grazing in five years, and implementing a horseback riding program that avoids these areas as much as possible will all help reduce fecal coliform input. As part of the planned habitat management plan, water quality monitoring will be started to measure the quality of water entering and leaving the refuge.

Stream Restoration

Comment: *The streams and their riparian habitats are an important feature of the refuge. Providing a high level of restoration and protection to the streams and riparian zones should be a high priority. Removal of recreation and most management activities from riparian zones will be beneficial; however, active management to restore integrity to the riparian zone should not be excluded.* (164)

Response: We agree. The preferred alternative proposes to use both passive and active restoration. Please see Appendix C, Project 13 for more specifics.

Dams

Comments: *I support your efforts at improving riparian quality throughout the Refuge. I am not, however, in favor of breaching the dams on Bayley and McDowell Lakes and Potters Pond. (256)*

Audubon strongly recommends further study of the effects to wildlife and habitat of breaching dams and diversions to restore natural hydrology to the refuge (Alt. D). If further analysis verifies that lakes do not currently represent a habitat asset so much as a fishing opportunity (CCP/EIS, 4-17), and the higher quality habitat would be created than lost, the breaching of dams would be appropriate. The restoration of natural hydrology and wetlands may potentially benefit amphibians and wading birds, including the migratory birds for which the Little Pend Oreille Wildlife Refuge was originally established in 1939. Moreover, restoring natural wetlands could eliminate the need for fish stocking, benefitting native species such as the redband trout and Columbia spotted frog. (188)

We support returning the Refuge to a more historic hydrologic function, by removing dams and diversions. (277)

It isn't clear to me that small lakes are superior to wet meadows for wildlife purposes. The opposite is probably the case. Go with the data. I am a flyfisherman but could live without the lakes. (17)

Response: As described in the CCP, all three lakes were created at different times by diverting portions of creek flow into natural basins that historically held lesser amounts of water, varying with the season. Bayley Lake was privately owned and enhanced for a fish hatchery before the land was acquired by the refuge. Due to the porous nature of its lake bed, Bayley Lake's surface area varies between 18 and 72 acres annually. Potter's Pond was diked in 1959 by the Refuge to provide waterfowl habitat. Fish were planted for recreational angling a few years after it was created. The diversion creating McDowell Lake was installed by Washington Department of Game in 1973 to hold water year around for fish propagation and wildlife habitat. All three lakes are on land obtained using Migratory Bird Hunting Stamp (Duck Stamp) Act funds.

These shallow, intermittently flooded wetlands provided important wildlife habitat before they were impounded. Their original water regime likely favored dabbling ducks, wading birds and amphibians. Since being converted to permanently flooded pools they provide habitat for a different suite of species, dominated by turtles, mergansers and diving ducks. They also support year around fish populations, which in turn attracts bald eagle and ospreys that otherwise might not have used these areas as much. Dailey Lake, Long Lake, McDowell Marsh and others sites on the refuge still provide shallow water wetland habitats.

The effect of these changes is difficult to quantify; no data is available describing the wildlife use of these areas prior to alteration. Conversion to deeper, more permanent pools certainly reduces habitat for some migratory bird species. However, shallow water habitat was retained on other

sites, while habitat for additional species was created. In addition, a recreational fishing opportunity was created.

The preferred alternative maintains the current condition. Creating the lakes provided an additional type of wetland habitat previously not available on the refuge, while retaining several shallow water wetlands. This alternative retains the recreational fishery on these lakes, whose existence also provides a food source for diving ducks, osprey and bald eagles. The effect recreational disturbance has on wildlife will be determined in the future, and human use modified if necessary. This alternative does specify that the in-stream flows will take precedence over lake level maintenance in extremely low water years.

OLD FIELDS

Plant Fields to Forage

Comment: *Planting up to 200 acres to perennial crops provides an important food source for wildlife, excellent viewing opportunities and maintains a cultural tie to the history of this area. WDFW recommends that annual crops (grains) not automatically be excluded from the crop selection.* (156)

Response: We agree. Perennial crops minimize the cost of annual tillage and planting otherwise associated with annual crops. However, we will seek the best combination of crops meeting our objectives and will certainly use grains or other annuals if they are the best choice.

Replant Fields to Trees

Comment: *Tree planting of old homestead fields would further enhance the refuge. These fields were originally forests, cleared by homesteaders. Why not put them back to trees?* (212)

Response: You are correct that most of the Refuge's open areas were cleared by homesteaders. When the refuge was created in 1939 about 1000 acres were actively farmed, in grass hay, or in livestock pasture. By 1998, 631 acres of openings remained, ranging in size from 1 to 60 acres. In addition to the approximately 200 acres planted to forage for the reasons already stated, another 140 acres will be allowed to revert to forest. These are mostly openings that are inaccessible, or are being rapidly reforested naturally. The remaining 291 acres will be maintained with prescribed fire, mowing or prescribed grazing. These openings, while not natural, do provide important habitat for some wildlife species by diversity of vegetation. Combining these openings with the cultivated fields will result in only about 1% of the Refuge in non-forested habitat. We wouldn't spend the time and money to create almost 500 acres of openings in this environment. But maintaining the ones already present costs only a small fraction of that amount, and provides some important habitat diversity.

Use Fire to Maintain Fields

Comment: *Whenever possible, use fire management rather than other field maintenance techniques such as planting, grazing and mowing to preserve meadows.* (188)

Response: Fire is one of the most efficient tools available for maintaining meadows and we will be using it extensively. The use of agricultural practices like tillage and forage planting is also a tool with certain advantages, and we plan to use it on about 1/3 of the Refuge s former farm fields. In addition to keeping these areas open, this controls weeds, increases habitat diversity, provides food and cover for wildlife, improves wildlife viewing opportunities and forms a link to the agricultural history of the Refuge. Mowing and prescribed grazing are also tools we propose to use.

Use Cattle to Maintain Fields

Comment: *Since agricultural openings are to be maintained, cattle grazing is the most reasonable means of achieving that goal. I believe that the maintenance of openings is essential to support the big game.* (43)

Response: Prescribed grazing will be a tool available for managing these areas.

WILDERNESS AND ROADLESS AREAS

Comment: *Northeastern Washington is virtually devoid of wild or roadless land. Even from the Kettle Crest you can hear vehicle doors being closed on adjacent roaded, developed lands. If solitude seeking wildlife are to find refuge in NE Washington, it will have to be in our single Wilderness or the Little Pend Oreille NWR. Outside the NWR is a sea of roaded, manipulated, disturbed habitat.* (17)

Response: Comment Noted

Comment: *I am very much in favor of wilderness designation for the area in the southeastern portion of the Refuge. I hope that you will follow through and do whatever steps are necessary to make that transition.* (256, similar to comments 86,188, 258 269 and 277)

Response: The Preferred Alternative in the Final Comprehensive Conservation Plan recommends that the 5,520 acre roadless area be managed in such a manner that the primitive roadless character of this area and associated values are not impaired. The roadless areas of the refuge will be studied further concurrent with development of the step-down Habitat Management Plan and the Public Use Management plan to determine if the roadless areas are suitable as a Wilderness Study Area. Public involvement associated with these step-down plans will allow the public to actively participate in the wildemess study process.

Comment: *The plan contains very little description of the wilderness study areas on the refuge that were reviewed during the early 1970's when the State of Washington managed the area, the wilderness review process, or the requirements of the Wilderness Act. The plan also fails to examine whether these or other areas on the refuge currently qualify for wilderness designation.*

Fulfilling the Promise, the Service s vision document for the Refuge System appropriately directs the service both to review areas added to the system since the agency completed it last

wilderness studies and to take a fresh look at areas that were reviewed but not recommended for wilderness designation. That document rightfully acknowledges that circumstances may have changed at many refuges where wilderness designation was once thought to be inappropriate.. Certainly Little Pend Oreille fits this category since, as the plan acknowledges, the State managed the refuge primarily for game species and recreation at the time of the wilderness review.

The Service s recently released draft planning policy requires each Comprehensive Conservation Plan to examine Refuge lands and waters for their potential for designation as wilderness or other special management areas. Therefore, it is inappropriate to leave this review to a step-down management plan to be completed by 2005, as the draft plan would do. (272A)

Response: Fulfilling the Promise and the draft planning policy did not exist when we began this process in 1995. Because the wilderness issue was not properly scoped early in the process, we did not feel it was appropriate or timely to address the wilderness issue as part of this CCP. Also see response to comment 256 above.

NOXIOUS WEED MANAGEMENT

Supports Weed Control Efforts

Comments: *After some pretty hard looking I found that you did mention the treatment of Noxious Weeds using integrated pest management methods. This is what I was looking for and was glad to find it. When it comes to potential impacts to wildlife habitat there is potentially no larger impact than noxious weeds if left untreated. (284)*

I support increased efforts to control noxious weeds on the Refuge. They are the greatest threat to our native vegetation. (282)

Noxious weed management: Unfortunately, it seems like the only way to control noxious weeds is to spray. Noxious weeds destroy habitat and I support their eradication. (68)

I d really like some weed control - weeds from the refuge spill over onto my land: and noxious weeds taking over an area are not attractive or in good balance for the environment. (5)

There should be aggressive weed control. (104)

Noxious weeds are an increasingly prevalent presence in the region. We support an active program of integrated pest management to suppress noxious weeds. (164)

Response: Comments noted.

Chemical Treatment of Weeds

Comments: *I am opposed to the use of chemical treatment for roadside and habitat weed control. I have personally found that natural processes are superior and more enduring in the long run. Weed control methods such as hand pulling (prison crews, work camps), mowing, torching, reseeding with native vegetation, and avoidance of land disturbing activities are far less intrusive to the natural ecosystem. The non-chemical weed control option is not offered in any alternative. (86)*

The use of targeted chemical treatments should be minimized, as risks to wildlife and other vegetation may outweigh potential benefits. Other integrated pest management methods should be used wherever possible to eradicate noxious weeds. (188)

Integrated pest management is proposed to manage noxious weeds. However, IPM tends to work more slowly than more vigorous, chemical-based methods. Though I am not a proponent of broad-scale herbicide application, I am extremely concerned about noxious weeds. As you know, noxious weeds displace native or more desirable vegetation that supports the wildlife that we want. Recent research on noxious weeds indicates that more insidious effects occur to niche-specific invertebrates. Additionally, once the native suite of soil microorganisms dies after noxious weeds invade and occupy an area, it is more difficult to re-establish native vegetation. I would like to see more emphasis on the quick-fix offered by herbicides, and long-term control maintained by full employment of IPM. Some broadleaf herbicides now available denature rather rapidly. (285)

. . . noxious weeds and a general lack of quality forage represent a startling amount of the Game Range acreage. Why don't you do as the rest of us, and spray noxious weeds and re-seed fields? (41)

Response: Management of noxious weeds is one of the greatest challenges facing the LPO NWR. As illustrated in the above comments, while many people recognize that weeds are a serious issue, there is little agreement on the best method for attacking the problem. No one treatment method, be it chemical application or some other treatment, is correct for all situations. Integrated weed management (IWM), defined as the method of managing undesirable species through a *combination* of techniques that may include: education; prevention; mechanical, biological, and chemical control; and cultural methods, provides the most effective means of combating this problem. Unlike one writer stated, the use of IWM offered in all the alternatives does allow for nonchemical control methods, such as reseeding with native vegetation when situations are appropriate, while retaining the option of applying herbicide when necessary. Noxious weeds exist as a wide variety of species in many different habitats throughout a broad spectrum of management situations. Integrated pest management provides a wide range of tools from which to choose the ideal method for the specific situation.

Livestock and Campers Introducing Weed Seeds

Comments: *The elimination of livestock grazing, as well as the development of an equestrian plan that includes weed free-hay and removal of animal waste products, will greatly reduce the spread of noxious weeds. (188)*

More than anything in Alternative D, put your money here and make horsemen/packers use clean feed and charge them access to treat the weed problem. (11)

Another item of concern was the use of straw and the fear of noxious weeds being introduced. I honestly believe that this is an item of minor concern. I believe if you would investigate that most of the straw brought in to be used for sleeping and camp floors is NEW straw which should contain very few weeds even though it may contain some grain. I cannot speak for the hay which may be brought in as feed. (44)

Response: Livestock are only one of many vectors for weed dispersal, and phasing out the annual grazing program could help reduce the spread of weed seeds. Noxious weeds will be an issue addressed in the upcoming equestrian plan.

The potential for introducing weed seeds exists when any agricultural material such as hay or straw is brought into the refuge for any reason.

Prescribed Fire Spreading Weeds

Comment: *Also, you might not want to restrict treatment to acreage listed in the draft if you plan to maintain an aggressive burn program. Most of the areas you burn probably will need some form of post-burn treatment because burning prepares a nice seedbed for noxious weeds. (285)*

Response: The Refuge's prescribed fire plan includes monitoring post-burn vegetational response on each prescribed fire treatment unit for ten years. These areas will be treated on a case by case basis if a noxious weed problem develops.

Eradicate New Invaders

Comment: *We suggest the LPO modify its objective for noxious weed management to include the objective of eradicating new invaders and containing spread of existing populations in addition to the stated objective reducing weed cover by 50%. (232)*

Response: Thank you for the suggestion. The revised noxious weed objective will include treating new invaders by the most effective method.

Weed Management Objective is Vague

Comment: *. . . we also ask that the invasion of noxious weeds receive greater consideration by the Refuge. The prevention of noxious weeds onto a site depends on many factors, which can be lumped into the category of invasibility. Changes in shading, moisture, soil disturbance, filling a soil profile niche, loss of mycorrhizae within the soil, all affect site invasibility. Logging,*

compaction, removal of tree cover all increase site invasibility and should be carefully monitored and mitigated for. The objective of reducing the extent of noxious weed invasions by half is admirable, but it is unclear how this objective will actually be obtained, or what resources are needed to obtain such a lofty goal. (277)

Response: Thank you for the suggestion. The revised noxious weed management objective contained in the final CCP addresses management strategies more clearly.

Need for a Weed Inventory

Comment: *For example the CCP noxious weed objective is to reduce the amount of noxious weed cover on the Refuge by half by the year 2015. Yet, the CCP or DEIS does not state the current level of noxious weed infestation or address the rate of spread on the Refuge. How can the CCP reduce noxious weed cover by half when the USFWS does not know how many acres of noxious weeds are on the Refuge? Even the National Forest System lands estimate 6-7 million acres are currently infested and potentially increasing at a rate of 8 to 12 percent per year (Forest Service Strategy for Noxious and Nonnative Invasive Plant Management 1998). Noxious weeds such as Leafy spurge are reported to double in infested acreage in ten years or less (Thompson 1990). In many places across the Northwest it is estimated that combined noxious weed infested acreage doubles every 5 to 6 years or less without effective control efforts (no action alternative). Ben Roches s knapweed invasion rates show approximately 17 percent increase or more per year if improper control methods are implemented. So, how does the CCP hope to reduce noxious weed infestation by half in 15 years when the USFWS does not know how many acres are infested or how fast they are spreading each year? The CCP does not state if the preferred alternative would even keep up with the rate of noxious weed spread, let alone reduce current infestations. Only treating 50 miles of 130 miles of roadside may not allow the CCP to reach its objective when you consider that roadsides are the number one source of noxious weed spread and noxious weed populations are increasing each year. (287)*

Response: The writer is correct is stating the draft CCP overlooks the need to inventory and map the occurrence of noxious weeds on the Refuge. The revised strategies contained in the final CCP includes inventorying and mapping noxious weed occurrences by subwatershed. This will be a critical step in the effort to contain the spread and reduce the level of weed infestation on the Refuge.

Based on our current weed monitoring program, treating 50 miles of roads appears adequate to control the spread of roadside noxious weeds in infested areas. Pending the results of the inventory, we will continue to target 50 miles of roadside, 250 acres of old field openings and 250 acres of forest openings for treatment annually, as well as aggressively treat new invaders.

INTERIOR COLUMBIA BASIN ECOSYSTEM MANAGEMENT PROJECT (ICBEMP) AND USE OF HISTORIC RANGE OF VARIABILITY (HRV)

Appropriate (or Inappropriate) Use of ICBEMP Science or Standards

Comments: *It is appropriate to reference the science developed for the Columbia Basin project but it is not appropriate or defensible to use information/standards developed as a part of the DEIS analysis. (45)*

Your reference to the defunct ICBEMP DEIS should be removed from your document. (174A)

I have yet to receive an explanation from your agency regarding its use of ICBEMP DEIS standards relative to a 1997 Fish Habitat Survey completed by your regional office and referenced in the CCP/EIS . . . This document that you relied upon has yet to complete the NEPA process and has not been approved by Congress. (288)

Response: The Interior Columbia Basin Management Project is a evolving, broad-scale effort to understand the landscape dynamics of the Interior Columbia Basin, and eventually to adopt a scientifically sound, ecosystem-based strategy for managing all Forest Service and Bureau of Land Management lands within the Basin. The U.S. Fish and Wildlife Service is a partner in the ICBEMP effort and has an appointed representative on the Executive Steering Committee. The ICBEMP draft alternatives have been rewritten, and we will make note of that in our standards. Although Refuge System lands are not required to implement any standards that result from ICBEMP, we do reserve this option when we feel that it is the most appropriate way to fulfill the Refuge purpose and the System mission, and if we feel these standards represent the best available science.

Refuges are required to conserve fish, wildlife, plants and their habitats, and to ensure that the biological integrity, diversity and environmental health of the System are maintained (P.L. 105-57). Such broad mandates are difficult to implement without the help of broad thinking about ecosystem processes and the range of spatial and temporal variability that ICBEMP elucidated so well. We agree that it is not appropriate to rely on standards that have not completed the NEPA process unless these standards have been shown to be rooted in the best available science. We also agree that it is appropriate to make use of the science generated for the ICBEMP effort.

Historic Range of Variability Concept (HRV) Use by Others

Comments: *Statements such as there is a clear trend on the part of federal land management agencies to return regional landscapes to a pattern more closely approximating the HRV are misleading to the public . . . In our judgement there is no clear trend to manage under the concept of HRV. (52)*

The historic range of variability is not supported by serious resource management professionals or scientists. In natural systems change is the only predictive reality and we can never go back to some stationary point in time. The assumption that less disturbance existed before Europeans arrived is both relative and false. (287)

Response: We may have misconstrued the future intentions of other land management agencies, but current direction for National Forests in Oregon and Washington east of the Cascades includes the requirement to apply HRV analysis to watersheds before initiating timber sales (Interim Management Direction Establishing Riparian, Ecosystem, and Wildlife Standards for Timber Sales [Eastside Screens]). This direction will apply to all east-side National Forests until a final alternative is selected under the ICBEMP process. Here is a quote from the Eastside Screens: The following ecosystem characterization and analysis process shall be used: Characterize the proposed timber sale and its associated watershed for patterns of stand structure by biophysical environment and compare to the historical range of variability Vegetative structure that does not meet late and old structural conditions shall be manipulated using treatments that move stands toward appropriate late and old structural conditions to meet historical range of variability. (USDA, 1995)

The November 1999 issue of Ecological Applications devotes approximately 100 pages in six papers to the uses and limitations of the historical range of variability concept in managing ecosystems. These papers (as well as the use of the concept in numerous recent planning documents in the federal land management agencies) show that the concept of natural variability is indeed established within the scientific and land management communities. According to Landres et al. (1999) natural spatial and temporal variation is a cornerstone of the contemporary non-equilibrium paradigm of ecology and its metaphor, the flux of nature . Put another way, ecologists are now in broad agreement that natural ecosystems are not static (remaining forever the same) nor homogeneous (the same in all places). Rather, natural ecosystems exhibit variation. This variation is revealed both over time and over space. The historical range of variability is simply a concept for describing that variation and having some idea of how much variation existed in a landscape over a certain area and within a certain time frame.

Debate Over Use of the Concept of the Historical Range of Variability

Comments: *There has been no public acceptance that the historic range of variability be the desired future condition of our public lands. (157)*

As a forested refuge set in a matrix of managed forest lands it is appropriate to manage to restore natural forest structure and composition that approximates conditions within the historic range of variability. (164)

One aspect of the CCP that I thought was very well presented was the concept and data related to the Historic Range of Variability . The concept itself is one that I think could become central to refuge planning, because it may be a way to capture the intent of the Improvement Act to maintain biological integrity, diversity and environmental health. (203)

Rather than attempting to convert forests to a poorly described and understood set of presettlement seral conditions, examining their present condition and assessing the potential to provide the full array of desired resource outputs and values would be prudent (258)

Response: We agree that a blind adherence to HRV in the absence of clearly defined desired future conditions is inappropriate to today's world. However, our analysis of habitats from a landscape perspective in Chapter 3 shows that certain components - especially the old single strata forest (open park like stands of ponderosa pine) - are nowhere near their historic level in the Colville sub-basin, nor within the range defined as typical of the historic range of variability after intensive studies of the Interior Columbia Basin ecosystem. We have broadly defined the desired future conditions at the Refuge in the three goal statements summarized in chapter 1 of the CCP. (Paraphrased, those goals are: 1) conserve native biological diversity; 2) monitor and protect wildlife and plants; 3) provide wildlife-dependent recreation opportunities.) In applying the HRV concept to vegetation and fire management, we have a high likelihood of achieving Goal 1. Furthermore, we accept the premise that approximating historical conditions provides a coarse-filter (broad-brush) management strategy that is likely to sustain the viability of diverse species (thus achieving Goal 2).

We recognize that quantifiable knowledge of historic conditions is inadequate, and increasingly suspect the further we go back in time, but innovations in paleoecology techniques (ice core analysis in the Antarctic as the basis for illuminating ancient climate patterns is a well-publicized example) may continue to make this field an important basis for understanding ecological change over time and space.

The Refuge System does not have within its mission the goal to provide resource outputs (commodity outputs). These may occasionally be provided as a side benefit of managing for the conservation of fish, wildlife, and plants.

PUBLIC USES

GENERAL COMMENTS

Law Enforcement and Better Facilities

Comments: . . . *the fishing lakes . . . need better facilities, esp. for waste. You need a penalty for fishermen who discharge into lakes and streams.* This commentator also wanted Refuge access for senior citizens with physical limitations. (11)

I would like to see heavy fines put on people who trash campsites. (13)

Response: Basic improvements would be made to some Refuge campgrounds including new wheelchair-accessible toilets, fire pits, and running water. Current staffing includes a seasonal law enforcement officer for 6 months. The plan recommends adding a law enforcement officer to the permanent Refuge staff.

Concern for All Recreational Interests

Comments: . . . *be sensitive to all recreational interests.* (20)

I strongly encourage you to carefully consider the comments of those of us who have historically utilized the lands. (225)

Response: We have considered all recreation interests in light of proper national wildlife refuge management, including comments from those who have historically used the lands.

Refuge Uses

Comments: *The refuge should be managed of course for priority uses. However these uses should not be the sole function of the refuge. The refuge should function as a place for people to visit or pass [through] and observe wildlife and management techniques in action. Management of current uses should be on [an] enhancement/improvement basis not a preservation/elimination basis. (24)*

No one will ever be able to convince me that snowmobiles, ORV;s [and] anything else unnatural has any place on a Refuge! I can see where possibly snowshoeing, skiing, horseback riding, hiking, camping, etc., may be allowed if controlled. (44)

I am sure the snowmobiles can find other areas as well as can the parties involved with the cattle grazing. (48)

"If changes must be made, eliminate the destructive activities first, dirt bikes and snowmobiles. Close all side roads to vehicle traffic, if necessary. Maintained public access for camping at designated areas, fishing and hunting during appropriate seasons, and allow controlled use of the area for horse riding. Perhaps consider improving designated areas for camping and horse corrals and restricting such activity to those areas only. Survival training is extremely important to the men and women of our Air Force and should be allowed at any cost. Cattle grazing seems fairly compatible with the concept of a wildlife refuge as well and should be continued. Other than activities significantly damaging to the refuge what could be considered incompatible? We encourage you to take a very close look at the benefits to local economics, presented by an open use structure at the refuge." (53)

"Over the years I have seen very little problem with Air Force, logging, grazing and other uses." (104)

". . . I would ask that hunting, logging, and livestock grazing not be allow on the Refuge. The wildlife refuge should be used primarily for the protection and propagation of its natural wildlife and plant communities. Secondarily, it should be open to wildlife observations, study, photography, bicycling, and educational hiking. (260)

Response: Please see the Compatibility Determinations Comment/Response section in this Appendix which responds to these comments.

Lock-Out

Comments: " I just want you to try hard to keep this land open to all classes. Specifically, I'm thinking of families" (1, similar to 9 11, 99, 175, 244, 278, 279A)

" . . . [the Refuge] is in our opinion, not just a wildlife refuge. It can and should be managed as a people refuge, where responsible people can escape and enjoy outdoor recreational activities. The area can be a successful wildlife refuge as well as an open inviting recreational opportunity for citizens. Keep our favorite natural area as opened as you can. Don't shut us out. (53)

" . . . I have to say that I feel the activities you are proposing to eliminate have become so much a part of the environment as the "natural" influences. Wildlife adapt to human activities as well [as] "natural" occurrences. Isn't adaptation "natural"?" (59)

"In reading the Conservation plan that you have proposed I see exclusion of public use for almost any reason. I did not read any substantiated studies or data saying that human, equestrian use or grazing has been harmful to the refuge. I believe that the refuge was established so that we can enjoy the wildlife native to our area in a natural setting. The assumptions that I read seem general." (112)

"As an avid sportsman and outdoorsman, I have enjoyed sharing the wonders of the LPONWR for nearly a decade now, and have yet to find any place in Washington equal to it. I have heard rumors and possibilities that it could be shut-down to public access. Closing down the LPONWR is not a solution. We all know how . . . little public access lands are available to the ever-expanding population. If one of the reason for possible closing the LPONWR is funding, there are alternative solutions." (201)

"Please, do not limit our usage of the LPO refuge! This is a precious commodity to the folks here in Stevens County and it would be a crying shame that the US government would limit our access to it." (253)

Response: It is not our intention to lock-out people or just let certain people into the wildlife Refuge; but one patch of land cannot fulfill everyone's wants or needs. We understand and appreciate your concerns and attraction to the Little Pend Oreille NWR, but some limits and regulations are necessary to protect the resources from overuse. Our goal is to have a refuge for fish and wildlife and still provide other appropriate and compatible uses.

