



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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JAN 23 2002

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Vale District
Bureau of Land Management
100 Oregon Street
Vale, Oregon 97918

Subject: Southeast Oregon Resource Management Plan–Biological Opinion
File # 1007.0000 OALS #1-4-02-F-0336

Dear Mr. Henderson:

With this letter, the U.S. Fish and Wildlife Service (Service) is providing the Vale District Bureau of Land Management (Bureau) with our Biological Opinion (Opinion) regarding the effects on bull trout and Lahontan cutthroat trout from adopting and implementing the Southeast Oregon Resource Management Plan (Plan). We are providing this Opinion pursuant to Section 7 of the Endangered Species Act (Act) and in response to your May 1, 2001 request for formal consultation, received by us May 7, 2001. The basis for our Opinion and concurrence is your Biological Assessment (Assessment), provided along with your May letter. We are also providing concurrence with your determinations that implementing the Plan may affect, but is not likely to adversely affect bald eagles, Canada lynx, and gray wolves.

Consultation History

April 28, 2000	The Service provided the Bureau with a list of threatened, endangered, proposed, and candidate species (reference number 1-4-00-SP-120/1007.3000) that may occur in the Plan area.
March and April 2001	The Bureau provided the Service with a draft Biological Assessment for the Plan. The Service reviewed the draft and provided comments on the draft via telephone and electronic mail.
May 7, 2001	The Service received the Bureau's request for formal consultation and Biological Assessment, dated May 1, 2001.

June 1, 2001 and December 1, 2001	The Service provided the Bureau with an updated species list for the Plan area (reference number 1-4-01-SP-350 and 1-4-01-SP-1115/ 1007.3000).
November 2, 2001	The Service received the Final Environmental Impact Statement, Plan, and Draft Record of Decision.
October 31, 2001	The Service received your October 30, 2001 letter clarifying that the Bureau will incorporate any future changes in the Canada Lynx Conservation and Assessment Strategy into the Plan.
January 7, 2001	The Service provided the Bureau with an electronic version of the Draft Biological Opinion for the Plan.

Related Consultations

There are a number of other Biological Opinions and informal consultations that are relevant to the Planning area and related to this consultation. They include:

- the Service's August 14, 1998 Opinion regarding the effects on bull trout from implementation of all Bureau and Forest Service land management plans in the range of the species;
- the Service's October 25, 2000 Opinion on the effects of land management plan implementation on lynx range-wide;
- the Service's May 22, 2001 Opinion for grazing activities in the District's allotments in North Fork Malheur River watershed; and
- the Service's May 1, 1997 Opinion on effects to Lahontan cutthroat trout from grazing on four allotments in the Coyote Lake and Quinn River basins (Whitehorse Butte).

For two reasons, those Opinions are not superseded by this consultation. First, those consultations address the species at a different scale—either larger (range-wide) or smaller (watershed). Second, because the District has proposed incorporating the all components of INFISH and the LCAS into the Plan, the action has not changed significantly with respect to bull trout or lynx range-wide. As such, any reasonable and prudent measures and terms and conditions of those Opinions still apply.

The Bureau has completed numerous other Section 7 consultations with the Service for individual activities in the action area, batched actions, and programs such as weed control District-wide. This Opinion does not supersede any of those Opinions or letters of concurrence. If changed direction in the Plan results in changes in any actions that have already undergone consultation, you should determine if reinitiation is warranted.

Proposed Action

The Bureau proposes adoption and implementation of the Southeast Oregon Resource Management Plan. The action area includes the Jordan and Malheur Resource Areas of the Vale District of the Bureau of Land Management, involving about 6.3 million acres in Grant, Harney, and Malheur Counties in southeast Oregon. The 20-year plan is being developed in accordance with the Federal Land Policy and Management Act of 1974 and supports the multiple-use, sustained yield principles of that law. The plan provides direction for management of a number of categories of resources: energy and minerals, water, fire, vegetation, fish, wildlife, wild horses, special status species, livestock, recreation, special management areas, and lands and realty.

The Biological Assessment describes the Plan as a mid-scale planning instrument; it will provide the basis for future activity plans and management actions on the Resource Areas. The Plan sets up a process for evaluation of resource issues based on geographic units such as watersheds, and calls for an adaptive management approach toward reaching a desired range of future conditions. Relevant to this consultation is the objective for special status animal species, which is as follows.

Manage public land to maintain, restore, or enhance populations and habitats of Special Status animal species. Priority for the application of management actions would be: (1) Federal endangered species, (2) Federal threatened species, (3) Federal proposed species, (4) Federal candidate species, (5) State listed species, (6) Bureau sensitive species, (7) Bureau assessment species, and (8) Bureau tracking species. Manage in order to conserve or lead to the recovery of threatened or endangered species.

What's more, the Plan contains resource objectives for general habitat management.

Fish and Aquatic Habitat

Restore, maintain, or improve habitat to provide for diverse and self-sustaining communities of fishes and other aquatic organisms.

Wildlife and Wildlife Habitat

1. Maintain, restore, or enhance riparian areas and wetlands so they provide diverse and healthy habitat conditions for wildlife.
2. Manage upland habitats so that the forage, water, cover, structure, and security necessary for wildlife are available on public land.

The Plan states that as management actions and activity plans are developed, the Bureau will analyze effects of the proposals on listed species and consult as needed with the Service in accordance with Section 7 of the Act. In addition, the Bureau would incorporate all appropriate provisions of the Canada Lynx Conservation and Assessment Strategy (Rudiger et al., 2001).

With respect to fish and aquatic habitat, the Bureau proposes to incorporate all provisions of the Interim Strategy for Managing Fish-producing Watersheds in Eastern Oregon, Washington,

Idaho, Western Montana, and Nevada (INFISH; USDA and USFWS 1995) as a permanent, long-term component of the Plan. As such, several overriding components of the Plan are relevant to all activities, will guide or constrain future management actions, and are aimed at reducing or avoiding impacts on aquatic resources and to contribute to their recovery. The provisions of INFISH, including objectives for riparian and in-stream conditions, definitions of Riparian Habitat Conservation Areas (RHCAs or RCAs) and Riparian Management Objectives (RMOs), will be applied to all actions. Further, INFISH provides for Ecosystem Analysis at the Watershed Scale which is intended to guide future land management decisions to contribute to attainment of RMOs. This is compatible with and complements the Plan's provisions for future evaluation of geographic areas within the two Resource Areas. INFISH itself has Standards and Guidelines for actions affecting RHCAs and associated areas, organized by management activity (timber, roads, grazing, recreation, minerals, fire/fuels). Other important components of INFISH are provisions for general riparian management, watershed and habitat restoration, fisheries and wildlife restoration, and monitoring. All these elements will be incorporated in their entirety into the Plan.

Concurrence for May Affect, Not Likely to Adversely Affect Determinations

Bald Eagle (*Haliaeetus leucocephalus*)

The Plan area is within Zone 16 of the Pacific Recovery Plan for bald eagles (USFWS 1986). The action area does not include any known occupied or historic bald eagle nesting territories, but does support limited migrant wintering populations. Suitable habitat on the Resource Areas is associated with major river water bodies, including Owyhee, Buelah, Bully Creek, and Malheur Reservoirs; the Owyhee, Malheur, and North Fork Malheur Rivers; Succor Creek; and Cow and Batch Lakes. The Assessment acknowledges that there is an extremely limited amount of coniferous forested habitat that is suitable for night roosting winter birds, and that is confined to the North Fork Malheur River watershed at the northern extreme of the action area and the southern edge of the Blue Mountains province. According to the Assessment, current wintering eagle numbers for the planning area are about 35.

A table on pages 32 through 35 of the Assessment provides an evaluation of potential effects on eagles for each of the management categories of the Plan and for Animal Damage Control activities. The Bureau provided an analysis of potential cumulative effects on the species on pages 26 and 27 of the Assessment. Based on the rationales provided in that table, the Service agrees that direct, indirect, interrelated/interdependent, and cumulative effects of implementing the plan would be negligible and discountable. As such, we concur with your determination that bald eagles may be affected, but are not likely to be adversely affected by adopting and implementing the Plan.

Gray Wolf (*Canis lupus*)

Wolves are not known to be present in the planning area, though there is some chance that they were present in the area historically. The majority of the lands in the Resource Areas do not support habitat suitable for breeding gray wolves and any historic use was probably confined to occasional migrants or wandering animals. In the event that suitable habitats north of the

planning area are reestablished as by breeding wolves, similar use could occur in the future, though it would not be likely to be important for recovery of the species. The Service agrees with your conclusion that Plan adoption and implementation may affect, but is unlikely to adversely affect wolves.

Canada Lynx (*Lynx canadensis*)

The planning area is at the far southern extreme of the presumed historic range of Canada lynx, and only a small portion of the Malheur Resource Area includes habitat that meets the criteria in the LCAS for mapping as a lynx analysis unit (LAU). That area is at the north end of the action area, adjacent to the Malheur and Wallowa Whitman National Forests. Any suitable habitat would be relevant to lynx only as a subset of LAUs on Forest lands. A table on pages 41 through 44 of the Assessment provides an evaluation of potential effects on lynx for each of the twelve management categories of the Plan and for Animal Damage Control activities, and the Bureau provided an analysis of potential cumulative effects on the species on page 40. Based on the rationales you provided, the Service agrees that direct, indirect, interrelated/interdependent, and cumulative effects of implementing the plan would be negligible and discountable. As such, we concur with your determination that lynx may be affected, but are not likely to be adversely affected by adopting the Plan.

We also note that you have concluded that there will be no effect on Ute ladies' -tresses or Howell's spectacular thelypody, and that you analyzed the potential effects of adopting and implementing the plan on spotted frog, a candidate for listing under the Act.

BIOLOGICAL OPINION FOR BULL TROUT AND LAHONTAN CUTTHROAT TROUT

I. Environmental Baseline--Status of the Species and Baseline Conditions

Regulations implementing the Act define the environmental baseline as the past and present impacts of all Federal, state or private actions and other human activities in the action area. Also included in the baseline are the anticipated impacts of all Federal actions that have undergone Section 7 consultation, and impacts of state and private actions which are contemporaneous with the consultation in progress.

A. Bull Trout (*Salvelinus confluentus*)

The Columbia River Basin Distinct Population Segment (DPS) of bull trout was listed threatened by the Service on July 10, 1998 (USFWS 1998b). The species has declined in terms of overall range and numbers of fish. Though still widespread, there have been numerous local extirpations reported throughout the Columbia River Basin. Habitat fragmentation, isolation, and barriers limit bull trout distribution and migration within the basin. Although some strongholds still exist, bull trout generally occur as isolated subpopulations in headwater lakes or tributaries where migratory fish have been lost. Bull trout declines have been attributed to the effects of land and water management activities, including forest management and road building, mining,

agricultural practices, livestock grazing, isolation and habitat fragmentation from dams and agricultural diversions, fisheries management practices, poaching, and the introduction of non-native species. Limiting factors for the species include habitat degradation associated with elevated water temperatures, excessive sedimentation, changes in stream morphology, degraded quality of riparian habitat, and competition with non-native fishes.

The Columbia Basin DPS includes bull trout residing in portions of Oregon, Washington, Idaho, and Montana, and is composed of 141 subpopulations. Bull trout are estimated to have occupied about 60 percent of the Columbia River Basin, and presently occur in 4 percent of the estimated historical range. For discussion and analysis, the Service has identified four major geographic areas of the Columbia River Basin: 1) lower Columbia River (downstream of the Snake River confluence), 2) mid-Columbia River (Snake River confluence to Chief Joseph Dam), 3) upper Columbia River (upstream from Chief Joseph Dam), and 4) Snake River and its tributaries (including the Lost River drainage).

The planning area is within the Snake River Basin. Bull trout occupy portions of 14 major tributaries in the Snake River Basin of Idaho, Oregon, and Washington. The Service identified 34 bull trout subpopulations in the Snake River Basin. The current distribution of bull trout in the Snake River Basin is less than it was historically, with recent extirpations documented in Eagle Creek (Powder River Basin) and Wallowa Lake (Grande Ronde River Basin) and possibly in South Fork Asotin Creek. Numerous impassable dams and large expanses of unsuitable habitat have isolated subpopulations within the historical range. Isolation is most prominent upstream of Hells Canyon Dam in southwest Idaho and southeast Oregon.

In the action area, bull trout occur only in the North Fork Malheur River on the Malheur Resource Area, where BLM administers 4.5 river miles of migratory habitat. Because dams constructed at Warm Springs Reservoir in 1919 and Buelah Reservoir in 1934 prevent upstream fish passage, the North Fork Malheur bull trout are isolated from other populations in the Malheur Basin. Access to the Malheur River from the Snake River was limited after 1881 due to the construction of Nevada Diversion Dam on the lower Malheur River near Vale. Bull trout migrate between headwater tributaries on the Malheur National Forest, where they spawn in the fall, and Buelah Reservoir in the action area. Spawning does not occur anywhere in the action area, and there is no indication they did historically. However, migratory and possibly rearing habitat is present in stream reaches on Bureau land in Upper and Middle North Fork Malheur watersheds.

Your Assessment states that North Fork Malheur bull trout appear to be adfluvial, migrating between streams where they spawn and Buelah Reservoir. However, little is known about their abundance, distribution, and migration patterns and a significant proportion of the population may remain in the river throughout its life cycle. In other populations, spawning bull trout move upriver in spring and hold in upper tributaries in areas of cover (e.g. deep pools, logs, undercut banks). Spawning occurs in the fall, primarily in September-November when water temperatures reach 10° C. North Fork Malheur River bull trout spawn in the upper mainstem and in Elk, Swamp, Sheep, and Little Crane Creeks on Forest Service lands.

According to the Assessment, it is not known if all bull trout migrate downstream into the mainstem or if a component of the population residualizes and completes its entire life history in the tributaries. Adult bull trout radio tagged in Buelah Reservoir have been observed leaving the reservoir in April and May, passing through BLM lands en route to the upper basin where optimum water temperatures for adult bull trout (12° to 15° C) are present. They return to the reservoir in late October after spawning. Bull trout are periodically lost over the spillway of the Bureau of Reclamation's Agency Dam at Buelah Reservoir in the spring and Fall. The facility is a barrier to upstream movement, and the fate of bull trout below the dam is unknown, though it is assumed that they are lost to the breeding population.

The Assessment provides information about numbers of bull trout in the North Fork Malheur River basin. It was estimated that in 1991 and 1992 more than 4000 individuals were in the headwaters. Numbers of redds observed increased from eight in 1993 to 115 in 1999. The increase in redd counts observed from 1996 to 1999 suggests a greater abundance of adult bull trout. However, according to the Assessment, redd density is low in good quality habitat areas and the size of the spawning population is well below the 300 adults thought by Oregon Department of Fish and Wildlife (department) to be needed to maintain genetic integrity.

Historic land uses affecting North Fork Malheur bull trout habitat include livestock grazing, timber harvest, road building, and irrigated agriculture. Effects have included increased stream temperatures as a result of riparian vegetation removal, increased sediment loads to stream channels, reduced recruitment and input of large woody debris, loss of streambank integrity, reduced flows from irrigation withdrawals, loss of fish at unscreened diversions, and migration barriers. In addition, earlier chemical poisoning projects conducted by the department may have killed bull trout.

B. Lahontan Cutthroat Trout (*Oncorhynchus clarki henshawi*)

The Lahontan cutthroat trout was listed by the Service as endangered in 1970 (USFWS 1970) and reclassified as threatened in 1975 (USFWS 1975). The Assessment provides a summary of status and distribution of the species in the action area. Fish in the Upper Quinn and Alvord Lake subbasins constitute the northwestern population segment and are within the Jordan Resource Area. In the Upper Quinn subbasin of Jordan Resource Area, Lahontan cutthroat trout occur in Sage and Line Canyon creeks, tributaries to the Quinn River, remnants of populations that historically inhabited the entire drainage. Trout from Sage Creek were transplanted above a falls into Indian Creek in 1980 and 1981, and a small population persists there. Lahontan cutthroat trout of the Coyote Lake area, a drainage within Alvord Lake subbasin, are currently present in Whitehorse, Little Whitehorse, Fifteenmile, Doolittle, and Cottonwood Creeks; in Willow Creek and its tributary B; and in Antelope Creek. Fifteenmile Creek fish are restricted by a natural barrier to the first 700 meters above the mouth; Lahontan cutthroat trout from Whitehorse Creek were stocked above the barrier in 1971 but did not survive. Antelope Creek was stocked in 1972 with trout from Whitehorse Creek and a small population remains.

The Assessment states that in 1996, the department estimated the Lahontan cutthroat trout

population density for Sage and Line Canyon Creeks to be about 9000 fish. In the Coyote Lake Basin, a 1994 inventory showed the population to be approximately 40,000. However, of the 70 miles of stream, less than 20 miles supported healthy fish densities.

The Assessment states that life history information on Lahontan cutthroat trout in the planning area is limited, but was summarized in the department's Lahontan Basin Fish Management Plan (1993). Fluvial Lahontan cutthroat trout spawn in the spring when water temperatures reach 5.5-9.0° C. Females mature at 3 to 4 years of age and males at 2 to 3 years. Consecutive year spawning by individuals is uncommon. Lahontan cutthroat trout have a high tolerance to extreme environmental conditions imposed by the fluctuating water temperatures and flow levels in arid climates. These fish are able to grow when exposed to diel cycling temperatures ranging from 20-26° C, though optimal temperatures average 9°-17° C. Currently, beaver ponds are the primary source of pools in the Coyote Lake drainage, providing refugia during summer low flow conditions and during winter when shallower areas develop ice.

The Bureau summarized land management impacts on the species in the Assessment. Major historic land uses affecting Lahontan cutthroat trout habitat in the planning area were grazing by domestic livestock and feral horses and activities associated with irrigated agriculture. Concentrations of livestock in riparian areas have caused loss of undercut banks and other cover, increased silt loads, and increased width to depth ratios which ultimately lead to elevated summer water temperatures. Lowering of water tables caused by vegetation removal and downcutting exacerbated low flows during drought. Diversions structures and reduced flows associated with irrigated agriculture are historic and current threats to the species. Because Lahontan cutthroat trout evolved in the absence of other salmonids, they appear to be poorly suited to competition with nonnative stream trout. Quinn River basin populations were affected adversely by introductions of brook, brown, and rainbow trout for sportfishing. Introductions have not occurred in the Coyote or Alvord Lake populations.

Livestock grazing and water diversions provide the major current conflicts with Lahontan cutthroat trout management. The Assessment states that in the late 1980s, the Bureau modified grazing practices in an effort to remove or reduce threats to Lahontan cutthroat trout. The Bureau has monitored riparian vegetation and stream channel characteristics since 1985, and results indicate upward in growth and vigor of woody riparian species and shade levels have increased throughout the basin. Increased plant cover has also contributed to filtering of debris and sediment and improving bank stability and width to depth ratios. Even with those improvements, a high percentage of instream fish habitat remains marginal. Many stream reaches have too few pools, excessive sediment, and elevated water temperatures. Upward trends in some fish habitat components is dependent on riparian recovery. Still, because the physical structure of the stream channel must be altered before instream conditions can be recovered completely, overall improvement in fish habitat has proceeded at a pace slower than that of the riparian component.

II. Effects of the Action

Following is the Service's analysis of effects of the proposed adoption and implementation of the Southeast Oregon Resource Management Plan on bull trout and Lahontan cutthroat trout. Direct effects occur simultaneously with, or immediately after, implementation of the proposed actions. Indirect effects are induced by the action but occur later in time. Effects of the action include direct and indirect effects as well as interrelated and interdependent actions (see 50 CFR 402.02). Cumulative effects are defined in the implementing regulations for Section as those effects of future state or private activities that have no Federal involvement and are reasonably certain to occur in the action area. Analysis of foreseeable future non-Federal actions provides the Service with greater insight into the full range of factors affecting listed species, likely trends, and the context in which effects of the action will occur over time. Future Federal actions that may affect bull trout or Lahontan cutthroat trout but are subject to separate Section 7 consultation are not considered in this Opinion.

A. Direct and Indirect Effects

The nature of a land use plan is to identify goals and objectives for the planning area, functioning as a framework for future decisions for individual actions or groups of actions. Generally, a Resource Management Plan does not cause specific actions to happen, but does identify the context and sideboards within which future actions may be developed and implemented. One purpose of such a Plan is to identify larger goals and objectives and management direction to assure that actions implemented under the Plan contribute to those outcomes. As such, one could view the majority of the effects of the action of adopting a land use plan as indirect, occurring in the future and a result of subsequent decisions. Standards and guidelines in the Plan will form the basis for future actions and have direct bearing on how those actions are planned and implemented. As such, the adopting Plan does have potential to have an impact on listed species. However, the analysis of those effects is predicated on the assumption that decision makers will have discretion in developing actions under the Plan, and that Section 7 consultation at the scale of individual actions, programs, or groups of actions will be needed in the future. There is a relationship between the analysis in your Assessment and this Opinion and effects determinations that will be made at a future time, but it is not known specifically how listed species will be affected by actions that will occur later in time.

The Assessment provides an effects analysis for bull trout and Lahontan cutthroat trout in table form, on pages 15 through 18, presenting the action in terms of thirteen major resource management categories. In the Assessment, the Bureau concludes that implementation of the Plan may affect and is likely to adversely affect those species. You have determined that implementation of one management category, cultural resource management, will have no effect on either species of threatened fish. Further, the Bureau concludes that six categories of management dealt with in the Plan may affect, but are not likely to adversely affect bull trout and Lahontan cutthroat trout. Your conclusion that the species may be adversely affected by implementation of the Plan is based on determinations you made for six types of resource management.

Activities that you determined may affect, but are unlikely to adversely affect bull trout and

Lahontan cutthroat trout are displayed below, along with the rationales for your determinations of effect.

Rangeland Vegetation Management The Plan calls for all vegetation management actions to be designed to allow attainment of RMOs. According to the Assessment, you anticipate long-term beneficial effects from improved soil and vegetative conditions and reduced risk of catastrophic wildfire.

Forest and Woodlands Management The Plan calls for prohibition of timber harvest in RHCA's except in the case of catastrophic events and then only when harvest will not retard or prevent attainment of RMOs. According to the Assessment, you anticipate long-term beneficial effects from improved soil and vegetative conditions and reduced risk of catastrophic wildfire.

Water Resources and Riparian/Wetlands Management According to the Plan, Best Management Practices and mitigation will be employed to eliminate or reduce effects to listed fishes. The Assessment states that there will be long-term benefits as a result of attainment of water quality standards and riparian health.

Areas of Critical Environmental Concern The North Fork Malheur River and Little Whitehorse Exclosure ACECs will be managed to promote attainment of healthy and self-sustaining plant and animal communities. Protection of habitat and limitations on lands uses within ACECs is likely to benefit bull trout and Lahontan cutthroat trout.

Wild and Scenic Rivers The North Fork Malheur Wild and Scenic River designation will likely benefit bull trout through protection of Outstanding Remarkable Values. Recreational use is promoted for Wild and Scenic Rivers, and as such there may be effects to bull trout, but they are not likely to be adverse.

Land and Realty Management The Plan requires the Bureau to adjust location, duration, and timing of land and realty actions to avoid impacts on listed fishes and habitat. Land acquisition or exchange could result in improved conditions for bull trout or Lahontan cutthroat trout if the Bureau acquires lands that support their habitats and manages them according to this Plan.

The Service agrees with your rationales and conclusions for these actions' effects on listed fishes. As such, adoption and implementation of these components of the Plan will not contribute to adverse effects on bull trout or Lahontan cutthroat trout. However, other management categories covered in the Plan have some potential to contribute to adverse effects on one or both species of threatened fishes. The Service has based its analysis of effects on information in several documents, including your Assessment, the rules listing bull trout (USFWS 1998b) and Lahontan cutthroat trout (USFWS 1970; USFWS 1975), the 1998 Biological Assessment by the Bureau and Forest Service regarding effects of implementing LRMPs on bull trout range-wide (USDA and USDI 1998), and the Biological Opinion prepared in response to that Assessment (USFWS

1998a).

Energy and Mineral Resource Development In general, development of mineral and energy resources may result in increased sediment mobilization and deposition in streams, chemical contamination, channel alteration, destruction of riparian vegetation, and alterations in hydrologic regimes. Because these resources occur where they occur, it is not always possible to avoid effects on aquatic resources through location of the activity. The Plan does call for adjustment of the location, timing, and duration of these activities consistent with INFISH standards and Guidelines, conceivably reducing, minimizing, or avoiding effects on listed fishes.

While there are no active mineral claims in either bull trout or Lahontan cutthroat trout habitat, there is an unknown potential for future energy or mineral development in the future and there may be adverse effects associated with those activities. Because the Plan provides for management of these resources, adoption and implementation of the Plan could result in adverse effects to bull trout and/or Lahontan cutthroat trout.

Fire Management Ground disturbing activities associated with wildfire suppression—fire line construction, for instance—can result in sediment mobilization and deposition in stream channels thereby adversely affecting fish. Post-fire salvage activities also have potential to generate sediment, reduce large woody debris, and alter riparian habitat structure and composition. Fuels treatments aimed at reducing wildfire risk can have similar effects. The Plan calls for all fire management (suppression and fuels treatment) actions to be designed to allow attainment of RMOs, consistent with INFISH.

Because the Bureau does not have control over the location or timing of wildfire, it is not possible to develop standards and guidelines that completely eliminate the risk of adverse effects from suppression activities. This is particularly true in cases where human safety or property are at risk. What's more, fuels reduction projects may involve work in RHCAs and as such may have adverse effects on aquatic species and their habitats. Fire management, as provided for in the Plan, may have adverse effects bull trout and Lahontan cutthroat trout.

Rangeland/Grazing Use Management Livestock grazing impacts on stream habitat and fish populations can be separated into direct and chronic effects. Direct effects are those that can result in immediate effects on individual fish and redds, loss of specific habitat features such as undercut banks, and localized effects on habitat quality. Chronic effects are those that result in long-term habitat degradation that result in loss or reduction of fish populations. Among chronic effects are long-term alteration of vegetation structure in riparian areas and uplands, altered channel morphology, and perturbation of hydrologic regimes.

The Assessment notes that baseline conditions have shown some improvement since the Bureau implemented changes in grazing management to reduce both direct and chronic

effects. You further state that progress toward reversing negative trends in habitat quality associated with chronic effects is very slow. The Plan calls for grazing in RHCAs to be managed for maintenance or enhancement of RMOs, consistent with INFISH, and to meet the Rangeland Health standards. Still, because the Plan provides for continued livestock grazing within the ranges of the listed fishes, including cattle and sheep use of riparian areas, continued and ongoing negative effects can be expected. You have determined that livestock grazing may affect, and is likely to adversely affect bull trout and Lahontan cutthroat trout, because of continued use of RHCAs and the associated slower rate of restoration of riparian areas and streams.

Recreation Recreational activities have potential to affect salmonid habitat through alteration of soil and vegetative conditions resulting in sediment mobilization and increased runoff, loss of cover, degraded water quality, and instream changes. Development and maintenance of recreational facilities may facilitate increased angling, therefore increasing the risk of mortality of listed salmonids. INFISH calls for managing recreation facilities and human use to promote attainment of RMOs. The Plan states that no new recreation facilities will be constructed in RHCAs. These measures will reduce risks to fish and their habitat, but cannot completely remove or eliminate future negative impacts. What's more, continued recreation management will slow the progress of restoration activities implemented under the Plan. As such, the Bureau determined that recreation management may affect and is likely to adversely affect bull trout and Lahontan cutthroat trout.

Off Highway Vehicles Impacts to fish and their habitats from off-highway vehicle use is similar to that of other recreation, but effects may be more severe when caused by motorized vehicles. Also, motorized vehicles enable quicker access at greater distances than non-motorized means of transportation so the extent of impacts may be greater. According to the Assessment, the Plan calls for use limitations or closures where RMOs are not being met. Because these limits or closures may not occur immediately, and because there is a time lag between removal of use and attainment of RMOs, you have determined that management of off-road vehicle use under the Plan is likely to adversely affect bull trout and Lahontan cutthroat trout.

Roads Management Construction, use, and maintenance of roads historically have had and continue to have significant adverse effects on bull trout and Lahontan cutthroat trout in a number of ways. Roads within RHCAs constrain stream channels, precluding or impeding normal morphological processes. Roads, both within and outside RHCAs, are a primary source of sediment in developed watersheds by virtue of their very presence, and resulting from maintenance activities and vehicle use. They can alter surface and subsurface flows, resulting in changes in a stream's hydrologic regime.

