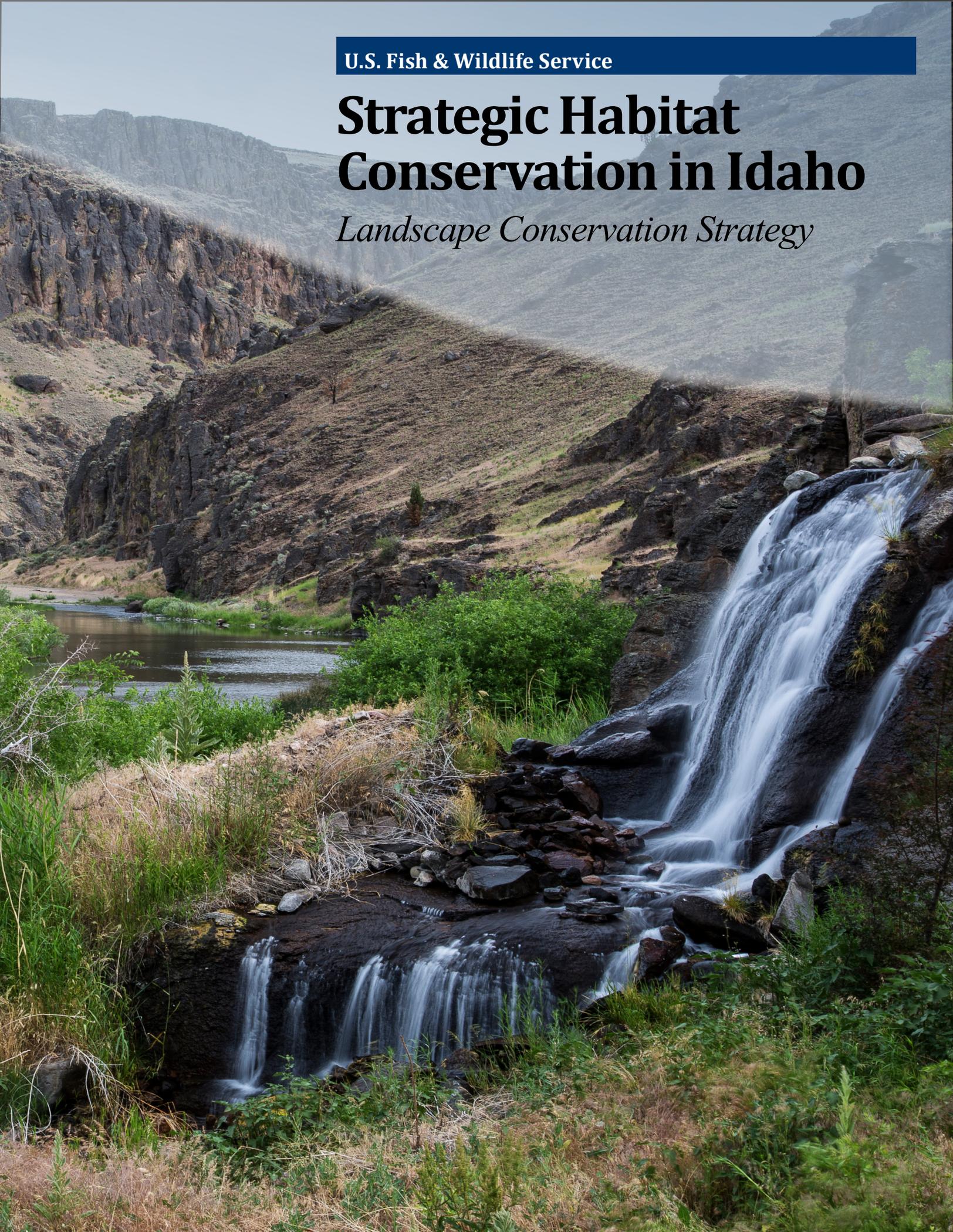


U.S. Fish & Wildlife Service

Strategic Habitat Conservation in Idaho

Landscape Conservation Strategy





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EXECUTIVE SUMMARY

In recent years, the Fish and Wildlife Service has emphasized a need to focus our efforts at landscape scales if we are to more successfully address conservation challenges such as changing land use and climate. Placing greater effort in areas of strategic conservation importance, will better ensure that our investments are meaningful and long lasting. The agency has also emphasized a need to better employ a science-based adaptive approach to ensure that we are effective in meeting our conservation objectives. The Idaho Fish and Wildlife Office (IFWO) used this guidance to identify four Priority Landscapes in the state of Idaho where there are compelling conservation interests for Federal Trust resources, the habitats in which they dwell, and associated natural resources that are valued by the public. The IFWO also identified 38 Priority Species that utilize habitats within these landscapes, which have been identified as habitat indicators, icons, or keystones. Lastly, we have drafted Landscape Strategies that provide stated Goals, Objectives, and Conservation Actions that focus on high profile targets (habitats or Priority Species) within Priority Landscapes, which will address important conservation activities, designed to improve habitat health and integrity for all native species that rely on them. This landscape-scale effort will require the development of willing collaborations between multiple partners, including state, federal, and Tribal agencies, as well as private conservation and user groups.

INTRODUCTION

Background & Need

The State of Idaho contains some of the largest undeveloped and wild landscapes in the lower 48 states, containing habitats as diverse as sagebrush ecosystems, montane forest, free-flowing wilderness rivers, desert canyons, mountain lakes, and alpine summits. It is home to wolves, grizzly bears, and wolverines, as well as lesser known wildlife, plant, and fish species that are found only in Idaho. Runs of salmon and steelhead still return from the Pacific Ocean to Idaho where they spawn in the remote Salmon and Clearwater river basins. Idahoans are proud of their natural resources, and many people journey to this state to experience its scenery and wildlife.

Idaho is a large state at nearly 84,000 square miles in size but supports only about 1.6 million residents. However, the human population is rapidly growing putting increased demands on limited natural resources. The majority of Idaho is publicly owned and relatively undeveloped, offering a multitude of recreational opportunities and supporting other land uses such as livestock grazing, timber harvest, and mining. Much of Idaho has been altered by humans and converted to agriculture which is a major component of the state's economy. Historically, conservation of natural resources has been challenged by multiple land use impacts and legacy effects remain; however, Idaho's resources are confronted by a suite of new challenges such as energy development, aquifer depletion, invasive species, changing frequency and intensity of wildfires, and urban development. Additionally, climate change threatens to exacerbate many of these issues. Conservation efforts conducted by the U.S. Fish and Wildlife Service (Service) in Idaho with its many partners have resulted in important successes, but the growing human population along with changes in land use and other threats require a more strategic approach in how we plan and implement conservation. In order to more effectively guide our conservation efforts into the future, the Idaho Fish and Wildlife Office (IFWO) of the Service has produced the following Landscape Conservation Strategy (Strategy).

The Service is a Federal agency with specific trust responsibilities which are integrally tied to the habitats upon which trust species depend. In 2014, the IFWO completed their Comprehensive Conservation Framework¹ which laid the foundation for developing a state-wide conservation strategy that would guide our efforts in the coming years. The purpose of this strategy is to ensure the resource conservation work IFWO engages in is strategically



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coordinated with our partners to provide the greatest long-term conservation value. We recognize that the Service's limited resources are one small component of the conservation work occurring in Idaho, yet we also acknowledge that as a leading conservation agency we influence the conservation activities occurring in this state. To ensure the IFWO will be engaging in future conservation work consistent with our mission and trust responsibilities, we felt that a necessary first step in this process was for us to identify our priorities in which our future resource work would focus.

¹ 2014 Draft Idaho Strategic Framework; Idaho Fish and Wildlife Office.

Landscape Approach

Recently the Service has stressed the need to focus on landscape-scale efforts to better conserve sustainable biological communities in the face of existing and expanding threats. This approach will require the Service to identify important landscapes that carry the greatest potential for conservation gains, and support collaborative efforts to those ends. While this more focused effort may reduce, but not eliminate, our conservation efforts in areas outside of the selected Priority Landscapes, it will result in more effective and longer lasting conservation gains relative to the resources committed.