SNOWMOBILING

Validity of Lynx Impacts Assessment

Comments: *The existing level of snowmobile use might not deter lynx from using an area.* (285, similar comments in 12)

WDFW does not think this significantly limits lynx movements or acts as a corridor for allowing other predators an opportunity to use packed trails to get into lynx habitat. (156)

If one of the concerns associated with snowmobile use is that other animals that compete with the Lynx for food can use snowmobile tracks for travel into Lynx territory, then crosscountry skiing and snowshoes should also be banned. Cross country skis and snowshoes actually leave firmer tracks (more pounds of pressure per square inch) than snowmobile tracks. (64)

Snowmobiling does allow increased access for predatory animals to find food. However I find it hard to believe this is detrimental to the Canadian Lynx when up until a very few years ago the Washington Department of Wildlife said there were no Canadian Lynx in Washington. So now that we have them why change management practices that helped bring them here in the first place? (117)

The impact to lynx citation is an extrapolation of data gathered in Canada on a situation unrelated to snowmobiles. It is not an actual study. Even if it were, it is not applicable to the 4-mile stretch of groomed road on the refuge. (221)

I suppose coyotes could use our trails and it may make it easier for them to encroach on lynx habitat, but I would think that coyotes, being rather intelligent, may have been bothering lynx for years. (254)

Response: We responded at length to other lynx comments and questions under the Wildlife section. Please see that response above as well.

According to McKelvey, et al. (1999), verified records of lynx in Washington are numerous and well distributed since the late 1800s and lynx populations in Washington have been studied in the field more than anywhere else in the contiguous United States and most of what is known of lynx ecology in southern boreal forests comes from these studies. Contrary to one commenter's impression, however, lynx are not on the increase in Washington but rather appear to be on the decline (McKelvey, et al., 1999). Trapping of lynx was legal in the state of Washington between 1934-1990. Lynx were classified as a threatened species by the state in 1993.

Because of their relatively larger paws, lynx are physically adapted to move across deep uncompacted snow that other carnivores may have difficulty traversing. This physiognomic difference historically enabled lynx to remain spatially segregated from other mid-sized carnivores during winter, and thus to exploit prey resources without competition during that time. Our concern about the potential for lynx competitors, specifically bobcat and coyote, to enter previously inaccessible lynx habitat during winter by following snowmobile trails, originates from the attention this topic received in the 1998 proposal for listing published in the Federal Register (July 8, 1998) and Ruggiero, et. al (1994). Our concern led to a proposal to close the Olson Creek Road to snowmobiling. This proposal in the draft CCP/EIS was very unpopular with snowmobilers and several questioned the scientific basis for this decision. Although the initial decision was made with sound professional judgement, several documents pertinent to this topic have emerged since the May, 1999 release of the draft CCP/EIS. These include scientific findings on lynx and on winter recreation contained in the Lynx Science Report (USDA, 1999) which was commissioned in response to the proposed listing of the lynx by the US Fish and

Wildlife Service in July, 1998. The Lynx Science Report (more formally titled *The Scientific Basis for Lynx Conservation*) reviews, reanalyzes (where warranted), and summarizes the scientific literature and data on lynx so as to document the scientific basis for conservation of lynx. In addition to this report, we relied on a new report issued by Yellowstone National Park, entitled *Effects of Winter Recreation on Wildlife of the Greater Yellowstone Area: A Literature Review and Assessment* (Oliff, et al., 1999). We have relied heavily on these two sources in evaluating whether our concerns were substantiated or unfounded.

Snowmobiling impacts to lynx are probably mainly indirect - resulting from 1) effects impacting their main forage source (snowshoe hares) and from 2) effects benefitting a key competitor (coyotes). These phenomena are explained in the next several paragraphs.

According to Neumann and Merriam (1973) snowmobile use affected snowshoe hare and red fox mobility and distribution in Ontario, mainly within 76 m. of snowmobile trails. Snowshoe hares avoid snowmobile trails while red foxes use them. Snowshoe hares are the primary food of lynx. Loss of snowshoe hare habitat areas affects lynx by reducing their forage source.

The authors of the Lynx Science Report feel that the coyote is a potentially formidable competitor with lynx, citing the coyote's wide habitat niche, heavy predation on snowshoe hares, high reproductive rate, great behavioral plasticity, and high tolerance of humans (Ch. 4, p. 9). Coyote population numbers have increased dramatically in many places over the last few decades, (including a 44X multiplication in Washington state between 1960-1984), using coyote harvests as an indicator.

The authors also cite several studies showing that coyotes prey heavily on snowshoe hares, especially during snowshoe population highs, and even cycle with snowshoe populations like the lynx (data from both Montana and Alberta; Ch. 4, p. 11). The authors also cited a study by O Donoghue (1997) which compared densities of lynx, hares and coyotes in Alberta and the Yukon, and showed that in both places, lynx were more abundant where coyotes were less dense, rather than where hares were more dense.

The Lynx Science Report substantiates the claim of coyotes accessing high elevation areas by moving along paths, roads, and even snowshoe hare trails, with several citations. In one Colorado study involving track counts along approximately 725 miles of snow transects within snowshoe hare habitat (7500 - 11,800 feet elevation), coyotes were the second most common carnivore taxon encountered (after weasels). The authors also cite a study by Murray et al. (1994) finding that coyotes were more selective of hard or shallow snow conditions than were lynx, and another study showing that between November and March, coyote use of open habitats increased. This shift was attributed to the greater compactness and load-bearing strength of snow in openings.

In conclusion, the authors of the Lynx Science report stated:

Fragmentation of habitats occupied by lynx (including increased openings, higher road densities, exurban residential development and wider use of snowmobiles and devices that compact snow in areas with deep, soft snow) is a plausible mechanism for the questionable conservation status of the lynx in the contiguous United States. (Ch. 4, p. 13)

We acknowledge the concerns of some Refuge users that site-specific data is lacking for Olson Creek Road. However we feel that the habitat issues highlighted by the Lynx Science Report authors and others (openings, snowmobiles, higher road densities, etc.) all exist in the local area and may be combining to pose a problem for lynx. At the same time, we are uncertain about how many lynx may use the area and in what capacity; we are uncertain about what could have been expected historically, before widespread fragmentation and human intrusion into winter habitats occurred; we are uncertain about the pattern and intensity of snowmobile use; and we are uncertain about whether coyotes are exploiting the groomed snowmobile tracks along Olson Creek Road to a higher level than ungroomed areas in the Refuge.

We have minimal concerns about cross-country ski traffic and snowshoeing since these activities are fairly limited in the upper elevations.

We are committed to monitoring winter-active mammals along Olson Creek Road and elsewhere in the Refuge, to sharing information with our neighboring landowners and interested parties, and to tracking the development of further scientific information on this topic. Our monitoring plan has been updated to reflect this new emphasis.

Snowmobile Use Related to Winter Range

Comments: *Snowmobilers probably have the least impact on wildlife of any user group. Snowmobilers are not interested in using the same areas that wildlife use for winter range. Wildlife move to the lower elevations to avoid deep snow to seek shelter and food supply. Snowmobilers seek the opposite and look for the higher elevations with the deepest snow.* (99)

Snowmobile access on [Olson Creek road] has existed for many years. It is generally outside the winter range for wildlife and has had no impact on the wildlife on the Refuge . (59,64,70,71,72,77,88,92,131 202, 210, 263, similar comments made by 21, 75,76, 100, 112, 113, 119, 120, 121, 122, 124,126, 127, 132, 185, 193, 243, 246).

. . . snowmobiling should not displace wildlife at all since the four mile section of road is well away from winter range. (221)

Response: Many members of the public assume that all animals migrate to lower elevations when the snow sets in. While this is true for the majority of species, some species are specifically adapted to deep snow and remain in areas of heavy snowpack for the majority of winter. Two examples of animals exhibiting this behavior include snowshoe hare and Canada

lynx. Since these animals inhabit the areas that snowmobilers like to use during winter, we are responsible for analyzing impacts to them. Please see the Compatibility Determinations for more.

Other members of the public seems to think that we mean deer every time we say wildlife. We have over 250 vertebrate wildlife species on the refuge and it is our job to manage responsibly for all of them, as well as for fish, plants, and other forms of life such as insects and fungi.

Snowmobile impact to deer has primarily been dealt with by restricting snowmobile use in the past to Blacktail Mountain Road east of Blacktail Bridge and Olson Creek Road (see map 12 in Chapter 2). White-tailed deer are generally not found in this area during snowmobile season. However, illegal off-road snowmobile use does currently occur outside of these two areas.

We agree that snowmobiles on Olson Creek Road are not disrupting winter range for deer. However, much of the scientific work exploring snowmobile impacts to wildlife focuses on impacts to deer.

Snowmobile Use and Whether Wildlife are Disturbed

Comments: *It has been our experience that snowmobiles do not bother the animals. They hardly bother to look at us anymore. They like to walk on the groomed trails. It is easier for them to get to their feeding areas. Most deer that are killed are hit by cars and trucks on the highways.* (31, similar comments in 9, 26, 79, 103)

Any animals that we have seen (Deer, Elk Coyotes, Birds, etc) do not seem to be bothered. In fact we have seen sign of them using the groomed trails quite often. It is quite a sight to stop and watch a herd of Deer or Elk. (116, similar comments in 132, 169, 189, 205, 273)

The irrelevant citation involving captive deer (Moen et al, 1982) is refuted by other studies: Response of White-tailed Deer to Snowmobiles and Snowmobile Trails in Maine, Voit B. Richens and Gerald R. Lavigne, Canadian Field Naturalist 92(4):334-344 found that deer management could be enhanced by use of snowmobiles. Wildland Recreation - Ecology and Management by Hammitt and Cole, 1987, 92-94 (ironically the same book cited by the DEIS for adverse impact to small mammals) states that deer are capable of habituating to presence of man and are often attracted to established snowmobile trails that make walking easier and browse more available. (221)

Response: Many commenters mentioned or implied habituation in defense of snowmobiling. Habituation is a process by which animals initially frightened off by a strange stimulus can, in response to a frequent and/or predictable exposure to the stimulus, gradually become accustomed to it and eventually show little or no avoidance of the stimulus. It is true that many studies have documented the process of habituation in ungulates (hoofed animals) and other species (Meagher, 1993, Aune, 1981). In evaluating deer habituation response to snowmobiles, the majority of studies cited in the Yellowstone document *Effects of Winter Recreation on Wildlife of*

the Greater Yellowstone Area: A Literature Review and Assessment (1999) showed a negative effect to white-tailed deer from snowmobiles; though a few studies do show positive or negligible effects to this species.

A summary of some of these deer studies is presented here: White-tailed deer in Minnesota showed significant displacement and increased movement in response to low-intensity snowmobile activity (Dorrance, et.al, 1975), and the response of deer increased with the duration of the disturbance. Huff and Savage (1972) found that snowmobile activity appeared to force deer into less-preferred habitats where nighttime radiant heat loss was increased. This study also found that home range sizes were reduced when deer were exposed to snowmobile traffic. Eckstein et. al (1979) found negligible changes in deer activities and home range resulting from snowmobile activity. Richens and Lavigne (1978) found that deer did benefit by following snowmobile trails where the snow was firmer. The varying results of these studies reinforce Gutzwiller's caution (1991) that habituation may occur only at specific levels of disturbance and disturbance intensities above or below these levels may be detrimental. Other researchers hypothesize that the lack of an external flight response may sometimes be a manifestation of a progressive weakening of an animal's physical condition, but internal responses such as heart rate may consistently rise in response to the disturbance. Where disturbance fails to produce habituation, the energy expended in avoiding the disturbance may deplete fat reserves, result in territory abandonment, or reduce the likelihood of reproductive success (Knight and Cole, 1991).

Again, please note again that the issue of whether to allow snowmobile access on Olson Creek Road is not based on a concern for deer. Deer are not generally found along that road during winter. Our concern for snowmobile use in that area revolves around high elevation inhabitants such as lynx, hares, and grouse. Deer are sufficiently different from lynx, hares, and grouse that we do not feel we can extrapolate from these studies to determine whether or not these high elevation inhabitants do habituate or not.

Snowmobiling Impacts To Other Wildlife

Comments: *The impacts and significance of the snowmobile use is not clear. This use should be studied for 3 to 5 years to determine what these effects are and what impacts are actually occurring.* (123, 125, 163, 168, 211, similar comments by 46, 279A)

What local data do you have to show that snowmobiles and off-road vehicles are incompatible with game range uses? (279A)

Snowmobile use through the Refuge has been ongoing for 25 years without any proven harm to wildlife. (129, similar comments in 83, 213, 238)

Snowmobiling leaves considerably less mark on the land than just about any other use that can be thought of. The argument of snowmobiles reducing the insulating properties of snow for small animals has no merit at all when snowmobile use is on an otherwise maintained road. (117, similar comment in 221)

*The basis for closing the area to snowmobiling must be based on sound science, not studies that make claims that the sport **may** have an adverse effect, or that it increases deer metabolism, etc. And that science must be scrutinized to the fullest extent before any one group is shut-out of a public resource. (200)*

The study on deer being penned up and snowmobiles run around them is cruelty to animals, did this study say what happens when people or cars or trucks run around them, you cannot pen up animals and run vehicles around them when they have no way to escape without raising their heart rate that study is a joke! After listening to your biologist first it was the deer then it was the Canadian lynx then it was the grouse that would be disturbed by snowmobiles it strikes me that every time we questioned one reason he came up with another excuse to keep snowmobiles off the roads strikes me your agenda is to keep all off-road vehicles out of the game range no matter if they are compatible with game range use or not. (279A)

Response: We agree that sound science must be the primary basis for Refuge management decisions. The public needs to recognize however, that science-based decisions require sophisticated ecological knowledge, and even with that, science does not necessarily present an unequivocal answer to common dilemmas. Conservation planning always occurs in the realm of varying degrees of uncertainty.

We acknowledge that we are lacking a satisfactory base of *local* information with respect to snowmobile use and patterns, and direct or indirect influences of winter recreation on resident wildlife. Under these circumstances, we must utilize credible scientific information from existing studies performed elsewhere about wildlife, existing or potential threats. Ultimately, it is our job to remain responsible public stewards for healthy wildlife habitats and populations. The lack of local information should never be construed as the lack of an actual impact to wildlife or their habitat.

In evaluating snowmobile effects to wildlife, the Refuge primarily considered wildlife inhabiting higher elevations during winter, including especially lynx (see Wildlife Comments and Response section).

The whole of the literature dealing with wildlife response to recreational disturbance is small, however, the body of literature shows that wildlife response is dependent on a number of factors (Knight and Cole, 1991). These include the type of activity, the timing of the activity, the spatial context of the disturbance relative to the animal (e.g., is the animal above or below the disturbance), the frequency of the disturbance, the predictability of the disturbance, and the characteristics of the wildlife being studied (including species, group size, age, sex, size, and nutritional status).

Various studies have demonstrated snowmobile impacts to different species of wildlife (see Oliff et al., 1999 for an extensive review). A few examples are cited here. Anderson and Sherzinger (1975) reported winter elk counts falling by 50% when recreational snowmobile activity

increased in the Bridge Creek Game Management Area. Aune (1981) demonstrated elk flights averaging 34 meters in response to approaching snowmobiles.

According to Neumann and Merriam (1973) snowmobile use affected snowshoe hare and red fox mobility and distribution in Ontario, mainly within 76 meters of snowmobile trails. Snowshoe hares avoid snowmobile trails while red foxes use them. Studies showing effects to white-tailed deer were summarized in the previous section Snowmobile Use and Whether Wildlife are Disturbed.

Wildlife Disturbance By People On Foot Compared to People On Machines

Comments: *Also numerous studies have proven that the duration of elevated pulse rates in wildlife is about 1/4 as long when wildlife is exposed to snowmobiles as compared to when wildlife is exposed to humans on cross country skis or snowshoes. (64)*

A number of scientific studies have been made about the effects of snowmobilers on wildlife. Eckstein, and others Vol6:45-51 1979 University of Wisconsin, Dr Andres Soom, University of Wisconsin 1988, N.B, Richens, Maine 1978, Richard A. Strait Yellowstone and Grand Teton National Parks 1990. All these and more, repeatedly show that persons on foot always disturb animals more than snowmobiles do. (129, similar comments in 83, 213, 238)

Response: We do not dispute that wildlife often flee at greater distances from people on foot than from mechanical disturbances (see Aune, 1981; Shultz and Bailey, 1978; Gabrielson and Smith, 1995). However, we have minimal concerns about cross-country ski traffic and snowshoeing since these activities are fairly limited in the upper elevations.

Wildlife Disturbance By Snowmobiles Compared to Automobiles

Comments: *Snowmobiling on the four-mile stretch of road within the Refuge is a means of access only, no more nor less than automobile use during the rest of the year. The Draft Plan does not propose to eliminate automobiles. (21, 64, 70, 71, 72, 73, 75, 77, 90, 92, 100, 101 119, 120, 121, 122, 124, 126, 127, 130, 202, 210, 243, 246, 263, similar comments received in 79, 117, 129, 169)*

Response: We disagree. Snowmobiles are far noisier than automobiles. Snowmobiles are also far more polluting than automobiles. On average (Schubert, 1997), a snowmobile emits 216 grams of hydrocarbons and nitrous oxide and 564 grams of carbon monoxide per hour per horsepower of the machine's engine. A 54 hp engine emits about 360 times as much pollution per hour as an automobile. Effects of such air pollutants to plant communities can result in foliar injury, reduced productivity, tree mortality, decreased growth, altered plant population, modifications in species diversity, and increased susceptibility to diseases and pests (Shaver et al. 1988). Attendant effects may result to aquatic systems when pollutant depositions melt into streams during the spring (Oliff, et al. 1999).

Snowmobiles also tend to be active in areas where automobiles are de facto restricted because of conditions. Winter places unique stresses on animals, and animals only survive the cold weather

by maintaining a positive energy balance. Put another way, animals survive if energy used doesn't exceed energy (food and fat) available to the animals. Any disturbance of the kind that causes a flight disturbance, increased heart rate, or reduction of available habitat is worrisome, because this causes an increase in energy used. In the rest of the Refuge, we are minimizing the effect of wintertime auto traffic on wildlife by closing all but the county maintained roads from January 1 through April 14. Snowmobilers are asking for an exception to this.

Snowmobiling Disturbance to Wildlife And People

Comments: *Snowmobiling usually disturbs wildlife and should in general be eliminated on the Refuge as given in several alternatives. But how many deer are on the four miles of road to Calispel Peak in the wintertime?* (10)

I am in favor of dispersed recreation but not in favor of snowmobiles and motorcycles. I believe they can be detrimental to wildlife and extremely stressful during the winter. (256)

Much of the research on motorized recreation, and particularly snowmobiling which occurs during the gestation period of large ungulates, shows its detrimental effect on the energy reserves of these animals during this critical period. (262)

"In the past we chose not to purchase property on the refuge because of the way it has been used. We have friends on its boundary who have been bothered by noise at night, snowmobiles and hunters. (82)

Response: See the responses above in Comments and Responses Sections: Snowmobiling Impacts To Other Wildlife ; Snowmobile Use Related to Winter Range ; and Validity of Lynx Impacts Assessment .

Usage Numbers

Comments *As Tri County Groomer Coordinator for the past twenty years, I have spent many hours on the trail and I feel the numbers used in your Draft Comprehensive Conservation Plan concerning usage are extremely high. Usage during weekdays are practically non-existent. There is use on the weekends but the numbers are nowhere near as high as you have estimated.* (274)

"You stated that last year you estimated there had been about 25,000 visitors to the refuge. On any given weekend in the winter, there may be, at most, 10 to 20 snowmobiles on Olson Creek Road. Perhaps one or two during the week. How can these few snowmobiles have more impact than 25,000 hunters, fishermen, campers, horseback riders, etc. (21)

Response: We are in the process of gathering better visitation numbers on the Refuge. Through the installation of counters we will collect user data over several years. Unfortunately, during this planning process no one seemed to know exactly how much use Olson Creek Road receives by snowmobilers. The snowmobilers we have consulted have provided us with dramatically different estimates. We started to get a more accurate estimate of snowmobile use on Olson

Creek Road this winter (1999/2000). Based on vehicle counters installed, we have revised (increased) our estimate of snowmobile use on Olson Creek Road to 7000 users per year. The compatibility determination for horseback riding includes stipulations to insure compatibility and address the concerns described. Our plan will include monitoring of snowmobile use.

Effect Of Snowmobile Use on Regional Economy

Comments: . . . *the elimination of this use, even though the National Forest has several 100 miles of snowmobile trails, could also have a negative effect on the region s economy.* (81, similar comment in 20, 83, 274)

Snowmobiling even pays its own way. The fees paid by snowmobilers pay for trail grooming and snowmobilers routinely volunteer their time for trail maintenance, education events, etc. (117)

The closure of this four miles of Olson Creek would also impact Beaver Lodge, a privately owned small business, taxpayer and employer, because it will close the route to Calispel Mountain. Beaver Lodge depends on winter visitors to its cabins and campgrounds for survival. Has this even been considered? (21)

Response: See the updated economic analysis in the document (Chapters 2 and 4) to determine the current snowmobiling effect on the local economy, and the way in which this would change under the different alternatives.

Appreciation And Enjoyment Of Wildlife

Comments: *Snowmobilers appreciate and enjoy wildlife as much as any other refuge visitor.* (64, 70, 71, 72, 73, 77, 90, 92, 100, 101, 102, 119, 120, 121, 122, 124, 127, 130, 131, 202, 243, 246, 263, similar comments received from 192, 200, 221)

In thirty years of winter activity in this area I have never observed any snowmobiler, cross-country skier, snowshoer, or winter camper be anything but respectful of wildlife in the winter. I cannot say that however of some summer visitors. (117)

I credit this sport with helping keep my kids from drugs, alcohol, and many other negative influences while they were growing up. Their appreciation of the outdoors and the winter snowmobiling trips has only been enhanced by the availability of places we can go. Through snowmobiling all of my sons have viewed many animals in the winter and made their decision not to become hunters, but to get involved in protecting the environment and animals. (191)

By the way, snowmobilers, fourwheelers and motorcyclists enjoy wildlife viewing and picture taking as much as anyone else, which is one of the uses you are suppose enhance on a game range! (279A)

Response: We recognize the conservation ethic held by many snowmobilers and appreciate their effort to promote the safe and respectful enjoyment of this activity.

Snowmobile Assistance With Environmental Education and Interpretation

Comments: *Snowmobilers can assist with environmental education and interpretation . They could distribute information and educate on the purposes of the Refuge. (64, 71, 72, 73, 92, 131, 101, 192, similar comments in 123, 125, 126, 168, 221, 263, 279A)*

Response: Thank you for the offer. We would appreciate the assistance of the snowmobile clubs in this arena. We will contact you as our environmental education and interpretation programs get underway.

Draft Plan s Effect On Established Recreational Use

Comments: *We feel that it would be a great loss if this area were closed to snowmobiling . (116)*

This is by far, in my opinion, the best snowmobiling area in the Colville area. (75)

People were snowmobiling the area back then in the 50s (that s a lot of years) and not causing any damage to the back country. Why the sudden change now? Please answer. (132)

This is a major snowmobile recreational area, and also includes the only safe snowpark location for loading and unloading snowmobiles on the state highway. (272)

Response: We recognize that snowmobiling is a favorite activity of many in the community and that the route through the refuge leads to a popular riding area. We have altered the plan to allow continued access to Calispell Peak along Olson Creek Road. We will continue to work with neighboring agencies and land managers to find an alternate route suitable to all concerned.

Whether Snowmobiles Should Be Allowed On A Wildlife Refuge

Comments: *Snowmobiles should be banned period! The same with jet skis. (13, similar comment in 261)*

During the past ten years we have noticed an increase of ATVs and ORVs and from what I gather at the recent meetings also in other areas of the Refuge an increase of snowmobiles. Personally these type of vehicles have no place on a Game Refuge unless operated by authorized personnel. (44)

"We would strongly support the elimination of dirt bikes, and snowmobiles, since we feel these activities are detrimental to the function of a refuge. Deer, elk, and other animals are not geared for avoiding such mobile off-road machinery. Dirt bikes and snowmobiles can cause significant damage to fragile landscapes and roadways as well. Such damage can increase environmental damage by water runoff and erosion, all of which contributes adversely to the role of a wildlife refuge. " (53)

Most of the refuge provides winter habitat for big game. It should be as the name implies: a refuge. Snowmobiling to my mind is incompatible with providing secure winter range for wildlife. (55)

Snowmobiles are detrimental to the safety, objectives, and purposes of a national wildlife refuge and have no place in one. I would, however, not be opposed to non-motorized transportation options such as horseback riding or bicycling. Non-motorized vehicles are far quieter, slower, and less intrusive than their motorized counterparts. (86)

"I strongly support phasing out . . . snowmobile use (105,106,107,108,109,110,133,134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 206, 207, 216, 217,218, 222, 223, 224, 227, 234, 235, 240, 241, 242, 247, 248, 250, similar comments received by 84, 182, 188, 190, 259, 277, 279, 283)

"Off-road use of motorized vehicles degrades the experience for refuge visitors. We support an active program to curtail illegal use of such devices. " (164)

Wildlife refuges must be used for native biodiversity and we strong feel . . . snowmobile use . . . [is] incompatible with native biodiversity. (259)

"The Wilderness Society strongly supports the Plan's proposal to terminate snowmobiling in the refuge. This activity clearly conflicts not only with fish and wildlife and their habitats, but also with the priority public uses mandated by the National Wildlife Refuge System Improvement Act. (272A)

Response: Many refuge managers within the National Wildlife Refuge System agree with the philosophy that snowmobiling is inappropriate on a wildlife refuge. The Refuge system is managed under the Closed until open rule, (originating from the Refuge Administration Act of 1966) which says that uses not specifically permitted under a compatibility determination are prohibited at refuges. Staffing and funding to properly administer the use must be in place before the use can be allowed. Because the activity may set a precedent, the managers must consider whether the use on their refuge would compromise the mission of the National Wildlife Refuge System. Finally, although many snowmobilers have told us that their appreciation of nature is enhanced by snowmobiling, snowmobiling is not considered a wildlife-dependent activity.