The Plan provides for management of roads within the two Resource Areas, including construction, reconstruction, maintenance, and obliteration. Several provisions in INFISH and the Plan provide for avoiding, reducing, minimizing, and mitigating effects

of these activities on aquatic species and habitats. Among them are provisions for relocating or reconstructing roads or road features that contribute to failure to attain RMOs. New roads will be constructed to meet RMOs and avoid adverse effects to listed fishes. According to the Assessment, construction of new roads in areas occupied by listed fish would be extremely unlikely. Adverse effects from Plan implementation are inevitable because of the fixed location and continuing use of many roads in the action area, the complexity and enormity of problems to be corrected so that RMOs may be attained, and the inherent slowness of recovery of stream and riparian habitats even after corrective measures are taken.

Adopting and implementing the Plan will allow perpetuation of ongoing actions that have impacts on fish and their habitats and provide for new actions to be undertaken that may also cause adverse effects. Many of these actions may occur simultaneously in areas occupied by bull trout or Lahontan cutthroat trout, and their combined effects may be significant. The geographic extent of those effects includes all areas occupied and potentially occupied by the two threatened species, and the duration of the impacts is likely the life of the Plan which is 20 years.

Implementation of standards and guidelines and discrete actions aimed at improving riparian and aquatic conditions and status and distribution of both species may remove or minimize some of these adverse effects. What's more, by adopting those provisions of the Plan, particularly adoption of INFISH as a long-term strategy, the Bureau has the opportunity to take actions that would improve conditions for bull trout and Lahontan cutthroat trout. As such, there is a chance that implementing the Plan could result in an improving trend for the species and their habitats. In that context, future adverse effects may have reduced significance for the species. However, in the same way that adopting the Plan does not assure or cause implementation of any individual action that would adversely affect species, neither is there assurance that actions that benefit them will occur.

B. Effects of Interrelated and Interdependent Actions

Many activities provided for in the Plan have potential to involve interrelated and interdependent actions that are not undertaken by or under the control of the Bureau. Because of the mixed of land ownership in the planning area, and because of the high level of public use of resources on Federal lands, many actions involve both a public and private component. When non-Federal actions would not occur without the associated Bureau action, or when the Bureau's action has no utility independent of a non-Federal action, those effects must be considered under Section 7 of the Act. At the level of this Plan consultation, the Service can acknowledge the high likelihood of interrelated and interdependent actions having effects on bull trout and Lahontan cutthroat trout, but we cannot predict them with any specificity. Such impacts will be dealt with in subsequent consultations for activity plans, programs, and individual actions.

C. Cumulative Effects

Management of the Jordan and Malheur Resource Areas occurs in a context of a wide variety of non-Federal actions that affect baseline conditions for bull trout and Lahontan cutthroat trout. The Service expects these activities to continue throughout the life of the Plan, and they will continue to have negative impacts on the threatened fishes. The most significant cumulative effects result from actions associated with livestock management and irrigated agriculture. Other non-Federal actions influencing the status of the species include management of angling, recreation on non-Federal lands, residential and commercial development, and state or privately funded conservation and restoration actions. The effects of adopting and implementing the Plan will be more significant because non-Federal actions can generally be expected to continue to contribute to a degraded baseline. In some cases, management decisions by the Bureau may be constrained by conditions that result from non-Federal actions. The Service expects that future consultation on actions taken under this Plan will provide full consideration of cumulative effects. We note that the Plan provision for evaluation of conditions and actions at a geographic scale will facilitate a comprehensive analysis of cumulative effects.

III. Conclusion

After reviewing the current status of the bull trout and the Lahontan cutthroat trout, the environmental baseline, the effects of the proposed adoption and implementation of the Plan, and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the bull trout and the Lahontan cutthroat trout. No critical habitat has been designated for these species, therefore, none will be affected.

We reached this conclusion for the following reasons.

Bull Trout

1. The only bull trout in the action area are found in the North Fork Malheur River which represents 1 of 141 subpopulations identified within the Columbia River DPS and 1 of 34 subpopulations identified within the Snake River Basin.
2. The Bureau manages lands including bull trout migratory habitat and the Buelah Reservoir, where bull trout are present seasonally. Bull trout spawning habitat occurs upstream of Bureau lands on the Malheur National Forest; there is currently no occupied or known historic bull trout spawning habitat on the Malheur Resource Area.
3. Although the proposed action is likely to result in future actions that cause habitat degradation that adversely affect the bull trout, this subpopulation is expected to persist, in part, because the proposed Plan includes provisions that require future actions developed under the Plan to include features that avoid and minimize adverse effects to the bull trout and benefit its conservation.

Lahontan Cutthroat Trout

1. Because of the Bureau's adoption of INFISH (with its Standards and Guidelines) as a long-

term strategy and incorporation of other aquatic conservation measures in the Plan, as described in the “Description of the Proposed Action” section of this document, the Lahontan cutthroat trout is expected to persist and maintain its present distribution within the Quinn River and Coyote Lake subbasins of the Jordan Resource Area.

IV. Incidental Take Statement

Under Sections 4(d) and 9 of the Act, any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species is prohibited unless exempted or authorized by permit or special regulation. Harm has been further defined to include significant habitat modification or degradation that actually kills or injures a listed species by significantly impairing essential behavior patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create a likelihood of injuring a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed species that results from, but is not the purpose of, the Federal agency or applicant carrying out an otherwise lawful activity.

The Service is unable to specifically identify the form and extent of any incidental take that is likely to result from adoption and implementation of the Plan because all such take is associated with future actions that have yet to be identified, proposed, or analyzed. For that reason, no incidental take exemption is provided herein. All such take will be addressed in future consultations on actions developed in accordance with the Plan that are likely to adversely affect the bull trout or the Lahontan cutthroat trout.

V. Conservation Recommendations

Section 7(a)(1) directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs to promote the purposes of the Act. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects on listed species and critical habitat, to help implement recovery plans, or to develop information.

1. Cooperate with the Bureau of Reclamation and interested Indian tribes to evaluate losses of bull trout at Agency Dam and to identify and implement short-term and long-term remedies to preclude or offset those losses.
2. Participate in review of the Service’s draft Recovery Plan for bull trout and provide recommendations for recovery actions for the North Fork Malheur population. Implement relevant recovery actions once a final plan is released.
3. Continue to cooperate to implement actions in the Recovery Plan for Lahontan cutthroat trout.

4. Monitor spotted frog populations and effects of management actions on the species. Cooperate with managers of public and private land where the species occurs to identify and implement actions to conserve the species.
5. Consider cooperating with the Service to develop a Conservation Agreement for spotted frog in the planning area, including measures to be taken that would improve habitat and reduce risks to the species.

VI. Closing Statement - Reinitiation

This concludes formal consultation under Section 7 of the Act for the Bureau's proposed adoption and implementation of the Southeast Oregon Resource Management Plan. Reinitiation of formal consultation on the Plan is required if: 1) unanticipated adverse effects to listed species are identified via new information or changed conditions; 2) the action is modified in a way that causes effects on species that were not anticipated in this Opinion; 3) a new species or Critical habitat is listed that may be affected by the action..

Thank you for your continued commitment to conservation of threatened and endangered species. Please contact Alison Beck Haas of my staff at (208)378-5384 if you have questions or need further assistance.

Sincerely,



Supervisor
Snake River Basin Office

cc: FWS-RO, Portland (Salata)
FWS-OSO, Bend (Mauer)
FWS-OSO, Portland (Miller)
ODFW, Vale
BLM-OSO, Portland (Nelson, Stone)

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Doug Young
04/03/2001 12:30 PM

To: Alison Beck Haas/ESBO/R1/FWS/DOI@FWS
cc:
Subject: Re: SEORMP BA--revised fish

I got my comments from Mauer, and had a brief conversation with Cynthia Tait:

My old comments indicate I recommended the following changes to an earlier SEORMP draft:

- better baseline discussion
- effects determinations (for each activity category) consistent w/ the Pacfish/Infish bull trout BA
- effects table should provide effects determination by category, not a bewildering array of (inaccurate) direct, indirect, and "cumulative" effects
- remove the site-specific details (such as monitoring results from each pasture from 1999) - simply describe the specific monitoring plan in proposed action section.

Seems like those comments have been integrated. Only concern:

- all non-listed species were not addressed. Not sure what SEORMP proposes for non listed critters.

Overall: thumbs up on fish.

Thoughts on a T&C for this programmatic: "BLM will site-specifically consult w the Service for any action that will raise to a may affect level"

Doug Young
Fish and Wildlife Biologist
Oregon Fish and Wildlife Office
2600 SE 98th Ave. Suite 100
Portland, OR 97266
503-231-6179, Fax -6195
Alison Beck Haas



Alison Beck Haas
04/03/01 10:24 AM

To: Doug Young/OSO/R1/FWS/DOI@FWS
cc:
Subject: SEORMP BA--revised fish

Thanks a million, Doug. We'll do the detail work here if you can give us a thumbs up or thumbs down. . . Let me know.

The only time I've ever been at the OSO was last month, the day the earthquake happened. Where were you? We'll be in PDX for a bull trout consultation coordination meeting May 15 and 16. Maybe see you then?

Alison Beck Haas
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----- Forwarded by Alison Beck Haas/ESBO/R1/FWS/DOI on 04/03/2001 11:21 AM -----



Cynthia Tait@BLM
03/27/2001 05:12 PM

To: Alison Beck Haas/ESBO/R1/FWS/DOI@FWS
cc: Jon Sadowski/VLFO/OR/BLM/DOI@BLM, Ron Rhew/OSO/R1/FWS/DOI@FWS, Al Bammann/VLFO/OR/BLM/DOI@BLM, Tom Dabbs/VLFO/OR/BLM/DOI@BLM, Jean Findley/VLFO/OR/BLM/DOI@BLM, Sandy Guches/VLFO/OR/BLM/DOI@BLM, Marilyn Hemker@FWS, Roy Masinton/VLFO/OR/BLM/DOI@BLM, Dorothy Mason/VLFO/OR/BLM/DOI@BLM, Marisa



Jon Sadowski@BLM

10/17/2001 04:11 PM

To: Deb Carter/ESBO/R1/FWS/DOI@FWS
cc: Alison Beck Haas/ESBO/R1/FWS/DOI@FWS, Sandy
Guches/VLFO/OR/BLM/DOI@BLM, Dave
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Jean Findley/VLFO/OR/BLM/DOI@BLM, Al
Bammann/VLFO/OR/BLM/DOI@BLM, Judy
Nelson/ORSO/OR/BLM/DOI@BLM, Eric
Stone/ORSO/OR/BLM/DOI@BLM, Dorothy
Mason/VLFO/OR/BLM/DOI@BLM, Cynthia Tait/VLFO/OR/BLM/DOI@BLM
Subject: Southeast Oregon Resource Management Plan (SEORMP) Biological
Assessment

Deb;

Thanks for the update on the progress regarding the SEORMP Biological Assessment. As I understand it, we can expect your office to ship us a response by the end of November (if not a little sooner). That is good news.

Based on our phone conversation today, I also got the message that we need to provide a brief edit to the final BA stating that any modifications to the current "Canada Lynx Conservation Assessment Strategy" and "Canada Lynx Conservation Agreement" will be incorporated into future BLM authorized actions. I will talk to the District Manager and Area Managers about this to make sure they are on board as to what this means. At this point I do not see any problem with the edit you suggest. The SEORMP presumes that as important new information becomes available it will be incorporated into the adaptive management process. This would be especially true for listed and candidate species.

Following my conversation with the managers I will draft a formal letter for the District Manager to sign which affirms the change. This will give us a permanent record based on informed consent and there will be no future surprises for either of our agencies.

Jon Sadowski
Wildlife Biologist
Vale District BLM
Jordan Resource Area

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Jon Sadowski@BLM

04/13/2001 11:28 AM

To: Alison Beck Haas/ESBO/R1/FWS/DOI@FWS

cc: Al Bammann/VLFO/OR/BLM/DOI@BLM, Randy
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Taylor/VLFO/OR/BLM/DOI@BLM

Subject: Southeast Oregon RMP (SEORMP) Consultation

Hi Alison;

Thank you for your review and feedback on the draft biological assessment for the SEORMP.

Per our conversation this morning, Cynthia Tait, Al Bammann, Jean Findley and I will be focusing our attention over the next few weeks on completing a final version of the biological assessment. We expect to have a final version in your possession by the end of April, 2001. We took notes about the items you referred to that need a little more work and conclude that the edits should not take us very long.

Based on our discussion and the expected turnaround from you (a signed letter received by BLM in late May to early June if we get the final to you by the end of April) we will not be entering into a signed agency agreement about timeframes.

Jon Sadowski
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Canada Lynx Conservation Agreement

Bureau of Land Management and U.S. Fish and Wildlife Service

I. INTRODUCTION

On July 8, 1998, the U.S. Fish and Wildlife Service (FWS) published a proposed rule to list the Canada lynx in the conterminous United States as a threatened species under the Endangered Species Act of 1973, as amended (ESA) (Federal Register, Volume 63, Number 130). Thereafter, the normal 12 month rule-making process was extended for an additional six months to allow for consideration of new scientific information and additional public comments on the proposed rule.

In response to the emerging awareness of the uncertain status of lynx populations and habitat in the conterminous United States and the onset of the listing process, an interagency lynx coordination effort was initiated in March 1998. The FWS, USDA Forest Service (FS), the Bureau of Land Management (BLM), and the National Park Service (NPS) have participated in this effort. Several products important to the conservation of lynx on federally managed lands have been produced through this effort: "The Scientific Basis for Lynx Conservation" (Ruggiero et. al., 2000), hereafter referred to as the "Science Report"; the Lynx Conservation Assessment and Strategy (LCAS); and this Lynx Conservation Agreement (CA), along with the Conservation Agreement between the FWS and the FS (FSCA). NPS is also in the process of developing a Conservation Agreement with FWS. Several States within the range of the lynx have contributed to this effort through interactions with participants and review of draft products.

The Science Report, prepared by an international team of experts in lynx biology and ecology, is a compendium and interpretation of current scientific knowledge about the Canada lynx, its primary prey and habitat relationships. This document serves as the scientific foundation for the various lynx activities of the cooperating Federal Agencies. The LCAS builds upon this scientific base and identifies the risks to the species that may occur as a result of federal land management. It recommends conservation measures that could be taken to remove or minimize the identified risks. It was developed to provide a consistent and effective approach to conservation of Canada lynx on federal lands in the conterminous United States.

On March 24, 2000, the FWS issued a final rule determining that the contiguous U.S. Distinct Population Segment of the lynx is threatened by a number of factors (Federal Register, Volume 65, Number 58). The effective date of the final rule is April 24, 2000. The final rule states that "current Forest Service Land and Resource Management Plans include programs, practices, and

activities within the authority and jurisdiction of Federal land management agencies that may threaten lynx or lynx habitat. The lack of protection for lynx in these Plans render them inadequate to protect the species.” Though the language of the Final Rule determination is specific to FS Land and Resource Management Plans (LRMP), the Biological Assessment of the Effects of National Forest Land and Resource Management Plans and Bureau of Land Management Land Use Plans on Canada Lynx (BA) that evaluated those plans applied identical criteria to both FS LRMPs and BLM Land Use Plans (LUP). The BA analysis of the FS and BLM Plans within the range of Canada lynx in the conterminous 48 states showed that some adverse effects exist on each administrative unit and in each geographic area (discussed below). The BA recommended amending or revising all of the subject Plans to incorporate conservation measures that would reduce or eliminate the identified adverse effects to lynx.

II. OBJECTIVE AND INTENT

This Agreement has been initiated to promote the conservation of the Canada lynx and its habitat on federal lands managed by the signatories. It identifies actions the signatories agree to take to reduce or eliminate adverse effects or risks to the species and its habitat, and to maintain the ecosystems on which this species depends. These actions are a result of considering the new information about the Canada lynx contained in the Lynx Science Report and the LCAS. The LCAS is appended to this Agreement as Exhibit A. Specifically, the signatories agree and intend:

- to coordinate assessment and planning efforts between the two agency signatories and with other appropriate entities (e.g. USDA Forest Service, National Park Service, State and Tribal agencies) to assure a comprehensive approach to conserving lynx;
- to use the Science Report and LCAS, together with locally specific information as appropriate, as the basis for these actions;
- to use the Science Report and LCAS, together with locally specific information as appropriate, as the basis for streamlining ESA Section 7 consultation between the BLM and FWS;
- to utilize the best available scientific and commercial data during the Section 7 consultation process.

III. PARTIES TO THE CONSERVATION AGREEMENT

USDI Bureau of Land Management (BLM), including Colorado, Idaho, Montana, Oregon/Washington, Utah and Wyoming. USDI Fish and Wildlife Service (FWS), including Regions 1 and 6. Additional parties (e.g. National Park Service, State agencies, and/or Tribal entities) may join in this lynx conservation effort through amendment to this CA or use of separate agreements.

IV. AUTHORITY FOR CONSERVATION AGREEMENTS

The actions in this Conservation Agreement are within existing authorities of the signatories. The authority for the U.S. Fish and Wildlife Service to enter into this voluntary Conservation Agreement derives from the Endangered Species Act of 1973, as amended; the Fish and Wildlife Act of 1956, as amended; and the Fish and Wildlife Coordination Act, as amended. The primary purpose of the ESA (Section 2 (b)) is to provide a means whereby ecosystems upon which endangered and threatened species depend may be conserved. Further under Section 7, federal agencies "...shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species...." Each federal agency "... shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded or carried out by such agency... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary... to be critical...." Under the ESA, federal agencies must utilize their authorities to meet the purposes of the Act by carrying out programs for the conservation of threatened and endangered species. Section 5 of the Endangered Species Act specifically authorizes and requires the Secretaries of the Interior and Agriculture to "establish and implement a program to conserve fish, wildlife, and plants, including those which are listed as endangered species or threatened species"

The authority for the BLM to enter into this voluntary Conservation Agreement also derives from the Endangered Species Act of 1973, as amended, and from the Federal Land Policy and Management Act (FLPMA, Sec 307, 43 USC 1737), which provides overall direction to the Bureau of Land Management for conservation and management of the public lands. The BLM manual, section 6840 (Special Status Species Management), provides overall policy direction to BLM managers to conserve listed threatened or endangered species on BLM administered lands, and to ensure actions authorized on BLM administered lands do not contribute to the need to list federal candidate, state-listed or BLM sensitive species.

V. STATUS AND DISTRIBUTION OF THE SPECIES

The U.S. Fish and Wildlife Service considers the lynx to have been historically resident within 16 states: Maine, New Hampshire, Vermont, New York, Pennsylvania, Massachusetts, Michigan, Wisconsin, Minnesota, Montana, Wyoming, Idaho, Washington, Oregon, Utah, and Colorado. In the Lynx Science Report, McKelvey et. al. (1999) reported finding records of lynx occurrence in 24 states. Lynx occur primarily in boreal, sub-boreal, and western montane forests in North America that support their primary prey, snowshoe hares.

In addition to its federal threatened species status, the lynx is classified as endangered by four states (Vermont, New Hampshire, Michigan, and Colorado), threatened by Washington, sensitive by Utah, extirpated by Massachusetts, presumed extirpated by Pennsylvania, a species of special concern in Maine, a protected species in Wisconsin, and as small game or furbearer with no harvest allowed in New York, Minnesota, Wyoming, Idaho, and Montana.

The Lynx Conservation Assessment and Strategy identifies 17 lynx risk factors in 4 different categories-- factors affecting lynx productivity, lynx mortality, lynx movements, and other large-scale risk factors. The risk factors identify activities or existing conditions that could adversely affect either individual lynx or groups of lynx. Factors identified include timber management; wildland fire management; recreation; forest/back country roads and trails; livestock grazing; other human developments; trapping; predator control; incidental or illegal shooting; competition and predation as influenced by human activities; highways (vehicular collisions); highway, railroad and utility corridors; land ownership patterns; ski areas and large resorts; fragmentation and degradation of lynx refugia; lynx movement and dispersal across shrub-steppe habitats; and habitat degradation by non-native invasive plant species. The Science Report, the LCAS and the FWS's listing process documents (proposed rule and final rule) are sources of more complete descriptions of the status and distribution of this species.

VI. CONSERVATION ACTIONS THAT WILL BE CARRIED OUT

PART 1 - IDENTIFYING SPECIFIC AREAS SUBJECT TO THIS AGREEMENT

- ✓ The BLM will map lynx habitat, and designate lynx analysis units and key linkage areas within the BLM administrative units listed in the BA within twelve (12) months of the execution of this agreement by the parties. BLM will coordinate mapping with the FWS and FS and use the habitat descriptions from the LCAS in these mapping activities. Lynx habitat, as used later in this document, refers to the designations resulting from this effort.

- Within each lynx geographic area (refer to the LCAS for geographic area definitions), BLM and
- ✓ Forest Service will coordinate mapping to achieve a level of map consistency sufficient to support programmatic and project planning, consultation and other lynx-related activities. State and Tribal governments may participate in these mapping activities.

This Conservation Agreement applies to all BLM lands mapped as lynx habitat in the administrative units listed in the BA. As information from the national lynx survey (see Part 4B, below), lynx research and other sources (including State and Tribal) becomes available the lynx habitat maps will be refined. As a result, the areas subject to this agreement may change. Such refinements will be fully coordinated between the signatories.

PART 2 - PROGRAMMATIC PLANNING

- ✓ The BLM agrees that BLM LUPs should include measures necessary to conserve lynx for all administrative units identified as having lynx habitat. Any necessary changes in these plans will be made through amendments, plan revisions, or other appropriate mechanisms consistent with BLM policy direction, the Federal Land Policy and Management Act (FLPMA), and the Council for Environmental Quality regulations for implementing the National Environmental Policy Act (NEPA). Any amendments to LUP's would include NEPA analysis and be conducted according to NEPA procedures. The following are key principles to guide these programmatic planning processes:

? signed this summer
? when

- Where appropriate the process will consider multiple scales of analysis as described in the LCAS.
- The process of amending or revising a LUP will include consideration of the Science Report, the LCAS and the FWS's final listing decision document. Any new data or information developed is incorporated into the LCAS, and will be considered in a LUP amendment or revision.
- The BLM administrative units with lynx habitat have plans of varying ages and are in various stages of being amended or revised. Consequently, the specific strategy for updating lynx management direction can also vary, including revisions, broad scale analysis and amendment processes, amendments of groups of LUPs, and amendment of an individual LUP. The process will maximize use of ongoing efforts. Once the lynx habitat, lynx analysis units, and key linkage areas are identified, the BLM agrees to coordinate with the FWS on approaches to the programmatic planning process for lynx. The objective is to coordinate assessment and planning efforts to assure a comprehensive approach to conserving lynx on BLM public lands. This coordination will be completed within three (3) months after the key linkage areas are identified. yes, on W-W

A schedule for amendments or revisions will be provided to the public. Where the programmatic planning processes have already been initiated for a geographic area (see below), they can proceed while considering the LCAS and Science Report.

A general description of the approach to amending or revising LUPs follows for each of the geographic areas utilized in the LCAS. The BLM and FWS agree to coordinate the planning efforts described here with any concurrent planning by the National Park Service or USDA Forest Service and other appropriate entities for adjacent lynx habitat.

Northern Rockies Geographic Area

The Northern Rockies Geographic Area (GA) includes 27 BLM administrative offices in Idaho, Montana, Oregon, Utah and Wyoming that are responsible for a total of 37 LUPs with identified lynx habitat. This geographic area offers the most complex administrative and geographic challenge for programmatic planning. Many of the units in Idaho, Montana and Oregon are covered by the Interior Columbia Basin Ecosystem Management Project (ICBEMP). The ICBEMP was initiated in 1994 to, among other things, address population viability and the long-term sustainability of threatened, endangered and sensitive species for agency administrative units in the Basin (59 Federal Register 234, p. 63071, December 7, 1994). The LCAS will be provided to the ICBEMP for consideration, as appropriate at the broad scale, in its final decision. A biological evaluation or assessment that addresses lynx will be prepared for the ICBEMP decision. Any additional finer scale protection measures needed within the Interior Columbia Basin to reflect the findings and recommendations of the LCAS would be addressed through BLM LUP amendments or revisions. The BLM LUPs being amended by the ICBEMP will include management direction for lynx habitat.

For the remaining units in the Northern Rockies GA, the BLM will address lynx through either

ongoing revision efforts or by amending the LUPs. The number and timing of amendments or revisions will be determined after the coordination described in Part 2, above. Amendments of LUPs could be through a single process for multiple units, or perhaps by individual units, if appropriate. If the lynx plan amendment process is completed, such decision may be subsequently modified as part of individual LUP revisions. Whether or not a lynx amendment is completed, the scope of future revisions will include management direction for lynx habitat. By October 31, 2000, the BLM will identify a process and timetable to amend or revise all remaining LUPs with lynx habitat in the Northern Rockies Geographic Area.

Cascade Mountains Geographic Area

The Cascade Mountains Geographic Area includes five BLM administrative offices in Oregon and Washington that are responsible for a total of five LUPs with identified lynx habitat. The 1994 Northwest Forest Plan (NFP) and the Supplemental Final Environmental Impact Statement for Amendment to the Survey and Manage, Protection Buffer, and Other Mitigating Measures Standards and Guidelines (SFEIS), recognize the rarity of lynx. Through the SFEIS, Canada lynx standards and guidelines for management have been developed to fully consider the findings and recommendations of the LCAS. For BLM Field Offices outside the NFP area in the Cascade Mountains GA, by October 31, 2000, the BLM shall identify a process and timetable to amend or revise all remaining LUPs with lynx habitat.

Southern Rockies Geographic Area

The Southern Rockies Geographic Area includes four BLM administrative offices in Colorado that are responsible for ten LUPs with identified lynx habitat. The BLM has initiated a region-wide mapping effort to ensure the conservation of lynx is incorporated in the appropriate land use plans. By October 31, 2000, the BLM shall identify a process and timetable to amend or revise all LUPs with lynx habitat in the Southern Rocky Mountain Ecosystem.

Great Lakes Geographic Area

There is no lynx habitat on BLM public lands within the Great Lakes Geographic Area, therefore no programmatic planning actions are necessary.

Northeast Geographic Area

There is no lynx habitat on BLM public lands within the Northeast Geographic Area, therefore no programmatic planning actions are necessary.

PART 3 - PROJECT PLANNING AND IMPLEMENTATION

The agencies agree that the LCAS includes a set of recommendations that are based on the best currently available scientific information about lynx, risks to the species and/or individuals posed by management activities, current habitat conditions, and measures that are likely needed to conserve the species.

The signatories agree to the following actions and considerations associated with project planning and implementation. All agency actions will comply with the Endangered Species Act and the regulations that implement it. For proposed agency actions, decision documents will not

be signed until the decision maker has determined the action will be in compliance with the ESA. If habitat needs of threatened or endangered species conflict with the habitat needs for lynx, the BLM and the FWS shall discuss the prudent alternative courses of action during consultation on the listed species.

The BLM and FWS agree to enter into an interagency coordination agreement(s) and/or process(es) to ensure that joint ESA responsibilities are fully met and to allow for the agencies to efficiently undertake Section 7 consultation on all actions that may affect any listed species or designated critical habitat. Such interagency coordination agreement(s)/process(es) will be based on the agreement of the agencies to utilize the LCAS as a primary source of information to base all ESA Section 7 consultations and will be used to develop a streamlined and coordinated approach to analyzing and documenting the effects of actions on lynx. This process will allow agencies to prepare and/or receive Biological Assessments, concurrence letters and Biological Opinions in a timely manner. The LCAS will also be considered as a primary source of information for species recovery planning.

The results of effects determinations for lynx will be documented in (a) Biological Assessment(s) or Biological Evaluation(s) as part of ESA consultation with the U.S. Fish and Wildlife Service.

A. Proposed actions

The BLM agrees to review and consider the recommendations in the LCAS prior to making any new decision to undertake actions in lynx habitat. A proposed or new action is one for which a federal agency has no documented agency decision (does not yet have a decision notice, record of decision, or decision memo). For actions on BLM lands, before LUP amendments or revisions are completed, a Biological Assessment of the proposed action will be prepared by the initiating BLM office using the best available scientific and commercial data, including relevant new information, the LCAS, and the Science Report, to determine whether the activity may affect the lynx. If the evaluation indicates an activity is likely to adversely affect the lynx, the agency will not authorize the activity until one of the following conditions are met: 1) plans are revised or amended as indicated in Part 2; 2) either formal or informal Section 7 consultation, as appropriate, has been completed; or 3) it has been determined that plans do not need to be amended or revised to incorporate additional measures for lynx.