This landscape approach requires strong partnerships with land and wildlife managers from State, Federal, and Tribal agencies, as well as local governments, private landowners, non-governmental organizations (NGOs) and other stakeholders, to ensure shared conservation goals and objectives are achieved.

Strategic Habitat Conservation Approach

The Service strives to apply the best available science in its planning and decision-making processes and as a tool to measure conservation success. To this end, the IFWO will apply the Service's Strategic Habitat Conservation (SHC)² approach to implement a science-based, adaptive process to our conservation efforts. The SHC process will employ all of the IFWO's tools to conserve and protect healthy and sustainable ecological processes within selected landscapes. As implemented by the Service, SHC will support a strong monitoring component that allows biologists and managers to measure success, detect shortcomings, and modify the process as the SHC process continues or new projects are planned and initiated, ensuring that management is resulting in the identified conservation goals.

A potentially effective approach currently being studied for its use in SHC is that of surrogate species. Surrogate species are those species that, by their qualities make them good proxies for landscape health, serving as indicators of the habitat and other species that rely on those habitats. Surrogate species may also be selected based on their effectiveness as habitat icons or "flagships", their supporting role in the biological community (keystone species), or their value in providing conservation benefits for other species (umbrella species). Identifying and managing surrogate species may be effective because it is not feasible or efficient to carry out conservation actions on a species-by-species basis. Selection and monitoring of appropriate surrogates may allow managers to gauge the effectiveness of their management actions and greatly reduce the number of variables to be monitored, thereby reducing monitoring effort and costs. Good surrogates may not only serve as indicators of the habitat(s) and biological community, but may also often be used to educate and engage the public. Surrogate species are not specifically identified in this Strategy, but most of the **Priority Species** identified in this plan possess strong surrogate characteristics.

In May of 2014, the IFWO completed a Comprehensive Conservation Framework¹ outlining a path to identify **Priority Landscapes** which would serve as focal areas for our conservation efforts. This Strategy describes the outcome of that process and positions the IFWO for the next steps of collaborating with partners and implementing strategic conservation actions in selected Priority Landscapes. This Strategy is not final, but rather a living document that will be improved over time with the participation of partnering agencies, organizations, Tribes, and individuals.

Focusing on selected Priority Landscapes will require shifting more of IFWO's resources from a diffuse state-wide approach to a more geographically focused approach, bringing our efforts to bear on areas with potential for large, long-lasting conservation gains. This will require IFWO staff to spend more time on partnering, project implementation, and monitoring within those landscapes, and less time on work with lower conservation value. This does not mean we will abandon efforts outside of Priority Landscapes since Service mandates such as listed species, Federal Projects, and critical partnering opportunities occur throughout the state. However, IFWO staff and managers will need to assess the conservation value of all projects and make decisions that direct office resources to those work items of critical value, while reducing our efforts in areas of little conservation gain, both within and outside of the selected Priority Landscapes.

² For more on this approach go to: <http://www.fws.gov/landscape-conservation/shc.html>

The successful implementation of any landscape-scale strategy will rely heavily on the willing participation of our partners, along with an active and concerted communication effort. Most importantly, a long-term landscape-scale SHC approach will require dedicated commitment and support from the Service at all levels of our organization: state, regional and national.

METHODS

IFWO All-Staff Engagement

Developing a state-wide landscape conservation strategy required engagement with all IFWO staff. To support this, the IFWO conducted three all-staff workshops held during 2014 and 2015. Topics addressed in these workshops included identifying: 1) state-wide conservation goals and objectives; 2) priority species; and 3) priority landscapes. Development of these three planning components were based on the collective expertise of IFWO biologists, managers, and support staff from the three satellite offices located in Boise, Chubbuck, and Spokane. This staff-collaborative approach helped ensure that expertise from all programs of the IFWO Ecological Services would be represented, include local biological expertise from throughout the state, and that staff would develop some level of ownership in the process and outcomes of a final Strategy which would guide future work. Each workshop was supported by working groups made up of IFWO staff and geographic information system (GIS) experts that refined and standardized the Strategy components.

Identifying Goals and Objectives

Staff from the IFWO gathered for two days to develop general goal and objective statements that would later help guide the development of more specific landscape strategies. These goals and objectives were written to address conservation needs at different scales, both ecosystem and at the species level. In broad terms, the objectives developed sought to: 1) protect or restore habitats or populations at sufficient sizes to ensure their viability and resilience; 2) build connectivity (habitat and genetic) into the landscape design; 3) address habitat and species-specific threats within selected landscapes; and 4) ensure development of monitoring efforts sufficient to measure results and adjust management as needed. Landscape-specific goals and objectives are further discussed under **Landscape Strategies** below.

Selecting Priority Landscapes

Identification of potential priority landscapes was done by teams made up of IFWO staff (**Ecoregion Teams**) with expertise in each of seven Idaho ecoregions³. No specific constraints were placed on landscape design, but they typically were based on: 1) major drainage systems or mountain ranges, 2) the range of high profile species, 3) proximity to wilderness or other protected areas, and 4) major conservation initiatives or active partnering efforts for those initiatives. After the initial identification of potential priority landscapes, Ecoregion Team members utilized the previously developed goals and objectives as guidelines on which to rank their selected potential landscapes. Many of the characteristics used in the design and ranking of landscapes (e.g., functional landscape scale for ecosystem integrity, connectivity, habitat complexity, number of listed or Priority Species, perceived resiliency, proximity to other functional landscapes) are subjective and often lack quantitative values that lend themselves to objective decision-making. Hence, the delineation of landscape boundaries was subjective and left up to each Team's best professional judgment. Each of the Ecoregion Teams identified and ranked two to 10 potential landscapes within their ecoregion. These ranked landscapes were then provided to IFWO leadership, along with notation on other unique characteristics, to ensure that those landscapes with the highest and/or unique conservation value were considered by the final decision makers.

Designation of the final Priority Landscapes was carried out by IFWO leadership. Final design of priority landscapes was based on multiple factors including the rankings and rationales provided by the Ecoregion Teams, consideration of ecological integrity across ecoregion boundaries as well as state or country borders, and high

³ For more information on Idaho ecoregions and Ecoregion Teams, reference the 2014 Draft Idaho Strategic Framework.

profile partnerships or initiatives. Upon selection of the Priority Landscapes, Ecoregion Teams were replaced with **Landscape Teams** made up of IFWO staff members with habitat and/or species expertise applicable to the selected Priority Landscapes.

Selecting Priority Species

The initial list of potential priority species drafted by IFWO staff, drew heavily from lists of protected, sensitive, or indicator species developed by other state and federally agencies as well as associated working groups and NGOs⁴. While the IFWO considered priority, sensitive, or focal species identified by other agencies or organizations the Service's authorities lie with Federal Trust species. Federal Trust species include migratory birds, threatened and endangered species (Endangered Species Act (Act)), inter-jurisdictional fish, bald and golden eagles, and marine mammals. Numerous native species, game, and furbearers are not regarded as Federal Trust resources. However, the Service's Landscape SHC approach emphasized the need to utilize species that serve as good habitat indicators and preferably with a substantial level of public appeal, serving as icons or "flagships" for the landscape or habitat under consideration. Many of the identified priority species in this Strategy are not Federal Trust resources and their inclusion is based on their value as habitat indicators, landscape icons, or keystone components of their community. Species not identified as Federal Trust resources are the responsibility of the states, and proposals to utilize such state-managed species as Priority Species, and use them as metrics to measure management effectiveness or as public outreach tools, will require buy-in and support from our state partners.

In an effort to narrow the list of potential Priority Species, IFWO staff ranked them on their relative qualities as habitat indicators and landscape icons. Other characteristics considered in these ranking exercises included: a species' value in a habitat keystone role, distribution and degree of endemism, and its various values as a metric for monitoring (e.g., existing information on status, ease of monitoring). This exercise, along with the development of specific Landscape Strategies (see below), reduced the number of Priority Species under consideration.