Of the more than five hundred refuges in the National Wildlife Refuge System, only 11 refuges outside Alaska allow snowmobiling. Another region of the Fish and Wildlife Service has issued a fact sheet entitled: Why snowmobiles are generally not a compatible reoccurring use on National Wildlife Refuges and Waterfowl Production Areas , citing the principle of wildlife first, general off-road vehicle restrictions on refuges, impacts of snowmobiles, preclusion of other uses, setting a precedent, safety and liability concerns, enforcement burdens, and the availability of other options on neighboring lands.

Fairness of Draft Plan to Snowmobilers

Comments: *If I were a snowmobiler or an RV owner you would have a difficult time proving to me that my vehicle was more disturbing than a chopper!!!? (44)*

We don't kill animals, we just look and take pictures. (9)

Lastly, I don't agree with the exclusion of snowmobiles. Number one: I feel that horses have as much if not more impact than snowmobiles, especially if snowmobiling is restricted to Olson Road, as is currently the case. (38)

Prescribed burns and hunting are much more stressful to animals than helicopters and snowmobiles. (31)

My question is do you travel any of these roads in the spring, summer, or fall. Do you see the damage that Motorcycle and ATV riders do to the meadows and hillsides and all the trails they create for themselves? I'm not saying that all riders do this damage, but probably 75% do. No one tells them that the roads will be closed. (169)

Snowmobiling does less damage than hiking and many other wilderness activities (191)

The decision to ban snowmobilers from the refuge seems very discriminatory to a select group of recreationists without studying the impact of all recreationists on the refuge. (192)

The DEIS inconsistently determines cross country skiing, snowshowing, and dog sledding are currently compatible, camping, search and rescue training, hiking, horseback riding, and scouting activity as compatible citing the attributes that these activities share with snowmobiling. For example, snowmobiling is a family activity. While mountain biking and jogging may temporarily displace wildlife but not more than other road uses, snowmobiling should not displace wildlife at all since the four mile section of road is well away from winter range. Viewed from the perspective of other allowed uses, the proposal to ban snowmobiling, which has historically existed in the area for many years, seems quite arbitrary. (221)

Response: Little Pend Oreille National Wildlife Refuge, like every other National Wildlife Refuge in the country, is required to evaluate activities for compatibility with the Refuge purpose and Refuge System mission before they can be permitted to occur. In the Refuge System, wildlife come first. The National Wildlife Refuge System Improvement Act further differentiates between the range of human activities and identifies six as wildlife-dependent (these are hunting, fishing, wildlife observation and photography, environmental education and interpretation). Snowmobiling is not a wildlife dependent activity. As such, it receives no priority consideration to be allowed on National Wildlife Refuges, no matter how loyal and large a local constituency it may have. Similarly, the long history of an activity on a Refuge is no guarantee that it will be considered compatible.

Some of the activities mentioned above as more damaging than snowmobiling (e.g., the Air Force Survival School, off road ATVs and dirt bikes) have also been deemed incompatible (see Appendix F). Other activities mentioned above were deemed compatible (many with stipulations), partly because of the low numbers of people partaking in these activities. Thus a person on foot on cross country skis may be more disturbing to wildlife, but they are much less likely to be using the Refuge for wintertime recreation than snowmobilers.

The compatibility determinations have been closely reviewed and edited. We are committed to a fair and unbiased evaluation of all activities, though it's difficult at times to evaluate the variety of different human activities in a way that seems fair and consistent to the public. We hope the public recognizes that the evaluation of impacts to wildlife is a difficult task. The compatibility determinations must encompass effects that can occur to the entire realm of species and habitats that occur on the refuge and must determine at what level effects are materially interfering or detracting from the purpose of the refuge. Some activities are deemed compatible because they occur at such a low level as to be generally inconspicuous.

See also the comments and responses dealing specifically with compatibility under the National Wildlife Refuge System section.

Little Pend Oreille Plan Is More Restrictive Than Yellowstone National Park

Comment: *If Yellowstone Park, pride of the U.S. Park Service, not only allows snowmobiling but encourages it . . . why eliminate it on the refuge? If the plan is to have law enforcement patrols subdue the snowmobilers, what are the patrols going to use to patrol . . . not snowshoes!* (212)

Response: In the Refuge System, wildlife come first. The National Park System mission is different. According to the National Park Service Organic Act, 16 U.S.C.1, their mission is ". . . to promote and regulate the use of the . . . national parks . . . which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." The Park Service thus places recreation on an equal footing with protection of natural resources. Even so, Yellowstone National Park is in the middle of a process of assessing the heavy levels of snowmobile recreation. Indicators point to increased restrictions on snowmobile traffic at Yellowstone in the future.

The Refuge staff would use snowmobiles for administrative needs, but this would be quite limited compared to the amount of recreational snowmobile traffic on Olson Creek Road.

Effect Of Eliminating Refuge Snowmobiling On Other Areas

Comment: *If access to Olson Road is denied this will force snowmobilers to use other snow park areas to access the Tacoma Creek drainage area, leading to overcrowding at these already heavily used snow park areas.* (38)

As more areas are closed to motorized recreation, greater concentrations of machines will be felt in the remaining open areas - this is not good. (189, similar comment in 204)

Snowmobiling is going to be a fact of life in this area and all land managers should team together to plan where access points will be and which areas can be used or even sacrificed. The Olson Divide likely is the best biological as well as practical snowmobile access to the Tacoma/Calispell Peak area. The loss of this access would mean another access would need to be developed and that would appear to need to start at a lower elevation and likely mean many more miles of potential wildlife conflict. So I suggest you look at Olson with a much larger map in mind; one that you would have to sit down with other land and resources managers and select new parking and grooming routes. It may make Olson look like a reasonable alternative to include in E. (23)

Response: Given that our primary concerns about snowmobiling on Olson Creek Road center on the potential effects to lynx, and given that any lynx inhabiting the Refuge doubtless range over our neighbors lands, we agree that the best strategy is to take a landscape level approach to conservation and protection of lynx habitat in this area. This approach is beyond the scope of this CCP however, we have modified our plan to include a key strategy: work with neighboring landowners and agencies to evaluate current snowmobile trails within the ecosystem (the Little Pend Oreille Lynx Management Zone, delineated by Washington Department of Natural Resources, would likely be the best ecosystem boundary to use), and minimize potential effects to wildlife while maintaining snowmobile recreation within the area.

Non-Refuge Areas Available for Snowmobiling

Comments: ". . . snowmobilers have hundreds of miles of trails to explore, but there's only one LPO National Wildlife Refuge. Let's protect and preserve it for the wildlife." (37, similar comments received by 48, 68)

"Snowmobile use on the refuge can be curtailed without unduly disrupting access to traditional use areas off the refuge by partnering with adjacent land ownerships to solve access problems. " (164)

"Anyone who lives in the northeast Washington area knows there are plenty of snowmobile routes open in the winter. Closing a few, especially where doing so will protect sensitive species of wildlife during their greatest season of stress, winter, can only be a good idea. (269)

"As for snowmobiling, there are alternative roads for snowmobilers to recreate on during the winter on the Colville National Forest. KRCG requested information from the Forest Service by way of FOIA concerning the use of snowmobiles on the Colville. The Forest Service informed us that the Colville travel map shows the designated routes for snowmobiles and also acknowledged that other restricted areas may receive use since policing all roads is impossible. (258)

Response: See response above. We intend to promote the strategy of a landscape level approach to conservation and protection of lynx habitat in this area, working with other agencies to minimize potential effects on wildlife while maintaining snowmobile recreation.

Grooming Access

Comment: *Grooming access to public and private lands is difficult to say the least. Obtaining approval to groom takes many weeks, months, and sometimes years of negotiation. (76, 89)*

Response: Comment noted.

Flexibly In Refuge Snowmobile Use - Adopt Rules vs. Closure

Comments: *Snowmobiling access on the Olson road has existed for many years. Before this use is eliminated, it should be restricted to the designated route, enforced, and monitored to evaluate the actual impacts to the wildlife (123, 125, 163, 168, 211, similar comments received in 126)*

Signed and enforced restriction of snowmobiles to the designated groomed trail should be fully implemented before any closure (64, 70, 71, 72, 90, 100, 131, 210, 263, similar comments received in 49, 83, 116, 129, 130, 132, 204, 271, 280)

I think your recommendations are right on track. Unfortunately, since other motorized vehicle traffic is not limited on open roads in the refuge, I do not think it is fair to restrict snowmobiles any differently than cars or trucks. I suggest you close the snowpark immediately, but allow snowmobiles along the traditional upper roads until the regular vehicle closure happens. Then from Jan. 1 to Apr. 15, the whole refuge would close to snowmobiles. All motorized vehicles are then treated the same, and the window of greatest stress for animals is protected at high elevations as well as low elevations. (98)

You also have a great opportunity to have the local snowmobile club police itself. You can state that the current snowmobile route is acceptable, but venturing off the trail is not. You set some level of tolerance, which they monitor. You state that you will conduct spot checks, and if you determine that errant snowmobilers have exceeded the tolerance level some set number of times, you close the trail for some specified time frame . . . and you publicize that both the refuge and the snowmobile group agreed to certain guidelines, which some exceeded, thus the temporary closure. (285)

I believe the approach has to be more flexible rather than adopting blanket restrictions. For example, to exclude the snowmobile users entirely is a mistake. As I understand it they are asking for a corridor through the Refuge to gain access to Kalispel Mountain. It sounds like they are willing to abide by a rule to stay on a designated route, which needs to be marked. The response that this would be disruptive to the deer herd doesn't meet the test of local control or desire. (20)

Response: We appreciate the many creative suggestions offered by the public to attain a win:win situation. We are committed to finding mutually satisfactory solutions.

We have decided to alter our plan as follows. Until a new snowmobile route network is found that minimizes lynx impact within the local area, *or* until we find an alternate route to Olson Creek road, snowmobiling will be prohibited from all areas of the refuge. However, travel to and from Calispell Peak along Olson Creek Road will continue to be allowed. Snowmobilers will be expected to comply with the rules listed in the Compatibility Determination and also found in Chapter 3 of the CCP/EIS.

The Refuge will sign the road in both directions so that these rules are clear to all snowmobilers. The Refuge will work out a speed limit and monitoring agreement with local snowmobile clubs, and will conduct occasional spot checks to ensure compliance.

CAMPING

Dispersed and/or Designated Site Camping

Comments: *On a phone call, one person said they like the idea of dispersed camping to permit people to get back-to-nature experiences.* (91)

If the reason for dispersed camping is for hunters, it should coincide with a hunting season. (98)

I am not in favor of channeling an X number of campers into a limited number of controlled campsites. This may be O.K. during the summer . . . but come hunting season I feel the number of hunters should be regulated by the amount of game & real estate available. (44)

If we get put into a campground situation during the deer hunting season, it will ruin the main purpose and best parts of our hunt. (34)

Camping should be limited to designated sites on the refuge. (272A)

Camping should be permitted only in designated campgrounds Apr 15 - Dec. 31 and in designated dispersed sites between Oct.1 and Dec. 31 (Alt. E). Designated campgrounds should be located close to the edges of the refuge whenever possible to reduce habitat fragmentation and impacts to sensitive habitats. (188)

Response: Under the Preferred Alternative, camping will be allowed only in designated refuge campgrounds between April 15 and December 31. Additional designated dispersed site camping will be allowed between October and December to support the hunting season. There will be no camping on the refuge from January 1 through April 15.

Camping impacts vegetation. Camping-induced soil disturbance may provide conditions that favor weed infestations. Dispersed camping is appropriate during the deer hunting season

because vegetation is not actively growing and breeding seasons are complete. Confining camping to a small number of campsites versus dispersing camps across a larger area reduces the impacts of camping.

Camping in Riparian Areas

Comments: *I support no dispersed riparian camping and would like to see some protection for designated campsites near these areas.* (68, similar to 17, 35, 54, 68, 188)

Elimination of riparian camping as proposed or severely restricted in the action alternative is contrary to Goal 3, Provide opportunities for wildlife dependent recreation and education to enhance public appreciation, understanding, and enjoyment of Refuge wildlife, fish, habitats, and cultural history. If people cannot experience the essence of the Refuge directly, next to riparian areas where most of the wildlife activity occurs, then they cannot appreciate, understand or enjoy. We do not dispute that impacts occur as a result of riparian camping. However, these impacts should be mitigated by a variety of site-specific means. The activity itself should not be eliminated. (221)

Response: People can still enjoy the Refuge's recreation and resources without camping directly in riparian areas. Camping is not a wildlife-dependent use. Camping activities in riparian areas can prevent animals from using this vital habitat and can result in increased runoff into streams due in part to exposed soil and reductions in vegetation. Water quality can also be negatively affected. This is of concern since Refuge dispersed riparian camp sites lack sanitary facilities and human waste is deposited on the ground around the site. Some upland dispersed sites will remain open, but dispersed riparian camps within 200 feet of meadows, streams, lakes, and wetlands will be closed and revegetated.

Refuge Camping

Comments: *. . . keep the refuge open for camping* (255, similar to 8, 15, 59, 63, 85, 86, 21, 271)

My main concern is our hunting camp , and . . . please find a way that good people can treat their families to the great experience that the refuge has to offer (34)

Response: Alternative E, the preferred alternative, proposes to retain a modified camping program to accommodate some traditional uses but with limits to ensure minimal impact to Refuge resources. Camping is probably the most family-oriented activity occurring on the Refuge. For many families it is their primary means of outdoor recreation and their primary introduction to wildlife enjoyment. While camping itself is not a wildlife-dependent use, it does support priority uses such as fishing, hunting and wildlife observation. Additional opportunities for wildlife interpretation and education will also be explored under the Public Use Management Plan.

The Refuge will remain open to camping under a strategy to limit dispersed camping from October through December and to protect riparian habitats as noted above. Basic improvements

would be made, if funding is available, to some Refuge campgrounds, including wheelchair-accessible toilets, designated sites, fire pits, and running water.

Camping Permit System or Fees

Comments: *I favor a permit system that would identify the applicant, the purpose, and the destination, and possibly require a report of the visit. (54)*

Camping fees should be charged to fund a camper education program for responsible behavior and appropriate use of wilderness resources. (188)

Response: Although individual camping permits would not currently be required under the preferred alternative, groups with 25 or more people must apply for a special use permit to camp on the Refuge. Charging a fee for refuge camping to support camper education will be addressed in the Public Use Management Plan. An education campaign addressing appropriate social behavior for refuge camping will be developed and implemented.

Primitive, No-trace Camping

Comments: *. . . all dispersed campers should be required to follow primitive, no-trace camping procedures (Alt D). (188)*

Allow only primitive, no-trace camping within the Refuge borders. (261)

Response: Your preference on this issue is noted.

Camping in Relation to Lakes

Comment: *In order to reduce the impact on nesting birds and other wildlife at Potter s Pond and Bayley Lake from recreational activities, camping should be prohibited until July 1 at these sites and camping areas should be relocated a suitable distance from the lakes. (188)*

Response: Under Alternative E, a site plan will be developed to reduce impact to wildlife from all recreational activity near Potter s Pond and Bayley Lake. This site plan will consolidate and relocate camping away from the lakeshore to reduce disturbance to the lake environment.

The camping objective is to minimize impacts associated with Refuge dispersed camping, especially along riparian areas and during the sensitive winter and spring/summer periods and to create a Refuge camping program supportive of Refuge System priority uses.

HORSEBACK RIDING

Horseback Riding on the Refuge

Comments: *I especially believe that . . . horseback riding should be allowed to continue. (271, similar comments in 1, 12, 15, 19, 40, 57, 59, 193, 275)*

Alt. E hints of severe restrictions on horseback riding, camping and access. Such restrictions may improve quality hunting and viewing for a very few people but destroy opportunities for far more. (59)

Opportunities for low impact activities such as camping and horseback riding should be increased. . . . (86, similar comments in 23)

I hope you will consider designating trails, . . . as horse routes. (23)

Response: Under all action alternatives, many recreational activities would be reigned in or regulated in one form or another. One objective is to minimize impacts associated with Refuge horseback riding and to produce an equestrian plan in cooperation with riders. Alternatives E would maintain or even increase horseback riding, but it would occur under the guidance of this equestrian plan that would deal with such issues as overnight use, trails, and horse feed.

Horseback riding needs to be managed on the Refuge for a number of reasons. Impacts from horses depend on the number of riders and horses, the season of use, and location of use. In refuge campgrounds, where horses may be confined, the impacts include girdling of trees, trampling of vegetation, animal waste, introduction of weeds through hay, and damage to streambanks and lake shores where horses are watered. Tying horses to trees or shrubs or confining them in wet areas has caused damage in refuge camps. At stream crossings that are not armored by rock, horse use has trampled vegetation, destabilized soils and caused sedimentation. Some users even ride within streams which affects the stability and integrity of aquatic life.

Comment: *[Horseback riding] might be good . . . but there are millions of acres of land outside the Refuge where equestrian use is compatible use. Inside the Refuge it is not. Your job is to provide a refuge for wildlife (17)*

Response: This family-oriented use offers a unique way to view wildlife and see the beauty of the Refuge. While it is technically not wildlife-dependent, horseback riding with stipulations is not anticipated to interfere with refuge purposes. For more information, see the horseback riding compatibility determination in Appendix F of the CCP/EIS.

Horseback Riding Regulation

Comments: *Horseback recreational use needs regulating. Hay bales may bring in potential noxious weeds and tethering horses near riparian areas is destructive to these areas. (68, similar comments in 11, 98, 188, 261)*

We recommend restrictions on cross country riding be studied carefully before a blanket restriction is implemented, and Recommend the date when horseback riding is restricted, i.e., April 15 to October 15, be considered flexible [depending on soils and trails conditions]. (238)

I did not see a future equestrian plan and am not satisfied with the removal of animal waste products stipulations. (115)

Response: There is considerable horse back riding use of the Refuge. Alternative E, the preferred alternative, seeks to reduce impacts associated with horseback riding activity.

An equestrian plan will be developed with the involvement of interested individuals and groups. The equestrian plan will identify trail heads, trails, roads open to riding, and other guidelines to protect Refuge resources. Some of the issues that will be covered in the plan are: cross-country riding; use of wet areas; designating and mapping roads and trails available for riding from April 15 through October 15; developing parking areas for day use; designating and improving one camp for horse users; restoring damaged areas; identifying appropriate crossings and watering areas; and treatment of animal waste products. These and other horse issues are noted in the CCP/EIS s Appendix F, Compatibility Determinations.

HUNTING

Support Hunting on the Refuge

Comments: *I want to see as much hunting as possible on the Refuge.* (23)

Little Pend Oreille provides important opportunities for hunting and fishing. These can be accommodated without degrading the refuge s capacity to harbor healthy wildlife populations. (164)

We believe there is a need for hunting. Hunters we know use the meat for on their table. (85)

The game range is a wonderful place to hunt- I mean hunt, not drive around in a car - and I wouldn t want hunting to be eliminated or reduced. (5)

The NRA was a strong supporter of the enactment of the National Wildlife Refuge System Improvement Act which elevated wildlife-dependent recreation activities like hunting, from a secondary use to a priority use of the Refuge System. Thus, we were pleased to read that the preferred alternative not only continues hunting as a valued recreational activity on the refuge, but seeks to enhance it We have long advocated that hunting can be conducted in a manner that does not exclude other activities and we are pleased that this philosophy is reflected in the preferred alternative. (16)

It is my belief and always will be that hunting is a basic management tool for maintaining a proper balance of wildlife. (44)

Response: Comments noted.

Support increased Quality Hunting

Comments: *. . . quality is largely in the mind of the participant and quality for some may be viewed as elitist by others.* (164)

Hunting is a quality experience regardless of the weapon type/method used (11)

I think you are on the right track here. More road closures is a key here since road hunting happens and this is one of my big irritations on the refuge. (98)

Response: Our goal was not to describe one type of hunting method (e.g., bowhunting) as being of superior quality compared to others. On page C-4 we define quality hunting as . . . providing participants with reasonable harvest opportunities, uncrowded conditions, minimal conflicts with other users, relatively undisturbed wildlife and limited interference from or dependence on mechanized aspects of the sport. . . . In addition, we wish to work with the Washington Department of Fish and Wildlife to maximize the hunting opportunities on the Refuge, including allowing additional seasons not currently available on the Refuge.

Opposed to Hunting on the Refuge

Comments: *Hunting has no place on a wildlife refuge. (13)*

We would prefer that no hunting be allowed, except as needed for population control. (249)

Let s keep in mind the LPO is a national wildlife refuge - hunters can go on private lands or on the National Forest. I am very much against the hunting of birds and predators on the refuge. I have not found any mention of furbearer trapping - it should not be permitted either. It has no chances of being enacted, but I personally would ban all hunting in the refuge boundaries. Rogue predators and herd culling would be handled by refuge personnel. (54)

Response: Congress, through the National Wildlife Refuge System Improvement Act of 1997 identified hunting as one of the priority public uses of the Refuge System. These uses are legitimate and appropriate public uses where compatible with the Refuge System mission and individual refuge purposes. A compatibility analysis of recreational hunting on this refuge determined this activity as described in the preferred alternative to be compatible with the refuge purposes.

Rogue predators , by which we assume the author meant such things as bears habituated to humans and threatening refuge visitors, would be dealt with by refuge personnel in conjunction with State wildlife officers. Since population control is one function of recreational hunting, we don t foresee the need to perform any herd culling in addition to or instead of recreational hunting harvest.

As stated on page 2-63 of the FEIS/CCP, trapping on the LPO NWR requires a special use permit. The policy on recreational trapping on all refuges nationwide is evolving. Currently, no permits to trap are being issued on the LPO NWR. The refuge wishes to retain the option of using trapping as a population management tool, however it would be limited to specific situations.

Hunter Education

Comments: *I applaud your efforts to expand hunter education programs. (68)*

I think AHE [Advanced Hunter Education] projects on the refuge should be encouraged as well. (98)

Response: Comment noted.

Comment: *Don t get into hunter ed., there are others doing it. (11)*

Response: The Refuge staff recognizes the Washington Department of Fish and Wildlife s use of volunteers to provide basic hunter safety instruction. However, the Refuge could host activities such as Washington Outdoor Women outdoor skills training workshops, as well as providing projects for individuals participating in the State s Advanced Hunter Education Master Hunter program. These programs would contribute to the Refuge s goal of providing opportunities for wildlife-dependent recreation and education.

Predator Hunting

Comments: *It is unusual for a refuge to permit the indiscriminate shooting of predators during the course of other open hunting seasons. This is a concept that no longer reflects either good wildlife management or the general feeling of the public toward predators. Given that the Fish and Wildlife Service has geared their management of refuges around Ecosystem Management it is incumbent upon you to develop a wildlife management program that more truly reflects the concept of ecosystem management, including the acceptance of predators as part of a functioning ecosystem.*

It is totally unjustified to permit the shooting of mountain lions and bears merely because there may be an open season on them in the State of Washington outside the refuge. Refuge hunting programs are to reflect good wildlife management in that they harvest animals surplus to the maintenance of healthy populations on the refuge while at the same time providing high quality outdoor recreation. Lacking any information that supports the killing of predators as necessary to maintain specific wildlife populations there should be no killing of predators in conjunction with big game and upland game hunting seasons. Refuge hunters must learn that National Wildlife Refuges are dedicated to Wildlife First and that the taking of wildlife in public hunting programs will be strictly controlled and not necessarily in conformance with hunting seasons or general practices outside the refuge boundary. (190)

I am strongly opposed to predator hunting because this sport is primarily for the purpose of bagging a trophy or for the protection of domestic animals (165)

We see little justification for the continuation of predator hunting on the refuge. According to the plan, predators account for a very small percentage of wildlife taken by hunters anyway. (272A)

Hunting of predator species such as bear and cougar should be eliminated. I feel that allowing such hunting to take place is contrary to the mission of a wildlife refuge, which should remain a place of sanctuary for animals. (86)

Response: For the purpose of the FEIS/CCP we define predators to include carnivores such as mountain lions and bobcats as well as more omnivorous animals like black bear and coyote. Mountain lions and bears are defined by Washington Department of Fish and Wildlife (WDFW) as big game animals requiring a species specific hunting license to harvest within designated hunting seasons. Bobcat and coyote are considered both small game and furbearers and therefore can be harvested by both hunting and trapping. Bobcat has a restricted season (September 7 - March 31), while coyotes can be harvested year around on lands open to hunting and trapping. Trapping has not occurred on the Refuge for several years. Other, smaller predators like weasels, mink and marten are classified as furbearers and protected by the Refuge s restriction of trapping. There is no hunting or trapping season on Canada lynx in Washington.

These species are no longer considered vermin or pests. All are managed by WDFW with the objectives of maintaining healthy, self-sustaining populations while providing a maximum sustainable recreational harvest opportunity.

The Refuge doesn t consider our plan to allow the controlled harvest of these game animals according to the rules and regulations imposed by WDFW as indiscriminate shooting . We do accept these animals as part of a functional ecosystem they share with the animals they prey on or the vegetation they consume. We would not allow harvest of these animals if it would jeopardize their continued existence on the area, nor do we believe there is a need on this refuge to control predators to manage other wildlife populations.