After completion of any necessary revisions or amendments of BLM LUPs to incorporate additional measures for lynx, projects may be authorized provided they are consistent with the LUPs and comply with ESA and other applicable laws and regulations. This section does not change current plan direction but will affect priorities for selecting and implementing particular management actions until such revisions and amendments are completed.

The BLM and FWS will also look for opportunities to undertake pro-active management actions to benefit lynx, based on the LCAS, to the extent they are consistent with current LUPs.

Nothing in this section of the Conservation Agreement is intended to alter existing laws and regulations. In particular, Public Laws 105-277 (FY 1999 Appropriations) and 106-113 (FY 2000 Appropriations) require that grazing permits which expire during Fiscal Year 1999 and

2000 shall be renewed on the same terms and conditions as contained in the expiring permits unless the Bureau of Land Management completes the necessary assessments and permit modifications prior to the expiration of the permits. As such, permits expiring in Fiscal Year 1999 and 2000 may be re-issued without the modification necessary to bring them into compliance with this agreement.

B. Ongoing actions

This category includes all actions that have gone through the agency planning process and have a documented agency decision (decision memo, decision notice or record of decision). Consistent with agency policy, new information on the lynx, including that in the LCAS and Science Report, will be reviewed and considered, as appropriate, for all ongoing actions to ensure compliance with applicable federal laws including but not limited to ESA, NEPA and FLPMA.

C. Determination of Effect.

The parties agree to use the definition of "likely to adversely affect" found in the Endangered Species Consultation Handbook (NMFS/USFWS, March 1998, p.3-13): "any adverse effect to listed species or critical habitat that may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions" and such adverse effects are not discountable or insignificant.

The Lynx LCAS will be used and referenced in all determinations of effect for lynx. It will be used as described in the LCAS in the section entitled "Approach to Development of Conservation Measures," and as provided for in current and future LCAS implementation guidance.

Because the LCAS represents the most up-to-date distillation of what is known about lynx ecology and also presents comprehensive recommendations for managing for lynx conservation, the LCAS will be the primary reference to be used for making determinations of effect, but not the only one. Effects determination will also include consideration and knowledge of local conditions by biologists using the LCAS and other relevant information sources. Effects determinations will also take into account modifications made to projects or plans that reduce or eliminate potential adverse effects to lynx. Documentation of effects determinations would occur in accordance with regulatory and agency policy for sensitive species or species listed or proposed for listing as endangered or threatened.

Administrative units in each lynx geographic area (as defined in the LCAS) should consider working together to supplement the guidance in this section with more specific tools, such as project screens, that could help insure consistency and accuracy in determination of effects.

PART 4 - MONITORING AND REPORTING

The BLM and FWS agree to the following actions subject to the availability of funding.

A. Research

As applicable on BLM's mapped lynx habitat, the BLM will cooperate in lynx research that emphasizes the needs discussed in the LCAS section entitled "Inventory, Monitoring, and Research Needs" and in the Science Report, Chapter 17;

B. Inventory and Monitoring

1. As further described in the LCAS, the BLM and FWS will cooperate with other agencies, the states and tribes in the inventory and monitoring of lynx distribution on BLM lynx habitat.
2. As recommended in the LCAS, the BLM will cooperate in appropriate actions, including research, administrative studies, and monitoring undertaken to verify the effectiveness of the lynx conservation measures on mapped lynx habitat on BLM lands.

C. Conservation Agreement Implementation Monitoring and Assistance

The agencies agree to a joint, semi-annual review and documentation of the progress in implementing this CA. This review could lead to the modification and exceptions discussed in part VII below. Whenever possible, the review should be coordinated with the Forest Service review process.

The agencies agree to use the Interagency Lynx Steering Committee and the interagency Biological Team that developed the LCAS to the extent necessary to ensure the consistent application of this Conservation Agreement and the LCAS, and to help resolve detailed questions that surface as implementation proceeds.

VII. AMENDMENTS, EXCEPTIONS AND DURATION OF AGREEMENT

Exceptions or amendments to this agreement may be jointly agreed to by the signatories on a case-by-case basis, where such deviations would better provide for protection and conservation of the lynx, where conflicts must be resolved between the needs of lynx and other listed or candidate species, or when new, relevant scientific information becomes available. Such exceptions or amendments shall be agreed to by modification. All modifications within the scope of this agreement shall be made by issuance of a written modification executed by all parties prior to any changes being performed.

Additional parties (e.g. National Park Service, state agencies and tribal entities) may join in this lynx conservation effort through amendment to this CA or development of separate agreements. Any of the parties to this agreement may terminate the agreement in whole, or in part, with five days notification. This agreement shall be considered fully executed when all signatories have signed. The agreement shall expire on December 31, 2004, at which time it will be reviewed for possible renewal.

VIII. QUALIFICATIONS AND CONTACTS

This agreement in no way restricts any of the signatories from participating in similar activities

with other public or private agencies, organizations, and individuals.

This agreement is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between the parties to this agreement will be handled in accordance with applicable laws, regulations, and procedures including those for Government procurement and printing. Such endeavors will be outlined in separate agreements that shall be made in writing by representatives of the parties and shall be independently authorized by appropriate statutory authority. This agreement does not provide such authority. Specifically, this agreement does not establish authority for noncompetitive awards to the cooperator of any contract or other agreement. Any contract or agreement for training or other services must fully comply with all applicable requirements for competition.

The principal contacts for this agreement are:

Field Supervisor, Montana Field Office
U.S. Fish and Wildlife Service
100 North Park, Suite 320
Helena, Montana 59601
(406) 449-5225

Chris Jauhola, Group Manager
Bureau of Land Management
Fish, Wildlife and Forests Group
1849 C. Street N.W.
Washington, D.C. 20240
(202) 452-7761

U.S. Fish and Wildlife Service

Date: _____

Regional Director, Region 1
U.S. Fish and Wildlife Service
911 Northeast 11th Avenue
Portland, Oregon 97232-4181

U.S. Fish and Wildlife Service

Date: _____

Regional Director, Region 6
U.S. Fish and Wildlife Service
134 Union Blvd.
Lakewood, Colorado 80228



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Vale District Office
100 Oregon Street
Vale, Oregon 97918

IN REPLY REFER TO:

6840

RECEIVED BY
OCT 31 2001
SNAKE RIVER BASIN OFFICE
U.S. FWS

OCT 30 2001

Mr. Robert G. Ruesink
U. S. Fish and Wildlife Service
Snake River Basin Office
1387 South Vinnell Way, Room 368
Boise, Idaho 83709

Dear Bob:

It has been brought to my attention that your staff needs some additional lynx management language pertaining to the Southeast Oregon Resource Management Plan (SEORMP) in order to proceed with finalizing a Biological Assessment. Specifically, my staff was asked to forward a statement to the effect that any future changes in the Canada Lynx Conservation Agreement, Bureau of Land Management and U.S. Fish and Wildlife Service or Canada Lynx Conservation Assessment and Strategy (2nd Edition, August, 2000) would be incorporated into authorized land uses.

Vale District plans to acknowledge and adhere to any lynx management changes that may emerge as a result of new information. The adaptive management process proposed in the SEORMP clearly states that new information about resources may result in modifications to land uses and that in all cases where Bureau actions may effect candidate or listed species we will consult or conference as needed.

Sincerely,

David R. Henderson
District Manager



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oregon Fish & Wildlife Office
2600 S.E. 98th Avenue, Suite 100
Portland, Oregon 97266
(503) 231-6179 FAX: (503) 231-6195

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x-ref: 8330.4053(99), 8330.3623(00)
File Name: ValegrazeBO 01.wpd
OALS Number: 01-2486

RECEIVED BY
MAY 26 2001
SNAKE RIVER BASIN OFFICE
U.S. FWS
May 22, 2001

Memorandum

To: Field Office Manager, Malheur Field Office, Vale District, U.S. Bureau of Land Management, Vale, Oregon

From: State Supervisor/Deputy State Supervisor, Oregon Fish and Wildlife Office, Portland, Oregon *Angela Miller*

Subject: Formal Section 7 Consultation for 2001 Grazing Activities on North Fork Malheur River Allotments, Bureau of Land Management

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of Malheur Field Office, Vale District, U.S. Bureau of Land Management's (BLM) proposed 2001 Range Allotment Projects, located in Grant, Baker, and Harney Counties, Oregon, and effects on bull trout (*Salvelinus confluentus*) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Your March 20, 2001 request for formal consultation, based on proposed actions analyzed in the 2001 North Fork Malheur River grazing program biological assessment, was received by the Service on March 26, 2001.

This biological opinion is based on information provided in the August 10, 1998, April 1, 1999, May 5, 2000, and March 20, 2001 biological assessments (USDI, BLM 1998; 1999a; 2000a, and 2001a, respectively) and June 22, 2000 amendment (USDI, BLM 2000b) for BLM North Fork Malheur River grazing activities; the 1998, 1999, and 2000 End-of-Year grazing reports (USDI, BLM 1999b; 2000c; 2001b); Vale BLM Level 1 Team (Level 1 Team) meeting notes and grazing program guidance documents; telephone and meeting conversations with Vale BLM Level 1 Team member, BLM range staff, Malheur Field Office Manager, and other grazing experts; field trips; permittee meetings; the proposed and final rules for listing of bull trout; the Service's August 14, 1998 Consultation on Effects to Bull Trout from the continued implementation of U.S. Forest Service Land and Resource Management Plans and U.S. Bureau of Land

Management Resource Management Plans; and other sources of information. A complete administrative record of this consultation is on file at the Bend Field Office, Bend, Oregon.

CONSULTATION HISTORY

Bull trout were listed as a threatened species on July 10, 1998. During 1998, the BLM Level 1 Team began discussing and reviewing the BLM’s grazing program and its effects on bull trout within the North Fork Malheur River watershed. Several meetings between Level 1 Team members, BLM range, fisheries, wildlife, and botany staff, BLM line officers, and permittees occurred from spring 1998 to spring 2001. Numerous phone conversations occurred between Service and BLM staff, in an effort to closely track grazing management activities in 1998 and 1999. Of note were 1998 and 1999 end-of-season field tours with permittees, Service, and BLM staff, and a 1999 pre-turn-out meeting in Juntura between permittees, Service, and BLM staff.

In February of 1999, an end-of-year report for 1998 grazing activities (USDI, BLM 1999b) provided insights into areas where compliance was and was not achieved, where additional protections were and were not necessary, where permit actions by the BLM were necessary, and where monitoring activities could be modified. The 1999 biological assessment (USDI, BLM 1999a) reflected these “adaptive management” modifications and commitments. The 1999 biological assessment updated other specific information, such as existing baseline. In 1999, a biological opinion (USDI, FWS 1999) was completed for 1998-1999 grazing activities in BLM allotments adjacent to the North Fork Malheur River. An end-of-year report for 1999, received April 24, 2000, detailed BLM and permittee management successes and failures (USDI, BLM 2000b). In 2000, a biological opinion (USFWS 2000a) was completed for 2000 grazing activities in BLM allotments adjacent to the North Fork Malheur River. An end-of-year report for 2000, received January 31, 2001, detailed BLM and permittee management successes and failures (USDI, BLM 2001b). The following is a summary of 2000 grazing actions, successes, failures, and additional management actions:

Allotment and Pasture	Proposed Action	Monitoring Report	Management Actions Necessary to Address Adverse Affects
Beulah Allotment			
MJ Field	No river use	Rim fence constructed in 1999 to halt access to river has resulted in cattle no longer accessing the river from this pasture.	BLM has solved problems of unauthorized use from this pasture affecting riparian areas along the river, and has dropped the allotment from consultation.

River Pasture	Rest	Successfully rested. Shrub utilization recorded at 46.5% and stubble height averaged 8.8 inches (median = 8 in); no livestock use apparent, shrub use appeared to be from wildlife; in compliance with objectives.	n/a
Whitley Canyon Allotment			
Little Malheur Pasture	Rest river corridor	Impacts of grazing on riparian condition continue to be severe in Little Malheur Pasture; Utilization was 87% use on shrubs, and stubble height averaged 2.9 inches (median =2.0 in); all impacts within the river corridor are due to unauthorized use; not in compliance with objectives	Cattle observed in river corridor; permittee notified and removed cattle within 5 days; willful trespass issued by BLM and trespass obligation settled on 9/01/00; Permittee successfully maintained boundary fence with Malheur National Forest, resulting in no unauthorized Forest Service livestock on this allotment.
Castle Rock Allotment			
North Rockpile Pasture	Rest	Shrub utilization recorded at 60% and stubble height averaged 11.4 inches (median = 11 in); no livestock use apparent, shrub use appeared to be from wildlife; in compliance with objectives	n/a
Water Gulch Pasture	Rest	At one site, utilization was <20% use on shrubs, and no stubble height measurements were made; other site browse was 57% (mainly deer/elk), stubble height = 6.5"; Riparian conditions were rated as "good" and in compliance with objectives.	n/a

Results of the previous three years of grazing management were used in developing the 2001 proposed action for BLM's North Fork Malheur River allotments (USDI, BLM 2001a).

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Three BLM allotments occur along the North Fork Malheur River: Beulah, Whitley Canyon, and Castle Rock allotments. Multi-year grazing systems have been established to prioritize riparian habitat improvement. The following is a brief description of BLM's 2001 allotment management, pasture sensitivities, Level 1 concerns, and specific conservation measures for BLM's North Fork Malheur River allotments:

Pasture	Level 1 Concerns	Management Prescription	Conservation Measures
Beulah Allotment			
MJ Field	Pasture dropped from consultation due to success of fence preventing use along the river.	n/a.	none
River	PFC survey indicated "Functioning at Risk"; end of season trailing; unauthorized use which occurred in the past has been resolved by demonstrated success in 2000.	Alternating years: early season (5/1-6/1) and rest. Monitoring.	Pasture rested under normal rotation schedule for 2000. MJ Field rim fence helped eliminate trespass into this pasture. Early Season Grazing is expected to allow riparian vegetation recovery.
Whitley Canyon Allotment			
Little Malheur	Livestock drift from USFS allotment(s) upstream; PFC survey indicates "Functioning at Risk"; unauthorized livestock from the rim portion of the pasture.	Not managed as riparian pasture, only upland objectives; grazed July through October on rim; Monitoring. New rim fence in 2001 is expected to resolve unauthorized use issue	Continue suspension of river corridor use in 2001, with twice-weekly checks by permittee for unauthorized livestock along river - any cattle will be immediately removed and BLM notified. Additional BLM monitoring patrols shall also occur. BLM will continue to work with the permittee to negotiate a long-term solution to unauthorized river corridor use.

Castle Rock Allotment			
North Rockpile	Unauthorized use from Little Malheur River area and adjacent pastures, end of season trailing	Alternating years: early season (3/20-6/1) and rest. Monitoring.	Rested in 2000 under normal rotation schedule. Early season use should allow for riparian vegetation recovery. No additional measures for 2001.
Water Gulch	Unauthorized use from adjacent private land.	Fenced Federal Range, landowner discretion, usually early season. Monitoring.	Light use in 2001

For 2001, BLM proposes to rest the river corridor portions of the Little Malheur pastures. A new fence will be constructed early season 2001 on the east rim of the North Fork Malheur river in Whitley Canyon Allotment. Extensive permittee and BLM monitoring should ensure the riverine areas of Little Malheur Pasture are protected. Light use will occur in 2001 for the Water Gulch Pasture. Woody browse standards are now proposed to be 20-30% of new leader growth.

A new rim fence, constructed by BLM and permittees in 1999, precluded livestock access to riverine riparian areas from MJ Field Pasture in 2000. MJ Field Pasture management for 2001 has been assessed by the BLM to have no affect on bull trout with the current protective measures in place.

Unauthorized use checks will be accomplished by BLM (aircraft, horseback, hiking). End-of-season grazing standards are proposed for North Fork Malheur River riparian areas (20-30% incidence of use on annual woody growth, 4-6 inches herbaceous end-of-season). In addition, BLM shall complete the 2000 Interagency Implementation Team's Grazing Implementation Monitoring Module for CY 2001. An end-of-year grazing tour for the Service, permittees, and other interested parties will be organized by BLM in 2001. An end-of-year report will be provided to the Service.

BLM completed cadastral surveys of the allotment areas in 2000. Corrected maps currently being processed by the BLM State office will be provided to the Service upon completion and will be used to evaluate land ownership boundaries and settle potential and actual encroachments onto BLM property. BLM shall continue to pursue land exchange opportunities in the North Fork Malheur River area.

A full description of these actions is found in the 2001 biological assessment (USDI, BLM 2001a) and is incorporated herein by reference.

STATUS OF THE SPECIES

On June 10, 1998, the Service listed the Klamath River Distinct Population Segment (DPS) and the Columbia River DPS as threatened, with an effective date of July 10, 1998 (63 FR 31647 - Service 1998a). Critical habitat was not designated. The North Fork Malheur River is included in the Snake River Geographical Area of the Columbia River DPS (63 FR 31647). A total of 141 sub-populations of bull trout were identified within the Columbia River DPS in the final rule; the North Fork Malheur River contains a single Columbia River DPS bull trout sub-population.

The Columbia River DPS' bull trout are threatened by habitat degradation and fragmentation, blockage of migratory corridors, poor water quality, past fisheries management practices, and the introduction of non-native species (63 FR 31647). Currently, the Columbia River DPS is represented by relatively widespread sub-populations that have declined in overall range and numbers of fish. A majority of bull trout in the Columbia River DPS occur in isolated, fragmented habitats that support low numbers of fish and are inaccessible to migratory bull trout (63 FR 31647). Of the 141 bull trout sub-populations, 75 are at risk of natural extirpation through physical isolation (63 FR 31647). The few remaining bull trout "strongholds" in the Columbia River basin tend to be found in large areas of contiguous habitats, such as the North Fork Malheur River.

Bull trout, a member of the family Salmonidae, is one of four species of char native to western North America. Bull trout historically occurred in major river drainages of the Pacific Northwest and western Canada (Cavender 1978). Bull trout have been recorded from major drainages from the McCloud River in northern California, the Jarbidge River in Nevada, the Klamath River basin in Oregon, and throughout much of the Interior Columbia River Basin in Oregon, Washington, Idaho, western Montana, and British Columbia, and extended east of the Continental Divide in the Saskatchewan and MacKenzie rivers in Alberta and British Columbia (Cavender 1978; Bond 1992; Brewin and Brewin 1997). Bull trout range also includes Puget Sound, coastal rivers of British Columbia, Canada, and southeast Alaska (Bond 1992).

Bull trout were first described as *Salmo spectabilis* by Girard in 1856 from a specimen collected on the lower Columbia River. Bull trout and Dolly Varden (*S. malma*) were originally considered a single species (Cavender 1978; Bond 1992). Taxonomists have considered bull trout to be a separate species from Dolly Varden since 1978 (Cavendar 1978; Bond 1992) and The American Fisheries Society recognized bull trout and Dolly Varden as two separate species in 1980 (Robins et al. 1980).

Life History

Bull trout exhibit resident or migratory life history strategies through much of the current range. These different life history patterns may exist separately or in combination in the same tributary. It is suspected that bull trout give rise to offspring exhibiting both resident and migratory behavior (Rieman and McIntyre 1993). Resident bull trout complete their entire life cycle in the streams or nearby tributaries where they were hatched. Migratory (including fluvial and adfluvial) bull trout, in contrast, spawn in tributary streams and juvenile fish rear from one to

several years before migrating to larger waters. Adults from fluvial populations inhabit large rivers, whereas adfluvial populations reside in lakes or reservoirs. In certain coastal areas, a third life history strategy, anadromy, occurs. Anadromous populations spawn in fresh water, and, after a period of juvenile rearing, migrate to saltwater, where they grow to maturity (Fraley and Shepard 1989; Goetz 1989). These diverse life histories are important to the stability and viability of bull trout populations.

The size and age of bull trout at maturity depends upon life-history strategy. Growth of resident fish is generally slower than migratory fish; resident fish tend to be smaller at maturity and less fecund (Fraley and Shepard 1989; Goetz 1989). Bull trout normally reach sexual maturity in 4 to 7 years and live as long as 12 years. Bull trout typically spawn from August to November during periods of decreasing water temperatures. However, migratory bull trout frequently begin spawning migrations as early as April, and have been known to move upstream as far as 250 kilometers (km) to spawning grounds (Fraley and Shepard 1989). Depending on water temperature, incubation of eggs is normally 100 to 145 days (Pratt 1992), and, after hatching, fry remain in the substrate for a short period of time prior to swim-up. Fry normally emerge between early April through May, depending upon water temperatures and increasing stream flows (Pratt 1992; Ratliff and Howell 1992).

Bull trout are opportunistic feeders with food habits primarily a function of fish size and life-history strategy. Resident and juvenile migratory bull trout prey on terrestrial and aquatic insects, macro-zooplankton and small fish (Boag 1987; Goetz 1989; Donald and Alger 1993). Adult migratory bull trout are primarily piscivores, known to feed on various fish species (Fraley and Shepard 1989; Donald and Alger 1993).

Habitat Relationships

Channel and hydrologic stability, substrate, cover, temperature, and the presence of migration corridors influence bull trout distribution (Thurow 1987). Bull trout have more specific habitat requirements than other salmonids, which may be particularly important to maintaining strong populations (Rieman and McIntyre 1993). Although bull trout may be present throughout large river basins, spawning and rearing fish are often found only in a portion of the available stream reaches. Watersheds must have specific physical characteristics to provide habitat requirements for bull trout to successfully spawn and rear (Fraley and Shepard 1989; Pratt 1992; Watson and Hillman 1997). Because bull trout exhibit a patchy distribution, even in pristine habitats (Rieman and McIntyre 1995), the fish should not be expected to simultaneously occupy all available habitats (Rieman et al. in press). Species with specific requirements are likely more sensitive to habitat change and less able to persist in the face of change.

Bull trout are repeatedly found in close association with the coldest stream reaches within basins. Water temperature above 15°C (59°F) is believed to limit bull trout distribution, which may partially explain the patchy distribution within a watershed (Fraley and Shepard 1989; Rieman and McIntyre 1995). Spawning areas are often associated with cold-water springs, groundwater infiltration, and the coldest streams in a given watershed (Pratt 1992; Rieman and McIntyre 1993; Rieman et al. 1997). Bull trout in Montana spawned when temperatures dropped below 9

Status and Distribution

Though wide-ranging in parts of Oregon, Washington, Idaho and Montana, bull trout in the interior Columbia River basin presently occur in only about 44 to 45 percent of the historical range (Quigley and Arbelbide 1997). Declining trends and associated habitat loss and fragmentation have been documented rangewide (Bond 1992; Schill 1992; Thomas 1992; Ziller 1992; Rieman and McIntyre 1993; Newton and Pribyl 1994; IDFG in litt. 1995). Fragmentation and isolation of bull trout populations or subpopulation has occurred through habitat changes caused by human activities. Overfishing and competition by introduced species of fish have restricted the distribution of bull trout to a small portion of the original range. Habitats have been degraded and lost. The original populations have been restricted in the number of individuals they contain, their resilience, and in their proximity to or connection with other populations (Rieman and McIntyre 1993). As a result, some populations are extinct and the risk of extinction for many of the remaining populations has increased (Rieman and McIntyre 1993).

The Columbia River Distinct Population Segment (DPS) includes 141 bull trout sub-populations residing in portions of Oregon, Washington, Idaho, and Montana, with additional sub-populations in British Columbia (63 FR 31647). Bull trout populations within the upper Columbia River have declined from historic levels and the remaining populations are generally considered to be isolated and remnant (Thomas 1992). Of the 141 bull trout sub-populations in the entire Columbia River DPS, 33 percent are declining, 15 percent are stable, 3 percent are secure, and 2 percent are increasing (Ratliffe 1992; 63 FR 31647). Bull trout are estimated to have occupied about 60% of the Columbia River Basin, and presently occur in 45% of the estimated historical range (Quigley and Arbelbide 1997). Fluvial bull trout populations in the upper Columbia River portion of the DPS appear to be nearly extirpated. Although some strongholds still exist, bull trout generally occur as isolated subpopulation in headwater lakes or tributaries where migratory fish have been lost (Thomas 1992). Though still widespread, there have been numerous local extirpations reported throughout the Columbia River basin beginning in the 1950s (Ratliff and Howell 1992; Donald and Alger 1993; Goetz 1994; Buchanan et al. 1997; Washington Department of Fish and Wildlife 1997). In Idaho, for example, bull trout have been extirpated from 119 reaches in 28 streams (IDFG in litt. 1995).

ENVIRONMENTAL BASELINE

The North Fork Malheur River lies within the Upper Malheur Sub-basin fourth field HUC #17050116, and includes the occupied Upper North Fork Malheur 5th field watershed. The adjacent Little Malheur 5th field watershed has potential bull trout habitat, and the Lower North Fork Malheur 5th Field watershed supports migratory habitat, as well as Beulah Reservoir. Due to geographic and physical barrier separations between bull trout sub-populations in the Middle and North Fork Malheur rivers, each rivers' sub-population is currently considered to be a metapopulation. Recent evaluation and discussion by the "Malheur Recovery Unit Recovery Team" may indicate these two separated populations should actually be considered a single recovery unit (M. Hansen, ODFW, pers. comm., 2000). Historic connectivity to the Snake River

basin, and between these two Malheur metapopulations, is currently blocked by impassible dams, associated irrigation projects, and seasonal water quality limitations.

Resident members of the North Fork Malheur River bull trout sub-population currently occupy six sub-watersheds within the Upper North Fork Malheur 5th HUC watershed (Little Crane, Flat Swamp, Sheep, and Elk creeks; North Fork Malheur River), with interconnective resident and migratory habitat between these populations (Buchanan et al. 1997). The Malheur National Forest (1999) also included Crane Creek as occupied bull trout habitat. Migratory (fluvial) habitat exists in the North Fork Malheur River watershed from headwater areas downstream to Beulah Reservoir. This sub-population is unique in that the occupied bull trout streams in the upper North Fork Malheur River system are exceptionally-well interconnected, with spawning occurring in all aforementioned streams (no spawning data for Flat Creek), and a fluvial, migratory group of bull trout established in Beulah Reservoir. No other historic records of bull trout occur in this watershed (Buchanan et al. 1997); numerous other sub-watersheds in the North Fork Malheur River may have or still provide suitable habitat for bull trout. Resident (summer distribution) bull trout currently occupy approximately 63 miles of stream in the Upper North Fork Malheur Watershed area (Malheur National Forest 1999). Research in 1998 and 1999 indicates bull trout migration out of Beulah Reservoir into the North Fork Malheur River begins in April, with migrating fish passing through BLM river corridor lands before July. While summer occupation of BLM lands by bull trout was noted in 1997, no summer-period observations were made in either 1998 or 1999 (USDI, BLM 2000b). Downstream migrations, from spawning areas to Beulah Reservoir, peaked in mid-September (USDI, BLM 2000b).

The North Fork Malheur River originates in the Monument Rock Wilderness of the Blue Mountains of north-central Oregon, with headwaters at approximately 7,815 ft on Table Rock, to 3,680 ft where the river exits the Little Malheur watershed (Malheur National Forest 1999). Annual precipitation ranges from 15-45 in, with approximately 70 percent falling as snow. Topography in the mountainous North Fork Malheur consists of ridgetops, mountain slopes, dissected canyons, and valley bottoms (Malheur National Forest 1999). The main surface soils are cobbly and gravelly loams (higher soil hazard ratings) or volcanic silt loams (lower soil hazard rating); erosional processes are mainly superficial (Malheur National Forest 1999). There are few occurrences of recent mass-wasting events in the sub-basin, and the two upper watersheds rate 96 percent stable or very stable (Malheur National Forest 1999). The lower portion of the North Fork Malheur River above Beulah Reservoir is either confined within a basalt canyon with moderately steep to precipitous hillslopes (approximately 6 miles) or open hay meadows. Recent livestock management in the canyon area has resulted in generally upward vegetative trends (Water Gulch, North Rockpile, and portions of Little Malheur pastures are in Properly Functioning Condition; River and portions of Little Malheur pastures are functioning at risk with either no apparent trend or downward trend). The BLM manages 1,441 acres within the lower canyon area, including 4.5 miles of the total 14.8 river miles between Beulah Reservoir and the Forest boundary.