Landscape Strategies

Landscape Teams developed a number of strategies designed to provide guidance for the conservation of species or habitats (targets) with high profile conservation needs within their landscapes. These strategies are comprised of the goals and objectives developed by IFWO staff, but tailored to each of those specific landscape targets, as well as a list of **Conservation Actions** that address specific conservation needs of those landscape habitats or species. Many of the Conservation Actions are drawn directly from documents such as recovery plans, Wildlife Management Plans (IDFG), or Federal land management plans. Most strategies include elements that consider projected climate change in an effort to ensure long-term success of the actions being carried out. Lastly, since multi-agency partnering is a critical component to the success of these strategies, many of the actions include collaborative review and design of pending land use plans being developed by partnering agencies.



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⁴ Referenced species lists included: IDFG Species of Greatest Conservation Need (2005); U.S. Forest Service Sensitive Species, Regions 1 & 4; Bureau of Land Management Sensitive Species; Idaho Native Plant Society Rare Plants (2013); Fish and Wildlife Service Birds of Conservation Concern Regions 9 & 10, 2008.

RESULTS

Priority Species and Landscape Strategies described here are regarded as working drafts which provide a level of flexibility as the IFWO engages partners and refines strategies. Hence, additional species (not identified in this Strategy) may be considered or dropped from consideration as our strategies are merged with those of our partners in these landscapes. Similarly, Landscape Strategies and Conservation Actions may be modified or their timelines adjusted based on current or planned priorities of our partners.

Priority Landscapes

Of 28 potential landscapes initially identified by the Ecoregion Teams, four were designated and/or designed in the final selection. Three of these were based on the original, top-ranked landscapes proposed by the Ecoregion Teams (Blue Mountains, Northern Basin & Range, and Northern Rockies), while the fourth was a composite of landscapes identified by the Middle Rockies and Snake River Plain Ecoregion Teams. The final Middle Rockies Priority Landscape included key sagebrush ecosystems, important watersheds critical to anadromous and associated species, and montane habitats regarded as important corridors to the greater Rocky Mountain ecosystem (Figure 1). These Priority Landscapes account for an estimated 29.2 % of the State of Idaho, with the Blue Mountains, Middle Rockies, Owyhee Uplands, and Selkirk Cabinet-Yaak Landscapes comprising an estimated 2%, 16.8%, 7.2%, and 3.3% respectively. All of the selected Priority Landscapes occur along state and/or international borders, ensuring that inter-state and international coordination will be necessary to achieve the highest levels of landscape integrity and conservation.

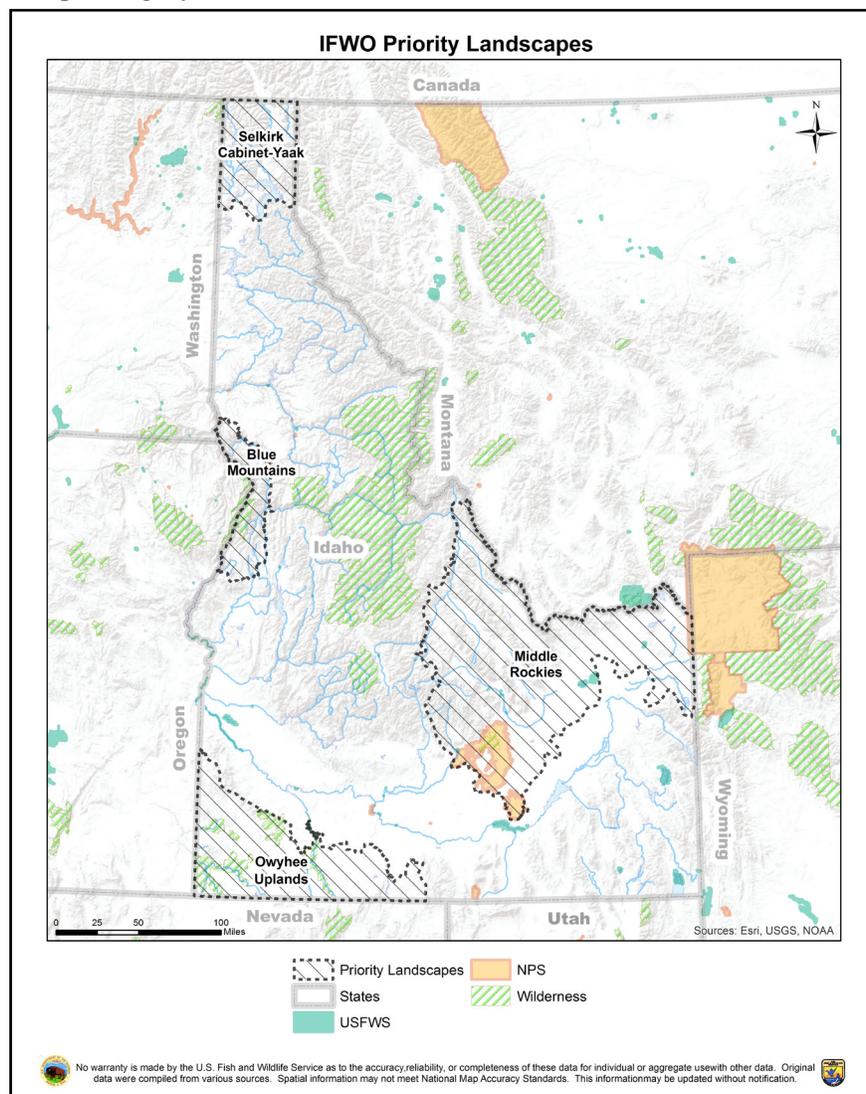


Figure 1. The state of Idaho illustrating the four priority landscapes identified by the IFWO.

Priority Species

The number of Priority Species initially identified by the Ecoregion Teams was reduced by the four Landscape Teams from an initial 72 to 38 (Table 1). No species was shared by all four Priority Landscapes, however widespread aquatic species such as bull trout or cutthroat trout⁵ were identified by three of the four teams, as was beaver. Shared species also included some sagebrush obligates (greater sage-grouse and pygmy rabbit) in Middle Rockies and Owyhee Uplands Priority Landscapes. Grizzly bear was identified as a priority in both the Middle Rockies and Selkirk Cabinet-Yaak Priority Landscapes. Ten of the priority species identified have Federal protection under the Act, an additional three were recently removed from candidate or other listed status, and one candidate for listing (whitebark pine) was identified in both the Middle Rockies and Selkirk Cabinet-Yaak Priority Landscapes. Other Federal Trust species include migratory birds (11 species, including bald eagle), and inter-jurisdictional fish (7 species/subspecies). Each of the Landscape Strategies provided in Appendix 1 list those priority species to be specifically addressed by the respective Landscape Actions.

In addition to the federally listed species identified as Priority Species, the IFWO made an effort to include species with value as habitat indicators, habitat icons or flagships, or that provide keystone roles in the ecosystem. At least two of the species identified, American beaver and aspen, were provided high values as keystones since both provide habitat for numerous other species and can affect factors such as local climate and hydrologic processes. As emphasized throughout this document, use of any non-Trust species as metrics of habitat health or to promote public engagement will require buy-in and support by our State and other partners.

Landscape Strategies

Each of the Landscape Teams identified three to four individual Landscape Strategies designed to address the priority conservation targets within their Priority Landscape. Specific Landscape Strategies addressing those targets are provided in Appendix I-IV. Each Landscape Strategy includes goals and objectives, specific to each Landscape Strategy, along with corresponding Conservation Actions that address the most pertinent objectives or other specific threats. Actions specific to each set of Conservation Objectives are referenced numerically at the end of each goal and **Conservation Objective** statement, and all Conservation Actions are provided at the end

Table 1. Priority Species identified for each of four IFWO Priority Landscapes.