The most recent population estimates for these species in eastern Washington is 1bear/ 3.1 square miles (WDFW 1996). Using this ratio the black bear population on the Refuge is estimated to be about 20 bears. Using WDFW s estimator of 1.5 - 2.5 cougars per 20 square miles, the refuge would contain about 5 - 8 mountain lions (WDFW 1997). These estimates are likely a minimum population estimate for both species, and populations of both black bears and mountain lions are increasing in the state. No estimates were made of coyote and bobcat, but bobcat are definitely present, and based on casual sightings, coyotes are abundant.

When hound hunting was legal up to 3 cougars and as many bears were harvested on the refuge annually, as well as an occasional bobcat. Since this ban was enacted in 1997, no cougars or bears have been reported taken from the Refuge. Currently, the State hunting season on cougars runs from August 1 through March 15. Bear season in eastern Washington was open August 1 through November 7 in 1999. However, these seasons are curtailed on the Refuge since part of the Refuge opens to hunting on September 1 while the remainder opens on October 1. All hunting ceases on December 31st. These seasons will remain the same under the preferred alternative, including the potential of opening the whole refuge to hunting on September 1. With the restrictions on hunting with hounds or bait, most predator harvest is opportunistic, that is, a harvest opportunity arises for a properly licensed hunter while pursuing other game. There is also a small number of hunters using predator calling as a method to hunt these animals; most of this activity is targeted at coyotes.

The WDFW believes the Refuge can sustain the current minor harvest of these species without jeopardizing population viability. Pursuit of these game animals provides an additional hunting opportunity on the Refuge, albeit with a low possibility for success. This limited harvest should not significantly affect the ecological role of predators in the refuge ecosystem. Harvest of these animals on the refuge will be monitored. Since all cougar and bobcat pelts must be inspected by WDFW personnel, very complete harvest records on these species are available. Information on black bear and coyote harvest is obtained mostly through hunter contacts and is less definitive. We plan to initiate survey techniques aimed at developing and monitoring an index of refuge wildlife populations, including predators. This information will allow us to evaluate the effects of our management activities, including controlled hunting, on wildlife populations and adjust harvest if necessary.

In the event that the legal use of hounds for hunting cougar or bobcat, or the use of hounds and/or bait for hunting bears is reinstated in Washington, neither activity will be allowed on the Refuge.

Continued Hunter Access

Comment: *Hunting programs and issues under the agencies preferred alternative does not outline specific dates which the refuge would be open. Statements indicate that this recreational activity would be continued if it does not disturb the conditions of the refuge. This represents a belief that a lock out could occur at some point, which would have a negative economic impact to the region in millions of dollars.* (81)

Response: The Refuge System Improvement Act identifies hunting as one of the six wildlife-dependent recreational uses that will receive enhanced consideration over other refuge uses. However, all refuge activities, including hunting, are subject to the compatibility standards set forth by this law and Service policy. The compatibility determination (Appendix F of the CCP/EIS) found hunting to be a compatible activity on this Refuge, within the specified stipulations.

Chapter 3 of the CCP/EIS discusses how recreational hunting varies between alternatives. Alternatives A and B mention specific dates, which are the current hunting periods, while the preferred alternative only states the CCP would expand quality hunting opportunities. The preferred alternative assumes the continuation or expansion of the current dates. Map 15 illustrates the hunting dates proposed under the preferred alternative.

Hunting Should Avoid Negative Impacts

Comment: *All hunting on the refuge should be carefully scrutinized to avoid negative impacts to targeted and non-targeted wildlife species.* (188)

Response: As stated above, recreational hunting was determined to be compatible with the purpose of the Refuge. This determination included analyzing the affects of this activity on refuge resources.

FISHING

Improved Fishing Access

Comment: *I realize you are there to protect the water etc., but does it mean a little bit more couldn't be fishable for the younger and elder people?* (1)

Response: Potter s Pond will remain a family fishing lake with standard State limits and regulations, including the use of bait. It also has a handicap accessible fishing dock.

Fishing Quality

Comments: *Catch and release fishing on the Little Pend Oreille River should be implemented and would result in a higher likelihood of natural spawning and larger fish in the rivers.* (188)

What is the support/justification to promote a catch and release fisheries program on the LPO River. (52)

Response: We agree. Fish populations in the Little Pend Oreille River are sustained primarily by natural spawning. Fish have not been stocked in this river for many years. A goal of fishing programs on all wildlife refuges is to provide an angling experience superior to that found on other nearby public lands. We feel the Refuge has the opportunity to provide both ample access and the expectation of catching large fish by restricting the number of fish removed from the stream and reducing angler-caused mortality. Implementing selective gear and catch and release fishing regulations are proven methods for accomplishing this. The exception may be the retention of the current regulations on eastern brook trout in an effort to keep populations of this highly competitive and prolific non-native species in check so as to reduce competition with other native fish species.

Comment: *I am a catch and release fly fisherman and want you to know how much I appreciate having the opportunity to fish Bayley Lake and McDowell Lake. I hope these fisheries will be continued and enhanced.* (22)

Response: We believe the fly-fishing only restrictions on Bayley and McDowell Lakes have successfully provided a type of angling experience not found on most public access fishing lakes. The preferred alternative would continue this program.

Relax Angling Restrictions

Comment: *I would like to see all lakes on refuge opened to all types of fishing with a 2-fish limit. This would improve all fishing on refuge. As of now most fish die of old age or by hook and release.* (104)

Response: Angling on Refuge lakes follow two different sets of rules. Potter s Pond regulations follow the statewide rules for lakes including a five fish limit, and is stocked annually by WDFW with catchable size trout. Bayley and McDowell Lakes are fly-fishing only lakes with non-motorized boats allowed. McDowell is catch and release only while Bayley has a one fish

limit through July 4th, when it becomes catch and release only. These lakes are stocked intermittently. With the exception of disallowing motorized gasoline powered boats on Potter s Pond, management will remain the same under the proposed plan.

Potter s Pond, with its handicap accessible fishing dock and liberal rules on gear and possession limits, provides opportunities for families and casual anglers to fish without special restrictions. It is managed by WDFW as a put, grow and take fishery with some fish surviving from season to season. The special restrictions on McDowell and Bayley Lakes provide an alternative angling experience not commonly available on public access lakes while allowing fish to grow to a larger size.

Having different rules for each lake provides a diversity of angling opportunities for refuge visitors. We disagree that most fish in these lakes die of either old age or by being caught and released. Certainly some fish do die from swallowing the hook or careless handling after being landed. The equipment required on the fly-fishing only lakes, (i.e. artificial flies with barbless hooks) minimizes this problem. Fish caught in Potter s Pond are kept anyway. Going to a two-fish limit would reduce the creel limit for anglers fishing Potter s Pond. Allowing any gear fishing on McDowell and Bayley eliminates their unique angling opportunities as well as their ability to grow and retain larger fish. We feel the current regulations allow ample recreational opportunity for a wide variety of refuge visitors.

Involve Trout Unlimited

Comment: . . . get T.U. (Trout Unlimited) involved (11)

Response: We have been and will continue to work with local and national conservation and sportsman groups on cooperative management projects.

Natural Spawning

Comments: *Improving natural fish reproduction is a worthwhile activity.* (10)

I support enhancing natural spawning in the lakes. (68)

Response: We agree. The potential for natural spawning will be explored and developed to its fullest extent.

Stocking Non-Native Species

Comments: . . . eliminate stocking of non-native fish species. This will benefit the native redband rainbow trout and have the benefit of not further polluting the gene pool. (188)

Stocking of non-native fish in refuge waters to support sport fishing, however, is inappropriate. (272A)

Response: In the past, stocking non-native fish was common practice throughout the State. Non-native fish stocked in Refuge waters include eastern brook trout, brown trout, and coastal

rainbow trout. No fish have been stocked in Refuge streams since 1953. Coastal rainbows are stocked in Potter s Pond annually, with eastern brook trout planted in Bayley Lake occasionally.

These species are so firmly entrenched in the aquatic system of the Refuge and surrounding area it s impractical to remove them. Hybridization of the native interior redband rainbow trout and westslope cutthroat with the coastal rainbow trout stocked here over several decades has resulted in an introgressed population with the majority of fish displaying characteristics of all three species to varying degrees.

The Refuge is working with WDFW on a proposal to begin stocking interior redband rainbow trout in Bayley and McDowell Lakes. Eastern brook trout would no longer be stocked. Redbands may also be stocked in the Little Pend Oreille River in the future. Coastal rainbows will continue to be stocked in Potter s Pond to support this family oriented fishery. The nature of the diversion supplying this artificial lake minimizes any chance of these fish leaving the lake. Creel limits on Refuge streams will be used to help control eastern brook trout populations. However, they and brown trout will continue to spawn naturally in the streams they inhabit.

Tench

Comment: *I would also suggest that McDowell Lake be treated to remove the tench. (35)*

Response: This non-native fish is a problem in McDowell Lake. Unfortunately, several past attempts to completely remove them have failed. The Refuge is working cooperatively with WDFW to trap and remove tench when populations reach problem levels. Trapping also minimizes impacts to other wildlife using the lake. We believe this method can control the tench population since completely eliminating them seems impractical.

Fishing Disturbing Nesting Birds

Comments: *Delaying fishing until July 1 is recommended to minimize disturbance to nesting birds. (188)*

. . . I suggest delaying the lake opener until the stream opener (June 1). This gives the waterfowl additional time to nest undisturbed. (98)

Response: We are concerned that anglers using the lakes in spring and early summer may impact breeding and nesting waterfowl and other wildlife. For the last several years fishing season on these lakes has opened on the last Saturday in April. Fishing pressure on all three lakes is very high for about one month following opening day. This level of use could chase waterfowl away from the lake resulting in abandonment of breeding territories or nest sites.

The purpose of the Little Pend Oreille NWR is as a refuge and breeding ground for migratory birds and other wildlife. Although fishing is a secondary use encouraged on national wildlife refuges, it s permissible only if it is not counter to the refuge purpose. More information needs to be collected before we can determine if spring and early summer fishing activity is negatively impacting wildlife. We plan on continuing the current fishing seasons on these lakes while we

collect data. If this impact is determined to be significant, we will take steps to reduce or eliminate human disturbance.

WILDLIFE OBSERVATION, INTERPRETATION, AND PHOTOGRAPHY

Comments: *I would absolutely love to have more wildlife viewing opportunities. and . . . some winter-time wildlife activities, if it could be done without harassing wildlife --- like seeing bald eagles; snow shoeing* (5, similar to 98)

Increased viewing information, opportunities, programs, and events for the public, including natural and cultural history (Alt. E), should be made available. (188, similar to 68,171, 261)

You might consider an auto tour guided by a brochure. (55)

Response: Alternative E, the preferred alternative, would promote additional wildlife viewing and photography on the Refuge, build an environmental education program, and promotes wildlife viewing through the creation of viewing areas and programs.

Interpretation of natural features would be emphasized, with kiosk construction and brochure development. This alternative would seek partnerships with citizens in developing a Refuge-specific wildlife viewing leaflet. Funds would be sought to improve roads and provide an auto tour route with interpretive signs relaying specific themes of Refuge habitats, wildlife, and history. There would be an effort to stage annual events celebrating Refuge wildlife, particularly around the International Migratory Bird Day in May and National Wildlife Refuge Week. Refuge staff would explore opportunities to develop the old Winslow logging railroad grade as an interpretive trail.

Comment: *Wildlife viewing is there and has always been there. Why increase wildlife viewing programs? It can only lead to conflicts between primary historic users and those others.* (12)

Response: One reason that we are considering expanding these programs is that there is a growing interest in wildlife viewing on the Refuge and it has been identified by Congress as a priority activity on refuges. This may be due to an increasing trend in wildlife viewing nationally as well as the result of highway signs guiding visitors to the Refuge. The Refuge is described in the Washington Wildlife Viewing Guide and several state birding guides. Some interest is generated through the national wildlife Refuge web site. Many birders contact the Refuge office for information about species and where to bird watch. The number of people who visit the Refuge to view wildlife is unknown but many historic users who visit primarily for other reasons (camping, fishing etc.) also enjoy seeing wildlife.

These activities have the potential to gain advocates for wildlife and habitat protection. Ultimately, these activities may expand support for refuge programs. By encouraging people to learn more about wildlife, the Refuge may be creating new constituents for wildlife protection and enhancement.

Visitation Activity Figures, Wildlife Viewing and Road Closures

Comments: *Why do you have in your agenda to improve wildlife viewing and then close access road? [Especially during winter]. (279A)*

From personal experience I find your Activity figures on Wildlife and nature observation on page 2-74 unbelievable. (212)

I question the 20,000-30,000 estimated visitors (pages 5-13) each year since there was no documentation, etc. to back this up. Twenty five thousand visitors would equal 6250 vehicles with 4 people in each or almost five visits per year by each man, woman and child in the city of Colville. (252)

We appreciate that you are considering the interests of the public who visit the Wildlife Refuge, and their economic value to the Colville area. Visitor use is high; between 17,000-25,000 visitors came to the Refuge between 1994-97. (277)

Response: Road closures would limit vehicular access and thus increase potential viewing opportunities for certain publics because there is less potential wildlife disturbance. For those willing to walk, snowshoe, or ski, viewing opportunities could be greatly enhanced. Developed wildlife viewing sites, such as along the auto tour route, would be vehicle accessible from April 15 through December 31, when major roads are open to motorized vehicles. Other than the birthing season, winter is usually the time when an animal must expend the most energy to survive. Winter closures are primarily to minimize stress to wildlife caused by vehicle disturbance. Opportunities for observation will still exist via county roads that remain open year-round.

These visitor use numbers are estimates of visitor use days. For example, a family of five camping on the refuge for five days equals 25 visitor use days. In 1999, we installed four vehicle counters in four locations. What we learned is that our visitor use estimates are probably too low and may be closer to 55,000 - 60,000 visitor use days. Since the vehicle counters have been in place for less than a year, we expect visitation estimate accuracy to increase in the future. Although the Refuge is locally popular for recreation, visitors come from all over Washington and out of state. On the Friday before the modern firearm season opened in October 1999 we counted 325 visitors on the Refuge.

Concerning the comment on the 1994-1997 visitor numbers, what we meant was, yearly visits were estimated at between 17,000 and 25,000 between 1994 and 1997. Again these estimates are now thought to be underestimates of use days.

OTHER RECREATIONAL USES

Motorboats

Comment: *Gas-powered motors on Potter s Pond should be eliminated. The issue of electronic motor use demands further examination. Audubon urges the refuge to take the preliminary measure of prohibiting the use of electronic motors on Potter s Pond until July 1, when the waterfowl nesting season is over. (188)*

Response: Under the preferred alternative, the fishing program would aim to provide a fishing experience superior to that found on other private and public lands. In keeping with this, motorized boating would be eliminated, except electric motors would be allowed on Potter s Pond.

Off-Road Vehicles, including Dirt Bikes

Comment: *Page S-23 references dirt bikes , what is a dirt bike ? This same page says that unlicensed all-terrain vehicles would be prohibited from operating on the Refuge under all alternatives . Therefore, if all-terrain vehicles are licensed they can operate on the Refuge? (52)*

Response: Dirt bikes are motorcycles designed for operation on unpaved surfaces. Vehicles operating on Refuge roads must be street legal and have lights, mufflers, license plates, registration, be in proper operating condition; basically having everything that is legally required to operate on streets and highway by the State of Washington Department of Motor Vehicles.

Unlicensed vehicles, including off-road vehicles, are prohibited from operating on the Refuge by 50 CFR 27.31(f). Vehicles commonly referred to as all-terrain vehicles , whether having 3, 4, or 6 wheels, are not licensable for highway use and therefore cannot be legally operated on the Refuge. Legally licensed vehicles capable of off-road travel are restricted to open roads

Motorized off-road vehicles uses are not dependent on wildlife. These vehicles are disturbing to wildlife and may have impacts to vegetation and soils when used off of established roads during the growing season. Loud motors detract from the quality of other forms of refuge recreation.

Mountain Bikes

Comment: *Mountain bikes should be limited to open roads only. [They] are unnatural mechanical disturbance in areas where one would expect to encounter wildlife, hikers or horseback riders. (12)*

Response: Mountain bikes may be used on maintained roads only. Mountain biking would be allowed to continue as at present under all alternatives until or unless this use becomes incompatible with Refuge purposes or there are safety concerns. Refuge staff will monitor all forms of recreation including mountain biking for their effects on wildlife and habitat and address any needed changes in the Public Use Management Plan.

Dog Sledding

Comments: *I support your efforts to reduce man-caused impact on the refuge. I don't understand, however, why dog sledding would be controlled/banned/regulated for supposedly disturbing wildlife, when logging trucks cause so much more disturbance and impact.* (4)

Dogsledding is considerable less disruptive to wildlife than either logging or hunting. (5)

... to exclude the snow mobile users [and dog sledders] entirely is a mistake. (20)

There are just not that many dogsledders to disrupt the wildlife. (4)

Their [dog sledders] small numbers cannot have the kind of negative impacts on wildlife to require a blanket restriction. (20)

You've said Special Use Permits would be available for dogsledding on the Game Range, however, on page F-23, it states that closing gates would reduce disturbance. What this says to me, I can get a permit, but you will close the gates so I can't use that permit. (4)

Response: Within the last two years, dog sledding has increased on the Refuge, possibly due to better snow conditions, although the numbers are still small. While this use is relatively minor, new dog sledding clubs are forming in and around Spokane.

Dog sledding, at the levels it is currently occurring, is not believed to negatively affect Refuge purposes. Dog sledding and other winter time activities have the potential to have some negative wildlife impacts during a time of year when wildlife are most vulnerable.

Dog sledding would be allowed to continue as at present under all alternatives unless it becomes incompatible with Refuge purposes. Refuge staff will monitor all forms of recreation including dog sledding for their effects on wildlife and habitat and address any needed changes in the Public Use Management Plan. To ensure compatibility, dog sledding and other winter time activities will be monitored during moderate to heavy snow years and restricted when warranted. Dog sledding and search and rescue training will require Special Use Permits.

ROADS AND ACCESS

General Comments and Questions

Comments: *I have to ask if your inventory of the roads on LPO was done in accordance with RS 2477 since the Colville National Forest encompasses LPO? If the roads in question are exempt from RS 2477 please explain why.* (59)

Closing all but county roads from January to April 15 seems prudent also. There should be a time on the refuge when it functions solely as a refuge. (68)

I think eight entrances are too many. I would like to see many interior roads closed as well. This will increase quality hunting experiences. (98)

In my opinion, using the tax payer s money to keep the tax payers out is Communism. (186)

NO obliteration of existing roads which is a waste of money and time. (244)

We support closing roads where doing so will bring together roadless areas into larger contiguous areas. We need to conserve what little remains of our unroaded, wild public lands. (269)

Response: Revised Statute 2477 (otherwise known as RS 2477) is a very short law, which states: the right of way for the construction of highways across public lands not otherwise reserved for public purposes is hereby granted. To the best of our knowledge there are no RS 2477 rights-of-way located within LPO.

Other comments noted.

Methods and Standards For Road Closures

Comments: *How about if we close off all the roads just inside the refuge boundary, prepare temporary parking, and let everyone park and hunt on foot? The hunting traffic and garbage they leave is ridiculous. Or have official shuttles through the refuge. (5)*

I agree that there should be a good road management program established and implemented. However, it bothers me that there are substantial differences in the standards you are proposing and those that are being implemented on the State, Private, and National Forest lands. (45)

There is hardly any type of habitat improvement work that is more beneficial for wildlife than reducing open road densities. Gates are bad for public relations. Remove as many gates as possible and replace them with boulders. (55)

Response: It is impractical to close all the refuge roads and allow only foot access during the hunting season. Similarly, although gates may be bad for public relations, they do allow management access when it is needed (for instance to fight fire).

The open road density standards adopted for the Refuge were based on the Washington Department of Fish and Wildlife publications *Management Recommendations for Washington s Priority Habitats and Species* (1991). Recommendations in this document are ordered by species or habitat. We focused on the recommendations for white-tailed deer in drawing from this source. In this publication, WDFW recommends that existing roads should be closed to motorized public use where densities exceed 1.5 mi/sq. mi on summer range or 0.5 mi/sq. mi on winter range.

In regard to being consistent with other agencies, there is no one standard that has been established for road density that meets all resource needs in all situations. National Forest road standards even differ from Forest to Forest. In choosing the standards we've adopted under the Preferred Alternative E, the Refuge has been more conservative than some agencies and less conservative than others. The Colville National Forest Land Management Plan (1988) for instance establishes a standard that roads open for public use will be minimized on big game ranges . . . not to exceed 0.4 miles of open road per square mile on elk winter range and mule deer winter range in Ferry County.

Regionally, road density has become a major concern because of the negative effects to fish and streams - regardless of whether the road is open or closed by a gate. A logistic regression analysis of four non-anadromous fish species across subwatersheds within the interior Columbia Basin showed that increasing road densities and their attendant effects are associated with declines in the status of bull trout, Yellowstone cutthroat trout, Westslope cutthroat trout, and redband trout. (Quigley and Arbelbide, et al. 1997, p. 1253-1260). All subgroups except one showed extirpation at the subwatershed level with geometric road densities of > 4.0 miles/square mile, and depressed status as road densities increased at lower levels.

Despite this widespread concern and various total road density proposals, the Refuge has NOT adopted a standard for total road density (which counts all existing roads visible on the landscape, regardless of open or closed status). The Refuge acknowledges the importance of reducing total road density and adopts objectives to do so (see Road Minimization Objective in Chapter 3), but stops short of establishing a firm upper limit on roads, even though some subwatersheds exceed or are nearing this threshold of 4.0 miles/square mile (see Table 2-9 in Chapter 2).

Comments on Specific Road and Access Points

Comments: *The access point from Starvation Lake appears to be on the chopping block and that's wrong. This access point has been a traditional access point for local residents and campers at the Starvation Lake Campground. Without this access point, it is impractical for visitors to the refuge to consider the off refuge camping opportunity at Starvation Lake Campground. (12)*

The Colville National Forest map shows Olson Creek road as a County road. How can you close a county road to the public? (52)

. . . it is important that the residents around Starvation Lake have a back door in case of emergency. Maybe some sort of arrangement can be made to close this road while allowing emergency access (keys, combinations to locks) that would address this concern (182)

Protect the roadless area by closing Blacktail Mountain and Cedar Creek roads to motorized vehicle traffic. (261)

Response: We recognize the concern by residents who live near the Starvation Lake access point and have decided not to close this entrance. See the modified maps of access points under Preferred Alternative E in Chapter 3.

The Colville National Forest Map is incorrect. Neither Olson Creek nor Flodelle Creek Roads are county roads. Flodelle Creek Road is maintained by the Washington Department of Natural Resources. Olson Creek Road, which forks off of Flodelle Creek Road after the bridge over the Little Pend Oreille River, is owned and maintained by either the Refuge or Stimson Lumber Company. Once this road reaches the divide and the Pend Oreille County line, it becomes Tacoma Creek Road and is maintained by Pend Oreille County.

We cannot completely close Blacktail Mountain Road, since a use agreement with Stimson Lumber Company allows company access to that road. However, Blacktail Mountain Road will be closed (along with other refuge maintained roads) from January 1 - April 14 each year to the general public.

Road Construction Within Riparian Areas

Comments: *I believe riparian habitat and water quality on the refuge should not be compromised by any commercial or recreational use. I therefore support repairing or removing roads that impair these resources. (55)*

A properly engineered stream crossing can be much better than taking up two to three times area to obtain the same access. Just think of the increased miles of road that would be needed today if we could not cross any of those streams. (94)

Response: The effect of roads on water quality and aquatic habitat is one of our primary concerns. We have attempted to curtail the likelihood of future negative effects by adopting the strategies to keep future roads out of riparian areas and obliterating or fixing problem roads. Properly designed perpendicular crossings would be allowed where needed, of course. Our objective was intended to avoid long distances of roads being built paralleling streams within the riparian area. We will of course consider all tradeoffs before making site-specific decisions and are not excluding the possibility of making exceptions where conditions warrant.

Disabled Access

Comment: *Have you looked at access to this area for people who cannot walk long distances and could access this with off-road vehicles? (279A)*

Response: Only vehicles licensed for highway use may operate on designated (open) Refuge roads. Operation of vehicles designed only for off-road use, and not licensed for highway use, is prohibited by 50 CFR 27.31(f). Since there are numerous open roads traversable by licensed vehicles, we feel sufficient access for disabled persons exists. We could allow additional access through a special use permit on a case-by-case basis.

OTHER USES

LIVESTOCK GRAZING

Support Phasing Out the Annual Livestock Grazing Program

Comments: *I was heartened to hear that you are recommending a phase out of grazing As an individual with a long family history of cattle farming, who was raised near Republic, WA, I am also thankful to hear that you propose to phase grazing out in the refuge. If a person chooses to raise cattle I believe that they have a responsibility to ensure that it doesn't effect people other than themselves, or nature other than their own piece of it. Let's protect our public places. The commercial production of cattle is incompatible with the needs of wildlife. (283)*

Streamside and lakeside habitat will require careful attention. Cattle do a lot of harm to shorelines. Therefore, grazing should be eliminated. (10)

Livestock: Alt. E if properly conducted. What species will meadows be managed for, How do you keep the cows out of the creek? The fish need protection (11)

Needless to say, livestock grazing is generally incompatible with refuge management. Fences should be removed. (17)

The Refuge received a telephone call from a local citizen concerning livestock on the LPO NWR. He was trying to flyfish along the Chimney Pasture portion of the LPO River and was very concerned about the presence of livestock grazing in that pasture. He felt grazing in that riparian pasture was improper (he used the word criminal) and that it not only damaged valuable riparian habitat but also detracted significantly from his outdoor experience. (55A)

Eliminate grazing especially in riparian areas ASAP. (18)

I m very supportive of restoration of riparian habitat. I think limitations on grazing will prove a good decision, it would be very expensive to graze the area appropriately. (23)

Grazing as been shown to be incompatible with native plant, fish, and wildlife interests. Grazing destroys habitat and adversely impacts riparian zones. (27)

We consider grazing to be incompatible with native plant, fish and wildlife interests (28)

. . . I would like to see immediate halting of grazing along the riparian areas of the river. Stopping that would make an immediate improvement in water quality. (35)

Improving streams, restoring forests, minimizing human impact within the Refuge boundaries, and otherwise protecting wildlife and wildlife habitat saves for the future one of the most precious things available in the area: our wild heritage. Maybe we can't gauge our gains in dollars, but the intangibles have value too, a fact that commercial interests are quick to forget.