Livestock grazing is the principal activity which occurs in the North Fork Malheur River sub-basin's BLM lands. Recreation is increasing in importance. Road density within the Lower North Fork watershed is 1.03 miles/square mile; only 2 miles of road occur within 200 feet of the

river within this entire watershed. However, in 1998 and 1999, new road construction activity (some potentially on BLM property), resulted in three new river crossings and unstable, hillslope roads. Some minor repair actions occurred by the private landowner and Oregon Department of Forestry in 1999. In 2000, repair of trespass road segments on BLM property, including vehicle barriers and resloping/revegetating of cut and fill areas was completed. No migratory bull trout barriers exist above Agency Valley Dam, which forms Beulah Reservoir (impassable upstream barrier). Several currently unscreened diversions occur on private lands along the lower river corridor; ODFW was scheduled to install screens at four locations on the North Fork Malheur River in 1999; however, this did not occur. The Service continues to work with ODFW on the lack of screens in this area. During 1999, the Service completed section 7 consultation with U.S. Bureau of Reclamation for their ongoing operations of Agency Valley Dam/Beulah Reservoir, addressing entrainment, conservation pool, and fish passage issues. Also in 1999 and 2000, the Service completed section 7 consultation with Malheur National Forest for their grazing activities in the North Fork Malheur River basin.

The BLM currently manages three allotments adjacent to the North Fork Malheur River above Beulah Reservoir: Beulah, Whitley Canyon, and Castle Rock allotments. Land ownership within these allotments is mixed, thereby increasing difficulties in managing livestock grazing on BLM lands. Within the Beulah Allotment, two pastures influence the river corridor, MJ Field and River pastures. Within Whitley Canyon Allotment, the Little Malheur Pasture influences the river corridor. Within the Castle Rock Allotment, two pastures influence the river corridor, North Rockpile and Water Gulch pastures.

Numerous habitat and population elements of concern to bull trout were identified in BLM's North Fork Malheur River biological assessment. Overall, BLM rates the BLM portion of the river as functioning at risk, using the "Bull Trout Matrix" (USDI, BLM 1999a). The North Fork Malheur River baseline conditions are described in detail, using the "Bull Trout Matrix" and baseline narrative, within the biological assessments (USDI, BLM 1999a, 2000a), and are incorporated herein by reference.

EFFECTS OF THE ACTION

Impacts of livestock grazing to stream habitat and fish populations can be separated into direct and indirect effects. Direct effects are those which contribute to the immediate loss or harm to individual fish or embryos (directly stepping on a fish, trampling a redd that results in the actual destruction of embryos or dislodging the embryos from the protective nest and ultimately destroying eggs, harassment of fish by the presence of livestock on the banks or in the water). Indirect effects are those impacts which occur at a later time, causing loss of specific habitat features (undercut banks, spawning beds, etc.), localized reductions in habitat quality (sedimentation, loss of riparian vegetation, changes in channel stability and structure, etc.), and, ultimately, cause loss or reductions of entire populations of fish, or widespread reductions in habitat quantity and/or quality. Bull trout have more specific habitat requirements than other salmonids (Rieman and McIntyre 1993), therefore indirect effects to bull trout habitat features from grazing activities are especially problematic to bull trout conservation.

Direct Effects on Fish

Direct effects of livestock grazing on aquatic species occur when livestock are allowed to wallow, wade, or trail in the stream. During the early phases of their life cycle, fish have little or no capacity for mobility, and large numbers of embryos or young are concentrated in small areas. Livestock entering fish spawning areas can trample redds, and destroy or dislodge embryos and alevins. Belsky et al. (1999) provides a review of these direct influences on stream and riparian areas. Direct wading in streams by livestock can be assumed to induce mortality on eggs and pre-emergent fry at least equal to that demonstrated for human wading (Roberts and White 1992). In this investigation, a single wading incident upon a simulated spawning bed induced 43 percent mortality of pre-hatching embryos. Direct effects can also include immediate bull trout behavioral modifications when livestock enter or are adjacent to occupied habitat, and possibility of direct mortality from livestock trampling of more mobile bull trout life stages.

None of the BLM allotments addressed in this consultation contain bull trout spawning areas, thereby precluding the possibility of direct impacts to spawning adults or embryos. Other forms of direct take (ie, harassment of bull trout by livestock when livestock enter or are adjacent to occupied habitat, resulting in bull trout behavioral modifications) may occur as adults migrate to and from spawning areas, or juvenile fish migrate downstream towards Beulah Reservoir. Avoiding direct take is more difficult to address in the context of an economically-viable grazing program, in that full riparian fencing would be necessary to preclude this potential impact. However, there is minimized concern, due to the transitory nature of bull trout utilizing these BLM-managed habitats, for direct effects from harassment. Additionally, this form of direct take is reduced, in the long term, by grazing management that results in better riparian and in-channel habitat conditions that creates more cover and other important habitat features.

Indirect Effects

Indirect effects of livestock grazing on riparian and instream habitats include compacting stream substrates, collapse of undercut banks, destabilized streambanks, localized reduction or removal of herbaceous and woody vegetation along streambanks and within riparian areas, widening streambanks, reducing pool frequency, promoting incised channels, and lowering water tables (Platts 1991; Overton et al. 1993; Henjum et al. 1994). Belsky et al. (1999) provides a review of these indirect influences on stream and riparian areas.

When livestock graze directly on streambanks, mass erosion from trampling, hoof slide, and streambank collapse cause streambank soils to move directly into the stream (Platts 1991). Trampling also causes instream habitat degradation to vulnerable aquatic life stages that require very specific habitat features including clear, clean, and well oxygenated cold water, undercut banks for hiding cover, pool habitat for resting. Heavy trampling by livestock can compact soils, reducing the infiltration of overbank flows and precipitation. Reduced infiltration and increased runoff may decrease the recharge of the saturated zone and increase peak flow discharges (Hanson et al. 1970; Lushby 1970; Platts 1991). Rauzi and Hanson (1966) and Bryant et al. (1972) found soil capacity for water intake on moderately grazed watersheds to be nearly twice that on heavily grazed watersheds due to increased soil compaction on areas that receive

Effects on Vegetation and Channel Morphology

All life history stages of bull trout are associated with complex forms of cover, including large woody debris, undercut banks, overhanging vegetation, boulders and cobble substrates, and pools (Fraley and Shepard 1989; Goetz 1989; Sedell and Everest 1991; Pratt 1992; Thomas 1992; Sexauer and James 1997; Watson and Hillman 1997). In addition, bank and channel stability influences bull trout spawning success, overwinter survival, and availability of relatively clean substrates for juvenile bull trout (USDI, FWS 1998b). Livestock grazing activities can have negative influences on vegetative, bank, and channel stability/quality, which, in turn, relate directly to decreases in these important bull trout habitat components. It is therefore important, when managing livestock grazing activities in bull trout watersheds, to design strategies to minimize impacts to native vegetation and protect bank and channel stability.

Watershed management activities such as livestock grazing can affect the quality and timing of sediment delivery to stream channels. Activities that increase the amount of sediment beyond a channels' transport capacity can cause aggradation, widening, and instability as the channel seeks a new equilibrium (Beschta and Platts 1986; Rosgen 1994). Sediment introduced into streams can adversely affect fish populations by inducing embryo mortality and altering primary productivity and food supply. Deposition of silt on spawning beds can fill interstitial spaces in stream bed material which will impede water flow, reduce dissolved oxygen levels, and restrict waste removal (Chapman 1988; Bjornn and Reiser 1991). Further, suspended sediments reduce light penetration to plants and reduce oxygen carrying capacity of the water (Ohmart and Anderson 1982). Reduction in photosynthesis and primary production decreases productivity of the entire ecosystem (Minshall 1967). Additionally, sedimentation directly decreases the amount of substrate suitable for some invertebrates and reduces instream cover for fish.

In areas under historic season-long grazing, major vegetation changes can and have taken place with changes in livestock management. Grazing an area too late in the growing season can cause adverse changes in the plant community. Individual plants are eliminated by re-grazing them during the growing season and not allowing adequate recovery after grazing. Over time, entire plant communities can change as a result of heavy grazing pressure. In mountain riparian systems of the Pacific Northwest, the replacement of native bunch grass with Kentucky bluegrass has occurred. Kentucky bluegrass has established itself as a dominant species in native bunch grass meadows as a result of overgrazing and subsequent habitat deterioration (Volland 1978). Plants in the early seral stage community do not provide as much protection for the watershed and streambanks. Many forbs and annual plants that frequently dominate early seral plant communities do not have the strong deep root systems of the later seral perennials such as bunchgrasses, sedges, rushes, shrubs, and willows. Kauffman et al. (1982) found that when grazing in moist meadows was halted, succession towards a more mesic/hydric plant community occurred.

Moderate to heavy grazing can affect the ability of the vegetation to reduce or prevent soil erosion. Plant root patterns in areas with no grazing or light grazing are generally dense, heavily branched, spreading, and deeply penetrating. Under progressively heavier grazing, roots have progressively fewer branches, and are sparser, shorter, and more concentrated in the top portion

of the soil profile (Valentine 1990). When watersheds with primarily early-seral plants, or late-seral plants with reduced root systems, experience a major flood event, they are more likely to suffer serious damage from erosion and mass wasting. Regardless of seral stage, at least four to six inches of residual stubble or regrowth is recommended to meet the requirements of plant vigor maintenance, bank protection, and sediment entrapment (Clary and Webster 1989). More than six inches of stubble height may be required for protection of critical fisheries or easily eroded streambanks and riparian ecosystem function (Clary and Webster 1989).

The effects of grazing on woody vegetation is critical for bull trout because of the importance of woody plant species in providing nutrients, structure, pool formation, streambank stability, shading, and microclimate conditions. Improper grazing can eliminate woody species over time. Elmore and Beschta (1987) suggest that in some situations grazing on willows begins when herbaceous plant utilization reaches 45 percent. While mature vegetation approaches senescence, excessive grazing pressures can prevent the establishment of seedlings. Vigorous woody plant growth and at least 6 inches of residual herbaceous plant height at the end of the growing season typified the riparian areas in excellent, good or rapidly improving condition (Myers 1989).

Removal of vegetation by grazing can expose soils, increase erosion potential, and affect groundwater storage capacity. Streamside vegetation protects and stabilizes streambanks by binding the soil to resist erosion and trap sediment (Chaney et al. 1990). Vegetative cover also insulates streambanks from frost-heaving and freeze-thaw cycles which alter soil strength and promote conditions for erosion (Bohn 1989). When bank vegetation is removed and plant roots do not help bind the soil, tension cracks can develop and lead to bank failure (Platts 1991). Where erosion proceeds unabated, extensive deep gullies can develop, lowering the water table. Channel entrenchment and gullying has occurred from past overuse in portions of both allotments subject to current grazing. Recovery of the stream channel and the development of new banks with an increase of the water table will be slow. If grazing practices are altered to allow total vegetative biomass to increase along a stream, channels typically begin to aggrade (Elmore and Beschta 1987). With continued sediment deposition, bank-building, and associated plant colonization, water tables rise and ultimately may reach the root zone of plants on former terraces or floodplains (Elmore and Beschta 1987).

Effects on Water Quality

Grazing can cause changes in upland, riparian, and in-channel features that maintain water quality conditions in bull trout habitats. Water quality relates to the stability of channel and bank features addressed above, and to the level of annual utilization that is allowed under livestock grazing management. The water quality parameter of greatest concern to conservation of bull trout is maintaining and enhancing cold water temperatures (USDI, FWS 1998b); grazing can influence water quality through changes in natural stream function (width:depth ratio; loss or suppression of woody species; aquifer recharge; water storage [Leonard et al. 1997]).

In general, elevated water temperatures can be lethal to trout, increase susceptibility to diseases because of stress, inhibit reproductive success, and adversely affect spawning migration (Bell 1991). However, indirect effects of increased water temperatures can affect all aquatic species

and include: creating a more favorable environment for introduced species such as brook trout; changes in the food chain; degraded water quality through decreased dissolved oxygen; increased productivity of algae; higher pH; and increased toxicity of ammonia. Bull trout are strongly influenced by water temperature, and are found to be associated with the coldest reaches of occupied stream systems, thereby restricting their overall distribution (Rieman and McIntyre 1993). Recent laboratory experiments on juvenile bull trout (McMahon et al. 1998) provide some preliminary water temperature:bull trout insights: survival > 98% at temperatures between 7.5 and 18°C; maximum growth observed at 12°C (however, growth observed at 14 and 16°C were only slightly less); and incipient lethal temperature for juvenile bull trout appears to be between 20 and 22°C. Maintenance of the historic temperature regime may be key to conservation of resilient and adaptable bull trout populations.

Ambient water temperatures are maintained when streambank vegetative cover is protected from grazing. Storch (1979) found that daily fluctuations of water temperatures in late August and early September averaged 27°F in a grazed area on Camp Creek, Oregon, compared to 13°F inside an enclosure that was ungrazed for about ten years. Also, maximum water temperatures outside the enclosure averaged 11°F higher than inside the enclosure. Beschta (1997) discussed associations between riparian vegetation shading and water temperatures. He found that coniferous and deciduous trees provide significant amounts of shade because of their heights and extensive canopies (even in wide river systems, tall riparian trees provide shading benefits); shrubs (willows, alders, etc) provide critical shading for medium and small-sized streams; and herbaceous species (sedges, rushes, etc) provide significant shading benefits to small meadow stream systems. Grazing systems can be developed that protect vegetative features that maintain ambient water temperatures (Leonard et al. 1997), while allowing for acceptable levels of herbaceous species utilization.

Another temperature-related factor is the potential for poorer winter survival of fish in grazed areas. Streams with little or no vegetative canopy are susceptible to the formation of anchor ice. Heavily grazed areas may be less suitable for fish overwintering because stream channels in such areas tend to be wider and shallower and thus are more susceptible to freezing throughout the water column. Fish mortality may also occur if the winter carrying capacity of an ungrazed reach is exceeded by an influx of fish migrating from grazed sections containing unsuitable habitat. In small streams the potential is high for reduced fish survival during seasonal winter and summer low-flow periods if stream conditions have been adversely affected by livestock grazing (Platts 1991).

Livestock grazing can cause a nutrient loading problem due to urination and defecation in areas where cattle are concentrated near the water (Doran et al. 1981). In other areas it can reduce nutrients through removal of riparian vegetation (Fisher 1972). Riparian vegetation provides organic material for approximately 50 percent of a stream's nutrient energy (Cummins 1974). Detritus from such plants is a principal source of food for aquatic invertebrates (Minshall 1967). Streamside vegetation also provides habitat for terrestrial insects, another important dietary component for both trout and other aquatic or riparian associated species. These on-going grazing actions will likely reduce streamside vegetation in some areas and may reduce nutrients

and invertebrates in riparian areas. An increase in riparian vegetation along creeks and springs could produce positive effects on nutrient supplies and aquatic and terrestrial invertebrates.

Effects at the Pasture Level

Grazing objectives for River (Beulah Allotment) and North Rockpile (Castle Rock Allotment) pastures are to allow for riparian habitat improvement. Both pastures were rested in 2000, with no evidence of livestock use. Utilization standards for herbaceous stubble height in both pastures were met, with stubble heights several inches in excess of the minimum. Although browse on woody species exceeded the 20-30% standard set in the Biological Opinion, the browse appeared to be entirely attributable to wildlife (USDI, BLM 2001b).

River and North Rockpile pastures will follow the current grazing schedule and be grazed in 2001. In both pastures livestock will be removed by 6/1, allowing sufficient time for herbaceous regrowth and recovery. The species and environmental baseline presented in the 2000 Biological Assessment indicated that ongoing livestock operations as prescribed for River and North Rockpile pastures would maintain or restore all relevant indicators.

Direct effects of the 2001 grazing activities would be limited to harassment of migratory bull trout in the River and North Rockpile pastures. The Service believes this is unlikely, due to low probability of unauthorized use of these pastures, which in turn may negatively affect bull trout. The species and environmental baseline presented in the 2000 Biological Assessment indicated that ongoing livestock operations as prescribed for the River and North Rockpile pastures would maintain or restore all relevant indicators.

Water Gulch Pasture of the Castle Rock Allotment will be used in 2001. Water Gulch Pasture is in Properly Functioning Condition, well vegetated with resistant, rocky soils, and has minimal forage available to attract livestock use or overuse. Livestock management prescriptions designed to protect riparian areas are not in place, but much of the BLM-owned portion of the river corridor is inaccessible to cattle and use by the permittee has been light and is prescribed for light use again in 2001. The riparian portion of the pasture was essentially rested in 2000 in spite of repeated livestock trespass from neighboring private land which the permittee removed from the pasture.

Direct effects of the 2001 grazing activities would be limited to harassment of migratory bull trout in the Water Gulch pasture. The Service believes this is highly unlikely, due to current habitat conditions. Indirect effects, mainly potential modification of stream and riparian functions in the pasture by grazing activities, which in turn negatively affects bull trout, are still of concern for Water Gulch Pasture. The species and environmental baseline presented in the 2000 Biological Assessment indicated that ongoing livestock operations as prescribed for Water Gulch pasture would maintain or restore all relevant indicators.

Little Malheur Pasture of Whitley Canyon Allotment has upland objectives and is not managed as a riparian pasture. Historically, livestock running in this pasture had very limited access to the North Fork Malheur River. However, construction of new roads on private land in recent years

has facilitated livestock access to the river corridor and has resulted in heavy riparian utilization. Subsequently, BLM closed the North Fork Malheur River corridor portion of Little Malheur Pasture to grazing in 1999. Despite this closure, livestock use again occurred in the river corridor in 2000, resulting in excessive browsing on herbaceous and woody vegetation. This grazing was considered willful unauthorized use, and the permittee was fined.

Because of extensive unauthorized use in 2000, scheduled livestock use in 2001 will again be suspended in the river corridor portion of Little Malheur Pasture. Browse and stubble height surveys showed that utilization levels in this pasture were not in compliance with riparian objectives, and plant regrowth will not be adequate prior to turn-out this spring. The closure will avoid over-utilization of resources that have had no opportunity for recovery. The species and environmental baseline presented in the 2000 Biological Assessment indicated that ongoing livestock operations as prescribed for the Little Malheur Pasture may have negative impacts on these indicators.

In the 1999 BA, BLM committed to negotiate with the landowner/permittee of Whitley Canyon Allotment to formalize a long-term agreement which would involve either nonuse of the river corridor or an early spring/ rest grazing system. Because of communication difficulties stemming from changes in ranch ownership, only a short-term (one year) agreement for nonuse was accomplished. BLM intends to negotiate with the new ranch owner(s) using information gathered and evaluated during *Geographical Area Planning* to finalize a long-term grazing plan that will protect and enhance bull trout habitat (USDI, BLM 2001a).

In order to restrict cattle access to the river corridor from the MJ Field Pasture of Beulah Allotment, a 3-mile rim fence from the Forest Service boundary to River pasture was constructed in 1999 which effectively controlled livestock use. No Beulah Allotment livestock were recorded from the corridor during the 2000 grazing season, and River Pasture has now been successfully rested for two years.

BLM did not observe any impacts from trailing in 2000. Minimizing fall trailing by Beulah Allotment was a requirement of Terms and Conditions of the Biological Opinion for Grazing Activities on North Fork Malheur River Allotments (USDI, FWS 2000a) that BLM will carry forward in the 2001 grazing season.

New fence construction was effective in controlling unauthorized livestock in River and North Rockpile pastures, but livestock trespass has continued in Little Malheur Pasture. Any unauthorized livestock use in the river corridor will reduce the effectiveness of riparian restorative efforts regardless of grazing prescriptions in place and may degrade relevant species and environmental indicators.

Assuming successful implementation of BLM's proposed 2001 grazing activities, including early season use, and rest of BLM river areas, minimal adverse effects to bull trout are anticipated. If unauthorized use of river areas again occurs in 2001, additional direct and indirect effects are expected.

INTERRELATED AND INTERDEPENDENT EFFECTS

Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have independent utility apart from the action under consideration. Interdependent and interrelated activities are identified by applying the "but for" test, which asks whether any activity and its associated impacts would occur "but for" the proposed action.

One interrelated and interdependent activity, fence maintenance, can have effects on bull trout. Specifically, the boundary fence between BLM and Malheur National Forest (Forest), has been a long-term, troublesome management feature for both agencies. The maintenance of this fence, or, more properly, lack of clear maintenance responsibility, allows cattle from the Forest to trail onto downstream BLM and private pastures, or visa-versa, with predictable, detrimental effects. Currently, the Forest is working, via consultation with the Service, on better management of unauthorized use in the North Fork River corridor, which should reduce the incidence of Federally-permitted livestock from trailing down the river onto BLM and private lands. In addition, a specific Term and Condition in the Malheur National Forest's 2000 grazing biological opinion stipulated more active coordination and implementation of boundary fence maintenance with BLM. Other interrelated and interdependent effects may include road use associated with transporting livestock between the home ranch and their allotment, within their allotment, and other use of roads to successfully manage livestock activities on BLM lands. Other interdependent effects may include the activities of the home ranch on bull trout streams (mainly migratory habitat); Federal grazing allotments provide opportunity for many permittees to seasonally relocate livestock, thereby allowing use of privately-owned riparian meadows to grow feed for winter use or sale. The feed production generally requires water diversion, thereby altering flow timing, magnitude, and quality. Hay meadows are often protected from "erosion" by channel modifications, including channelization and rip rap placement, features detrimental to proper functioning of aquatic systems.

Effects to bull trout from these interrelated and interdependent activities include indirect impacts such as changes in riparian vegetation (of particular concern is hot season unauthorized use and/or trespass), damage to streambanks and channel features, and dewatering of channels (with associated changes in water quality, passage, and other important bull trout habitat attributes). Direct effects from the above activities may include harassment of various life stages of bull trout.

The Level 1 Team, BLM Range staff, and permittees have attempted to address several of these interrelated and interdependent effects via pro-active measures, such as fence maintenance and monitoring for unauthorized use in high-risk pastures. The BLM has no authority to determine activities on the home ranch, and therefore is not responsible for potential effects that occur from home ranch operations.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Within the current range of bull trout in this sub-basin, the land ownership pattern is mixed. Resident bull trout mainly occupy streams and rivers of Forest ownership, while migratory bull trout habitat occurs within non-Federal, BLM, Bureau of Reclamation, and Forest lands. The Service believes a larger incidence of cumulative effects are likely to occur in the future on non-Federal lands. These cumulative effects are anticipated to include, but not be limited to, timber harvest activities, road construction and maintenance, livestock grazing and associated agricultural activities (home ranches of BLM permittees often occur adjacent to migratory bull trout habitat). Of particular concern are several roads constructed in 1998 and 1999 on private lands that have already had detrimental impacts (increased access for livestock, increased sediment), and may have detrimental impacts in the future (access to timber harvest activities, additional sediment inputs from poorly-constructed roads, increased incidence of livestock trespass from private lands). Continued seasonal water withdrawals within migratory bull trout corridors, entrainment of migratory bull trout into seasonal diversions (plans for screening these diversions by ODFW are finalized, but landowner has not implemented [W. Bowers, ODFW, pers. comm., 1999]), and livestock grazing on private lands are other potential cumulative effects. From a bull trout recovery perspective, future cumulative effects will continue to restrict bull trout summer migratory corridors.

CONCLUSION

Baseline conditions are presented in the Status of Species and Environmental Baseline sections above. Direct and indirect effects of livestock grazing activities, its interrelated and interdependent activities' effects, and future cumulative effects on bull trout, based on current baseline conditions, are summarized in the Effects sections above. The Service's review of these effects on the Columbia River bull trout DPS range, numbers, and reproduction is based on known direct and indirect effects of livestock grazing on aquatic species and their habitats, and the level to which these potential effects are being minimized by implementation of the proposed grazing strategies and Conservation Measures. The strategies and Conservation Measures proposed to minimize negative effects to bull trout include: altering historic livestock management activities (timing, duration, number, strategy, etc.) to better meet bull trout habitat concerns; meeting prescribed utilization levels; conducting project monitoring, based on utilization levels and other pasture move "triggers", to assist permittees in making timely pasture moves; monitoring for unauthorized use; constructing gap fences; and submitting results of grazing activities in a full annual report. The overall proposed action is therefore crafted towards a more equitable balance between bull trout survival and recovery needs and economic benefit, resulting in significant reductions in the combined effects of livestock management on bull trout.

The timing, intensity, and duration of these livestock grazing-related effects on the Columbia River bull trout DPS recovery rate reduces the speed at which bull trout recovery would occur if no livestock grazing were occurring in this sub-basin. However, these effects, when compared to this sub-basin's current baseline and including future cumulative effects, does not increase the overall risk of jeopardy to the Columbia River bull trout DPS. Bull trout range will not be reduced from the proposed action, and may be incrementally expanded as riparian, stream bank, and in-channel habitat features gradually respond to better grazing management practices. Bull trout numbers should not be reduced from the proposed action, due to decreased incidence of detrimental indirect effects. Well-managed livestock grazing programs should not significantly reduce the range, numbers, or reproduction of Columbia River bull trout DPS.

After reviewing the current status of bull trout in the Columbia River Distinct Population Segment, the environmental baseline for the North Fork Malheur River, the effects of the proposed 2001 grazing activities on bull trout, and the cumulative effects, it is the Service's biological opinion that the proposed BLM 2001 grazing activities in the North Fork Malheur River bull trout watershed, as proposed, is not likely to jeopardize the continued existence of the bull trout. No critical habitat has been designated for this species, therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the BLM so that they become binding conditions of any grant or permit issued to the grazing permittees, as appropriate, for the exemption in section 7(o)(2) to apply. The BLM has a continuing duty to regulate the activity covered by this incidental take statement. If the BLM (1) fails to assume and implement the terms and conditions or (2) fails to require the grazing permittees to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the BLM must report the progress of the action and its

impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

The Service expects that livestock grazing in BLM allotments in North Fork Malheur River is likely to result in incidental take of bull trout in the form of harm or harassment, due to detrimental effects on parameters such as water temperature, substrate quality, bank stability, food supply, normal behavior including migration to spawning areas upstream, and suspended sediment levels, which directly and indirectly affect the life history of bull trout. Because of the inherent biological characteristics of aquatic species such as bull trout, however, the likelihood of discovering an individual death or recording non-lethal effects to bull trout attributable to grazing is very small. For example, small size, behavioral modifications before death, presence of aquatic vegetation, stream flow, and rapid rates of decomposition make finding a bull trout mortality due to incidental take extremely unlikely. Another example is difficulty in recording non-lethal harassment or harm to bull trout, from indirect effects of grazing activities, in a fashion that can be immediately quantified as a detrimental effect. Incidental take due to grazing management actions is largely unquantifiable in the short term, and may only be measurable as long-term effects on the species' habitat or population levels.

Even though the Service expects incidental take to occur from the effects of grazing within riparian habitats which help support populations of listed bull trout, the best scientific and commercial data available are not sufficient to enable the Service to estimate a specific amount of take to the species itself. In instances such as these, the Service has designated the expected level of take as "unquantifiable".

Based on stream habitat, fish population, and riparian vegetation surveys by the BLM and ODFW, the Service anticipates that the following unquantifiable take could occur as a result of the activities associated with the implementation of the proposed 2001 BLM grazing activities in bull trout habitats.

1. Take of bull trout in the form of harm or harassment in the North Fork Malheur River open to cattle grazing for 2001: a total of 3.25 river miles on BLM land and 2.0 river miles on private land managed under the BLM issued permit. A total of 0.7 river miles under BLM ownership; and 0.6 miles of private land managed under the BLM permit, which potentially could be affected with unauthorized use.

The Terms and Conditions for implementing the Reasonable and Prudent Measures of this biological opinion are anticipated to minimize the level of incidental take.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

The Service believes the following Reasonable and Prudent Measures are necessary and appropriate to minimize take of bull trout:

1. Adherence to pasture use guidelines, riparian protections, additional conservation measures, monitoring, and reporting, consistent with the Proposed Action, as stipulated in the BLM grazing management biological assessment.
2. Implement additional protective measures within individual allotments to increase overall conservation benefit to bull trout.

With implementation of these Reasonable and Prudent Measures, the Service believes that take of bull trout will be limited to harm or harassment in stream areas open to cattle access within the context of the BLM's proposed grazing activities. The grazing systems, prescriptions, timing, monitoring, and additional Conservation Measures proposed by the BLM and Permittees will minimize incidental take by reducing direct impacts to migratory adults and other life stages occupying or passing through BLM-owned river segments; allowing significant herbaceous plant regrowth; protecting woody plant species from grazing impacts in hot season; increasing bank stability; ensuring, via monitoring, that unauthorized use is avoided; and, based on monitoring and reporting, allowing the BLM Level 1 Team, Range Staff, and Permittees to better respond to bull trout habitat needs in future years.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, the BLM must comply with the following Terms and Conditions, which implement the Reasonable and Prudent Measures described above, and outline required reporting/monitoring requirements. These Terms and Conditions are non-discretionary and must be undertaken by the BLM or be made a binding condition of any permit issued to an applicant, as appropriate.