Blue Mountains	Middle Rockies	Owyhee Uplands	Selkirk Cabinet-Yaak
Bull trout	American beaver	American beaver	American beaver
Flammulated owl	Bull trout	Aspen	Bald eagle
MacFarlane's four-o'clock	Chinook salmon	Brewer's sparrow	Bull trout
Mountain quail	Greater sage-grouse	Columbia spotted frog	Canada lynx
Northern goshawk	Grizzly bear	Greater sage-grouse	Fisher
Northern Idaho ground squirrel	Lewis's woodpecker	Interior redband trout	Grizzly bear
Rocky Mountain tailed frog	Pygmy rabbit	Mule deer	Harlequin duck
Spalding's catchfly	Rocky Mountain tailed frog	Pygmy rabbit	Kootenai white sturgeon
Westslope cutthroat trout	Steelhead	Sage thrasher	Lewis's woodpecker
White-headed woodpecker	Townsend's big-eared bat	Sagebrush sparrow	Rocky Mountain tailed frog
Willow flycatcher	Trumpeter swan	Slickspot peppergrass	Westslope cutthroat trout
	Western pearlshell		Whitebark pine
	Westslope cutthroat trout		Willow flycatcher
	Whitebark pine		Woodland caribou
	White-faced ibis		
	Yellowstone cutthroat trout		

⁵ Both Westslope and Yellowstone Cutthroat subspecies are named independently, but they can be treated as a single species given their common habitat requirements and allopatric distribution within Idaho.

of each strategy. For the purposes of this document the strategies provided in Appendix 1 have been restricted to goals, objectives, and actions, keeping them general and brief. Refinement of these strategies and actions will be accomplished through collaboration with our conservation partners.

NEXT STEPS

The four Landscape Teams have identified a list of strategies and actions intended to advance on the ground conservation in the state of Idaho. A number of the strategies and actions are already underway or being actively planned (e.g., IFWO Partners for Fish and Wildlife Program, State-wide sage-grouse initiatives), while others have willing partners but are awaiting support and engagement to move them forward. Many of the strategies and/or actions outlined in this document target the same habitats and species as the Idaho State Wildlife Action Plan (SWAP), and propose many of the same general management actions to achieve conservation of these resources. Completion of the IFWO Landscape Strategy positions us to help guide or provide a supporting role for Idaho and other partners. As described in the Idaho draft SWAP, regular meetings between the many natural resource agencies that have taken part in developing the SWAP strategies will ensure that collaborative resource management and conservation efforts will be informed and able to adapt to future challenges. The IFWO's Priority Landscape Teams shall remain engaged in this process and utilize it to partner with the agencies, Tribes, and other entities in an effort to carry out mutually acceptable and beneficial strategies and actions. The IFWO's next phase in carrying out this Landscape Strategy is to engage with willing partners and prioritize our staff and funding resources to those projects with the greatest conservation benefits. Effectively addressing this challenge will lead to greater long-term conservation on the ground by creating stronger, productive relationships with our conservation partners.



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APPENDICES: PRIORITY LANDSCAPE STRATEGIES

The appendices include a brief description of each of the conservation strategies developed by each of four Landscape Teams. Landscape Strategies are meant to provide a step-down outline for addressing the most pressing conservation issues in which the Service is engaged within the identified landscapes. Maps for each of the landscapes are provided at the beginning of each appendix for the: Blue Mountains, Middle Rockies, Owyhee Uplands, and Selkirk Cabinet-Yaak. The list of Conservation Actions, located immediately following the strategy goals and supporting Conservation Objectives, do not contain great detail, but identify the primary needs or threats that will be necessary to address the stated objectives. Each of the Landscape Teams have developed more detailed accounts that will help guide the tasks to be undertaken with local landscape partners for planning and implementation of these Landscape Strategies.

APPENDIX I: BLUE MOUNTAINS PRIORITY LANDSCAPE

The Blue Mountains Priority Landscape Team identified three conservation targets and drafted Landscape Strategies to address them: 1) aquatic habitats that support native resident salmonids; 2) canyon grasslands of the Snake and Salmon River drainage systems; and 3) ponderosa pine woodlands. These landscapes include 11 IFWO priority species, 4 of which are federally listed. The landscape’s western boundary contacts both Oregon and Washington States, and includes an important anadromous link to much of central Idaho (Figure 2).

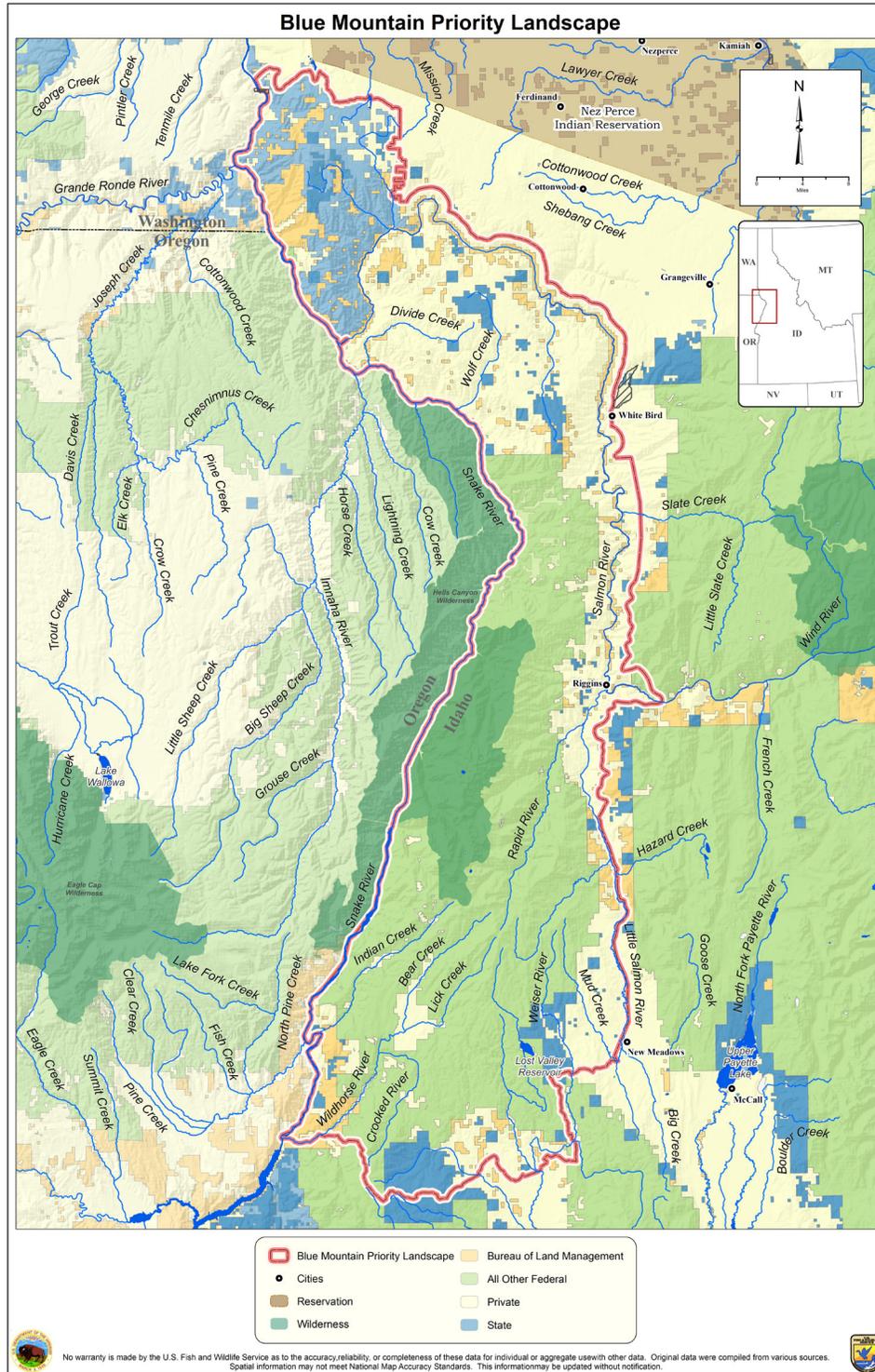


Figure 2. Blue Mountains Priority Landscape. Conservation targets identified in this landscape are: aquatic habitats for native resident salmonids, canyon grasslands, and ponderosa pine forest. This landscape covers approximately 2% of the State of Idaho and its western boundary is the Snake River.

Landscape Strategy 1: Secure and enhance native, resident salmonid populations and their habitats in the Blue Mountains Priority Landscape.

Priority Species: Bull trout, Westslope cutthroat trout, Rocky Mountain tailed frog

Goal 1a: Ensure resilient, ecologically functioning aquatic habitats capable of supporting native species in the Blue Mountains Priority Landscape.

