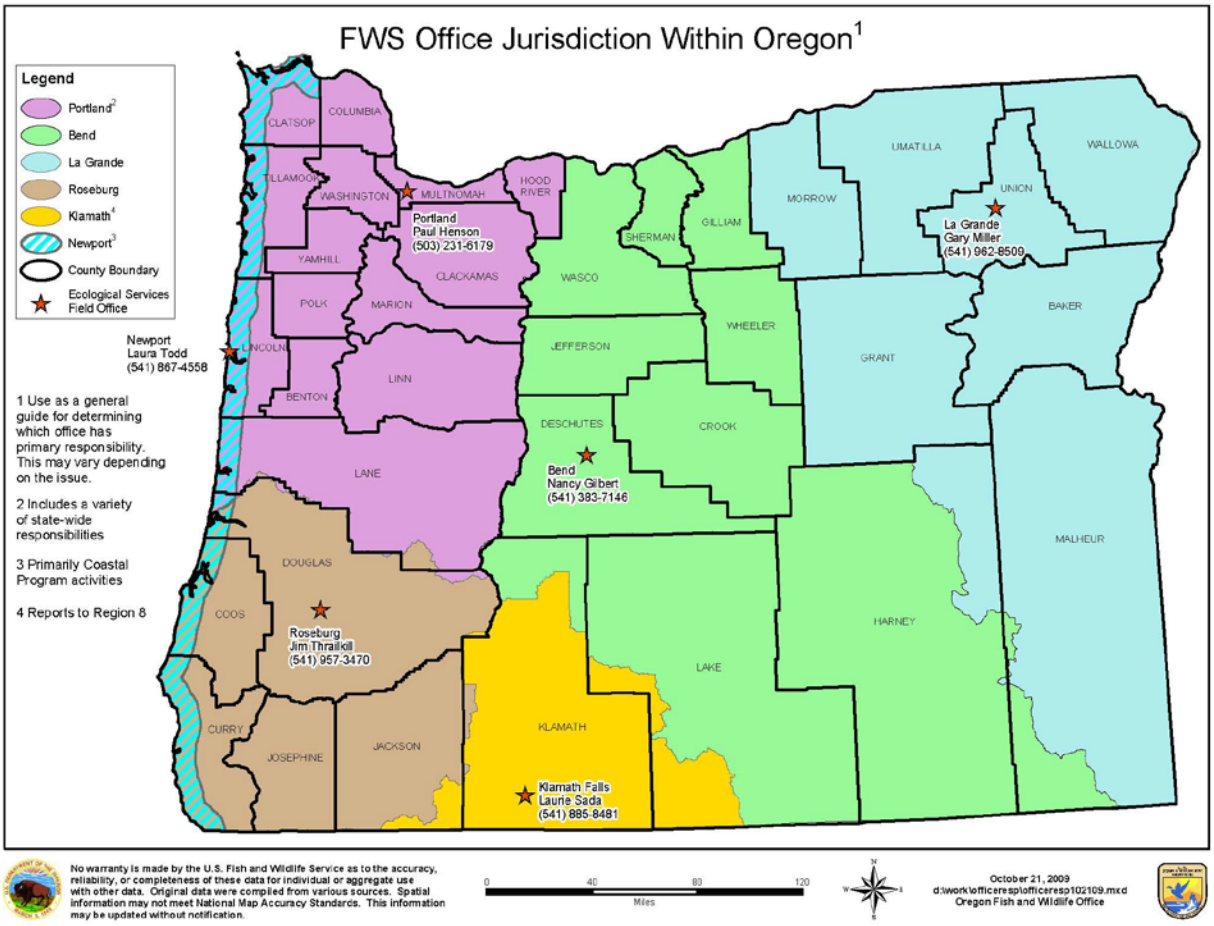
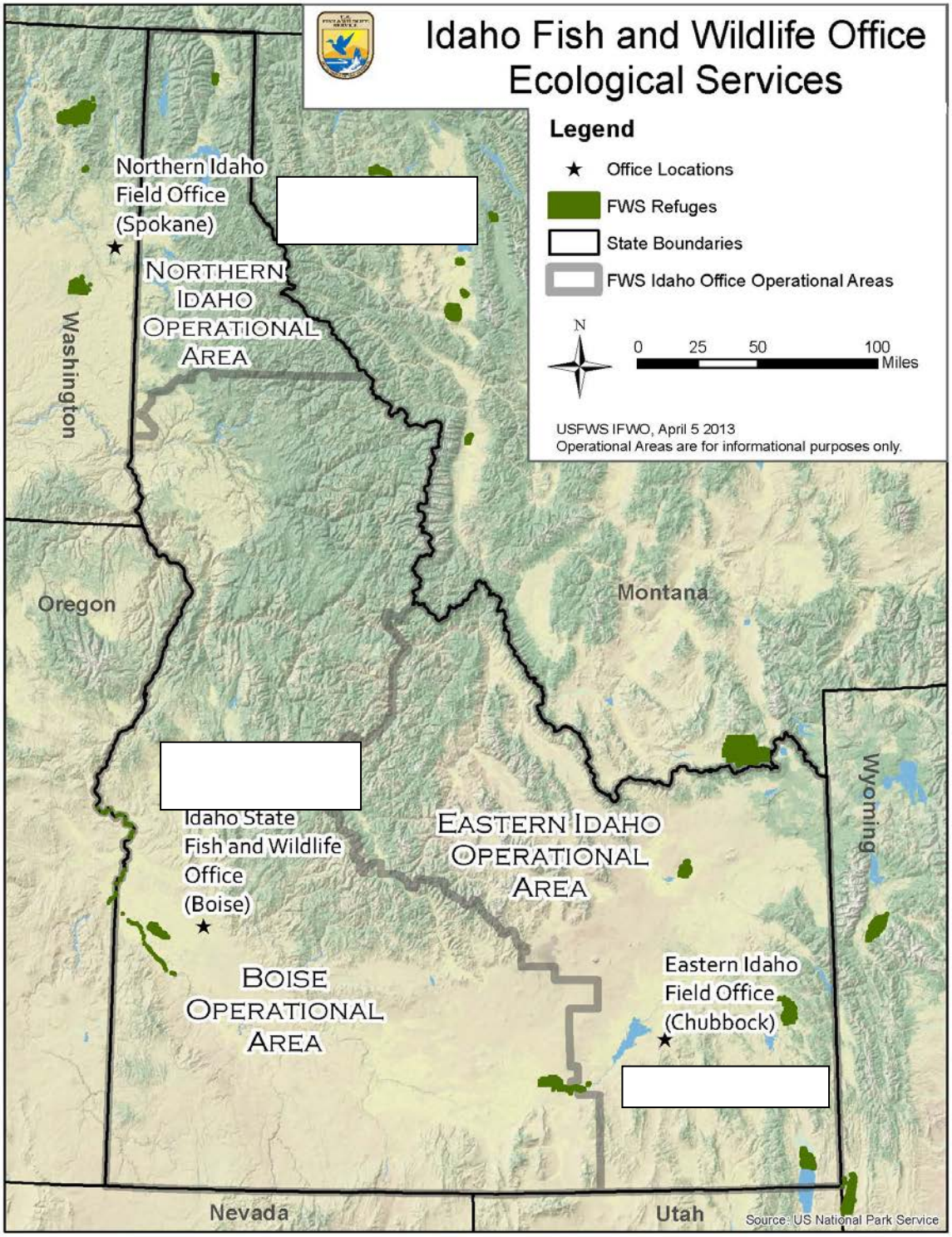
Oregon


FWS Office Jurisdiction Within Oregon[1]
Legend
Portland[2]
Bend
La Grande
Roseburg
Klamath[4]
Newport[3]
County Boundary
Ecological Services Field Office
Newport
Laura Todd
(541) 867-4558
1 Use as a general guide for determining which office has primary responsibility. This may vary depending on the issue.
2 Includes a variety of state-wide responsibilities
3 Primarily Coastal Program activities
4 Reports to Region 8
Portland
Paul Henson
(503) 231-6179
La Grande
Gary Miller
(541) 962-8509
Bend
Nancy Gilbert
(541) 383-7146
Roseburg
Jim Thrailkill
(541) 957-3470
Klamath Falls
Laurie Sada
(541) 885-8481
CLATSOP
COLUMBIA
TILLAMOOK
WASHINGTON
MULTNOMAH
HOOD RIVER
YAMHILL
CLACKAMAS
POLK
MARION
LINCOLN
BENTON
LINN
LANE
DOUGLAS
COOS
CURRY
JOSEPHINE
JACKSON
KLAMATH
LAKE
DESCHUTES
JEFFERSON
WASCO
SHERMAN
GILLIAM
MORROW
UMATILLA
WALLOWA
UNION
WHEELER
GRANT
BAKER
CROOK
HARNEY
MALHEUR
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
0 40 80 120
Miles
October 21, 2009
d:\work\officeresp\officeresp102109.mxd
Oregon Fish and Wildlife Office


Idaho Fish and Wildlife Office
Ecological Services
Legend
Office Locations
FWS Refuges
State Boundaries
FWS Idaho Office Operational Areas
N
0 25 50 100
Miles
USFWS IFWO, April 5 2013
Operational Areas are for informational purposes only.
Northern Idaho Field Office (Spokane)
NORTHERN IDAHO OPERATIONAL AREA
Washington
Oregon
Montana
Idaho State Fish and Wildlife Office (Boise)
EASTERN IDAHO OPERATIONAL AREA
Wyoming
BOISE OPERATIONAL AREA
Eastern Idaho Field Office (Chubbock)
Nevada
Utah
Source: US National Park Service


CANADA
NORTH DAKOTA
Kalispell
Glacier Nat'l. Pk.
Havre
Clark Fork
Flathead Lk.
Missouri
Ft. Peck Lake
ROCKY MTS.
Great Falls
Yellowstone
Missoula
MONTANA
HELENA
Anaconda
Butte
Billings
Bozeman
Jefferson
Yellowstone Nat'l. Pk.
SOUTH DAKOTA
IDAHO
WYOMING

Appendix C – Restoration Review Team Process

Restoration Review Team (RRT)
A BPA led QA/QC process will be utilized on complex, medium to high-risk projects in the Fish Passage Restoration activity category and the River, Stream, Floodplain and Wetland Restoration activity category to (a) meet the obligations set forth in the FWS and NMFS BOs within the action area, (b) ensure consistency between projects, (c) maximize ecological benefits of restoration and recovery projects, and (d) ensure consistent use and implementation throughout the geographic area covered by the FWS and NMFS BOs.

A primary purpose of a RRT is to define high, medium, and low risk project types, and then provide additional review on medium to higher risk projects as needed. Project managers and environmental compliance staff, using guidance developed by the RRT, will screen projects and then forward only the medium and high risk projects to the RRT for review.

Risk for the purposes of the RRT is defined primarily as risk to species and their habitats, but is also applied more broadly to social, economic, and institutional risks, which may include, but are not limited to: (a) Precedent and/or policy setting actions, such as the application of new technology, (b) Project types that are not necessarily new, but are new to a geographic area or stakeholder group, and (c) Project types for which the project manager is unfamiliar, regardless of the relative risk.

Another primary purpose of the RRT is to provide updates and clarifications regarding the FWS and NMFS BOs to all users to ensure consistent use, and to resolve inconsistencies and obtain clarification from the Services when needed. A BO Addendum that tracks all clarifications, changes, and interpretations will serve as the administrative record of the RRT.

Restoration Review Team Structure:
The following members are all internal BPA team members. The Team Leader, Core Team Members, and Technical Team members are not necessarily mutually exclusive roles. Service to the RRT in any capacity is not intended to compromise staff work or relieve staff of other responsibilities or obligations.

- Restoration Review Team Leader
- Core Team Members
  -KEC
  -KEW

- Technical Team: (KEC, KEW Subject Matter Experts, as needed)
  -Biology
  -Aquatics
  -Terrestrial
  -Contaminants
  -Engineering

-Environmental

The following external members have an open invitation to attend:

- NMFS assigned team member
- USFWS assigned team member (if applicable)

For all projects reviewed by the RRT that may impact bull trout or Oregon chub, Janine Castro from the Service's Oregon Fish and Wildlife Office, will serve as lead representative on RRT for the FWS, along with an FWS biologist from the field office most proximate to the project being reviewed. Brigette Tuerler from the Oregon Fish and Wildlife Office, and Emily Teachout from the Washington Fish and Wildlife Office, should be involved in any RRT discussions for projects that may adversely impact marbled murrelets

The RRT Team Lead from BPA will provide overall leadership to the RRT review process and will coordinate with Contracting Officers and Contracting Officer's Technical Representatives (COTRs) to identify Medium – High risk contracts that will require RRT review. Twice a year the RRT Team Lead will generate a project list that will require RRT review. This list could be generated from PISCES, or based on COTR requests or requests from KEC or KEW managers. This list will be used to track and assign project review tasks to Core Team members, who will then review and rate projects. Meetings will be held as necessary to review and discuss projects. On occasions when members need to be replaced or re-assigned, the RRT will be convened to review and discuss the RRT charter. Meetings will be convened to best coincide with funding cycles. Meetings will be used to develop a project list, coordinate and prioritize reviews, and assign projects to core team members.

The RRT Team Lead will coordinate and respond to input from KEC and KEW managers. This position directs Core Team members for assistance in the process. Core Team members provide program, policy, and technical review, and solicit additional technical input when necessary. If subject matter experts are solicited for project review or input, the RRT will either identify the additional expertise and experience needed or rely on the technical expertise provided by the project manager or sponsor. The function of the RRT shall not replace existing review processes. The RRT review process should not slow project permitting and/or implementation unless significant technical, policy, and/or program concerns with a particular restoration approach are identified.

General Project and Data Summary Requirements

Planning and design documentation of conservation practices should effectively communicate that appropriate planning, analysis, design and resulting construction documentation are met. The project documentation should provide other persons the means of quickly following the rationale used in determining all features of a design including the design objective(s), data, criteria, assumptions, procedures, and decisions used in design and resulting construction plans,

specifications and details. The General Project and Data Summary Requirement (GPDSR) serves as the design submittal framework that is needed to assess and evaluate the adequacy of the proposed project.

The BPA RRT will review submitted GPDSR documents to determine if the technical deliverables provided are adequate for functionality (adherence to HIP 3 Conservation Measures) and technical quality (competent execution of design and project plans – contract documents).

The GPDSR criteria were developed using the River Restoration Analysis Tool and address the 16 overarching questions proposed within the RiverRAT Framework.

For the Channel Reconstruction activity category a project specific Monitoring and Adaptive Management Plan must be included.

Project Background

1. Name and titles of sponsor, firms and individuals responsible for design.
2. List of project elements that have been designed by a licensed Professional Engineer.
3. Identification and description of risk to infrastructure or existing resources.
4. Explanation and background on fisheries use (by life stage - period) and limiting factors addressed by project.
5. List of primary project features including constructed or natural elements.
6. Description of performance / sustainability criteria for project elements and assessment of risk of failure to perform, potential consequences and compensating analysis to reduce uncertainty.
7. Description of disturbance including timing and areal extent and potential impacts associated with implementation of each element.

Resource Inventory and Evaluation

8. Description of past and present impacts on channel, riparian and floodplain conditions.
9. Instream flow management and constraints in the project reach.
10. Description of existing geomorphic conditions and constraints on physical processes.
11. Description of existing riparian condition and historical riparian impacts.
12. Description of lateral connectivity to floodplain and historical floodplain impacts.
13. Tidal influence in project reach and influence of structural controls (dikes or gates).

Technical Data

14. Incorporation of HIP 3 specific Activity Conservation Measures for all included project elements.
15. Summary of site information and measurements (survey, bed material, etc.) used to support assessment and design.
16. Summary of hydrologic analyses conducted, including data sources and period of record including a list of design discharge (Q) and return interval (RI) for each design element.

17. Summary of sediment supply and transport analyses conducted, including data sources including sediment size gradation used in streambed design.
18. Summary of hydraulic modeling or analyses conducted and outcomes – implications relative to proposed design.
19. Stability analyses and computations for project elements, and comprehensive project plan.
20. Description of how preceding technical analysis has been incorporated into and integrated with the construction – contract documentation.

Construction – Contract Documentation

21. Incorporation of HIP 3 General and Construction Conservation Measures
22. Design – construction plan set including but not limited to plan, profile, section and detail sheets that identify all project elements and construction activities of sufficient detail to govern competent execution of project bidding and implementation.
23. List of all proposed project materials and quantities.
24. Description of best management practices that will be implemented and implementation resource plans including:
    a) Site Access Staging and Sequencing Plan with description
    b) Work Area Isolation and Dewatering Plan with description of how aquatic organisms within the action area will be treated / protected.
    c) Erosion and Pollution Control Plan.
    d) Site Reclamation and Restoration Plan
    e) List proposed equipment and fuels management plan.
25. Calendar schedule for construction/implementation procedures.
26. Site or project specific monitoring to support pollution prevention and/or abatement.

The Monitoring and Adaptive Management Plan (Channel Reconstruction)

1. Introduction
2. Existing Monitoring Protocols
3. Project Effectiveness Monitoring Plan
    a. Objective 1
    b. Objective 2
    c. Objective 3
4. Project Review Team Triggers
5. Monitoring Frequency, Timing, and Duration
    a. Baseline Survey
    b. As-built Survey
    c. Monitoring Site Layout
    d. Post-Bankfull Event Survey
    e. Future Survey (related to flow event)
6. Monitoring Technique Protocols
    a. Photo Documentation and Visual Inspection
    b. Longitudinal Profile

c. Habitat Survey
d. Survival Plots
e. Channel and Floodplain Cross-sections
f. Fish Passage
g. Other

7. Data Storage and Analysis
8. Monitoring Quality Assurance Plan
9. Literature Cited

Recommendation and Approval Template for RRT Email Correspondence

RRT TEMPLATE RECOMMENDATION

To: NMFS Branch Chief / USFWS Field Office Supervisor

Subject: RRT Project Recommendation: <PROJECT NAME>

The <PROGRAMMATIC> RRT has completed a technical and program review of <PROJECT NAME>, which is scheduled for implementation during the <YEAR> construction season.

Our review was based on the following documents:

- <Document 1>
- <Document 2>
- <Document 3>
- <Document 4>

The RRT fully supports this project and recommends covering the project under <PROGRAMMATIC>.

Sincerely,

<NAME>
<PROGRAMMATIC> Restoration Review Team Lead

NMFS or FWS TEMPLATE APPROVAL

Subject: <NMFS or FWS> Project Approval: <PROJECT NAME>

Thank you for submitting plans for the <PROJECT NAME>, which is scheduled for implementation during the <YEAR> construction season. Endangered Species Act compliance for <USFWS or NMFS> species will be provided through the <PROGRAMMATIC NAME> <DATE>.

This project was formally presented to the <PROGRAMMATIC> Restoration Review Team (RRT) on <DATE>, and received a thorough technical and program review. <ADD MORE HISTORY HERE, OR REVIEWER NAMES IF APPLICABLE>. Further, in order to address both implementation and effectiveness monitoring of this project, a detailed Monitoring and Adaptive Management Plan was developed, which was submitted to the full RRT for review on <DATE>. This Monitoring and Adaptive Management Plan is an additional requirement to the biological opinions.

Based on the project design plans and specifications, a summary of review comments and project modifications, and the thoroughness of the Monitoring and Adaptive Management Plan, the RRT fully supports this project and recommends covering the project under the biological opinion(s) referenced above.

Based on project design, Monitoring and Maintenance Plan, review comments, and that the project:

- Will take place where ESA-listed species occur and designated critical habitat occur,
- Was reviewed and approved by a NMFS fish passage engineer <NAME> on <DATE>,
- Was reviewed and approved by the <Programmatic> Restoration Review Team on <DATE>, and
- All other relevant project design criteria for construction practices will be used.

the <USFWS or NMFS> hereby approves inclusion of this project for coverage under the biological opinion(s) referenced above.

Sincerely,

<USFWS Field Office Supervisor>
<NMFS Branch Chief>

FISH PASSAGE TEMPLATE APPROVAL

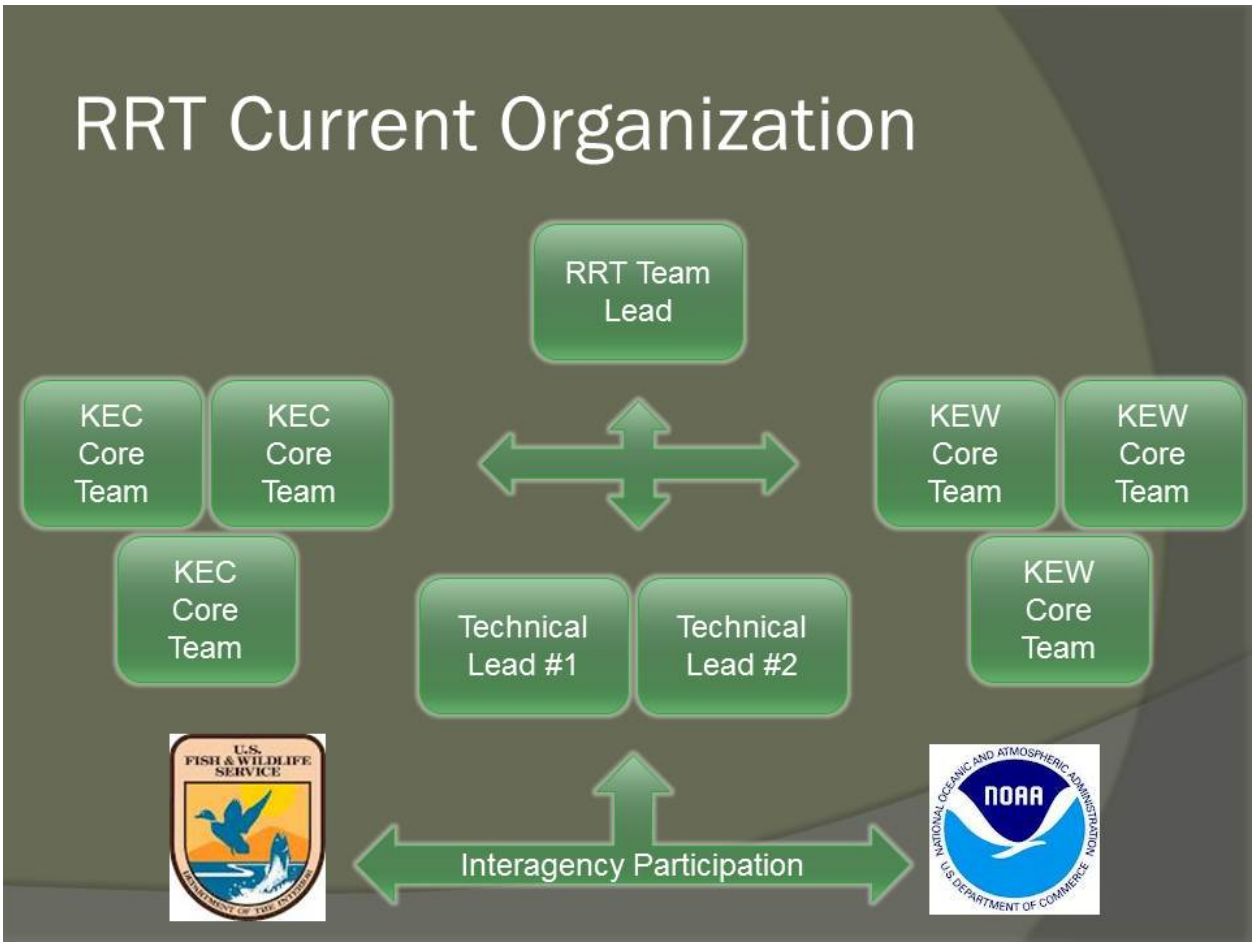
Subject: NMFS Fish Passage Approval: <PROJECT NAME>

Upon review of the provided plans and other documentation for the <PROJECT NAME>, I find that the project meets NMFS fish passage criteria and is appropriate for the site. Please forward this approval as necessary for programmatic or individual biological opinion documentation.

NMFS appreciates the opportunity to review this project and to provide comments. If you have any questions or concerns, feel free to contact me at your convenience.

Sincerely,

<NMFS Fish Passage Engineer>



Appendix D – General and Species-Specific Conservation Measures for Terrestrial Plants, Wildlife and Aquatic Invertebrates

This appendix describes general and species-specific conservation measures (CMs) and practices included in the proposed action to minimize or avoid the exposure of certain endangered, threatened, and proposed species managed by USFWS to effects of the underlying restoration activities. These conservation measures were developed by the Service, in cooperation with BPA, during the consultation process in order to support BPA's "not likely to adversely affect" calls for a suite of federally listed and proposed species (and associated proposed and designated critical habitat) within the HIP III action area. These CMs were submitted by BPA as part of the proposed action via a BA Amendment received by the Service on August 26, 2013.

HIP III restoration projects are unlikely to occur within the range of some of the listed species included herein, but due to the programmatic approach to this consultation, and the fact that specific project locations are unknown at this time, we are providing the benefit of the doubt to the species and have included project design measures for all species that occur within the proposed action area.

Although we are formally consultating on adverse effects to marbled murrelets, we are including CMs for this species in the section because based on the timing of project implementation, and the type of activity category, some actions may be either "no effect" or "not likely to adversely affect" to marbled murrelet.

The CMs below that are specific to marbled murrelet were developed to provide clarification on the types of projects and associated timing that fall under an "likely to adversely affect" (LAA) determination versus a "no effect" (NE) or "not likely to adversely affect" (NLAA) determination. As outlined in the incidental take statement of this biological opinion, there is only a limited number of "likely to adversely affect" projects covered under this programmatic consultation for marbled murrelet. All other projects within the range of marbled murrelet must meet the CMs resulting in NE or NLAA determinations.

Identifying Species Locations:

1. When proposed project locations have been identified, the action agency or project proponent will obtain the current species list for the county in which the proposed project is located. The species lists can be accessed at the following websites:

    - **Idaho**: http://www.fws.gov/idaho/species/IdahoSpeciesList.pdf
    - **Oregon**: http://www.fws.gov/oregonfwo/Species/Lists/default.asp
    - **Montana**: http://www.fws.gov/montanafieldoffice/Endangered_Species/Listed_Species/countylist.pdf

- **Washington, Western**: http://www.fws.gov/wafwo/speciesmap.html
- **Washington, Eastern**: http://www.fws.gov/wafwo/species_EW.html

2. If species are located within the county where the proposed project is located, refer to the habitat descriptions for each species below for each species or critical habitat to determine whether that listed species may occur in the vicinity of the proposed project. Maps for some species have also been provided at the end of this Appendix to assist in identifying suitable habitat that may be occupied by listed species. For additional assistance, contact the appropriate state FWS office for more information:

    - Idaho Fish and Wildlife Office, (208) 378-5243
    - Oregon Fish and Wildlife Office, (503) 231-6179
    - Montana Ecological Services, (406) 459-5225
    - Washington Fish and Wildlife Office, (360) 753-9440
    - Eastern Washington Field Office, (509) 891-6839
    - Central Washington Field Office, (509) 665-3508

    Site-specific information of listed species occurrences in Washington State may be obtained from the Washington Department of Fish and Wildlife Priority Habitat and Species Program http://www.wdfw.wa.gov/hab/phspage.htm and from the Washington Department of Natural Resources Natural Heritage Program at http://wdfw.wa.gov/mapping/phs/.

    Site-specific information of listed species occurrences in Oregon may also be available from the Oregon Biodiversity Information Center at http://orbic.pdx.edu/index.html.

3. If it is determined that listed species, critical habitat, or unsurveyed suitable habitat for listed species are located within the vicinity (generally within 1 mile) of the proposed project, the action agency will implement the following project design standards for each species.

General Conservation Measures for Terrestrial Species and Critical Habitats

1) Project Access. Existing roads or travel paths will be used to access project sites whenever possible; vehicular access ways to project sites will be planned ahead of time and will provide for minimizing impacts on riparian corridors and areas where listed species or their critical habitats may occur.

2) Vehicle use and human activities. Including walking in areas occupied by listed species, will be minimized to reduce damage or mortality to listed species.

3) Flight patterns. Helicopter flight patterns will be established in advance and located to avoid seasonally important wildlife habitat

4) Herbicide Use. On sites where ESA-listed **terrestrial wildlife** occur, herbicide applications will be avoided or minimized to the extent practicable while still achieving project goals. Staff will avoid any potential for direct spraying of wildlife or immediate habitat in use by wildlife for breeding, feeding, or sheltering. Herbicide use in or within 1 mile of habitat where listed terrestrial wildlife occur will be limited to the chemicals and application rates as shown in **Table 1**. Additional species-specific herbicide limitations are also defined below in each species CMs section.

TABLE 1: Maximum Herbicide Application Rates in or Within 1 Mile of Habitat Where ESA-listed Terrestrial Species Occur[32]

	2,4-D	Aminopyralid	Chlorsulfuron	Clethodim	Clopyralid	Dicamba	Glyphosate 1	Glyphosate 2	Imazapic	Imazapyr	Metsulfuron	Picloram	Sethoxydim	Sulfometuron	Triclopyr (TEA)
Listed Species	Maximum Rate of Herbicide Appliction (lb/ac)														
Mammals	NA	0.22	0.083	NA	0.375	NA	2.0	2.0	0.189	1.0	0.125	NA	0.3	NA	NA
Birds*	NA	0.11	0.083	NA	0.375	NA	2.0	2.0	0.189	1.0	0.125	NA	0.3	NA	NA
Invertebrates*	NA	NA	NA	NA	0.375	NA	2.0	2.0	NA	1.0	NA	NA	0.3	NA	NA

NA = Not Authorized for use
** See required buffers and methods restrictions within each species-specific PDS*

Species Specific Conservation Measures for Mammals

Within the Columbia River Basin, BPA funded activities may occur in areas that are near or occupied by the following mammalian ESA-listed species; (a) North American Wolverine (*Gulo gulo luscus*) (b) Northern Idaho ground squirrel (Spermophilus brunneus brunneus) (c) Columbian white-tailed deer (*Odocoileus virginianus leucurus*) (Columbia River DPS) (d) Gray wolf (*Canis lupus*) (e) Pygmy rabbit (*Brachylagus idahoensis*) (Columbia Basin DPS) (f) Woodland caribou (*Rangifer tarandus caribou*) and critical habitat (Southern Selkirk Mountains DPS) (g) Canada lynx (*Lynx canadensis*) and critical habitat and (h) Grizzly bear (*Ursus arctos horribilis*).

[32] This list of chemicals is based on the analyses in the Syracuse Environmental Research Associates (SERA) risk assessments maintained by the U.S. Forest Service and available at http://www.fs.fed.us/foresthealth/pesticide/risk.shtml. The herbicides and application rates listed in this table include only those that were found in the SERA assessments to be below both the acute and chronic NOAELs for terrestrial wildlife.

a. North American Wolverine (*Gulo gulo luscus*)

Description. Mean seasonal elevations used by wolverines in the northern Rocky Mountains and North Cascades vary between 1,400 and 2,600 m (4,592 and 8,528 ft) depending on location, but are always relatively high on mountain slopes. Wolverines do not appear to specialize on specific vegetation or geological habitat aspects, but instead select areas that are cold and receive enough winter precipitation to reliably maintain deep persistent snow late into the warm season. Wolverines prefer to move across suitable habitat (as defined by persistent spring snow cover) rather than to cross unsuitable habitats during dispersal movements. In the contiguous United States, valley bottom habitat appears to be used only for dispersal movements and not for foraging or reproduction. Litters are born in mid-February thru March. Natal birthing dens are used thru late April or early May and are located in snow deeper than 1.5 meters (5 feet). Depending on weather or disturbance, wolverines may move to maternal dens during the month of May. Rendezvous sites may be used through early July.

Conservation Measures.

1) Restoration activities at locations at or above the elevation of 4,000 ft that generate noise above ambient levels (the typical level of background noise within an environment) within 0.25 mile (1 mile for blasting and pile driving) of any known wolverine den, will not occur from February 1 to May 15.
2) Within suitable or occupied habitat use only herbicides listed under **General Conservation Measures for Terrestrial Species and Critical Habitats #4**.

b. Northern Idaho ground squirrel (*Spermophilus brunneus brunneus*)

Description. The Northern Idaho ground squirrel (NIDGS) needs large quantities of grass seed, stems and other green leafy vegetation to store fat reserves for its eight-month hibernation period (August/early September through late April/May). Adult males are first to emerge from burrows in the spring followed by females and their young. Populations of the northern Idaho ground squirrel have been found in Adams and Valley Counties of western Idaho, though the species historic range extends into neighboring Washington County.

It occurs in dry meadows surrounded by ponderosa pine and Douglas-fir forests, including lands managed by the U.S. Forest Service's Payette National Forest (1,500 to 7,500-foot elevations). This species is not likely to be found in riparian areas of streams. Areas where the northern Idaho ground squirrel may occur are shown in **Appendix B-1.**

Conservation Measures.

1) If a project occurs within NIDGS suitable habitat a qualified wildlife biologist must conduct onsite surveys during the appropriate time of year at least three times during a 7-day period in potential NIDGS habitat to determine their presence.
2) If upland projects will occur in within 0.25 miles of a known occurrence or potential habitat of northern Idaho ground squirrel, contact the appropriate USFWS field office to confirm the project will have *no effect* or is *not likely to adversely affect* northern Idaho ground squirrel.
3) Avoid blasting and pile driving within 1 mile of occupied NIDGS habitat, unless it is confirmed the activity is not likely to adversely affect NIDGS.
4) Avoid ground disturbing activities within occupied NIDGS between April 1 and August 15 to avoid the NIDGS above ground activity period.
5) Do not locate parking, vehicle turnout, staging or fueling areas, or any type of temporary sites associated with a project, within occupied or potential habitat.
6) No off-road travel in occupied habitat.
7) Avoid conducting weed treatments during the squirrels' above ground activity period (April 1 through August 15). Within suitable or occupied habitat use only herbicides listed under **General Conservation Measures for Terrestrial Species and Critical Habitats #4**.

c. Columbian white-tailed deer (*Odocoileus virginianus leucurus*) (Columbia River DPS)

Description. Within the action area, Columbian white-tailed deer are closely associated with riparian habitats in the Lower Columbia River **Appendix B-2.** The deer found on islands in the Columbia River use "tidal spruce" habitats characterized by densely forested swamps covered with tall shrubs and scattered spruce, alder, cottonwood and willows; in the summer Columbian white-tailed deer preferentially inhabit mixed forests of western red cedar, red alder, and parkland habitat with a grassy understory. Breeding activity begins the first week of November and lasts a month or more. The gestational period is approximately 210 days, with the peak of fawning occurring in mid-to-late June. Fawns stay with their mother until just prior to the next fawning season.

Conservation Measures.

1) To avoid and minimize impacts to Columbian white-tailed deer during the fawning period, restoration activities will not occur from June 1 to July 15 within the following region: The Columbia River, including all islands and extending 2 miles inland from both sides of the river, from Svensen Island, Clatsop County, to the confluence with the Willamette River. The Columbia River includes the outlet of Vancouver Lake from the Lake, north to its confluence with the Columbia River just south of the confluence of the Lewis River and Columbia Rivers.

2) To avoid and minimize impacts to Columbian white-tailed deer and their movements, fencing projects on Puget Island; the Hunting Islands; Price Island; and 2 miles inland from the Columbia River between 2 miles east of Cathlamet and 2 miles west of the community of Ridgefield, will use only three-strand barbed wire and have a maximum fence height of 42 inches, with lower strands 18 or more inches above the ground.
3) Project personnel will be instructed to not approach Columbian white-tailed adults or fawns at any time and reduce vehicle speeds around project sites where deer occur to avoid vehicle-deer collisions.
4) Herbicides will not be used in known or suitable Columbian white-tailed deer fawning areas from June 1 to July 15. Within suitable or occupied habitat use only herbicides listed under **General Conservation Measures for Terrestrial Species and Critical Habitats #4**.
5) Restoration projects proposed within the areas identified in CM 1 & 2 above, which include activities under **Categories 1a (Fish Passage Restoration: Dams, Water Control or Legacy Structure Removal) and 2b (River, Stream, Floodplain, and Wetland Restoration: Set-back or Removal of Existing Berms, Dikes, and Levees)** will be reviewed by the appropriate USFWS field office to confirm the project will have *no effect* or *is not likely to adversely affect* Columbian white-tailed deer habitat. Those projects that cannot avoid adverse effects to Columbian white-tailed deer or their habitat are not covered under this Biological Opinion and will require a separate section 7 consultation.

d. Gray wolf (*Canis lupus*)

The Rocky Mountain Distinct Population Segment of the grey wolf was delisted on February 27, 2008. Within the action area, the wolf remains listed in portions of Oregon and Washington as follows:

> **Oregon:** that portion of OR west of the centerline of Highway 395 and Highway 78 north of Burns Junction and that portion of OR west of the centerline of Highway 95 south of Burns Junction. To date, no wolf packs have been identified in these areas.
>
> **Washington:** that portion of WA west of the centerline of Highway 97 and Highway 17 north of Mesa and that portion of WA west of the centerline of Highway 395 south of Mesa). Within this area, wolf packs have recently been identified in Okanogan and Kittitas Counties (http://wdfw.wa.gov/conservation/gray_wolf/).