1. The BLM shall assure consistent implementation of grazing-related measures and standards specified in the Aquatic Conservation Strategies as indicated in the 1998 Biological Opinion for the Effects to Bull Trout from the Continued Implementation of Land and Resource Management Plans and Resource Management Plans as Amended by the Interim Strategy for Managing Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, Western Montana, and portions of Nevada (INFISH), and the Interim

Strategy for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and portions of California (PACFISH).

2. Monitor cattle access to North Fork Malheur River after completion of the East Rim Gap Fence to ensure effectiveness of the fence in keeping cattle out of the river corridor.
3. In the Little Malheur Pasture, ensure all BLM authorities are used to preclude unauthorized livestock use on the new road system, including development and implementation of specific measures to ensure functionality of existing and new management features (gates, barriers, etc.). Continue, as necessary, to take permit/trespass actions for unauthorized use that originates from these access points.
4. Keep working with the Beulah Allotment permittees to ensure they minimize their fall trailing down the river corridor and use rim route instead.

The Service believes that an unquantifiable number of bull trout will be incidentally taken as a result of the proposed action. The Reasonable and Prudent Measures, with their implementing Terms and Conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, incidental take occurs due to a failure to comply with Terms and Conditions or the Reasonable and Prudent Measures (i.e. the overall Proposed Action), such incidental take represents new information requiring reinitiation of consultation and review of the Reasonable and Prudent Measures provided. The BLM must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the Reasonable and Prudent Measures.

Reporting requirements

1. An annual report of BLM's management activities in the North Fork Malheur River shall be submitted to the Service by January 31, 2002. The following shall be included in the report for each allotment: 1) Overview of Proposed Action and actual management (livestock numbers, on-off dates for each pasture, and grazing strategy.); 2) Specific BLM implementation monitoring data, date and location collected (stubble height, woody use, bank damage, unauthorized use, fence maintenance); 3) review of management and compliance successes and failures; 4) New habitat trend or bull trout population data; 5) status of ongoing BLM proposed activities including: watershed planning and evaluation efforts; restoration work on illegal roads; progress on negotiations for gap fence or other solution for Little Malheur Pasture's unauthorized use problems; and progress with land exchanges; and 6) Management recommendations for subsequent years.
2. Upon locating dead, injured, or sick bull trout during the time when livestock are authorized to be in the pastures, initial notification must be made to the Service's Division of Law Enforcement, Senior Resident Agent Pete Nylander, Wilsonville, Oregon, at telephone number 503-682-6131. Instructions for proper handling and disposition of such specimens will be issued by the Division of Law Enforcement. Care must be taken in handling sick or injured fish to

ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. In conjunction with the care of sick or injured bull trout, or the preservation of biological materials from a dead trout, the BLM and the permittee have the responsibility to ensure that information relative to the date, time, and location of the fish when found, and possible cause of injury or death of each fish be recorded and provided to the Service.

3. Results of all riparian and stream habitat and fish population/genetic monitoring conducted by the BLM or others within these allotments should be provided to the Service's Bend Field Office upon completion.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Continue to pursue completion of the land exchange opportunities identified in the 2000 biological assessment. BLM consolidation of riverine parcels will allow better riparian management of these river corridor lands, and thereby benefit bull trout.
2. For allotments where unauthorized use and/or trespass is a continual issue, require fence maintenance as a condition of the grazing permits to insure maintenance is completed successfully.
3. Prioritize water development activities in pastures that would benefit from additional, off-stream water sources. Additional water developments would allow for better rotation (early season and rest rotation) through allotments by using more sensitive pastures during non-impactful times, with shorter duration of use.
4. Continue to look for opportunities to cooperatively manage boundary fences, especially those which are historically problem areas, with Malheur National Forest Ranger Districts, and private landowners.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the proposed action described in BLM's Biological Assessment, dated March 20, 2001. As provided in 50 CFR §402.16, reinitiation of formal

consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded (in this case, non-compliance with the Reasonable and Prudent Measures and their implementing Terms and Conditions), any operations causing such take must cease pending reinitiation.

We would like to acknowledge the legal actions taken by BLM in 1999 and 2000 to manage difficult issues, especially trespass roads and resultant unauthorized livestock use. We also would like to acknowledge permittee success during 2000, especially in successfully resting the Water Gulch and North Rockpile pastures (Castle Rock Allotment), and River pasture (Beulah Allotment); and the efforts of BLM's range and fishery staff, who successfully accomplished important fencing and monitoring efforts in 2000 and early 2001. If you have questions or require additional information regarding this consultation, please contact Alan Mauer or Jerry Cordova, Bend Field Office, at 541-312-6421.

383-7146

cc: Alison Beck-Haas, USFWS, SRBO, Boise, ID
 Alan Mauer, USFWS, Bend Field Office, Bend, OR
 Larry Salata, USFWS, R1, Portland, OR
 Wayne Bowers, ODFW, Hines, OR
 Dan Gonzales, Burns Paiute Tribe, Burns, OR
 Cynthia Tait, Vale BLM, Vale, OR
 Dick Haines, Prairie City Ranger District, Prairie City, OR
 Pat Sweeney, Malheur National Forest, John Day, OR
 Rick Reiber, Bureau of Reclamation, PNW Region, Boise, ID
 Mary Hanson, ODFW Native Fish, Portland, Or.

Ron Rhen

503 231 6195

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Personal Communication

Wayne Bowers, Oregon Department of Fish and Wildlife, conversation with Doug Young, USFWS, 1999.

Mary Hansen, Oregon Department of Fish and Wildlife, conversation with Doug Young, USFWS, 2000.

FAX TRANSMITTAL



From: Alison Beck Haas

U.S. Fish and Wildlife Service
Ecological Services
Snake River Basin Office
1387 South Vinnell Way, Room 368
Boise, Idaho 83709

Phone (208)378-5384
Fax (208)378-5262

To: Jon Sadowski FAX Number 541 473 6213

Subject: GEORMP BO Date 1/7/01

Number of Pages (including this sheet) 29 Distribution: URGENT Hand Carry Usual Routing

R.M. Vale

January 6, 2002

Hi Jon-

Don't faint, but here is the draft BO for the SEORMP. If you have a chance to review this draft, that would be terrific. I'm looking for any inaccuracies or fatal flaws you see.

I am going to be out of the office Tuesday afternoon through Thursday evening this week. While I'm gone, one of my staff will be working on filling in the lit cited and other gaps in the document. At the same time, my boss--Bob Ruesink--is reviewing for content, etc. Because the Incidental Take Statement in the draft is pretty unusual, there is a chance Bob will want me to make changes to it.

If there is any chance at all that you can look this over by Friday, that would be terrific. (Isn't that an ironic request given the glacial pace with which our office developed the BO?!)

Barring unforeseen disasters, I'd like to have the final BO in the mail by COB Monday the 14th. I WON'T try for that if you want some time to go over this--according to the regs you get ten days for review of the draft. Just let me know.

If you see Sandy G., please let her know that I have forwarded this draft to you.

Thank you very much for being so patient with the FWS--Cheers and Happy New Year!

ABH

voice 3785384
FAX 3785262

alison_breck@fws.gov

P.S. I am writing this note assuming I'll be Fed-Exing it and the draft doc; if by chance our e-mail is restored 1/7, I'll be e-mailing the whole works to you.



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Vale District Office
100 Oregon Street
Vale, Oregon 97918-9630
<http://www.or.blm.gov/Vale/>

IN REPLY REFER TO:
1510

MAY 01 2001

Mr. Robert Ruesink
US Fish and Wildlife Service
Snake River Basin Office
1387 South Vinnell Way, Room 368
Boise, Idaho 83709

Dear Bob:

Enclosed is a final version of the Biological Assessment (BA) for land use authorizations proposed in the Preferred Alternative, Final Environmental Impact Statement (FEIS), Southeast Oregon Resource Management Plan (SEORMP). This final BA incorporates a variety of suggestions that were provided by your staff during the draft phase of the document.

In contrast to the draft document, this final BA is significantly streamlined both in terms of species covered and the area of analysis. Andrews Resource Area in Burns District was eliminated from the SEORMP, FEIS due to a special congressional action which eliminated Steens Mountain and certain other adjoining federal lands from the planning area.

If there are any questions or further clarification needed please contact Jon Sadowski in Vale at 541-473-6275.

Sincerely,

Sandra L. Guches
for *Penelope Dean Woods*
Sandra L. Guches
Acting Vale District Manager

Enclosure

cc: Judy Nelson, Oregon State Office, BLM
Eric Stone, Oregon State Office, BLM

Biological Assessment for Proposed Southeast Oregon Resource Management Plan/ Final Environmental Impact Statement

Introduction

The following is a biological assessment (BA) pursuant to the Endangered Species Act, Section 7(c)(1) which evaluates the effects of the Proposed Southeast Oregon Resource Management Plan (SEORMP) on listed and proposed species of fish and wildlife. No listed plant species occur in the planning area. The following chapters address analysis of effects for individual species:

- Chapter I--Fishes (bull trout, Lahontan cutthroat trout)
- Chapter II--Bald Eagle
- Chapter III--Canada Lynx
- Chapter IV--Gray Wolf
- Chapter V--Columbia Spotted Frog
- Chapter VI--Plants

The SEORMP provides the Bureau of Land Management (BLM) with a general framework for managing public land within the Malheur (MRA) and Jordan (JRA) resource areas of the BLM Vale District. The actions planned and analyzed in the Final Environmental Impact Statement (FEIS) associated with the SEORMP conform with the concept of multiple-use and sustained yield as well as the Federal Land Policy and Management Act (FLPMA) of 1976. In this context the goal of the plan is to strike a reasonable balance between commodity production and the need to sustain healthy and productive land. To the extent possible, the plan incorporates principles and thought processes of ecosystem management. *

The SEORMP applies the Interim Strategy for Managing Fish-producing Watersheds in Eastern Oregon, Washington, Western Montana, and Nevada (INFISH) to bull trout watersheds as well as those watersheds with Lahontan cutthroat trout and other salmonids.

SEORMP Planning Area

The SEORMP planning area includes the Malheur and Jordan resource areas of Vale District. It is bounded on the east by Idaho, on the south by Nevada, on the north by Vale District's Baker Resource Area, and on the west by the BLM Burns District. Most of the public land is contiguous, with some scattered or isolated parcels. Land ownership acreages are shown in Table 1.

The SEORMP planning area is semiarid rangeland with scattered mountains and broad valleys,

with much of the area dominated by sagebrush and native bunchgrasses. Communities of fir, pine, juniper, quaking aspen, and mountain mahogany are present on more mesic sites at higher elevations. Many vegetation communities have been influenced by past heavy grazing use, fire, and rehabilitation efforts. Several noxious weed species are present in the planning area and are increasing in abundance.

There are two major river systems: the Malheur and the Owyhee. Natural flows to Malheur and Owyhee rivers are modified by six major reservoirs, the largest of which is Owyhee Reservoir.

Although riparian and wetland areas cover less than 1% of public land in the planning area, they contribute substantially to ecosystem productivity and structural and biological diversity. Critically important to fish, birds, and other wildlife species, these areas also affect the quantity and quality of water available for irrigation, livestock watering, recreation, and other human uses.

Public land provides habitat for nearly 350 species of permanent or seasonally resident fish and wildlife, three species of which are listed (Table 2). None of the plant species found within the planning area are currently listed as Federal threatened or endangered, although 16 were candidates for listing under the Endangered Species Act (ESA). Twelve of these species are listed as either State endangered or threatened.

There are eight existing areas of critical environmental concern (ACEC) designated to protect and preserve special features or values. Main Owyhee, West Little Owyhee, and North Fork Owyhee rivers have been designated as national wild and scenic rivers (NWSR). Although no wilderness areas occur in the planning area, there are 32 wilderness study areas (WSA), covering 1,264,184 acres.

The planning area incorporates Malheur and portions of Harney and Grant counties. In 1996, the population of Malheur County was about 28,700. Personal income is substantially lower than the State average. Agriculture is an important part of the economy in both counties. Agricultural activity in Malheur County is based on labor-intensive crops and food processing; agriculture in Harney County is based on cattle ranching and hay production. For about 260 ranch permittees that rely on livestock grazing for their livelihood, a substantial portion of the necessary forage is produced on BLM-administered lands.

Recreation has increased markedly in recent years, primarily in the Trout Creek/Oregon Canyon Mountains and the Owyhee Wild and Scenic River. More than 97,000 recreation visits are made annually to the planning area. Recreational activities include camping, bicycling, hiking, horseback riding, sightseeing, hunting, fishing, and float boating.

Proposed SEORMP

The proposed SEORMP/Final Environmental Impact Statement (FEIS) is based on an analysis of 5 alternatives which were issued for public review in a Draft EIS. The proposed SEORMP/FEIS incorporated those public comments and suggestions which warranted further analysis or

clarification.

The SEORMP is a 20-year plan. Uses of public land, decisions, and direction are identified for management of resources which include energy and minerals, water, fire, vegetation, fish, wildlife, wild horses, special status species, livestock, recreation, special management areas, and lands and realty. Plan revisions within the 20-year time frame will be considered if resource conditions or issues are no longer adequately analyzed in the FEIS.

As the SEORMP is implemented, BLM is planning to evaluate geographic regions within each resource area, which will make it possible to examine resource conditions on a larger scale than individual grazing allotments or other artificial administrative boundaries. This is a significant change in approach for BLM.

Management under the Proposed SEORMP will be towards attainment of a Desired Range of Future Conditions. The Proposed SEORMP has a high level of natural resource protection and improvement in ecological conditions while providing commodity production. Additional constraints to commodity production would be implemented to protect sensitive resources.

On a site-specific basis, the adaptive management process will be used to implement the SEORMP. Management actions prescribed in activity plans (e.g., grazing allotment management plans) will be evaluated periodically to identify whether the objectives they were designed to attain are being met. If the evaluation reveals that resource objectives are not being met, then management changes would be implemented.

In the SEORMP, Federally listed species are addressed under Special Status Species. The objectives for Special Status animal species are:

1. Manage public land to maintain, restore, or enhance populations and habitats of Special Status animal species. Priority for the application of management actions would be: (1) Federal endangered species, (2) Federal threatened species, (3) Federal proposed species, (4) Federal candidate species, (5) State listed species, (6) BLM sensitive species, (7) BLM assessment species, and (8) BLM tracking species. Manage in order to conserve or lead to the recovery of threatened or endangered species.

clarification.

The SEORMP is a 20-year plan. Uses of public land, decisions, and direction are identified for management of resources which include energy and minerals, water, fire, vegetation, fish, wildlife, wild horses, special status species, livestock, recreation, special management areas, and lands and realty. Plan revisions within the 20-year time frame will be considered if resource conditions or issues are no longer adequately analyzed in the FEIS.

As the SEORMP is implemented, BLM is planning to evaluate geographic regions within each resource area, which will make it possible to examine resource conditions on a larger scale than individual grazing allotments or other artificial administrative boundaries. This is a significant change in approach for BLM.

resource objectives that provide pro-active habitat conservation management. These resource objectives are:

Fish and Aquatic Habitat

Restore, maintain, or improve habitat to provide for diverse and self-sustaining communities of fishes and other aquatic organisms.

Wildlife and Wildlife Habitat

1. Maintain, restore, or enhance riparian areas and wetlands so they provide diverse and healthy habitat conditions for wildlife.
2. Manage upland habitats so that the forage, water, cover, structure, and security necessary for wildlife are available on public land.

Specific management measures to meet these and other objectives for resources and uses of public lands are identified in Chapter 3 of the FEIS.

Relationship of the Proposed Action to Future Federal Actions

The SEORMP is considered to be a mid-scale planning document which links broad-scale efforts (such as the Draft Eastside EIS or the Healthy Rangelands [Range Reform] EIS) with implementation at the fine-scale or activity level. The SEORMP must be in compliance with the decisions made on broad-scale plans. As a mid-scale plan, the Proposed SEORMP identifies goals and objectives for the planning area. Activity plans identify actions to achieve these goals and objectives. Management actions and/or activity plans will be evaluated by interdisciplinary teams to determine appropriate management activities within certain geographic areas. These evaluations will be done using an ecosystem analysis process that looks at human and ecological features, conditions, processes, and interactions within geographic areas. The geographic areas that will be evaluated will vary in size, depending on the issues, concerns, and management objectives as determined by resource area managers and their staffs. Current activity plans will be revised, if necessary, to ensure consistency with SEORMP objectives.

Relationship of Section 7 Consultation for the SEORMP and Future Federal Actions

With few exceptions, the SEORMP does not describe site-specific activities. Because of this, determination of effects for site-specific activities and required Section 7 consultation will occur as those activities are planned. The effects of any site-specific activities described in the SEORMP that can affect species addressed by this BA are described below for individual species.

If new species are listed or proposed during the 20 years addressed by this BA, Section 7 consultation for the SEORMP will be reinitiated. The effects of site-specific activities on future listed or proposed species will be addressed when Section 7 consultation on the SEORMP is conducted for those species.

Table 1

*Acres per Type of Land
Ownership and Resource
Area*

Surface jurisdiction	Malheur	Jordan	Planning area
BLM Land			
Malheur County	1,982,572	2,462,711	4,553,628
Harney County	21,426	124,640	1,716,623
Grant County	9,299	0	9,299
	2,013,297	2,587,351	6,279,550
Other federal agency land			
Malheur County	51,842	48,487	100,329
State of Oregon			
Malheur County	101,467	176,347	278,278
Harney County	25,343	9,909	38,316
Grant County			
	126,811	182,256	316,594
Private			
Malheur County	1,081,194	274,364	1,359,595
Harney County	35,326	39,017	481,753
Grant County	12,411		12,411
	1,128,931	313,381	1,853,759
TOTALS	3,320,881	3,131,475	8,576,725

Table 2 Current federally listed, proposed, or candidate species addressed in this BA for the SEORMP

<u>Fishes</u>			
Bull trout	<i>Salvelinus confluentus</i>		T
Lahontan cutthroat trout	<i>Oncorhynchus clarki henshawi</i>		T
<u>Amphibian</u>			
Columbia spotted frog	<i>Rana luteiventris</i>		C
<u>Birds</u>			
Northern bald eagle	<i>Haliaeetus leucocephalus</i>		T
<u>Mammals</u>			
Canada lynx	<i>Lynx canadensis</i>		T
Gray wolf	<i>Canis lupus</i>		E
<u>Plants</u>			
Howell's spectacular thelypody	<i>Thelypodium howellii</i> <i>ssp. spectabilis</i>		T
Utes ladies'-tresses	<i>Spiranthes diluvialis</i>		E T

Chapter I Fishes

Bull trout (*Salvelinus confluentus*)

Consultations Regarding Bull Trout

The *Biological Opinion for the Effects to Bull Trout from Continued Implementation of Land and Resource Management Plans and Resource Management Plans as Amended by the Interim Strategy for Managing Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, Western Montana, and Portions of Nevada (INFISH), and the Interim Strategy for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH)* was finalized in August 1998. BLM determined that implementation of existing RMPs, as amended by the Record of Decision for INFISH, was likely to adversely affect the Columbia River distinct population segment of bull trout.

In 1998, Vale District BLM determined that ongoing site-specific livestock grazing actions were likely to adversely affect bull trout in the North Fork Malheur River corridor and has, to date, consulted annually with USFWS. Present grazing prescriptions and monitoring protocols are in concordance with biological opinions issued by the Service, and results of grazing monitoring appear annually in reports to USFWS and to the Interagency Implementation Team as per requirements of the PACFISH/INFISH Biological Opinion.

Bull Trout Distribution and Life History within the SEORMP area

Distribution

The bull trout, a char in the family Salmonidae, is found in cold waters throughout the Rocky Mountain and Cascade Ranges in Montana, Idaho, Oregon, Washington and in Alaska, Alberta, and BC. Bull trout have been eliminated from the mainstem of most large rivers in which they historically occurred. Many remaining populations are isolated in headwater streams. Bull trout numbers and distribution have declined from loss of habitat due to forest management practices, road building, dams, water diversions, mining, and grazing; poor water quality; past fisheries management; overharvest; and competition and hybridization with nonnative fish species.

Unless otherwise cited, life history and distribution data were obtained from Buchanan et al. (1997).

In the SEORMP area, bull trout occur in the North Fork Malheur River in the Malheur Resource Area, where BLM administers 4.5 river miles of migratory habitat. Because dams constructed at Warm Springs Reservoir in 1919 and Beulah Reservoir in 1934 prevent upstream fish passage, the North Fork Malheur bull trout are isolated from other populations in the Malheur Basin. Access to the Malheur River from the Snake River was limited after 1881 due to the construction of Nevada Diversion Dam on the lower Malheur River near Vale. Although no documentation exists prior to 1955, it is assumed that bull trout in Malheur Basin had access to

the Snake and Columbia rivers before dam construction. Historically, anadromous salmon and steelhead also spawned in the upper Malheur basin.

Bull trout migrate between headwater tributaries on Malheur National Forest, where they spawn in the fall, and Beulah Reservoir. Spawning does not occur within BLM ownership nor do records indicate that bull trout spawned historically here. However, migratory and possibly rearing habitat is present on BLM reaches in Upper and Middle North Fork Malheur watersheds. Information on bull trout subpopulation characteristics is limited, but interagency life history and distribution studies initiated in 1997 will facilitate recovery efforts.

Life History

North Fork Malheur bull trout appear to be adfluvial, migrating between streams where they spawn and Beulah Reservoir (Buckman et al. 1992). However, little is known about their abundance, distribution, and migration patterns and a significant proportion of the population may remain in the river throughout its life cycle. In other populations, spawners move upriver in spring and hold in upper tributaries in areas of cover (e.g. deep pools, logs, undercut banks). Spawning occurs in the fall, primarily in September-November when water temperatures reach 10° C. Redds are constructed in loosely compacted gravel or cobble, frequently near groundwater infiltration or springs. North Fork Malheur River bull trout spawn in the upper mainstem and in Elk, Swamp, Sheep, and Little Crane creeks. Numbers of redds observed during annual surveys have increased from eight redds in 1993 to 115 redds in 1999, though greater search effort and experience may account for some of this change (Perkins 1999).

Hatching is usually completed by the end of January and fry emerge from the gravel approximately in April. Juveniles depend on pockets of slow water behind unembedded substrate and especially woody debris for refugia. Bull trout growth rates appear to be correlated with water temperature, with fastest growth and largest sizes attained at lower temperatures (optimum = 4° to 10° C). Trout less than 110 mm feed on aquatic insects; those >110 mm are increasingly piscivorous. Mountain whitefish (*Prosopium williamsoni*), a common species in the North Fork Malheur River, is a preferred prey (Howell and Buchanan 1992). Multiple age classes ranging in fork length from 50 to 410 mm were sampled from the upper mainstem and tributaries in 1991-2 and fish up to 560 mm have been captured in Beulah Reservoir.

It is not known if all bull trout migrate downstream into the mainstem or if a component of the population residualizes and completes its entire life history in the tributaries. Ongoing interagency studies begun in 1997 have shown that radio tagged Beulah Reservoir adults leave the reservoir in April-May, passing through BLM-administered allotments on the river corridor, and reside in upper basin spawning areas throughout the summer, where optimum water temperatures for adult bull trout (12° to 15° C) are present. They return to the reservoir in late October after spawning.

A portion of the population is lost periodically over the spillway of Agency Dam at Beulah Reservoir. The facility is a barrier to upstream movement, and the fate of bull trout below the

dam is unknown. Anglers regularly catch bull trout below the dam, with catch rates especially high in spring and fall. In spring 1998, bull trout were caught on hook and line by Burns Paiute personnel and returned to the reservoir. One of these fish was radio tagged and subsequently migrated up the North Fork to spawning habitat.

Total bull trout numbers in the North Fork Malheur River headwaters were estimated in 1991-2 to be about 4,132 fish based on a multiple pass removal method. The increase in redd counts observed from 1996 to 1999 suggest an increase in abundance of adult bull trout. However, redd density is still low in good quality habitat areas and the size of the spawning population is well below the 300 adults thought to be needed to maintain genetic integrity (ODFW's Wild Fish Management Policy 1992).

Habitat Condition

Historic land uses affecting North Fork Malheur bull trout habitat include livestock grazing, timber harvest, road building, and irrigated agriculture. Effects have included increased stream temperatures as a result of riparian vegetation removal, increased sediment loads to stream channels, loss of potential for large woody debris, loss of streambank integrity, reduced flows from irrigation withdrawals, loss of fish at unscreened diversions, and blocks to migration from dams. In addition, earlier chemical poisoning projects conducted by ODFW may have killed bull trout.

Naturally occurring ecological events, such as the 1985-1994 drought, may have further stressed bull trout populations. Major forest fires along spawning streams occurred in the basin in 1989 and 1990, but long term impacts from these fires are not anticipated.

Monitoring

The objectives of implementation monitoring are to determine if a given standard or requirement is being properly applied on-the-ground as intended and documented. Monitoring sites were chosen in 1998 which accurately portray riparian or stream channel conditions for each pasture following grazing actions. Photopoints, modified Cole Browse transects, residual herbaceous stubble heights, and stream temperatures are measured in all allotments at the end of the growing season in October by BLM personnel. Stream temperatures are measured June through October.

Results of grazing monitoring appear annually in reports to USFWS and to the Interagency Implementation Team for meeting requirements of the Biological Opinion for effects of regional land use plans as amended by PACFISH/INFISH on bull trout.

Analysis of Effects

Table 1 summarizes the array of land use actions authorized under the SEORMP, the potential affects of these actions on bull trout habitat, SEORMP provisions for avoidance or mitigation of

adverse effects, and the determination of effects call.

Conclusion

BLM determines that implementation of the SEORMP is not likely to jeopardize the continued existence of the listed species, but that it may affect and is likely to adversely affect local bull trout populations. Specific land management directions addressed in the SEORMP that could have significant adverse effects to bull trout on public land are mining, especially for locatables, fire management, grazing, recreation, OHV use, and roads.

The SEORMP differs from other land use plans that applied INFISH direction as an interim aquatic conservation strategy to bull trout watersheds. Rather, the SEORMP incorporates the management objectives, standards, and guidelines outlined in INFISH into a permanent, long-term and comprehensive strategy for the planning area. In addition, the SEORMP implements aquatic conservation strategies on the watershed scale (Geographical Management Areas), thereby avoiding maintenance of fragmented networks of degraded habitat that do little to recover metapopulations.

in project description

Moreover, the document states explicitly and repeatedly that when specific land use actions in activity plans are proposed, BLM will: (1) determine if the actions may affect bull trout and (2) promptly initiate consultation with USFWS to avoid or mitigate impacts when a may-affect determination is made. BLM intends to keep lines of communication open through informal means with the Service so that any issues unforeseen in the SEORMP may be addressed as expeditiously as possible.

Lahontan Cutthroat Trout (*Oncorhynchus clarki henshawi*)

Consultations Regarding Lahontan Cutthroat Trout

Since 1992, BLM has initiated Section 7 formal consultation for grazing authorization in four allotments of the Coyote Lake and Quinn River basins where Lahontan cutthroat trout are present. These biological assessments have resulted in biological opinions of likely to adversely affect, but not likely to jeopardize the continued existence of the trout.

Actions presented by USFWS in the Lahontan Cutthroat Trout Recovery Plan (1995) included coordinating interagency activities to secure, manage, and improve habitat for all existing populations; develop reintroduction plans for Quinn River basin streams; and manage self-sustaining populations outside the native range (the Alvord basin) until their need as genetic repositories is over. BLM is presently in compliance with Recovery Plan recommendations.

Lahontan Cutthroat Trout Distribution and Life History within the SEORMP area

Distribution

The Lahontan cutthroat trout is an inland cutthroat subspecies endemic to the physiographic Lahontan Basin of northern Nevada, eastern California, and southern Oregon. Although somewhat hardier than other cutthroats, the Lahontan subspecies nonetheless requires cool water temperatures, deep-water refuges, and silt-free gravels for spawning. It was listed by the USFWS as endangered in 1970 and subsequently reclassified as threatened in 1975. USFWS recognizes a northwestern Lahontan basin population segment of Lahontan cutthroat trout which resides in the Upper Quinn and Alvord Lake subbasins of the SEORMP planning area.

In the Upper Quinn subbasin of Jordan Resource Area, Lahontan cutthroat trout occur in Sage and Line Canyon creeks, tributaries to the Quinn River. These trout are remnants of populations that historically inhabited the entire drainage. Trout from Sage Creek were transplanted above a falls into Indian Creek in 1980 and 1981, and a small population persists there. Hybridization with hatchery rainbow trout as well as interspecific competition with other exotic trout species (brook and brown trout) has reduced the distribution of pure Lahontan cutthroat trout in this subbasin.