Conservation Objectives

- i. Conserve remaining functional blocks of streams and rivers supporting aquatic Priority Species.
- ii. Identify and restore aquatic habitats to ensure their use by aquatic Priority Species and that will promote connectivity within existing functional blocks of aquatic habitat within the landscape
- iii. Identify and address threats to aquatic habitats and their surrounding terrestrial and riparian habitats to ensure aquatic integrity.
- iv. Protect and restore all aquatic habitat types (lakes, rivers, streams) to ensure habitats for all life-history needs of aquatic Priority Species are available and connected.

Actions: 1, 2, 4, 5, 6, 7 (see complete list of Actions below).

Goal 1b: Ensure abundant, diverse, and resilient populations of aquatic priority species within the habitats of the Blue Mountains Priority Landscape.

Conservation Objectives

- i. Identify Priority Species as well as appropriate indicator species as needed. Identify additional aquatic species that require special consideration as appropriate (e.g., federally listed species or other species identified by partners).
- ii. Protect or restore native habitats that support key life history components of Priority Species.
- iii. Identify and address threats to aquatic priority species and their habitat.
- iv. Promote connectivity between important habitat patches for aquatic Priority Species.
- v. Promote genetic diversity in the aquatic landscape.
- vi. Protect unique native species associated with aquatic habitats of the Blue Mountains Priority Landscape.

Actions: 2, 3, 5, 6, 7 (see below).

Goal 1c: Ensure that aquatic habitats within the Blue Mountains Priority Landscape are biologically connected to adjacent habitats outside of the landscape area.

Conservation Objectives

- i. Identify existing and potential aquatic corridors to existing functional blocks of aquatic habitats in the Salmon and Snake River drainages, and similar drainages in Oregon, that will provide connectivity to aquatic Priority Species.
- ii. With partners, promote connectivity between important habitat patches adjacent to the Blue Mountains Priority Landscape.

- iii. With partners, plan restoration and/or mitigation efforts for aquatic habitats that connect adjacent Priority Landscapes or functional blocks of aquatic habitat.

Actions: 8 (see below).

Conservation Actions for Blue Mountains Landscape Strategy 1:

Action 1: Using climate and resiliency models assess predicted habitat suitability for bull trout and other native, resident salmonids and focus on suitable areas for Conservation Actions (Focal Drainages).

Action 2: Removal of passage barriers within Focal Drainages: a) Culvert replacement, b) fish ladder installation, c) fish screen installation, d) thermal barrier remediation (identified as Primary Threat in DRUIP: 2015 Draft Recovery Unit Implementation Plan);

Action 3: Control harmful non-native fish species within Focal Drainages (identified as Primary Threat in DRUIP);

Action 4: Restore or enhance anadromy, where appropriate, within Focal Drainages;

Action 5: Within Focal Drainages assess human water use in drainage and secure necessary in-stream flow sufficient for healthy trout populations and anadromy (identified as Primary Threat in DRUIP);

Action 6: Reduce sedimentation to streams in Focal Drainages;

Action 7: Develop implementation and monitoring plan with partners.

Action 8: Consider habitat conditions adjacent to Blue Mountains Priority Landscape and work with partners to promote connectivity of aquatic habitats where appropriate.

Landscape Strategy 2: Secure and enhance canyon grasslands in the Salmon and Snake River corridors.

Priority Species: Macfarlane’s four-o’clock, Spalding’s silene, Willow flycatcher, Mountain quail.

Goal 2a: Ensure resilient, ecologically functioning canyon grassland habitats capable of supporting native species in the Blue Mountains Priority Landscape.

Conservation Objectives

- i. Conserve remaining functional blocks of canyon grasslands and the Priority Species within them.
- ii. Identify and restore impacted grassland habitats to ensure their use by Priority Species and promote connectivity to adjacent functional blocks of grassland habitat within the landscape.
- iii. Identify and address threats to canyon grassland habitats.
- iv. Protect and restore adjacent habitats to provide connected mosaic of native habitats.

Actions: 1, 2, 3, 4, 5, 6, 7 (see complete list of Actions below).

Goal 2b: Ensure abundant, diverse, and resilient populations of native species within the targeted canyon grassland habitats.

Conservation Objectives

- i. Identify Priority Species as well as appropriate indicator species as needed. Identify additional canyon grassland species that require special consideration as appropriate (e.g., federally listed species, SGCNs, or other species identified by partners).
- ii. Protect or restore native habitats that support key life history components of Priority Species.
- iii. Identify and address threats to canyon grassland-inhabiting Priority Species within targeted habitats.
- iv. Promote connectivity for Priority Species between important habitat patches of targeted canyon grasslands (Focal Grasslands; see Strategy below).
- v. Promote genetic diversity of Priority Species in the targeted canyon grassland habitats.
- vi. Protect unique native species (Priority, listed, SGCNs, etc.) associated with canyon grassland habitats of the Blue Mountains Priority Landscape.

Actions: 1, 2, 3, 4, 5, 7 (see below).

Goal 2c: Ensure that priority landscapes within and adjacent to Idaho are biologically connected.

Conservation Objectives

- i. Identify existing and potential corridors between existing functional blocks of canyon grassland habitats within Blue Mountains Ecoregion (Idaho and Oregon).
- ii. With partners, promote connectivity between important habitat patches throughout the Blue Mountains Landscape and adjacent areas.
- iii. With partners, plan restoration and/or mitigation efforts for canyon grasslands and adjoining habitats that promote connectivity of Priority Species.

Actions: 1, 8 (see below).

Conservation Actions for Blue Mountains Landscape Strategy 2:

Action 1: Using climate and resiliency models and land condition data assess predicted habitat changes in the canyon grasslands biome within the Blue Mountains Priority Landscape. Identify resilient canyon grassland habitat patches (Focal Grasslands) with partner participation (IDFG, BLM, TNC).

Action 2: Develop integrated weed management plan with partners for identified invasive plants within Focal Grasslands (identified as Primary Threat in ESA plant recovery plans and CMWMA).

Action 3: Manage livestock grazing within Focal Grasslands to enhance habitat for priority species (identified as recovery action in recovery plans⁶ and CMWMA Mgmt. Plan).

Action 4: Restore or enhance native vegetation communities (and supporting components) for the benefit of co-occurring plants and native animal species within Focal Grasslands and adjacent habitats.

Action 5: Control use of pesticides (herbicides, insecticides, fungicides) in Focal Grasslands and adjacent habitats

⁶ Identified as primary threats in FWS recovery plans for Macfarlane's four o'clock (2000, revised) and *Silene spaldingii* (2007); CMWMA: IDFG Craig Mountain WMA Management Plan, 2014.

as appropriate.

Action 6: Include riparian and spring protection and restoration projects where they occur within Focal Grassland project areas.

Action 7: Develop implementation and monitoring plan with partners (IDFG, BLM, The Nature Conservancy (TNC), and Nez Perce Tribe (NPT) and private parties as appropriate).

Action 8: Consider canyon grassland habitat conditions adjacent to Blue Mountains Priority Landscape and work with partners to promote connectivity where appropriate.

Landscape Strategy 3: Secure and enhance ponderosa pine woodlands.

Priority Species: Northern goshawk, Northern Idaho ground squirrel (NIDGS), Flammulated owl, White-head woodpecker

Goal 3a: Ensure resilient, ecologically functioning ponderosa pine woodland habitats capable of supporting native species in the Blue Mountains Priority Landscape.

Conservation Objectives

- i. Conserve remaining functional blocks of ponderosa pine woodlands and the Priority Species within them.
- ii. Identify and restore impacted ponderosa pine woodland habitats to ensure their use by Priority Species and promote connectivity to adjacent functional blocks of ponderosa pine woodland habitat within the landscape.
- iii. Identify and address threats to ponderosa pine woodland habitats.
- iv. Protect and restore adjacent habitats to provide connected mosaic of native habitats.

Actions: 1, 2, 3, 4, 5 (see complete list of Actions below).

Goal 3b: Ensure abundant, diverse, and resilient populations of native species within the targeted ponderosa pine woodland habitats.