Description. Habitat for wolves is diverse and generally encompasses areas with adequate supply of prey. Wolves prey primarily on ungulates but may also prey on smaller mammals, including beaver. Wolves breed in mid to late February and pups are usually born two months later. Dens are often in underground burrows, but can occur in abandoned beaver lodges, hollow trees, and shallow rock caves. Dens are commonly located on southerly aspects of moderately steep slopes in well-drained soils (or rock caves/abandoned beaver lodges), usually within 400

yards of surface water and at an elevation overlooking surrounding low-lying areas. As pups grow older, they are taken from the den to a rendezvous site. One or more rendezvous sites are used over the summer until the pups are large enough to travel and hunt with the pack. Rendezvous sites are usually complexes of meadows and adjacent hillside timber, with surface water nearby.

Conservation Measures.

1) Restoration activities generating noise above ambient levels within 1 mile of any known gray wolf den or rendezvous site (based on current information from state wildlife agencies and the USFWS), will not occur from Dec 1 to June 30, unless the project is reviewed by the appropriate USFWS field office to confirm the project will have *no effect* or is *not likely to adversely affect* the gray wolf.
2) Restoration activities will not increase trail or road densities within gray wolf habitat.
3) Within suitable or occupied habitat use only herbicides listed under **General Conservation Measures for Terrestrial Species and Critical Habitats #4**.

e. Pygmy rabbit (*Brachylagus idahoensis*) (Columbia Basin DPS)

Description. Pygmy rabbits are typically found in areas that include tall, dense stands of sagebrush (*Artemisia spp.*), and are highly dependent on sagebrush to provide both food and shelter throughout the year. During winter months the rabbits' diet consists of up to 99 percent sagebrush. In the summer and spring months, their diet becomes more varied, including more grass and forbs. The pygmy rabbit digs its own burrows, which are typically found in deep, loose soils. However, pygmy rabbits occasionally make use of burrows abandoned by other species and, as a result, may occur in areas of shallower or more compact soils that support sufficient shrub cover.

Pygmy rabbits breed in early spring, having up to three litters per year and averaging six young per litter. Recent information on captive and wild pygmy rabbits indicates that pregnant females dig secret, relatively shallow burrows, known as natal burrows. These natal burrows, which are found in the vicinity of the pygmy rabbit's regular burrows, are used to give birth in and for nursing and early rearing of their litters.

Conservation Measures.

1) Prior to initiating restoration activities in the central Columbia Plateau (Douglas, Lincoln, Adams and Grant counties) in dense, tall stands of sagebrush, or if any evidence of pygmy rabbit presence is detected on a project outside of these counties, but within the historic range of the pygmy rabbit, contact the appropriate USFWS field office to confirm the project will have *no effect* or is *not likely to adversely affect* the pygmy rabbit.
2) Within suitable or occupied habitat use only herbicides listed under **General Conservation Measures for Terrestrial Species and Critical Habitats #4**.

f. Woodland caribou (*Rangifer tarandus caribou*) and critical habitat (Southern Selkirk Mountains DPS)

Description. The Selkirk caribou occurs in the Selkirk mountains at elevations of 4,000 feet or above in Bonner or Boundary counties in Idaho or east of the Pend Oreille River, Pend Oreille County, Washington. A general description of seasonal habitats used by Selkirk caribou follows (**Table 2**); a more detailed description is available in the Recovery Plan for Selkirk caribou at: http://ecos.fws.gov/docs/recovery_plan/940304.pdf.

Table 2: Seasonal Habitats Used by Selkirt Caribou

Season	Habitat Description
Early Winter	Mature to old-growth cedar-hemlock and spruce-fir stands, 70 percent canopy closure, high windthrow and lichen densities.
Late Winter	High elevation, open canopied spruce-fir stands, high lichen density.
Spring	Mature timber with canopy openings.
Calving	Secluded, high elevation, mature old-growth forest.
Summer	Relatively flat terrain, abundant understory cover, variable overstories.
Fall	Mature old-growth stands with dense understories.

Conservation Measures.

1) Prior to initiating restoration activities at elevations of 4,000 feet or above in Bonner or Boundary counties in Idaho or east of the Pend Oreille River, Pend Oreille County, Washington, within recovery zones (as defined in the Woodland Caribou Recovery Plan, USFWS 1993), contact the appropriate USFWS field office to confirm the project will have *no effect* or is *not likely to adversely affect* woodland caribou.
2) Projects that are scheduled during early winter in the caribou recovery area (Michael Borysewicz pers. com. 2003) and generate noise above ambient levels will be evaluated by the local USFWS wildlife biologist to determine if there will be disturbance effects to woodland caribou.
3) Any vegetation management in woodland caribou habitat will not affect more than 1.0 acre of native forest per year.
4) Projects will not result in increased access for snowmobiles or other off-road vehicles and will not result in new roads in woodland caribou habitat.

5) Within suitable or occupied habitat use only herbicides listed under **General Conservation Measures for Terrestrial Species and Critical Habitats #4**.

g. Canada lynx (*Lynx canadensis*) and critical habitat

Description. Canada lynx inhabit lodgepole pine, cedar/hemlock and sub-alpine forest habitats at or above 3000 ft. elevation in Idaho, Montana, Oregon and Washington. Canada lynx are specialized predators that are highly dependent on the snowshoe hare (*Lepus americanus*) for food, but also eat alternate prey such as squirrels and grouse. The range of the snowshoe hare coincides with Canada lynx. The snowshoe hare prefer diverse, early successional forests with dense stands of conifers and shrubby understories that provide food, cover to escape from predators, and protection during extreme weather. Lynx usually concentrate their winter foraging activities in areas where hare activity is high.

Canada lynx den in forests with large woody debris, such as downed logs and windfalls, to provide denning sites with security and thermal cover for kittens. In Washington, lynx used lodgepole pine (*Pinus contorta*), spruce (*Picea spp.*), and subalpine fir (*Abies lasiocarpa*) forests older than 200 years for denning. Based on information from the western United States, sites selected for denning also must provide for minimal disturbance by humans and proximity to foraging habitat (early successional forests), with denning stands at least one hectare (2.5 acres) in size. Intermediate-age forests allow for lynx access between den sites and foraging areas, movement within home ranges, and random foraging opportunities.

Conservation Measures.

1) Prior to initiating restoration activities in lodgepole pine, cedar/hemlock and sub-alpine forest habitats at or above 3000 ft. in elevation in Idaho, Montana, Oregon and Washington, contact the appropriate USFWS field office to confirm the project will have *no effect* or is *not likely to adversely affect* Canada lynx.
2) Activities within or near potential denning sites will be reviewed by the appropriate USFWS field office to confirm the project will have *no effect* or is *not likely to adversely affect* the lynx.
3) The project will meet the standards and guidelines identified in the Northern Rockies Lynx Management Direction (NRLMD) and/or in the current and upcoming revised (2013) LCAS (Lynx Conservation Assessment and Strategy). The current LCAS is available at: http://library.fws.gov/Pubs5/Lynx_consassess_2000.pdf
4) The project will not result in increased off-road vehicle/snowmobile access to lynx habitat during or following implementation.
5) Within suitable or occupied habitat for Canada lynx or its key prey species, snowshoe hare (*Lepus americanus*), use only herbicides listed under **General Conservation Measures for Terrestrial Species and Critical Habitats #4**.

h. Grizzly bear (*Ursus arctos horribilis*)

Description. The grizzly bear has a broad range of habitat tolerance. Contiguous, relatively undisturbed mountainous habitat having a high level of topographic and vegetative diversity characterizes most areas where the species remains. Forest cover is also especially important to grizzly bears. However, the search for food has a prime influence on grizzly bear movements and individuals will go where they are able to locate these resources.

Displacement of grizzly bears from trails (motorized and non-motorized) and roads has been well documented (Archibald et al. 1987, Mattson et al. 1987, McLellan and Shackleton 1988, 1989; Kasworm and Manley 1990; Mace and Waller 1996, 1998; Mace et al. 1996, 1999, Ciarniello et al. 2007). Factors related to human access include increased potential for poaching, collisions with vehicles, and chronic negative human interactions at campgrounds and campsites that are accessed by roads and trails (Claar et al. 1999, Wisdom et al. 2000, Ciarniello et al. 2005, Ciarniello et al. 2007). Human access is managed by assessing the quality and quantity of seasonal habitats within core areas (IGBC 1998). Core areas are defined as areas that are greater than 500 meters from an open road, motorized trail or high-use trail within the recovery zones identified below (Gaines et al. 2003).

Mating appears to occur from late May though mid-July with delayed implantation until late November. Den excavation starts as early as September or may take place just prior to entry in late November. Dens are usually at higher elevations dug on steep slopes where wind and topography cause an accumulation of deep snow that is unlikely to melt during warm periods. Birth of cubs occurs during hibernation near February 1. Upon emergence from the den they seek the lower elevations, drainage bottoms, avalanche chutes, and ungulate winter ranges where their food requirements can be met. Throughout late spring and early summer they follow plant phenology back to higher elevations. In late summer and fall, there is a transition to fruit and nut sources, as well as herbaceous materials that may occur at lower elevations.

Grizzly bears may occur both within and outside of recovery zones. Within the proposed action area, the following recovery zones have been identified for grizzly bear in Idaho, Montana, and Washington.

> ***Bitterroot Ecosystem Recovery Zone.*** The BE recovery zone is located primarily in northern Idaho with small portions in western Montana **(Appendix B-3)**.
>
> ***Cabinet-Yaak Ecosystem Recovery Zone.*** The CYE recovery zone is located primarily in northwestern Montana with small portions in northern Idaho **(Appendix B-4)**.
>
> ***North Cascades Ecosystem Recovery Zone.*** The NCASC recovery zone is in north-central Washington State **(Appendix B-5)**.
>
> ***Northern Continental Divide Ecosystem Recovery Zone*.** The NCDE is contained entirely within the State of Montana **(Appendix B-6)**.

Selkirk Mountains Ecosystem Recovery Zone. The SE recovery zone is located primarily in northern Idaho but also includes portions of Washington and Canada **(Appendix B-7)**.

Conservation Measures.

1) Restoration activities generating noise above ambient levels will not occur within 0.25 mile (1.0 mile for blasting and pile driving) of known grizzly bear den sites (based on current information from state wildlife agencies and the USFWS) from October 15 through May 15. Activities within 0.25 mile of a known den site at any time of year will be reviewed by the appropriate USFWS field office to confirm the project will have *no effect* or *is not likely to adversely affect* grizzly bear.
2) Restoration activities generating noise above ambient levels, motorized vehicle use (including helicopters), or increasing human use within 0.25 mile (1.0 mile for blasting and pile driving) of grizzly bear core areas is not covered by this programmatic BO and will require a separate Section 7 consultation.
3) Restoration activities will not degrade or destroy key grizzly bear foraging habitat (e.g., avalanche chutes, berry/shrub fields, fruit/nut sources).
4) Restoration activities will not increase trail or permanent road densities within core areas or areas actively used by grizzly bears.
5) Within recovery areas, or areas actively used by grizzly bears all attractants, including food and garbage, will be stored in a manner unavailable to wildlife at all times.
6) Within recovery areas, or areas actively used by grizzly bears, 25-ft no-cut buffers will be maintained in riparian zones to provide vegetative screening along streams and wetlands. Visual cover will also be maintained adjacent to roads and major habitat components such as snow chutes and shrub fields.
7) Within suitable suitable or occupied habitat use only herbicides listed under **General Conservation Measures for Terrestrial Species and Critical Habitats #4**.

Species Specific Conservation Measures for Birds

Within the Columbia River Basin, BPA funded activities may occur in areas that are near or occupied by the following avian ESA-listed species; (a) Streaked horned lark (*Eremophila alpestris strigata*), (b) Marbled murrelet (*Brachyramphus marmoratus*) and critical habitat, (c) Northern spotted owl (*Strix occidentalis caurina*) and critical habitat and (d) Western snowy plover (*Charadrius alexandrinus nivosus*) and their critical habitat (Pacific coast DPS).

a. Streaked horned lark (*Eremophila alpestris strigata*)

Description. Streaked horned lark and its critical habitat were proposed to be listed as threatened on October 11, 2012. The current range of the streaked horned lark can be divided into three

regions: (1) Puget lowlands in Washington, (2) Washington coast and lower Columbia River islands (including dredge spoil deposition sites near the Columbia River in Portland, Oregon), and (3) Willamette Valley in Oregon.

Streaked horned larks prefer wide open spaces with no trees and few or no shrubs. They nest on the ground in sparsely vegetated sites dominated by grasses and forbs. Data indicate that sites used by larks are generally found in open (i.e., flat, treeless) landscapes of 120 hectares (ha)(300 acres) or more. Some patches with the appropriate characteristics (i.e., bare ground, low stature vegetation) may be smaller in size if the adjacent fields provide the required open landscape context. This situation is common in agricultural habitats and on sites next to water. For example, many of the sites used by larks on the islands in the Columbia River are small, but are adjacent to open water, which provides the landscape context needed.

Conservation Measures.

1) Restoration projects proposed at locations with suitable habitat will be surveyed for streaked horned larks (using a survey protocol approved by the USFWS) prior to project design. If streaked horned larks are identified, contact the appropriate USFWS field office to confirm the project is *not likely to adversely affect* streaked horned lark.
2) Restoration activities generating noise above ambient levels within 200 feet (1.0 mile for blasting and pile driving) of likely occupied nesting habitat will not occur from March 15 to August 15.
3) If an area is identified as likely to be occupied by larks, riparian plantings will not occur within 300 feet to maintain the open habitat suitable required by streaked horned larks unless individual project approval has been received from the appropriate FWS field office.

b. Marbled murrelet (*Brachyramphus marmoratus*) and critical habitat

Description. The marbled murrelet (MAMU) is a small, robin-sized, diving seabird that feeds primarily on fish and invertebrates in near-shore marine waters. It spends the majority of its time on the ocean, roosting and feeding, but comes inland up to 80 kilometers (50 miles) to nest in forest stands with old growth forest characteristics. These dense shady forests are generally characterized by large trees with large branches or deformities for use as nest platforms. Murrelets nest in stands varying in size from several acres to thousands of acres. However, larger, unfragmented stands of old growth appear to be the highest quality habitat for marbled murrelet nesting. Nesting stands are dominated by Douglas-fir in Oregon and Washington and by old-growth redwoods in California.

Marbled murrelets nest from mid-April to late September. The sexually mature adult murrelet (at age 2 or 3 of an average 15-year lifespan) generally lays a single egg on a mossy limb of an old-growth conifer tree. Both sexes incubate the egg in alternating 24-hour shifts for 30 days. Murrelet chicks are virtually helpless at hatching and rely on the adults for food. The adults feed

the chick at least once per day, flying in (primarily at dawn and dusk) from feeding on the ocean, carrying one fish at a time. The young fledge from the nest in about 28 days and appear to fly directly to the sea upon leaving the nest. Marbled murrelets have a naturally low reproductive rate because they lay only one egg per nest and not all adults nest every year.

Definitions.

Suitable habitat: Conifer-dominated stands that generally are 80 years old or older and/or have trees greater than or equal to 18 inches mean diameter at breast height (dbh). Murrelet suitable habitat must include potential nesting structure.

Potential Nesting Structure: Consists of individual tree(s) with the following characteristics:

- It occurs within 50 miles (81 km) of the coast (USFWS 1997);
- It is a conifer tree (USFWS 1997)
- It is ≥ 19.1 in. (49 cm) (dbh) in diameter, > 107 ft. (33 m) in height, has at least one platform ≥ 4 in. (10 cm) in diameter, nesting substrate (e.g., moss, epiphytes, duff) on that platform, and an access route through the canopy that a murrelet could use to approach and land on the platform (Burger 2002, Nelson & Wilson 2002);
- It has a platform ≥ 32.5 ft. (9.9 m) above the ground (Nelson & Wilson 2002);
- And it has a tree branch or foliage, either on the tree with nesting structure or on an adjacent tree, that provides protective cover over the platform (Nelson & Wilson 2002)

Unsurveyed Habitat: Consists of suitable habitat or potential structure within younger stands that has not been surveyed by the established survey protocol (Evans et al. 2003). In cases of uncertainty such as stand occupancy, it is Service policy to give the benefit of the doubt to the listed species. On that basis, the Service considers unsurveyed habitat as occupied when analyzing effects to murrelets.

Nesting periods: In Washington the Service considers the murrelet nesting season to span from April 1 – September 23, while in Oregon the Service considers the murrelet nesting season to span from April 1 – September 15. The differences in applied nesting seasons are due to internal evaluations of murrelet biology and nesting season data, which are on-going. Within the murrelet nesting period in Oregon, the USFWS considers two distinct periods: the critical nesting season between April 1 – August 5, and the late nesting season between August 6 and September 15. In Washington, the USFWS does not incorporate a late nesting period into its management evaluations. During the late nesting season in Oregon, activities other than helicopters are *not likely to adversely affect* murrelets *provided that they don't begin until two hours after sunrise and cease prior to two hours before sunset.*

Conservation Measures.

1) Projects will not occur within the applicable disruption and disturbance distances from occupied MAMU nest trees or suitable nest trees in unsurveyed nesting habitat for MAMUs (**Table 3**) during the critical nesting period unless a protocol survey determines MAMUs are not present. Otherwise, in Oregon the project would be LAA and either delayed until August 6 (with 2-hr timing restrictions) at which point it would be considered NLAA, or until it is determined that young are not present, or counted toward the limited number of LAA projects covered under this programmatic (with 2-hr timing restrictions). In Washington, the project would be LAA and either delayed until September 4 (with 2-hr timing restrictions) or until it is determined that young are not present, or counted toward the limited number of LAA projects covered under this programmatic.
2) Projects within the applicable disruption and disturbance distances for MAMUs implemented between April 1 and September 15 would not begin until 2 hours after sunrise and would end 2 hours before sunset.
3) No suitable, potential, or critical MAMU habitat is to be modified as part of this action to the extent that the functionality is changed for MAMU.
4) Within suitable, potential, or critical habitat, garbage containing food and food trash generated by workers in project areas is secured or removed daily to minimize attraction of corvids, which have been identified as predators of murrelet eggs and young.
5) Table 3 shows MAMU disruption distances that are applicable to the proposed actions under this BO. Distances and times can be locally revised based on current information available from the appropriate FWS field office.
6) For large wood (LW) projects, follow conservation measures as outlined in the **Tree Removal for LW Projects under the Proposed Action's Special Actions, Action-Category Nine.**

Table 3. Disturbance and disruption distance thresholds for Marbled Murrelet during the nesting season (April 1 to September 15 for OR; April 1 to September 23 for WA). Distances are to a known occupied marbled murrelet nest tree or suitable nest trees in unsurveyed nesting habitat.

Action	Action Not Likely Detected Above Ambient Levels	Disturbance Distances	Disruption Distances	Increased Risk of Physical Injury and/or Mortality
Light maintenance (e.g., road brushing and grading), and heavily-used roads	> 0.25 mile	≤ 0.25 mile	NA[1]	NA
Log hauling on heavily-used roads (FS maintenance levels 3, 4, 5)	>0.25 mile	≤ 0.25 mile	NA[1]	NA
Chainsaws (includes felling hazard/danger trees)	>0.25 mile	111 yards to 0.25 mile	≤ 110 yards[2]	Potential for mortality if trees felled contain platforms

Heavy equipment for road construction, road repairs, bridge construction, culvert replacements, piling removal, etc.	>0.25 mile	111 yards to 0.25 mile	≤ 110 yards[2]	NA
Helicopter: Chinook 47d	>0.5 mile	266 yards to 0.5 mile	≤ 265 yards[5]	100 yards[6] (injury/mortality)
Helicopter: Boeing Vertol 107, Sikorsky S-64 (SkyCrane)	>0.25 mile	151 yards to 0.25 mile	≤ 150 yards[7]	50 yards[6] (injury/mortality)
Helicopters: K-MAX, Bell 206 L4, Hughes 500	>0.25 mile	111 yards to 0.25 mile	≤ 110 yards[8]	50 yards[6] (injury/mortality)

7. NA = not applicable. We anticipate that marbled murrelets that select nest sites in close proximity to heavily used roads are either undisturbed by or habituate to the sounds and activities associated with these roads (Hamer and Nelson 1998, p. 21).
8. Based on recommendations from murrelet researchers that advised buffers of greater than 100 meters to reduce potential noise and visual disturbance to murrelets (Hamer and Nelson 1998, p. 13, USFWS 2012c, pp. 6-9).
9. Based on an estimated 92 dBA sound-contour (approximately 265 yards) for the Chinook 47d (Newman et al. 1984, Table D.1).
10. Because murrelet chicks are present at the nest until they fledge, they are vulnerable to direct injury or mortality from flying debris caused by intense rotor wash directly under a hovering helicopter. Hovering distance is based on a 300-ft radius rotor-wash zone for large helicopters hovering at < 500 above ground level (from WCB 2005, p. 2 – logging safety guidelines). We reduced the hovering helicopter rotor-wash zone to a 50-yard radius for all other helicopters based on the smaller rotor-span for all other ships.
11. Based on an estimated 92 dBA sound contour from sound data for the Boeing Vertol 107 the presented in the San Dimas Helicopter Logging Noise Report (USFS 2008, chapters 5, 6).
12. The estimated 92 dBA sound contours for these helicopters is less than 110 yards (e.g., K-MAX (100 feet) (USFS 2008, chapters 5, 6), and Bell 206 (85-89 dbA at 100 m)(Grubb et al. 2010, p. 1277).

c. Northern spotted owl (*Strix occidentalis caurina*) and critical habitat

Description. Northern spotted owls live in forests characterized by dense canopy closure of mature and old-growth trees, abundant logs, standing snags, and live trees with broken tops. Although they are known to nest, roost, and feed in a wide variety of habitat types, spotted owls prefer older forest stands with variety: multi-layered canopies of several tree species of varying size and age, both standing and fallen dead trees, and open space among the lower branches to allow flight under the canopy. Typically, forests do not attain these characteristics until they are at least 150 to 200 years old.

Like most owl species, the spotted owl nests in the tops of trees or in cavities of naturally deformed or diseased trees. Spotted owls primarily mate for life and may live up to 20 years. Although the breeding season varies with geographic location and elevation, spotted owls generally nest from February to June. One to four (usually two) pure white eggs are laid in the early spring and hatch about a month later. During incubation, the male typically does most of the foraging and brings food to the female and the young owlets. At three to four weeks of age, the owlets are able to perch away from the nest, but still depend on their parents for food. Predation on these juveniles by great horned owls and other predators is high at this time and many do not survive. Parental care of the juveniles generally lasts into September when the young owls finally take off on their own. This period, too, is hard for the young birds, and starvation is common in the first few months on their own.

Definitions.

Suitable habitat: Consists of stands with sufficient structure (large trees, snags, and downed wood) to provide opportunities for owl nesting, roosting, and foraging. Generally, these conditions are associated with conifer-dominated stands, 80 years old or older, multi-storied in structure, have trees greater than or equal to 18 inches mean diameter at breast height (dbh) and the canopy closure generally exceeds 60 percent. Stands are defined at a larger scale (e.g. province) as suitable based just on age or size (i.e. 80 years, >18") alone.

The Service's HIP III BO does not provide take for NSO. Only activities that are determined to have a "no effect" or "not likely to adversely affect" are covered under the concurrence section of this BO. Table 4 below is provided to assist with these determinations.

Conservation Measures.

1) Projects will not occur during the critical breeding period, generally between March 1 – July 15, but may vary by location. Timing can be locally revised based on current information available from the appropriate FWS field office. Projects should (a) be delayed until after the critical breeding season (unless action involves Type I helicopters, which extend critical nesting window to September 30 (check with appropriate FWS field office to determine if date applies to all locations)); (b) delayed until it is determined that young are not present.
2) The FWS wildlife biologist may extend the restricted season based on site-specific information (such as a late or recycle nesting attempt).
3) **Table 4** shows disruption distances applicable to the equipment types proposed in the BA. These distances can be locally altered based on current information.
4) No activity within this BO will cause adverse effects to spotted owl critical habitat when analyzed against the appropriate local scale as determined by the unit wildlife biologist.
5) For (LW) projects follow conservation measures as outlined in the **Tree Removal for LW Projects under Special Actions.**
6) No hovering or lifting within 500 feet of the ground within occupied spotted owl habitat during the critical breeding season by ICS Type I or II helicopters would occur as part of any proposed action addressed by this assessment.

Table 4. Disturbance, disruption (harass) and/or physical injury (harm) distance thresholds for Spotted Owls. Distances are to a known occupied spotted owl nest tree or suitable nest trees in unsurveyed habitat.

Project Activity	**No Effect (Mar 1 – Sept. 30)**	**NLAA** "may affect" disturbance distance **(Mar 1 – Sept. 30)**	**LAA – Harass** early nesting season disruption distance (**Mar 1–Jul 15[11]**)	**LAA – Harass** late nesting season disruption distance (**Jul 16[11]–Sep 30**)	**LAA – Harm** direct injury and/or mortality (**Mar 1 – Sept. 30)**
Light maintenance (e.g., road brushing and grading) and heavily-used roads	>0.25 mile	≤ 0.25 mile	NA[1]	NA	NA
Log hauling on heavily-used roads (FS maintenance levels 3, 4, and 5)	>0.25 mile	≤ 0.25 mile	NA[1]	NA	NA
Chainsaws (includes felling hazard/danger trees)	>0.25 mile -	66 yards to 0.25 mile -	≤ 65 yards[2]	NA	NA
Heavy equipment for road construction, road repairs, bridge construction, culvert replacements, piling removal, etc.	>0.25 mile	66 yards to 0.25 mile	≤ 65 yards[2]	NA	NA
Helicopter: Chinook 47d	>0.5 mile	266 yards to 0.5 mile	≤ 265 yards[5]	≤ 100 yards[6] (hovering only)	NA
Helicopter: Boeing Vertol 107, Sikorsky S-64 (SkyCrane)	>0.25 mile	151 yards to 0.25 mile	≤ 150 yards[7]	≤ 50 yards[6] (hovering only)	NA
Helicopters: K-MAX, Bell 206 L4, Hughes 500	>0.25 mile	111 yards to 0.25 mile	≤ 110 yards[8]	≤ 50 yards[6] (hovering only)	NA

NLAA = "not likely to adversely affect." **LAA** = "likely to adversely affect" **≥ is greater than or equal to, ≤ is less than or equal to.**

Table 2 (Spotted Owl) Footnotes:

1. NA = not applicable. Based on information presented in Temple and Guttiérez (2003, p. 700), Delaney et al. (1999, p. 69), and Kerns and Allwardt (1992, p. 9), we anticipate that spotted owls that select nest sites in close proximity to open roads either are undisturbed by or habituate to the normal range of sounds and activities associated with these roads.
2. Based on Delaney et al. (1999, p. 67) which indicates that spotted owl flush responses to above-ambient equipment sound levels and associated activities are most likely to occur at a distance of 65 yards (60 m) or less.
3. Based on an estimated 92 dBA sound-contour (approximately 265 yards) from sound data for the Chinook 47d presented in Newman et al. (1984, Table D.1).
4. Rotor-wash from large helicopters is expected to be disruptive at any time during the nesting season due the potential for flying debris and shaking of trees located directly under a hovering helicopter. The hovering rotor-wash distance for the Chinook 47d is based on a 300-ft radius rotor-wash zone for large helicopters hovering at < 500 above ground level (from WCB 2005, p. 2 – logging safety guidelines). We reduced the hovering helicopter rotor-wash zone to a 50-yard radius for all other helicopters based on the smaller rotor-span for all other ships.
5. Based on an estimated 92 dBA sound contour from sound data for the Boeing Vertol 107 the presented in the San Dimas Helicopter Logging Noise Report (USFS 2008, chapters 5, 6).
6. The estimated 92 dBA sound contours for these helicopters is less than 110 yards (e.g., K-MAX (100 feet) (USFS 2008, chapters 5, 6), and Bell 206 (85-89 dbA at 100 m)(Grubb et al. 2010, p. 1277).

d. Western snowy plover (*Charadrius alexandrinus nivosus*) and critical habitat (Pacific coast DPS)

Description. The Pacific coast population of western snowy plovers (WSP) breeds on coastal beaches from southern Washington to southern Baja California, Mexico. Plovers lay their eggs in shallow depressions in sandy or salty areas that generally do not have much vegetation. Because the sites they choose are in loose sand or soil, nesting habitat is constantly changing under the influence of wind, waves, storms, and encroaching plants. The nesting season extends from early March through late September. Fledging of late-season broods may extend into the third week of September throughout the breeding range.

Conservation Measures.

1) Prior to initiating restoration activities on coastal beaches, project cooperators will coordinate with local FWS plover monitoring biologists to identify western snowy plover nesting areas.
2) Restoration activities occurring on coastal beaches will not occur within western snowy plover nesting or foraging habitat from March 15 to September 30.
3) Ground disturbing activities on coastal dunes will occur during the fall and winter months before the plover's critical nesting period (*i.e.*, March 15-September 15). These activities will include the control or removal of invasive and non-native vegetation on coastal dunes through manual, mechanical, and chemical methods.
4) Proposed restoration activities generating noise above ambient levels will not occur within 0.4 km (0.25 mi) of a western snowy plover occupied beach during the critical nesting period. Project cooperators will coordinate with local plover monitoring biologists to identify these areas.
5) In-channel nutrient enhancement activities will not occur in coastal streams between March 15-September 15 nor within 15 km (9.3 mi) of a western snowy plover occupied beach in order to not attract potential avian or mammalian predators to project sites.
6) Project personnel must take appropriate measures not to attract potential avian or mammalian predators to project sites in WSP habitat. These include eliminating human-introduced food sources, properly disposing of organic waste, and not planting vegetation that could be potential cover or perches for predators near designed critical or suitable habitats.

Species Specific Conservation Measures for Invertebrates

Within the Columbia River Basin, BPA funded activities may occur in areas that are near or occupied by the following invertebrate ESA-listed species; (a) Fender's blue butterfly (*Icaricia icarioides fenderi*), (b) Oregon silverspot butterfly (*Speyeria zerene Hippolyta*), (c) Taylor's (Edith's) checkerspot butterfly (*Euphydryas editha taylori*), (d) Banbury Springs limpet (*Lanx sp.),* (e) Bliss Rapids snail (*Taylorconcha serpenticola*), (f) Snake River Physa snail (*Haitia (Physa) natricina*) and (g) Bruneau Hot springsnail (*Pyrgulopsis bruneauensis*).

a. Fender's blue butterfly (*Icaricia icarioides fenderi*) and critical habitat

Description. Fender's blue butterfly occurs in native prairie habitats. Most Willamette Valley prairies are early seral (one stage in a sequential progression) habitats, requiring natural or human-induced disturbance for their maintenance. The vast majority of these prairies would eventually be forested if left undisturbed. Fender's blue butterfly is typically found in native upland prairies, dominated by red fescue (*Festuca rubra*) and/or Idaho fescue (*F. idahoensis*).

The butterfly uses three lupine species as larval food plants which include: Kincaid's lupine (*Lupinus sulphureus kincaidii*), sickle-keeled lupine (*L. albicaulis*) and spur lupine (*L. arbustus*). Kincaid's lupine (listed as Threatened), occurs on a few, small prairie remnants in the Willamette Valley. Adult Fender's blue butterflies use a variety of plants as nectar sources; these include: tapertip onion (*Allium acuminatum*), narrowleaf onion (*Allium amplectens*), Tolmie's mariposa lilly (*Calochortus tolmiei*), small camas (*Camassia quamash*), clearwater cryptantha (*Cryptantha intermedia*), Oregon sunshine (*Eriophyllum lanatum*), Oregon geranium (*Geranium oreganum*), toughleaf iris (*Iris tenax*), pale flax (*Linum angustifolium*), blue flax (*Linum perenne*), Meadow checkermallow (*Sidalcea campestris*), rose checker-mallow (*Sidalcea virgata*), Amercian vetch (*Vicia Americana*), bird vetch (*V. cracca*), common vetch (*V. sativa*), and tiny vetch (*V. hirsute*). Native plants that occur on native upland prairies serve as herbaceous indicators of prairie condition. These dry, fescue prairies make up the majority of habitat for Fender's blue butterfly. Although Fender's blue butterfly is occasionally found on steep, south-facing slopes and barren rocky cliffs, it does not appear to thrive in the xeric oatgrass communities often found there.

The life cycle of a Fender's blue butterfly begins in late spring or early summer when an adult female deposits an egg on the underside of a Kincaid's lupine leaflet. The egg soon hatches and the larva feeds on lupine leaflets. The larva may pass through one molt before dropping to the ground in mid-June or July where it goes into hibernation for the fall and winter. In the following March or April, the larva begins to feed on fresh lupine leaflets again. After three to four additional molts, it ecloses into a butterfly in May and begins the cycle again.

Conservation Measures.

1) Within the Willamette Valley, pre-project surveys will be conducted by a qualified biologist for adult Fender's blue butterfly during the mid-May to early-July flight period

on any project site that supports or may support Kincaid's lupine (*Lupinus sulphureus* ssp. *kincaidii*), longspur lupine (*L. arbustus*), or sickle-keeled lupine (*L. albicaulis*). Information acquired through population and vegetation surveys will be used to direct restoration/recovery activities away from key breeding areas.

2) Restoration activities will not remove or disturb Kincaid's lupine, spur lupine *(Lupinus laxiflorus = L. arbustus)* or sickle-keeled lupine *(L. albicaulis*) or remove habitat including the following nectar sources: tapertip onion (*Allium acuminatum*), narrowleaf onion (*Allium amplectens*), Tolmie's mariposa lilly (*Calochortus tolmiei*), small camas (*Camassia quamash*), clearwater cryptantha (*Cryptantha intermedia*), Oregon sunshine (*Eriophyllum lanatum*), Oregon geranium (*Geranium oreganum*), toughleaf iris (*Iris tenax*), pale flax (*Linum angustifolium*), blue flax (*Linum perenne*), Meadow checkermallow (*Sidalcea campestris*), rose checker-mallow (*Sidalcea virgata*), Amercian vetch (*Vicia Americana*), bird vetch (*V. cracca*), common vetch (*V. sativa*), and tiny vetch (*V. hirsute*) within the range of the Fender's blue butterfly.
3) Manual and mechanical treatments for invasive and non-native plant control may occur adjacent to occupied habitat or critical habitat for Fender's blue butterfly but will not occur during the butterfly flight period from mid-April to late May to avoid impacts to adults. Occupied areas include all nectar habitat within 0.5 km of occupied lupine habitat. Mowing, tilling, disking, plowing, excavation, or other extensive ground disturbing activities will not occur within 20 m (65 ft) of critical habitat or known Fender's blue butterfly or Kincaid's, spur, or sickle-keeled lupine occupied habitats.
4) Livestock grazing will not occur in critical habitat or any habitat occupied by the Fender's blue butterfly.
5) Hand applications of herbicides may be used to control or remove invasive native and non-native vegetation in prairie habitats but will not occur within a minimum distance of 20 m (65 ft) of occupied habitat or critical habitat for Fender's blue butterfly. Areas known to have high nectar plant densities will also be avoided. Herbicide treatments must be followed with native seed or plant introductions to minimize or eliminate the establishment of invasive and non-native vegetation.
6) Broadcast herbicide applications will not be used within 275 m (900 ft) of occupied habitat or critical habitat for Fender's blue butterfly.

b. Oregon silverspot butterfly (*Speyeria zerene Hippolyta*) and critical habitat

Description. The Oregon silverspot butterfly occupies three types of grassland habitat. One type consists of marine terrace and coastal headland salt-spray meadows (e.g., Cascade Head, Bray Point Rock Creek-Big Creek and portions of Del Norte sites). The second consists of stabilized dunes as found at the Long Beach Peninsula, Clatsop Plains, and the remainder of Del Norte. Both of these habitats are strongly influenced by proximity to the ocean, mild temperatures, high rainfall, and persistent fog. The third habitat type consists of montane grasslands found on Mount Hebo and Fairview Mountains. Conditions at these sites include colder temperatures, significant snow accumulations, less coastal fog, and no salt spray. See **Appendix B-8** for a map of Oregon silverspot butterfly habitat locations.

The most important feature of the habitat of the Oregon silverspot butterfly is the presence of the early blue violet. This plant is normally the only species on which the Oregon silverspot butterfly can successfully feed and develop as larva. This plant is part of the salt-spray meadow vegetation and is an obligatory component of the butterfly's habitat. Other features of optimum habitat include moderate grass cover, including red fescue (*Festuca rubra*) used as a shelter for larvae, and a mixture of herbaceous plants such as California aster (*Aster chilensis*) used for nectaring by adults. Apparently the more inland meadow sites occupied by related subspecies of silverspots are not accessible to Oregon silverspot butterfly. The habitat is similar on Mount Hebo with *Viola adunca* as the key component. The distribution and composition of the flora may differ slightly, but the habitat functions similarly to the salt-spray meadow. The shallow soil apparently helps to keep this area in the meadow stage.

Upon eclosion (metamorphosis of the pupa into the adult butterfly), the adults generally move out of the meadows into the fringe of conifers or brush where there is shelter for more efficient heat conservation and nectaring flights. The forest shelter may also be used for courtship and mating. Where such sheltered conditions exist, the adults will use various nectar sources, including native and exotic plants, particularly composites such as the native California aster, yarrow (*Achillea millefolium*), Canada goldenrod (*Solidago canadensis*), Pearly everlasting (*Anaphalis margaritacea*) and Indian thistle (*Cirsium edule*) and some exotics such as false dandelion (*Hypochaeris radieata*) and tansy ragwort (*Senecio jacobaea*).