Lahontan cutthroat trout of the Coyote Lake area, a drainage within Alvord Lake subbasin, are currently present in Whitehorse, Little Whitehorse, Fifteenmile, Doolittle, and Cottonwood creeks; in Willow Creek and its tributary B; and in Antelope Creek. Fifteenmile Creek fish are restricted by a natural barrier to the first 700 m above the mouth; Lahontan cutthroat trout from Whitehorse Creek were stocked above the barrier in 1971 but did not survive. Antelope Creek was stocked in 1972 with trout from Whitehorse Creek and a small population remains.

Origins

Recent electrophoretic and mitochondrial DNA research confirms that Coyote Lake cutthroat trout are genetically indistinguishable from Lahontan cutthroat trout of the Quinn River drainage, yet they show some divergence consistent with their geographic isolation (Williams 1991; Williams *et al.* 1992). Behnke (1992) suggests that Coyote Lake Lahontan cutthroat trout originated from a Quinn River headwater stream transfer that occurred before the unique Humboldt cutthroat evolved. Other theories of origin include a headwater capture from the Trout Creek drainage of Alvord Lake and an ancestral cutthroat trout migration directly into Coyote Lake drainage via Crooked Creek, the Owyhee River, and the Snake River (Behnke 1981). Others have speculated that Lahontan cutthroat trout were introduced by humans to Coyote Lake streams from the Quinn River drainage.

Life History

Life history information on Lahontan cutthroat trout in the SEORMP area is limited, but was summarized in ODFW's Lahontan Basin Fish Management Plan (1993). Fluvial Lahontan cutthroat trout spawn in the spring when water temperatures reach 5.5-9.0° C. Females mature at 3 to 4 years of age and males at 2 to 3 years. Consecutive-year spawning by individuals is uncommon. In a Summit Lake, NV population, spawning mortality reached 60-70% for females and 85-90% for males, with spawner repeat rates of 50 and 25% for surviving females and males, respectively. In Coyote Lake drainage, scales from a 4-year old fish from Whitehorse Creek indicated that it had spawned twice, although there was no evidence of spawning in eight

4-year fish from Willow Creek. This could be due to conditions unsuitable for spawning rather than sexual immaturity.

Lahontan cutthroat trout have a high tolerance to extreme environmental conditions imposed by the fluctuating water temperatures and flow levels in arid climates. These fish are able to grow when exposed to diel cycling temperatures ranging from 20-26° C (Dickerson 1997), though optimal temperatures average 9°-17° C, with average summer maxima <22° C (Lahontan Cutthroat Trout Recovery Plan 1995). A recent Oregon DEQ study recommended a conservative thermal maximum of 22° C for Oregon Lahontan cutthroat trout (Dunham 1999).

Limited scale data from trout taken in Whitehorse, Fifteenmile, and Willow creeks in 1967 and 1970 showed generally slow growth rates. Trout mature at 6-10 inches. The largest Lahontan cutthroat trout sampled in 1989 was a 13 inch fish from Whitehorse Creek. Size depends in part on type of habitat. In general, fish will grow larger in streams with large pools (beaver ponds), though population density and food availability also influence trout size.

In 1996, ODFW estimated (using multiple-pass reduction electroshocking) the Lahontan cutthroat trout population density for both Sage and Line Canyon creeks to be about 9000 fish. In Coyote Lake basin, a similar 1994 inventory suggested that the trout population was robust, with approximately 40,000 fish present. However, of the 70 miles of stream, less than 20 miles supported healthy fish densities.

Habitat condition

BLM has monitored riparian vegetation and stream channel characteristics from 1985, when livestock management was modified, to present on all Lahontan cutthroat trout streams in Jordan Resource Area. Analysis of BLM riparian studies indicates that upward trends are occurring along all streams. Effective livestock management has enhanced the growth and vigor of woody riparian species and shade levels have increased throughout the basin. Increased plant cover has also contributed to filtering of debris and stream sediment, improving bank stability and width:depth ratios.

Although riparian vegetation has recovered rapidly since 1989, a high percentage of instream fish habitat remains marginal. Many stream reaches have too few pools, excessive silt, and warm temperatures. Upward trend in fish habitat is dependent on riparian recovery, but because the physical structure of the stream channel must be altered before instream conditions can change, improvement in fish habitat has proceeded at a pace slower than that of riparian vegetation.

Currently, beaver ponds are the primary source of pools in the Coyote Lake drainage. Beavers play an important role in the basin. While they remove some of the willow, alder, and aspen trees, they provide pools for holding adult and juvenile fish during summer and winter. Deep pools ensure valuable rearing refugia for trout during periods of low stream flow and prevent the formation of anchor ice. Beaver impoundments also store fine sediments, allow the stream to aggrade, and extend the floodplain. Research funded by ODFW and BLM in 1997-1998

showed that spawning and rearing in lower Willow Creek was associated with a complex of beaver ponds.

Specific limiting factors

Historic land uses affecting Lahontan cutthroat trout habitat in the planning area have primarily been livestock and feral horse grazing and irrigated agriculture. Concentrations of livestock in riparian areas have caused loss of undercut banks and other cover, increased silt loads, and increased width:depth ratios which ultimately lead to elevated summer water temperatures. Lowering of water tables caused by vegetation removal and downcutting exacerbated low flows during drought.

Livestock grazing and water diversions provide the major conflicts with Lahontan cutthroat trout management. However, current grazing practices along Lahontan cutthroat trout streams have proven to be compatible with riparian recovery and improving fish habitat. Because of the fragile nature of the resource, even brief livestock trespass could result in serious habitat degradation.

Because Lahontan cutthroat trout evolved without other salmonids, they appear to be poorly suited to competition with nonnative stream trout (Behnke 1992), and Quinn River basin populations were impacted by introductions of brook, brown, and rainbow trout. Introductions have not occurred in the Coyote Lake or Alvord populations.

Monitoring

BLM has monitored riparian vegetation and stream channel characteristics from 1985, when livestock management was modified, to the present on all Lahontan cutthroat trout streams in Jordan Resource Area. Monitoring methods include photopoints, vegetation transects, macroinvertebrate sampling, low level aerial imagery, and stream profiles. BLM range riders monitor grazing utilization in riparian pastures, which is not to exceed 20 to 30% use of previous year's growth on woody vegetation. Once this use is reached the livestock operator would be notified to remove his cattle.

The Oregon Department of Fish and Wildlife conducted stream habitat and fish surveys in the Coyote Lake and McDermitt basins during 1992-96. Their quantitative physical habitat surveys described channel morphology, riparian conditions, and instream habitat. In addition, stream temperatures have been monitored at various sites since 1992 using continuously recording thermographs.

Analysis of Effects

Table 1 summarizes the array of land use actions authorized under the SEORMP, the potential affects of these actions on Lahontan cutthroat trout habitat, SEORMP provisions for avoidance or mitigation of adverse effects, and the determination of effects call.

Conclusion

BLM determines that implementation of the SEORMP is not likely to jeopardize the continued existence of the listed species, but that it may affect and is likely to adversely affect local Lahontan cutthroat trout populations. Specific land management directions addressed in the SEORMP that could have significant adverse effects to Lahontan cutthroat trout on public land are mining, especially for locatables, fire management, grazing, recreation, OHV use, and roads. ✓

The SEORMP differs from other land use plans that applied INFISH direction as an interim aquatic conservation strategy to bull trout watersheds. Instead, the SEORMP incorporates the management objectives, standards, and guidelines outlined in INFISH into a permanent, long-term and comprehensive strategy for all fish habitat in the planning area. In addition, the SEORMP implements aquatic conservation strategies on the watershed scale (Geographical Management Areas), thereby avoiding maintenance of fragmented networks of degraded habitat that do little to recover metapopulations.

Moreover, the document states explicitly and repeatedly that when specific land use actions in activity plans are proposed, BLM will: (1) determine if the actions may affect Lahontan cutthroat trout and (2) promptly initiate consultation with USFWS to avoid or mitigate impacts when a may-affect determination is made. BLM intends to keep lines of communication open through informal means with the Service so that any issues unforeseen in the SEORMP may be addressed as expeditiously as possible.

Table 1

Analysis of Effects of Land Use Authorizations Identified in the SEORMP on Bull Trout (BT) and Lahontan Cutthroat Trout (LCT)

Land Use	Potential Effects of Use on Fish Habitat	SEORMP Provisions for Avoidance or Mitigation of Effects	Effects Determination of SEORMP provisions
<p>Energy and Mineral Resource Development</p>	<p>Impairment of water quality and riparian integrity from machinery operation and surface disturbance; contamination from toxic or acidic effluents from mines or chemicals used in exploration or operations; possible impairment of water quality from road construction related to transport of mining materials</p>	<p>Adjustments in location, timing, and duration of minerals activities in RCAs will be required. Operations outside RCAs must maintain and protect fish habitat or mitigate for impacts. Currently, no mining claims occur in BT watersheds and there are no active mines in LCT watersheds.</p>	<p>LAA due to difficulty of complete avoidance or mitigation of sedimentation, chemical spills, and surface disturbance, especially for locatables</p>
<p>Fire Management</p>	<p>No impacts if fires are suppressed before entering RCAs; within RCAs, short-term adverse effects to water quality may occur if RCA not at PFC; short-term impacts of drafting water from streams; fire suppression activities upland in the watershed may result in short term inputs of sediment to streams; possible impairment of water quality from fireline construction related to fire suppression</p>	<p>All fire management actions will be designed to allow attainment of RMOs, including locating fire camps and helitack ports outside RCAs. Proposals for prescribed fire management in BT or LCT watersheds will require consultation with USFWS prior to ignitions.</p>	<p>LAA due to short-term impacts likely in emergency or catastrophic fire suppression activities</p>
<p>Rangeland Vegetation Management</p>	<p>Long-term beneficial effects through reduced likelihood of catastrophic fire; improvement in rangeland forage will attract grazing animals to uplands, decreasing likelihood of overuse in RCAs; input of sediment to streams caused by management operations will cause short term negative impacts</p>	<p>All vegetation management actions, including use of prescribed fire, will be designed to allow attainment of RMOs</p>	<p>NLAA due to avoidance and protection of RCAs</p>

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Land Use	Potential Effects of Use on Fish Habitat	SEORMP Provisions for Avoidance or Mitigation of Effects	Effects Determination of SEORMP provisions
<p>Forest and Woodlands Management</p>	<p>Long-term beneficial effects through reduced likelihood of catastrophic fire; increased forage in uplands will attract grazing animals, decreasing likelihood of overuse in RCAs; input of sediment to streams caused by management operations will cause short term negative impacts</p>	<p>Timber harvest will be prohibited in RCAs with listed fish unless catastrophic events (e.g., fire, flood, insects) result in degraded riparian conditions that would benefit from salvage, and where salvage would not adversely affect bull trout or retard or prevent attainment of RMO's; proposals for forest management in BT or LCT (aspen) watersheds will require consultation with USFWS.</p>	<p>NLAA due to avoidance and protection of RCAs</p>
<p>Water Resources and Riparian/Wetlands Management</p>	<p>Long-term beneficial effects through attainment of water quality standards and riparian health; short-term negative effects may occur if ground is disturbed during project implementation</p>	<p>Any short-term negative effects will be minimized or eliminated through BMPs and mitigation; proposals for riparian management in BT or LCT watersheds will require consultation with USFWS.</p>	<p>NLAA due to long-term beneficial effects to RCA and minimization of short-term impacts</p>
<p>Rangeland/Grazing Use Management</p>	<p>Degradation of water quality and bank stability from presence of livestock</p>	<p>Grazing in RCAs will be managed to meet standards of Rangeland Health and to maintain or enhance RMOs; proposals for changes in grazing management in BT or LCT watersheds will require consultation with USFWS.</p>	<p>LAA due to slower rate of RCA restoration with livestock present</p>
<p>Recreation Management</p>	<p>Degradation of water quality and bank stability from concentrated recreational use or development of facilities; negative impacts from harassment of fish may occur due to presence of recreationists or their equipment in spawning or rearing areas; ground disturbance caused by traffic in uplands may increase sediment input to streams.</p>	<p>Use limitations or closures will be implemented if RMOs are not met; new recreational facilities will not be constructed in RCAs.</p>	<p>LAA due to time lag between degradation of RCAs and implementation of use limits or closures</p>

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Land Use	Potential Effects of Use on Fish Habitat	SEORMP Provisions for Avoidance or Mitigation of Effects	Effects Determination of SEORMP provisions
Off Highway Vehicles	Degradation of water quality and bank stability from concentrated use in RCAs; negative impacts from harassment of fish may occur due to presence of OHVs in spawning or rearing areas; ground disturbance caused by traffic in uplands may increase sediment input to streams.	Use limitations or closures will be implemented if RMOs are not met	LAA due to time lag between degradation of RCAs and implementation of use limits or closures
Areas of Critical Environmental Concern	Beneficial effects through protection of habitat for BT and LCT from other land uses, such as mining	ACEC management promotes attainment of healthy and self-sustaining plant and animal communities; the North Fork Malheur River and Little Whitehorse Exclosure ACECs affect listed fish	NLAA
Wild & Scenic Rivers	Results in generally beneficial effects through protection of habitat for BT and LCT, which are considered Outstandingly Remarkable Values; increased levels of public use may degrade riparian condition or cause harassment to fish	Wild & Scenic River uses are allowed to the extent that they do not adversely affect BT or LCT; North Fork Malheur Wild & Scenic River designation affects BT.	NLAA
Cultural Resource Management	No direct or indirect impacts anticipated	No mitigation or avoidance measures identified.	No Affect

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Land Use	Potential Effects of Use on Fish Habitat	SEORMP Provisions for Avoidance or Mitigation of Effects	Effects Determination of SEORMP provisions
<p>Land and Realty Management</p>	<p>Potentially results in positive or negative effects to habitat resulting from a wide range of anticipated land and realty actions; potentially adjusts the amount of listed fish habitat held in public ownership</p>	<p>Land acquisitions or exchanges may increase the amount of habitat held in public ownership; exchange of lands with listed fish habitat would be avoided in accordance to BLM policy.</p> <p>Adjustments in location, duration, and timing of lands and realty related activities such as road construction and issuance of rights-of-way will be required when they are likely to impact listed fish habitat.</p>	<p>NLAA</p>
<p>Roads</p>	<p>Major source of sediment transport from surface disturbances to stream systems; road use is associated with most land use practices; road construction may occur with mining, fire suppression, forest/woodland management, recreation or lands and realty related activities.</p>	<p>Road and drainage features that retard attainment of RMO's would be relocated or reconstructed; new roads would meet RMO's and avoid adverse effects to listed fish, but construction of new roads in areas which could impact listed fish would be extremely unlikely.</p>	<p>LAA due to difficulty of complete avoidance of sedimentation and surface disturbance</p>

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Chapter II

Bald eagle (*Haliaeetus leucocephalus*)

Consultations Regarding the Bald Eagle

Formal Consultation for Animal Damage Control was proposed by USDA-APHIS in Malheur Resource Area and Jordan Resource Area, November 10, 1992, BLM Environmental Assessment # OR-03-92-14. Consultation was completed with the U.S. Fish and Wildlife Service, Portland Field Station, USFWS Reference 1-7-93-I-35.

ESA Federal Listing History

The US Fish and Wildlife Service (USFWS) listed bald eagle populations south of the 40th parallel as endangered under the authority of the Endangered Species Protection Act (ESPA) in 1967 (32 FR 4001). Eleven years later in 1978, their status was re-examined and eagles resident in the lower 48 states were separated into areas with a threatened status and an endangered status. Populations in Michigan, Minnesota, Wisconsin, Oregon, and Washington were all assigned a threatened status (43 FR 6233). In 1995, bald eagles were once again reassessed and down-listed from endangered to threatened in all of the lower 48 states (60 FR 36000).

Due to successful recovery efforts over the last 30 years, the USFWS has recently proposed to remove the bald eagle from the endangered species list altogether. The Service's de-listing proposal, which was published in the Federal Register on July 6, 1999, has yet to occur. If the bald eagle is de-listed in the future, the ESA requires the USFWS to monitor their population status for a period of five years after de-listing. Subsequent to de-listing, detection of a downward population trend would be reason for the USFWS to invoke an emergency re-listing of the species under the authority of the ESA.

In terms of USFWS conservation and recovery planning efforts, bald eagles within the SEORMP occur in one of five established recovery regions in the United States, and are currently addressed within the *Pacific Region Bald Eagle Recovery Plan* (USDI/FWS 1986). Table 1 provides some specifics from the recovery plan concerning management of land uses and breeding population targets applicable to the SEORMP.

General Life History/Distribution

Population dynamics for bald eagles throughout their North American range

In 1782, it was estimated that as many as 100,000 nesting birds lived in the continental United States, excluding Alaska. By 1963, only 417 pairs were found in the lower 48 states. Over the past 30 years, the bald eagle population has nearly doubled every 7 to 8 years. With annual spending exceeding \$1 million during the period 1985-1995, USFWS data show that in the lower

48 there were 4,712 nesting pairs in 1995, and 5,748 in 2000.

Beginning in the mid- to late-1800's, a decline in eagle populations was attributed to a drop in waterfowl and shorebird prey populations, direct killing, and habitat destruction. The Bald Eagle Protection Act of 1940 (16 U.S.C. 668) prohibited direct killing in most of the eagle's range except Alaska, where the state paid a bounty for killing eagles to protect the salmon fishery. In 1952, the exemption allowing Alaska's bounty was revoked.

Following World War II, the widespread use of the organochlorine pesticide DDT caused significant reproductive failure, leading to another sharp decline in eagle populations. DDE, the primary breakdown product of DDT, caused eggshells to be thin and to break easily. The EPA banned the use of DDT in the United States in 1973 (37 FR 13369). Pesticides used in recent times have not impacted bald eagle population levels (60 FR 36000), although illegal use of pesticides has resulted in mortality on western rangelands corresponding primarily with wintering areas.

Illegal shooting and electrocutions from power poles and lines continue to be threats, although steps have been taken to stop mortality from these direct and indirect actions.

Bald eagle winter habitat requirements in the Pacific Recovery Area

According to Marshall et. al. (1996), bald eagles winter in every county within Oregon. The highest concentrations are found in local areas that support dependable food sources such as the Klamath Basin, Harney Basin, Snake River and Columbia Rivers. Table 2 shows mid-winter bald eagle counts in Oregon and Recovery Zone 37, which includes the SEORMP planning area.

According to the *Pacific Bald Eagle Recovery Plan* (1986), it is typical for wintering bald eagles to perch on a variety of forest substrates depending upon regional habitat types and stand structure. Perch proximity to a food source is described as probably the most important factor in determining roost site selection; they are invariably located near feeding areas. Although the stereotypical food source for bald eagles is anadromous fish, they are not the only important food source. Within Klamath Basin, for example, eagles forage extensively on suckers.

Most tree perches selected by eagles tend to be the highest sites available that offer a good panoramic view of the surrounding area. Although the context for much of the literature on bald eagle winter use is forest types, they will readily use other tree or tree-like structure for perching including cottonwoods and tree-form willow. It has been reported that artificial perches may be important to wintering bald eagles where natural structure is lacking.

Habitat requirements differ for communal night roosting and diurnal (daytime) perching. Communal roosts are not only typically found near rich food sources, such as runs of anadromous fish or high concentrations of waterfowl, but where forest stands are uneven aged and exhibit at least a remnant old growth characteristics. Research in the Klamath Basin of Oregon showed that eagles used old growth as far as 15 km (about 8 ½ miles) from their food source for communal

night roosting.

Most communal winter roosts used by bald eagles within the recovery area have attributes that offer considerably more protection from the weather than diurnal habitat, thereby facilitating energy conservation and winter survival during severe cold. This is an important matter for the SEORMP area because it is certainly a region which often sustains severe winter cold conditions (0 to -30 degrees F).

Isolation is described as an important feature of bald eagle wintering habitat. The nature of human activities (timing, duration, and intensity) will determine whether or not they rise to levels which cause eagles to vacate an area. For instance, automobile traffic appears to be one of the least disturbing activities because eagles apparently often become habituated to their presence on and near roads. The same cannot be said about other activities such as motor-boating which can cause eagles to depart from an area. It is thought that excessive human activity is probably the reason that some suitable but yet unoccupied wintering habitats are not being used by eagles.

Bald Eagle breeding habitats within the Pacific Recovery Area

According to the *Pacific Bald Eagle Recovery Plan*, most bald eagle nests in the Pacific Recovery Area are located in uneven-aged conifer stands near water bodies which support an adequate food supply; primarily fish. These are typical habitats found in western and south-central Oregon, and they are atypical within the SEORMP area. Even though there are forest habitats that may be suitable for bald eagle nesting near Beulah Reservoir in MRA, no bald eagle summer use has been reported since 1980.

Some nesting in Idaho has been reported in large cottonwood stands (*Populus* spp), presumably near major river systems that may also support good quality fishery resources.

Specific Life History and Distribution of Bald Eagles within the SEORMP area

General Overview

As of 2000, no bald eagle nesting has been documented on public land within any of the BLM resource areas addressed in the SEORMP, but wintering populations migrate into southeast Oregon from breeding habitats located outside the planning area. Table 3 shows results from bald eagle winter surveys for sites within the planning area. The average combined winter bald eagle census in JRA and MRA accounts for less than 1/2 of 1% of the total Oregon winter population, reported by Oregon Eagle Foundation to be about 579 birds (Table 2).

For bald eagle planning and assessment purposes, the SEORMP falls within USFWS's Pacific recovery area. As such, BLM used the *Pacific Bald Eagle Recovery Plan* (1986) and the *Working Implementation Plan for Bald Eagle Recovery in Oregon and Washington* (1990) as primary information sources for determining which issues to consider in this Biological Assessment and what kinds of potential impacts needed to be addressed.

MRA and JRA Winter Habitat Characteristics

Bald eagles are winter residents in MRA and JRA, utilizing open water on major stream systems and impoundments including Owyhee Reservoir, Beulah Reservoir, Bully Creek Reservoir, Malheur Reservoir, Owyhee River, Malheur River, North Fork Malheur River, Succor Creek, Cow Lakes and Batch Lake. Under severe winter cold conditions surface waters freeze and cause eagle dispersal into nearby open water where food sources such as waterfowl can be found. Based on conversations with federal biologists at Deer Flat National Wildlife Refuge, it is apparent that ice closure on the Owyhee and Malheur River drainages correlates with increased numbers of eagles on the Snake River where the water stays open and waterfowl are abundant.

Major stream systems that support bald eagles in MRA and JRA typically support woody riparian communities comprised of willow, cottonwood, ponderosa pine, alder, box elder, or juniper. BLM administered habitats with mature deciduous or coniferous structural characteristics are generally limited in both resource areas.

The limited distribution of mature cottonwoods on public land is probably due to a variety of reasons including improper grazing use within riparian corridors, land use practices on privately owned property, and modified river flow regimes resulting from the construction of irrigation reservoirs that service the western Treasure Valley. Periodic harvest of mature trees by beaver has probably contributed toward a loss of mature overstories and a general downward spiral of habitat loss.

The cumulative effect of all these influences over time is an interruption to normal flood-plain functions such as bank scouring, soil deposition, complex plant community formation and aquifer recharge. When these stream function processes are impaired over a long enough period of time, cottonwood dominated riparian systems either disappear or survive at diminished levels in contrast to their site potential.

The following public land areas within MRA either currently support mature cottonwood communities or will do so within the next several decades:

- 1) Immediately below Owyhee Dam (Townships 21/22 North, Range 45 East)
- 2) The southern tail-water of Owyhee Reservoir (Township 26 South, Range 43 East)
- 3) Succor Creek (Township 24 South, Range 46 East)

Coniferous roosting habitat such as ponderosa pine is confined to northern the regions of MRA in the vicinity of the North Fork of Malheur River (Township 18 South, Range 37 East). There are no forest habitats in JRA. As described in the SEORMP FEIS, MRA forested habitats are at the edge of the Blue Mountain physiographic province. At best they offer fragmented, transitional forests that are intermingled with sagebrush steppe, mountain shrub, and juniper woodlands.

It is possible that forested habitat in MRA provides communal night roost and/or diurnal roosting habitat for bald eagles. However, existing forest survey data are insufficient to ascertain the amount and location of resources which may meet the criteria of bald eagle roosting habitat.

Furthermore, mid-winter surveys have not included upper elevation forest habitats because of limited road access due to snow-cover. An existing wildlife habitat management plan around Castle Rock prescribes forest management practices only to the extent that they enhance wildlife habitat character. This land use allocation was a NEPA based decision made under the existing land use plan and it has been the underpinning for avoidance of commercial harvest around castle Rock for the last 15 years.

MRA and JRA Breeding Habitat

There is no documented breeding activity by bald eagles within MRA and JRA. It is possible that bald eagles were breeders in Malheur County prior to the construction of Hells Canyon Dam, but salmon are no longer able to migrate up the Columbia River and into the Owyhee River drainage. The nearest monitored nest site is located about ten miles northwest of Malheur County near Unity Reservoir. ✓

As described above, the planning area generally supports limited cottonwood and conifer habitats so that structural components for successful nesting are also limited.

Perhaps even more significant in terms of bald eagle breeding habitat, the aquatic prey base is relatively poor due to an inadequate quantity and size of fish required for feeding young and supporting adults. The generally muddy water conditions in reservoirs and major streams further contribute to limited forage habitat quality for bald eagles by reducing their ability to locate prey fish that may be present. This is not to suggest that there are no fish food sources for eagles or that the entire fish prey base is unavailable due to high suspended sediment levels. The fish forage base is simply limited in contrast to other more significant wintering areas within the state.

Due to the combined effects of (1) limited habitat structure for nesting, (2) a limited fish forage base, and (3) long distances to nearby breeding populations (e.g. potential sources of new nesting pairs), the Beulah Reservoir, Bully Creek Reservoir, Malheur River, Owyhee Reservoir and Owyhee River systems "probably don't have potential for use by nesting bald eagles at the present time" (*Working Implementation Plan for Bald Eagle Recovery in Oregon and Washington*, 1990) (see Attachment #1). BLM verified this determination in phone conversations with Frank Isaacs and Bob Anthony (OSU Research Biologists). BLM believes that this 1990 assessment about habitat potential is still true in 2000, although the status could conceivably change in the future because bald eagle population recovery and expansion is still ongoing.

Due to the fact that not even occasional breeding season observations (those where adults persist in an area through the May/June period) were made in MRA or JRA through 2000, no systematic breeding season searches for bald eagles have been pursued. It is typical for the general public to report highly visible and charismatic species such as bald eagles to BLM if they are in the area. Moreover, Isaacs and Anthony (1998) did not report any nesting activity within the planning area. This indicates that there do not appear to be any nest site locations confirmed by others that might have been overlooked by BLM and ODFW biologists.

Some mature bald eagles were reported from 1997 and 1998 on private land along Birch Creek in

northern Malheur County (Township 15 South, Range 45 East, section 18). These observations are reliable and were made by retired ODFW biologist Bill Olson and Tim McBride, a local rancher. To date there has been no survey conducted to determine if the birds observed are actually breeding in the area or simply roosting periodically after foraging on the Snake River around Farewell Bend.

Summary of Inventories and Surveys

General Winter Use Surveys in MRA and JRA

MRA and JRA bald eagle survey data are compiled and stored within an internal BLM planning document known as the Analysis of the Management Situation (AMS).

By helicopter, BLM inventoried mid winter bald eagle use on the Owyhee River starting at Mitchell Butte (T21S R46E section 6) and ending at Fivebar (T36S R45E section 15) from 1982 through 1985 (Table 2). The average count during this time period was about 15 birds, with a low of 11 and a high of 18. BLM surveys were coordinated with ODFW to avoid inventory overlap and allow for a true winter population estimate within the county. The highest combined count with reasonable assurance of no census overlap between BLM and ODFW biologists was recorded in 1983 when 45 eagles were observed. Due to the general consistency in the number of birds observed over this time period and the high costs associated with helicopter flights, no winter surveys have been conducted since 1985.

The ODFW has surveyed mid-winter bald eagles on vehicle routes that have included the Malheur River, North Fork Malheur River, Beulah Reservoir, Bully Creek Reservoir, Malheur Reservoir and Succor Creek. The average ODFW count between 1988 and 1998 (excluding 1993) has been about 6 eagles. Since the start of these ODFW surveys in 1979, counts have varied from 0 to 28 eagles (Table 3).

Audubon Society mid-winter bird count data have been gathered from 1994 through 1997 in the "Lower Owyhee Valley" sampling area in Vale District. This census occurs near Adrian. It is primarily an Oregon census but takes in part of Idaho on the east side of the Snake River at Big Bend. Audubon counts have indicated low levels of bald eagle use. Two bald eagles were seen in 1997 and only one was observed each year from 1994 through 1996.