Conservation Objectives

- i. Identify Priority Species as well as appropriate indicator species as needed. Identify additional ponderosa pine woodland species that require special consideration as appropriate (e.g., federally listed species, SGCNs, or other species identified by partners).
- ii. Protect or restore native habitats that support key life history components of Priority Species.
- iii. Identify and address threats to ponderosa pine woodland-inhabiting Priority Species within targeted habitats.
- iv. Promote connectivity for Priority Species between important habitat patches of targeted ponderosa pine woodlands (Focal Woodlands; see goal below).
- v. Promote genetic diversity of Priority Species in the targeted ponderosa pine woodland habitats.
- vi. Protect unique native species (Priority, listed, SGCNs, etc.) associated with ponderosa pine woodland habitats of the Blue Mountains Priority Landscape.

Action: 3, 4, 5 (see below).

Goal 3c: Ensure that priority landscapes within and adjacent to Idaho are biologically connected.

Conservation Objectives

- i. Identify existing and potential corridors between existing functional blocks of ponderosa pine woodland habitats within Blue Mountains Ecoregion (Idaho and Oregon).
- ii. With partners, promote connectivity between important habitat patches throughout the Blue Mountains Ecoregion and adjacent Ecoregions.
- iii. With partners, plan restoration and/or mitigation efforts for ponderosa pine woodlands and adjoining habitats that promote connectivity of Priority Species.

Actions: 1, 6, 7 (see below).

Conservation Actions for Blue Mountains Landscape Strategy 3:

Action 1: Using climate and resiliency models and land condition data, assess predicted habitat changes in the ponderosa pine woodland biome within the Blue Mountains Priority Landscape. Identify resilient ponderosa pine habitat patches (Focal Woodlands) with partner participation (IDFG, BLM, TNC).

Action 2: Develop integrated weed management plan with partners for identified invasive plants within ponderosa pine woodland habitat.

Action 3: Restore or enhance native vegetation communities (and supporting components) to historical conditions, including restoring a fire regime similar to historical conditions (more frequent, low intensity fires), for the benefit of co-occurring plants and native animal species within Focal Woodland habitat.

Action 4: Utilize ESA candidate and recovery programs to support recovery of candidate and listed native species, and co-occurring native species, on private lands.

Action 5: Develop and implement focal species monitoring plans with partners (IDFG, PNF, NPNF, and others as appropriate).

Action 6: Consider ponderosa pine woodland conditions adjacent to Blue Mountains Priority Landscape and work with partners to promote connectivity where appropriate.

Action 7: Work with partners across state borders to keep habitats connected and in good ecological condition, regardless of land ownership or jurisdiction.

APPENDIX II: MIDDLE ROCKIES PRIORITY LANDSCAPE

The Middle Rockies Priority Landscape represents the largest of the IFWO’s identified conservation landscapes and supports a number of diverse habitat types, including basalt desert scrub, alpine, and anadromous river systems (Figure 3). The Middle Rockies Landscape Team identified 4 Landscape Strategies for this landscape: 1) secure and enhance sagebrush ecosystems for the benefit of priority species, 2) secure and enhance wetland habitats, 3) enhancing the viability of forest ecosystems, and 4) securing and enhancing riverine/riparian habitats. These strategies identify 16 IFWO Priority Species, 4 of which are federally listed.

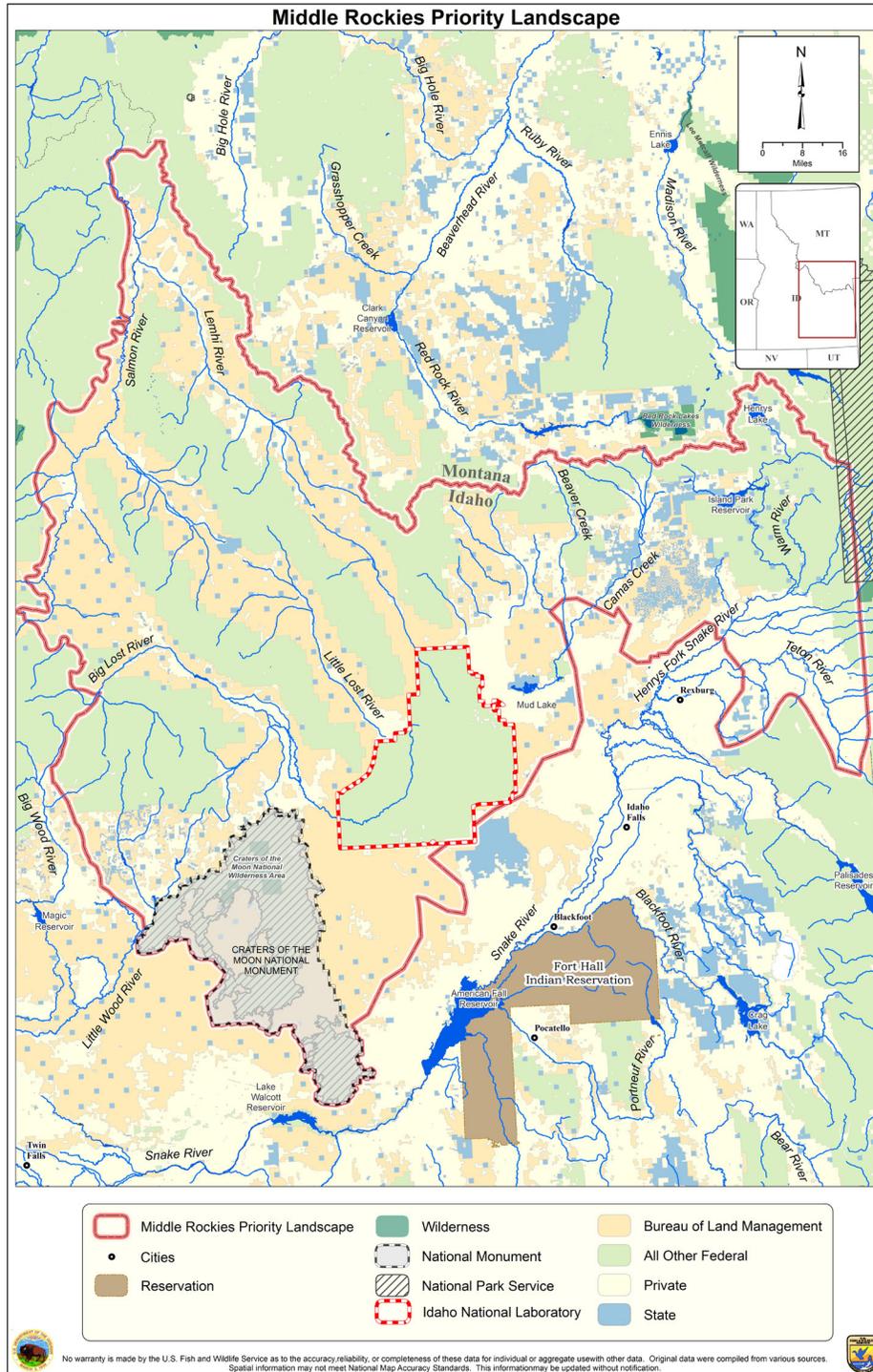


Figure 3. Middle Rockies Priority Landscape. Four conservation targets have been identified within this landscape: sage ecosystems, lacustrine and palustrine wetlands, forest ecosystems, and riverine/riparian. The Middle Rockies Landscape is the most diverse of the four landscapes and borders Montana and Wyoming, as well as the largest, comprising an estimated 16.8% of Idaho.

Landscape Strategy 1: Stabilize and enhance populations of sagebrush ecosystems target priority species.

Priority Species: Greater sage-grouse, Pygmy rabbit.

Goal 1a: Ensure resilient, ecologically functioning sagebrush ecosystems habitats capable of supporting native species in the Middle Rockies Priority Landscape.

Conservation Objectives

- i. Conserve remaining functional blocks of sagebrush habitats to support Priority Species.
- ii. Identify and restore habitats to ensure their use by Priority Species and that will promote connectivity within existing functional blocks of sagebrush ecosystems within the landscape.
- iii. Identify and address threats to sagebrush ecosystems and their surrounding habitats to ensure integrity.
- iv. Protect and restore all sagebrush ecosystems to ensure habitats for all life-history needs of Priority Species are available and connected.
- v. Conserve sage-grouse Priority Habitat Management Areas (PHMA) and Important Habitat Management Areas (IHMA) in Idaho as developed in BLM and USFS Greater Sage-grouse Decision Land Use Plan Amendment of 2015.