The life history of the Oregon silverspot butterfly revolves around its obligatory host plant, the early blue violet (*Viola adunca*). Females oviposit up to 200+ eggs singly amongst the salt-spray meadow vegetation near the violet host plant, usually in late August and early September. Sites with good sun exposure are favored. The eggs hatch in approximately 16 days and the newly hatched larvae wander short distances to find a suitable site for diapause (suspended growth for overwintering). The larvae end diapause sometime in early spring and begin to feed on the violet leaves. As the larvae grow, they pass through five molts (shed outer covering) before they enter the intermediate stage between larval and adult forms (pupate). Approximately two or more weeks later, the butterflies emerge from their pupal case (eclose). Adult emergence starts in July and extends into September. Shortly thereafter, their wings and other body parts harden and they escape the windy, cool meadows for nearby forests or brush lands.

Mating occurs through August and September. Those individuals (male and female) which are most efficient at basking and maintaining proper body temperature will be able to operate longer and deeper in the windy meadow zone, thus improving their opportunities for successful reproduction.

Conservation Measures

1) Population surveys for Oregon silverspot butterfly will be required prior to restoration activities proposed in areas with suitable habitat for the butterfly. Surveys using direct observation will be conducted for Oregon silverspot butterfly from mid to July-

September 30 during the flight period using a modified Pollard walk method in occupied habitat (Pickering et al. 1992). Habitat surveys for early blue violets (*Viola adunca*) (violets) will be done during the peak violet blooming period April-May. Information acquired through population and vegetation surveys will be used to direct restoration/recovery activities away from key breeding areas.

2) Manual and mechanical treatments will only be used to maintain or increase meadow size in unsuitable habitat areas which do not contain early blue violets or Oregon silverspot butterfly larvae or pupae. These activities may occur adjacent to occupied habitat but will not occur during the butterfly flight period from mid to July-September 30 to avoid impacts to adults. Mowing, tilling, disking, plowing, excavation, or other extensive ground disturbing activities will not occur during the butterfly flight period or within 20 m (65 ft) of critical habitat or known Oregon silverspot butterfly or early blue violet occupied habitats.
3) Livestock grazing will not occur in critical habitat or any habitat occupied by the Oregon silverspot butterfly or early blue violet.
4) Hand application of herbicides may be used to control or remove invasive native and non-native plants, but will not occur within a minimum distance of 20 m (65 ft) of occupied habitat or critical habitat for the Oregon silverspot butterfly. Areas known to have high nectar plant densities will also be avoided (see above description of nectar species). Herbicide treatments must be followed with native seed or plant introductions to minimize or eliminate the establishment of invasive and non-native vegetation.
5) Broadcast herbicide applications will not be used within 275 m (900 ft) of occupied habitat or critical habitat for Oregon silverspot butterfly.

c. Taylor's (Edith's) checkerspot butterfly (*Euphydryas editha taylori*) and proposed critical habitat

Description. Habitat requirements for the Taylor's checkerspot butterfly consist of open grasslands and grass/oak woodland sites where food plants for larvae and nectar sources for adults are available. These sites include coastal and inland prairies on post-glacial, gravelly outwash and balds. In Oregon, Taylor's checkerspot butterflies occur along the Bonneville Power Administration (BPA) right-of-way corridor in an area known as Fitton Green in Benton County and on grassland openings within the Beazell Memorial Forest in Benton County. These two locations for Taylor's checkerspot butterfly are currently the only occupied patches known from Oregon. Known occurrences in Washington are located outside the proposed action area.

Taylor's checkerspot larvae have been documented feeding on members of the figwort or snapdragon family (Scrophulariaceae), including paintbrush (*Castilleja hispida*) as well as native and non-native *Plantago spp*. in the plantain family (Plantaginacea). The population in Oregon also depends upon *P. lanceolata*.Adults emerge in the spring, during April and May, when they mate and lay clusters of as many as 1,200 eggs. Larvae emerge and grow until the fourth or fifth instar. Larvae feeding on wildflowers in Puget Trough have been documented to enter diapause in mid-June to early July, hibernating through the winter.

Conservation Measures.

1) Population surveys for Taylor's checkerspot butterfly will be required prior to restoration activities proposed in areas with suitable habitat for the butterfly. Surveys using direct observation will be conducted for Taylor's checkerspot butterfly from April through May during the flight period using a survey approved by the Oregon Fish and Wildlife Office. Information acquired through population surveys will be used to direct restoration/recovery activities away from key breeding areas.
2) Manual and mechanical treatments for invasive and non-native plant control may occur adjacent to occupied habitat or critical habitat for Taylor's checkerspot butterfly but will not occur during the butterfly flight period from April to May to avoid impacts to adults. Mowing, tilling, disking, plowing, excavation, or other extensive ground disturbing activities will not occur within 20 m (65 ft) of known Taylor's checkerspot butterfly occupied habitats or proposed critical habitat.
3) Livestock grazing will not occur in critical habitat or any habitat occupied by the Taylor's checkerspot butterfly.
4) Hand application of herbicides may be used to control or remove invasive native and non-native vegetation but will not occur within a minimum distance of 20 m (65 ft) of occupied habitat or proposed critical habitat for Taylor's checkerspot butterfly. Areas known to have high nectar plant densities will also be avoided. Herbicide treatments must be followed with native seed or plant introductions to minimize or eliminate the establishment of invasive and non-native vegetation.
5) Broadcast herbicide applications will not be used within 275 m (900 ft) of occupied habitat or critical habitat for Taylor's checkerspot butterfly.

d. Banbury Springs limpet (*Lanx sp.)*

Description. *Lanx* requires cold, clear and well-oxygenated water with swift currents. *Lanx* are found on smooth basalt, boulders, or cobble-sized grounds ranging from 2 to 20 inches deep, but they avoid areas with green algae. Currently this species only exists at four cold-spring locations in Idaho that are isolated from each other: Thousand Springs, Box Canyon Springs, Briggs Springs and Banbury Springs **Appendix B-9**.

Conservation Measure.

Prior to initiating restoration activities in Thousand Springs, Box Canyon Springs, Briggs Springs and Banbury Springs in Gooding County, Idaho contact the appropriate USFWS field office to confirm the project will have *no effect* or is *not likely to adversely affect* the limpet.

e. Bliss Rapids snail (*Taylorconcha serpenticola*)

Description. The Bliss Rapids snail occurs in cold water springs and spring-fed tributaries to the Snake River, and in some reaches of the Snake River. The Bliss Rapids snail is primarily found on cobble boulder substrate, and in water temperatures between 59 and 61 degrees Fahrenheit. Recent surveys indicate the species is distributed discontinuously over 22 miles, from River Mile (RM) 547-560, RM 566-572, and at RM 580 on the Snake River **Appendix B-10**. The species is also known to occur in 14 springs or tributaries to the Snake River. The species does not occur in reservoirs.

Conservation Measure.

Prior to initiating restoration activities in habitat occupied by the Bliss Rapids snail, contact the appropriate USFWS field office to confirm the project will have *no effect* or *is not likely to adversely affect* the Bliss Rapids snail.

f. Snake River Physa snail (*Haitia (Physa) natricina*)

Description. The Snake River physa snail occurs in the mainstem Snake River, between rkm 890 to 1086 (RM 553 to 775), inhabiting areas of swift current on sand to boulder-sized substrate **Appendix B-11**.

Conservation Measure.

Prior to initiating restoration activities in habitat occupied by the Snake River physa snail, contact the appropriate USFWS field office to confirm the project will have *no effect* or *is not likely to adversely affect* the Snake River physa snail.

g. Bruneau Hot springsnail (*Pyrgulopsis bruneauensis*)

Description. The Bruneau Hot springsnail is only found in geothermal springs and seeps along an 8-kilometer length of the Bruneau River in Southwest Idaho (**Appendix B-12)**. It prefers wetted rock faces of springs and flowing water, with large cobbles and boulders. Spring temperatures are the predominant factor that determines the springsnail's distribution and abundance; the springsnail requires constant springwater temperatures to survive.

Conservation Measure.

Prior to initiating restoration activities in habitat occupied by the Bruneau Hot springsnail, contact the appropriate USFWS field office to confirm the project will have *no effect* or *is not likely to adversely affect* the Bruneau Hot springsnail.

Species Specific Conservation Measures for Plants

Within the Columbia River Basin, BPA funded activities may occur in areas that are near or occupied by the following ESA-listed plant species; Bradshaw's lomatium (*Lomatium bradshawii*), Cook's lomatium (*Lomatium cookie*) and their critical habitat, Gentner's fritillary (*Fritillaria gentneri*), Golden paintbrush (*Castilleja levisecta*), Howell's spectacular thelypody (*Thelypodium howellii spectabilis*), Kincaid's lupine (*Lupinus sulphureus ssp.* Kincaidii) and their critical habitat, Large-flowered wooly meadowfoam (*Limnanthes floccosa*) and their critical habitat, Malheur wire-lettuce (*Stephanomeria malheurensis*) and their critical habitat, McFarlane's four o'clock (*Mirabilis macfarlanei*), Nelson's checkermallow (*Sidalcea nelsoniana*), Rough popcorn flower (*Plagiobothrys hirtus*), Showy stickseed (*Hackelia hispida*), Slickspot peppergrass (*Lepidium papilliferum*) and their proposed critical habitat, Spalding's catchfly (*Silene spaldingii*), Umtanum Desert buckwheat (*Eriogonum codium*) and their critical habitat, Ute ladies' tresses (*Spiranthes diluvialis*), Water howellia (*Howellia aquatilis*), Wenatchee Mountain checkermallow (*Sidalcea oregana var. calva*) and their critical habitat, Western lily (*Lilium* occidentale), Willamette daisy (*Erigeron decumbens*) and their critical habitat, and White Bluffs bladderpod (*Physaria douglasii*) and their critical habitat.

Surveys.

If an ESA- listed plant is located within the county where a project is proposed (based on a review of the most recent USFWS county species list), contact the appropriate USFWS field office to determine whether there are known ESA-listed plants or suitable unsurveyed habitat for ESA-listed plants in the project area. If a known site of an ESA-listed plant is within 0.4 km (0.25 mi) of the project action area, or suitable or potential habitat may be affected by project activities, then a BPA contract botanist will conduct a site visit/vegetation survey to determine whether ESA-listed plants are within the project area. This visit and survey will be conducted at the appropriate time of year to identify the species and determine whether individual listed plants or potential habitat are present and may be adversely affected by project activities (**Table 5**). If listed plants are present and likely to be adversely affected by the project, then an individual consultation with the USFWS under Section 7 of the ESA must be initiated.

Table 5 – Optimal Survey Times for Flowering Periods of Listed Plants in Oregon and Washington

Species	Optimal Survey Time Period*
Bradshaw's Lomatium (*Lomatium bradshawii*)	April to mid-May
Cook's Lomatium (*Lomatium cookii*)	Mid-March through May (varies with spring moisture)
Gentner's Fritillary (*Fritillaria gentneri*)	April to June
Golden Paintbrush (*Castilleja levisecta*)	April to September
Howell's Spectacular Thelypody (*Thelypodium howellii* ssp. *spectabilis*)	June through July
Kincaid's Lupine (*Lupinus sulphureus* ssp. *kincaidii*)	May through July
Large-flowered Wooly Meadowfoam (*Limnanthes floccose*)	Mid-March to May (varies with spring moisture)
Malheur Wire-Lettuce (*Stephanomeria malheurensis*)	July through August
MacFarlane's four o'clock (*Mirabilis macfarlanei*)	May through June
Nelson's Checkermallow (*Sidalcea nelsoniana*)	Late May to Mid-July
Rough Popcornflower (*Plagiobothrys hirtus*)	Mid-June to early July
Showy Stickseed (*Hackelia venusta*)	May to July
Slickspot peppergrass (*Lepidium papilliferum*)	Mid-May to Mid-July
Spalding's Catchfly (*Silene spaldingii*)	June to September
Umtanum Desert Buckwheat (*Eriogonum codium*)	June through July
Ute Ladies'-Tresses (*Spiranthes diluvialis*)	July to late August
Water Howellia (*Howellia aquatilis*)	May through August
Wenatchee Mountains Checker-Mallow (*Sidalcea oregano* var. *calva*)	June to Mid-August
Western Lily (*Lilium occidentale*)	May to July
Willamette Daisy (*Erigeron decumbens* var. *decumbens*)	Mid-June to early July
White Bluffs Bladderpod (*Physaria douglasii* ssp. *tuplashensis*)	Mid-May to Mid-June

Conservation Measures.

For all of the above mentioned ESA-listed plant species that may occur in project areas within the scope of this proposed action, the following criteria will be applied:

1) Prior to restoration activities at areas with listed plants, all project staff will be familiarized with identification of any ESA-listed plants in the area and will be aware of ESA-listed plant locations within the project area.
2) Access points and tracks within occupied or suitable habitats for ESA-listed plant species must be limited and clearly marked to avoid soil compaction and damage to ESA-listed plant species from vehicles and/or foot traffic.
3) Revegetation activities in habitats where ESA-listed plants may occur or within their critical habitat must be approved by the USFWS field office prior to implementation.
4) Dust-abatement additives and stabilization chemicals will not be applied within 10 m (33 ft) of listed plants or critical habitat for listed plants.
5) Restoration activities will avoid actions that cause soil compaction, erosion, or deposition, or change the hydrology or drainage of a site with listed plants or critical habitat for listed plants.
6) Vehicle and equipment staging areas will be located at least 15 m (50 ft) from listed plants or critical habitat for listed plants.

Invasive and Non-native Plant Control

1) Listed plants must be clearly flagged or fenced prior to restoration activities to avoid inadvertently affecting listed plants.
2) When using manual methods at project sites occupied by a federally listed plant species, a buffer of 3 m (10 ft) will be required around green growing plants until after senescence. Manual control and removal activities may occur year round in occupied habitat or critical habitat for listed plants except at sites occupied by listed butterflies (see above for information on Fender's blue butterfly). Chips, sawdust, brush accumulations, and other plant waste materials will be removed from project site to the extent possible.
3) Mowing, tilling, disking, plowing, excavation, raking or sod rolling (*i.e.,* larger scale sub-surface ground disturbances) will not occur within 10 m (33 ft) of known federally listed plant species or critical habitat for listed plants at any time. Listed plants must be clearly flagged or fenced prior to restoration activities to avoid inadvertently affecting listed plants. Additional requirements for mechanical treatments include the following.
    a) Use of low ground impact (*e.g.,* rubber tired or tracked) and appropriately sized equipment to prevent soil compaction.
    b) Mower deck heights must be set to prevent soil gouging.
    c) Chips, sawdust, brush accumulations, and other plant waste materials must be removed from project site to the extent possible.
    d) Mechanical treatments must not alter the existing hydrology at a project site.

e) All equipment must be cleaned of invasive and non-native plant materials before entering a project site occupied by a listed plant species to prevent the dispersal of seeds or other reproductive plant parts.
f) Ground-disturbance activities (*e.g.* tilling, disking, and plowing) must be followed with native seed or plant introductions to minimize or eliminate the establishment of invasive and non-native vegetation.

4) Herbicides applications may be used to control or remove invasive native and non-native vegetation in accordance with the conservation measures identified in the proposed action of the biological assessment.
5) Herbicides will not be applied at locations where nearby listed plants may be in the path of surface runoff from the project.
6) Hand applications of herbicide will maintain a minimum distance of 5 m (16 ft) from listed plants or critical habitat. Spraying will only take place during calm periods (wind velocities less than 3 mph). Listed plants will be physically shielded (e.g., covered with buckets or some other barrier that will not harm the plants) as needed to protect them from spray or drift, unless they are dormant; plants will be uncovered immediately after spraying has been completed.
7) Broadcast applications of herbicide will not occur within 275 m (900 ft) of occupied habitat or critical habitat for listed plants.
8) Herbicide treatments must be followed with native seed or plant introductions to minimize or eliminate the establishment of invasive and non-native vegetation.
9) The following conservation measures are specific for the type of herbicide application to be used at project sites when listed plant species are nearby.
   a) Wick and wipe applications
      i) The appropriate type and size of equipment will be used to apply herbicides onto the target foliage and stems.
      ii) Herbicide applications will be made in a manner that prevents herbicide runoff onto the ground.
   b) Basal bark applications
      i) Applicators will avoid unnecessary run-off when applying herbicide to stems of target vegetation.
      ii) Herbicide applications will be applied using the lowest nozzle pressure that will allow adequate coverage.
      iii) Applicator will apply herbicides while facing away from listed plants.
   c) Spot and patch applications
      i) Herbicides applications may be used with hand applicators.
      ii) Herbicide will be applied in a manner where the spray is directed towards the application area and away from listed plants.
      iii) The spray nozzle will be kept within three feet of the ground when herbicide is being applied within 50 feet of listed plants. Beyond 50 feet, the nozzle may be held up to six feet above ground if needed to treat taller clumps of competing vegetation.
   d) Cut surface and hack and squirt/injection applications. Herbicide applications will be made in a manner that prevents herbicide runoff onto the ground.

e) Spot applications of dry granules, pellets, and dust. A 5 m (16 ft) buffer will be maintained between listed plants and application areas to prevent exposure to listed plants.

Terrestrial Wildlife and Aquatic Invertebrate Species Maps

The following pages include distribution/range maps for a number of terrestrial wildlife, plant and aquatic invertebrate species:

Figure 1. Columbian White Tailed Deer

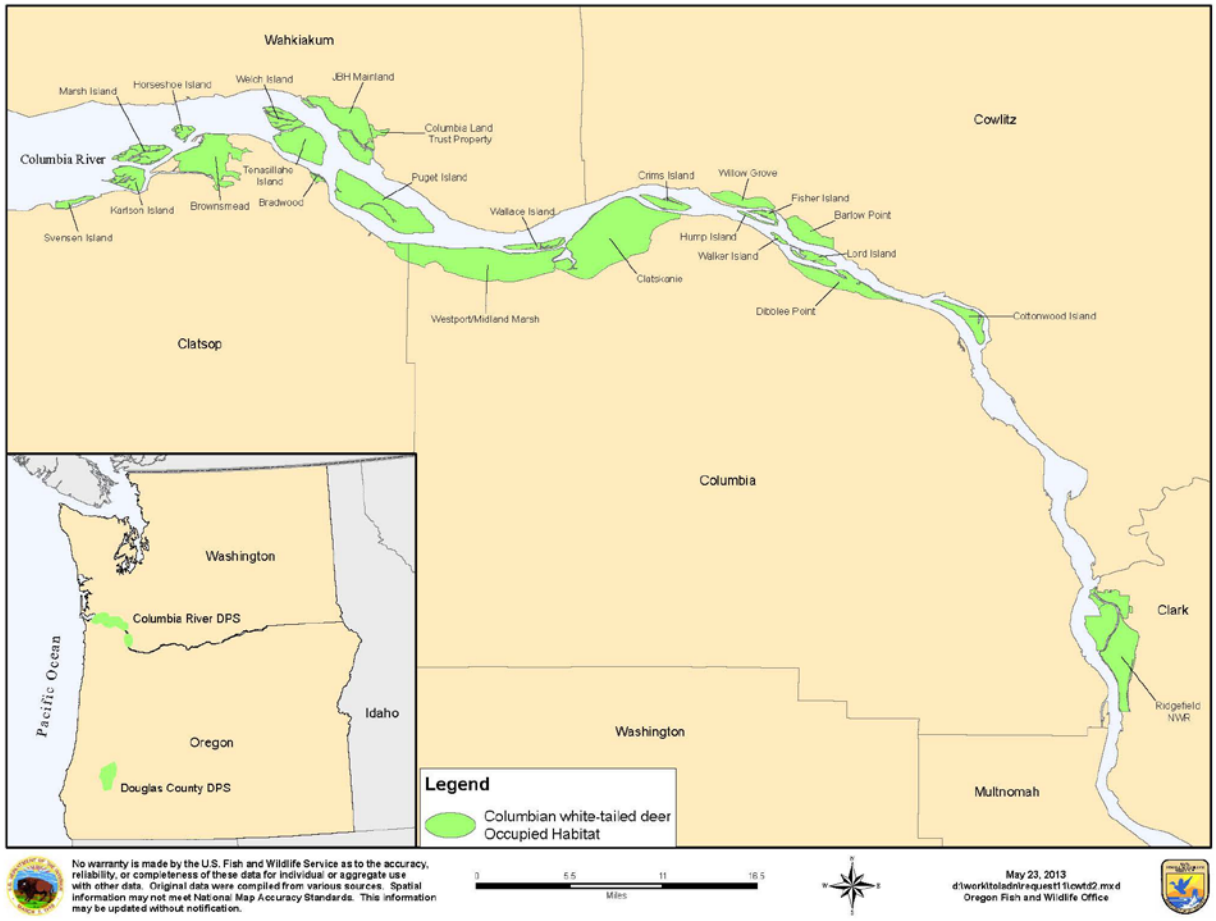


Figure 2a, 2b, 2c and 2d. Grizzly Bear

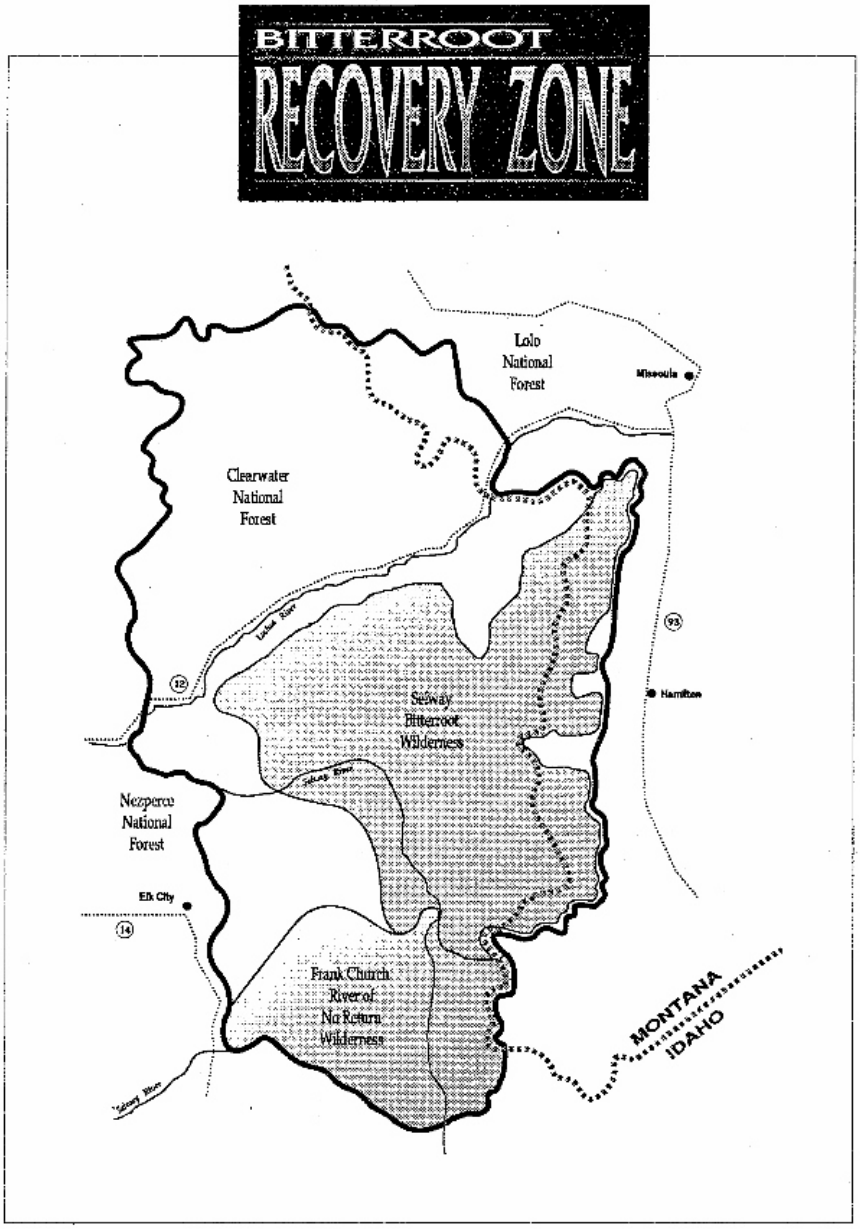


Figure 12.

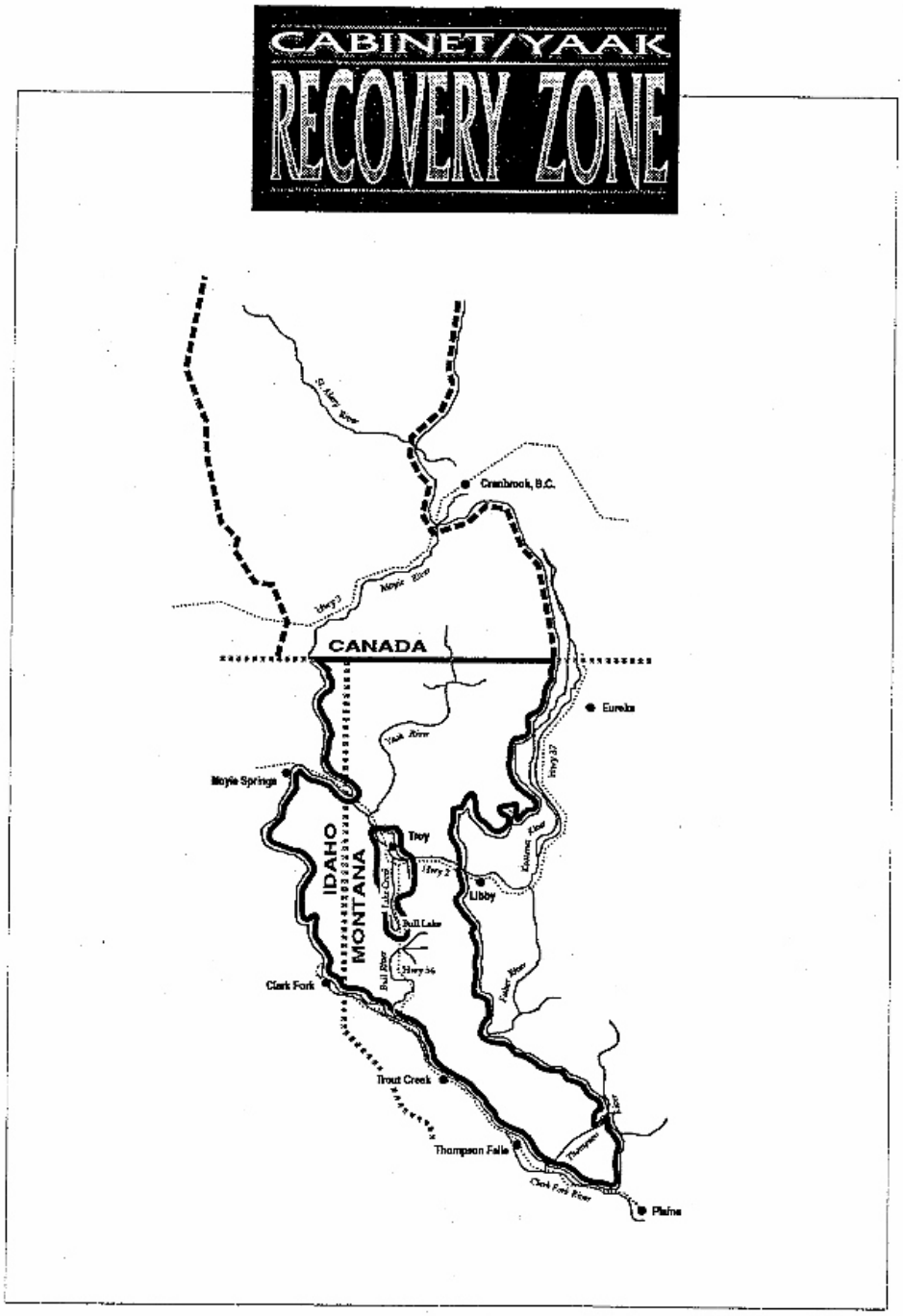

CABINET/YAAK
RECOVERY ZONE
St. Mary River
Cranbrook, B.C.
Hwy 3
Moyie River
CANADA
Eureka
Yaak River
Hwy 37
Moyie Springs
IDAHO
MONTANA
Troy
Hwy 2
Libby
Kootenai River
Lake Creek
Bull Lake
Bull River
Hwy 56
Clark Fork
Fisher River
Trout Creek
Thompson Falls
Clark Fork River
Plains

Figure 10.

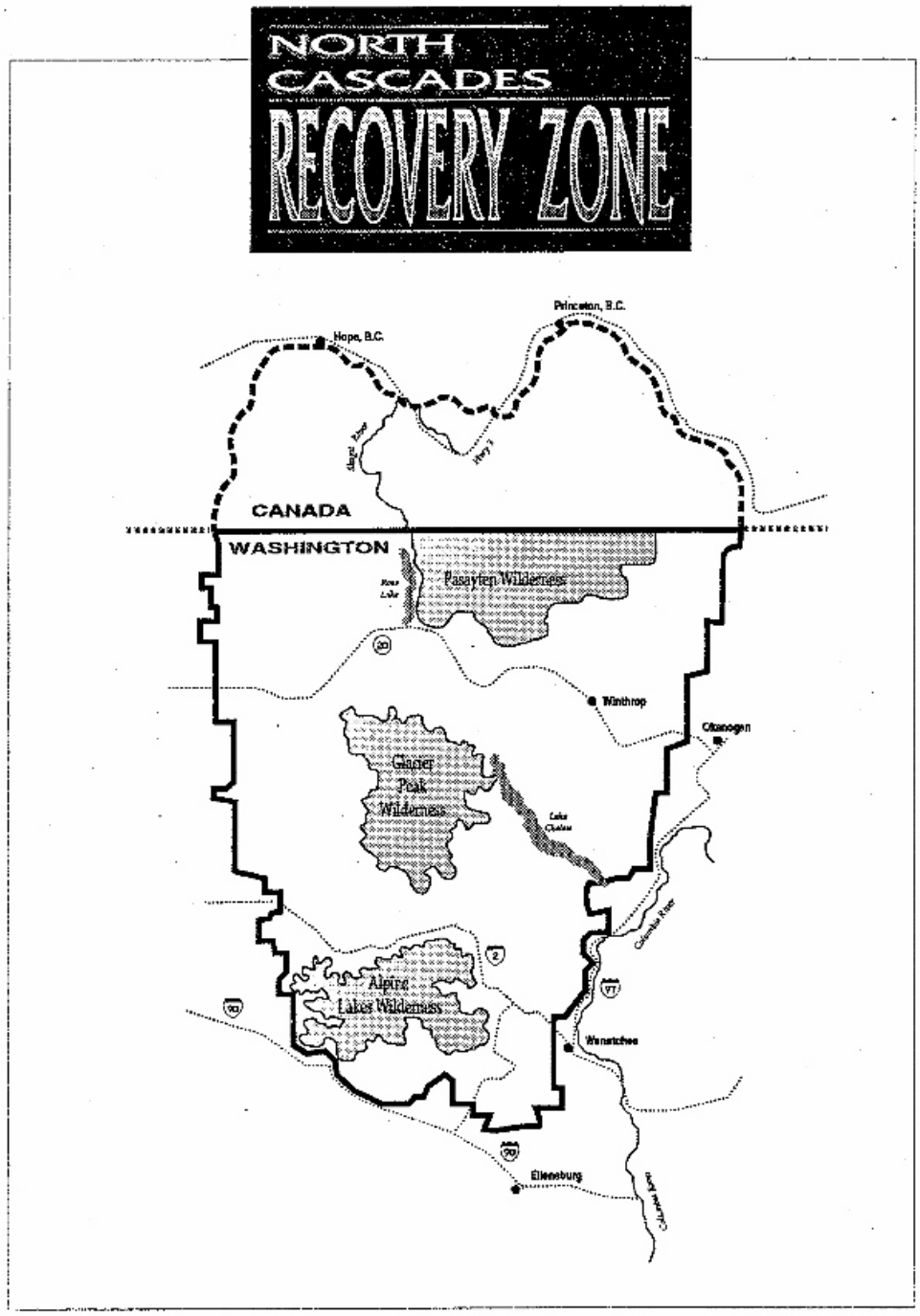

NORTH CASCADES
RECOVERY ZONE
Princeton, B.C.
Hope, B.C.
CANADA
WASHINGTON
Pasayten Wilderness
Winthrop
Okanogan
Glacier Peak Wilderness
Alpine Lakes Wilderness
Wenatchee
Ellensburg

Figure 13.

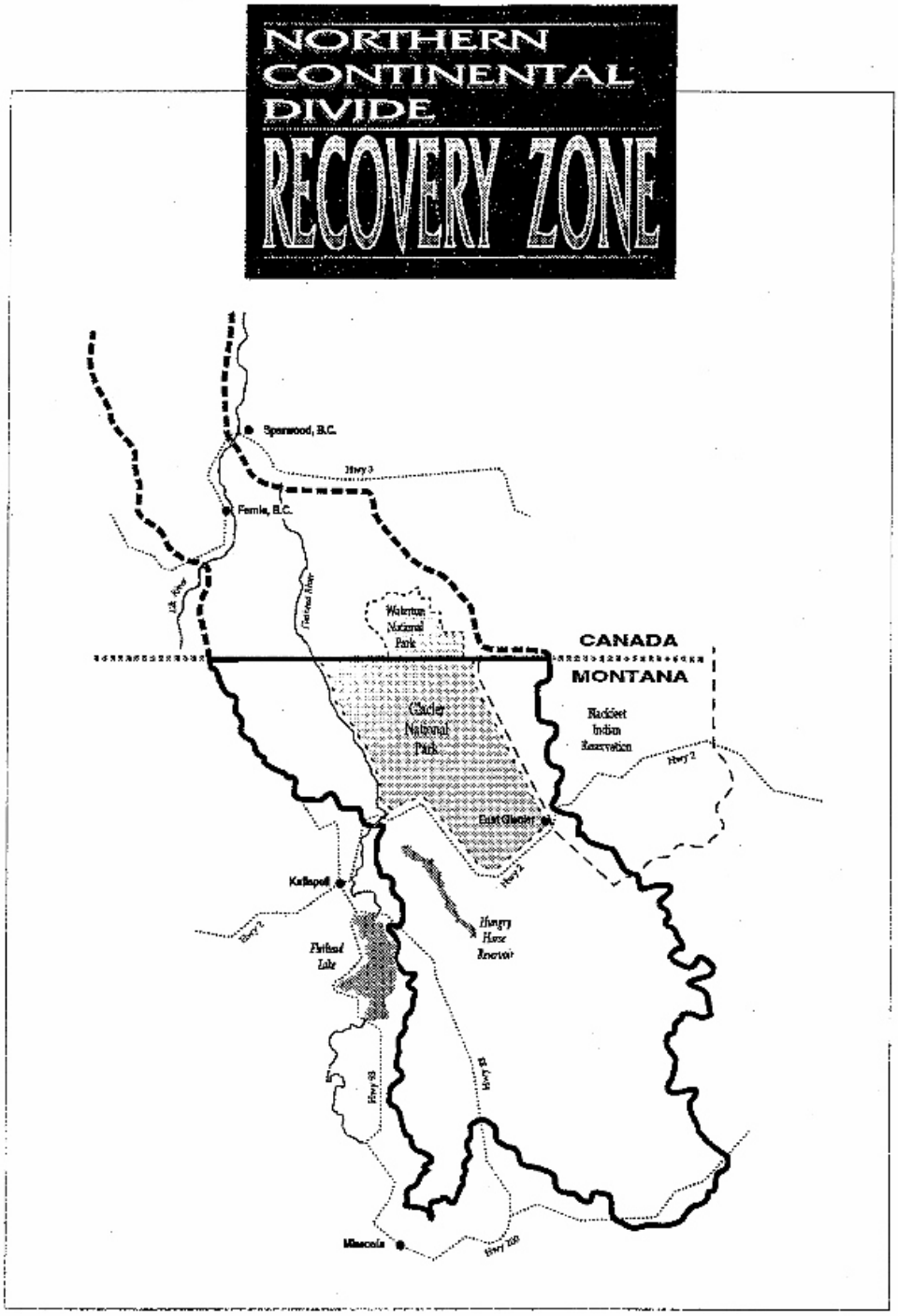

NORTHERN
CONTINENTAL
DIVIDE
RECOVERY ZONE
Spanwood, B.C.
Hwy 3
Fernie, B.C.
Waterton
National
Park
CANADA
MONTANA
Glacier
National
Park
Blackfeet
Indian
Reservation
Hwy 2
East Glacier
Kalispell
Hungry
Horse
Reservoir
Flathead
Lake
Hwy 93
Missoula
Hwy 200

Figure 7.