Statewide surveys of mid-winter bald eagle use in Oregon have been conducted since 1979. Based on Oregon Eagle Foundation, Inc. (1997) data, Oregon has been shown to support an average of about 579 bald eagles per year since 1979 (Table 2). These surveys have been conducted by using a variety of agencies and individuals throughout the state. The data acquired have been compiled, analyzed and redistributed to various government and wildlife management entities by Oregon Eagle Foundation, lead by Frank Isaacs and Bob Anthony, both of whom are associated with Oregon State University in Corvallis.

Two known cases of nest building behavior have been observed; one near Vale and another on cliffs adjoining the Owyhee River near Sand Springs close to Rome, OR. In both cases adults did

not remain within the area and nest.

BLM Owyhee River rangers involved in the administration of recreation use have no records of bald eagle occupancy past April. Data compiled from river log reports (1992 through 1997) show a total of 5 bald eagles observed between late February and late March. Observations made during this time period are almost exclusively within the Rome Valley and downstream for about 10 miles. The area is comprised of private land which supports mature stands of cottonwood trees.

Communal Night Roost Surveys in MRA and JRA

No specific BLM or ODFW inventories have been conducted for the purpose of locating communal night roosts in Malheur County. It is quite possible that there are consistently used roosting areas on public land that biologists have not detected.

The only known tree roost site that is used relatively consistently is on private land adjacent to the Malheur River just outside of Vale. This site has been known by BLM for some years because wintering eagles can easily be seen by casual observers traveling on the highway between Vale and Ontario. This roost is immediately downstream from the confluence of a geothermal spring which delivers warm water into the Malheur River and frequently attracts waterfowl.

Monitoring

Any consistent follow-up monitoring on bald eagle use of Owyhee drainage above Owyhee Dam is unlikely because of high aircraft contract costs and limited BLM budgets. Periodic flights may occur if funding is specifically earmarked for this purpose. This forecast could change if winter surveys within the SEORMP become necessary for conservation or recovery of the species or if budgets substantially increase. This interpretation of future allocations of inventory money is consistent with Special Status species objectives for the SEORMP area.

If harvest or forest health actions are considered in likely roosting habitat, monitoring to determine absence/presence of night roosts in suitable forest types within MRA would be required for several years prior to the action. As already discussed in this document, no night roost monitoring or survey has been completed to date.

Analysis of Effects

Table 4 summarizes the array of land use actions authorized under the SEORMP and the ways in which they could effect bald eagle habitat. The table describes direct, indirect, and interrelated/interdependent impacts. The table summaries were used to arrive at the summary conclusion presented below and they help lead to the basis for the cumulative effects determination described below.

Cumulative Effects

Given the character of bald eagle winter habitat within the SEORMP area and the land uses and

avoidance measures foreseen, BLM does not believe there are any creeping and incremental adverse impacts associated with implementation of the SEORMP.

There are no data available regarding the habitat conditions and trends on private lands supporting bald eagle winter use within the planning area and it is not possible to ascertain with any degree of certainty what may reasonably be expected to occur on private lands in the future. Consequently, the cumulative effects of private and federal land use actions on bald eagle winter use over the next 20 years is unknown. Excluding uncontrollable natural events, BLM assumes that public lands are the only secure source of tree structure (coniferous or deciduous) to support ongoing winter use and potential future nesting use in Malheur County.

There are no breeding pairs identified on public land within the planning area, so no effects on bald eagle production would occur.

Avoidance measures resulting from future consultation (when specific actions are proposed) are highly likely to be effective in meeting the continued conservation and recovery goals for bald eagles.

Conclusion

The proposed Southeast Oregon Resource Management Plan is not likely to adversely affect bald eagle winter or breeding habitat in Oregon. Because the SEORMP is a mid-scale planning document, there are no specific projects identified which may be interpreted as having significant direct, indirect, interrelated and interdependent, or cumulative adverse effects to bald eagles in the planning area.

As of the year 2000, no bald eagle nesting has been documented within any of the BLM resource areas addressed in the SEORMP. Wintering populations migrate into southeast Oregon from breeding habitats located outside the planning area. The average combined winter bald eagle census in JRA and MRA accounts for less than ½ of 1% of the total winter population in Oregon which is reported to be about 579 birds according to 1979 to 1997 Oregon Eagle Foundation data. Moreover, the SEORMP states explicitly under Chapter 1 Planning Criteria that when specific authorizations in activity plans are proposed, BLM will:

- 1) determine if they may have an effect on bald eagles
- 2) promptly initiate consultation with the U.S. Fish and Wildlife Service for the purpose of impact avoidance when a may effect determination has been made.

Through informal means and the consultation streamlining processes, BLM will keep lines of communication open with the Service so that any Section 7 issues that may have been unforeseen in the SEORMP may be addressed in a timely manner.

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Table 1

(a) USFWS Recovery Zone 16 (Boise Valley) Key Areas--from *Working Implementation Plan for Bald Eagle Recovery in Oregon and Washington* (USFWS 1990)

Names of Key Areas	Existing # of Breeding Territories	Target for Breeding Territories	Current Wintering Population
Malheur River	0	1	10
Owyhee River	0	1	10
Cow Lakes	0	0	15
Lake Owyhee	0	1	0
Bully Creek Reservoir	0	1	0
Beulah Reservoir	0	1	0

(b) Recovery Plan Site-Specific Tasks--from page 125, *Working Implementation Plan for Bald Eagle Recovery in Oregon and Washington* (USFWS 1990)

1.3211	Prohibit logging of known nest trees, perch trees, and winter roost trees
1.3214	Develop contingency plans to protect nesting and winter habitat in emergencies, e.g. wildfires pre-attack or prevention planning
1.3215	Preserve snags in eagle use areas
1.332	Exclude logging construction, habitat improvements, and other activities during critical periods of eagle use
1.333	Prohibit building construction near key bald eagle nesting and wintering habitats
4.11	Reduce bald eagle mortality associated with shooting and trapping
4.121	Restrict use of poisons detrimental to eagles in predator and rodent control programs within important bald eagle nesting and winter habitat
4.123	Develop contingency plans to deal with disease and contaminant emergencies

Table 2

1979 to 1997 Midwinter bald eagle counts

State of Oregon and Recovery Zone 37 Data

Source : Oregon Eagle Foundation (1997)

State of Oregon Data

Year	Count
1979	493
1980	602
1981	529
1982	384
1983	354
1988	390
1989	513
1990	701
1991	780
1992	585
1993	643
1994	676
1995	712
1996	649
1997	681
<i>avg</i>	579.47
<i>sdv</i>	131.19
<i>max</i>	780.00
<i>min</i>	354.00

Recovery Zone 37 Data

Year	Count
1979	3
1980	16
1981	7
1982	25
1983	45
1988	7
1989	1
1990	5
1991	12
1992	9
1993	12
1994	10
1995	4
1996	4
1997	5
<i>avg</i>	11.00
<i>sdv</i>	11.18
<i>max</i>	45.00
<i>min</i>	1.00

Table 3

Bald eagle winter surveys, 1979 through 1997 - Oregon Department of Fish and Wildlife data gathered by vehicles. Total number of adults and young seen on January routes that included major reservoirs, the Malheur River, and the Owyhee River below Owyhee dam.

Year	Number Observed	Year	Number Observed
1979	3	1991	12
1980	16	1992	9
1981	7	1993	no data
1982	17	1994	6
1983	28	1995	2
1988	7	1996	4
1989	0	1997	5
1990	5	1998	2

sum of all years = 123, average = 8.2

Bald eagle winter surveys, 1982 through 1985 - Bureau of Land Management data gathered by helicopter. Total number of adults and young seen on January surveys between Mitchell Butte and Fivebar on the main stem Owyhee River.

Year	Number Observed
1982	13
1983	17
1984	18
1985	11

sum of all years = 59, average = 14.75

Table 4 Land Use Practice or Activity	Potential Direct Impacts	Potential Indirect Impacts	Interrelated and Interdependent Impacts	SEORMP Provisions and Effects Determinations
Energy and Minerals Development or Exploration	Direct losses of winter roost sites due to surface disturbances; disruption of security due to noise and human activity.	Poisoning of eagles from ingestion of prey that have been contaminated from intake of chemicals used in exploration or development	Noise or disturbance related to the transport of mining related materials near roost sites.	NLAAs because adjustments in the location, timing, and duration of energy/minerals activities will be required when they would likely interfere with bald eagle security. NLAAs due to the fact that handling, storage, disposal etc of hazardous materials will conform to Oregon Department of Environmental Quality standards.
Fire Management	Direct loss of roost sites for the purpose of protecting human safety.	None identified.	Disturbances to winter roost security as a result of forest management practices being proposed adjacent to winter roosting habitat.	NLAAs because potential roosting habitat will be identified in fire activity plans so that steps can be taken to avoid losses resulting from wildfires; BLM will specify on maps where biologist input will be required if wildfire occurs. NLAAs because proposals for the pro-active reintroduction of fire into forest habitats used by bald eagles will require consultation with the US Fish and Wildlife Service prior to any ignitions.
Rangeland Vegetation Management	None identified.	Short term contribution of some suspended sediments into streams and reservoirs resulting in reduced visibility of prey.	None identified.	NLAAs because sagebrush steppe habitats are to be managed to meet standards of Rangeland Health which support a variety of habitats and animals. This provision promotes the general support of a variety of prey items for bald eagles.
Forest and Woodlands Management	Loss of mature growth and uneven aged character of forest habitat used by bald eagles; removal of snags for human safety and sales administration purposes; disruption of habitat security due to administrative activities associated with timber sales or forest health mgmt. prescriptions.	Loss of habitat security due to access and activity near to wintering activities.	Same as indirect effects but for reasons related to activities "near to but not directly overlapping with" winter roost sites; e.g. roads access or yarding areas that disrupt security.	NLAAs because all forest management practices within bald eagle winter use areas will require consultation with the US Fish and Wildlife Service before any actions are taken.

Table 4	Land Use Practice or Activity	Potential Direct Impacts	Potential Indirect Impacts	Interrelated and Interdependent Impacts	SEORMP Provisions and Effects Determinations
Water Resources and Riparian Wetlands Management	Attainment of water quality standards would contribute towards improving riparian habitat conditions. Attainment of PFC would not necessarily meet bald eagle nesting or wintering habitat characteristics because it is a measure of physical function, not biological function.	Contributions of suspended sediments influence the quality of habitat and quantity and food sources available for bald eagles.	Private lands nested within Malheur County are usually the best locations for the production of large trees used by bald eagles for nesting or roosting. BLM has no authority to prescribe management on private lands which are often the most significant sources of sediments effecting water quality.	NLAA because riparian habitat objectives for activity plans that overlap with bald eagle winter range will include goals which emphasize the need for mature and complex riparian overstories preferred by bald eagles. These goals will incorporate issues of site potential of individual sites because they vary. A one size fits all objective for riparian habitats which ignores site potential would be unattainable. NLAA because water quality requirements on public land will be set at levels consistent with , which indirectly	
Fish and Aquatic Habitat Management	Where salmonid fishery objectives overlap with bald eagle use, they generally compliment one another by promoting mature habitat structure and the presence of a healthy community of aquatic organisms.	Potential benefits to the forage base by promoting the presence of a healthy community of aquatic organisms.	None identified.	NLAA because fishery habitat objectives for activity plans that overlap with bald eagle winter range will include goals which emphasize the need for mature and complex riparian overstories preferred by bald eagles.	
Rangeland Grazing Use management	Limited direct impacts	None identified	None identified	NLAA because sagebrush steppe habitats are to be managed to meet standards of Rangeland Health which support a variety of habitats and animals. This provision promotes the general support of a variety of prey items for bald eagles.	
Recreation Management	Development of recreational facilities or promotion of outdoor activities that threaten habitat security may result in adverse impacts to bald eagle use area.	Same as indirect effects but for reasons related to activities "near to but not directly overlapping with" winter roost sites; e.g. disruptions to habitat security.	None identified	NLAA because recreation management practices within bald eagle winter use areas will incorporate habitat structure and security matters so that impacts may be avoided or greatly reduced. May effect determinations will result in consultation with the US Fish and Wildlife Service before any actions are taken.	

Table 4 Land Use Practice or Activity	Potential Direct Impacts	Potential Indirect Impacts	Interrelated and Interdependent Impacts	SEORMP Provisions and Effects Determinations
Off Highway Vehicle Use	Development of recreational facilities or promotion of outdoor activities that threaten habitat security may result in adverse impacts to bald eagle use area.	Same as indirect effects but for reasons related to activities "near to but not directly overlapping with" winter roost sites; e.g. disruptions to habitat security.	Same as potential indirect impacts	NLAA because disruptions associated with off highway vehicle use will be promptly curtailed or eliminated through federal register notices on a case basis. When such action is necessary to protect bald eagle habitat, the US Fish and Wildlife Service will be consulted regarding the extent and nature of the required avoidance.
Areas of Critical Environmental Concern	Where ACEC objectives overlap with bald eagle use, they generally compliment one another by promoting healthy, natural habitat characteristics.	None identified.	None identified.	NLAA because ACEC management promotes the attainment of natural systems that support healthy and self sustaining plant/animal communities.
Wild and scenic Rivers	Where wild and scenic river objectives overlap with bald eagle use, they generally compliment one another by promoting healthy, natural habitat characteristics; some patterns and levels of public use may potentially threaten bald eagle security.	None identified.	None identified.	NLAA because patterns and levels of use within wild and scenic rivers which lead to adverse impacts to bald eagle use will be adjusted. Wild and scenic river management is intended to promote natural values and sustaining outstandingly remarkable values (ORV's); bald eagles are considered ORV's where they occur within wild and scenic rivers. NLAA because BLM authorized river floaters occupy the Owyhee River corridor after the most intense cold periods of the year have passed. Incidental encounters of floaters and bald eagles would not result in any significant harassment.
Cultural Resource management	No impacts anticipated	No impacts anticipated	No impacts anticipated	NLAA because no avoidance measures are even required.

Table 4	Land Use Practice or Activity	Potential Direct Impacts	Potential Indirect Impacts	Interrelated and Interdependent Impacts	SEORMP Provisions and Effects Determinations
Lands and Realty Management	Seasonal disturbances from the operation of equipment; sale or exchange of properties with known values as bald eagle habitat.	None identified.	None identified.	None identified.	NLAA because all realty actions which may effect bald eagle habitat will require consultation with the U.S. Fish and Wildlife Service.
Animal Damage Control	Potentially threatens eagles by inadvertent poisoning or injury from equipment such as leg hold traps and snares.	Bald eagle consumption of prey items tainted with chemical compounds used for eliminating offending predators.	Predator control actions requested by private landowners and livestock grazing permittees often result in circumstances where control actions to protect animals on private land are practiced on public land.	Total elimination of grazing from public land would reduce but not eliminate the need for periodic requests for control on public land because of intermingled private land ownership in Malheur County.	NLAA because consultation requirements for ADC, as practiced by USDA-APHIS within the SEORMP area, have already been fulfilled. As long as the terms and conditions provided in the biological opinion are adhered to, the Service has already stated that USDA-APHIS is not likely to jeopardize bald eagles in Oregon. Moreover, BLM is no longer responsible for determining NEPA or ESA conformance on actions initiated by USDA-APHIS on public land, it is the responsibility of the US Department of Agriculture.
				BLM permittees account for some but not all of the industry demands for predator control within the SEORMP.	

List of bald eagle nest trees and potential territories in Oregon by land ownership.
History of use of nest trees can be provided upon request.

Bald Eagle Nest Trees

Owner							Potential Territories (c)		
Site-Nest Number	T	R	Sec 1/4	Name	RZ (a)	MPP (b)	Name (Number) - Note	RZ	
236-041	25S	7W	7	SW	Cougar Creek-N	13	2		
236-081	25S	7W	7	SW	Cougar Creek-S	13			
227-028	25S	7W	9	SW	Golden Bar	13			
243-052	25S	4W	25	SW	Huntley Creek-E	13	2		
243-077	25S	4W	28	SE	Huntley Creek-W	13			
256-072	23S	7W	23	W1/2	Martin Creek-S	13	2		
256-093	23S	7W	23	W1/2	Martin Creek-N	13			
256-099	23S	7W	23	NW	Martin Creek-NE	13			
263-088	26S	6W	7	SW	Woodruff Mountain	13	1		
268-084	24S	7W	21	SE	Lost Creek	13	2		
USDI Bureau of Land Management - Salem									
210-004	3S	7W	17	NE	Elk Creek-N	13	3	Kichis River (1) *	13
210-006	3S	7W	21	NW	Elk Creek-SE	13		North Santiam River (1) 1 *	12
210-005	3S	7W	17	NE	Elk Creek-S	13		Wilson River (1) *	13
244-054	13S	8W	5	SW	Table Mountain	13	3		
260-079	12S	3E	31	NE	Green Peter Res	12	2		
272-106	7S	8W	32	NW	Boulder Cr	13	1		
USDI Bureau of Land Managers - Vale									
								Batiah Reservoir (1) * X	16
								Brownies Reservoir (1)	14
								Bully Creek Reservoir (1) * X	16
								Burnt River (1) *	9
								Grande Ronde River (1)	9
								Hells Canyon Reservoir (1) *	14
								Melihar River (1) * X	16
								Owyhee Reservoir (1) * X	16
								Owyhee River (3) * X	16 (1), 37 (2)
								Oxbow Reservoir (1) *	14
								Powder River (1) *	9
								Thiel Valley Reservoir (1) *	9
								Wallows River (1) *	9
USDI Fish and Wildlife Service									
016-028/h	40S	8E	31	SW	Chicken Hills-E	22	2	Finley National Wildlife Refuge (NWR) (1)	12
301-004	9N	7W	25	NE	Quinns Island-S	10	2	Hart Lake (1) *	16
301-005	9N	7W	24	SE	Quinns Island-NE	10		Lewis and Clark NWR (1) *	10
301-006	9N	7W	24	SE	Quinns Island-N	10		Umalla NWR (1) *	10
303-003	9N	7W	32	NW	Marsh Island	10	2		
258-067	1S	11W	13	NE	Cape Meares-N	13	1		
258-103	1S	11W	13	NE	Cape Meares-S	13			
300-001	9N	6W	28	SW	Tenasitche Is-S	10	2		
300-002	9N	6W	28	SW	Tenasitche Is-N	10			
300-011	9N	6W	28	SW	Tenasitche Is-E	10			
302-006	8N	7W	7	NW	Karlson Island-W	10	2		
302-007	8N	7W	7	NE	Karlson Island-E	10			
302-009	8N	7W	7	NE	Karlson Island-NE	10			
USDI National Park Service									
								Cramer Lake (1) *	22
Warm Springs Tribe									
434-074	11S	11E	2	SW	Daley Spring	11	1	Deschutes River (1)	11
440-058	11S	11E	16	NW	Box Canyon	11			
437-081	8S	14E	19	NW	Warm Springs R	11	1		
?									
250-100	19S	1W	24	W1/2	Eagle Rock-W	12			

(a) RZ = Recovery Zone

(b) MPP = Management Plan Priority: 1 = Immediate; 2 = Within 5 years; 3 = Plan established. Refers to all nests in the territory.

(c) * = Target Recovery Territories from the Recovery Plan

X = Territories that probably don't have potential for use by nesting bald eagles at the present time.

(d) Potential territories on private lands in Oregon by Recovery Zone.

(e) On Army Corps of Engineers land managed by USDA Forest Service.

Attachment #1

Excerpt from: Working Implementation Plan for Bald Eagle Recovery in Oregon and Washington
(July 1990)

Chapter III

Canada Lynx (*Lynx canadensis*)

Consultation Regarding the Lynx

No previous consultation has occurred.

General Life History and Distribution

Canada lynx habitat extends across the North American continent. Eastern Oregon lies within the Northern Rocky Mountains Geographic Area, Middle Rocky Mountain Province and Blue Mountains Section of lynx distribution. Here, typical preferred lynx habitat consists of large (>1800 square km), contiguous areas of boreal, sub-boreal, and western montane forest types. Subalpine fir habitat types where lodgepole pine is a major seral species, generally between 1,250 - 2000 m, is considered preferred habitat. Moist grand fir and moist Douglas-fir habitat types where they are intermixed with subalpine fir habitat types, and aspen stands constitute secondary vegetation that may also contribute to lynx habitat. Dry forest and shrub-steppe communities do not provide summer or breeding habitat, but they do provide connectivity between adjacent mountain ranges and may be used some winters.

Intense crown fires occurred at long frequencies (100-300 years) in forested areas and created large openings that persisted for long intervals. As burned areas moved through successional stages, snowshoe hares begin to utilize the young hardwood or pine stands 15-30 years after fire. At lower elevations, more frequent fires (5-60 years) restricted juniper to shallow rocky soils and created grassy openings in shrub-steppe communities important to alternate prey species such as black-tailed jackrabbits, ground squirrels and sage grouse. Where forested communities are in close proximity to shrub-steppe rangelands there are opportunities for wandering lynx to utilize atypical habitats during winters when snowshoe hare numbers are low, or during years alternate prey numbers are high.

Important habitat components for lynx during summer include dense forest blow-downs used by females with kittens. Ridges and riparian areas generally serve as important travel routes through home ranges. Moderate, rolling topography with young stands of regenerating hardwoods and pines is primary snowshoe hare foraging habitat and, therefore, lynx hunting habitat. Large openings within forested communities are avoided although the ecotone maybe extensively used by hunting lynx. Low elevation, shrub-steppe rangelands serve as travel routes between core populations of lynx and those populations in isolated mountain ranges. Atypical habitat maybe important to maintain genetic diversity within these lynx populations, and to repopulate habitat where they have been extirpated.

Specific Life History and Distribution of Canada lynx within the SEORMP area

There are no known records or sightings of Canada lynx on lands managed by Vale District BLM. A portion of MRA is located 12 miles from where a Canada lynx was collected on private property on January 8, 1993. This animal was within the boundary of Three Rivers Resource Area, Burns District BLM, when killed. A possible lynx sighting occurred on October 31, 1991 in the Wallowa-Whitman National Forest, approximately 23 miles from MRA.

Summer Habitat

Potential summer dispersal or exploratory habitat is present on MRA land adjacent to the Malheur and Wallowa-Whitman National Forests. Potential summer habitat on BLM primarily consists of about 3,000 acres of mixed dry Douglas fir/ponderosa pine forest with several first-order creeks and numerous decadent aspen patches. Approximately 2,000 acres of this habitat was consumed in a severe crown fire during 1994. Within the dry pine/fir community there is an isolated 80 acre stand of alpine fir, and separately, a 2 acre stand of young lodgepole pine.

At lower elevation on BLM, approximately 4,000 acres of dry forest habitat is located in numerous isolated pockets of ponderosa pine and Douglas fir within a sea of sagebrush-steppe vegetation. The largest of these forested pockets is approximately 600 acres in size. Most BLM managed rangeland is covered with mountain and Wyoming big sagebrush-steppe plant communities. Both the forest and shrub-steppe communities experienced a major invasion of western juniper during the last 100 years. The shrub-steppe/juniper community does not provide any of the typical habitat features utilized by lynx during summer months and probably constitutes a natural barrier to lynx movement from core habitat to the isolated forested stands during summer. BLM authorizes livestock grazing on two intensively managed and 11 custodial allotments in potential exploratory lynx summer habitat. The current land-use plan authorizes 50 percent utilization of key forage species by livestock in all forested areas.

Winter Habitat

BLM forested tracts adjacent to U.S. Forest Service holdings may provide winter habitat for lynx moving to lower elevations down the North Fork and Little Malheur River riparian corridors, or along their associated ridge systems. Lynx reaching the eastern edge of MRA would find remnant unburned patches of late succession and some historically logged dry forest types that support cottontail rabbits, red squirrels and ruffed and/or blue grouse. Snowshoe hares have never been recorded in the planning area. Burned areas could eventually provide habitat suitable for preferred prey species in 15-30 years, when hardwoods and pines reach the necessary size. After the 1994 fire, BLM constructed a livestock enclosure along 1/3rd mile of Middle Willow Creek (NW/SW Sec 14, T15S, R37E) to aid recovery of riparian shrubs and an isolated aspen stand.

Should lynx travel into lower elevation shrub-steppe communities during winter, cottontail rabbits and black-tailed jackrabbits could provide alternate prey. Typically, sage grouse in this subbasin move 10 to 25 miles further east and to much lower elevation during winter so, presumably, would not be available to lynx. Ground squirrels would be hibernating during winter. Virtually all BLM and private lands at lower elevation are subjected to livestock grazing at moderate levels (30-50% utilization) and support moderate numbers of atypical prey species. There are, however, no

mountain ranges that could provide suitable lynx breeding or summer habitat east of MRA, though animals could cross the Snake River, several highways and extensive agricultural areas to enter central Idaho habitat. There are no mountain ranges with typical breeding habitat to the south, although a lynx must have moved that direction historically given a 1916 record in the Steens Mountains.

Summary of Inventories and Surveys

No formal surveys have been conducted for lynx or primary prey species on BLM lands. There are no records of snowshoe hare being present. Red squirrels are seen regularly and forest grouse and cottontail rabbits are seen on occasion in forested communities. Forest habitat potentially available to lynx has not been inventoried since 1979 except to record the 1994 fire perimeter and a salvage logging sale subsequent to that fire. ✓

In fall 2000, an 80 acre pocket of alpine fir was recorded on Ironside Mountain (section 18, T15S, R38E) in the extreme northwest corner of the planning area. Because it is isolated from other moist forest communities by dry ponderosa pine and Douglas fir forest types that were logged or burned in the recent past, it is unlikely to constitute more than potential temporary use by a dispersing or exploring lynx during winter. ✓

Monitoring

It is doubtful that BLM will pursue any systematic lynx surveys in the near future. Survey dollars are scarce and the probability of detecting wandering lynx in dispersal/exploratory habitat is extremely low. BLM would fully cooperate with any survey or monitoring effort by adjoining Forests or the Oregon Department of Fish and Game, subject to available funding and personnel. ✓

On two large allotments with potential atypical lynx habitat the BLM currently monitors livestock grazing using the key plant species methodology. Maximum allowable use is 50%, as measured in key locations. Small amounts of BLM lands are within eleven additional "custodial" allotments that are not monitored although the grazing limits are the same.

BLM inventoried approximately 4000 acres of dry forest habitat managed by MRA during summer 2000 as part of the Standards and Guides evaluation process, and in preparation for Forest Health activities. Forest composition information, stand densities and some understory components potentially important to lynx, their prey, and the presence of prey species potentially available to lynx was recorded. Habitat inventory results would be utilized to develop any consultation documentation required by specific projects that may affect lynx, lynx habitat or prey species. The alpine fir habitat on Ironside Mountain will be inventoried in spring/summer 2001. ✓

Analysis of Affects of BLM Actions

Table 1 summarizes the array of land use actions authorized under the SEORMP and the ways in

which they could affect lynx habitat. Due to the lack of lynx observations within the planning area boundary, BLM believes that detailed analysis of potential affects from implementing the general guidance in the SEORMP is not warranted. Specific management actions could be proposed within the framework of the Proposed SEORMP that may affect potential lynx dispersal/exploratory habitat. Each action that may affect lynx or lynx habitat will result in conference or consultation with USFWS prior to project initiation.

The Proposed SEORMP states that all forested land would be managed using timber harvest in conjunction with pre-commercial thinning, prescribed fire and other techniques to achieve site-specific objectives of restoring and maintaining forest health, biodiversity and wildlife habitat. Timber harvest would be permitted if identified values could be protected or enhanced. Each project affecting lynx or lynx habitat would be subject to ESA consultation, but because BLM lands have value only as potential dispersal/exploratory habitat there is no way to determine which project treatments may affect lynx except by individual and cumulative analysis in relation to adjoining BLM and Forest Service lands. This analysis will be periodically updated as new inventories, studies, sightings, techniques and policies develop during the life of this Plan.

The Proposed SEORMP includes one ACEC adding special management emphasis to potential lynx dispersal/exploratory habitat. Public land within and adjoining the existing Castle Rock WSA; which the BLM currently manages for wilderness, wildlife, cultural, and scenic values would also be managed for these values. The special management emphasis provided by this proposed ACEC would encompass approximately 2,065 acres of mature to old growth Douglas fir and ponderosa pine forest. Numerous small forested stands are isolated from contiguous forest by approximately 5 miles of shrub-steppe rangeland mixed with mature western juniper trees.

Additionally, the administratively suitable North Fork Malheur NWSR would establish management direction for habitat of bull trout, redband trout and amphibians within 1,810 acres of river, riparian, adjoining canyon and old growth forest stands. This river/ridge system may serve as a travel corridor or atypical winter habitat for lynx. These two special management areas probably are unsuitable for intensive commercial harvest because harvest likely would affect relevant and important or outstandingly remarkable values. The Proposed SEORMP will make 4,407 acres of forested lands available for commercial harvest.