Actions: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20 (see complete list of Actions below).

Goal 1b: Ensure abundant, diverse, and resilient populations of native species within sagebrush ecosystems of the Middle Rockies Priority Landscape.

Conservation Objectives

- i. Use identified Priority Species (indicator, umbrella, keystone, etc.) as needed to achieve strategic conservation. If needed, continue to identify species that require special consideration as appropriate (e.g., federally listed species or other species identified by partners).
- ii. Protect or restore native habitats that support key life history components of Priority Species.
- iii. Identify and address threats to Priority Species and their habitat.
- iv. Promote connectivity between important habitat patches for Priority Species.
- v. Promote genetic diversity of Priority Species in the sagebrush ecosystems landscape.
- vi. Protect unique native species associated with habitats of the Middle Rockies Priority Landscape.
- vii. With partners, create opportunities to implement populations monitoring.
- viii. With partners, evaluate priority species populations and habitat function to validate identified goals and objectives.
- ix. As identified in the BLM and USFS Greater Sage-grouse Decision Land Use Plan Amendments of 2015, protect sage-grouse populations at the established level (based on counts of males on leks).

Actions: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20 (see below).

Goal 1c: Ensure that sagebrush ecosystems within and adjacent to the Middle Rockies Priority Landscape are biologically connected.

Conservation Objectives

- i. Identify existing and potential corridors to existing functional blocks of sagebrush habitats in Idaho, Montana and Wyoming that will provide connectivity to Priority Species.
- ii. With partners, plan restoration and/or mitigation efforts for sagebrush habitats that connect adjacent Priority Landscapes or functional blocks of habitat to promote connectivity within and adjacent to the Middle Rockies Priority Landscape.

Actions: 13, 14 (see below).

Conservation Actions for Middle Rockies Landscape Strategy 1:

Action 1: Assist the BLM/FS with implementing land-use plans (LUPs) developed for sage-grouse conservation.

Action 2: Assist BLM/FS with implementing priority actions identified by Snake-Salmon-Beaverhead Fire & Invasives Assessment Team (FIAT).

Action 3: Assist BLM/FS with Burned Area Emergency Rehabilitation (BAER) and Emergency Stabilization and Rehabilitation (ES&R) efforts.

Action 4: Assist BLM with planning, funding, and implementation of Nesting Habitat Restoration.

Action 5: Assist the State of Idaho with implementing the Idaho Department of Lands Greater Sage-grouse Conservation Plan

Action 6: Provide funding and technical assistance to Sage-grouse Initiative Strategic Watershed Action Team biologists.

Action 7: Provide funding and assistance to establish Sage-grouse in the Schools programs.

Action 8: Assist Idaho National Laboratory with Candidate Conservation Agreement (CCA) implementation.

Action 9: Assist IDFG with lek counts.

Action 10: Assist Natural Resources Conservation Service (NRCS) and other partners with conservation strategy for the Pioneers area.

Action 11: Identify and address species-specific threats and habitat needs for Priority Species in sagebrush ecosystems within the Middle Rockies Priority Landscape.

Action 12: Support research projects in the Middle Rockies Priority Landscape that will help refine management strategies for Priority Species within sagebrush ecosystems.

Action 13: Identify existing and potential corridors for Priority Species in the Middle Rockies Priority Landscape that are needed for conservation. Consider habitat conditions adjacent to Middle Rockies Priority Landscape and work with partners (in Idaho, Montana, and Wyoming) to promote connectivity (including migratory corridors) and to promote genetic diversity for Priority Species, where appropriate.

Action 14: Work with partners to develop implementation and monitoring plans for all actions.

Action 15: Using climate and resiliency models, assess predicted habitat suitability for pygmy rabbit, within the Middle Rockies Priority Landscape.

Action 16. Collaborate with BLM, NRCS, IDFG, Idaho Department of Lands (IDL), and private landowners to focus habitat restoration in Focal Sagebrush Habitat that will provide for sustainable populations of sagebrush obligate species as well as connectivity between Focal Sagebrush Habitat areas for pygmy rabbits.

Action 17: Encourage BLM, IDL, NRCS, and private landowners to employ a suite of tools to reduce invasive non-native annual grasses (e.g., cheatgrass, medusahead) within and adjacent to pygmy rabbit suitable habitat within the Middle Rockies Priority Landscape Team.

Action 18: Encourage BLM, NRCS, IDFG, IDL, and private landowners to employ a suite of tools to increase species diversity within and adjacent to pygmy rabbit suitable habitat dominated by non-native vegetation, including areas seeded post-fire with non-native plants.

Action 19: Collaborate with BLM, NRCS, IDFG, and IDL to accelerate the re-establishment of shrub cover in areas with limited mid- to late-seral sagebrush within identified Focal Pygmy Rabbit Sagebrush Habitat in the Middle Rockies Priority Landscape.

Action 20: Encourage BLM, NRCS, IDFG, and IDL to maintain adequate shrub cover (>30%) in deep soil areas of Focal Sagebrush Habitat Areas to promote conservation of pygmy rabbit within the Middle Rockies Priority Landscape.

Landscape Strategy 2: Secure and enhance wetlands (e.g., lacustrine and palustrine), excluding riparian and riverine habitats, in the Middle Rockies Priority Landscape.

Priority Species: Trumpeter swan, White-faced ibis, Greater sage-grouse.

Goal 2a: Ensure resilient, ecologically functioning lacustrine and palustrine wetland ecosystems capable of supporting native species and habitat.

Conservation Objectives

- i. Identify priority wetlands within the landscape.
- ii. Work with partners to create opportunities for potential wetland improvement and construction of highest priority wetlands.
- iii. Work with partners on water conservation actions (incentives).
- iv. Reduce and/or prevent invasive species introduction into priority wetlands.
- v. Ensure objectives appropriate for individual wetlands are met.

Actions: 1, 2, 3, 4, 5 (see complete list of Actions below).

Goal 2b: Ensure abundant, diverse, and resilient populations of priority and native species within wetlands across the landscape.

Conservation Objectives

- i. Identify Priority Species as well as appropriate indicator species as needed. Identify additional terrestrial species that require special consideration as appropriate (e.g., federally listed species or other species identified by partners).
- ii. Identify and address threats to Priority Species and their habitat.
- iii. With partners, create opportunities to implement population monitoring.

Actions: 6, 7 (see below).

Goal 2c: Ensure that wetlands within and adjacent to the Middle Rockies Landscape are biologically connected.

Conservation Objectives

- i. Identify existing and potential wildlife corridors for Priority Species.
- ii. Promote connectivity between important wetlands.
- iii. Promote restoration efforts on wetlands adjacent to intact connected landscapes.
- iv. Coordinate with partners to ensure implementation of conservation objectives do not impede in adjacent landscape conservation.
- v. With partners, evaluate species populations, as needed, and habitat function to validate identified goals and objectives.

Actions: 8 (see below).

Conservation Actions for Middle Rockies Landscape Strategy 2:

Action 1: Identify threats to wetland function and prioritize wetlands within the landscape.

Action 2: Work with partners to create opportunities for potential wetland improvement.

Action 3: Work with partners on water conservation actions (incentives).

Action 4: Reduce and prevent invasive species introduction and habitat conversions.

Action 5: Set measurable objectives appropriate for individual wetland types.

Action 6: Prioritize wetland-dependent Priority Species of the Service and partners.

Action 7: Work with partners to create opportunities for population monitoring.

Action 8: Identify existing and potential wetlands corridors for priority species between wetlands within and adjacent to the Middle Rockies Priority Landscape.

Landscape Strategy 3: Enhance the viability of Middle Rockies Priority Landscape forested ecosystems for the continuing benefit of priority species.

Priority Species: Whitebark pine, Lewis's woodpecker, Grizzly bear, Townsend's big-eared bat.

Goal 3a: Ensure resilient, ecologically functioning forested ecosystems capable of supporting native terrestrial species and habitats.