Figure 3. Northern Idaho Ground Squirrel

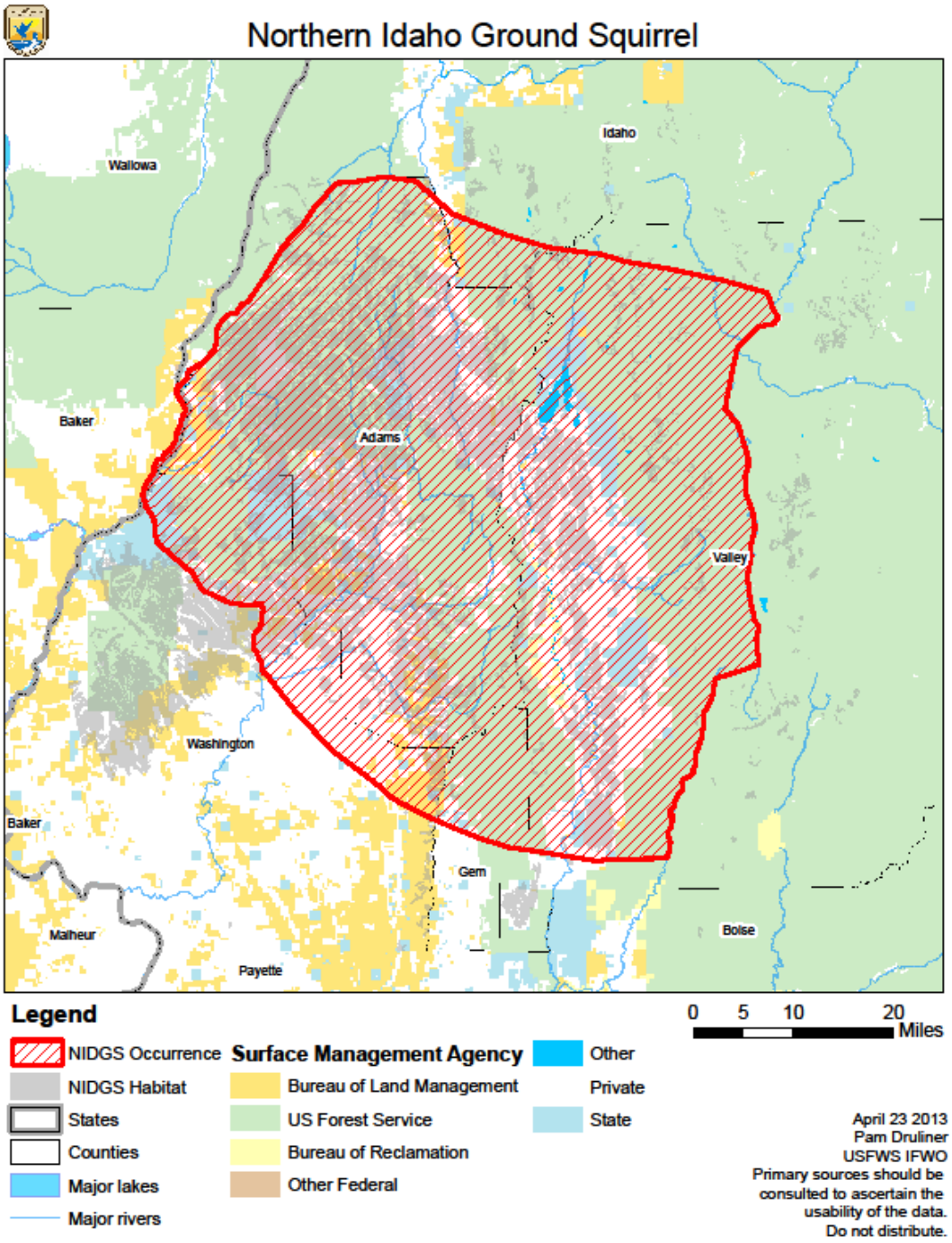
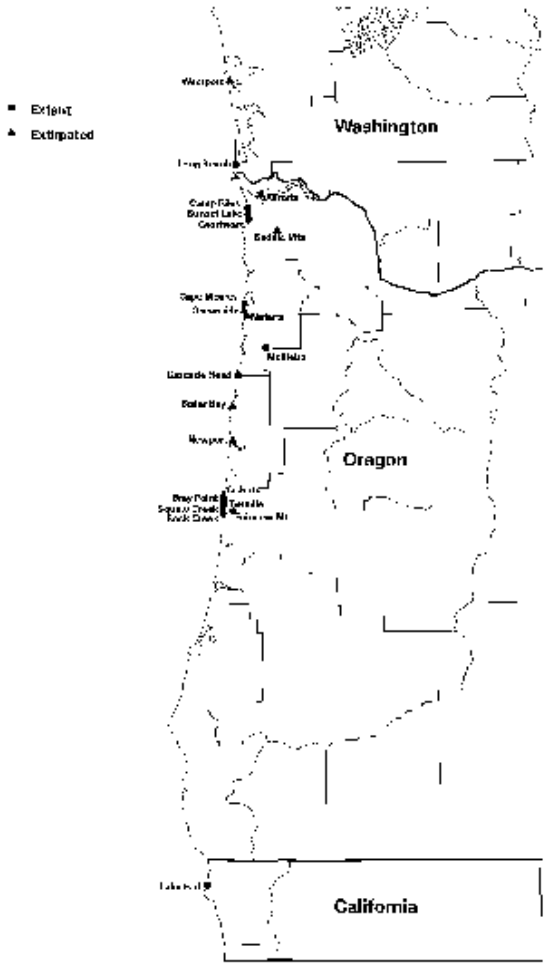


Figure 4. Distribution of the Oregon Silverspot Butterfly

Figure 4. Distribution of the Oregon silverspot butterfly.



9

Figure 6. Banbury Springs Lanx Occurrence

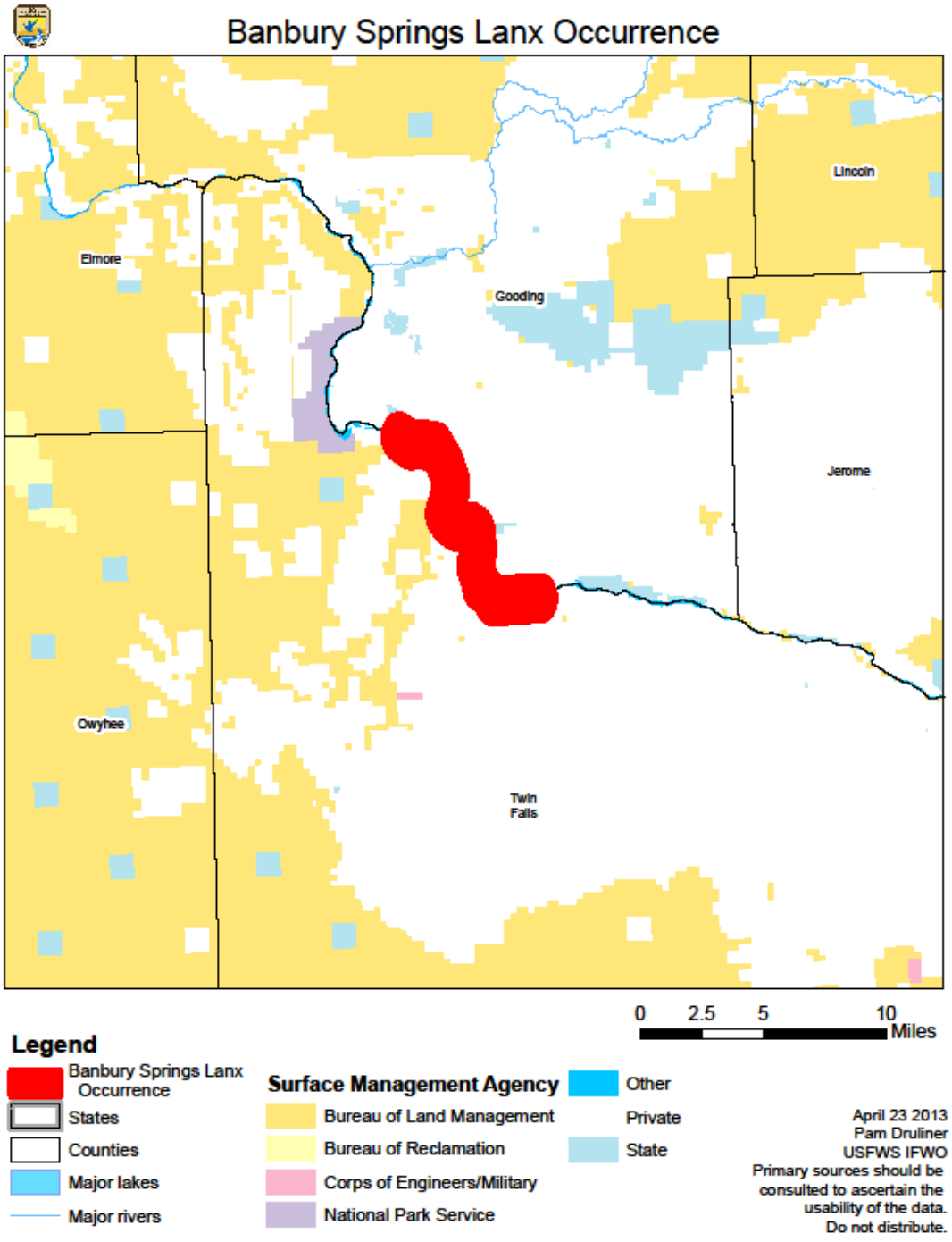


Figure 7. Bliss Rapids Snail Occurrence

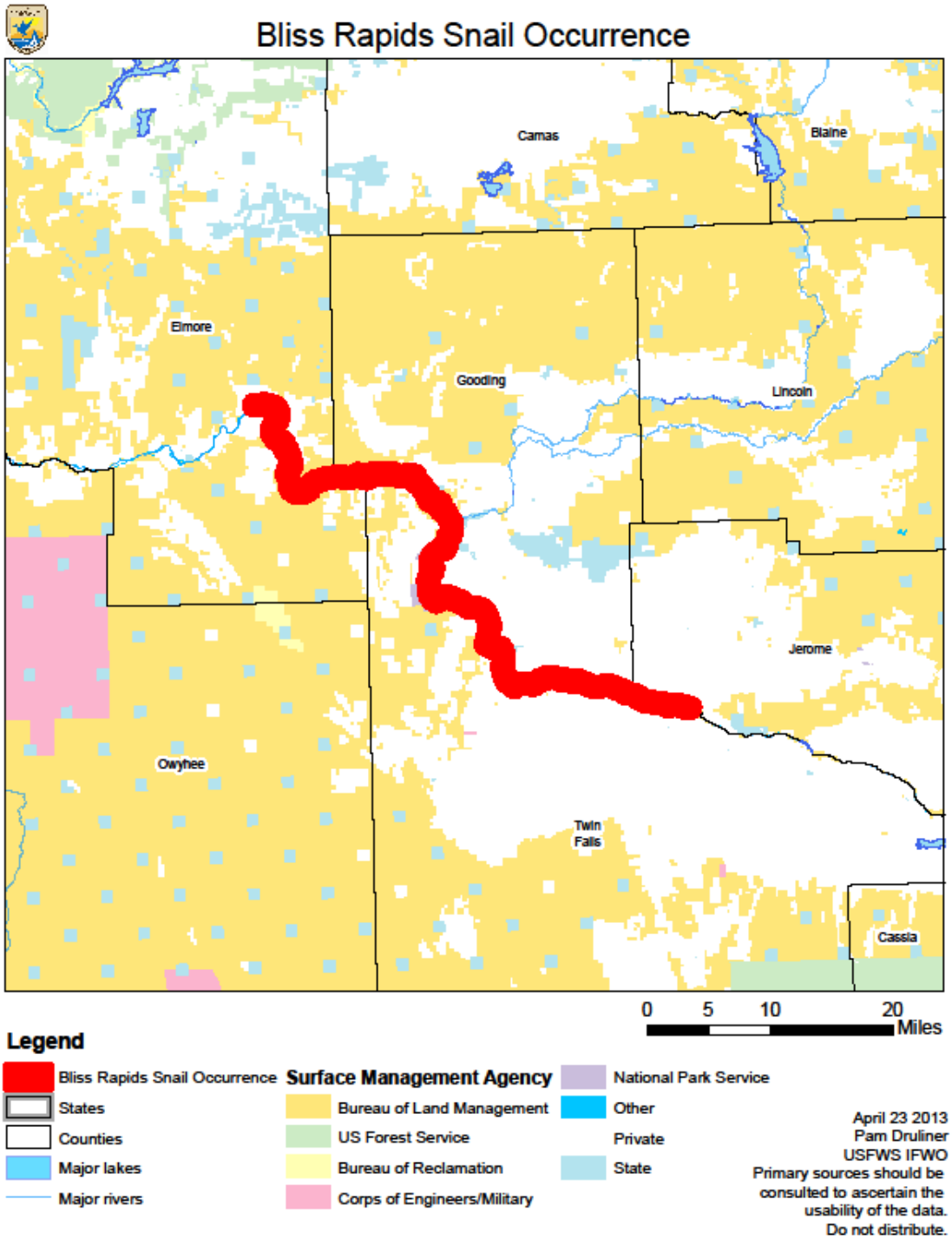


Figure 8. Snake River Physa Occurrence in Idaho

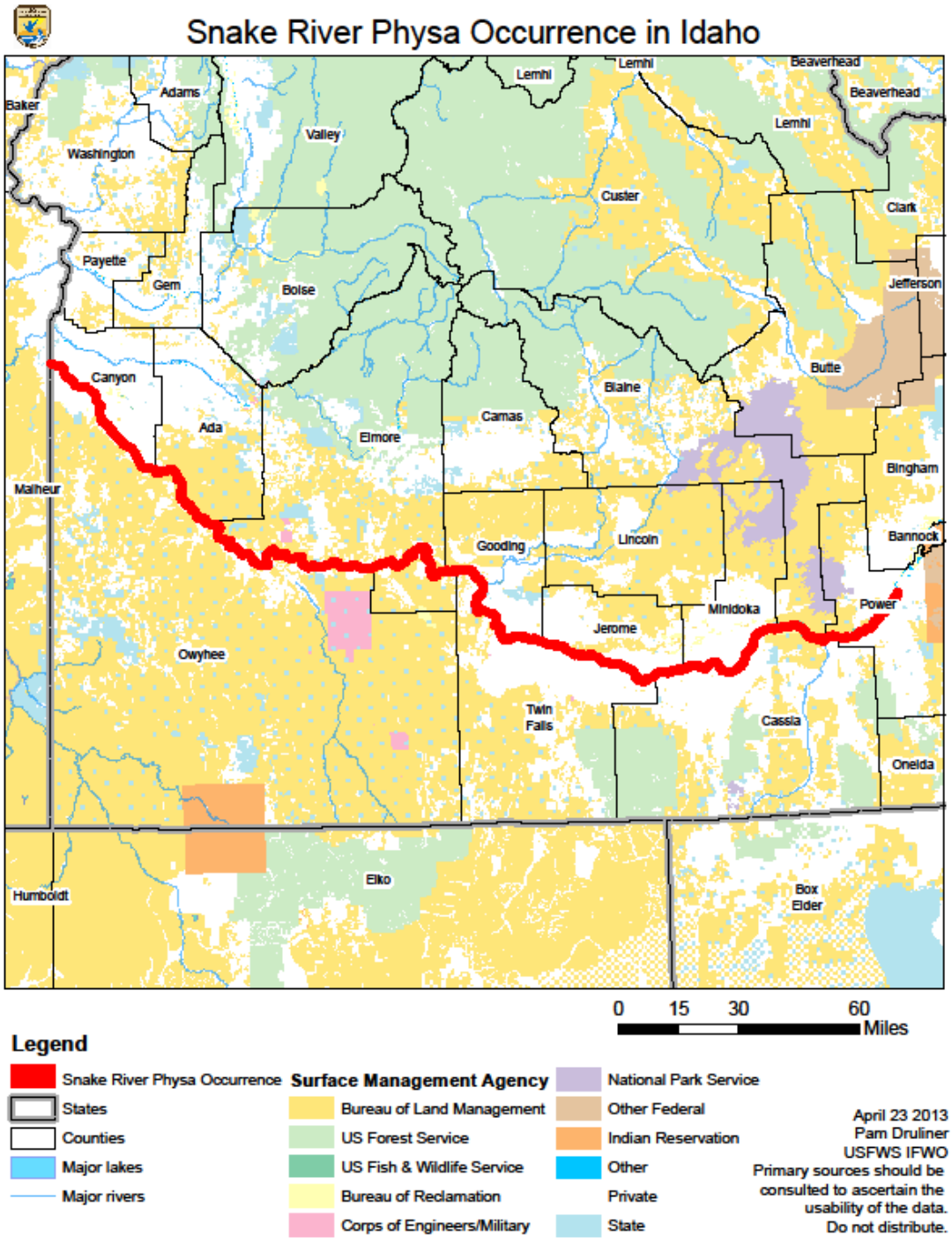


Figure 9. Bruneau Hot Spring Snail Occurrence

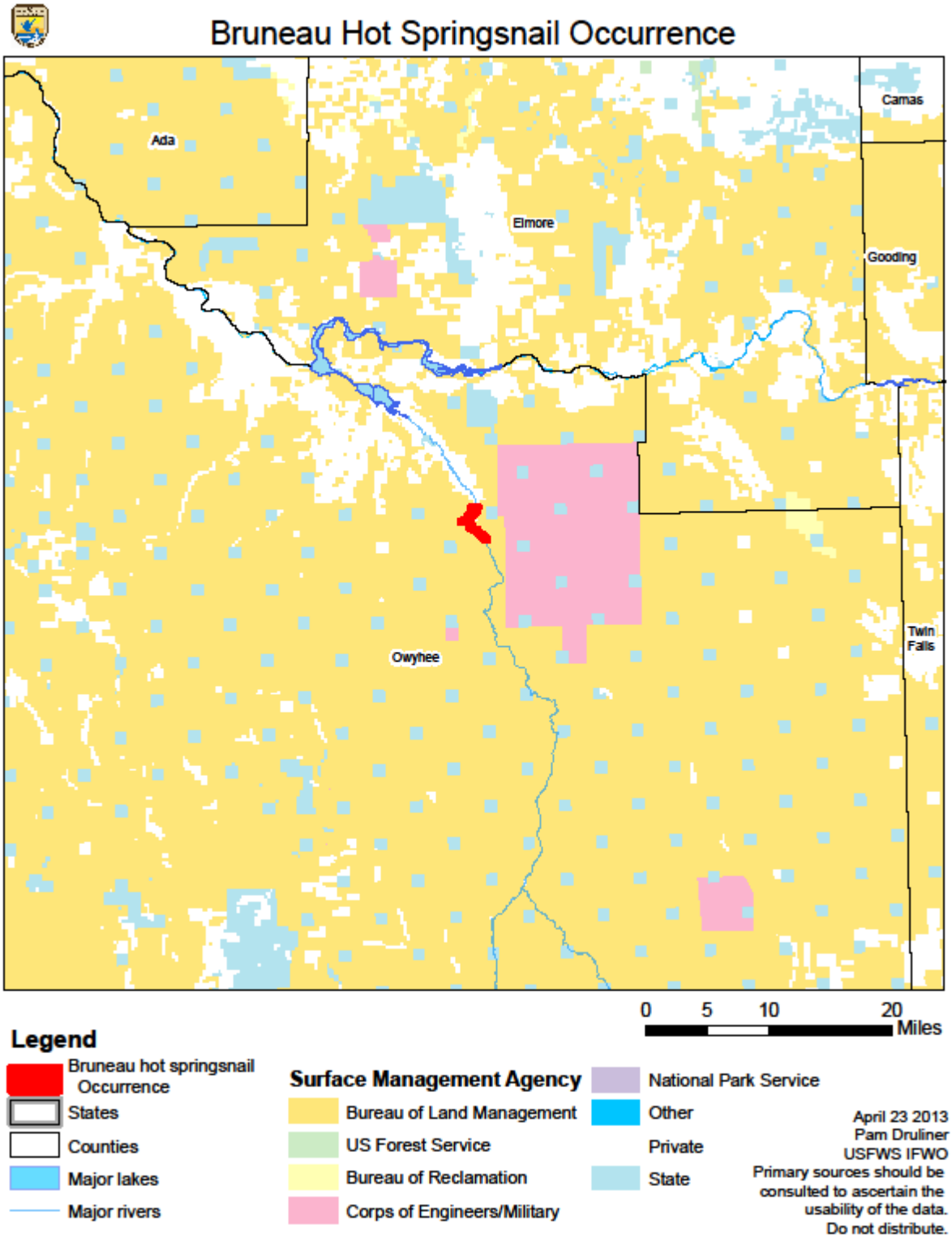


Figure 10. MacFarlane's Four-O'Clock Occurrence in Idaho

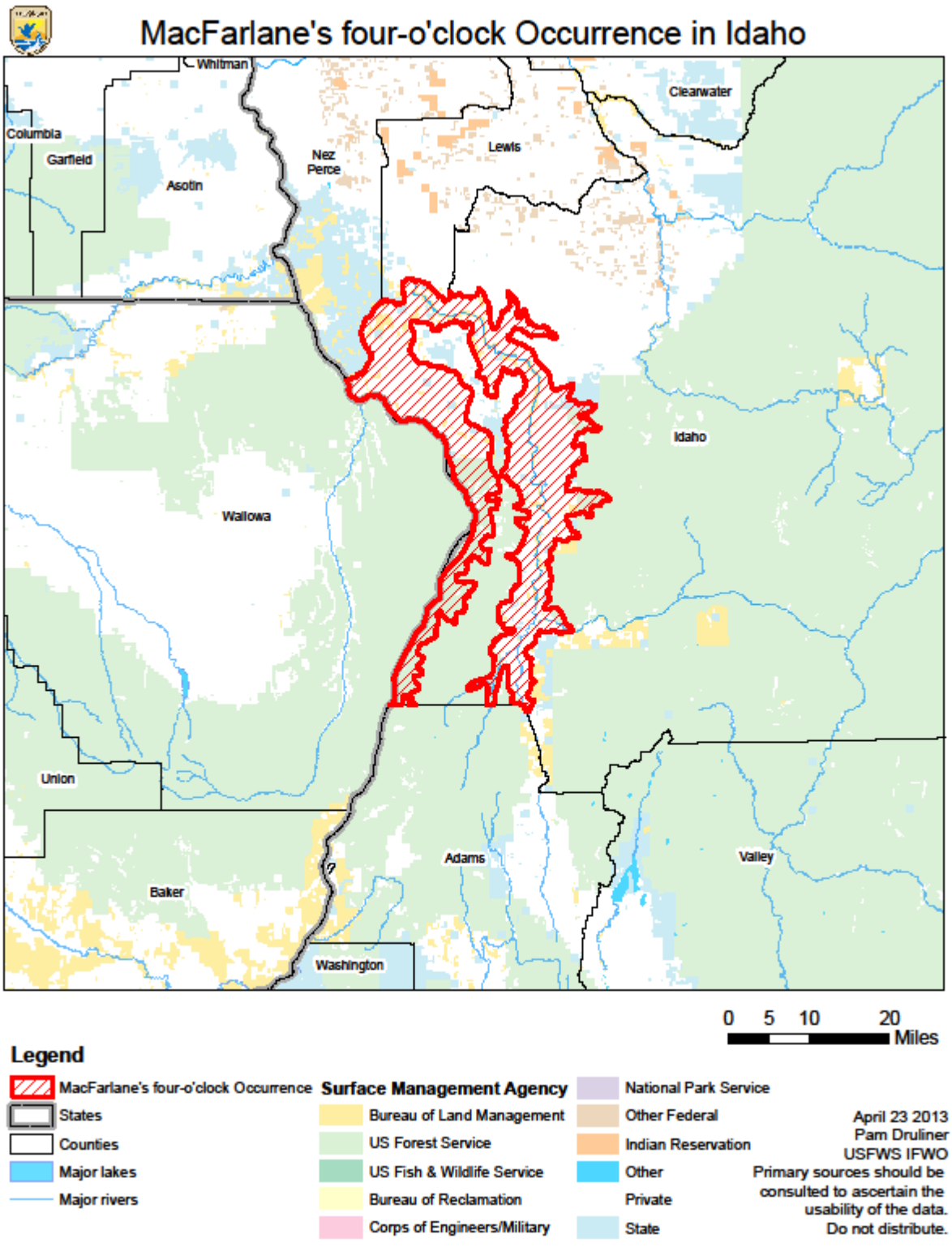


Figure 11. Spalding's Catchfly Occurrence in Idaho.

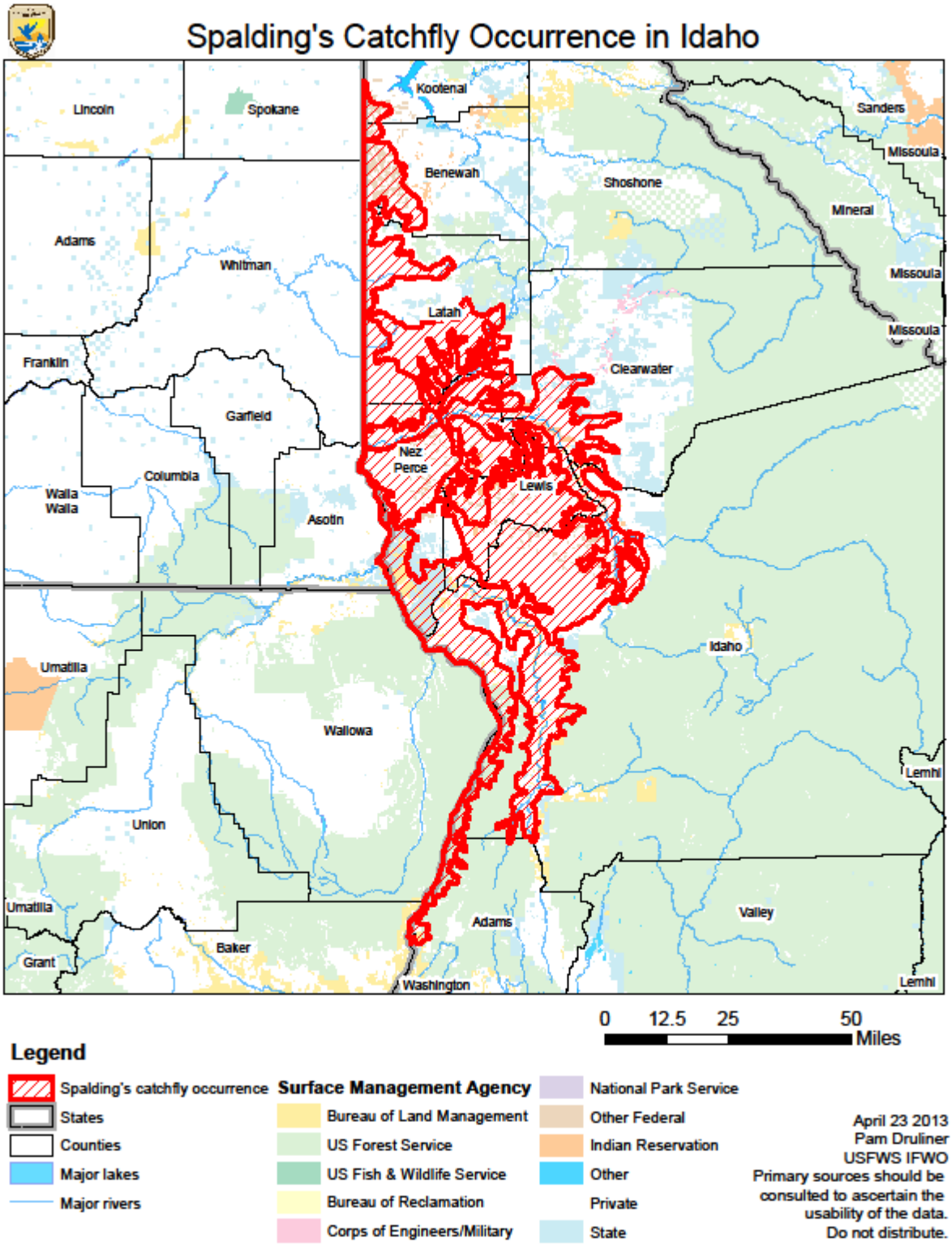


Figure 12. Ute Ladies'-Tresses

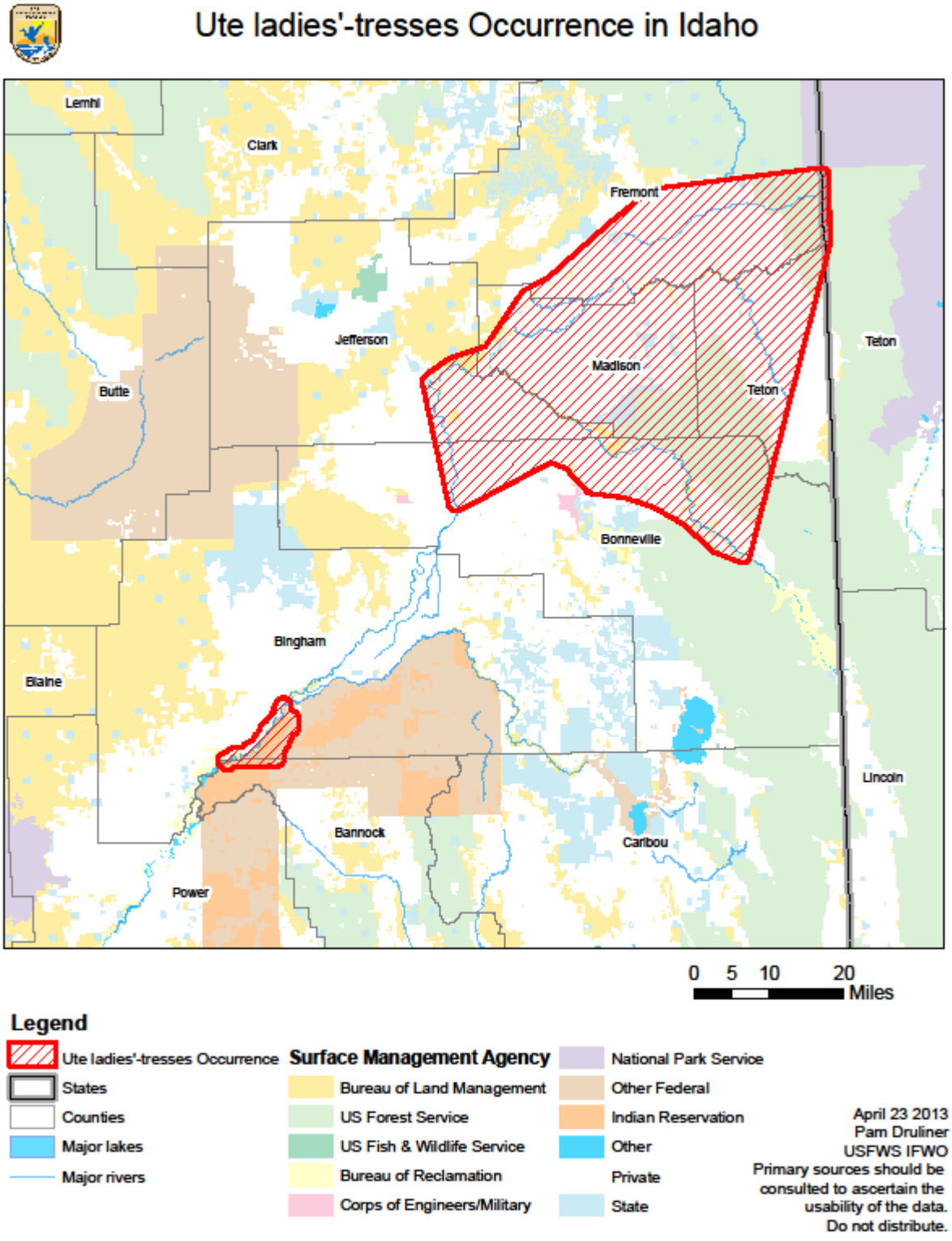
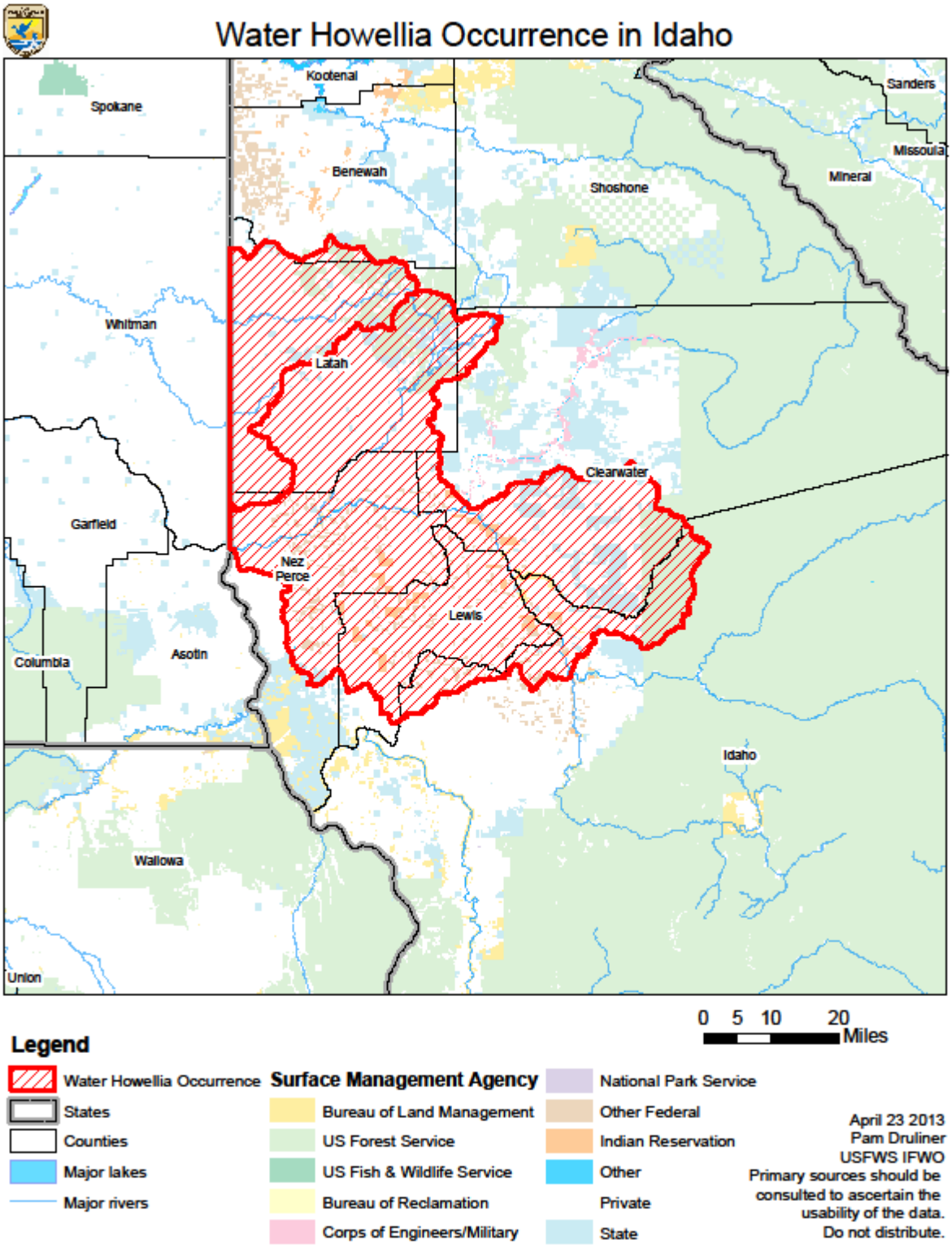


Figure 13. Water Howellia



Appendix E - Bull Trout Columbia River Interim Recovery Unit – Management Unit Maps and Table of Management Units, Core Areas, Local Populations

This appendix provides a list of all management units (n=23; generally major river basins) present within the Columbia River Interim Recovery Unit (IRU), and corresponding core areas and local populations. The accompanying management unit maps, which follow the table, depict spawning and rearing areas (SR) denoted in red, and foraging, migration and overwintering habitat (FMO) denoted in blue. Due to the scale of the maps it was generally not possible to label all stream names designated SR or FMO habitats. In combination, the table and maps should allow project sponsors to determine if their project occurs in bull trout occupied habitat (either SR or FMO habitat). If the table and accompanying maps do not provide the level of detail required to make a determination, please contact the appropriate FWS field office based on the field office jurisdiction maps and contact information provided in Appendix B of this document. A more refined tool to help determine if a project is occurring in bull trout occupied habitat and/or critical habitat is available by accessing the Service's bull trout critical habitat unit maps at the following link:

http://www.fws.gov/pacific/bulltrout/CH2010_Maps.cfm#CHMaps

The critical habitat unit maps generally mimic the management unit maps below (i.e., major river basins) but provide much more detail. For example, the Salmon River Basin critical habitat unit is subsequently broken into 66 different maps with an identifier (label) for every stream that is designated critical habitat. Although there are some exceptions, most bull trout occupied habitat (SR or FMO) is also designated critical habitat.

Please note in the table below (right-hand column) that Pop Type 1 refers to a Local Population; and Pop Type 2 refers to a Potential Local Population. A *local population* is defined as a group of bull trout that spawn within a particular stream or portion of a stream system. Multiple local populations may exist within a core area. A local population is considered to be the smallest group of fish that is known to represent an interacting reproductive unit. For most waters where specific information is lacking, a local population may be represented by a single headwater tributary or complex of headwater tributaries. Gene flow may occur between local populations (e.g., those within a core area), but is assumed to be infrequent compared with that among individuals within a local population. A *potential local population* is defined as a population that likely exists but has not been adequately documented, or that is likely to develop in the foreseeable future if habitat or connectivity is restored in that area or if bull trout re-colonize or are reintroduced in the area.

Data for this table was provided by Columbia River Fisheries Program Office (CRFPO, D. Hines) June 2013.