The SEORMP authorizes livestock grazing on virtually all forested and adjoining rangelands potentially available to lynx. The draft *Canada Lynx Conservation Assessment and Strategy* states: "Grazing use levels, by livestock and/or wild ungulates, may increase competition for forage resources with lynx prey. By changing native plant communities, such as aspen and high elevation riparian willow, grazing can degrade snowshoe hare habitat." BLM grazing prescriptions are designed to maintain healthy rangeland and forest conditions. Most potential lynx habitat was inventoried for rangeland health during 2000, establishing baseline conditions. Under current and proposed management prescriptions BLM would modify grazing practices that lead to unsatisfactory conditions prior to the next grazing season.

In all alternatives, BLM will coordinate with Malheur and Wallowa /Whitman National Forests as they develop Lynx Analysis Unit boundaries and aid subsequent inventories, monitoring and management activities, as appropriate. Potential travel corridors and pinch-points will be identified and updated throughout the life of the SEORMP. BLM will consult with USFWS on any proposed action that may affect lynx or lynx habitat. ✓

Cumulative Effects

It is unlikely that there are any combinations of proposed actions which would result in cumulative adverse effects on Canada lynx within the SEORMP.

Conclusion

The Proposed SEORMP is not likely to adversely affect Canada lynx. There are no specifically identified land management proposals addressed in the SEORMP that would have significant direct, indirect or cumulative adverse impacts to lynx on public land. Moreover, the document states explicitly and repeatedly that when specific land use actions in activity plans are proposed, BLM will: (1) determine if the actions may affect listed species and (2) promptly initiate consultation with USFWS to avoid or mitigate impacts when a may-affect determination is made. BLM intends to keep lines of communication open through informal means with the Service so that any issues unforeseen in the SEORMP may be addressed as expeditiously as possible. ✓

References

Ruediger, B., J. Claar, S. Gniadek, B. Holt, L. Lewis, S. Mighton, B. Naney, G. Patton, T. Rinaldi, J. Trick, A. Vandehey, F. Wahl, N. Warren, D. Wenger, and A. Williamson. 2000. Canada lynx Conservation Assessment and Strategy. USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Forest Service Publication #R1-00-53, Missoula, MT. 142pp.

Table 1

Land Use Practice or Activity	Potential Direct Impacts	Potential Indirect Impacts	Interrelated and Interdependent Impacts	Avoidance or Mitigation of Impact Provisions in the Southeast Oregon Resource Management Plan, Preferred Alternative
<p>Energy and Minerals Development or Exploration</p>	<p>Direct losses of hunting, travel or dispersal habitat due to surface disturbances; disruption of security due to noise and human activity.</p>	<p>Decreased prey numbers due to loss of habitat or contaminated from intake of chemicals used in exploration or development</p>	<p>Noise or disturbance related to the transport of mining related materials near summer, winter or dispersal habitat.</p>	<p>Adjustments in the location, timing and duration of energy/minerals activities will be required when they would likely interfere with Canada lynx security.</p> <p>Handling, storage, disposal etc of hazardous materials will conform to Oregon Department of Environmental Quality standards.</p>
<p>Fire Management</p>	<p>Potential habitat improvement projects for lynx; loss of habitat for the purpose of protecting human safety.</p>	<p>None identified.</p>	<p>None identified</p>	<p>Potential lynx habitat will be identified in fire activity plans to prevent avoidable losses from wildfires; BLM will specify on maps where biologist input will be required if wildfire occurs. Proposals for prescribed fire in forest habitats potentially used by lynx will require consultation with the US Fish and Wildlife Service prior to any ignitions. Rangeland prescribed fires will be evaluated to insure potential dispersal corridors are not disrupted with large openings.</p>
<p>Rangeland Vegetation Management</p>	<p>Cattle food habitats overlaps that of many lagomorphs and can reduce prey numbers; livestock grazing of burned aspen can prevent recovery.</p>	<p>Presence of cattle and facilities for their management could disturb lynx at critical times; food or habitat of prey species can be reduced.</p>	<p>None identified.</p>	<p>Sagebrush steppe habitats are to be managed to meet Standards of Rangeland Health which support a variety of habitats and animals. This provision promotes the general support of a variety of prey items for lynx. The needs of lynx will be incorporated into all allotment evaluations in lynx habitat.</p>

Land Use Practice or Activity	Potential Direct Impacts	Potential Indirect Impacts	Interrelated and Interdependent Impacts	Avoidance or Mitigation of Impact Provisions in the Southeast Oregon Resource management Plan, Preferred Alternative
Forest and Woodlands Management	Loss of mature growth and uneven aged character of forest habitat; prescribed burning; disruption of habitat security due to administrative activities associated with timber sales or forest health mgt. prescriptions.	Loss of habitat security due to new roads, increased human access and activity in forested tracts. Decreased prey numbers due to loss of hardwood or pine thickets and old growth stands. Increased access by mammalian competitors for prey	Same as indirect effects.	All forest management practices within lynx habitat will require consultation with the US Fish and Wildlife Service before any actions are taken.
Water Resources and Riparian Wetlands Management	None identified	Improved riparian conditions may result in better travel corridors for lynx and higher numbers of some prey.	None identified	Riparian habitat objectives for activity plans that overlap with lynx habitat will include goals which emphasize the need for mature and continuous riparian vegetation preferred by lynx. These goals must incorporate what is known about the potential of individual sites; e.g. a one size fits all objective which ignores the site potential would be unattainable.
Fish and Aquatic Habitat Management	None identified	None identified	None identified.	None identified
Rangeland Grazing Use management	Livestock forage preference overlaps that of most lagomorphs and may reduce prey numbers.	Livestock facilities including roads increases human activities in lynx habitat	None identified	Sagebrush steppe habitats are to be managed to meet standards of Rangeland Health which support a variety of habitats and animals. This provision promotes the general support of a variety of prey items for lynx and lynx needs will be incorporated into all rangeland assessments.

Land Use Practice or Activity	Potential Direct Impacts	Potential Indirect Impacts	Interrelated and Interdependent Impacts	Avoidance or Mitigation of Impact Provisions in the Southeast Oregon Resource Management Plan, Preferred Alternative
Recreation Management	Development of recreational facilities or promotion of outdoor activities that threaten habitat security or increase disturbance of lynx may result in adverse impacts.	Same as indirect effects but for reasons related to activities "near to but not directly overlapping with" lynx.	None identified	All recreation management practices within lynx habitat will incorporate habitat structure and security matters so that impacts may be avoided or greatly reduced. May effect determinations will result in consultation with the US Fish and Wildlife Service before any actions are taken.
Off Highway Vehicle Use	Development of recreational facilities or promotion of outdoor activities that threaten habitat security may result in adverse impacts to lynx use areas.	Same as indirect effects but for reasons related to activities "near to but not directly overlapping with" lynx habitat.	Same as potential indirect impacts	Disruptions associated with off highway vehicle use will be promptly curtailed or eliminated through federal register notices on a case basis. When such action is necessary to protect lynx or lynx habitat, the US Fish and Wildlife Service will be consulted regarding the extent and nature of the required avoidance or mitigation.
Areas of Critical Environmental Concern	Ott Mountain, Castle Rock and North Fork Malheur River proposed ACEC/RNAs promote healthy lynx habitat.	None identified.	None identified.	ACEC management promotes the attainment of natural systems that support healthy and self sustaining plant/animal communities.
Wild and scenic Rivers	None identified	None identified.	None identified.	None identified
Cultural Resource management	No impacts anticipated	No impacts anticipated	No impacts anticipated	No mitigation or avoidance identified.

Land Use Practice or Activity	Potential Direct Impacts	Potential Indirect Impacts	Interrelated and Interdependent Impacts	Avoidance or Mitigation of Impact Provisions in the Southeast Oregon Resource Management Plan, Preferred Alternative
Lands and Realty Management	Seasonal disturbances from the operation of equipment; sale or exchange of properties with known values as lynx habitat.	None identified.	None identified.	All realty actions which may effect lynx habitat will require consultation with the U.S. Fish and Wildlife Service.
Animal Damage Control	Potentially threatens lynx by inadvertent poisoning or injury from equipment such as leg hold traps and snares.	Lynx consumption of prey items tainted with chemical compounds used for eliminating offending predators.	Predator control actions requested by private landowners and livestock grazing permittees often result in circumstances where control actions are requested on public land. Total elimination of grazing from public land would still not remove the need for periodic requests for control on public land because of intermingled land ownerships, especially in MRA and JRA. BLM permittees account for some but not all of the industry demands for predator control within the SEORMP.	Consultation requirements for ADC, as practiced by USDA-APHIS within the SEORMP area, will be requested in the future. (BLM is no longer responsible for determining NEPA conformance on actions initiated by USDA-APHIS on public land)

Chapter IV

Gray Wolf (*Canis lupus*)

Past Consultations Regarding the Gray Wolf

Due to the fact that gray wolf habitat within the planning area is considered to be peripheral at best, no consultations on BLM actions in MRA or JRA regarding this species have ever been conducted.

ESA Federal Listing History

In 1967, the timber wolf subspecies (*Canis lupus lycaon*) was listed as endangered under the Endangered Species Protection Act (ESPA) of 1966 (32 FR 4001). In 1973, the USFWS listed the northern Rocky Mountain subspecies (*C. l. irremotus*) and the Texas subspecies (*C. l. monstrabilis*) as endangered under the ESA (38 FR 14678). The Secretary of Interior clarified the legal and taxonomic confusion that arose from these listings in 1978 by down-listing the Minnesota population from endangered to threatened, and left all other North American gray wolf populations south of Canada under an endangered status without reference to the subspecies (43 FR 9607).

Life History, Current Status, and Historic Distribution

Wolves have long been labeled the archpredator and, as North America was settled, they were killed at every opportunity for a variety of reasons. Systematic predator control programs, habitat destruction, and over-hunting of prey populations eliminated wolves from most of the contiguous United States by the 1940's.

B.J Verts and Leslie N. Carraway wrote in *The Land Mammals of Oregon* (1998), that ... "during early European settlement, the gray wolf in Oregon was considered to be a forest animal. And, indeed, the last major stronghold of the wolf in the state was the dense forests of the remote eastern parts of Clackamas, Linn, Lane, and Douglas counties [all of which are in western Oregon]." The authors make no reference to any historical information for eastern Oregon so it is assumed that there were in fact no credible records to include and discuss in their text.

It is conceivable that wolves historically occupied some of the northern habitats of MRA which overlap with the south end of the Blue Mountains. This is merely speculation, however, based on the presence of forest habitat types and the likelihood of wolf occupation due to the presence of large ungulates that would have been food sources.

There are two records of wolf sightings that are close to, but not within, the planning area. One was made in 1974 about 1 mile south and 6 miles east of Huntington, Oregon. In this case, the animal was shot and the skull was recovered for identification purposes. Reportedly, the skull

was shipped to the USFWS and was confirmed to have been a gray wolf. The other record is an observation made in 1999 where a collared wolf (B-45-F) from an experimental population in Idaho traveled into national forest lands of the Blue Mountains in Oregon. This animal was eventually captured and returned to Idaho. This indicates that the northern portion of the proposed action area may be on the edge of suitable wolf habitat.

Wolves are limited by prey availability, and interactions with humans typically result in either the wolf's departure (due to disturbance) or demise (as a result of shooting or poisoning). There are no known wolf populations currently residing within the planning area. Moreover, no denning or rendezvous sites have been identified in the course of recent interagency efforts to compile wolf observations in Oregon. Habitats considered suitable and occupied for denning activity are located well outside of the proposed action area. Recent records accumulated by the interagency wolf working group are shown in the Appendix of this chapter.

Analysis of Effects.

BLM multiple use management activities in forested habitats are compatible with wolf protection and recovery. If nonbreeding wolves were to appear periodically in the future, prey availability and BLM habitat availability would not likely be a limiting factor for their survival. However, local perceptions and actions in response to the possibility of coexisting with wolves would very likely limit their likelihood of survival. Moreover, the relatively high level of state and federal predator control requested by private landowners in Malheur County (that frequently do not even have BLM grazing permits) would also diminish the likelihood of their survival in a way that is independent of BLM actions. Malheur County reports from USDA-APHIS, Wildlife Services consistently show the highest level of predator control actions (animals taken by lethal means) in the state of Oregon.

Conclusion

The Proposed SEORMP is not likely to adversely affect the gray wolf in Oregon. Because the SEORMP is a mid-scale planning document, there are no specific projects identified which may be interpreted as having significant direct, indirect, interrelated and interdependent, or cumulative adverse effects to the gray wolf in the planning area.

Although big game food sources are generally plentiful, there are no known wolf populations currently residing within the planning area. Moreover, no denning or rendezvous sites (wolf use areas with the highest potential for sustaining adverse impacts to the species) have been identified in the course of recent interagency efforts to compile wolf observations in Oregon.

Local perceptions and actions on private land in response to the possibility of coexisting with wolves would very likely limit their likelihood of survival. This outlook and probable outcome is wholly independent of BLM authorizations in the SEORMP.

Gray wolf Appendix

To: Wolf_Agency%FWS@fws.gov, Wolf_Public%FWS@fws.gov
cc: Kemper_McMaster@r1.fws.gov

Subject: Large canid sightings in E.Oregon

It was brought to attention that the map I displayed at the last wolf information group meeting was missing the large canid sightings from the ODFW Baker District Office. Below are the raw sightings provided to me from this office - 16 of them were Y2K sightings. The Service will interview and provide a report on each sighting. Since we have not completed the interviews, I have removed their last names and phone numbers. jjc

2/12/00 - Lawrence saw 2 wolves: Crossed RR tracks at Jordan Cr. near Rye Valley
4/1/00 - Henry saw 1 gray wolf 85-90lbs: 3 miles up grade from Swede's landings
Spring/00 - Ivan saw 1 wolf: Above their house near Lookout Mtn.
Spring/00 - Leonard saw 1 wolf: Snake River near Connor Creek
5/18/00 - Tom saw black wolf: Sass Rd.
Spring/00 - Kathy saw 1 wolf: Near Bridgeport
6/11/00 - Glen saw 1 wolf: Up Pine Creek
6/30/00 - Mark saw 1 wolf feeding along road: MP## of I-84
8/19/00 - Dennis saw 2 wolves (1 gray, 1 fawn color): On 1-84 near Rye Valley
9/8/00 - Naomi saw 1 wolf black with red tint was carrying a back leg: Corner of Foothill and Bulger Flat Rd.
9/12&13/00 - David saw 2 adults and 4 young: Between River Feed and Main
9/20/00 - Stan saw 1 black wolf: Near Fish Lake
10/3/00 - Dan saw 1 wolf: Near Crane Flat
Summer/Fall/00 - George saw 1 dark brown wolf: Prichard Creek (BLM)
10/11/00 - Aileen saw 2 wolves: East of Unity.
10/11/00 - Mike saw 1 wolf (gray w/black&white face): At Crane Flat
10/27/00 - Greg saw a large dog-like animal (est. over 100lbs): Near Gorham Butte Union Co.

Chapter V

Columbia Spotted Frog (*Rana luteiventris*)

Endangered Species Act Concerns

The Columbia spotted frog is found from Alaska south through British Columbia, eastern Washington, Idaho, eastern Oregon, western Montana, and northwestern Wyoming. Disjunct populations occur in SE Oregon, SW Idaho, Nevada, and Utah. The species can be subdivided into genetically differentiated groups, including the Rocky Mountain, the Wasatch Range, and Great Basin (Green et al. 1996). Based on samples collected from several subpopulations, Green (1997) determined that Columbia spotted frogs found in the SEORMP planning area belong to the Great Basin population. Due to extensive impact on riparian habitats primarily from livestock grazing, conversion of wetland habitats to irrigated pasture, and dewatering of river areas by irrigation practices, the USFWS found that listing the Great Basin population of the Columbia spotted frog (Nevada, southern Idaho, and southeastern Oregon) was warranted, but precluded. Because Candidates are those plant and animal species for which the USFWS has sufficient information on biological status to propose them as endangered or threatened under the Endangered Species Act, environmental planning efforts and resource management actions that alleviate threats could remove the need to list these taxa.

Spotted Frog Distribution and Life History within the SEORMP area

Distribution

Spotted frogs are associated with riparian habitat in portions of the analysis area. Their known distribution within Malheur and Jordan resource areas ranges from Bendire Creek (near Beulah Reservoir) to Parsnip Peak south of Jordan Valley, but the population is fragmented into small isolated units. A 1997 survey in MRA determined the frog population along Dry Creek (tributary to Owyhee Reservoir) to be quite robust, with numerous individuals of all age classes, including larvae (Munger et al. 1998). Other populations were recorded in North Fork Malheur, Bully, and Willow subbasins. In JRA, observations of spotted frogs have been limited to springs and sloughs in the Jordan Valley area and about 15 miles south. Although a large population recorded in 1975 on Cottonwood Creek (south of Harper) may have been extirpated, spotted frogs in general appear to be more abundant than previously believed. Recent above-average annual precipitation as well as greater survey efforts may account for the increased number of frog observations.

Life History

The Columbia spotted frog inhabits wetlands, ponds, and low gradient streams with permanent water. Adults tend to be found in oxbows or pools with a sand substrate, submerged vegetation, and algal mats. They require a high water table and therefore are associated with willow or sedge/rush riparian communities rather than sagebrush (Munger et al. 1996). Breeding sites generally have quiet water with muddy substrates, emergent vegetation, and associated springs.

After breeding, frogs may disperse along watercourses to occupy areas some distance away.

Spotted frogs become active in late February or early March, with egg-laying occurring from April to June, depending on elevation (Nussbaum *et al.* 1983). Well-developed egg masses were observed 16 April in a pond 30 miles NW of Vale, and 8 May in Castro Spring Reservoir south of Jordan Valley. Hatching time varies between 72 and 400 hours, depending on water temperature. Newly metamorphosed frogs appear in late summer and may move from breeding sites to wetlands or areas of shallower water. Although little is known of overwintering requirements for Columbia spotted frogs, evidence suggests that frogs burrow in soft substrates in or near permanent springs.

Specific Limiting Factors

The primary threat to Columbia spotted frogs is through loss of habitat, whether from water diversions, long-term effects of grazing, mining operations, or other habitat modifications that reduce the water table or pool depths. Even in heavily grazed areas, frogs will persist if substantial bodies of water are present to provide predictable aquatic and wetland habitat throughout summer and sufficient depth for non-freezing hibernacula in winter.

Another significant threat to frog survival is the introduction of exotic fish and bullfrogs, which may compete with or prey upon spotted frogs. In Jordan Resource Area, spotted frogs have not been observed in suitable habitats colonized by bullfrogs. Spotted frogs are also absent from reservoirs containing smallmouth bass, although frogs do coexist in streams and ponds with native redband or hatchery rainbow trout.

Monitoring

BLM is engaged in long-term monitoring of spotted frog populations through contracts with researchers and local school groups. In Castro Spring Reservoir in JRA, egg masses, juveniles, and adults are periodically counted and all adults are marked with PIT tags. At Dry Creek, a five-year population monitoring project will begin in 2001 and will include correlation of frog numbers with habitat condition. Habitat monitoring methods include photopoints, vegetation transects, macroinvertebrate sampling, low level aerial imagery, and stream profiles.

Analysis of Effects

The SEORMP identifies land use authorizations that have the potential to affect fish habitat (Chapter 1—Fishes, Table 1). Because spotted frogs are riparian obligates and will be affected similarly by the same land uses that impact fish, the analysis of potential effects of a given land use on frogs would be comparable to those for Lahontan cutthroat trout and bull trout.

Cumulative Effects

BLM does not believe that cumulative impacts to spotted frogs would result from land uses associated with the Proposed SEORMP because mitigation or avoidance measures in place for

Chapter VI Plants

riparian conservation areas are likely to be effective in meeting conservation and recovery goals for the species.

Conclusion

BLM determines that implementation of the SEORMP is not likely to imperil the survival of the species, but that it may have negative affects on local frog populations. Specific land management directions addressed in the SEORMP that could have significantly negative impacts to spotted frogs on public land are mining, especially for locatables, fire management, grazing, recreation, OHV use, and roads.

As Federal candidates, Columbia spotted frogs receive higher priority for the application of management actions than other special status species except for those that are listed or proposed. However, they are not subject to protections inherent in the Section 7 consultation process. The BLM would manage spotted frog habitat in accordance with the SEORMP as described under Special Status Animal Species Objective 1, but specific habitat objectives would be introduced into BLM activity plans if habitat needs for the species are not met.

The SEORMP implements aquatic conservation strategies on the watershed scale (Geographical Management Areas), thereby avoiding maintenance of fragmented networks of degraded habitat that do little to recover metapopulations. In addition, Special Management Area designations (both ACECs and NWSRs) would provide additional protections to frog habitat in the North Fork Malheur River and Dry Creek Gorge.

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Chapter VI Plants

Howell's spectacular thelypody (*Thelypodium howellii* ssp. *spectabilis*) 'THHOSP'

ESA Federal Listing History

The USFWS published a final rule to list THHOSP as threatened, effective June 25, 1999 (64 FR 28393). Critical habitat has not been designated for this species.

General Distribution/ Biology

Historic Distribution

The type locality for THHOSP was first described by Peck in 1932 from a specimen collected in 1927 in Malheur County near Ironside, Oregon. The type locality has not been relocated since 1927, and the taxon is considered extirpated due to past and on-going agricultural development. It has never been identified specifically on public domain land in Malheur County.

Present Distribution

Considered possibly extinct until rediscovery in 1980, THHOSP is now found in eastern Oregon in the Baker and Powder River valleys. Today the species is limited to 11 known, disjunct sites in a combined habitat area of approximately 100 acres within a 10-mile radius of Haines, Oregon. This area is approximately 50 miles north of the project area covered by the SEORMP. Based on recent surveys conducted by BLM, there are currently no known populations of THHOSP on public lands within the Baker Resource Area of the Vale District (Button, personal communication, 2000). Inventories for the subspecies have also been conducted in Cow Valley, near Ironside, Oregon, presumably near the type locality, by both Jean Findley (BLM Botanist, Vale District) and Bill Olson (BLM Biological Technician, Vale District) in 1997 and 1998. Very little public domain land remains in Cow Valley; it is all heavily utilized by livestock or is under cultivation. No populations of THHOSP were relocated or otherwise found in the area. It is therefore considered extirpated from the overall SEORMP project area.

Biology

Plants grow in valley bottoms and wet meadow areas, which are generally alkaline and have an annual precipitation of 10.6 inches, most falling as snow in winter. THHOSP may be dependent on periodic flooding since it appears to rapidly colonize areas adjacent to streams that have flooded. THHOSP is frequently associated with a variety of shrubs such as greasewood (*Sarcobatus vermiculatus*) and rabbitbrush (*Chrysothamnus nauseosus*) and grasses such as giant wild rye (*Leymus cinereus*), alkali saltgrass (*Distichlis stricta*), and alkali bluegrass (*Poa juncifolia*).

A member of the mustard family, THHOSP is a biennial, typically 1-2 feet tall with small leaves

clustered at the base of the stem. Flowers are showy, pink-to-purplish, in a loose spike at the end of the stem. Fruits are long, slender pods.

THHOSP occurs on 11 small sites (5 populations) located within 100 acres of private lands near North Powder and Haines in eastern Oregon (Baker and Union counties). Due to the location of all sites on private lands, population dynamics are unknown except for one site which, until recently, was protected by an agreement with The Nature Conservancy and was studied by that organization.

Present status

Due to a variety of threats, the current populations are at risk of extirpation. These threats include the loss or changes in habitat resulting from land use practices and hydrological alterations. THHOSP populations are easily accessible by road, which makes them vulnerable to roadside mowing, spraying and road maintenance activities. Plants do not compete well with encroaching weedy vegetation, and because habitat has been invaded by weeds, this is considered to be a significant threat. This species is also threatened by spring and summer livestock grazing, which can affect its seed production. Since the plant occurs primarily in small isolated areas, it is also susceptible to insect or disease outbreaks.

Analysis of effects

No populations of THHOSP currently occupy sites on the Vale District, nor have sites been known to occur historically on federal land managed by the Vale District BLM in either the Baker Resource Area or the SEORMP project area. In addition, this taxon has not been found in Malheur County within the last three-quarters of a century. Consequently, no THHOSP populations would be subject to any activities proposed in the SEORMP.

Conclusion

The SEORMP would have no effect on THHOSP.

Utes ladies'-tresses (*Spiranthes diluvialis*) 'SPDI'

A memorandum (Appendix, this chapter) dated April 4, 2001, outlines the Vale District's approach to Utes ladies'-tresses. Based on the facts that no known populations of SPDI currently occur within either the SEORMP area or any portion of Oregon, no populations are known to have historically occupied the area or any portion of Oregon, and the two closest populations are near the Yellowstone area of Idaho and the Columbia River near Wenatchee, Washington, the SEORMP would have no effect on SPDI.



United States Department of the Interior

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APR 04 2001

IN REPLY REFER TO:
6840

Memorandum

To: Vale District Area Managers

From: Sandy Guches, District Manager

Subject: Utes ladies'-tresses (*Spiranthes diluvialis*)

Ute ladies'-tresses (*Spiranthes diluvialis* - SPDI) was added to our updated species list from U.S. Fish and Wildlife Service (USFWS), Snake River Basin Office, in September of 2000. In conjunction with conversations with the Portland Regional Office of the USFWS, the following outlines the Vale District approach to this new listing:

Historically, Utes ladies'-tresses was known from Colorado, Utah and Nevada, although it is thought to be extirpated from Nevada. The species was initially described in 1984 and was discovered in Idaho in September, 1996, along the South Fork of the Snake River. In August, 1997, a population was also found in north-central Washington, Okanogan County. In 2000, a new population of the species was discovered along the Columbia River, near Wenatchee, Washington. There are no historical records of SPDI in Oregon, nor are there any known populations of the Utes ladies'-tresses in Oregon.

Habitat for SPDI is in sites that are seasonally flooded. Current populations are reported for low-gradient stream edges and terraces, islands in rivers, and along the edges of lakes and ponds. All currently reported populations are below 6,500 feet, generally in moist areas in open shrub or grassland, or in the transitional zone.

SPDI is a perennial, terrestrial orchid with stems rising 8 to 20 inches from thickened tuberous roots. Plants generally bloom from late July through September, depending on location and climatic conditions. In some areas, it may bloom in early July or as late as early October. Non-blooming plants are very similar to those of the widespread species, *Spiranthes romanzoffiana*.

Potential habitat for the Utes ladies'-tresses is very limited within the Vale District. At this time, based on botanical surveys conducted by BLM in potentially suitable habitat in both Oregon and Washington in the Vale District, SPDI is not known to occur on public lands.

Specifically, Dr. Don Mansfield, botanist and professor at Albertson College of Idaho, entered into Challenge Cost Share agreements in 1998 and 1999 with the Vale District to conduct inventory for riparian species in Malheur and Jordan Resource Areas. He was alerted to the need to search specifically for SPDI. Dr. Mansfield traversed many miles of streams and rivers in both resource areas and found neither SPDI or any indication of SPDI. In addition, the riparian inventory crews assessing proper functioning conditions (PFC) in the summers of 1998 and 2000 were aware of the need to identify locations of unusual plants that would merit a return trip by a botanist for potential identification of SPDI. The crew leader of the 1998 team in Malheur Resource Area received training in species recognition and habitat for SPDI. Again, no reports were made of a species that would fit the description of an orchid.

There remains an element of controversy regarding this species and the potential and/or likelihood of its occurrence in Oregon. Some USFWS biologists believe potential habitat for SPDI may include a wider range of variations than do our district botanists. Also, surveys/clearances for this species cannot adequately be made where the species may have been impacted by grazing, and such field work may have to be conducted more than one year at a specific site if the species is not found and conditions suggest that there may be suitable habitat.

The call for all project activities at this time is No Effect for SPDI on the Vale District for the following reasons:

1. No populations currently occupy this District.
2. No populations have historically occupied this District.
3. The two closest populations are Yellowstone area of Idaho and the Columbia River near Wenatchee, Washington.

If and when Utes ladies'-tresses are found on our District, we will analyze our effects and complete consultation requirements on those projects. We will also continue to make a concerted effort to inventory for this species in all project clearances in wetlands and riparian areas.

If you have questions regarding this approach, Dorothy Mason can be reached at (541) 523-1308, Clair Button at (541) 523-1424, or Jean Findley at (541) 472-6233.

Jayla M. Ernst
Acting for Sandy Guches