Cattle can graze elsewhere . . . but there s only one LPO National Wildlife Refuge. Let s protect and preserve it for the wildlife. (37)

. . . can find other areas as well as can the parties involved with the cattle grazing. (48)

This will usher in my comments by starting with grazing. I support your alternative to not allow it. It should be phased out as immediately as practical, not within 5 years. (54)

(Local citizen) stopped by to say they support the direction we propose and think grazers have abused the land (60)

Supports the FWS preferred alternative, opposed to grazing and . . . in particular. (61)

I support phasing out the program. Grazing is extremely destructive of riparian areas. (68)

. . . we fully support the EIS that would put an end to grazing . . . in this area. A refuge . . . is no place for cattle (69)

I am stunned and thrilled that this document proposes the measures that have been so badly needed for so long to restore and preserve the ecological integrity of the LPO Refuge, specifically . . . removing most of the bovines (80)

I want to go on record as supporting your preferred alternative plan, as I believe it is a plan that best supports the needs of wildlife, which is what a wildlife refuge should do. Reducing cattle grazing . . . should be priorities in the new management plan. (84)

I understand the negative impact livestock grazing has on the refuge. From dispersion of weeds to trampling of ground-nesting birds, there is more bad than good that I see livestock offering to the goals of the refuge. I strongly suggest that grazing immediately be removed from any streamside allotments as soon as possible. Additionally, I recommend that you remove fences after ending some of the allotments. Most of the fences I have seen on the refuge are not wildlife friendly. (98)

I strongly support phasing out cattle grazing . . . and other incompatible uses on the LPO NWR. (105-110, 133-154, 195, 206-207, 216-218, 222-224, 233-235, 240-242, 247, 248, 250)

I support Alternative E: The annual livestock grazing program would be discontinued, however periodic grazing may occur to meet wildlife objectives. (128)

I am strongly in favor of adopting a plan that would quickly phase our uses incompatible with the purpose of the area. Those uses I favor being discontinued include . . . grazing. (159)

Wildlife Management Institute agrees with the concept of utilizing grazing of domestic animals as a habitat management tool to achieve wildlife objectives. Grazing can be used effectively to

reduce rank vegetation but it should not be implemented as an annual program and special sensitivity is required in stream side areas. (164)

. . . but I know of few small businesses that have the opportunity to lease public land for their operations that are subsidized with tax dollars to the extent that grazing on public lands is. As a taxpayer, I say no to cattle, and as (a) citizen who expects a wildlife refuge to be exactly that, I say no to cattle. (165)

I find it odd that . . . cattle . . . are even allowed to share this land with wildlife, if indeed it is a wildlife refuge. (172)

The Board of Directors of The Lands Council has voted to support Alternative E of the CCP/EIS for the Little Pend Oreille National Wildlife Refuge. We think alt. E. best protects fish, plant, and wildlife resources and addresses two of the main concerns we previously expressed in our statement to the LPO management last August about grazing . . . on the wildlife refuge. (177)

We strongly support Alternative E. Especially the approaches to grazing (182)

There should be no livestock grazing in the NWR, even as a tool of habitat management. The risks of seed dispersal and selective grazing are too great to support grazing in any part of the refuge. Plans to phase out livestock grazing . . . are particularly encouraging. There are many public lands in northeastern Washington that can sustain these activities; the Little Pend Oreille National Wildlife Refuge is not among them. As a wildlife refuge, the land should be dedicated above all to the conservation of wildlife and harmful activities must be prohibited. (188)

We especially support the phasing out of livestock grazing except for specific management purposes . . . on the refuge. All these actions are a good start to bring Little Pend Oreille into conformance with the National Wildlife Refuge System Administration Act. (190)

Many years ago I worked a summer job at the Turnbull Wildlife Refuge . . . and was amazed to see cattle grazing on the land. I have always felt that this was not appropriate . . . for the Little Pend Oreille Refuge. I am excited with the efforts to return our refuge system to wildlife management as a priority. (227)

Please do everything you can to end livestock grazing on your wildlife refuge. Livestock are not wildlife, they get vitamins, antibiotics, hormones and are fed all winter - there is no way wildlife can compete with livestock. (257)

We thoroughly support the phasing out of cattle grazing . . . inherent in Alternative E. We commend the FWS for such progressive work and we feel the refuge will be improved for its primary purpose - as a refuge for native wildlife. (258)

Wildlife refuges must be used for native biodiversity and we strongly feel grazing . . . are incompatible with native biodiversity. (259)

In addition, I would ask that . . . livestock grazing not be allowed on the Refuge. (260)

If possible, eliminate livestock grazing . . . immediately. If phase out is required, attempt to accelerate the process. (261)

The riparian areas of the Refuge have clearly been damaged by cattle grazing. In conducting a workshop on bird identification at the Refuge last spring, I was at a loss to find healthy riparian habitat within walking distance of the Refuge Headquarters . . . and this on a refuge for migratory birds! I look forward to the improvement of these areas with the adoption of Alternative E. (262)

Collectively, we believe that activities which are incompatible with wildlife needs either by sound from permitted activities and/or direct or indirect habitat degradation should be discontinued on the Little Pend Oreille. The proposal is to phase out . . . 2)cattle grazing . . . over the next few years. We commend you on your decision to make wildlife the priority of the Little Pend Oreille Refuge. (265)

We wish to express our support for your proposed phasing out of cattle grazing . . . inherent in Alternative E. Cattle removing forage increases tree seedling growth success due to lessened competition. Cattle . . . are what historically were not part of the evolution of the ecosystem. Overstocked stands in a early and mid-seral forest are highly likely to occur, especially in the presence of cattle grazing. (269)

*PETITION TO SUPPORT THE LITTLE PEND OREILLE WILDLIFE REFUGE. Collectively, we, the undersigned, support Wildlife Refuge Manager Lisa Langeliers s decision on the proposed Draft Refuge Plan for the Little Pend Oreille. Collectively, we believe that activities which are incompatible with wildlife needs . . . should be discontinued on the Little Pend Oreille. The proposal is to phase out . . . 2) cattle grazing . . . over the next few years. 15 signatures (270)
11 signatures (290)*

Grazing of cattle should be extremely limited or discontinued as cattle grazing is destructive to the habitat in all but a few instances, should be used only for the purpose of managing the land and need to be out of riparian zones, and high-elevation areas. (271)

We support many of the components of Alternative E, especially phasing out livestock grazing. . . The Refuge can be recovered from impacts of livestock grazing, the quickest way would be to remove cattle from the Refuge. We would like to see monitoring of the hydrology and plants after the cattle are removed, baseline data should be established now. (277)

I strongly oppose the use of this refuge for . . . cattle grazing (279)

The exclusion of cattle from the riparian zone is desirable where their presence has a negative impact on efforts to increase vegetation along streams. (43)

Livestock grazing should be sharply curtailed in areas where grasses and vegetation have been degraded by such activity. Further, grazing fees should be sufficient such that tax dollars are not used to continually subsidize it. (86)

This is always a difficult issue with many complexities. At first glance it seems to me that livestock grazing is compatible with the mission of this refuge. However, I do not possess detailed knowledge of the allotments and any resource problems that grazing may be causing. I do feel strongly that livestock should be excluded from all riparian areas on the refuge except necessary watering sites and crossings. The expense of constructing and maintaining additional pasture fencing or enclosures may be prohibitive however. I support not renewing any vacated allotments. I support reductions in AUMs or changes in grazing operations if they are warranted. If it is occurring, grazing big game winter ranges late in the season is likely incompatible with maintaining these ranges for wildlife. (55)

Response: Comments noted. Please be advised that since the draft CCP/EIS has been available, the USFWS has decided not to phase out the annual livestock grazing, but to allow it to continue at the current intensity for five years, then completely discontinue the annual program.

Support Retaining Annual Livestock Grazing Program

Comment: *Cattle grazing seems fairly compatible with the concept of a wildlife refuge as well and should be continued. (53)*

Response: See Appendix F of the CCP/EIS for an explanation of refuge grazing compatibility.

Comment: *Over the years I have seen very little problem with . . . grazing (104)*

Response: Comment noted.

Purpose of the Refuge and Livestock Grazing

Comment: *I attended the meeting in which you presented your new directives to the Stevens County Cattlemen at the Ag Center in Colville. I am writing in support of the continued cattle grazing on the Little Pend Oreille National Wildlife Refuge. I certainly understand your position with your directives from your employer. However, I think you need to be more understanding of the tradition and history of the Little Pend Oreille. The ranchers that use this range will be threatened economically with the decision to eliminate cattle grazing. That would be tragic and, I believe, violate one of the original intents of the Refuge. (56)*

Response: Your comments concerning continued livestock grazing on the Refuge are noted. However, your statement that eliminating livestock grazing would violate one of the original intents of the Refuge cannot be substantiated. An exhaustive search of Refuge records resulted in no documentation that contradicts the purpose of the Refuge being . . . as a refuge and

breeding ground for migratory birds and other wildlife . . . , as stated in the executive order creating the Refuge. The Service has no legal obligation to maintain livestock grazing as a secondary economic or biological use on the Refuge.

Comments: *Promises were made to our Stockman s Association, the Colville Chamber of Commerce, the Rotary, the Colville Examiner and homestead families that those lands being acquired for the LPO would be managed for the maximum benefit to whitetail deer and livestock grazing. (268)*

There were commitments made to the users when the game range was initially formed. My family, along with other users, was promised that they would have continued access to their traditional grazing areas. Are these promises going to be kept or not? (289)

Response: We manage national wildlife refuges with the best available technical information under legal and policy guidance. We have been unable to identify any legal mandates from the past that require us to have a livestock grazing program at LPO NWR. We now have clear direction from the Refuge System Improvement Act and refuge policy that help guide our management. Society has changed in the 60 years since the Refuge was established and with that change comes new expectations of refuges. We will manage LPO NWR for more than white-tailed deer. The planning and public process used at LPO NWR has applied biological science, policy and law to one of the nation s national wildlife refuges.

Comment: *Grazing policy is to remain the same as it has been in the past so as not to interfere with the original intent of the founding of the L.P.O. (87)*

Response: Livestock grazing was not an original intent for creating the Refuge.

Goals of the Refuge

Comment: *The Little Pend Oreille National Wildlife Refuge could become an example of how both goals, habitat preservation and livestock grazing, can be met with proper management. This act could greatly reduce the risk of eminent loss of livestock grazing on public holdings for future generations in the surrounding area. (38)*

Response: Habitat restoration is a goal of the Refuge, livestock grazing is not.

What Data Supports the Decision?

Comment: *You have not scientifically established that grazing is incompatible with this specific range and, in fact, it is a beneficial practice for the wildlife species that inhabit the LPO. (268)*

Response: The Service has collected both qualitative and quantitative information in riparian habitats to evaluate how livestock grazing influences these habitats. Riparian habitats have been considered carefully because they are one of the most critical and species-rich habitats occurring on LPO NWR. The alluvial (floodplain) riparian areas of the Refuge have received the most intensive grazing use since livestock were first introduced to this area at the turn of the century.

We sought assistance from other fish and wildlife biologists within the agency to address whether LPO NWR s riparian habitats were providing, as mandated by the Refuge System Improvement Act, high integrity habitats for fish and wildlife and, if not, how we could improve them.

Three evaluations were completed that supported the finding of grazing being incompatible in riparian habitats. These included the 1996 grazing review (USFWS, 1997), 1996-97 riparian evaluation (Pyle 1997), and 1996 and 1997 fish habitat assessments (Kelly Ringel, 1998). The methods used to evaluate riparian and aquatic habitat condition are in standard and widespread use on federal lands throughout much of the western U.S.

The grazing review was one of several conducted throughout the Pacific Northwest Region. The purpose of the grazing review was to evaluate whether the annual grazing program was supporting Refuge purposes and wildlife habitat objectives. It evaluated the existing grazing program in riparian and forest pastures and included resource management professionals from the U.S. Fish and Wildlife Service, U.S. Forest Service, Natural Resource Conservation Service (NRCS), and Washington Department of Fish and Wildlife. At the conclusion of the review, the Service team was unable to identify a significant positive benefit for habitat or wildlife associated with the grazing program.

The riparian evaluation characterized the physical composition, vegetative composition, and functional condition of the Little Pend Oreille River, Bear Creek, North Fork Bear Creek and other selected streamside habitats using survey and classification procedures developed by the Fish and Wildlife Service, Bureau of Land Management and Natural Resources Conservation Service. Functional condition was determined based on a thorough examination of site characteristics and classified as either in proper functioning condition or functioning at risk. Approximately 5 miles of Bear Creek and 2 miles of the Little Pend Oreille River were classified as functioning at risk. These unsatisfactory areas were mostly in the alluvial, low gradient troughs that comprise more than 50% of the total riparian habitat on the Refuge. Areas classified as functioning at risk were characterized by excessive stream bank erosion, widened and down cut stream channels, lowered water tables, and reduced diversity and amount of herbaceous and woody riparian vegetation.

Service fisheries biologists completed fish habitat assessments in portions of the Little Pend Oreille River and Bear Creek in 1996 and 1997. They measured stream variables, fish species composition and community structure, and examined relationships between fish populations and habitat characteristics. Several areas of the Little Pend Oreille River scored below the INFISH standards (USDA Forest Service, 1995) for water temperature, pool frequency, bank stability, sediment, frequency of large woody debris and riparian vegetation. These areas coincided with the reaches functioning at risk in the riparian evaluation. The biologists attributed these substandard conditions to past logging and clearing of the valley, livestock grazing and wildlife browsing. Three reaches of Bear Creek also showed significant erosion, attributed to soil type, but exacerbated by cattle grazing. These coincided with areas determined to be functioning at risk.

Both the riparian evaluation and fish habitat assessments were based on technically sound methods and analyses. These surveys found evidence of unsatisfactory habitat conditions at least partially attributable to past and present livestock grazing practices. The draft compatibility determination in Appendix F of the draft CCP/EIS states that the benefits of the grazing program do not outweigh the negative effects and that we cannot meet riparian restoration and stream habitat objectives with the existing grazing program.

Comment: *I would not attempt to deny that grazing has had some impact on the land. However, since you have failed to scientifically quantify through information and supporting data the significance, if any of the problems grazing has caused, I would implore you to allow it to continue at its existing level. I have been told there is no information available to differentiate impacts caused by cattle or by deer or elk by assessing the measurements on lands inside and outside of these areas where cattle use has been excluded. Had a standard range management program been in place, these impacts would have been known. Without this data, elimination of grazing on the refuge will be based entirely on political whims and not on substantiated facts.* (225)

Response: The Service feels the impact of annual livestock grazing on wildlife habitat within the Refuge has been sufficiently described and quantified through the surveys and review already mentioned. Differentiating the impacts of cattle versus those caused by wildlife is difficult for some variables but not others. There are pasture units that have excluded cattle for 3 years adjacent to recently grazed units. Recent damage to stream banks like trampling and bank sloughing is readily apparent in these grazed units. Direct observation of cattle on the streambanks, hoof prints and other evidence confirm this is the direct result of livestock use and not deer. Elk are not a significant impact since very few live on the Refuge. Other impacts are less obvious. Removal and suppression of woody plants normally require as much as 10 years or more to become apparent.

We are not clear on your definition of a standard range management program. The livestock grazing program has been managed under a Coordinated Resource Management Plan written jointly with the USDA Soil Conservation Service (now the Natural Resources Conservation Service) since 1978, and updated in 1990. However, the result has been continued degradation of wildlife habitat on the Refuge, primarily in those areas grazed by cattle. This is counter to the mission priority of the Refuge to manage for wildlife and their habitat, and therefore unacceptable. This decision is substantiated by facts and is compliant with USFWS direction and not based on political whim.

Comments: *I also did not see any statistics establishing the amount of vegetation consumed through the grazing program. It appears that much is being assumed by scientists who do not live in the area.* (115)

I believe inadequate data was used for the conclusions drawn with regard to items such as exclusion of grazing (158, 167, 228)

As presented, I feel the plan is biased toward preplanned decisions and has not provided adequate support to justify the elimination of these actions in the future. The primary areas that appear to be biased are . . . grazing (162)

Finding no long term local documentation to support restrictions on . . . cattle grazing, leads me to feel those are decisions in support of political agendas. (252)

Response: We feel the information gathered through surveys and review described earlier adequately documents the impact annual livestock grazing has on refuge habitats.

Comment: *WCA (Washington Cattleman s Association) requests that you clearly address and answer each of the following questions in writing before adopting any of the proposed management alternatives for the Little Pend Oreille NWR. What is the scientific background or reasoning for the proposed restrictions?* (58)

Response: Please refer to the response to this comment on pages J-27 and J-28. Also, please note the compatibility determination for grazing in Appendix F.

Comment: *Where did the scientific testing occur to come up with this alternative? Where are those test results?* (268)

Response: The surveys and reviews used to evaluate the habitat condition on the LPO NWR are discussed in earlier responses. The NEPA evaluation process requires the review of technical information as a basis for decisions. The process may include evaluation of results from descriptive, comparative or experimental scientific research. The results from the descriptive research done on the LPO NWR is available at the Refuge Headquarters, as well as summarized in the draft CCP.

Comment: *When the U.S. Fish and Wildlife Service resumed control of these lands and indicated that the grazing program would be under scrutiny, we offered assistance in doing some test-site research. We knew then as we know now, that assumptions are frequently made where cattle are concerned which are not based on fact, but on political persuasion. At that time, your office appeared interested in such research, but it never happened.* (276)

Response: Refuge staff discussed with permittees the potential for various research projects involving livestock grazing on the Refuge. However, the grazing program review, riparian condition survey and aquatic habitat survey, in addition to documented concerns with cattle grazing found in the Refuge s records dating back over 35 years, provided sufficient information to support discontinuing the annual livestock grazing program.

Comment: *The preferred alternative is not satisfactory to me. I wish to voice my objection to a plan that is not based on factual information or the cultural and historical uses of the area - especially when I feel the agency s management plans will be of no benefit to wildlife or the*

community. I prefer a combination of current uses with emphasis on maintaining renewable resources. (276)

Response: Comment noted.

Range Management Specialist

Comments: *Who was your range manager that led you to your decision? (268)*

In determining livestock are not compatible with the Refuge goals, the USFWS has come to this conclusion without the assistance of professionals in the field of rangeland management. Expertise in the field of range management is not represented in list of preparers (page 6-1), which is another example of the lack of qualified science to support the CCP/DEIS. Just as no one would ask a professional plumber to complete the electrical system in building your new house. Why should members of the public believe a wildlife and fisheries biologist about the complex interrelationships of soil, plant and animal interactions and the effects livestock will have upon them? Even if the intentions are honest the job will obviously be lacking. (287)

Response: On national wildlife refuges, we focus on the condition of habitats and how to meet specific habitat objectives. The purpose of this Refuge is as a refuge and breeding ground for migratory birds and other wildlife. Livestock grazing must complement, contribute to, or have a neutral affect on that purpose, since grazing is not a Refuge purpose. Several wildlife biologists evaluated the Refuge grazing program, all with expertise in habitat management and experience with livestock grazing. Part and parcel of being a wildlife biologist is understanding the complex interrelationships of soil, plant and wildlife interactions, *and the effects outside influences like livestock grazing will have on them.* When we ask if livestock grazing is compatible on this Refuge we also ask, What effect is it having on wildlife habitat? This question is best answered by a wildlife biologist.

Comment: *I believe, as I stated at the meeting, that an experienced neutral range management specialist could be engaged to give you ideas on how the forest and riparian areas could be managed and still allow full time cattle grazing. (56)*

Response: Our review of the literature as well as consultation with knowledgeable individuals consistently indicates that maintaining a grazing program on this refuge would result in less vegetative recovery requiring a longer period of time than we can expect with elimination of grazing. This is a case of compromising our primary mission of managing wildlife and its habitat in order to accommodate an commercial use (livestock grazing) on the refuge.

Develop Alternatives to Mitigate Grazing Impacts

Comments: *I saw no effort to minimize damage to streams, etc. through enlightened grazing management techniques. (174A)*

The bottom line is I believe a management plan can be implemented that both protects the refuge and allows for the continuance of grazing as well as other traditional uses. Some

mitigating actions would likely be necessary to help restore, protect and enhance the refuge.
(225)

A management alternative could take several forms but basically we want to see an alternative that properly considers the other actions available which would correct or mitigate the grazing impacts. There are several mitigation actions that should be analyzed to determine the future compatibility of livestock use. Some mitigation actions needing further analysis are (1) continue annual grazing under the currently leased AUMS, (2) fencing out the riparian areas, (3) providing watering sources outside of the riparian area, (4) providing salting areas to draw use away from riparian areas, (5) the hiring of or the sharing of professional range skills to manage the program on the Refuge, and (6) logical combinations of the above. Until these mitigation opportunities are properly analyzed, the determination to eliminate the annual grazing program is unacceptable. (46)

The impacts of livestock grazing are well known. However, before this use is eliminated, it would seem that other mitigation actions should be analyzed or tried on the ground. There are ways to properly manage livestock use to capitalize on the benefits of grazing and eliminate (at least minimize) the negative impacts. First, use has to be fully managed. Second, many measures such as implementing a rest-rotation system, fencing riparian areas, providing proper watering sources, using proper salting techniques, requiring herding, etc. could be applied on the allotments. I could not find where these measures were even considered. In fact, it appeared (again in the Compatibility Determination) that in lieu of supporting range inventory (mapping), data (utilization or trend data), or other support information, that references to research documents were deemed adequate to support the decision to eliminate the annual grazing program. In a quick overview, it is questionable that all of the referenced research is applicable to this area and/or this type of management. (45)

In summary, we agree that cattle use can be impacting if not properly managed. However, there has been a significant reduction in the number of leased AUMS and there are several management alternatives available to bring the grazing program under proper management. These would reduce the potential negative impacts and could improve the habitat for most wildlife species. We feel strongly that the alternative, to improve the livestock management, has not been given adequate consideration. (52)

Response: Alternative B in the draft CCP did include a continuation of an annual livestock grazing program with significant mitigation. However, for the following reasons, this alternative was not selected as the preferred alternative.

Unlike many public lands that are managed for multiple-uses, the National Refuge System Improvement Act states that wildlife conservation is the priority of National Wildlife Refuge System lands and that the biological integrity, diversity, and environmental health of refuge lands shall be maintained. Each refuge must be managed to fulfill the refuge system mission and the specific purposes for which it was established. The Executive Order 8104 established the LPO NWR . . . as a refuge and breeding ground for migratory birds and other wildlife Lands

added later to the Refuge were acquired under the authority of the Migratory Bird Conservation Act . . . *for use as an inviolate sanctuary, or for any other management purpose, for migratory birds* There is no requirement that Refuge lands be managed for multiple uses.

One of the issues identified in the CCP process was What methods and intensity of livestock grazing is compatible with the refuge purpose and goals. (Please see pages 1-8 through 1-12 of the Draft CCP for a discussion of Refuge purpose and goals.)

Policy governing grazing (and haying) management on units of the National Wildlife Refuge System is contained in refuge manual 6 RM 9.1:

Grazing (and haying) activities may be permitted:

On a primary basis when they enhance, support, and contribute to established wildlife management objectives.

On a secondary basis when they wisely utilize a renewable natural resource and do not conflict with established wildlife objectives.

Grazing (and haying) which conflicts with wildlife or habitat management objectives must be phased out as quickly as possible.

In summary, livestock grazing is appropriate if it contributes to wildlife management objectives, or at least does not conflict with them. Devising techniques to mitigate negative impacts to habitat by minimizing but still retaining the effect of livestock grazing is not acceptable if a complete solution to the problem is available.

Concerns about livestock grazing reducing wildlife habitat quality are recorded in Refuge documents going back several decades, and are shared by the current refuge staff. Shortly after the Service resumed refuge management a grazing review was conducted on the LPO NWR to determine if the current livestock grazing program supported the broad draft wildlife and habitat management goals being proposed at that time. The review team was not able to identify a significant positive benefit for habitat or wildlife associated with the grazing program. This review team recommended grazing on the LPO NWR be terminated (USFWS 1997). Subsequent surveys of riparian condition (Pyle 2000) and aquatic habitat (Kelly Ringel 1997, 1998) further documented resource damage in these habitats, and indicated livestock grazing as contributing to this degradation. A review of the literature further indicated the degraded habitat conditions found on the LPO NWR were consistent with similar problems found on other sites that were also attributed to livestock grazing. This information was sufficient to document an unacceptable situation.

Since the current livestock grazing program was not meeting refuge manual policy, several alternatives for modifying the program, in lieu of total cessation, were formulated and considered. These included many of the suggestions made in the above comment letters

including riparian fencing, rotation systems, water development and herding. Of these, the one which later became alternative B was carried forward.