Columbia River Interim Recovery Unit

Management Unit	Core_Area	Local Pop Name	Pop Type
Deschutes River Basin	Lower Deschutes River	Canyon/Jack/Heising complex	1
Deschutes River Basin	Lower Deschutes River	Jefferson/Candle/Abbot complex	1
Deschutes River Basin	Lower Deschutes River	Shitike Creek	1
Deschutes River Basin	Lower Deschutes River	Warm Springs River	1
Deschutes River Basin	Lower Deschutes River	Whitewater River	1
Deschutes River Basin	Odell Lake	Odell Creek	2
Deschutes River Basin	Odell Lake	Trapper Creek	1
Hood River Basin	Hood River	Clear Branch	1
Hood River Basin	Hood River	Hood River	1
Lower Columbia River Basin	Klickitat River	West Fork Klickitat River	1
Lower Columbia River Basin	Lewis River	Cougar Creek	1
Lower Columbia River Basin	Lewis River	Pine Creek	1
Lower Columbia River Basin	Lewis River	Rush Creek	1
Lower Columbia River Basin	Lewis River	Swift By-pass Reach	2
Lower Columbia River Basin	Lewis River	Upper Lewis River	2
Willamette River Basin	Upper Willamette River	McKenzie River	1
Willamette River Basin	Upper Willamette River	Middle Fork Willamette River	1
Willamette River Basin	Upper Willamette River	South Fork McKenzie River	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Willamette River Basin	Upper Willamette River	Trail Bridge Res. complex	1
Clark Fork River Basin	Akokala Lake	Akokala Creek	1
Clark Fork River Basin	Arrow Lake	Camas Creek	1
Clark Fork River Basin	Big Salmon Lake	Big Salmon Creek	1
Clark Fork River Basin	Bitterroot River	Bass Creek	2
Clark Fork River Basin	Bitterroot River	Blodgett Creek	1
Clark Fork River Basin	Bitterroot River	Boulder Creek	1
Clark Fork River Basin	Bitterroot River	Burnt Fork Bitterroot River	1
Clark Fork River Basin	Bitterroot River	Chaffin Creek	2
Clark Fork River Basin	Bitterroot River	East Fork Bitterroot River	1
Clark Fork River Basin	Bitterroot River	Fred Burr Creek	1
Clark Fork River Basin	Bitterroot River	Gird Creek	2
Clark Fork River Basin	Bitterroot River	Laird Creek	2
Clark Fork River Basin	Bitterroot River	Lolo Creek	1
Clark Fork River Basin	Bitterroot River	Lost Horse Creek	1
Clark Fork River Basin	Bitterroot River	Mill Creek	2
Clark Fork River Basin	Bitterroot River	Nez Perce Fork	1
Clark Fork River Basin	Bitterroot River	O'Brien Creek	1
Clark Fork River Basin	Bitterroot River	Roaring Lion Creek	2
Clark Fork River Basin	Bitterroot River	Rye Creek	2
Clark Fork River	Bitterroot River	Sawtooth Creek	2

Management Unit	Core_Area	Local Pop Name	Pop Type
Basin			
Clark Fork River Basin	Bitterroot River	Skalkaho Creek	1
Clark Fork River Basin	Bitterroot River	Sleeping Child Creek	1
Clark Fork River Basin	Bitterroot River	Sweathouse Creek	2
Clark Fork River Basin	Bitterroot River	Tin Cup Creek	1
Clark Fork River Basin	Bitterroot River	Tolan Creek	1
Clark Fork River Basin	Bitterroot River	Trapper Creek	2
Clark Fork River Basin	Bitterroot River	Warm Springs Creek	1
Clark Fork River Basin	Bitterroot River	West Fork Bitterroot River	1
Clark Fork River Basin	Bitterroot River	Willow Creek	2
Clark Fork River Basin	Blackfoot River	Alice Creek	2
Clark Fork River Basin	Blackfoot River	Arrastra Creek	2
Clark Fork River Basin	Blackfoot River	Bear Creek	2
Clark Fork River Basin	Blackfoot River	Belmont Creek	1
Clark Fork River Basin	Blackfoot River	Blackfoot River	1
Clark Fork River Basin	Blackfoot River	Chamberlain Creek	2
Clark Fork River Basin	Blackfoot River	Copper Creek	1
Clark Fork River Basin	Blackfoot River	Cottonwood Creek	1
Clark Fork River Basin	Blackfoot River	Dry Creek	2
Clark Fork River Basin	Blackfoot River	East Twin Creek	2
Clark Fork River Basin	Blackfoot River	Gold Creek	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Clark Fork River Basin	Blackfoot River	Johnson Gulch	2
Clark Fork River Basin	Blackfoot River	Keep Cool Creek	2
Clark Fork River Basin	Blackfoot River	Landers Fork	1
Clark Fork River Basin	Blackfoot River	Monture Creek	1
Clark Fork River Basin	Blackfoot River	North Fork Blackfoot River	1
Clark Fork River Basin	Blackfoot River	Poorman Creek	1
Clark Fork River Basin	Blackfoot River	Rock Creek	2
Clark Fork River Basin	Blackfoot River	Salmon Creek	2
Clark Fork River Basin	Blackfoot River	Sauerkraut Creek	2
Clark Fork River Basin	Blackfoot River	West Twin Creek	2
Clark Fork River Basin	Bowman Lake	Bowman Creek	1
Clark Fork River Basin	Clark Fork River (Section 1)	Boulder Creek	1
Clark Fork River Basin	Clark Fork River (Section 1)	Flint Creek	1
Clark Fork River Basin	Clark Fork River (Section 1)	Harvey Creek	1
Clark Fork River Basin	Clark Fork River (Section 1)	Racetrack Creek	1
Clark Fork River Basin	Clark Fork River (Section 1)	Warm Springs Creek	1
Clark Fork River Basin	Clark Fork River (Section 2)	Albert Creek	1
Clark Fork River Basin	Clark Fork River (Section 2)	Cedar Creek	1
Clark Fork River Basin	Clark Fork River (Section 2)	Dry Creek	2
Clark Fork River Basin	Clark Fork River (Section 2)	Fish Creek	1 & 2
Clark Fork River	Clark Fork River (Section 2)	Grant Creek	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Basin			
Clark Fork River Basin	Clark Fork River (Section 2)	Ninemile Creek	2
Clark Fork River Basin	Clark Fork River (Section 2)	Petty Creek	1
Clark Fork River Basin	Clark Fork River (Section 2)	Rattlesnake Creek	1
Clark Fork River Basin	Clark Fork River (Section 2)	St. Regis River	1 & 2
Clark Fork River Basin	Clark Fork River (Section 2)	Trout Creek	1
Clark Fork River Basin	Clearwater River & Lakes	Clearwater River	1 & 2
Clark Fork River Basin	Clearwater River & Lakes	Deer Creek	1
Clark Fork River Basin	Clearwater River & Lakes	Morrell Creek	1 & 2
Clark Fork River Basin	Clearwater River & Lakes	Placid Creek	1 & 2
Clark Fork River Basin	Clearwater River & Lakes	West Fork Clearwater River	1
Clark Fork River Basin	Cyclone Lake	Cyclone Creek	1
Clark Fork River Basin	Doctor Lake	Doctor Creek	1
Clark Fork River Basin	Flathead Lake	Bear Creek	1 & 2
Clark Fork River Basin	Flathead Lake	Big Creek	1 & 2
Clark Fork River Basin	Flathead Lake	Bowl Creek	1
Clark Fork River Basin	Flathead Lake	Clack Creek	1
Clark Fork River Basin	Flathead Lake	Coal Creek	1 & 2
Clark Fork River Basin	Flathead Lake	Dirtyface Creek	2
Clark Fork River Basin	Flathead Lake	Granite Creek	1 & 2
Clark Fork River Basin	Flathead Lake	Hay Creek	2

Management Unit	Core_Area	Local Pop Name	Pop Type
Clark Fork River Basin	Flathead Lake	Kishenehn Creek	1
Clark Fork River Basin	Flathead Lake	Long Creek	1 & 2
Clark Fork River Basin	Flathead Lake	Moose Creek	2
Clark Fork River Basin	Flathead Lake	Morrison Creek	1
Clark Fork River Basin	Flathead Lake	Nyack Creek	1
Clark Fork River Basin	Flathead Lake	Ole Creek	1
Clark Fork River Basin	Flathead Lake	Park Creek	1
Clark Fork River Basin	Flathead Lake	Pinchot Creek	2
Clark Fork River Basin	Flathead Lake	Red Meadow Creek	1
Clark Fork River Basin	Flathead Lake	Sage (B.C.) *	1
Clark Fork River Basin	Flathead Lake	Schafer Creek	1
Clark Fork River Basin	Flathead Lake	Starvation (B.C.) *	1
Clark Fork River Basin	Flathead Lake	Strawberry Creek	1 & 2
Clark Fork River Basin	Flathead Lake	Trail Creek	1
Clark Fork River Basin	Flathead Lake	Whale Creek	1
Clark Fork River Basin	Frozen Lake	Frozen Creek	1
Clark Fork River Basin	Harrison Lake	Harrison Creek	1
Clark Fork River Basin	Holland Lake	Holland Creek	1
Clark Fork River Basin	Hungry Horse Reservoir	Bunker Creek	1
Clark Fork River Basin	Hungry Horse Reservoir	Danaher Creek	1
Clark Fork River	Hungry Horse Reservoir	Doris Creek	2

Management Unit	Core_Area	Local Pop Name	Pop Type
Basin			
Clark Fork River Basin	Hungry Horse Reservoir	Felix Creek	2
Clark Fork River Basin	Hungry Horse Reservoir	Gordon Creek	1
Clark Fork River Basin	Hungry Horse Reservoir	Little Salmon Creek	1
Clark Fork River Basin	Hungry Horse Reservoir	Lost Johnny Creek	2
Clark Fork River Basin	Hungry Horse Reservoir	Lower Twin Creek	2
Clark Fork River Basin	Hungry Horse Reservoir	Spotted Bear River	1
Clark Fork River Basin	Hungry Horse Reservoir	Sullivan Creek	1 & 2
Clark Fork River Basin	Hungry Horse Reservoir	Taylor Creek	2
Clark Fork River Basin	Hungry Horse Reservoir	Tin Creek	2
Clark Fork River Basin	Hungry Horse Reservoir	Twin Creek	2
Clark Fork River Basin	Hungry Horse Reservoir	Wheeler Creek	1
Clark Fork River Basin	Hungry Horse Reservoir	White River	1
Clark Fork River Basin	Hungry Horse Reservoir	Wounded Buck Creek	1
Clark Fork River Basin	Hungry Horse Reservoir	Youngs Creek	1 & 2
Clark Fork River Basin	Isabel Lakes	Park Creek	1
Clark Fork River Basin	Kintla Lake	Kintla Creek	1
Clark Fork River Basin	Lake Pend Oreille	Char Creek	1
Clark Fork River Basin	Lake Pend Oreille	East Fork Creek	1
Clark Fork River Basin	Lake Pend Oreille	Gold Creek	1
Clark Fork River Basin	Lake Pend Oreille	Granite Creek	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Clark Fork River Basin	Lake Pend Oreille	Grouse Creek	1
Clark Fork River Basin	Lake Pend Oreille	Johnson Creek	1
Clark Fork River Basin	Lake Pend Oreille	Lightning Creek	1
Clark Fork River Basin	Lake Pend Oreille	Middle Fork East River	1
Clark Fork River Basin	Lake Pend Oreille	Morris Creek	1
Clark Fork River Basin	Lake Pend Oreille	North Fork East River	2
Clark Fork River Basin	Lake Pend Oreille	North Gold Creek	1
Clark Fork River Basin	Lake Pend Oreille	Pack River	1
Clark Fork River Basin	Lake Pend Oreille	Porcupine Creek	1
Clark Fork River Basin	Lake Pend Oreille	Rattle Creek	1
Clark Fork River Basin	Lake Pend Oreille	Savage Creek	1
Clark Fork River Basin	Lake Pend Oreille	Strong Creek	1
Clark Fork River Basin	Lake Pend Oreille	Trestle Creek	1
Clark Fork River Basin	Lake Pend Oreille	Twin Creek	2
Clark Fork River Basin	Lake Pend Oreille	Uleda Creek	1
Clark Fork River Basin	Lake Pend Oreille	Wellington Creek	1
Clark Fork River Basin	Lincoln Lake	Lincoln Creek	1
Clark Fork River Basin	Lindbergh Lake	Swan River	1
Clark Fork River Basin	Logging Lake	Logging Creek	1
Clark Fork River Basin	Lower Clark Fork River Complex	Bull River	1
Clark Fork River	Lower Clark Fork River	Dry Creek	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Basin	Complex		
Clark Fork River Basin	Lower Clark Fork River Complex	Fishtrap Creek	1
Clark Fork River Basin	Lower Clark Fork River Complex	Graves Creek	1
Clark Fork River Basin	Lower Clark Fork River Complex	Jocko River	1
Clark Fork River Basin	Lower Clark Fork River Complex	Middle Fork Jocko River	1
Clark Fork River Basin	Lower Clark Fork River Complex	Mission Creek	1
Clark Fork River Basin	Lower Clark Fork River Complex	North Fork Jocko River	1
Clark Fork River Basin	Lower Clark Fork River Complex	Post Creek	1
Clark Fork River Basin	Lower Clark Fork River Complex	Prospect Creek	1
Clark Fork River Basin	Lower Clark Fork River Complex	Rock Creek	1
Clark Fork River Basin	Lower Clark Fork River Complex	South Fork Jocko River	1
Clark Fork River Basin	Lower Clark Fork River Complex	Swamp Creek	1
Clark Fork River Basin	Lower Clark Fork River Complex	Vermilion River	1
Clark Fork River Basin	Lower Clark Fork River Complex	West Fork Thompson River	1 & 2
Clark Fork River Basin	Lower Quartz Lake	Quartz Creek	1
Clark Fork River Basin	Pend Oreille River	Calispell Creek (complex)	2
Clark Fork River Basin	Pend Oreille River	Cedar Creek	2
Clark Fork River Basin	Pend Oreille River	Indian Creek	2
Clark Fork River Basin	Pend Oreille River	Le Clerc Creek (complex)	2
Clark Fork River Basin	Pend Oreille River	Mill Creek	2
Clark Fork River Basin	Pend Oreille River	Ruby Creek	2

Management Unit	Core_Area	Local Pop Name	Pop Type
Clark Fork River Basin	Pend Oreille River	Sullivan Creek	2
Clark Fork River Basin	Pend Oreille River	Tacoma Creek	2
Clark Fork River Basin	Priest Lakes	Bench Creek	2
Clark Fork River Basin	Priest Lakes	Caribou Creek	2
Clark Fork River Basin	Priest Lakes	Cedar Creek	1
Clark Fork River Basin	Priest Lakes	Gold Creek	1
Clark Fork River Basin	Priest Lakes	Granite Creek	2
Clark Fork River Basin	Priest Lakes	Hughes Fork	1
Clark Fork River Basin	Priest Lakes	Indian Creek	1
Clark Fork River Basin	Priest Lakes	Jackson Creek	2
Clark Fork River Basin	Priest Lakes	Lime Creek	2
Clark Fork River Basin	Priest Lakes	Lion Creek	2
Clark Fork River Basin	Priest Lakes	North Fork Granite Creek	1
Clark Fork River Basin	Priest Lakes	Rock Creek	2
Clark Fork River Basin	Priest Lakes	South Fork Granite Creek	2
Clark Fork River Basin	Priest Lakes	Trapper Creek	2
Clark Fork River Basin	Priest Lakes	Two Mouth Creek	2
Clark Fork River Basin	Priest Lakes	Upper Priest River	1
Clark Fork River Basin	Quartz Lakes	Quartz Creek	1
Clark Fork River Basin	Rock Creek	Brewster Creek	1
Clark Fork River	Rock Creek	Butte Cabin Creek	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Basin			
Clark Fork River Basin	Rock Creek	Cinnabar Creek	2
Clark Fork River Basin	Rock Creek	Copper Creek	2
Clark Fork River Basin	Rock Creek	Cougar Creek	1
Clark Fork River Basin	Rock Creek	Eagle Creek	2
Clark Fork River Basin	Rock Creek	East Fork Rock Creek	1
Clark Fork River Basin	Rock Creek	Gilbert Creek	1
Clark Fork River Basin	Rock Creek	Hogback Creek	1
Clark Fork River Basin	Rock Creek	Hutsinpilar Creek	2
Clark Fork River Basin	Rock Creek	Middle Fork Rock Creek	1
Clark Fork River Basin	Rock Creek	Ranch Creek	1
Clark Fork River Basin	Rock Creek	Rock Creek	1
Clark Fork River Basin	Rock Creek	Ross Fork Rock Creek	1
Clark Fork River Basin	Rock Creek	Sawmilll Creek	2
Clark Fork River Basin	Rock Creek	Stony Creek	1
Clark Fork River Basin	Rock Creek	Upper Willow Creek	1
Clark Fork River Basin	Rock Creek	Wahlquist Creek	1
Clark Fork River Basin	Rock Creek	Welcome Creek	1
Clark Fork River Basin	Rock Creek	West Fork Rock Creek	1
Clark Fork River Basin	Rock Creek	Wyman Gulch	1
Clark Fork River Basin	Swan Lake	Buck Creek	2

Management Unit	Core_Area	Local Pop Name	Pop Type
Clark Fork River Basin	Swan Lake	Cedar Creek	2
Clark Fork River Basin	Swan Lake	Cold Creek	1
Clark Fork River Basin	Swan Lake	Cooney Creek	2
Clark Fork River Basin	Swan Lake	Dog Creek	2
Clark Fork River Basin	Swan Lake	Elk Creek	1
Clark Fork River Basin	Swan Lake	Glacier Creek	2
Clark Fork River Basin	Swan Lake	Goat Creek	1 & 2
Clark Fork River Basin	Swan Lake	Holland Creek (lower)	2
Clark Fork River Basin	Swan Lake	Jim Creek	1
Clark Fork River Basin	Swan Lake	Kraft Creek	2
Clark Fork River Basin	Swan Lake	Lion Creek	1
Clark Fork River Basin	Swan Lake	Lost Creek	1
Clark Fork River Basin	Swan Lake	Piper Creek	1
Clark Fork River Basin	Swan Lake	Soup Creek	1
Clark Fork River Basin	Swan Lake	Woodward Creek	1
Clark Fork River Basin	Trout Lake	Camas Creek	1
Clark Fork River Basin	Upper Kintla Lake	Kintla Creek	1
Clark Fork River Basin	Upper Stillwater Lake	Stillwater River	1
Clark Fork River Basin	Upper Whitefish Lake	East Fork Swift Creek	1
Clark Fork River Basin	West Fork Bitterroot River	Blue Joint Creek	1
Clark Fork River	West Fork Bitterroot River	Chicken Creek	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Basin			
Clark Fork River Basin	West Fork Bitterroot River	Deer Creek	1
Clark Fork River Basin	West Fork Bitterroot River	Hughes Creek	1
Clark Fork River Basin	West Fork Bitterroot River	Little Boulder Creek	1
Clark Fork River Basin	West Fork Bitterroot River	Overwhich Creek	1
Clark Fork River Basin	West Fork Bitterroot River	Slate Creek	1
Clark Fork River Basin	West Fork Bitterroot River	West Fork Bitterroot River	1
Clark Fork River Basin	Whitefish Lake	Swift Creek	1
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Bean Creek (complex)	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Boulder Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	California Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Cougar Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Downey Creek (complex)	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Entente Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Fly Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Gold Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Heller Creek	1
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Independence Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Marble Creek (complex)	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Medicine Creek	1
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	North Fork Coeur d'Alene River	2

Management Unit	Core_Area	Local Pop Name	Pop Type
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Quartz Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Red Ives Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Sherlock Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Shoshone Creek (complex)	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Simmons Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	St. Joe River	1
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Steamboat Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Tepee Creek (complex)	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Timber Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	West Fork Eagle Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Wisdom Creek	1
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Yankee Bar Creek	2
Coeur d'Alene Lake Basin	Coeur d'Alene Lake	Yellow Dog Creek	2
Kootenai River Basin	Bull Lake	Camp Creek	2
Kootenai River Basin	Bull Lake	Keeler Creek	1
Kootenai River Basin	Kootenai River	Boulder Creek	1
Kootenai River Basin	Kootenai River	Callahan Creek	1
Kootenai River Basin	Kootenai River	Flower Creek	2
Kootenai River Basin	Kootenai River	Libby Creek	1 & 2
Kootenai River Basin	Kootenai River	Long Canyon Creek	1
Kootenai River Basin	Kootenai River	O'Brien Creek	1
Kootenai River Basin	Kootenai River	Partmenter Creek	2
Kootenai River Basin	Kootenai River	Pipe Creek	1
Kootenai River Basin	Kootenai River	Quartz Creek	1
Kootenai River Basin	Kootenai River	West Fisher Creek	1
Kootenai River Basin	Kootenai River	Yaak River	2
Kootenai River Basin	Lake Koocanusa	Grave Creek	1 & 2

Management Unit	Core_Area	Local Pop Name	Pop Type
Kootenai River Basin	Lake Koocanusa	Sinclair Creek	2
Kootenai River Basin	Lake Koocanusa	Therriaulte Creek	2
Kootenai River Basin	Lake Koocanusa	Wigwam River	1
Kootenai River Basin	Lake Koocanusa	Young Creek	2
Kootenai River Basin	Sophie Lake	Phillips Creek	1
Clearwater River Basin	Fish Lake (Lochsa River)	Fish Lake Creek	1
Clearwater River Basin	Fish Lake (North Fork Clearwater River)	Fish Creek	1
Clearwater River Basin	Lochsa River	Boulder Creek	2
Clearwater River Basin	Lochsa River	Brushy Fork complex	1
Clearwater River Basin	Lochsa River	Canyon Creek	2
Clearwater River Basin	Lochsa River	Colt Killed complex	1
Clearwater River Basin	Lochsa River	Coolwater Creek	?
Clearwater River Basin	Lochsa River	Crooked Fork complex	1
Clearwater River Basin	Lochsa River	Deadman Creek	?
Clearwater River Basin	Lochsa River	Fire Creek	?
Clearwater River Basin	Lochsa River	Fishing (Squaw) Creek	1
Clearwater River Basin	Lochsa River	Hungery-Fish Creek	2
Clearwater River Basin	Lochsa River	Indian Grave Creek	2
Clearwater River Basin	Lochsa River	Lake Creek	1
Clearwater River Basin	Lochsa River	Legendary Bear (Papoose) Creek	1
Clearwater River Basin	Lochsa River	Lower Warm Springs Creek	1
Clearwater River Basin	Lochsa River	Old Man Creek	2
Clearwater River Basin	Lochsa River	Pete King Creek	2

Management Unit	Core_Area	Local Pop Name	Pop Type
Clearwater River Basin	Lochsa River	Post Office Creek	2
Clearwater River Basin	Lochsa River	Split Creek	2
Clearwater River Basin	Lochsa River	Walton Creek	1
Clearwater River Basin	Lochsa River	Weir Creek	2
Clearwater River Basin	Lower Middle Fork Clearwater River	Clear Creek	2
Clearwater River Basin	Lower Middle Fork Clearwater River	Lolo Creek	1
Clearwater River Basin	North Fork Clearwater River	Beaver Creek	2
Clearwater River Basin	North Fork Clearwater River	Cayuse Creek	1
Clearwater River Basin	North Fork Clearwater River	Cold Springs Creek	2
Clearwater River Basin	North Fork Clearwater River	Floodwood Creek	1
Clearwater River Basin	North Fork Clearwater River	Fourth of July Creek	1
Clearwater River Basin	North Fork Clearwater River	Isabella Creek	1
Clearwater River Basin	North Fork Clearwater River	Kelly Creek	1
Clearwater River Basin	North Fork Clearwater River	Little North Fork Clearwater River	1
Clearwater River Basin	North Fork Clearwater River	Moose Creek	1
Clearwater River Basin	North Fork Clearwater River	Orogrande Creek	1
Clearwater River Basin	North Fork Clearwater River	Quartz Creek	1
Clearwater River Basin	North Fork Clearwater River	Rock Creek	2
Clearwater River Basin	North Fork Clearwater River	Skull Creek	1
Clearwater River Basin	North Fork Clearwater River	Stoney Creek	1
Clearwater River	North Fork Clearwater River	Upper North Fork Clearwater	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Basin			
Clearwater River Basin	North Fork Clearwater River	Weitas Creek	1
Clearwater River Basin	Selway River	Bear Creek	1
Clearwater River Basin	Selway River	Deep Creek	1
Clearwater River Basin	Selway River	Gedney Creek	2
Clearwater River Basin	Selway River	Indian Creek	1
Clearwater River Basin	Selway River	Little Clearwater Creek	1
Clearwater River Basin	Selway River	Magruder Creek	1
Clearwater River Basin	Selway River	Marten Creek	2
Clearwater River Basin	Selway River	Meadow Creek	1
Clearwater River Basin	Selway River	Mink Creek	2
Clearwater River Basin	Selway River	Moose Creek	1
Clearwater River Basin	Selway River	O'Hara Creek	2
Clearwater River Basin	Selway River	Running Creek	1
Clearwater River Basin	Selway River	Three Links Creek	2
Clearwater River Basin	Selway River	Upper Selway River	1
Clearwater River Basin	Selway River	White Cap Creek	1
Clearwater River Basin	South Fork Clearwater River	American River	2
Clearwater River Basin	South Fork Clearwater River	Crooked River	1
Clearwater River Basin	South Fork Clearwater River	Johns Creek	1
Clearwater River Basin	South Fork Clearwater River	Meadow Creek	2

Management Unit	Core_Area	Local Pop Name	Pop Type
Clearwater River Basin	South Fork Clearwater River	Mill Creek	2
Clearwater River Basin	South Fork Clearwater River	Newsome Creek	1
Clearwater River Basin	South Fork Clearwater River	Red River	1
Clearwater River Basin	South Fork Clearwater River	Tenmile Creek	1
Grande Ronde River Basin	Grande Ronde River	Catherine Creek	1
Grande Ronde River Basin	Grande Ronde River	Indian Creek	1
Grande Ronde River Basin	Grande Ronde River	Lookingglass Creek	1
Grande Ronde River Basin	Grande Ronde River	Lostine River/Bear Creek	1
Grande Ronde River Basin	Grande Ronde River	Minam River/Deer Creek	1
Grande Ronde River Basin	Grande Ronde River	Upper Grande Ronde River	1
Grande Ronde River Basin	Grande Ronde River	Upper Hurricane Creek	1
Grande Ronde River Basin	Grande Ronde River	Wenaha River	1
Grande Ronde River Basin	Little Minam River	Little Minam River	1
Hells Canyon Complex	Pine, Indian & Wildhorse Creeks	Bear Creek	1
Hells Canyon Complex	Pine, Indian & Wildhorse Creeks	Clear Creek	1
Hells Canyon Complex	Pine, Indian & Wildhorse Creeks	Crooked River	1
Hells Canyon Complex	Pine, Indian & Wildhorse Creeks	Duck Creek	2
Hells Canyon Complex	Pine, Indian & Wildhorse Creeks	East Pine Creek	1
Hells Canyon Complex	Pine, Indian & Wildhorse Creeks	Elk Creek	1
Hells Canyon Complex	Pine, Indian & Wildhorse Creeks	Fall Creek	2
Hells Canyon	Pine, Indian & Wildhorse	Fish Creek	2

Management Unit	Core_Area	Local Pop Name	Pop Type
Complex	Creeks		
Hells Canyon Complex	Pine, Indian & Wildhorse Creeks	Indian Creek	1
Hells Canyon Complex	Pine, Indian & Wildhorse Creeks	Lick Creek	2
Hells Canyon Complex	Pine, Indian & Wildhorse Creeks	Little Elk Creek	2
Hells Canyon Complex	Pine, Indian & Wildhorse Creeks	Upper Pine Creek	1
Imnaha River Basin	Imnaha River	Cabin Creek	1
Imnaha River Basin	Imnaha River	Cliff Creek	1
Imnaha River Basin	Imnaha River	Lower Big Sheep Creek	1
Imnaha River Basin	Imnaha River	Lower Imnaha River	1
Imnaha River Basin	Imnaha River	McCully Creek	1
Imnaha River Basin	Imnaha River	Redmont Creek	1
Imnaha River Basin	Imnaha River	Upper Big Sheep Creek	1
Imnaha River Basin	Imnaha River	Upper Imnaha River	1
Imnaha River Basin	Imnaha River	Upper Little Sheep Creek	1
John Day River Basin	Middle Fork John Day River	Big Boulder Creek	2
John Day River Basin	Middle Fork John Day River	Big Creek	1
John Day River Basin	Middle Fork John Day River	Butte Creek	2
John Day River Basin	Middle Fork John Day River	Clear Creek	1
John Day River Basin	Middle Fork John Day River	Granite Boulder Creek	1
John Day River Basin	Middle Fork John Day River	Vinegar Creek	2
John Day River Basin	North Fork John Day River	Cable Creek	2
John Day River Basin	North Fork John Day River	Davis Creek	2
John Day River Basin	North Fork John Day River	Desolation Creek	1
John Day River Basin	North Fork John Day River	Dry Creek	2
John Day River Basin	North Fork John Day River	Hidaway Creek	2

Management Unit	Core_Area	Local Pop Name	Pop Type
John Day River Basin	North Fork John Day River	Indian Creek	2
John Day River Basin	North Fork John Day River	Lower Clear Creek	1
John Day River Basin	North Fork John Day River	Upper Clear Creek/Lightning complex	1
John Day River Basin	North Fork John Day River	Upper Granite Creek	1
John Day River Basin	North Fork John Day River	Upper Middle Fork John Day River	2
John Day River Basin	North Fork John Day River	Upper North Fork John Day River	1
John Day River Basin	North Fork John Day River	Upper South Fork Desolation Creek	1
John Day River Basin	North Fork John Day River	Winom Creek	2
John Day River Basin	Upper Mainstem John Day River	Canyon Creek	2
John Day River Basin	Upper Mainstem John Day River	Indian Creek	1
John Day River Basin	Upper Mainstem John Day River	Pine Creek	2
John Day River Basin	Upper Mainstem John Day River	Strawberry Creek	2
John Day River Basin	Upper Mainstem John Day River	Upper John Day River	1
Lower Snake Basin	Asotin Creek	Charley Creek	1
Lower Snake Basin	Asotin Creek	Cougar Creek	1
Lower Snake Basin	Asotin Creek	George Creek	2
Lower Snake Basin	Asotin Creek	North Fork Asotin Creek	1
Lower Snake Basin	Asotin Creek	South Fork Asotin Creek	2
Lower Snake Basin	Tucannon River	Bear Creek	1
Lower Snake Basin	Tucannon River	Cold Creek	1
Lower Snake Basin	Tucannon River	Cummings Creek	1
Lower Snake Basin	Tucannon River	Hixon Creek	2
Lower Snake Basin	Tucannon River	Little Turkey Creek	1
Lower Snake Basin	Tucannon River	Meadow Creek	1
Lower Snake Basin	Tucannon River	Panjab Creek	1
Lower Snake Basin	Tucannon River	Sheep Creek	1
Lower Snake Basin	Tucannon River	Turkey Creek	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Lower Snake Basin	Tucannon River	Upper Tucannon River	1
Middle Columbia Basin		Stehekin River	?
Middle Columbia Basin	Entiat River	Entiat River	1
Middle Columbia Basin	Entiat River	Mad River	1
Middle Columbia Basin	Methow River	Beaver Creek	1
Middle Columbia Basin	Methow River	Chewuch River	1
Middle Columbia Basin	Methow River	Early Winters Creek	1
Middle Columbia Basin	Methow River	Goat Creek	1
Middle Columbia Basin	Methow River	Gold Creek	1
Middle Columbia Basin	Methow River	Lake Creek	1
Middle Columbia Basin	Methow River	Lost River	1
Middle Columbia Basin	Methow River	Twisp River	1
Middle Columbia Basin	Methow River	Upper Methow River	1
Middle Columbia Basin	Methow River	Wolf Creek	1
Middle Columbia Basin	Wenatchee River	Chiwaukum Creek	1
Middle Columbia Basin	Wenatchee River	Chiwawa River	1
Middle Columbia Basin	Wenatchee River	Icicle Creek	1
Middle Columbia Basin	Wenatchee River	Little Wenatchee River	1
Middle Columbia Basin	Wenatchee River	Nason Creek	1
Middle Columbia Basin	Wenatchee River	Peshastin Creek	1
Middle Columbia Basin	Wenatchee River	White River	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Powder River	Powder River	Anthony Creek	1
Powder River	Powder River	Big Muddy Creek	1
Powder River	Powder River	Eagle Creek	2
Powder River	Powder River	Lake Creek	1
Powder River	Powder River	North Powder River	1
Powder River	Powder River	Rock Creek	1
Powder River	Powder River	Salmon Creek	1
Powder River	Powder River	Upper Powder River	1
Powder River	Powder River	Wolf Creek	1
Sheep / Granite Creeks	Granite Creek	Granite Creek	1
Sheep / Granite Creeks	Sheep Creek	Sheep Creek	1
Umatilla River Basin	Umatilla River	North Fork Meacham Creek	2
Umatilla River Basin	Umatilla River	North Fork Umatilla River	1
Umatilla River Basin	Umatilla River	Ryan Creek	2
Umatilla River Basin	Umatilla River	South Fork Umatilla River	2
Walla Walla River Basin	Touchet River	North Fork Touchet River	1
Walla Walla River Basin	Touchet River	South Fork Touchet River	1
Walla Walla River Basin	Touchet River	Wolf Fork Touchet River	1
Walla Walla River Basin	Walla Walla River	North Fork Walla Walla River	1
Walla Walla River Basin	Walla Walla River	South Fork Walla Walla River	1
Walla Walla River Basin	Walla Walla River	Upper Mill Creek	1
Yakima River	Yakima River	Ahtanum Creek	1
Yakima River	Yakima River	American River	1
Yakima River	Yakima River	Box Cayon Creek	1
Yakima River	Yakima River	Bumping River	1
Yakima River	Yakima River	Cle Elum River	1
Yakima River	Yakima River	Cold Creek	?
Yakima River	Yakima River	Cowiche Creek	?
Yakima River	Yakima River	Crow Creek	1
Yakima River	Yakima River	Deep Creek	1
Yakima River	Yakima River	Gold Creek	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Yakima River	Yakima River	Indian Creek	1
Yakima River	Yakima River	Kachess River	1
Yakima River	Yakima River	Little Naches River	2
Yakima River	Yakima River	Nile Creek	?
Yakima River	Yakima River	North Fork Tieton River	1
Yakima River	Yakima River	Rattlesnake Creek	1
Yakima River	Yakima River	South Fork Tieton River	1
Yakima River	Yakima River	Taneum Creek	2
Yakima River	Yakima River	Teanaway River	1
Yakima River	Yakima River	Upper Yakima River	1
Yakima River	Yakima River	Waptus River	1
Little Lost River Basin	Little Lost River	Badger Creek	1
Little Lost River Basin	Little Lost River	Iron Creek	1
Little Lost River Basin	Little Lost River	Mill Creek	1
Little Lost River Basin	Little Lost River	Smithie Fork Creek	1
Little Lost River Basin	Little Lost River	Squaw Creek	1
Little Lost River Basin	Little Lost River	Timber Creek	1
Little Lost River Basin	Little Lost River	Upper Little Lost River	1
Little Lost River Basin	Little Lost River	Warm Creek	1
Little Lost River Basin	Little Lost River	Wet Creek	1
Little Lost River Basin	Little Lost River	Williams Creek	1
Malheur River Basin	Malheur River	Big Creek	1
Malheur River Basin	Malheur River	Crane Creek	1
Malheur River Basin	Malheur River	Elk Creek	1
Malheur River Basin	Malheur River	Lake Creek	1
Malheur River Basin	Malheur River	Meadow Fork	1
Malheur River Basin	Malheur River	Sheep Creek	1
Malheur River Basin	Malheur River	Swamp Creek	1
Malheur River Basin	Malheur River	Upper North Fork Malheur	1

Management Unit	Core_Area	Local Pop Name	Pop Type
		River	
Salmon River Basin	Lake Creek	Lake Creek	1
Salmon River Basin	Lemhi River	Agency Creek	2
Salmon River Basin	Lemhi River	Bohannon Creek	1
Salmon River Basin	Lemhi River	Geertson Creek	1
Salmon River Basin	Lemhi River	Hawley Creek	1
Salmon River Basin	Lemhi River	Hayden Creek	1
Salmon River Basin	Lemhi River	Kenney Creek	1
Salmon River Basin	Lemhi River	Pattee Creek	1
Salmon River Basin	Lemhi River	Sandy Creek	2
Salmon River Basin	Lemhi River	Upper Lemhi River	1
Salmon River Basin	Lemhi River	Withington Creek	2
Salmon River Basin	Little-Lower Salmon River	Boulder Creek	1
Salmon River Basin	Little-Lower Salmon River	Elkhorn Creek	2
Salmon River Basin	Little-Lower Salmon River	French Creek	2
Salmon River Basin	Little-Lower Salmon River	Hard Creek	1
Salmon River Basin	Little-Lower Salmon River	John Day Creek	1
Salmon River Basin	Little-Lower Salmon River	Lake Creek	1
Salmon River Basin	Little-Lower Salmon River	Partridge Creek	1
Salmon River Basin	Little-Lower Salmon River	Rapid River	1
Salmon River Basin	Little-Lower Salmon River	Slate Creek	1
Salmon River Basin	Middle Fork Salmon River	Bear Valley Creek	1
Salmon River Basin	Middle Fork Salmon River	Beaver Creek	1
Salmon River Basin	Middle Fork Salmon River	Big Creek 1	1
Salmon River Basin	Middle Fork Salmon River	Big Creek 4	1
Salmon River Basin	Middle Fork Salmon River	Big Ramey Creek	1
Salmon River Basin	Middle Fork Salmon River	Camas Creek	1
Salmon River Basin	Middle Fork Salmon River	Crooked-Buck	1
Salmon River Basin	Middle Fork Salmon River	Indian Creek	1
Salmon River Basin	Middle Fork Salmon River	Little Loon Creek	1
Salmon River Basin	Middle Fork Salmon River	Loon Creek	1
Salmon River Basin	Middle Fork Salmon River	Lower Middle Fork 2	1
Salmon River Basin	Middle Fork Salmon River	Lower Middle Fork 3	1
Salmon River Basin	Middle Fork Salmon River	Lower-Middle Fork 1	1
Salmon River Basin	Middle Fork Salmon River	Marble Creek	1
Salmon River Basin	Middle Fork Salmon River	Marsh Creek	1
Salmon River Basin	Middle Fork Salmon River	Mayfield Creek	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Salmon River Basin	Middle Fork Salmon River	Monumental Creek	1
Salmon River Basin	Middle Fork Salmon River	Pistol Creek	1
Salmon River Basin	Middle Fork Salmon River	Rapid Creek	1
Salmon River Basin	Middle Fork Salmon River	Rush Creek	1
Salmon River Basin	Middle Fork Salmon River	Silver Creek	1
Salmon River Basin	Middle Fork Salmon River	Sulphur Creek	1
Salmon River Basin	Middle Fork Salmon River	Upper Middle Fork Salmon 1	1
Salmon River Basin	Middle Fork Salmon River	Upper Middle Fork Salmon 2	1
Salmon River Basin	Middle Fork Salmon River	Warm Spring Creek	1
Salmon River Basin	Middle Fork Salmon River	Wilson Creek	1
Salmon River Basin	Middle Fork Salmon River	Yellow Jacket Creek	1
Salmon River Basin	Middle Salmon River-Chamberlain	Bargamin Creek	1
Salmon River Basin	Middle Salmon River-Chamberlain	Big Squaw Creek	1
Salmon River Basin	Middle Salmon River-Chamberlain	California Creek	1
Salmon River Basin	Middle Salmon River-Chamberlain	Chamberlain Creek	1
Salmon River Basin	Middle Salmon River-Chamberlain	Crooked Creek	2
Salmon River Basin	Middle Salmon River-Chamberlain	Fall Creek	1
Salmon River Basin	Middle Salmon River-Chamberlain	Sabe Creek	1
Salmon River Basin	Middle Salmon River-Chamberlain	Sheep Creek	1
Salmon River Basin	Middle Salmon River-Chamberlain	Warren Creek	1
Salmon River Basin	Middle Salmon River-Chamberlain	Wind River	1
Salmon River Basin	Middle Salmon River-Panther	Allison Creek	1
Salmon River Basin	Middle Salmon River-Panther	Boulder Creek	1
Salmon River Basin	Middle Salmon River-Panther	Carmen Creek	1
Salmon River Basin	Middle Salmon River-Panther	Cow Creek	1
Salmon River Basin	Middle Salmon River-	Fourth of July Creek	1

Management Unit	Core_Area	Local Pop Name	Pop Type
	Panther		
Salmon River Basin	Middle Salmon River-Panther	Hat Creek	1
Salmon River Basin	Middle Salmon River-Panther	Horse Creek	1
Salmon River Basin	Middle Salmon River-Panther	Indian Creek	1
Salmon River Basin	Middle Salmon River-Panther	Iron Creek	1
Salmon River Basin	Middle Salmon River-Panther	Jesse Creek	1
Salmon River Basin	Middle Salmon River-Panther	McKim Creek	1
Salmon River Basin	Middle Salmon River-Panther	Napias Creek	1
Salmon River Basin	Middle Salmon River-Panther	North Fork Salmon River	1
Salmon River Basin	Middle Salmon River-Panther	Owl Creek	1
Salmon River Basin	Middle Salmon River-Panther	Panther Creek	1
Salmon River Basin	Middle Salmon River-Panther	Pine Creek	1
Salmon River Basin	Middle Salmon River-Panther	Spring Creek	1
Salmon River Basin	Middle Salmon River-Panther	Squaw Creek	1
Salmon River Basin	Middle Salmon River-Panther	Twelvemile Creek	1
Salmon River Basin	Middle Salmon River-Panther	Williams Creek	1
Salmon River Basin	Opal Lake	Opal Lake	1
Salmon River Basin	Pahsimeroi River	Big Creek	1
Salmon River Basin	Pahsimeroi River	Burnt Creek	1
Salmon River Basin	Pahsimeroi River	Ditch Creek	1
Salmon River Basin	Pahsimeroi River	Falls Creek	1
Salmon River Basin	Pahsimeroi River	Goldburg Creek	1
Salmon River Basin	Pahsimeroi River	Little Morgan Creek	1
Salmon River Basin	Pahsimeroi River	Morse Creek	1
Salmon River Basin	Pahsimeroi River	Patterson Creek	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Salmon River Basin	Pahsimeroi River	Tater Creek	1
Salmon River Basin	Pahsimeroi River	Upper Pahsimeroi River	1
Salmon River Basin	South Fork Salmon River	Bear Creek	2
Salmon River Basin	South Fork Salmon River	Blackmare Creek	1
Salmon River Basin	South Fork Salmon River	Buckhorn Creek	1
Salmon River Basin	South Fork Salmon River	Burntlog Creek	1
Salmon River Basin	South Fork Salmon River	Camp Phoebe Creek	1
Salmon River Basin	South Fork Salmon River	Cougar Creek	1
Salmon River Basin	South Fork Salmon River	Curtis Creek	1
Salmon River Basin	South Fork Salmon River	Dollar-Six Bit Creek	1
Salmon River Basin	South Fork Salmon River	Elk Creek	1
Salmon River Basin	South Fork Salmon River	Fitsum Creek	1
Salmon River Basin	South Fork Salmon River	Fourmile Creek	1
Salmon River Basin	South Fork Salmon River	Fritser Creek	1
Salmon River Basin	South Fork Salmon River	Grouse-Flat Creek	1
Salmon River Basin	South Fork Salmon River	Lick Creek	1
Salmon River Basin	South Fork Salmon River	Loon Creek	1
Salmon River Basin	South Fork Salmon River	Pony Creek	1
Salmon River Basin	South Fork Salmon River	Porphyry Creek	2
Salmon River Basin	South Fork Salmon River	Profile Creek	1
Salmon River Basin	South Fork Salmon River	Quartz Creek	1
Salmon River Basin	South Fork Salmon River	Riordan Creek	1
Salmon River Basin	South Fork Salmon River	Ruby Creek	1
Salmon River Basin	South Fork Salmon River	Sheep Creek-South Fork Salmon	2
Salmon River Basin	South Fork Salmon River	Sugar Creek	1
Salmon River Basin	South Fork Salmon River	Summit Creek	1
Salmon River Basin	South Fork Salmon River	Tamarack Creek	1
Salmon River Basin	South Fork Salmon River	Trapper Creek	1
Salmon River Basin	South Fork Salmon River	Upper East Fork South Fork Salmon River	1
Salmon River Basin	South Fork Salmon River	Upper East Fork South Fork Salmon River	1
Salmon River Basin	South Fork Salmon River	Upper Johnson Creek	2
Salmon River Basin	South Fork Salmon River	Upper Lake Creek	1
Salmon River Basin	South Fork Salmon River	Upper South Fork Salmon	1
Salmon River Basin	South Fork Salmon River	Victor Creek	1
Salmon River Basin	South Fork Salmon River	Warm Lake Creek	1

Management Unit	Core_Area	Local Pop Name	Pop Type
Salmon River Basin	South Fork Salmon River	Zena Creek	1
Salmon River Basin	Upper Salmon River	Alturas Lake Creek	1
Salmon River Basin	Upper Salmon River	Basin Creek	1
Salmon River Basin	Upper Salmon River	Bayhorse Creek	1
Salmon River Basin	Upper Salmon River	Challis Creek	1
Salmon River Basin	Upper Salmon River	Champion Creek	1
Salmon River Basin	Upper Salmon River	East Fork Salmon River	1
Salmon River Basin	Upper Salmon River	Fourth of July Creek	1
Salmon River Basin	Upper Salmon River	Garden Creek	1
Salmon River Basin	Upper Salmon River	Germania Creek	1
Salmon River Basin	Upper Salmon River	Kinnikinic Creek	1
Salmon River Basin	Upper Salmon River	Morgan Creek	1
Salmon River Basin	Upper Salmon River	Pettit Lake	1
Salmon River Basin	Upper Salmon River	Redfish Lake Creek	1
Salmon River Basin	Upper Salmon River	Slate Creek	1
Salmon River Basin	Upper Salmon River	Squaw Creek	1
Salmon River Basin	Upper Salmon River	Thompson Creek	1
Salmon River Basin	Upper Salmon River	Upper Salmon River	1
Salmon River Basin	Upper Salmon River	Valley Creek	1
Salmon River Basin	Upper Salmon River	Warm Springs Creek	1
Salmon River Basin	Upper Salmon River	Yankee Fork Creek	1
Salmon River Basin	Upper Salmon River	Yellowbelly Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Bear Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Big Peak Creek	2
Southwest Idaho River Basins	Anderson Ranch Reservoir	Big Smokey Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Big Water Gulch	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Blackhorse, Redrock, and Carrie Creeks	2
Southwest Idaho River Basins	Anderson Ranch Reservoir	Boardman-Smokey Dome	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Deadwood Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Deer Creek	2
Southwest Idaho	Anderson Ranch Reservoir	Dog Creek	1

Management Unit	Core_Area	Local Pop Name	Pop Type
River Basins			
Southwest Idaho River Basins	Anderson Ranch Reservoir	Elk Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Emma Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Fall Creek	2
Southwest Idaho River Basins	Anderson Ranch Reservoir	Feather River	2
Southwest Idaho River Basins	Anderson Ranch Reservoir	Grindstone Creek	2
Southwest Idaho River Basins	Anderson Ranch Reservoir	Grouse Creek	2
Southwest Idaho River Basins	Anderson Ranch Reservoir	Johnson Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Little Smokey Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Middle Fork Lime Creek	2
Southwest Idaho River Basins	Anderson Ranch Reservoir	North Fork Big Smokey Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	North Fork Lime Creek	2
Southwest Idaho River Basins	Anderson Ranch Reservoir	Ross Fork Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Salt Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Skeleton Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	South Fork Lime, Maxfield, Hunter Creeks	2
Southwest Idaho River Basins	Anderson Ranch Reservoir	Trinity Creek	2
Southwest Idaho River Basins	Anderson Ranch Reservoir	Wagontown Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Willow Creek	1
Southwest Idaho River Basins	Anderson Ranch Reservoir	Worswick Creek	2
Southwest Idaho River Basins	Arrowrock Reservoir	Bald Mountain and Eagle Creeks	2

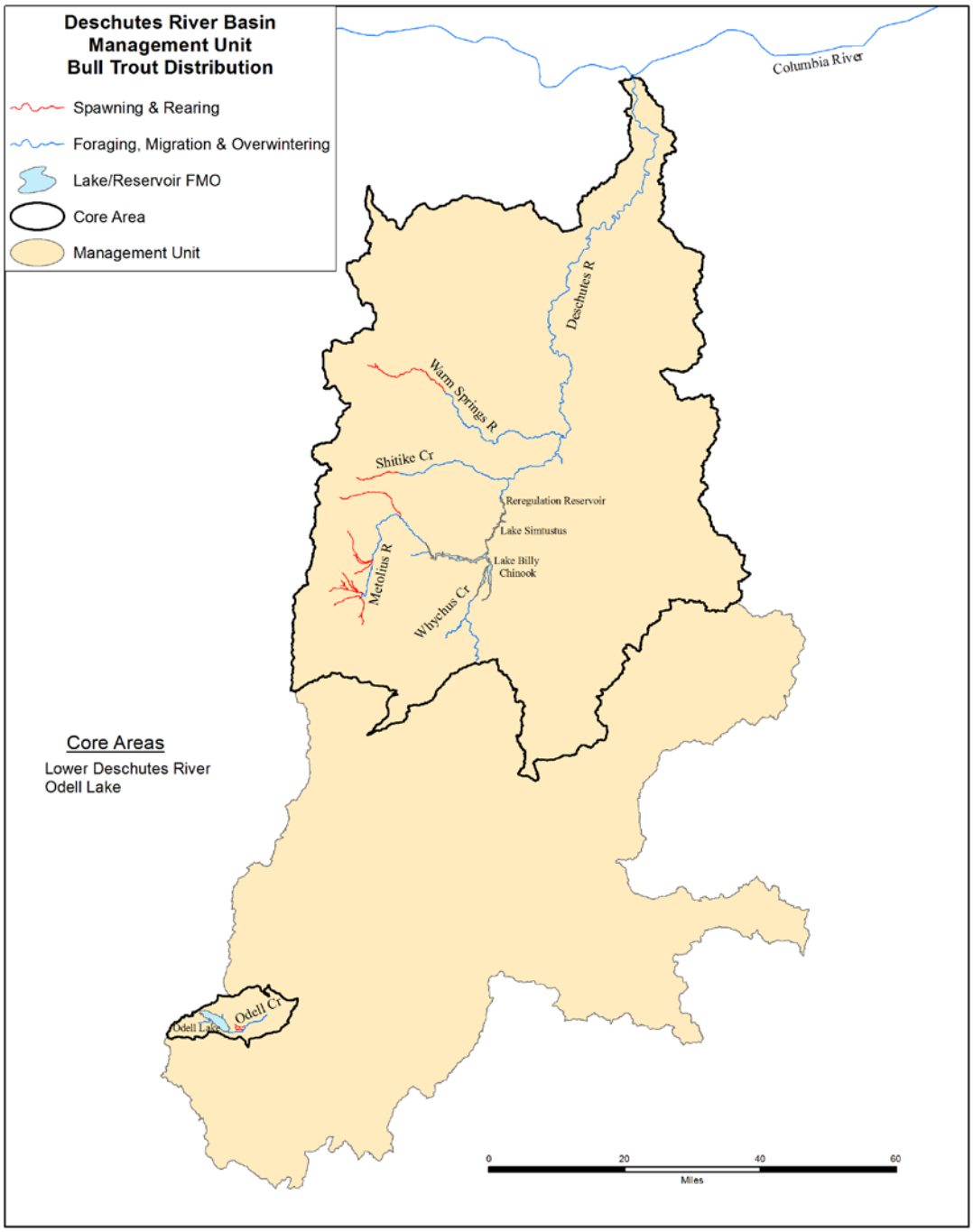
Management Unit	Core_Area	Local Pop Name	Pop Type
Southwest Idaho River Basins	Arrowrock Reservoir	Bear River	1
Southwest Idaho River Basins	Arrowrock Reservoir	Beaver and Edna Creeks	2
Southwest Idaho River Basins	Arrowrock Reservoir	Big Owl and Wren Creeks	2
Southwest Idaho River Basins	Arrowrock Reservoir	Big Silver Creek	1
Southwest Idaho River Basins	Arrowrock Reservoir	Blackwarrior and Steel Creek	1
Southwest Idaho River Basins	Arrowrock Reservoir	Buck Creek	1
Southwest Idaho River Basins	Arrowrock Reservoir	Cottonwood Creek	2
Southwest Idaho River Basins	Arrowrock Reservoir	Joe Daley and Leggit Creeks	2
Southwest Idaho River Basins	Arrowrock Reservoir	Johnson Creek	1
Southwest Idaho River Basins	Arrowrock Reservoir	Little Queens River	1
Southwest Idaho River Basins	Arrowrock Reservoir	Lodgepole Creek	1
Southwest Idaho River Basins	Arrowrock Reservoir	Logging and Haga Creeks	2
Southwest Idaho River Basins	Arrowrock Reservoir	Lost Man Creek	2
Southwest Idaho River Basins	Arrowrock Reservoir	Meadow and French Creeks	2
Southwest Idaho River Basins	Arrowrock Reservoir	Pikes Fork	2
Southwest Idaho River Basins	Arrowrock Reservoir	Queens River	1
Southwest Idaho River Basins	Arrowrock Reservoir	Rabbit Creek	2
Southwest Idaho River Basins	Arrowrock Reservoir	Rattlesnake Creek	1
Southwest Idaho River Basins	Arrowrock Reservoir	Roaring River	1
Southwest Idaho River Basins	Arrowrock Reservoir	Sheep Creek	1
Southwest Idaho	Arrowrock Reservoir	Swanholm and Hot Creeks	2

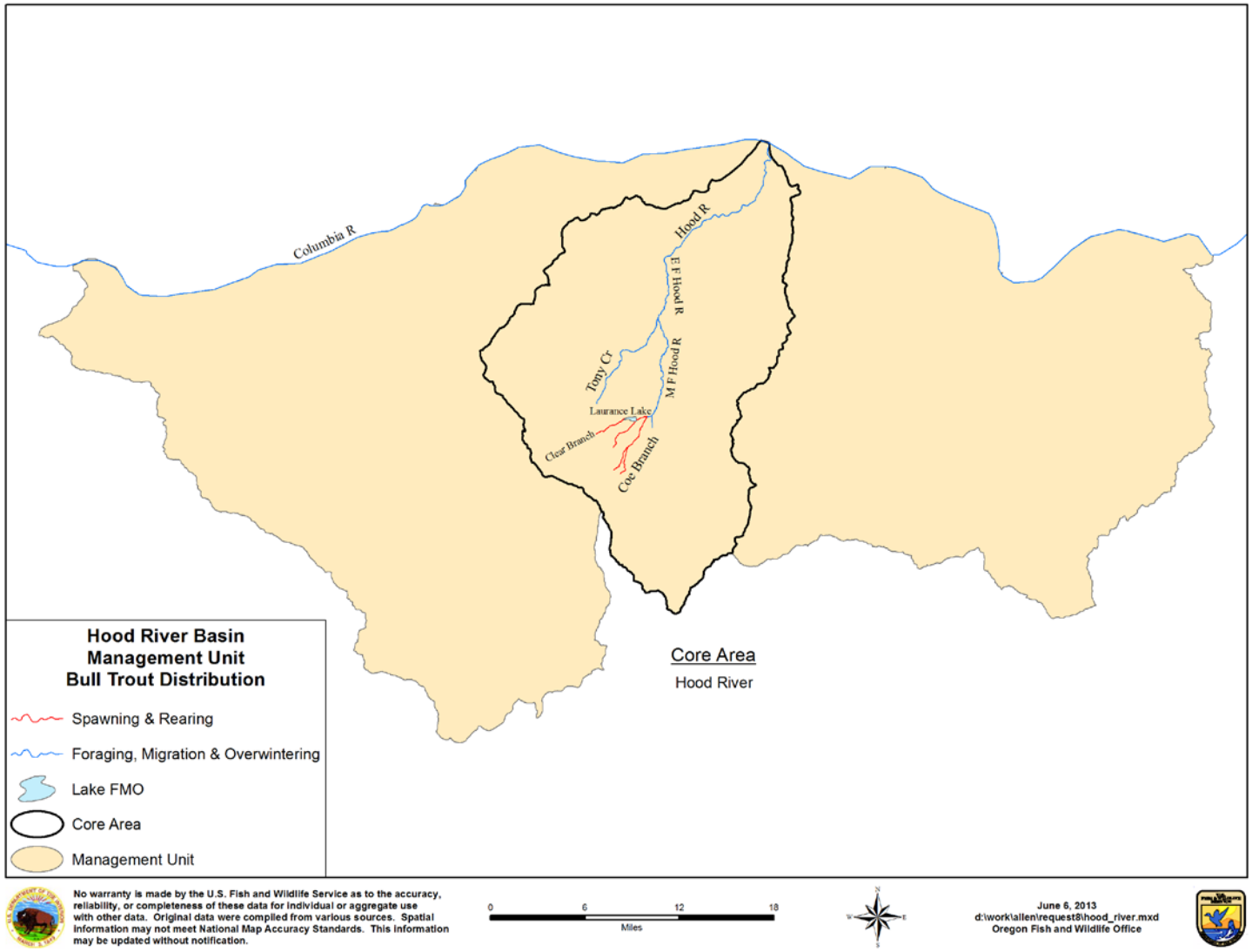
Management Unit	Core_Area	Local Pop Name	Pop Type
River Basins			
Southwest Idaho River Basins	Arrowrock Reservoir	Upper Crooked River	1
Southwest Idaho River Basins	Arrowrock Reservoir	Upper Middle Fork Boise River	2
Southwest Idaho River Basins	Arrowrock Reservoir	Upper North Fork Boise	1
Southwest Idaho River Basins	Arrowrock Reservoir	Upper Smith Creek	2
Southwest Idaho River Basins	Arrowrock Reservoir	Yuba River	1
Southwest Idaho River Basins	Deadwood River	Beaver Creek	1
Southwest Idaho River Basins	Deadwood River	Deer Creek	1
Southwest Idaho River Basins	Deadwood River	Trail Creek	1
Southwest Idaho River Basins	Deadwood River	Upper Deadwood River	1
Southwest Idaho River Basins	Deadwood River	Wildbuck Creek	1
Southwest Idaho River Basins	Lucky Peak Reservoir	Mores Creek	1
Southwest Idaho River Basins	Middle Fork Payette River	Lightning Creek	1
Southwest Idaho River Basins	Middle Fork Payette River	Silver Creek	1
Southwest Idaho River Basins	Middle Fork Payette River	Sixmile Creek	2
Southwest Idaho River Basins	Middle Fork Payette River	Upper Middle Fork Payette	1
Southwest Idaho River Basins	Middle Fork Payette River	West Fork Creek	2
Southwest Idaho River Basins	Middle Fork Payette River	Wet Foot Creek	2
Southwest Idaho River Basins	North Fork Payette River	Fisher Creek	2
Southwest Idaho River Basins	North Fork Payette River	Gold Fork River	1
Southwest Idaho River Basins	North Fork Payette River	Kennally Creek	2

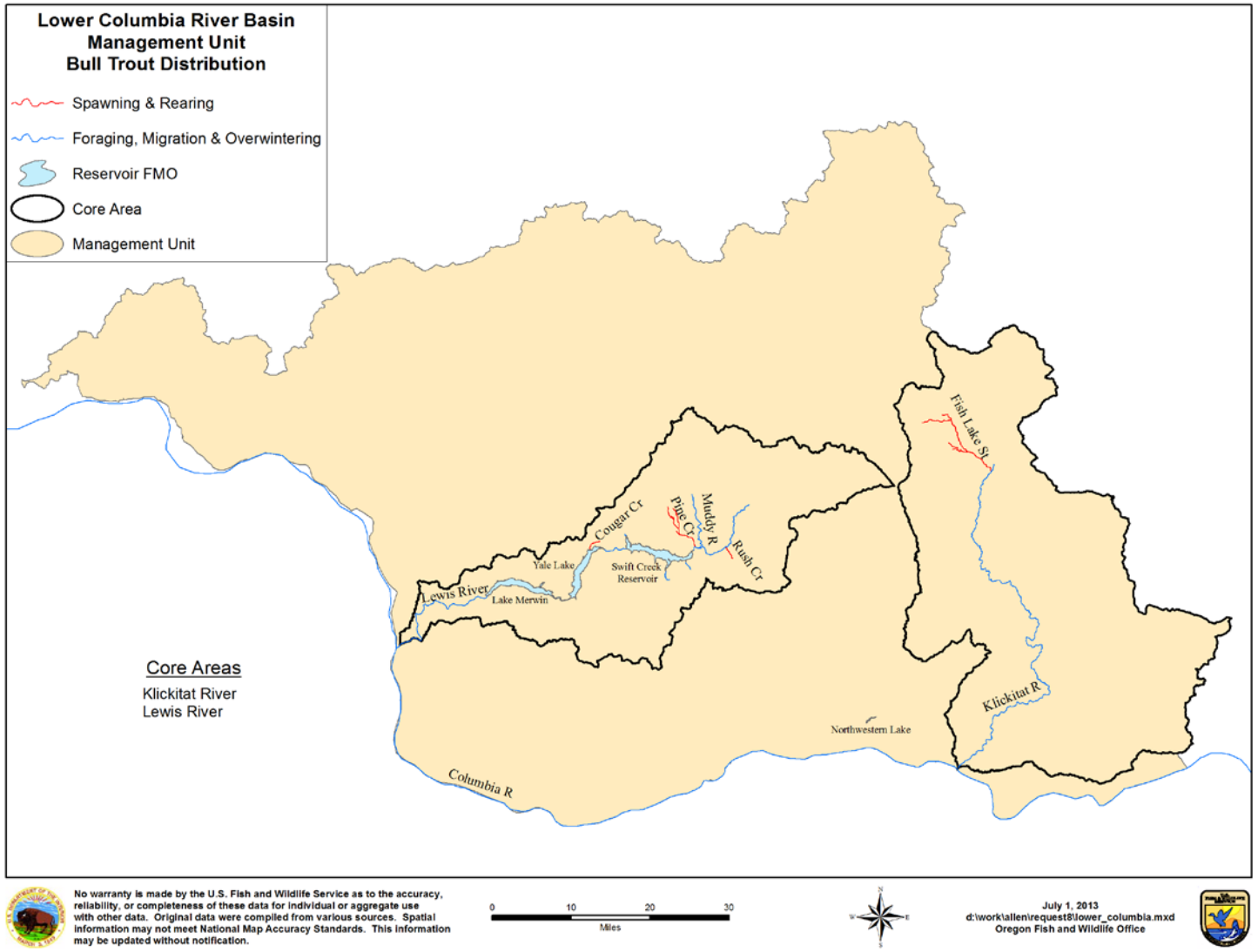
Management Unit	Core_Area	Local Pop Name	Pop Type
Southwest Idaho River Basins	North Fork Payette River	Lake Fork Creek	2
Southwest Idaho River Basins	North Fork Payette River	North Fork Lake Fork Creek	2
Southwest Idaho River Basins	North Fork Payette River	South Fork Lake Fork Creek	2
Southwest Idaho River Basins	North Fork Payette River	Upper North Fork Payette River	2
Southwest Idaho River Basins	Squaw Creek	Pine Creek	2
Southwest Idaho River Basins	Squaw Creek	Sage Hen Creek	2
Southwest Idaho River Basins	Squaw Creek	Second Fork Squaw Creek	1
Southwest Idaho River Basins	Squaw Creek	Squaw Creek	1
Southwest Idaho River Basins	Squaw Creek	Third Fork Squaw Creek	1
Southwest Idaho River Basins	Upper South Fork Payette River	Canyon Creek	1
Southwest Idaho River Basins	Upper South Fork Payette River	Chapman Creek	1
Southwest Idaho River Basins	Upper South Fork Payette River	Clear Creek	1
Southwest Idaho River Basins	Upper South Fork Payette River	Eightmile Creek	1
Southwest Idaho River Basins	Upper South Fork Payette River	Fivemile Creek	2
Southwest Idaho River Basins	Upper South Fork Payette River	Rock Creek	2
Southwest Idaho River Basins	Upper South Fork Payette River	Scott Creek	1
Southwest Idaho River Basins	Upper South Fork Payette River	Tenmile Creek	1
Southwest Idaho River Basins	Upper South Fork Payette River	Upper South Fork Payette River	1
Southwest Idaho River Basins	Upper South Fork Payette River	Wapiti Creek	1
Southwest Idaho River Basins	Upper South Fork Payette River	Warm Springs Creek-Gates Creek	1
Southwest Idaho	Upper South Fork Payette	Wilson Creek	1

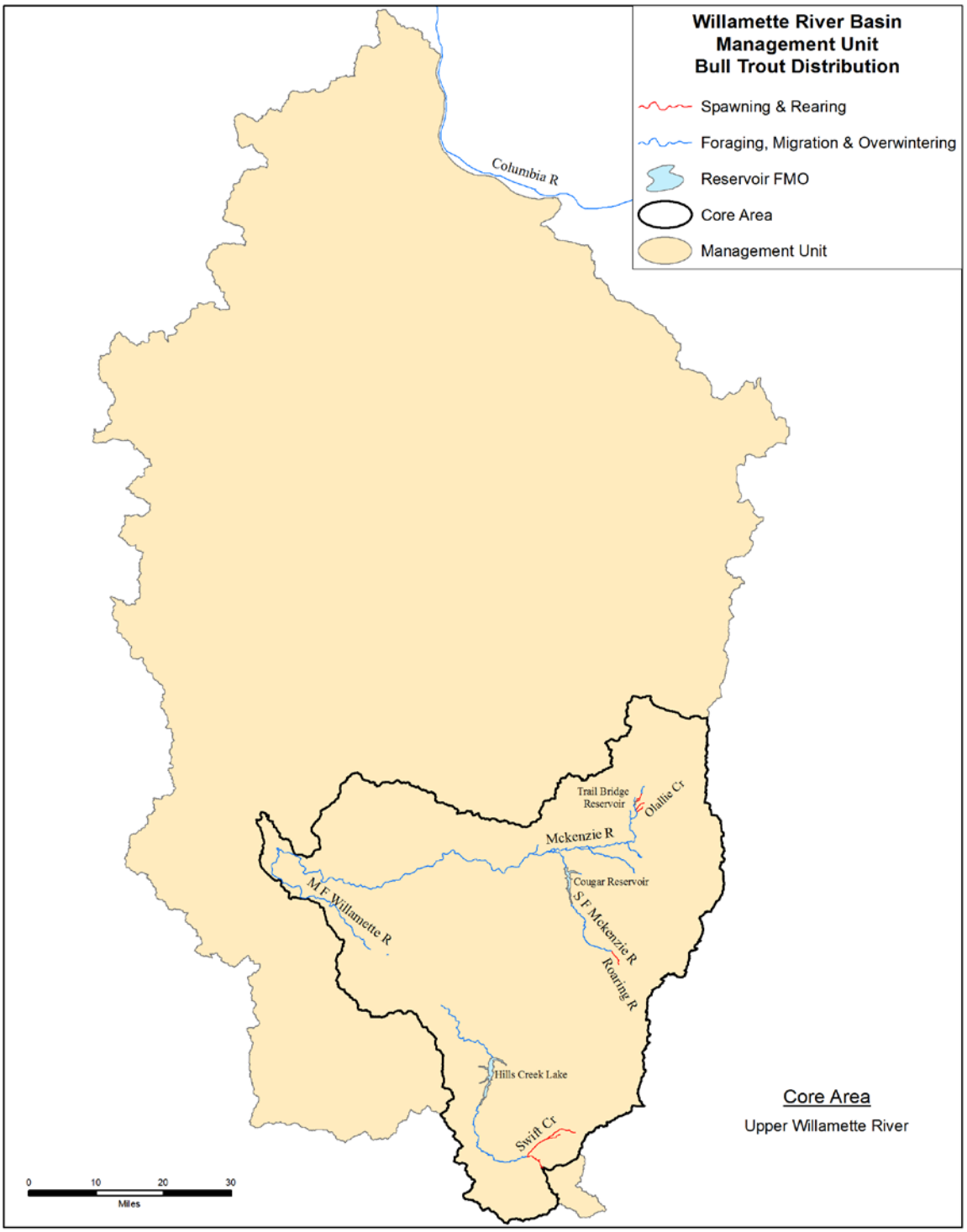
Management Unit	Core_Area	Local Pop Name	Pop Type
River Basins	River		
Southwest Idaho River Basins	Weiser River	Anderson Creek	1
Southwest Idaho River Basins	Weiser River	East Fork Weiser	1
Southwest Idaho River Basins	Weiser River	Goodrich Creek	2
Southwest Idaho River Basins	Weiser River	Johnson Creek	2
Southwest Idaho River Basins	Weiser River	Lost Creek	2
Southwest Idaho River Basins	Weiser River	Pine Creek	2
Southwest Idaho River Basins	Weiser River	Rush Creek	2
Southwest Idaho River Basins	Weiser River	Sheep Creek	1
Southwest Idaho River Basins	Weiser River	Upper Hornet Creek	1
Southwest Idaho River Basins	Weiser River	Upper Little Weiser River	1
Southwest Idaho River Basins	Weiser River	Upper Weiser River	2
Southwest Idaho River Basins	Weiser River	West Fork Weiser River	2

The following management unit maps are presented in the same order by which they appear in the table above.