Quality of the alluvial riparian habitat along both Bear Creek and the Little Pend Oreille River and the impact of livestock grazing was a major concern. Several literature references indicate significant improvements in this types of habitats with changes in livestock management practices. However, these sites were located either on private land where grazing was an economic necessity, or on public lands where a multiple use management requirement encouraged continuation of livestock use; both situations were livestock grazing in some form needed to be maintained.

A literature search uncovered numerous pertinent references. The overwhelming preponderance of evidence clearly indicates that the best way to manage riparian habitats is not to graze them (Ohmart 1996). Belsky et al. (1999) reviewed over 100 documented studies and concluded that livestock grazing does not benefit stream and riparian communities, water quality, or hydrologic functioning in any way. Improved livestock grazing management may allow denuded banks to revegetate and erosion may decline, but recovery will take longer than if grazing were terminated completely (Ohmart 1996, among others). Saar et al. (1996 *in* Belsky 1999) found that 10 full years of livestock exclusion was necessary to reverse a negative trend and allow stream conditions to start to improve. The message is clear that excluding livestock consistently results in the most dramatic and rapid rate of ecosystem recovery, which is the Refuge s ultimate goal for these areas.

Several options such as constructing fencing to exclude livestock from riparian areas were considered. However, associated problems such as extremely high cost of initial fence construction, operation and maintenance costs, as well as the potential for wildlife entanglement and trapping and concentrating cattle along streams, caused us to dismiss these options.

In summary, given the Refuge purpose, manual direction and best available science, as well as the lack of a requirement to manage for a concurrent if competing use, it was clear that terminating livestock grazing was the most rapid and cost efficient alternative for restoring these degraded areas. A similar process was associated with the decision to terminate of livestock grazing on upland habitats.

The grazed upland forests of the refuge are generally overstocked stands of ponderosa pine and Douglas fir with suppressed understory vegetation. Aspen inclusion and deciduous browse are generally depressed. Existing browse is generally decadent and over browsed. This situation is most likely caused by many years of wildfire suppression, selective logging practices, and livestock grazing.

Grazing in forested areas may improve white-tailed deer habitat by increasing palatability of grasses, however, data supporting this idea is scant. This potential positive benefit would likely be outweighed by the loss of shrubs and residual ground cover needed by nesting birds and small mammals.

We believe these forested stands can be better managed using forest thinning and prescribed fire, actions that more closely mimic natural processes. These management techniques will be implemented on the LPO NWR. The administrative and maintenance costs of an intensively managed livestock grazing program are substantial. These are in addition to the intangible costs such as effects on native wildlife caused by obstructive fencing and negative impacts to aspen inclusions and the shrub component of the forest. These factors, combined with forest management and prescribed fires stand entries will be more effective in upland habitat recovery.

In the future, should Refuge staff determine that livestock grazing is the optimal habitat manipulation tool for a specific situation, the preferred alternative allows for the use of prescriptive grazing on a site-by-site basis.

Comment: *It would seem to me that a good compromise is needed here. The cattlemen have compromised a lot over the years in the drop of numbers that have been allowed to graze there. Proper long range forest management probably would have averted that, too, but that is in the past. My suggestion would be to involve the cattlemen in a joint effort to bring in a range management specialist that has had experience with these conflicting issues before. I would be glad to suggest some men in that respect that I have come to know from teaching range science in Montana. These problems have been solved in other states with good results for both sides.*

These people that you are working with are some of the finest people on earth. They need someone to listen and be a liaison between them and a federal government that doesn't seem to care and simply continues to force its agendas on them. You can be that person!! They are not to blame for the condition of the riparian areas because they have not had management of the forest areas. On their own ranches they do have that control and I am sure their riparian areas look differently! It is not your fault either, but the lack of a consistent total management plan for the last sixty years. It is time to take control and put that total management into force. It just needs to be done with the ranchers and the original intent in mind. Believe me, they will be glad to assist you with their expertise in addition to a neutral range manager. (56)

Response: We agree that cattlemen have cooperated with both federal and state refuge managers. However, in spite of the efforts made by managers and permittees to jointly manage both livestock grazing and wildlife habitat since the inception of the Refuge over 60 years ago, habitat in the Refuge still exhibits damage attributable in part to livestock grazing. In addition, the grazing review done in 1996 . . . was not able to identify a significant positive benefit for habitat or wildlife associated with the grazing program on the LPO NWR. In view of the primary purpose of the Refuge described earlier, it is readily apparent that continuation of annual cattle grazing would not contribute to restoration or Refuge forest and riparian wildlife.

Comment: *We offered to design a grazing program with a range management specialist which would meet your goals. You gave us the sideboards, Bob Gillaspay (Range specialist with the Natural Resources Conservation Service) and the LPO Permittees spent considerable time developing the plan. That is the last we heard of it. (276)*

Response: The Refuge staff recognizes the effort that was put into the alternative you formulated. Portions of that alternative we felt might allow us to meet our habitat management objectives were incorporated in proposed alternative B. However, we determined that alternative E better met the purpose, goals and objectives on the Refuge.

Comment: *If managed properly, grazing is not detrimental to wildlife or the surrounding habitat. It has been documented in several studies, the key is management. By utilizing proper pasture rotation without over grazing, a valuable resource would not be lost to the surrounding economic area. Management doesn't mean necessarily exclusion. (38)*

Response: We agree that properly managed grazing can minimize impacts to wildlife habitat. Unfortunately, grazing on the Refuge has already caused detrimental impacts to wildlife habitat. The quickest and most economical way to correct this damage is to discontinue the annual livestock grazing program. Demonstrating proper livestock grazing is not one of the goals of the Refuge, nor is it the mission of the US Fish and Wildlife Service. Prescribed (i.e. closely managed) livestock grazing, used in cases where it is the best habitat management tool available, will remain an option under the preferred alternative.

Cattle Grazing as a Wildlife Management Tool.

Comment: *Grazing has been a recognized wildlife management tool on the LPO since its inception. During all this period you and the State found grazing a compatible and useful wildlife management tool. (268)*

Response: Between the time these lands were purchased from private landowners and Executive Order 8104 in 1939 established the Refuge, local cattle raisers continued to graze the area with very little control or management. Between 1939 and 1940, 15 - 19 permittees held grazing permits on the Refuge. In 1939, only one original homesteader and three secondary settlers (people who purchased property from homesteaders) had grazing permits on LPO NWR. The remaining permittees were Refuge neighbors.

When the Biological Survey, the precursor to the Service, initiated management of the Refuge, they focused on reducing the impacts of livestock grazing on white-tailed deer habitats. Very little wildlife science information was available in 1939, and the impacts of livestock grazing and other land uses on wildlife habitats were not well understood. In addition, early wildlife management could be described as game management with all management effort focused on those species that directly benefitted people through recreational hunting. Habitat for non-game wildlife was not a priority. We vigorously controlled predators, such as cougars and coyotes, through year-around trapping and shooting. This philosophy of good vs. bad or unimportant wildlife dominated management, even on national wildlife refuges.

Whether grazing was considered an important management tool is debatable. A review of the Refuge quarterly reports from 1939 through 1965, the first period of Federal Refuge administration, reveals no mention of livestock grazing being used specifically to manage habitats for white-tailed deer or any other species. In fact, several reports mention concerns

about overuse of browse by cattle and the detrimental effects on the overwinter food supply for deer. Refuge personnel made several changes in stocking rates and on /off grazing dates over the years in attempts to reduce these problems. A range inspection in 1963 documented continuing problems with cattle overeating browse on deer winter range. The inspectors suggested starting a long rest-rotation system requiring extensive fence construction. However, concerns were raised about the impact of additional fencing on deer movements, especially in winter and spring, and they did not carry out the proposal.

This emphasis on white-tailed deer management continued during the 28 years of management by the Washington Department of Game (now the Washington Department of Fish and Wildlife). State managers tried to use livestock grazing as a tool for managing habitats for white-tailed deer, black bear, waterfowl and ruffed grouse. Other objectives for the grazing program were fire suppression, weed control, and maintaining horse and hiking trails. The State qualitatively monitored stubble heights of grazed vegetation but did not quantitatively monitor wildlife or habitat to determine if the grazing program met these objectives.

The Service has required compatibility determinations on refuges since passage of the Refuge Administration Act in 1966. The draft CCP/EIS includes the first compatibility determination for livestock grazing on LPO NWR and finds the existing annual program to be incompatible, particularly in riparian habitats. While livestock may provide some desirable changes in habitats for white-tailed deer, grazing requires close monitoring of livestock use and pasture management schemes such as rest-rotation. The existing grazing also requires extensive fencing (approximately 35 miles of internal fence) and water facilities.

Since 1965, wildlife management within the Refuge System has evolved from emphasizing economically important game species and economic uses to managing ecosystems for the recovery and perpetuation of all native fish, wildlife, and plants.

Comment: You make extensive use of grazing as a wildlife management tool on 114 of your refuges in the U.S. which practice you admitted was not even considered prior to your decision. (268)

Response: In 1998, 114 refuges had with livestock grazing programs - approximately 22% of refuges within the Refuge System. Service policy on grazing (6 RM 9.1) states it may be used as a habitat management tool when it enhances, supports, or contributes to wildlife/habitat management objectives. The primary objective of grazing on refuges is to manage vegetation to maintain or increase its value to wildlife. Grazing may be allowed on a secondary basis when it does not conflict with these objectives or the purposes for which the refuge was established. How one refuge uses grazing is not necessarily applicable to another refuge with different purposes, habitats and objectives. LPO NWR is unique in habitats when compared with other lands within the Refuge System. It is similar in some habitats to Turnbull NWR which eliminated grazing by court order in 1994 due to compatibility concerns.

Comment: *In Montana a group tried to manage an area for elk. Their first move was to remove the cattle and stop all grazing. They soon found that their elk herds had moved out of the areas where no cattle were allowed. The elk preferred the young tender browse and grass that was made available when cattle were allowed to graze the area.*

When cattle were brought back to that area, the elk came back also. If enough wildlife were in the area to eat the grass and brush to the extent that cattle do, when winter comes there would not be enough forage for wildlife and you would have either mass starvation or have to supplement the feed. (160)

Response: There are situations where cattle grazing has enhanced habitat for elk. However, the technique you mention has not been as successful with deer, mostly because elk and cattle have a much greater dietary overlap than do white-tailed deer and cattle. Also, since the primary goal of the Refuge is to manage for all native species of wildlife, not just white-tailed deer, the negative effects of this management technique on other wildlife species would not be acceptable.

Comment: *I don't think you will be happy with the riparian areas with no cattle grazing after a few years. The woody shrubs will be out of hand for size, which is normally controlled by proper cattle grazing. I am sure that the riparian areas right now are not satisfactory for good wildlife habitat but extremely woody ones aren't either. Weed control in extremely woody riparian area is also a problem. (56)*

Response: Actually, our objective is to restore alluvial riparian habitats by increasing the establishment, growth and area of riparian shrubs. The quality of alluvial riparian habitat is largely determined by the composition, area and structural diversity of its woody component. We recognize that weed control will be an issue in these areas, as it is throughout the refuge.

Comments: *It is better and cheaper to let cattle do the necessary grazing and pruning and then move them out of the area and let the new grass and brush grow back for wildlife - however in order to have the cattle available to provide this service, the owner of the cattle needs to know that he or she will have a place to graze each year. You can't have a bunch of cattle and just put them on a shelf to take down and be put to work on a hit or miss type of management. This is the situation I see developing in the Alternatives C;D;&E. (160)*

You make the statement that prescribed grazing is to be, maintained as a habitat management tool; however, the annual grazing program would be phased out. What do you mean by this? How much grazing will be allowed? Who will be allowed to utilize this facility and when? Is your intent to have grazing or to eliminate the program? (289)

Response: Livestock grazing can be a tool to enhance wildlife habitat under certain circumstances. The preferred alternative would ultimately discontinue the annual livestock grazing program but leave open the option to use livestock as a tool if warranted. Under the current annual grazing program, permittees bring cattle onto the Refuge whether Refuge habitats benefit from that activity or not. Discontinuing the annual program after five years will allow

permittees time to secure alternative grazing areas or make other modifications to their program. The Refuge is released from an annual obligation to take on permitted cattle, while retaining the option of issuing a specific short term permit when using livestock grazing to manage a specific habitat is desirable. When an opportunity arises on the refuge, potential permittees will be contacted and offered the opportunity to graze a specific location at an intensity and duration designed to meet a refuge habitat management goal. If no interested parties are found, some other habitat management tool will be used.

Comment: I don t agree with the concept of phasing out grazing on the refuge. Grazing can produce very beneficial effects to wildlife, but the current grazing management scheme certainly isn t structured to do so. Fences restrain movement of large mammals and most should be removed. If fences are needed, use temporary fence such as electric fence. Many ranchers throughout the west have moved to more intensive, less extensive management with very good results with the vegetation. You could serve as a good example of this, and use cattle to prevent overstocked stands from becoming established. You probably could maintain close to the current level of livestock, but the permittees will have to be on the ground far more frequently that they now are. However, at some point in the summer cattle should be removed. (285)

Response: What you have described is very similar to our proposed use of prescribed grazing as a habitat management tool. We agree most permanent fences should be removed, and that cattle can be left on some of the pastures too long into the summer. We propose to use grazing as a intensively managed prescription treatment in very specific areas as needed. However, we don t feel this type of management is congruent with the current annual livestock grazing program in which a permittee expects to graze a certain number of cattle on the Refuge every summer. Our proposal allows the flexibility of using livestock to manipulate habitats when needed, the size and timing of which will very greatly between years, without being committed to providing a predetermined amount of grazing each year regardless of need.

Comment: The state of Wyoming does have data that reveals that grazing has been beneficial to public lands. They have quantifiable data that proves this through photo aerial surveys they recently conducted. (225)

Responses: Repeated attempts to contact the writer for more specific information have been unproductive. Neither the Wyoming Game and Fish Department nor the Wyoming Department of Agriculture recognize this reference.

Comments: I also feel that grazing should be allowed to continue on the refuge. Grazing has been allowed in the area for a very long time and if managed properly can be beneficial to wildlife. (75)

I am against the EIS and Draft conservation Plan as written as it eliminates most user fees such as grazing which is a tool for good wildlife management. (193)

Livestock grazing is an excellent tool to bring about the desired vegetation changes you want for Deer, Waterfowl and water quality. (198)

Response: Comments noted. See responses above.

Livestock Grazing Has Benefitted Wildlife on the Refuge

Comment: *Other historic refuge uses, especially grazing, should continue. Grazing management has obviously benefitted wildlife, since it has existed for nearly 100 years. (64, 72, 77, 90, 100, 131, 169, 202, 210, 263)*

Response: We respectfully disagree. Until the establishment of the Refuge in 1939, grazing was purely an agricultural activity aimed at livestock production. It is probably safe to say that the impact grazing was having on wildlife habitat was not a consideration driving management decisions. With the establishment of the Refuge in 1939, wildlife and its habitat did become a consideration, and efforts were made to manage livestock grazing to minimize its negative impacts to wildlife. That has been the general direction of grazing management for the last 60 years. However, when wildlife habitat on the Refuge was evaluated in 1997 and 1998, it was found that livestock grazing was not producing any positive benefit to wildlife, and several negative effects could be attributed to it. In conclusion, we have found that although grazing management has existed on the LPO NWR for at least 60 years, there are no documented benefits to wildlife.

Comment: *. . . this land has been primarily grazing land for nearly 100 years. The use of this land by local ranchers predates the creation of the refuge. It is interesting to note that even after several decades of farming and cattle grazing, this land was identified as suitable for a wildlife refuge. Does this not make sense that grazing should be allowed to continue as an historical use on this land under its current limited fashion? (225)*

Response: The value of this refuge lies in its importance as winter range for white-tailed deer, its value to migratory birds, its lakes, rivers and other wetlands, and the presence within its boundaries of all the major forest types found in northeastern Washington. These values are neither dependant on nor the result of previous or current farming and grazing activities.

Comment: *I understand you also want to eliminate grazing. Why? Both cattle and sheep graze in the Liberty area in the summer. They don't seem to bother the wild-life (sic) in our area and since they have been grazing in the proposed closed area for almost 100 years I would say they must not be bothering the wild-life (sic) there either. (83)*

Response: We are not familiar with the Liberty area, and so cannot know if that situation is similar to here. The responses above address the remainder of your comment.

Cattle Don t Compete with Deer for Food

Comments: *Deer eat a different browse than cattle and yet cattle have always been on a controlled plan on the refuge. (85)*

Contrary to your statement on the cattle eating feed the deer need in the winter . . . I have not found that to be true. (212)

Response: While deer and cattle generally utilize different foods, there are some significant overlaps in diet. Deer feed heavily on new growth of grasses and forbs that occurs early each spring. This occurs because deer are just coming out of the winter where they have been surviving on woody browse and have been losing weight due to an energy deficit. Essentially, they have been burning more calories than they have been able to take in by eating the only foods available. The new spring growth of herbaceous plants is highly palatable and nutritious, and important to deer for regaining health and vigor in preparation for the fawning season.

The second diet conflict between cattle and deer occurs in mid to late summer. As grasses cease growing and begin to cure out, their palatability to cattle decreases. At this point cattle begin shifting their diet to shrub browse since at this point these plants have deposited a large amount of sugars in their terminal buds. This directly impacts deer by consuming and making unavailable the foods they need to survive through the winter.

An additional conflict between cattle and deer occurs when cattle grazing and browsing of herbaceous and woody vegetation reduces hiding cover available to deer fawns, making them more susceptible to predation.

Comment: *I have horses too that graze and based upon my expertise, this area has many years of grazing. Good management of grazing has not caused any harmful affect to deer. The deer eat different type of vegetation. Don t they? (132)*

Response: See earlier response concerning deer and cattle diets. Grazing affects on white-tailed deer habitat is only one of the aspects of the livestock grazing issue. The impacts livestock grazing is having on habitat for many other wildlife species on the Refuge are also important.

Livestock Grazing Prevents Wildfires

Comments: *We believe that cattle grazing has prevented wild fires as there have been no fires that amounted to anything since we moved here(41 years ago). (85)*

From personal experience, I m a firm believer in livestock grazing. For the past five years I have not had cattle grazing on my property, east of my property on the Boise Cascade and east of their property on the National Forest. This covers the whole western face of Old Dominion mountain. The trails and roads have become overgrown creating brush barriers. The grass is high, creating fire hazards. Contrary to your statement on the cattle eating feed the deer need in winter . . . I have not found that to be true. (212)

Response: We believe that timely fire suppression by all the agencies involved in that activity is the main reason the refuge has not experienced a major fire in several decades. Cattle do eat some of the herbaceous vegetation comprising the fine fuels that contribute to wildfires. However, the high levels of fuel loading we are experiencing on the Refuge are composed of excessively stocked tree stands and excessive downed woody materials. These fuels have been increasing over the last several decades due to things such as aggressive fire suppression. Cattle do not control these types of fuels. Thus, while the Refuge has not experienced a major fire event for several decades, the potential for such an event has been increasing, even with several decades of livestock grazing. These fuels are best removed through the judicious use of tree thinning and prescribed fire.

We do not believe that livestock grazing is the most efficient method for maintaining roads or trails. It is interesting to note that the shrubs that you feel the cattle should be allowed to eat in order to keep the roads clear can also provide deer winter browse as well as food and habitat for other wildlife.

Comment: *Reasonable grazing is a very effective means of wildfire control and the refuge has adapted to it after years of livestock.* (189)

Response: Please note the earlier response addressing the use of livestock to control potential wildfire fuels. If what the respondent means by adapted is that the refuge has changed in response to livestock grazing, they are correct. Unfortunately some of those changes were and are detrimental to wildlife habitat, which is the situation we are trying to correct.

Refuge Should Focus on Forest Management

Comment: *Your focus of management needs to be on the forest lands and its health to obtain your habitat objectives for our wildlife.* (268)

Response: The Service agrees that forest management is an important part of future management. In the draft CCP/EIS we propose to treat 1000 acres of forest annually using a combination of thinning and prescribed burning. We also believe that riparian habitat restoration and management is equally important since these habitats are critical for fish and wildlife on LPO NWR.

Comment: *It seems to me that a lack of consistent forest management on the Wildlife Range over the past sixty years has caused the problems you are facing today. The allowance of this timber to grow so thick has forced the cattle into the riparian areas over the years. Thus the cattle have over grazed the riparian areas.*

It seems as if the timber land was thinned properly there would be more grass in the timbered areas which would take cattle pressure off the riparian areas. This would take care of the fire threat and the need for prescriptive burning , which the ranchers are also opposed to. It would provide the Wildlife Range with a good income to finance other management practices. Water

development in the forested areas would take pressure off the riparian areas and also enhance wildlife use.

I am smart enough and have had enough experience with cattle, to know that they are still going to want to camp on the riparian areas. However, this could be avoided with a young range rider and eliminate the need for fencing the riparian areas. With proper thinning of the timber, there will be lots of grass for both cattle and wildlife in the forested areas--shade too!
(56)

Response: We agree that some of the forest stands on the Refuge are overstocked, the result of previous harvest activities and exclusion of fire. These are issues the Refuge is addressing in this plan, with the purpose of regaining and maintaining forest health and thereby promote wildlife habitat. We disagree with the assertion that lack of consistent forest management has resulted in degradation of riparian areas by livestock. As you've stated, cattle habitually use riparian areas far out of proportion to available upland areas, regardless of the ease of accessibility. While we will be aggressively managing some forest stands adjacent to riparian areas this will be directed at improving and maintaining wildlife habitat, not to provide livestock forage. This will include the potential use of prescribed fire, whose effects cannot be adequately simulated through just timber thinning.

Revenues generated through secondary economic uses of refuges, including livestock grazing and timber harvest, are deposited in the U.S. Treasury and are not directly available for use by a specific refuge. Hiring a rider to manage cattle in order to maintain a grazing program is not economically feasible, nor would it solve all the problems associated with livestock grazing in the Refuge.

Livestock Control Weeds

Comments: *The cattle do eat some of the harmful weeds that are in the area, such as knapweed, toad flax etc, that no one seems to care that is taking of (sic) many of the forests in this area .*
(169)

. . . what about weed control that will be worse without cattle eating weeds in the spring?
(279A)

Response: We are concerned about weeds on the refuge and address that specific concern in the CCP. However, most research indicates that cattle are not effective at controlling most broadleaf weeds such as knapweed and toadflax, and may contribute to the spread of these plants.

There is little documentation that supports the use of cattle grazing to control most broadleaf weeds such as knapweed and toadflax. Most weeds are not as palatable to cattle as native plant species except during a very short period of time in early spring if at all. Spotted knapweed once thought totally unpalatable and even poisonous to cattle has been shown to be palatable and nutritious during the rosette stage in early spring and will be readily eaten during a short window of time. The caveat is that grazing too late in the spring impact desirable species when they are

the most vulnerable. Cattle are generally selective grazers and will go for the more nutritious, desirable species given the choice. One way of reducing their choices is to use short duration high intensity grazing whereby high numbers of livestock are placed in an area for a short period of time, forcing them to eat all but the most unpalatable species. Even though cattle will graze weeds under these specific conditions, little documentation exists supporting the premise that grazing actually reduces the population of the weed species and increases desirable plant species. This type of grazing can also result in increased opportunities for the spread of noxious weeds by breaking up soil crust and actually decreasing the vigor of some other species thereby reducing competition. There are far more effective ways to control noxious weeds than cattle grazing with its potential for detrimental side effects, including the judicious use of herbicides to reduce or remove weeds coupled with replacement using a more competitive and beneficial long-lived perennial species.

Impacts to Neighbors and Permittees

Comment: *If the Ranchers are put out of business, in most cases their only alternative is subdivision. Then you have a larger number of neighbors bordering the refuge. Smaller ownerships (sic) require more roads and other intensive land uses creating more water quality problems than the cows that you now have control over. (198)*

Response: We agree that conversion of land from agricultural to residential uses is a concern not only near the Refuge but throughout the county. Witness the dramatic growth in rural residential homes adjacent to the refuge in the last 5 years. However, since none of the current permittees owns land adjacent to the Refuge, our decision to cease annual livestock grazing has no impact on neighboring land.

Comment: *My biggest concern is the fact that you will be impacting families lives by closing the game range for grazing cattle. I personally know several families that will be financially impacted by this. They will not have a place to summer their cattle. I have been in their living rooms and have heard their conversations about how they will make do. Have you? You have a responsibility to people whose lives will be affected! (231)*

Response: It is the responsibility of the Refuge staff to manage this refuge for the purpose of conserving habitats for migratory birds and all other native fish and wildlife (CCP pg.1-8) Unlike other federal land management agencies like the USDA Forest Service who are tasked with providing multiple-use resources including livestock forage, the National Refuge System has the single mission of managing for wildlife and their habitats. We recognize eliminating the annual livestock grazing program will adversely impact the Refuge's two permittees. Waiting five years to discontinue the annual grazing program, should allow these individuals to find alternative summer grazing.

Comment: *As long-time permittees, we are very familiar with a large part of the LPO. We have been proud of the grazing program, feeling that it has enhanced the land that has been near and dear to us. (276)*

Response: Comment noted.

Comment: *When your regional biologist made his decision in 1997 to phase out grazing, couldn't this information have been shared with us then? . . . we continue to be responsible permittees on our grazing lease, to result in every input being ignored.* (268)

Response: The 1997 grazing review provided a recommendation (versus a decision) to phase out the grazing program with the completion of the CCP.

The Service considered many factors, in addition to the effect of discontinuing the annual grazing program on the two remaining grazing permittees. These factors included: Refuge purposes; draft riparian restoration objectives; public comments received between 1995 and 1998 related to Refuge grazing; 1996-97 riparian habitat evaluation results; 1997 grazing review recommendations; 1996-97 fish habitat assessment results; the National Wildlife System Improvement Act of 1997; compatibility of livestock grazing with Refuge purposes and Refuge System mission; positive versus negative impacts on fish, wildlife, and plants; financial cost of administering the program; and the availability of other vegetation management tools.