Deschutes River Basin
Management Unit
Bull Trout Distribution
Spawning & Rearing
Foraging, Migration & Overwintering
Lake/Reservoir FMO
Core Area
Management Unit
Columbia River
Deschutes R
Warm Springs R
Shitike Cr
Reregulation Reservoir
Lake Simtustus
Lake Billy Chinook
Metolius R
Whychus Cr
Odell Lake
Odell Cr
Core Areas
Lower Deschutes River
Odell Lake
0
20
40
60
Miles
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
July 1, 2013
d:\work\allen\request8\deschutes.mxd
Oregon Fish and Wildlife Office


Columbia R
Hood R
E F Hood R
M F Hood R
Tony Cr
Laurance Lake
Clear Branch
Coe Branch
Core Area
Hood River
Hood River Basin
Management Unit
Bull Trout Distribution
Spawning & Rearing
Foraging, Migration & Overwintering
Lake FMO
Core Area
Management Unit
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
0
6
12
18
Miles
June 6, 2013
d:\work\allen\request8\hood_river.mxd
Oregon Fish and Wildlife Office


Lower Columbia River Basin
Management Unit
Bull Trout Distribution
Spawning & Rearing
Foraging, Migration & Overwintering
Reservoir FMO
Core Area
Management Unit
Core Areas
Klickitat River
Lewis River
Cougar Cr
Pine Cr
Muddy R
Rush Cr
Yale Lake
Swift Creek Reservoir
Lewis River
Lake Merwin
Fish Lake Sl
Klickitat R
Northwestern Lake
Columbia R
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
0
10
20
30
Miles
July 1, 2013
d:\work\allen\request8\lower_columbia.mxd
Oregon Fish and Wildlife Office



July 1, 2013
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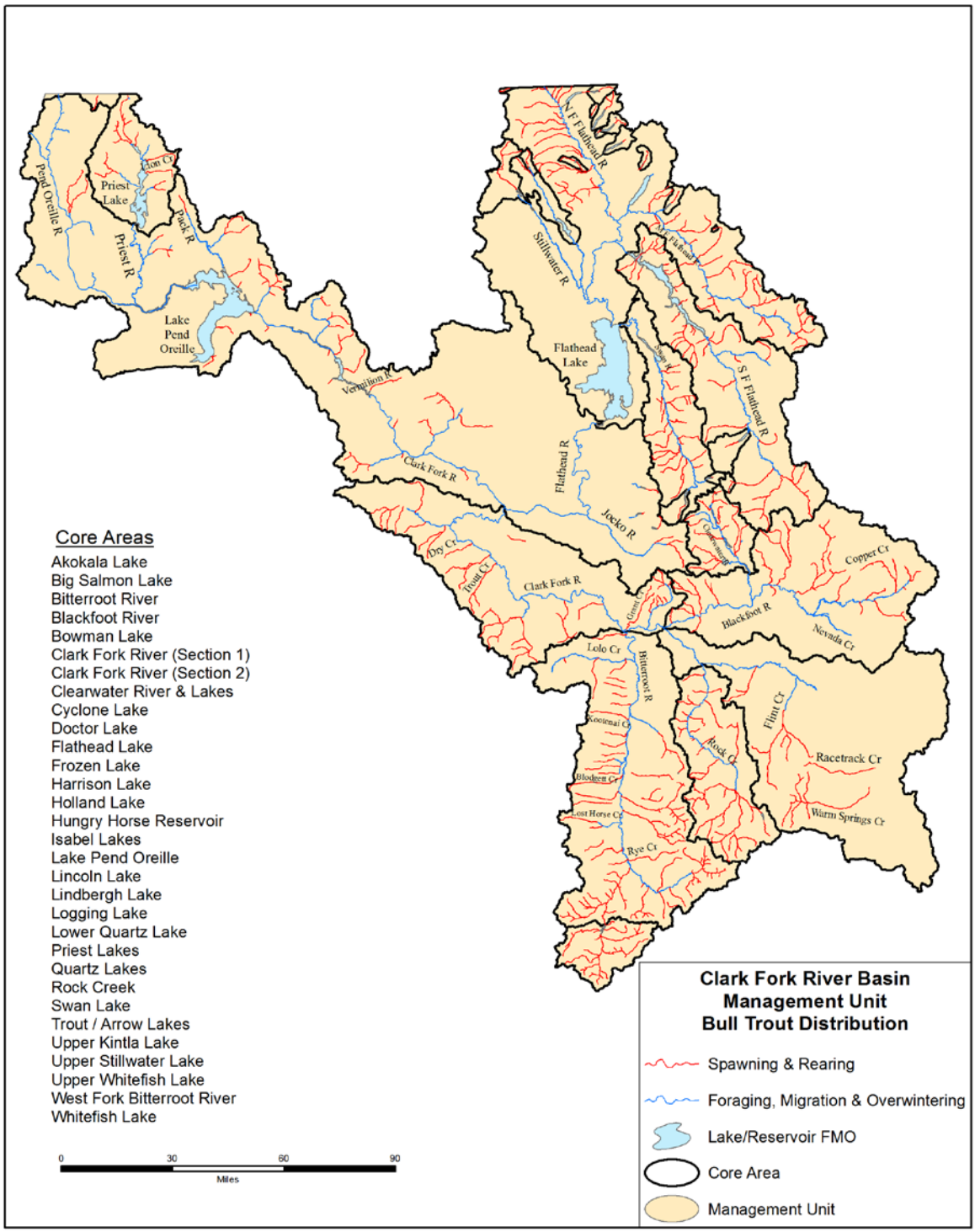
Oregon Fish and Wildlife Office



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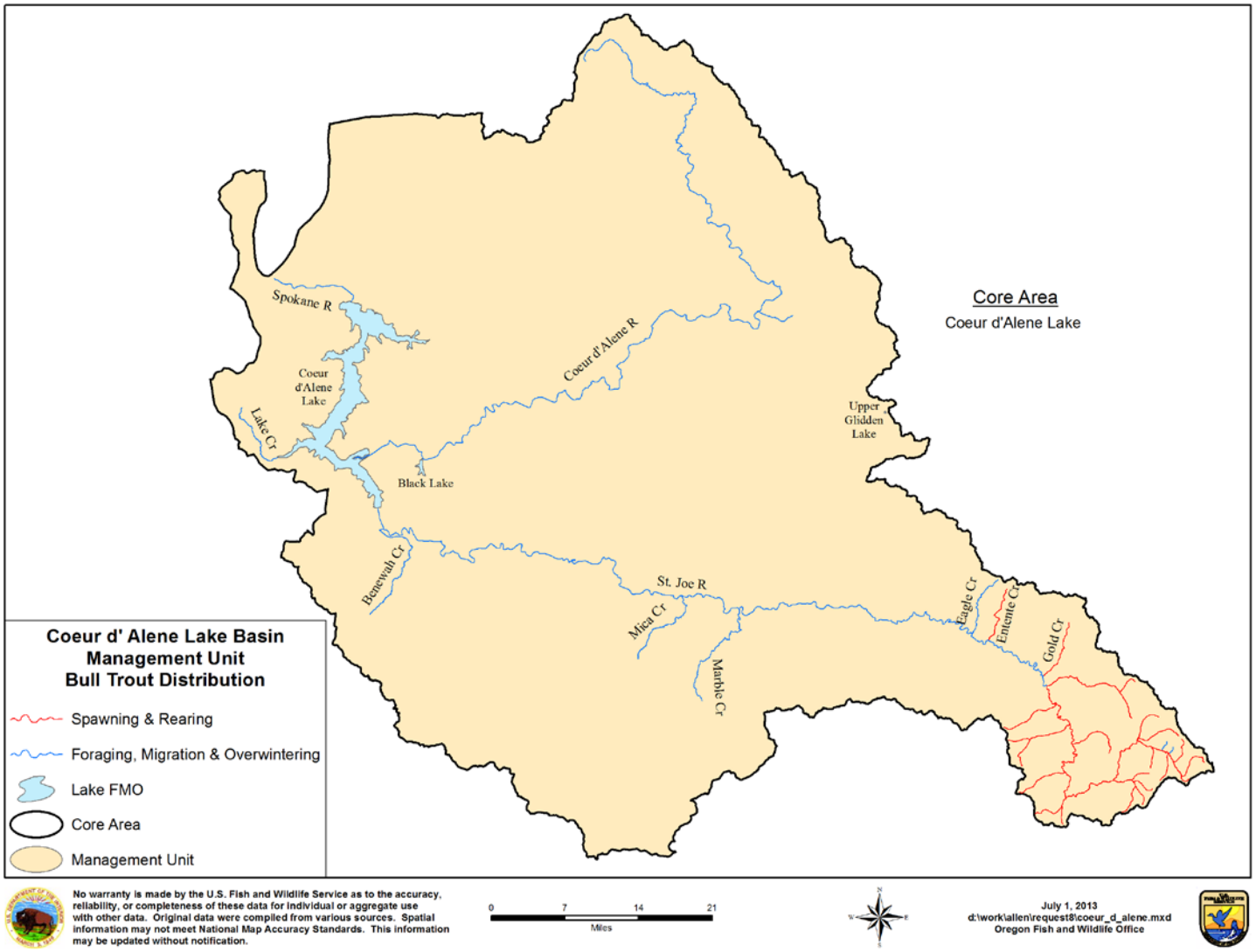
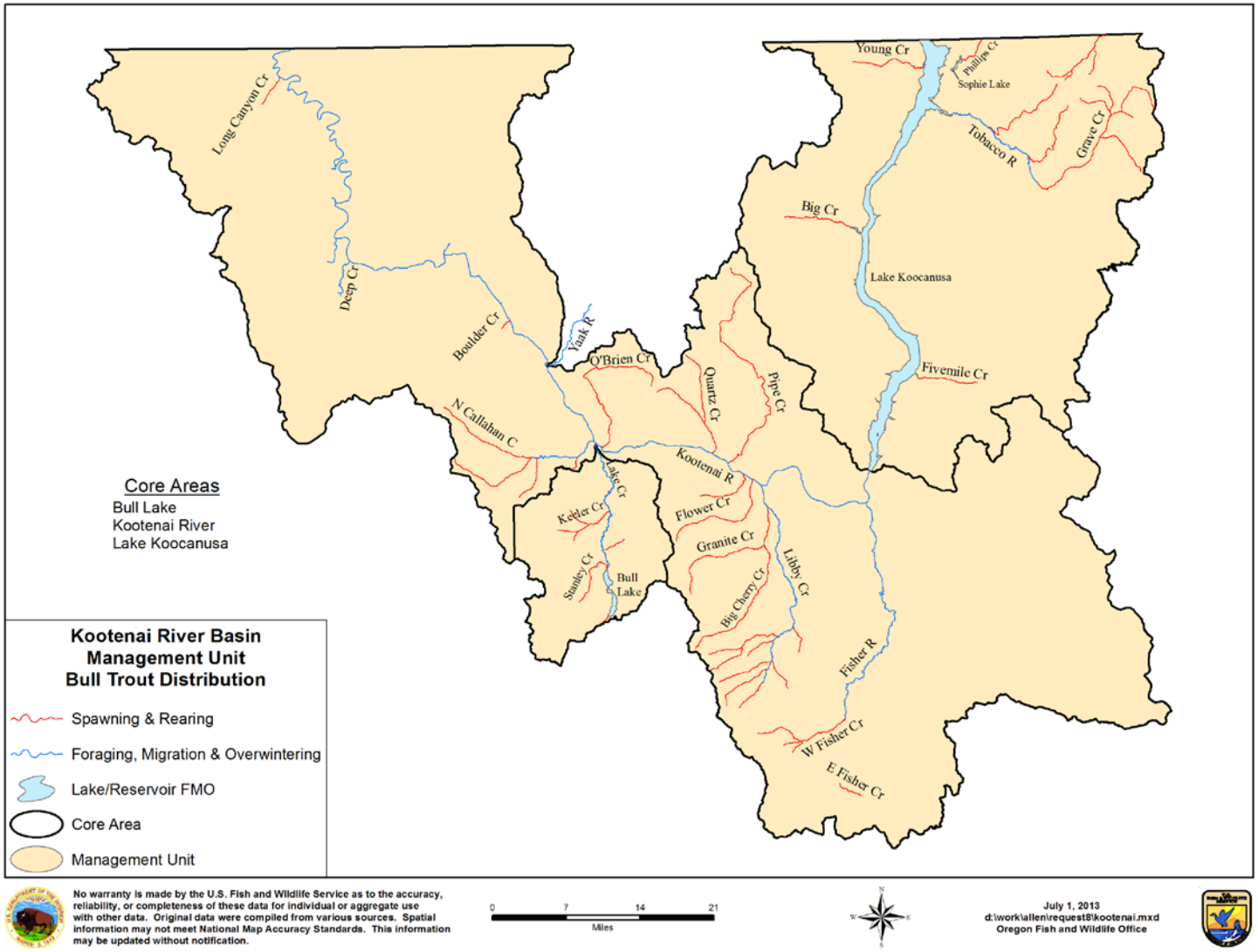
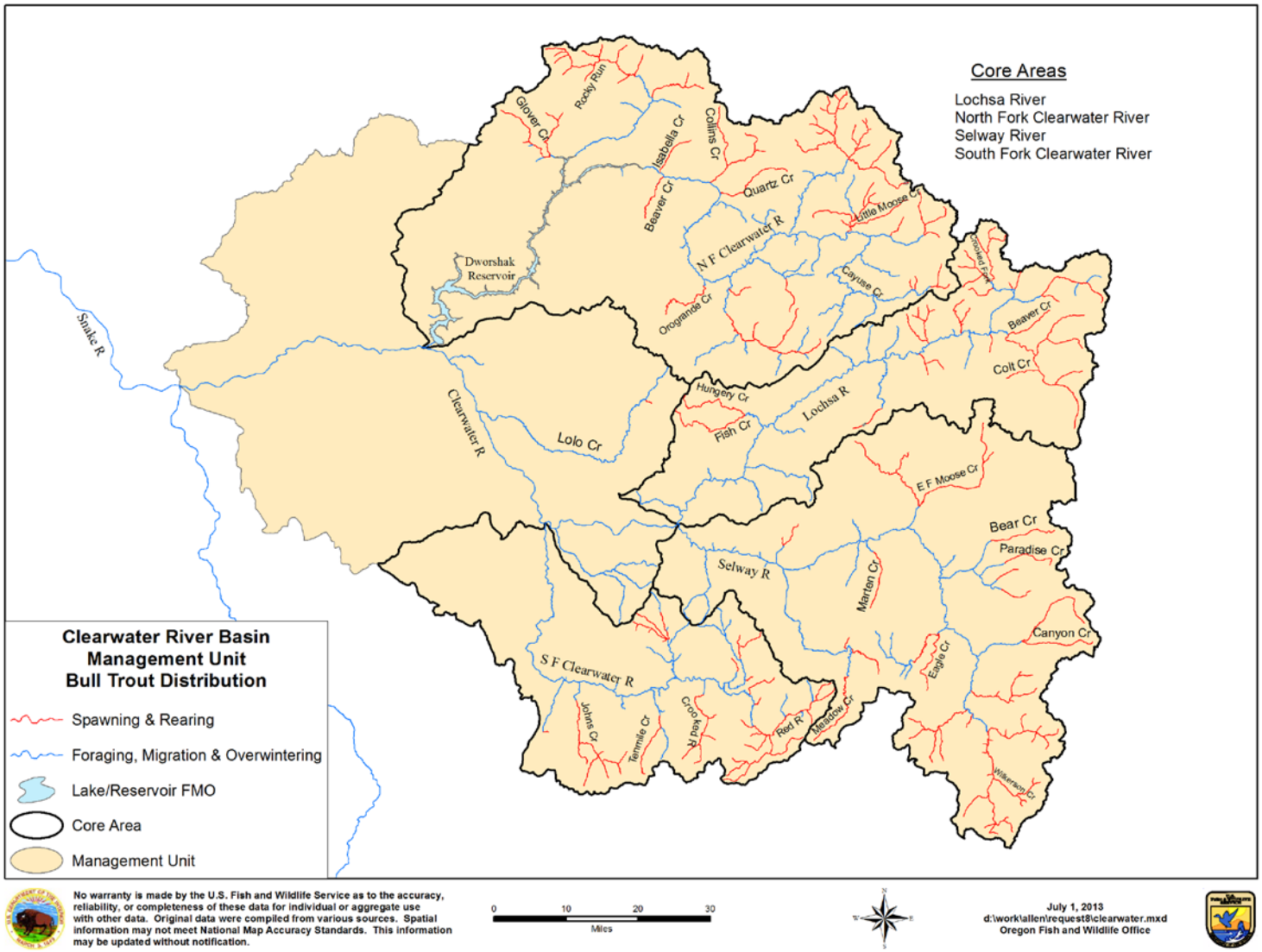
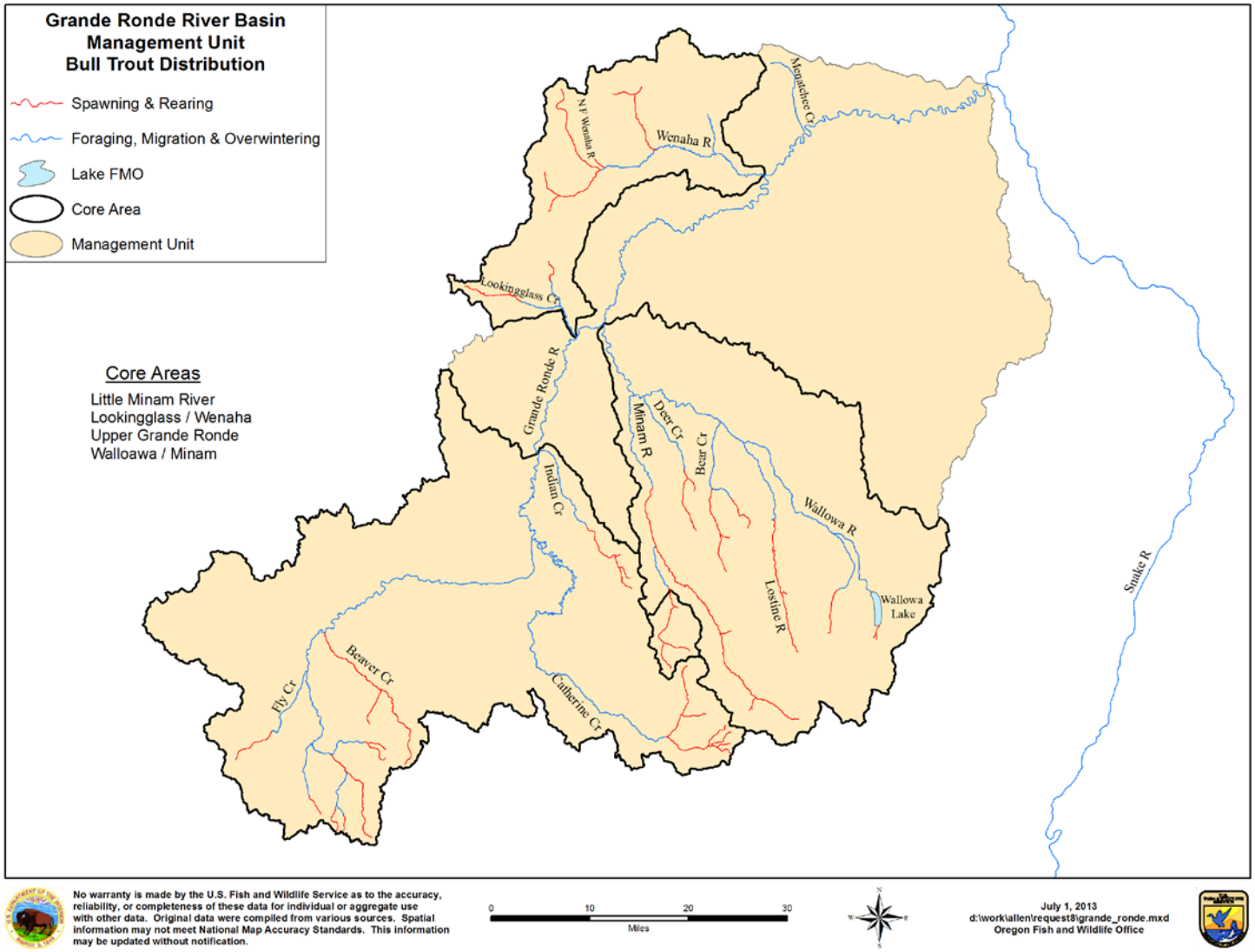
Oregon Fish and Wildlife Office


Core Area
Coeur d'Alene Lake
Spokane R
Coeur d'Alene Lake
Lake Cr
Coeur d'Alene R
Upper Glidden Lake
Black Lake
Benewah Cr
St. Joe R
Mica Cr
Marble Cr
Eagle Cr
Entente Cr
Gold Cr
Coeur d' Alene Lake Basin
Management Unit
Bull Trout Distribution
Spawning & Rearing
Foraging, Migration & Overwintering
Lake FMO
Core Area
Management Unit
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
0 7 14 21
Miles
July 1, 2013
d:\work\allen\request8\coeur_d_alene.mxd
Oregon Fish and Wildlife Office


Young Cr
Phillips Cr
Sophie Lake
Tobacco R
Grave Cr
Big Cr
Lake Koocanusa
Fivemile Cr
Long Canyon Cr
Deep Cr
Boulder Cr
Yaak R
O'Brien Cr
Quartz Cr
Pipe Cr
N Callahan C
Kootenai R
Lake Cr
Keeler Cr
Flower Cr
Granite Cr
Libby Cr
Stanley Cr
Bull Lake
Big Cherry Cr
Fisher R
W Fisher Cr
E Fisher Cr
Core Areas
Bull Lake
Kootenai River
Lake Koocanusa
Kootenai River Basin
Management Unit
Bull Trout Distribution
Spawning & Rearing
Foraging, Migration & Overwintering
Lake/Reservoir FMO
Core Area
Management Unit
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
0
7
14
21
Miles
July 1, 2013
d:\work\allen\request8\kootenai.mxd
Oregon Fish and Wildlife Office


Core Areas
Lochsa River
North Fork Clearwater River
Selway River
South Fork Clearwater River
Clearwater River Basin
Management Unit
Bull Trout Distribution
Spawning & Rearing
Foraging, Migration & Overwintering
Lake/Reservoir FMO
Core Area
Management Unit
Dworshak Reservoir
Snake R
Clearwater R
Lolo Cr
N F Clearwater R
S F Clearwater R
Lochsa R
Selway R
Glover Cr
Rocky Run
Isabella Cr
Collins Cr
Beaver Cr
Quartz Cr
Little Moose Cr
Crooked Fork
Cayuse Cr
Orogrande Cr
Beaver Cr
Colt Cr
Hungery Cr
Fish Cr
E F Moose Cr
Bear Cr
Paradise Cr
Marten Cr
Canyon Cr
Eagle Cr
Wilkerson Cr
Johns Cr
Tenmile Cr
Crooked R
Red R
Meadow Cr
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
0 10 20 30
Miles
July 1, 2013
d:\work\allen\request8\clearwater.mxd
Oregon Fish and Wildlife Office


Grande Ronde River Basin
Management Unit
Bull Trout Distribution
Spawning & Rearing
Foraging, Migration & Overwintering
Lake FMO
Core Area
Management Unit
Core Areas
Little Minam River
Lookingglass / Wenaha
Upper Grande Ronde
Walloawa / Minam
N F Wenaha R
Wenaha R
Menatchee Cr
Lookingglass Cr
Grande Ronde R
Minam R
Deer Cr
Bear Cr
Indian Cr
Wallowa R
Lostine R
Wallowa Lake
Snake R
Beaver Cr
Fly Cr
Catherine Cr
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
0
10
20
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Miles
July 1, 2013
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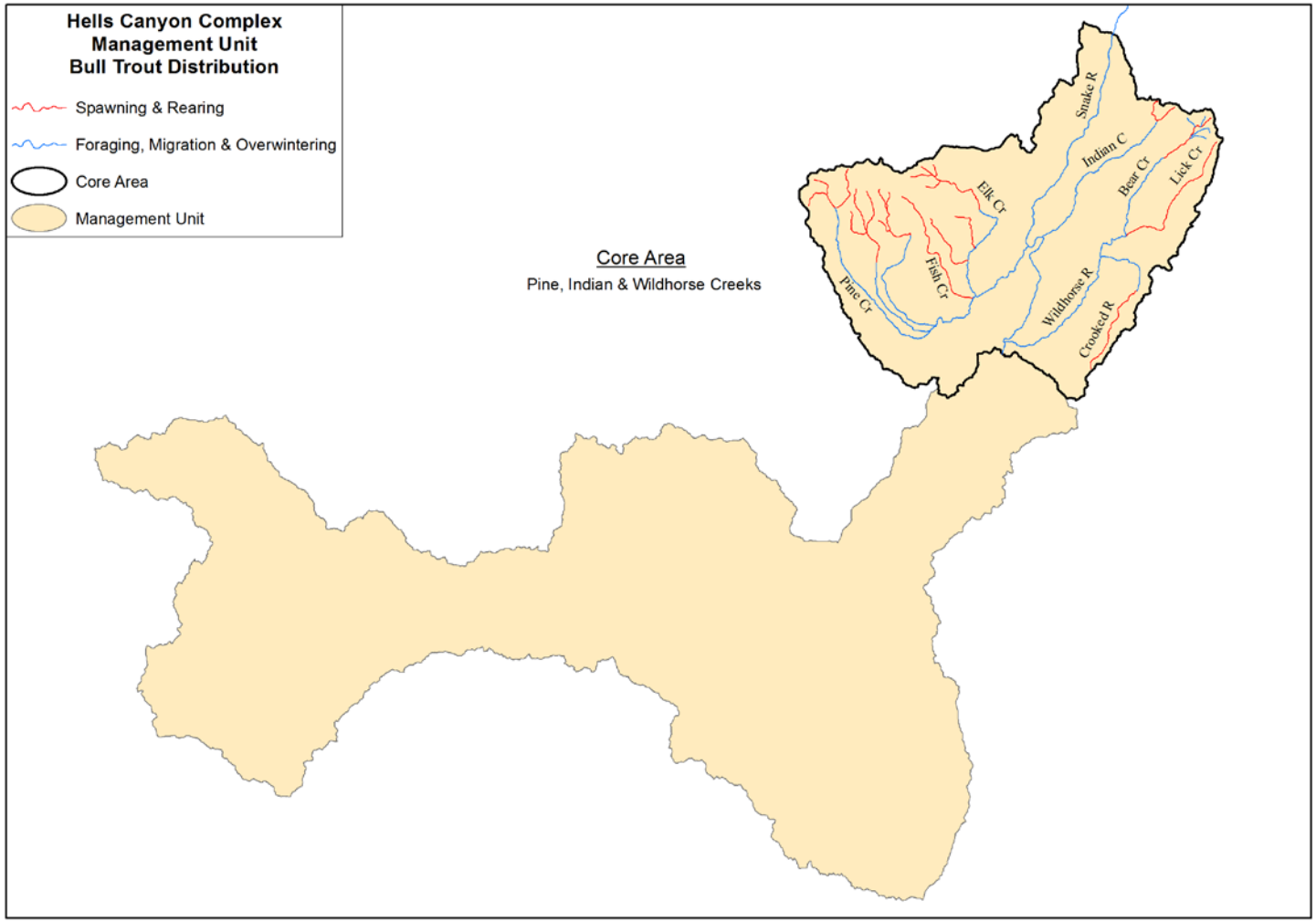
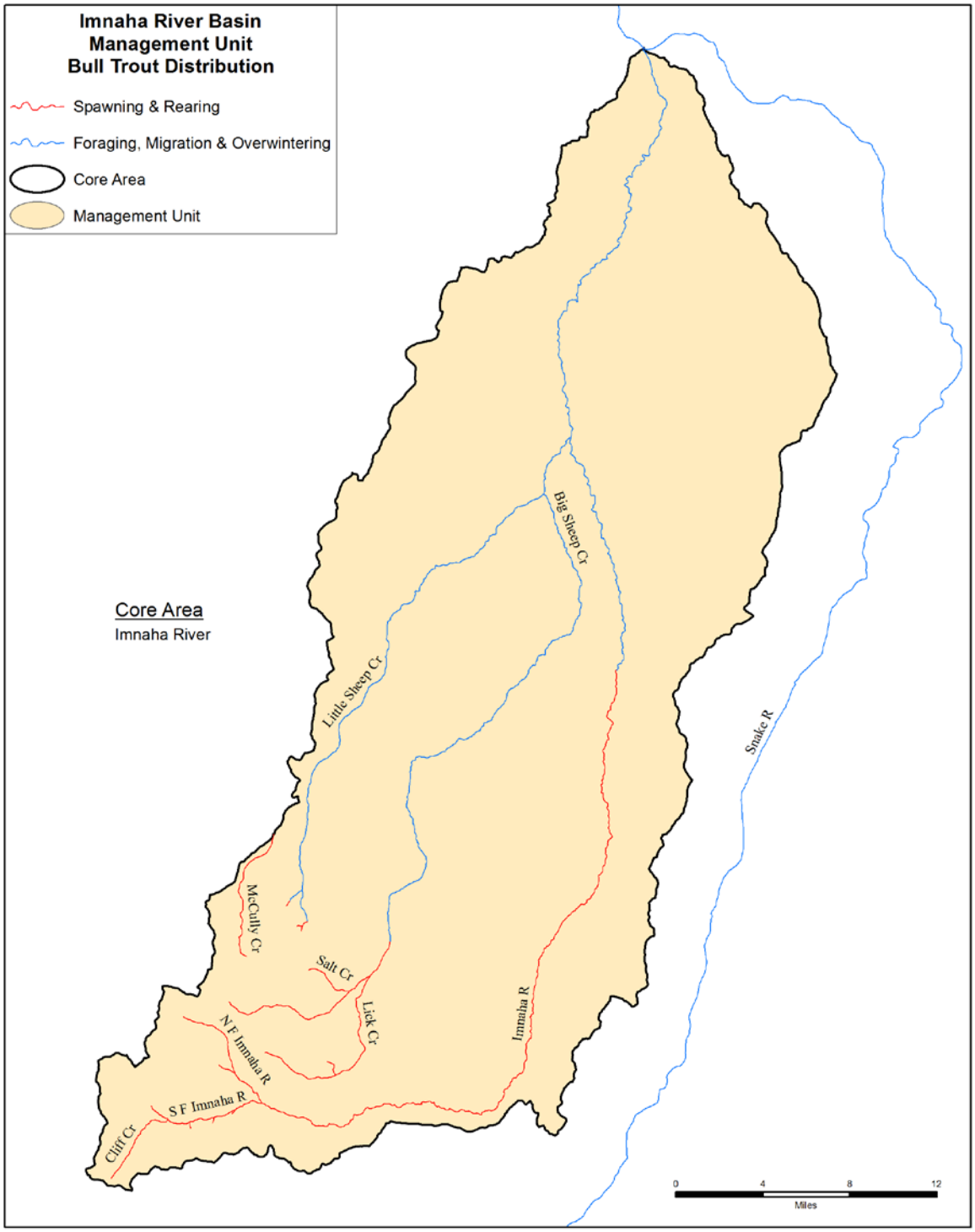
Oregon Fish and Wildlife Office


Hells Canyon Complex
Management Unit
Bull Trout Distribution
Spawning & Rearing
Foraging, Migration & Overwintering
Core Area
Management Unit
Core Area
Pine, Indian & Wildhorse Creeks
Snake R
Indian C
Bear Cr
Lick Cr
Elk Cr
Fish Cr
Pine Cr
Wildhorse R
Crooked R
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
0
9
18
27
Miles
June 5, 2013
d:\work\allen\request8\hells_canyon.mxd
Oregon Fish and Wildlife Office



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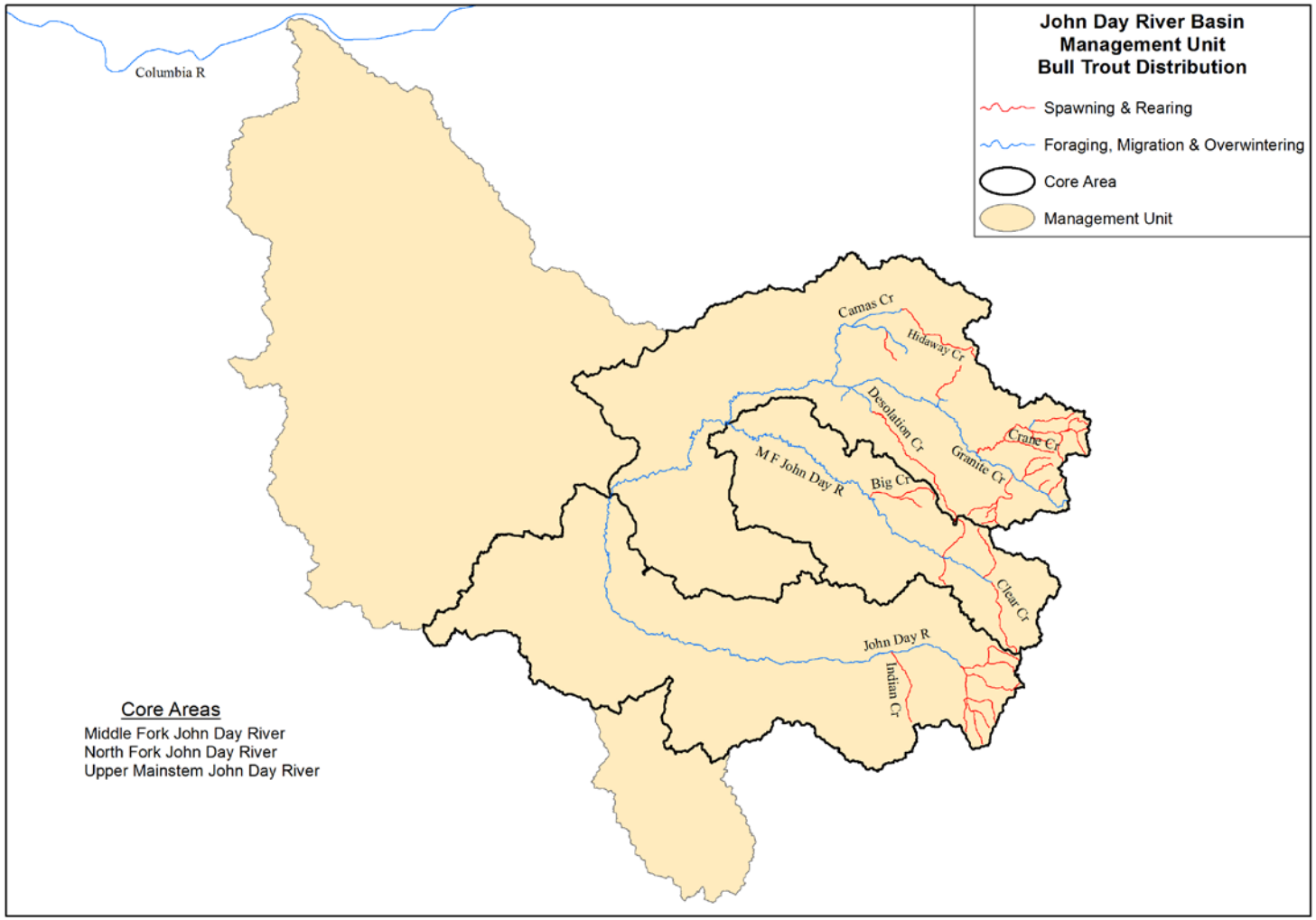
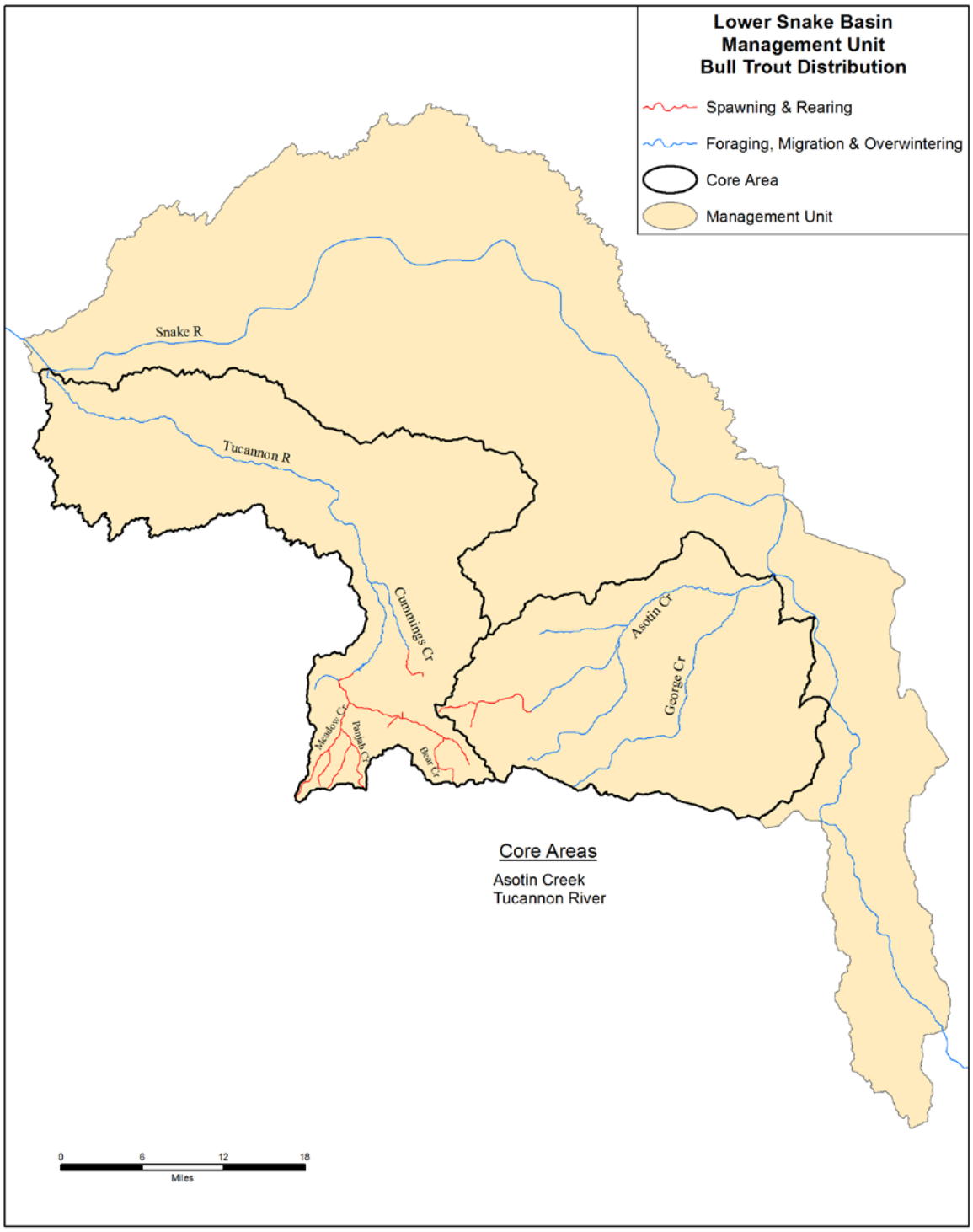
Oregon Fish and Wildlife Office


John Day River Basin
Management Unit
Bull Trout Distribution
Spawning & Rearing
Foraging, Migration & Overwintering
Core Area
Management Unit
Columbia R
Camas Cr
Hidaway Cr
Desolation Cr
Crane Cr
Granite Cr
M F John Day R
Big Cr
Clear Cr
John Day R
Indian Cr
Core Areas
Middle Fork John Day River
North Fork John Day River
Upper Mainstem John Day River
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
0 10 20 30
Miles
June 5, 2013
d:\work\allen\request8\john_day.mxd
Oregon Fish and Wildlife Office



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June 5, 2013
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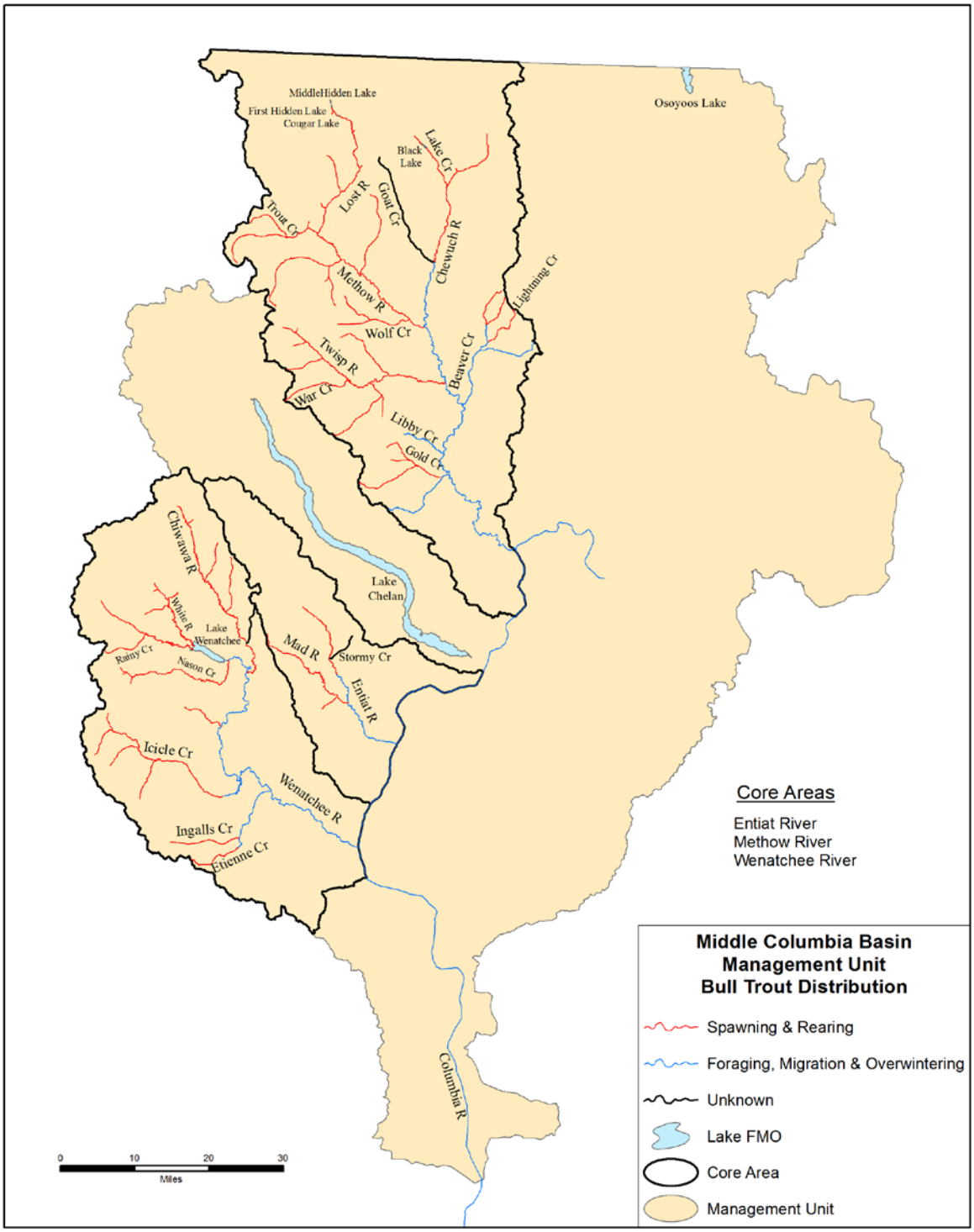
Oregon Fish and Wildlife Office



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July 1, 2013
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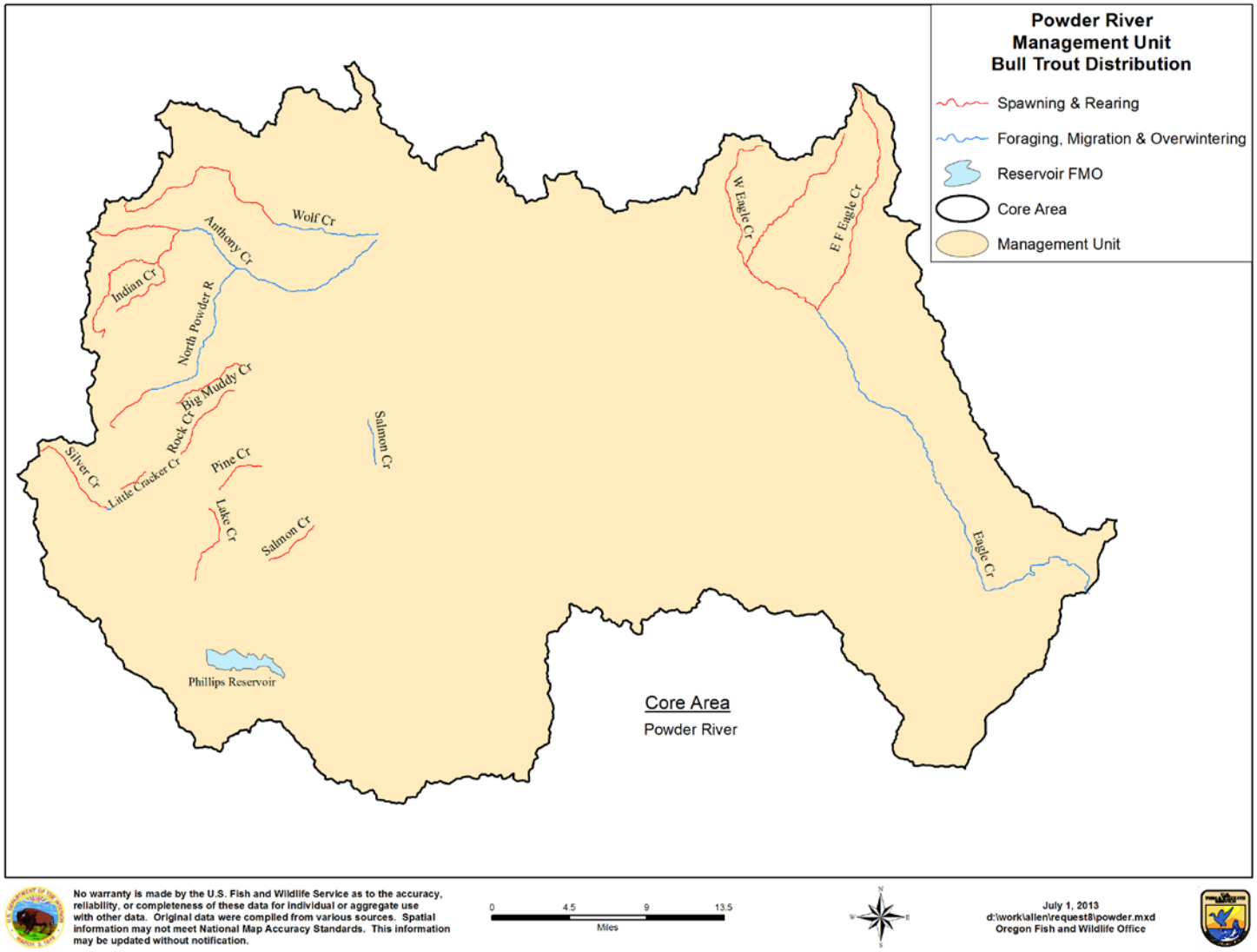
Oregon Fish and Wildlife Office


Powder River
Management Unit
Bull Trout Distribution
Spawning & Rearing
Foraging, Migration & Overwintering
Reservoir FMO
Core Area
Management Unit
Wolf Cr
Anthony Cr
Indian Cr
North Powder R
Big Muddy Cr
Rock Cr
Little Cracker Cr
Silver Cr
Pine Cr
Lake Cr
Salmon Cr
Salmon Cr
W Eagle Cr
E F Eagle Cr
Eagle Cr
Phillips Reservoir
Core Area
Powder River
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
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Miles
July 1, 2013
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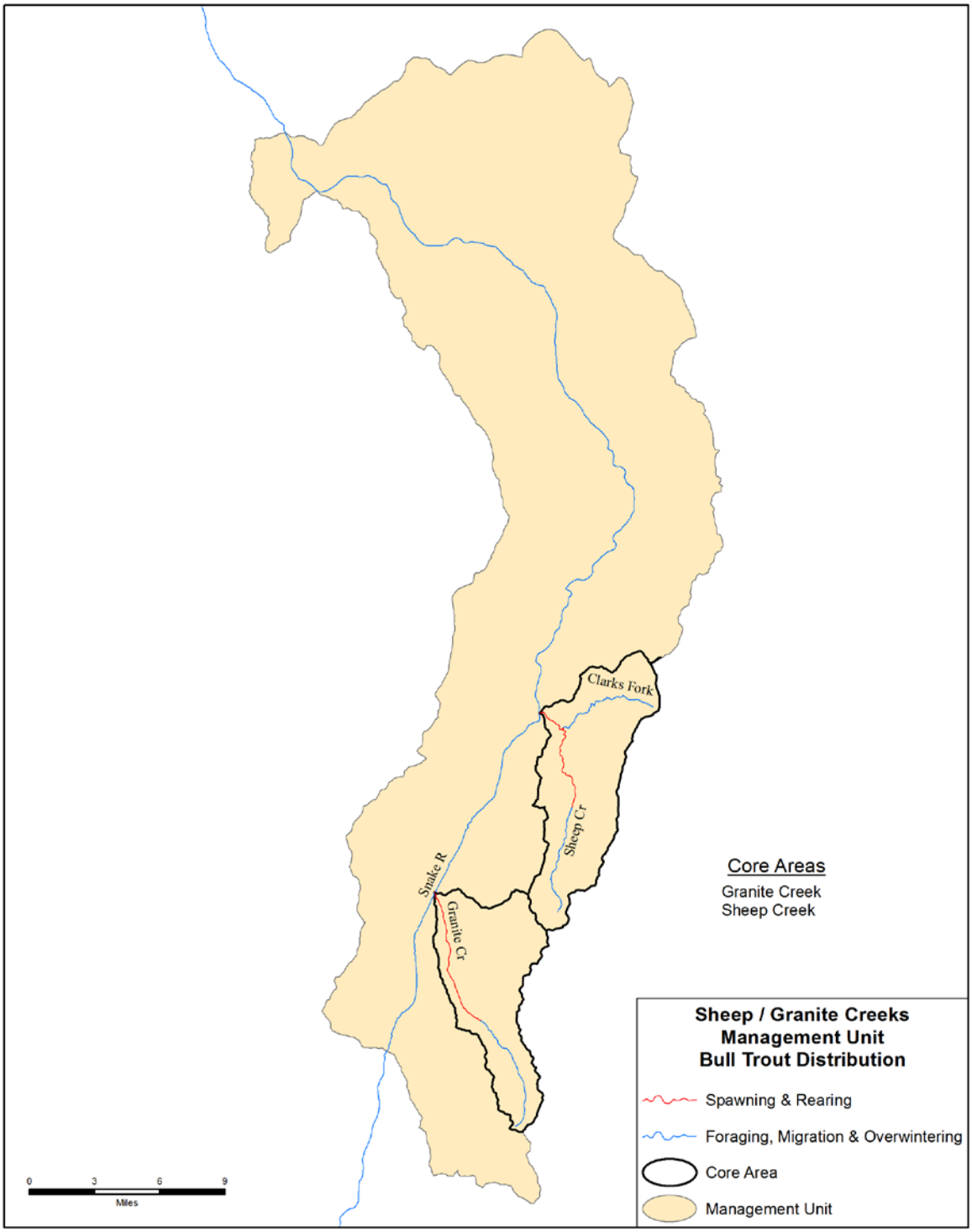
Oregon Fish and Wildlife Office



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June 5, 2013
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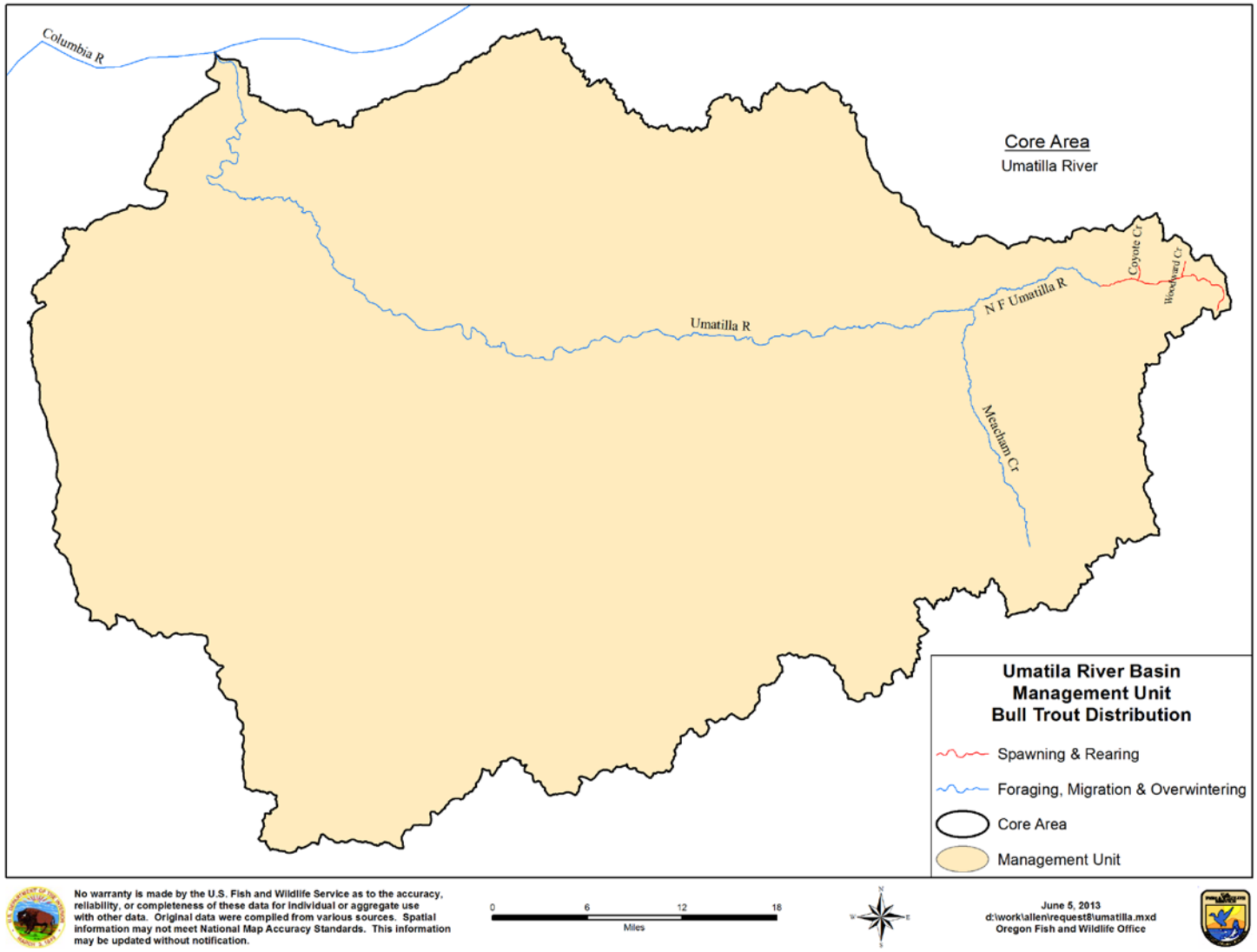
Oregon Fish and Wildlife Office


Columbia R
Core Area
Umatilla River
Coyote Cr
Woodward Cr
N F Umatilla R
Umatilla R
Meacham Cr
Umatila River Basin
Management Unit
Bull Trout Distribution
Spawning & Rearing
Foraging, Migration & Overwintering
Core Area
Management Unit
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
0
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Miles
June 5, 2013
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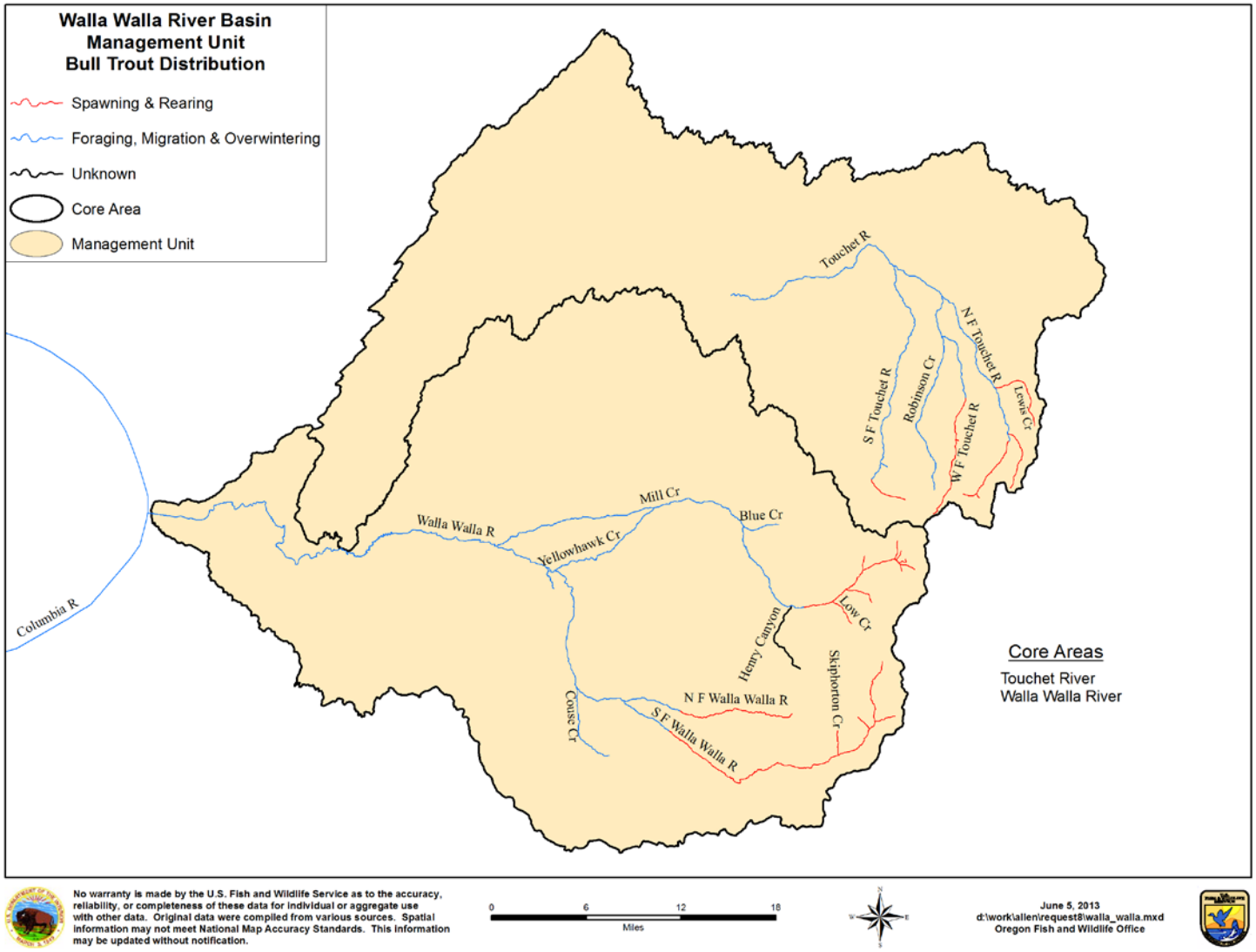
Oregon Fish and Wildlife Office


Walla Walla River Basin
Management Unit
Bull Trout Distribution
Spawning & Rearing
Foraging, Migration & Overwintering
Unknown
Core Area
Management Unit
Touchet R
N F Touchet R
S F Touchet R
Robinson Cr
W F Touchet R
Lewis Cr
Mill Cr
Blue Cr
Walla Walla R
Yellowhawk Cr
Columbia R
Low Cr
Henry Canyon
Skiphorton Cr
N F Walla Walla R
S F Walla Walla R
Couse Cr
Core Areas
Touchet River
Walla Walla River
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
0
6
12
18
Miles
June 5, 2013
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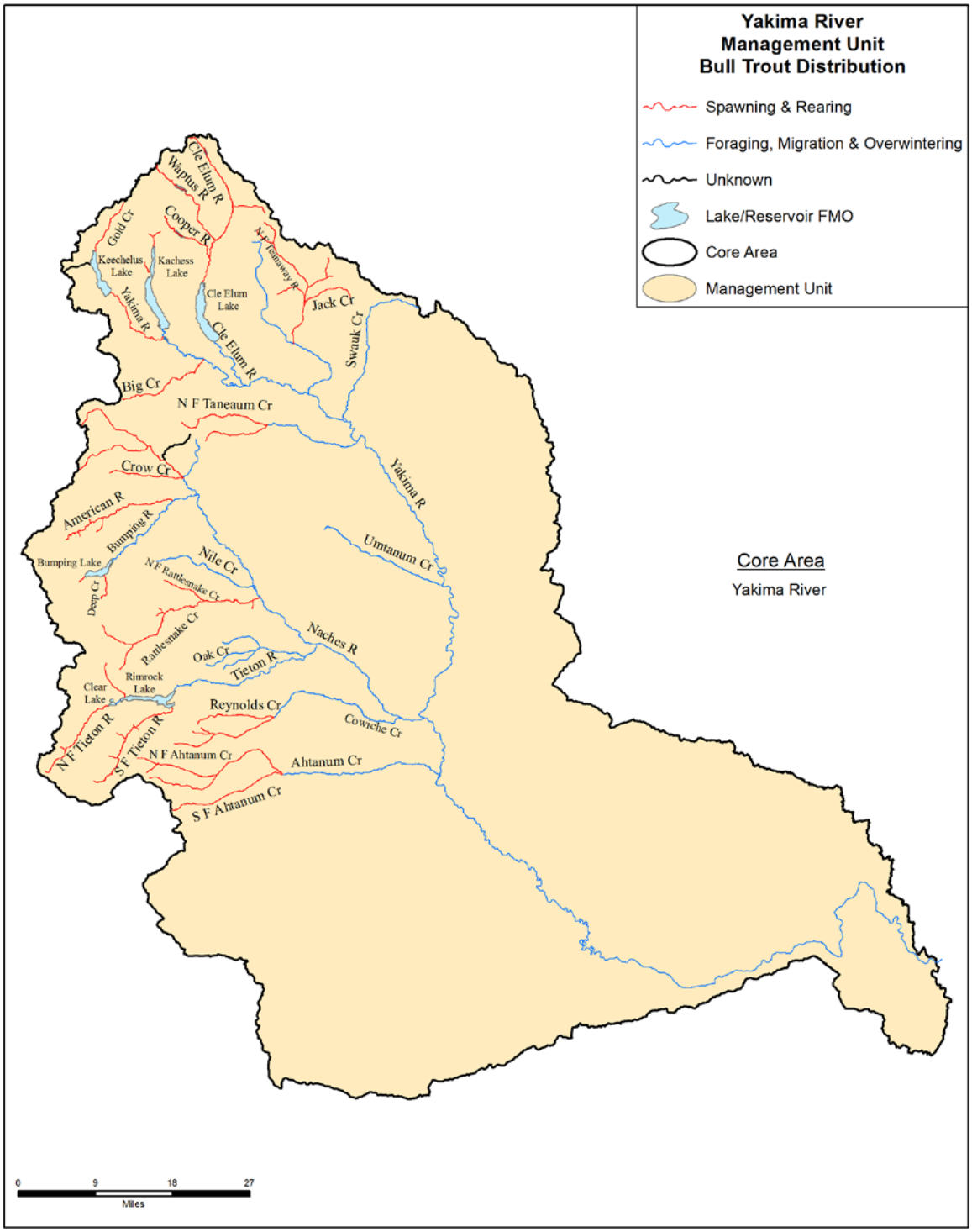
Oregon Fish and Wildlife Office



July 1, 2013
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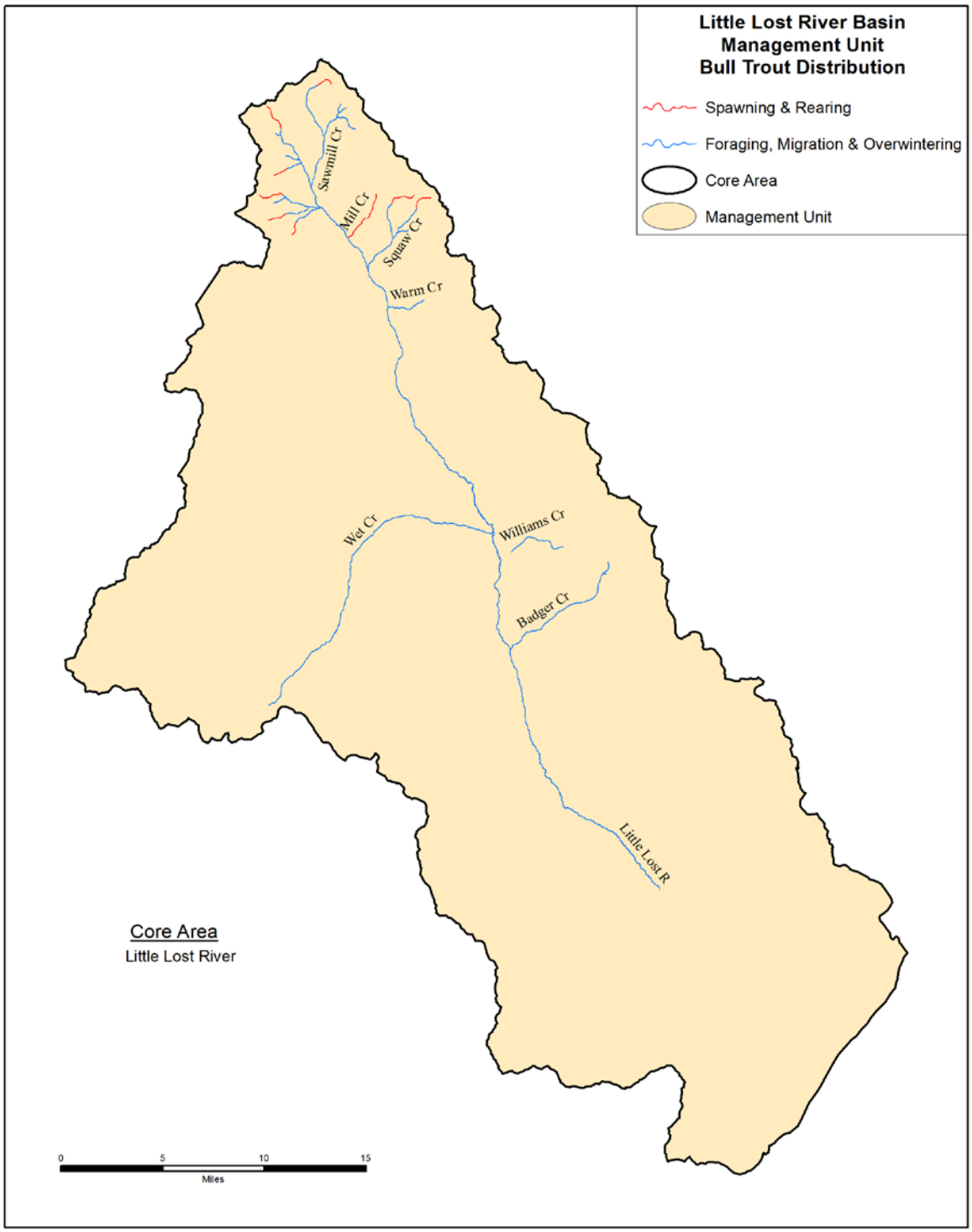
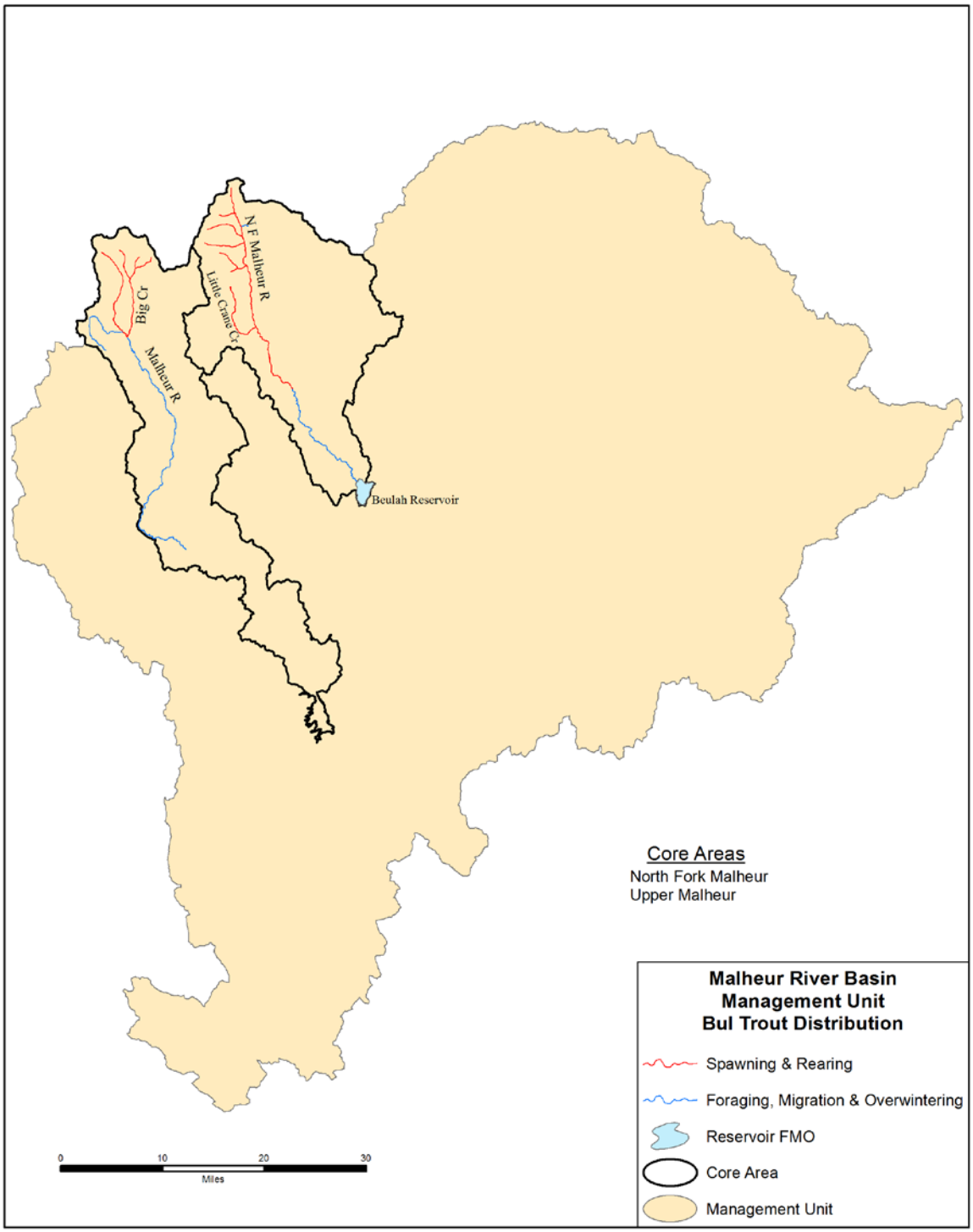
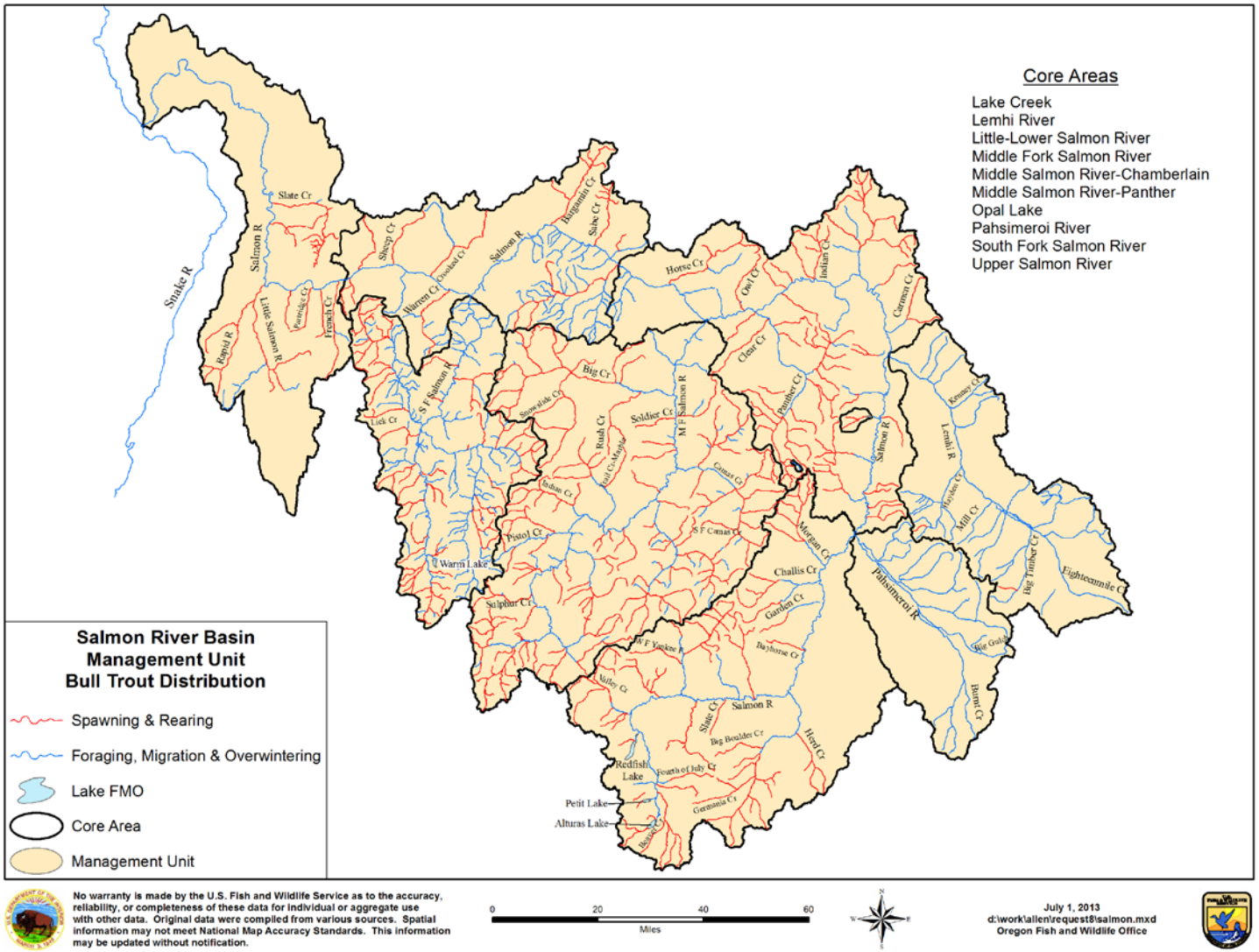
Oregon Fish and Wildlife Office



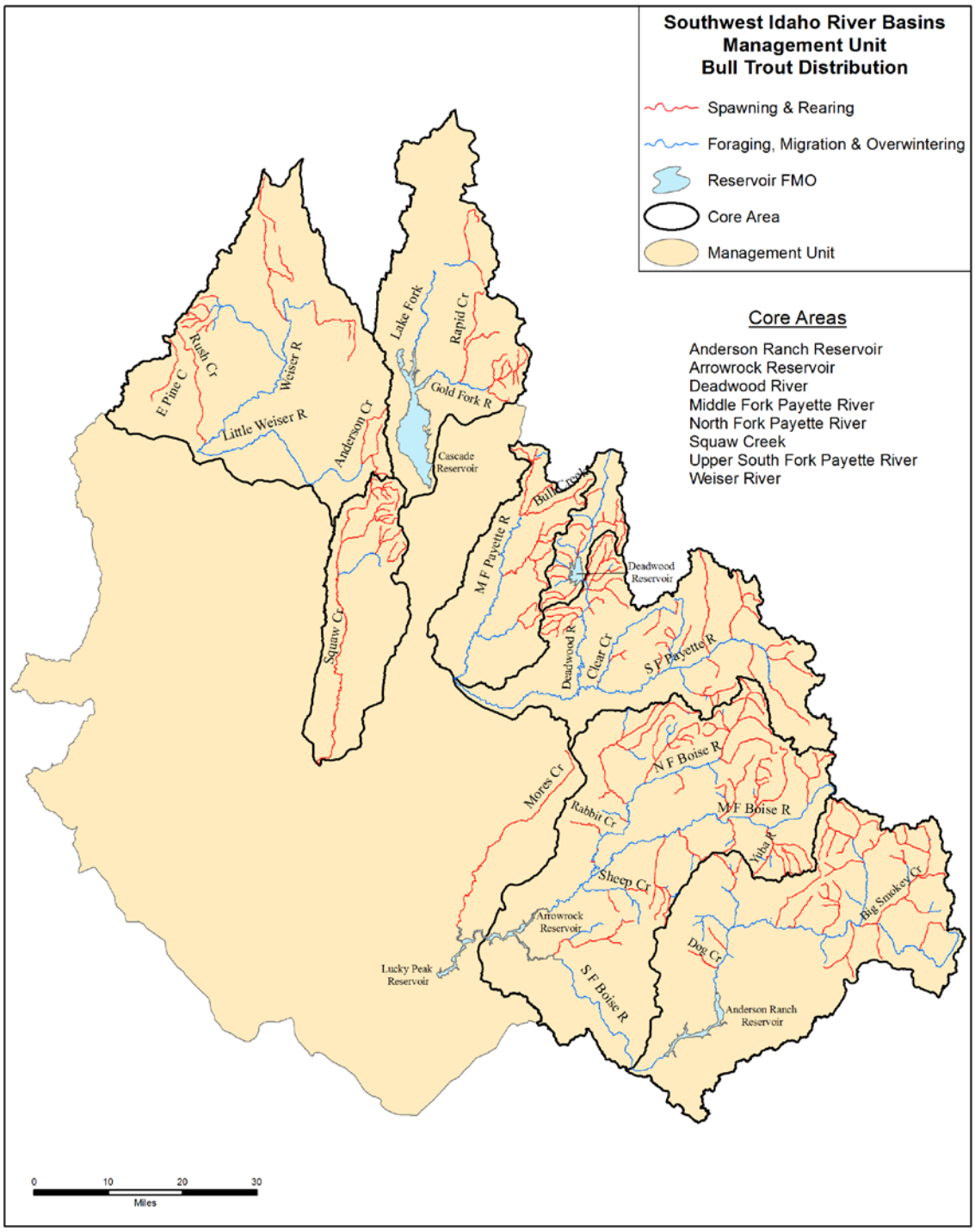
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.

June 5, 2013
d:\work\allen\request8\little_lost.mxd
Oregon Fish and Wildlife Office


N F Malheur R
Little Crane Cr
Big Cr
Malheur R
Beulah Reservoir
Core Areas
North Fork Malheur
Upper Malheur
Malheur River Basin
Management Unit
Bul Trout Distribution
Spawning & Rearing
Foraging, Migration & Overwintering
Reservoir FMO
Core Area
Management Unit
0
10
20
30
Miles
No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
July 1, 2013
d:\work\allen\request8\malheur.mxd
Oregon Fish and Wildlife Office



No warranty is made by the U.S. Fish and Wildlife Service as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.



July 1, 2013
d:\work\allen\request8\sw_idaho.mxd
Oregon Fish and Wildlife Office