Comment: *The only support to your finding on grazing being detrimental on the LPO is the one page - findings of a Fish and Wildlife service review of six grazed sites Why were the cattlemen not consulted and told face to face of this review and your decision?* (268)

Response: We notified grazing permittees of the grazing review in a May 14, 1996 pre turnout meeting. The grazing review was part of a regional Service initiative aimed at ensuring that the grazing program was not in conflict with Refuge purposes and was being managed according to Service policy. The grazing review recommendations were considered in conjunction with other survey results and information, as detailed in earlier responses.

Literature Not Relevant to This Area

Comment: *The use of grazing literature cited does not include research relevant to our area. Oregon State University has the largest permanent resource enclosure in the world. They have done extensive work in the field of grazing management for the Pacific Northwest.* (287)

Response: We used the most recent and relevant published literature available as a basis for decisions made in the CCP. In addition to individual scientific articles we relied heavily on Robert D. Ohmart's (1996) chapter titled "Historical and present impacts of livestock grazing on fish and wildlife resources in western riparian habitats" found in the book "Rangeland Wildlife", as well as Elmore and Kauffman's (1994) chapter "Riparian and watershed systems: degradation and restoration" contained in the book "Ecological implications of livestock herbivory in the west", both books published by the Society for Range Management. "Survey of livestock influences on stream and riparian ecosystems in the western United States" by Belsky et al., published in the Journal of Soil and Water Conservation in 1999, became available after the draft CCP was completed, and has been very useful during the revision process leading to the final

CCP. These and other sources included research conducted by individuals affiliated with Oregon State University, as well as various other researches throughout the western U.S.

Livestock Not Responsible for the Problems

Comment: *For example, ice flows in early spring and the subsequent freezing the thawing of soils were found to be much more detrimental to stream bank stability and sediment production than livestock trampling. No changes in water quality were found due to grazing, and there was no significant difference in coliform counts, all of which were below recreational use standards. Study results found grass production increased one to four fold due to timing and intensity of grazing. Vegetation responded dramatically to properly timed grazing and the improved biomass production in the riparian area (Krueger, Vavra and others 1995). (287)*

Response: Your response to our request for the specific sources of these statements failed to include adequate reference information. Concerning the affect of ice flows and other overwinter events on streambank stabilization, Kaufman, Krueger and Vavra (1983) found that Overwinter events such as high water and ice flows also caused a great amount of streambank disturbance and erosional loss of banks along Catherine Creek. However, they concluded this discussion by stating Significantly greater streambank disturbance (e.g. undercut collapse, cave-ins, and sloughoffs) occurred in the grazed areas compared to ungrazed areas at this time. Livestock grazing may have weakened the streambank structure through trampling and forage removal to the point where ice flows and high water had a more damaging effect on grazed portions of the streambanks.

Regarding water quality, Ohmart (1996) states Numerous workers have attributed high fecal coliform counts in streams to livestock grazing. Belsky et al. (1999) quotes George (1996), writing in a Oregon State University Extension Service Special Report bacterial contamination of drinking and surface water by domestic livestock is a significant nonpoint source of water pollution.

Finally, Belsky et al. (1999) found most studies comparing grazed and protected riparian areas show some plant and animal species decreasing in abundance or productivity in grazed sites while other species increase. Plant species that commonly increase with livestock grazing include weedy species benefitting from disturbed conditions, upland species preferring the drier conditions created by grazing, or sub-dominant species that are released from competition when their neighbors are grazed down. This overall increase in biomass is not necessarily a benefit to wildlife if it is not of correct species composition or structure.

Comment: *The CCP states on page F-7 that cows cause extensive physical damage to the stream banks and channel. Yet Krueger and Kauffman (1984) found that proper grazing can occur without undesirable browsing of riparian shrubs and without stream bank damage. (287)*

Response: We were unable to find this reference as cited but believe your referring to information contained in Kauffman and Krueger (1984). In this review the authors discuss several articles describing the impacts of livestock grazing to riparian ecosystems, including

damage to streambanks and channels. We agree that with improved grazing management, livestock damage can be minimized and improvement to riparian habitat realized. However, the preponderant evidence indicates that recovery would occur at a faster rate if cattle are excluded from the riparian areas. In one example, 10 full years of livestock exclusion was necessary to reverse a negative trend and allow stream conditions to improve (Saar et al. 1996 in Belsky et al. 1999). In addition, providing the conditions under which native riparian-wildlife communities evolved would not be fully possible in riparian areas are grazed by cattle

Comment: *In addition, the compatibility determination (page F-8) refers to cattle browsing several times. But, cattle are grazing animals which means they prefer grasses as their main source of nutrition and if there are palatable grasses available there is little need for them to switch their natural behavior to other less desirable species of plants (Vavra and others 1980). Impact discussed about browsing alder and aspen species by livestock are unfounded and the lack of regeneration if there really is any could easily be attributed to the lack of disturbance and closed canopies rather than heavy use by livestock. (287)*

Response: The nutritive and palatability value of grasses begins to decline in late summer and fall. This results in livestock feeding on increasing amounts of shrubs and other woody browse. One quantitative diet analysis found shrubs constituting up to 31% to 37% of cattle diets in September and October (Sieg and Severson 1996). This browsing behavior has been observed on numerous occasions by refuge personnel. There is an easily discernable lack of aspen, willow and alder regeneration on both wetland and riparian areas of the refuge. Certainly, lack of disturbance and closed canopies contribute to this situation, especially as it effects aspen stands. However, livestock browsing on the suckering shoots of these and other woody vegetation is contributing to this problem.

Comment: *Grazing has taken place in the area for over a century, far before the designation of the Wildlife Refuge. It is frustrating that you have chosen to consider only the so called science that backs up your own objectives. There are a wide array of studies done at land grant universities that have taken place over long periods of time, which have seen no substantial impact to riparian areas or water quality due to grazing. One such study is the Catherine Creek study in Oregon which has taken place over the last twenty years. This study in fact, has found that there is less environmental and plant diversity in the areas which have excluded grazing than the area which has had a managed grazing plan. In fact there are many benefits of grazing which you have chosen to ignore and exclude from any of the presented alternatives. I have enclosed a list of a few of those benefits. It is WCA s [Washington Cattleman s Association] opinion that there should have been an additional alternative offered which increased the utilization of the benefits of grazing and recognized the need for an active management plan rather than the negligent plans proposed. (58)*

Response: Comment noted. Please refer to the above responses.

Native Restoration Not Possible

Comment: *Page F-10 Restoration of native forest and riparian ecosystems on LPO NWR may (sic) be best achieved without cattle . This statement is not based on science but rather a reflection of personal opinion. Removing livestock will not return plant composition back to the original potential natural community (Frederick C. Hall, 1995). (287)*

Response: The complete quote being referenced reads as follows: Restoration of native forest and riparian ecosystems on the Little Pend Oreille NWR may be best achieved without cattle, however, in altered environments, like old fields where the A soil horizon is gone, livestock grazing may be an effective tool to manage nonnative vegetation. This enables the refuge to retain grazing as a tool for vegetation management under specific controlled conditions. We acknowledge Mr. Hall s work in the area of native restoration and realize that complete restoration of native species may not be practical or possible on all sites. This is one of the reasons the proposed preferred alternative allows for the use of limited prescribed grazing when deemed advantageous.

Livestock Needed to Manage Existing Plant Species

Comment: *Grasses need to be utilized in order for them to remain healthy. Native grasses evolved under grazing thousands of years ago in this area and since the disappearance of those grazing animals, the western interior forest have gone without the benefits of grazing animals until the introduction of domestic livestock (Wayne Burkhardt, 1996). The grasses found in riparian areas on the LPO are mostly non-jointed species (i.e. Kentucky bluegrass, orchard grass, perennial rye grass and tall fescue). These species have growing points close to the ground, usually too low to be grazed and if growing points are removed, they can readily activate other growing points. Management of these species for a two inch stubble height is needed for site protection (Guinn, Rouse, and Dr. Briske, 1994). (287)*

Response: If forage production was our only objective than this would be of concern. However, forage is only one of the benefits grasses provide. Standing dead grass and accumulated dead plant material are also important components for wildlife habitat. If vegetation health becomes a concern, the proposed preferred alternative retains tools such as prescribed fire, mowing or prescribed grazing to manage these sites.

We examined the documentation supporting the statement that the non-native, non-jointed grasses found on some areas of the Refuge require management for a two inch stubble height for site protection, and believe it was misinterpreted. This the *minimum* height that must be retained to maintain site protection. Stubble heights greater than 2 inches will provide *more* than the minimum required site protection.

Comment: *Grasses are not only tolerant of grazing, but are stimulated to produce additional forage by grazing. This is why LPO is spending tens of thousands of dollars each year to mow grass in meadow sites in an attempt to mimic the positive effect grazing has on the environment. But, mowing is not part of the compatibility determinations. This is a major over site (sic) to not address the compatibility of mowing on the Refuge, since it is a major project and expense each*

year. However, the heavy tractor equipment used by the USFWS does not add nutrients to poor quality soils (page F-11). Rather, the heavy tractors used have greater potential to cause harm to wildlife in terms of displacement, mortality to rodent and ground nesting birds, and adds noise and chemical pollution to the LPO than livestock grazing. I can't believe the public and surrounding wildlife would benefit more from the sound of huge lawn mowers blasting away, than livestock quietly grazing in an open meadow. Grazing is better than mowing because livestock do add nutrients to poor quality soils and do not displace wildlife as these heavy tractors do. (287)

Response: The writer has been misinformed or has misinterpreted one of the management activities occurring on the Refuge. The meadow mowing being discussed was limited to 3 sites in 1999. These areas were mowed to reduce seed production by weedy plant species and to remove standing vegetation in preparation for an experimental grass planting trial using a no-till grass drill. The trial will evaluate the potential of replanting these fields, currently dominated by weedy forbs, with either native and/or non-native grasses that will help control these weeds and provide more valuable wildlife habitat. This is *not* an ongoing project costing tens of thousands of dollars each year and is *not* an attempt to mimic livestock grazing. It is not an activity requiring a compatibility determination.

Miscellaneous Livestock Grazing Comments

Comment: *Reverse your decision to terminate the late George Raska's grazing permit and allow his heirs to acquire it. (87)*

Response: This comment is outside the scope of the CCP/EIS.

AIR FORCE SURVIVAL SCHOOL TRAINING

The following includes detailed comments received from the Air Force Survival School (AFSS) (65).

Phase Out Air Force Training

Comments: *The Wilderness Society strongly supports the Plan's proposal to phase out Air Force training on the refuge. This activity clearly conflicts not only with fish and wildlife and their habitats, but also with the priority public uses mandated by the National Wildlife Refuge System Improvement Act. (272A, similar in 61, 68, 80, 165, 177, 190, 256, 258, 269, 277, 279)*

I'll never understand how the Air Force was ever allowed the use of choppers within the confines of the Refuge? Having actually experienced the impact which these choppers have upon the wildlife when they pass through at low level I can definitely attest to the fact that it causes every living creature to take shelter, they definitely cause a major unnatural condition which places the wildlife involved to become very nervous, high strung & in some instances causes panic, depending on the pitch of the rotor blades. (44, similar in 69, 172)

The Air Force certainly needs someplace to continue survival training in northeastern Washington but of the programs or issues listed it has to be near the top of the list as an impact

on fish and wildlife. I hope you are successful in negotiating a phase out of at least the mechanized equipment use. (23, similar in 84)

In the Statesman EX. the Deputy Commander Steve Childers head officer of the Airforce Survival School says they could move thier (sic) training facility to other terrain and could be duplicated elsewhere. (48)

Military: We consider military activity (maneuvering scores of personnel night and day through the most remote parts of the Refuge for most of each year) to be also incompatible with wildlife interests. There are millions of acres of National Forest lands in our region which can and already have been utilized for military training. The Refuge has been a convenient place for them, but survival and other training can and will continue without the use of a wildlife refuge. (28 similar in 27, 37, 105-110, 133-154, 159, 195, 206, 207, 216-218, 222-224, 233-235, 240-242, 247, 248, 250, 259, 277)

Phone call: This person visited the refuge for archery hunting in September. He was surprised at the numbers of USAF personnel in the area, and was frustrated by being restricted to the hunting area north of Blacktail Mt. Road due to USAF use conflicts. Opposes Air Force Survival School activities on the refuge due to wildlife disturbance. (91)

Audubon strongly agrees that the AFSS should be phased out over five years, as this activity conflicts with the purpose of the refuge As a wildlife refuge, the land should be dedicated above all to the conservation of wildlife and harmful activities must be prohibited. (188, similar in 283)

Training military personnel is an important job, but not compatible with Refuge goals. And besides there are millions of acres outside the Refuge in the inland northwest for military training. (17, similar in 27)

If possible, eliminate . . . Air Force Survival School immediately. If phase out is required, attempt to accelerate the process. (261 similar in 98)

Response: Comments noted.

Continue Air Force Training

Comments: *We feel the conservation should continue as it has always been, the land is for the public use - and the Air Force Survival School has observed the rules as well as everyone else has. It is a perfect location near Fairchild and it is a known fact that it is beneficial to the men taking the course. (85, similar comments in 1, 11, 42, 53, 63, 87, 104, 169, 185, 266)*

You say we should be rid of the survival school. What kind of American are you? I m proud of my country. And I believe in protecting it for us and our children. (9, similar in 160)

Over the many years that I have been using the Refuge, mainly fishing, I have not seen a problem with the Air Force Survival School. I don't think it should be phased out. (10)

Sharing the refuge with the Air Force has been an added treat because it is so interesting to see what little evidence they leave behind in their camp areas. Coming across one of their lean-tos was never seen as a nuisance but an interesting site. (255)

Nor does it make any sense to close the Air Force Survival School. It is much more vital to our country than an unneeded wildlife refuge. (31, similar in 181)

As a citizen who has had a family member flying the worldwide unfriendly skies, the Air Force Survival School is critical to our piece of mind and safety of the Scott O Grady's of America. If some uses by the Survival program are truly detrimental to endangered wildlife then that part of the training program should be modified by the US Government or scheduled relocation to another area developed by the Defense Department. As you know with all government funding a change of this nature will take from 5 to 15 years to accomplish. (198)

Response: Comments noted.

Wording of Issue Summary

Comment: *We object to the differing phraseology between Issue 3, Grazing, and Issue 4, Air Force Survival School Training. Both issues relate to special uses on the refuge. A revised issue summary of What methods and intensity of Survival School activities are compatible with the refuge purpose and goals better states the issue. (65)*

Response: We have reworded the Air Force issue summary statement in Chapter 1 to read: What level of use by the Air Force Survival School is compatible with the Refuge purposes and goals?

Number of Students

Comment: *There are several inaccurate statements in this section pertaining to the number of students on the refuge at any given time. Typically, students and instructors are in training on the refuge from Saturday through the following Thursday morning. Only one or two instructors may remain on the refuge to protect equipment until the instructors arrive Friday afternoon to prepare for the arrival of the next class. (65)*

Response: Note corrections in FEIS in Chapter 2 description of Air Force Survival School training. During 1999 training on the Refuge, there were an average of 82 Air Force personnel each week of use, totaling 4562 visits over the course of 54 days. When determining the number of visits for the Air Force, we use the Saturday through Thursday time frames. If there are 65 students and 19 instructors on the refuge from Saturday through Thursday, this equals 504 visits or use days.

Compatibility Determination for Air Force Training

Comment: *There were 15 compatibility determinations made in Appendix F. Why wasn't a compatibility determination made on the Airforce training? (52, similar in 232)*

Response: The compatibility determination was omitted from the Draft CCP/EIS but is included in the FEIS in Appendix F.

Range of Alternatives Too Narrow for Air Force Survival School

Comment: *We have concern that the range of alternatives is too narrow with respect to the USAF Survival School use of the refuge. Specifically, only one displayed alternative included any use - all remaining alternatives displayed use phased out over five years. (232)*

Response: Only one AFSS alternative was considered to be compatible with the mission of the National Wildlife Refuge System and the purpose of the Refuge. Incompatible alternatives are not viable from a refuge policy standpoint and do not warrant further analysis. Much of the instructor (versus air crew) training would be allowed under Alternative B.

Comment: *The Survival School is aware of environmental effects related to the training program, and has worked diligently to reduce the level of impact on refuge resources. These changes have not been without difficulty or an increased amount of work and training time by the instructors. In reference to Alternative B, we could support a reduction in the hunting closure from January through September to a shorter period from June through September. We would also support a reduced effective closure area, retaining a smaller amount of the refuge in an adjustable hunting closure for a shorter period of time. Helicopters would operate at higher altitudes for one day of vector support, and two recovery demonstrations (near landing hover for 10 minutes) for each class. Pyrotechnics could be limited to those previously mentioned, and used away from streams and other riparian functioning areas. With a maximum personnel size of 90 students and instructors in each class, the Survival School could accomplish the core training requirements with providing significant improvements in protection of resources and habitats. (65)*

Response: Comment noted. With the exception of the hunting closure changes, this sounds similar to Alternative A. Alternative B eliminated helicopter landings, use of explosives, reduced group size to 25 or less and restricted off-road vehicle use to emergencies.

Other Alternatives for Air Force Survival School Training

Comments: *The Air Force Survival School should be allowed to continue with their training mission contingent upon phased-in modifications recommended in Alternative B. (86)*

Air Force Survival School - At a minimum, Air Force activities should not occur on the refuge during critical periods for wildlife. These include the wintering period for big game (December 1 to March 31), and calving/fawning (May and June). Military activities should also be excluded in July since it is an important month for many nesting birds. Helicopters should be used only in

emergencies. If the Air Force could live with these restrictions (and I have some doubt they can), it seem reasonable to allow their activities to continue at this reduced level. (55)

Alternative B or C for the Air Force survival-training program is all right with me as I live very near the Refuge and haven t been too disturbed by it. (Does the Refuge get monies for allowing this?) (271)

Response: Comments noted. The Fish and Wildlife Service does not receive money from the Air Force for their special use permit. The AFSS does support a full time-equivalent position for the Forest Service.

Why LPONWR?

Comment: *The Little Pend Oreille Wildlife Refuge is considered by the Air Force as a prime location for conducting survival training due to its terrain features, lack of logging operations, natural resources, and its close proximity to both Fairchild AFB and the Survival Command Post. Most of the survival training conducted in the Little Pend Oreille Wildlife Refuge occurs during August and September in order to take advantage of the Refuge s no hunting zone established by the Washington State Department of Fish and Wildlife. The use of an area closed to hunting is essential for the safety of personnel engaged in survival training. The process of finding and evaluating an alterative to the Little Pend Oreille Wildlife Refuge will take months and there may be substantial logistical and financial issues associated with a new area. (65)*

Response: Comment noted.

Hunting Closure

Comment: *The current hunting closure was established during a period of high staffing of military personnel and cold war tensions. The influx of Air Force aircrew necessitated a large closure area and time period to accommodate a survival training program 100% larger in size than the present programs. The current training programs reflect a smaller Air Force, with reduced numbers of students and subsequent reduced need for the present large closure The Survival School is willing to examine the training benefits of the hunting closure and evaluate opportunities to open more areas and time periods for hunting. We support the retention of the hunting closure for big game from January 1 through April 15 as described in Alternative E; the agency preferred alternative in the CCP As a result, shotgun and bow/arrow seasons are viable within the January through September closure period. (65)*

Response: Comment noted and changes made in document in Chapter 2 to reflect this.

Comment: *In regard to the hunting closure, we would like to see the Airforce s response to modifying the current closure to allow spring turkey hunting if it was limited to archery and shotguns. We would also like to see their response to allowing archery deer hunting. (52)*

Response: See the above comment 65 for Air Force point of view on this issue.

Maps

Comment: *Map 13 displays the primary use zone of Survival School use in the refuge. The displayed area is misleading, in that the displayed area is nearly the total area of feasible Survival School use. The primary area of use each year is approximately one-third of the area represented on Map 13. Similarly, a number of permitted helicopter landing zones are displayed on Map 13. Clarification is needed to further explain that only a small number of these landing zones are used during a training period on the refuge, and that helicopter use has been adjusted and reduced to minimize the effects to refuge wildlife, users and neighbors. (65)*

Response: Map 13 has been revised to display the area used by the Air Force between 1997 and 1999. The new map displays the primary and secondary use areas. The primary use is the area used repeatedly by SV-80 air crew training from late July through September of these years. The secondary area displays areas used primarily during instructor training. The new map does not differ significantly from Map 13 in the draft CCP/EIS. The helicopter landing sites in Map 13 of the draft CCP/EIS reflect those sites where one could physically land a helicopter and are from the 1997 Special Use Permit. The new map differentiates between all landing sites and those used between 1997 and 1999.

Effects

Comment: *We have reviewed the evaluation species of birds and mammals. The major threats to these species are described as catch from anglers on deep lakes, timber harvest and fire suppression, livestock browsing, wildfire, and losses from hunting and fishing, and not from Survival School operations. (65)*

Response: See criteria used for selection of evaluation species in Chapter 2 and impacts analysis in Chapter 4.

Comment: *Page 2-58 -Three groupings of potential effects are described on this page. The groupings include effects to visitor experience, wildlife habitat, and hunting seasons. This discussion would appear to be better located in the Environmental Consequences chapter of the CCP. Similarly, a display of specific data displaying the type, frequency, magnitude and significance of these effects, particularly in relation to the wildlife dependent recreational uses, is needed to substantiate the potential effects. (65)*

Response: We have moved the portion of this section that describes effects to Chapter 4, Environmental Consequences. There was one omission from the groupings of potential effects on the referenced pages: Effects on wildlife. See changes in Chapter 4 and compatibility determination in Appendix F.

Comment: *Effects on visitor experience, including loud overflights and direct contact with military personnel: One of the objectives of the Survival School is to avoid contact with civilian users of the refuge during the training period. For much of the week, students are actively avoiding other people in the refuge, contact with whom may lead to their simulated capture. The presence of other people tends to add realism and a degree of uncertainty to the training*

program The use of aircraft has been severely restricted in recent years to minimize the effect of noise on the refuge. Several methods have been used in the past several years to reduce the noise footprint of helicopters. These actions include reducing the number of continuous weeks of training on the refuge, minimizing the number of helicopter flights conducted for direct and indirect support of training, and adaptively managing the flight routes to reduce the repetitive effects of flight. We feel these actions have significantly reduced the impact of helicopter operations to wildlife, users and neighbors of the refuge. (65)

Response: We recognize the effort the Air Force has made to reduce disturbance to refuge wildlife, habitats, recreationists and neighbors. However, since the training takes place in the core of the Refuge, the same areas popular with civilians, there is bound to be overlap in Air Force and public use areas.

Comment: *Effects to habitat from base camps, fires, and repeated use by large groups: During the training period on the refuge, the Survival School will re-establish several base camps for instructors and smaller static camps for students. Provisions of the current special use permit with the refuge require only the reuse of existing camp sites-no new camps may be created. Camp areas with compacted soils or with a loss of vegetation are re-seeded with a wildlife oriented seed mix to restore vegetation and minimize opportunities for noxious weed growth. (65)*

Response: The historic use of the Refuge by the Survival School is thought to result in the indirect effect of the existing camp anywhere use. Many of the camps created by the Air Force are used by the Air Force personnel during their leisure visits to the Refuge or by the public. Prior to 1995, the Air Force created and/or used an average of 36 static camps per year. In 1999, a minimum of 12 new camps were created and used repeatedly throughout the nine trips. Heavy and repeated use of the camps and trails leading to and away from them have an impact on vegetation and wildlife. Heavy use of the riparian corridor along the North Fork of Bear Creek was noted in 1999. This and other riparian corridors are important wildlife movement corridors. Repeated use, as evidenced by trails on either side of this stream, reduce the integrity of these important wildlife habitats.

Comment: *Page 2-68 -This section describes types of ground disturbing activities that require monitoring and surveys for protection of cultural resources. The items attributable to the Survival School require clarification to avoid misrepresentation of the effects. The Survival School has conducted road construction and reconstruction activities in the past on the refuge. However, this work has been in response to direct requests for assistance from both State and Federal Refuge staff, and primarily to repair damage resulting in unregulated winter and spring use. There have been no requests for assistance in the past several years The explosive devices used in training are currently limited to blank pistols, smoke flares laid on the ground in open areas and removed after use, and two propane fueled weapon simulators mounted in vehicles. These training aids are not ground disturbing in nature. (65)*

Response: This section has been rewritten to more accurately describe cultural resources concerns associated with Air Force training.

Comment: *Page 4-1 -The CCP displays no effects to coniferous forest, riparian and deciduous forests, noxious weeds, rare plants, water quality, aquatic habitat, and air quality that are attributable to the Survival School training mission. (65)*

Response: See revisions to FEIS to reflect modification in noxious weeds and revisions in the Environmental Consequences Chapter.

Comment: *Page 4-9 -The CCP states that Alternatives B, C, D and E would eliminate low level helicopter flights, and that such a policy would benefit the bald eagle. However, the discussion also states that most bald eagle use on the Refuge occurs during winter and then along the Little Pend Oreille River, and that no nesting sites are known to exist. The CCP needs to explain the benefits of phasing out the Survival School training program in late spring and summer when the bald eagle use period on the refuge is in winter. (65)*

Response: While most bald eagle use currently occurs in the winter, they are known to use the Refuge year-round. Recently a pair of eagles built a new nest on the Refuge. Chapter 2 and 4 has been rewritten to reflect this. Eagles begin nesting in late winter or early spring. From courtship through fledging requires between six to eight months. At this latitude, they could start breeding in February and complete the breeding season when the young disperse from the nest area by late August or September, a period that overlaps Air Force Refuge use. As a refuge, our mission is to manage habitats for wildlife. If the habitat is suitable, wildlife, including bald eagles, may occur here unless other limiting factors prevent use of an area. Disturbance and availability of food or nest sites or roost trees are some factors that may limit use of an area by bald eagles.

Lack of Information, Bias

Comment: *One of our most significant criticisms of the Comprehensive Conservation Plan is that there was no site-specific data given to support the conclusion that the Air Force Survival School use is incompatible with other Refuge uses. Our belief is that the mission of the Survival School is compatible with the Refuge Management of maintaining a healthy ecosystem within the Refuge. In fact, all of our training and operational directives emphasizes the principle of little or no impact on the environment. (65)*

Response: Air Force training that involves approximately 80 people on one-third of the Refuge over a two month period, including helicopters, flares, blanks pistols, and numerous camps are not usually allowed on national wildlife refuges. According to the Refuge System Improvement Act, Refuges are to managed first and foremost for wildlife. We believe that Air Force training compromises habitats, disturbs refuge wildlife and limits our provision of priority public uses, including hunting and wildlife viewing. The draft CCP/EIS did not include a compatibility determination but this reviewer had a copy of the an early version of the determination. Appendix F of the FEIS includes a compatibility determination for Air Force Survival School

training and concludes the use to be incompatible with the purposes of the Refuge, not with other Refuge uses.

Comments: *We feel that the discussion on environmental consequences in the CCP is weak. In particular regarding the Survival School program, the display of effects is not adequate to support some of the restrictions in Alternative B and the phase out of training proposed in Alternative D, E and F. We are aware that in a wildlife refuge, no use may be allowed unless it is determined to be compatible. However, the lack of specific information, either through intent or lack of funding, poses a de facto decision process that precludes and defeats the display and disclose objectives of the National Environmental Policy Act. The use of mere presumption, feelings, or generic potential effects to preclude a mission related to national defense is indefensible. (65)*

The historic USAF use of the Refuge for survival training need further analysis before implementation of any changes to this. First, the actual impacts and the significance of the impacts needs to be determined and/or disclosed Finally, any future change to the USAF use area need to be coordinated with and agreed to by the other impacted land managers/land owners. Another example, page S28 (should be S27), The combination of recreational and Air Force disturbances under Alternative A could cause cumulative impacts to sensitive wildlife . Again, this statement has no supporting evidence and appear to be included simple to lead the reviewer to a pre-determined conclusion. (52)

What damage or adverse effect on wildlife and the LPO as a refuge do survival training . . . present? (53)

Response: The most significant potential impacts to wildlife are associated with helicopter support of training which involves low-level flights, hovering and landing; use of certain pyrotechnics and simulated weapons, and effects of disturbance from about 80± people scattered over one-third of the refuge. Resources at risk include migratory birds, wide-ranging forest carnivores, priority public uses, and wilderness values in the more remote portions of the refuge. Additionally, summer training has resulted in several small fires which pose an additional risk to refuge forests. In the last five years we have averaged 2-3 Air Force-caused fires per year. In August 1999, off-duty Survival School instructors accidentally burned a bridge that was on the National Historic Register.

Most Air Force use occurs in the core of the refuge. This core area is the same area where most refuge public uses occur due primarily to the location of popular fishing lakes and public campgrounds. The cumulative disturbance from Air Force and public use reduces habitat integrity for sensitive wildlife species.

Camping associated with Air Force training has contributed to the camp anywhere legacy at the Refuge. Air Force camps developed near roads have been used by the public or reused by Air Force personnel during off-duty visits to the Refuge. The compatibility determination for

camping stipulates that dispersed camping in designated sites would only be allowed during the October through December hunting seasons.

On refuges we manage for wildlife first and foremost. Unlike some other federal public lands, multiple use management is not our focus. In evaluating the Air Force use of the Refuge over almost six years we cannot show that the use is compatible. We question the necessity of a Refuge for this use, and believe there is a direct correlation between the camping portion of the Air Force training and the problems associated with public camping. We know the use is more compatible now than it was five years ago as a result of the changes made to Refuge training.

In the absence of site-specific data we used scientific literature related to wildlife disturbance from noise generated by helicopters and other aircraft and increased ground activity associated with military training, not presumption, feelings, or generic potential effects. This is considered sound professional judgement. Our compatibility process does not require us to generate data to show or prove that a use is not compatible. The burden of proof is on the proponent of the use. Our guidance from the 1994 Compatibility Training Manual is If you do not have the necessary information to document that a use is compatible, the use should be denied.

We understand the importance of the Air Force Survival School training mission and view this situation as a conflict of missions. Since we have primary jurisdiction within the Refuge, we are required to follow our agency laws and policies in evaluating this and other refuge uses.

Comment: The statement the potential impacts of Airforce training (emphasis added) immediately leaves the reviewer with the impression that the impacts are not known or supported by data. The potential impacts are then listed on page 2-58. The four impacts are (1) effects on visitor experience; (2) N/A because this bullet is the same as (1); (3) effects to habitat; and (4) restrictions on hunting opportunities. With the exception of (4), these potential impacts appear to be weak justification to close down an operation that has been on-going for 33 years. In 33 years what type of and how many complaints have been received from the user public? What evidence do you have to show the amount of or the significance of the wildlife disturbance? What are the actual effects to the habitant and how significant are they? We have personal knowledge of this activity and, although trapping and taking of wildlife is permitted as part of the training, it is extremely rare that a big game animal would be trapped, let alone killed. It is our understanding that the Airforce keeps records of the animals trapped or captured. If so, we would like know how many animals are destroyed annually and whether these numbers would be significant enough to impact the prey base for other wildlife or are significant enough to impact the overall population dynamics. (52)

Response: Description of effects associated with Air Force training have been moved to Chapter 4, Environmental Consequences. Additional information related to effects are in the compatibility determination in Appendix F. One bullet was inadvertently eliminated from the draft document. It has been corrected in the final version which was moved to Chapter 4.

Complaints from the public are usually associated with helicopters, vehicle speed, or use of roads or vehicle types not allowed to other users. Some people who commented during the planning process said they do not use the refuge because of the Air Force. In 1998 and 1999, respectively (see parenthetical numbers), the Air Force reported taking the following animals during Refuge training: deer (1, 0); trout (125, 113); other fish (2, 0); red squirrels (15, 11); and rabbit (1,1). This harvest is not considered significant to populations of these species.

Comment: *Page 4-15 -The Survival School has reduced the use of the refuge for winter training in recent years. Currently, no training occurs during the big game winter range period, and little or no training is conducted until the summer months on the Refuge. The CCP needs to be revised to describe current trends of survival training on the Refuge. (65)*

Response: The draft CCP/EIS refers to disturbing agents in past winters This is a correct statement. In December 1999 the Air Force requested to use the Refuge during 10 days in February. This use included daily use of snowmobiles and tracked vehicles.

Affect of Phase Out on Fairchild AFB and the Economy

Comments: *If it [AFSS] leaves the refuge, will it also leave Fairchild Air Force Base? What are the ramifications here? Have you considered them? (21)*

Even though National Security is not a chamber problem or issue, it is an economic issue which will have a negative effect on support businesses in the Colville region. (81, similar in 212)

Response: Phasing out Air Force Survival School training on the Refuge will not remove the Survival School from Fairchild Air Force Base. The Refuge is one location among several in northeastern Washington used for survival training. The hunting closure in August and September is the most critical parameter for Air Force use during these months. In recent years the training has occurred only during these months. This closure could be shifted to another location. According to the Air Force, their use of the Refuge does not contribute to the local Colville economy. See Air Force Training Economics section in Chapter 2.

Changes in Air Force Training Since 1994

Comment: *The described 1995 training period on the refuge is atypical of usual and recent training. In that year, the Basic Combat Survival Course conducted all summer and early fall training in the refuge, rather than using two different sites for training. Following the 1995 training period, we realized that training for that period of time was detrimental to refuge wildlife, users and neighbors, and has not been repeated. For most efficient use of personnel, the Survival School prefers an August-September training period of six to eight weeks (42 to 56 days) in the refuge. (65)*

Response: The FEIS revisions reflect the 1999 training program. Although 1998 and 1999 training reduced helicopter activity and simulated weapon use, the most recent five-year plan (dated 3/1997) developed by the Survival School showed winter and spring use of the Refuge in 2000 and beyond.

Comment: *There is no indication, other than some meetings were held, that (1) the USAF has been asked to modify operations to help mitigate some of the problems . Such modifications could include measure such as limiting training to a different time frame, allowing hunting of turkey and deer with shotguns and bows only, providing materials to be imported to training sites to reduce impacts to existing vegetation, providing portable sanitation facilities, etc. or (2) that the proposed actions have been coordinated with adjacent land managers to absorb the impacts created by moving the survival training off the Refuge. (46)*

Response: Since resuming on-site management of Little Pend Oreille NWR, the Fish and Wildlife Service has worked with the Air Force to reduce the effects of survival training on wildlife and habitats. Air Force use of the Refuge has been coordinated through an annual special use permit. Some of the changes that have occurred include: reduction in helicopter use, particularly night and low-level flights and training flights within Refuge; elimination of ground burst simulators; reduction in winter training; reduced helicopter activity near lakes between March and June; full documentation of training trips within the Refuge; minimization of training overlap between survival and instructor training; modification of wildlife use to eliminate taking migratory birds; no live fish use for bait; no cutting of snags greater than eight inches in diameter; no use of public campgrounds; no new camps or latrines within 200 feet of water; reduction in the number of camps used; removal of all structures, flagging, etc.; no new clearing for fires; restrictions on off-road vehicle use; restriction on use of refuge for survival and instructor training only.

We also asked that helicopters be used only in emergencies and groups sizes be reduced to 25 or fewer people. We sought feedback from the Air Force on opening the refuge to turkey hunting, archery deer and elk hunts, and grouse hunting with restrictions on weapon type. Helicopters are an integral part of survival training and emergency-only use is not practical from the Air Forces perspective. The Air Force was concerned with personnel safety during training but was open to turkey hunting, new primitive weapon and non-rifle hunts. Any further restrictions erode the Air Forces ability to meet its training requirements.

Improvement Act and Military Use

Comments: *Washington State offers a diverse range of climates and geologic conditions that provide realistic training for military pilots. The LPONWR provides an element of that training and is clearly essential for military preparedness. I am deeply disturbed by the LPONWR s proposal to phase out the Fairchild Air Force Base s Survival Training School at the refuge, even though Section 5(a)(4)(L) of Public Law 105-57 mandates the continuation of . . . authorized or permitted uses . . . , including those necessary to facilitate military preparedness. What legal authority does the LPONWR cite to justify phasing out use of the refuge for military preparedness? (288)*

Response: Public Law 105-57 - the Refuge System Improvement Act states . . . continue, consistent with existing laws and interagency agreements, authorized or permitted uses of units

of the system by other Federal agencies, including those necessary to facilitate military preparedness.

The House Report for the Refuge System Improvement Act (House of Representative, 1997) submitted by Congressman Young of Alaska states The term existing laws and interagency agreements means applicable laws in force at any given time and agreements consistent with those laws. It does not grant permanence to all agreements existing as of enactment.

The U.S. Fish and Wildlife Service has primary jurisdiction at the Little Pend Oreille Refuge. We are required, therefore, to evaluate all secondary uses, such as U.S. Air Force Survival Training School, for compatibility. The Service has used an annual special use permit, not an interagency agreement, to authorize this use. We believe that the compatibility test required by the Refuge Administration Act and amended by the Refuge System Improvement Act is the appropriate decision-making tool to determine if the Air Force activities are to continue. As part of the Comprehensive Conservation Planning process, Air Force training activities, including the use of helicopters and extensive ground activities were not found to be compatible with the purpose of the Refuge.

The Refuge is considered by the Air Force to be one of a series of prime locations for training in Eastern Washington. The Refuge is desirable by the Air Force because of its close proximity to the Fairchild Air Force Base and the Tacoma Command Post, the lack of logging, the natural resources, the terrain and the hunting closure. These attributes could also be found on other Federal, State, Tribal, or private areas in Eastern Washington. In response to our concerns, the Air Force has been actively seeking alternative locations to train over the past year. Since the Little Pend Oreille Refuge is the only Federal land in this part of northeastern Washington acquired and managed for the conservation of fish, wildlife, plants, and their habitat, we suggest that Air Force training is more appropriate on other lands with a multiple use mission. We will continue to explore options with the Air Force and with other land managers to find the most appropriate location for the Air Force training program.

Air Force Training Wildlife-dependent?

Comment: *The Refuge System Improvement Act identifies six wildlife-dependent recreational uses. These are hunting, fishing, wildlife observation and photography, and environmental education and interpretation. The Airforce training is designed to teach the trainees how to survive in a timbered ecosystem. In order to do this, they are given training in hunting, fishing, vegetation identification, and other aspects of the environment, such as exposure, weather, etc. In other words, they are using the area for environmental education and interpretation. They are also learning hunting/trapping and fishing skills. Perhaps this is not a true case of recreational use but we feel that their use does meet the intent of the law because most of their training/experience is wildlife dependent. (52)*

Response: We disagree. The Air Force does not require a wildlife refuge for their survival training. Their training is considered forest-dependent versus wildlife-dependent. Survival skill training is not a compatible public use as intended by the Improvement Act. Trapping is not one

of the six priority, wildlife-dependent uses identified in this law. Survival training does not contribute to and is believed to conflict with the wildlife conservation mission of this Refuge.

Shifting Impacts to Another Area

Comments: *The Colville National Forest (refer to our July 20 letter to the USAF copied to you) is very concerned about the potential indirect effects on the resources and public use of the Forest if USAF Survival School use of the LPO is phased out. We would like to work toward a cooperative effort of rotating use among all landowners and public agencies who could potentially meet USAF Survival School needs to reduce the environmental and social effects to any one agency or landowner. (232)*

*. . . there are several things that you didn't pursue or accomplish:
- future management of the United States Air Force survival training needs have not been coordinated or agreed to by the Forest Service or State. Movement of the training from the Refuge lands only shifts the impacts to other lands without any known gain to the user public. For example, even if you can provide more hunting on the Refuge, someone else will be able to provide less. The end result is that you have simply transferred the use to someone else, and committed them, without their approval. This is not the way neighbors should operate. (45 similar in 46, 174)*

Response: The Fish and Wildlife Service is always willing to cooperate with landowners and public agencies when that cooperation is within the context of laws and policies governing refuges. We seek such opportunities when they result in management that protects wildlife and wildlife habitat. When a use is not considered compatible we are not likely to participate. The concept of compatibility is a legal provision that sets the Refuge System apart from other Federal lands. The laws governing the Refuge System require us to focus first and foremost on wildlife conservation.

The Refuge System Improvement Act requires that we not renew or initiate a special use permit until we have determined the use is compatible with the wildlife conservation mission of the Refuge System and the purposes of the Little Pend Oreille National Wildlife Refuge. Despite the efforts of the Air Force to reduce their impacts, we cannot conclude their use is compatible.

Fish and Wildlife Service staff discussed the possibility of shifting the Air Force use to other property with the Air Force and U.S. Forest Service. The Air Force has considered other land, both public and private, including State land in Idaho. The Air Force personnel must decide what other areas meet their needs before coordinating or discussing a shift. Since we can only speculate where the Air Force may relocate their training, further analysis of the impacts associated with relocating the training is outside the scope of this EIS and is the responsibility of the Air Force. We are aware that the Colville National Forest does not want to have the Refuge training shifted to the Forest.

MISCELLANEOUS

Human Modifications and Capacity to Support Fish and Game

Comment: *In a larger philosophical sense, an argument might be made that a significant part of the Refuge's capacity to support fish and game is related to the human modifications (related to agriculture and grazing). (43)*

Response: Human modification of habitat definitely influences Refuge habitats capacity to support fish and wildlife species. For some species these influences have been positive, particularly habitat generalists; but for others, it has been negative or neutral. There is no shortage of once-forested habitats altered by humans. There appears to be a lack of unfragmented, well-connected forested habitats representing all stages of succession, particularly the latter mature and old stages. We believe human modifications can improve habitats for species with specialized habitat needs and propose to modify habitats in the CCP.

Bayley Lake Leak

Comment: *I would like to add one recommendation: I would like to see the engineers from your organization conduct a study of Bayley Lake to determine how to stop the loss of water from the lake. Mother Nature has favored us with several years of excellent run-off and the lake has had ample water in it during this time. But if we face a year or two of drought, the level of the water in the lake will lower drastically and all the flats around the lake will be dry land. These flats are the main insect producers for the lake and are vital to its continuing well-being. A solution to this problem should definitely be implemented. (49).*

Response: Bayley Lake did draw down to its lowest level during the summer of 1999. This attracted many shorebirds who do not use the lake at full pool. This draw down does affect fishing, fish food, and concentrates the fish. The portion of the lake remaining during low water periods may approximate the original lake before water was diverted from Bear Creek. This lake has a long history of leaking and temporary fixes, as revealed by a search of Refuge files. A 1948 document refers to leakage in the floor of the canyon. Engineers Willis and Jacoby checked the leak in 1947 and determined the cost of checking the leak would result in more expense than would seem justifiable. These engineers determined the leak would require constant repair. A 1963 document reports that there is a leak under the dike. A beaver dam 150 feet above the dike helped to maintain lake levels but engineering investigation was suggested. The Inland Empire Fly Fishing Club has attempted to seal sink holes repeatedly since the late 1980's. They have used bentonite. Dynamiting has been recommended but not tried. We suspect that the conclusion reached by Engineers Willis and Jacoby were well founded and are still true.

Inholdings

Comments: *I would like to see in-holdings convert to refuge lands through swaps, purchase, or land exchange to eliminate the checkerboard pattern and allow for more free range mobility for the benefit of wildlife. Further, eliminating in-holdings by whatever mean will create a less stressful environment for rare or threatened species. (86)*

Perhaps it is not appropriate in this document but the eventual acquisition of major timber company in holdings would improve refuge management opportunities and increase public benefits. The Fish and Wildlife Service should explore all opportunities which could lead to the fee acquisition or other actions that would eliminate private lands within the refuge boundary. (190)

Response: It is appropriate to cover this issue in this document. On page 3-5 of the draft CCP/EIS in the section called Features Common to all Alternatives , we address this: There is continued interest by the Fish and Wildlife Service to consolidate management of lands within the existing Refuge boundary. This could be done through management, protection, exchange, or acquisition of the approximately 6500 acres of inholdings within the boundary. A significant portion of these in-holdings are industrial timber land

Other Management

Comments: *Best alt. turn management over to the State. (197)*

I also feel that Washington State should take over this wildlife refuge the way it used to be!! (266)

After viewing the Plan , there is no doubt in my mind that stewardship should definitely RETURN TO WASHINGTON STATE and local input can be heard. (41)

Response: Transferring control of the Refuge to another entity is beyond the scope of this EIS.

Ecosystem Management

Comment: *Ecoregion or Columbia Basin Ecoregion Management System keeps showing up in this document. On pages 1-6 is a statement which says the LPONWR is expected to fulfill Ecoregion goals. I have been under the impression that Congress did not accept or approve the Columbia Basin Ecoregion Management System as proposed. (252)*

Response: There are two uses of the term ecosystem that have confused this commenter. One refers to a geographic division of land identified by the Fish and Wildlife Service - the Columbia Basin Ecoregion. This is one of 52 separate geographic areas in the United States that are similar ecologically. The other reference is the Interior Columbia Basin Ecosystem Management Project (ICBEMP) and addresses lands managed by the Bureau of Land Management and the Forest Service.

The statement on pages 1-6 refers to and lists the ecoregion goals of the Fish and Wildlife Service within our boundary of the Columbia Basin ecoregion. The ICBEMP project has not completed the NEPA process and has been remanded (sent back) by Congress to the agencies for further work. See comments and responses related to this ecosystem reference under Interior Columbia Basin Ecosystem Management Project .

Cultural resources

Comment: *Cultural resources: What are they? Are they worth protecting?* (11)

Response: Cultural resources are the remains of sites, structures, or objects used by people in the past. We are required through the National Environmental Policy Act, Historic Sites Act, Archaeological Resources Protection Act and other legislation passed by the US Congress to protect and manage cultural resources pertaining to our collective past, because they include information that helps us understand where we have come from and who we are. Little Pend Oreille Refuge has a rich history worthy of protection and interpretation.

Rare plants Survey

Comment: *Since no systematic rare plant survey exists for the Refuge, I encourage you to conduct a survey for rare plants in potential habitat and to monitor their sites.* (282)

Response: Comment noted. Rare plant surveys have been added to Appendix C, the Preferred Alternative: CCP Objectives, Projects, and Implementation Strategies..

Vehicles

Comment: *Assuming that licensed motor vehicles are just as detrimental as orv and snowmobiles when will you be excluding them also?* (279A)

Response: The plan does not propose to exclude any street legal vehicles on established open roads. Some roads may be seasonally closed or eliminated for all vehicle access.

Beaver Lodge

Comment: *I was very disappointed to hear of the revision of Beaver Lodge and the area. We have camped and stayed in that area for over 35 years. It would be a real shame to make such a radical change.* (239)

Response: The Refuge plan does not include the Beaver Lodge area. Forest Service, Washington Department of Natural Resources and private land surround Beaver Lodge. Snowmobilers have referred to a detrimental effect on Beaver Lodge if the draft plan to eliminate snowmobiling and the snow park were implemented.

Appendix K: State Listed Noxious Weeds Inhabiting Stevens County, Washington, 1999.

<u>Common Name</u>	<u>Scientific Name</u>	<u>State Noxious Weed Classification</u>
Buffalobur	<i>Solanum rostratum</i>	A
Meadow clary	<i>Salvia pratensis</i>	A
Clary sage	<i>Salvia sclarea</i>	A
Velvetleaf	<i>Abutilon theophrasti</i>	A
Blueweed	<i>Echium vulgare</i>	B*
Scotch broom	<i>Cytisus scoparius</i>	B*
Annual bugloss	<i>Anchusa arvensis</i>	B*
Common bugloss	<i>Anchusa officinalis</i>	B
Wild carrot	<i>Daucus carota</i>	B
Wild chervil	<i>Anthriscus sylvestris</i>	B*
Sulfur cinquefoil	<i>Potentilla recta</i>	B
Oxeye daisy	<i>Leucanthemum vulgare</i>	B
Orange hawkweed	<i>Hieracium aurantiacum</i>	B*
Yellow hawkweed	<i>Hieracium caespitosum</i>	B*
Diffuse knapweed	<i>Centaurea diffusa</i>	B*
Russian knapweed	<i>Acroptilon repens</i>	B*
Spotted knapweed	<i>Centaurea biebersteinii</i>	B*
Kochia	<i>Kochia scoparia</i>	B*
Garden loosestrife	<i>Lysimachia vulgaris</i>	B*
Purple loosestrife	<i>Lythrum salicaria</i>	B*
Tansy ragwort	<i>Senecio jacobaea</i>	B*
Longspine sandbur	<i>Cenchrus longispinus</i>	B*

Rush skeletonweed	<i>Chondrilla juncea</i>	B*
Perennial sowthistle	<i>Sonchus arvensis</i> ssp. <i>arvensis</i>	B*
Leafy spurge	<i>Euphorbia esula</i>	B*
Yellow starthistle	<i>Centaurea solstitialis</i>	B*
Musk thistle	<i>Carduus nutans</i>	B*
Plumeless thistle	<i>Carduus acanthoides</i>	B*
Scotch thistle	<i>Onopordum acanthium</i>	B*
Dalmatian toadflax	<i>Linaria dalmatica</i> ssp. <i>dalmatica</i>	B
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>	B
Babysbreath	<i>Gypsophila paniculata</i>	C
Field bindweed	<i>Convolvulus arvensis</i>	C
Reed canarygrass	<i>Phalaris arundinacea</i>	C
White cockle	<i>Silene latifolia</i> ssp. <i>alba</i>	C
Hoary cress	<i>Cardaria draba</i>	C
Smoothseed alfalfa dodder	<i>Cuscuta approximata</i>	C
Jointed goatgrass	<i>Aegilops cylindrica</i>	C
Black henbane	<i>Hyoscyamus niger</i>	C
Houndstongue	<i>Cynoglossum officinale</i>	C
Japanese knotweed	<i>Polygonum cuspidatum</i>	C
Scentless mayweed	<i>Matricaria perforata</i>	C
Poison hemlock	<i>Conium maculatum</i>	C
Cereal rye	<i>Secale cereale</i>	C
Common St. Johnswort	<i>Hypericum perforatum</i>	C
Common tansy	<i>Tanacetum vulgare</i>	C
Canada thistle	<i>Cirsium arvense</i>	C

Yellow toadflax	<i>Linaria vulgaris</i>	C
Absinth wormwood	<i>Artemisia absinthium</i>	C

Washington State and Stevens County Weed Classification:

- A State listed Class A weeds are non-native species with a limited distribution in Washington. Preventing new infestations and eradicating existing infestations is the highest priority. Eradication is required by law.
- B State listed Class B weeds are non-native species presently limited to portions of the state. Class B species are designated for control in regions where they are not yet widespread. Preventing infestations in these areas is a high priority. In regions where a Class B species is already abundant, control is decided at the local level, with containment the primary goal. Control not required in Stevens County.
- B* Class B Designate weeds requiring control in Stevens County.
- C State listed Class C weeds are non-native weeds found in Washington. Many of these species are widespread in the state. Long-term programs of suppression and control are a local option, depending upon local threats and the feasibility of control in local areas. Control not required in Stevens County.

Source - *1999 Washington State Noxious Weed List, as annotated by the Stevens County Noxious Weed Board.*

Little Pend Oreille NWR
1310 Bear Creek Road
Colville, Washington 99114
509/684-8384

U.S. Fish & Wildlife Service
<http://www.fws.gov>
<http://www.r1.fws.gov/planning/plnhome.html>

Refuge Information
1 800/344 WILD

**Whitetail deer, McDowell Lake,
Ponderosa pine stand, and
background photo/USFWS**
All other photos - © Scott Price

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