Conservation Objectives

- i. Conserve and enhance remaining functional habitat blocks or mosaics that support Priority Species.
- ii. Identify and address threats to habitats to ensure ecosystem integrity.
- iii. Identify and restore human-impacted habitats to ensure their use by Priority Species and will promote connectivity within existing functional blocks of habitats within the landscape.

- iv. Promote connectivity between important habitat patches to sustain all life history stages of native terrestrial species.
- v. Protect mosaics of habitat at multiple scales.

Actions: 1, 2, 3, 4, 5 (see complete list of Actions below).

Goal 3b: Ensure abundant, diverse, and resilient populations of native forest species within the Middle Rockies Priority Landscape.

Conservation Objectives

- i. Protect or restore native habitats that support key life history components of Priority Species and mutualistic species (i.e. Clark's nutcracker).
- ii. Identify and address threats to Priority Species and their habitats.
- iii. Promote connectivity between important habitat patches for Priority Species.
- iv. Promote genetic diversity in the Priority Landscape.
- v. Promote recovery of Priority Species.

Actions: 3, 4, 5, 6, 7, 8 (see below).

Goal 3c: Ensure that forested ecosystems within and adjacent to the Middle Rockies Priority Landscape are biologically connected.

Conservation Objectives

- i. Identify existing and potential wildlife corridors that will provide connectivity for Priority Species.
- ii. With partners, promote connectivity between important habitat patches adjacent to the Middle Rockies Priority Landscape.
- iii. With partners, plan restoration and/or mitigation efforts for habitats that connect adjacent Priority Landscapes or functional blocks of habitat.

Actions: 2, 3, 4, 5, 6, 7 (see below).

Conservation Actions for Middle Rockies Landscape Strategy 3:

Action 1: Investigate current Priority Species distribution and abundance within the priority landscape. Information from these projects will be used in conjunction with other occurrence data to target areas for habitat enhancement or management projects.

Action 2: Improve function and complexity of vegetation communities where necessary/appropriate to support or contribute to sustainable population levels of Priority Species.

Action 3: Work with land management agencies to enhance habitats necessary to sustain viable population levels of Priority Species.

Action 4: Identify and protect hibernaculum (including abandoned mines, caves, tubes, etc.).

Action 5: Promote the Whitebark Pine Restoration Strategy by providing research and funds towards tasks in order to protect and enhance whitebark pine stands and provide for resiliency into the future (collect whitebark pine seed; grow rust resilient seedlings; promote saving the relics; plant burned areas; treat stands; inventory and

monitor).

Action 6: Identify and work with partners to improve our understanding of wildlife corridors the Middle Rockies Priority Landscape and surrounding states and National Forests.

Action 7: Perform landscape resistance analyses to identify potential wildlife corridors.

Action 8: Increase public education and engagement to reduce human-wildlife conflicts (bats, bears).

Landscape Strategy 4: Secure and enhance riverine/riparian habitats in the Middle Rockies Priority Landscape for the continuing benefit of Priority Species.

Priority Species: Bull trout, Westslope cutthroat trout, Yellowstone cutthroat trout, Chinook salmon, Steelhead, Rocky Mountain tailed frog, Western pearlshell, American beaver, and cottonwood/willow complexes.

Goal 4a: Ensure resilient, ecologically functioning riverine/riparian habitats capable of supporting native species in the Middle Rockies Priority Landscape.

Conservation Objectives

- i. Conserve remaining functional blocks of streams, rivers, and associated riparian habitat supporting Priority Species.
- ii. Identify and restore impacted riverine/riparian habitats to ensure their use by Priority Species, and promote connectivity within existing functional blocks of riverine/riparian habitat within the landscape
- iii. Identify and address threats to streams, rivers, and associated riparian habitat to ensure ecosystem integrity.
- iv. Protect and restore streams, rivers, and associated riparian habitat to ensure habitats for all life-history needs of Priority Species are available and connected.

Actions: 1, 2, 4, 5, 6, 7, 9, 11, 12, 13, 14

Goal 4b: Ensure abundant, diverse (including life histories), and resilient populations of Priority Species within the riverine/riparian habitats of the Middle Rockies Priority Landscape.

Conservation Objectives

- i. Protect or restore native habitats that support key life history components of Priority Species.
- ii. Identify and address threats to Priority Species and their habitat.
- iii. Promote connectivity between important habitat patches for Priority Species.
- iv. Promote genetic diversity in the Priority Landscape.

Actions: 2, 3, 5, 6, 7, 8, 9, 11, 12, 13, 14

Goal 4c: Ensure that riverine/riparian habitats within the Middle Rockies Priority Landscape are biologically connected to adjacent habitats outside of the landscape area.

Conservation Objectives

- i. Identify existing and potential riverine/riparian corridors to existing functional blocks of riverine/riparian habitats in the Salmon and Upper Snake River drainages that will provide connectivity for Priority Species.
- ii. With partners, promote connectivity between important habitat patches adjacent to the priority landscape.
- iii. With partners, plan restoration and/or mitigation efforts for riverine/riparian habitats that connect adjacent priority landscapes or functional blocks of riverine/riparian habitat.

Actions: 10, 12

Conservation Actions for Middle Rockies Landscape Strategy 4:

Action 1: Using climate and resiliency models assess predicted habitat suitability for bull trout, Yellowstone cutthroat, westslope cutthroat, and salmon and focus on suitable areas for Conservation Actions (Focal Drainages). Assessment of suitable habitat should consider susceptibility of drainages to wildfire.

Action 2: Remove passage barriers within Focal Drainages (identified as Primary Threat in 2015 Draft Recovery Unit Implementation Plan (DRUIP), and factor influencing Yellowstone cutthroat distribution in the status review): a) culvert replacements, b) fish ladder installation, c) fish screen installation, d) thermal barrier remediation, e) velocity barrier remediation where not natural.

Action 3: Control harmful non-native fish species within Focal Drainages (identified as Primary Threat in Bull Trout DRUIP and a concern in the Yellowstone Cutthroat Trout Status Review).

Action 4: Restore or enhance salmonid fluvial and adfluvial life histories, where appropriate, within Focal Drainages.

Action 5: Within Focal Drainages assess human water use in drainage and secure necessary in-stream flow sufficient for healthy salmonid populations (identified as Primary Threat in DRUIP and identified as a factory influencing Yellowstone cutthroat trout populations) and as needed for tailed frog and western pearlshell.

Action 6: Assess the suitability of existing flow regimes to sustain cottonwood/willow complexes. Where flow regimes have been altered by dams and/or irrigation, investigate the feasibility, and work with partners, to establish a more natural flow regime.

Action 7: Reduce sedimentation and other water quality impacts in Focal Drainages and where impacting western pearlshell and tailed frog.

Action 8: Assess non-native diseases and/or parasite infections and address as feasible.

Action 9: Develop implementation and monitoring plans with partners.

Action 10: Consider habitat conditions adjacent to Middle Rockies Priority Landscape and work with partners to promote connectivity of habitats where appropriate.

Action 11: Restore stream habitat by implementing restoration projects where stream habitat is lacking complexity by placing wood, doing riparian plantings, restoring grade control, nutrient replacement, and other stream restoration techniques.

Action 12: Leverage opportunities and partnerships to promote conservation within the Priority Landscape (Land and Water Conservation Fund, BPA funds, watershed groups, etc.).

Action 13: Reintroduce beaver where habitat complexity is lacking or they would be beneficial.

Action 14: Gather information regarding the status of western pearlshell, tailed frog, beaver, and cottonwood/willow complexes. Assess status, current distribution and abundance, etc. to identify key areas to conduct restoration activities.

APPENDIX III: OWYHEE UPLANDS PRIORITY LANDSCAPE

The Owyhee Uplands Landscape Team identified 3 conservation targets addressed with the following Landscape Strategies: 1) sagebrush ecosystems, 2) aquatic and wet meadow systems, and 3) aspen ecosystems. Within the Owyhee landscape (Figure 4), the aquatic and wet meadow systems as well as aspen comprise important habitats nested within the greater sagebrush ecosystems which predominates this region of the state. The aquatic-wet meadow and aspen habitat/ecosystems are integral to the life histories of many of the species that are regarded as members of the sagebrush ecosystem. This landscape supports 11 IFWO priority species, none of which are currently listed under the Act.

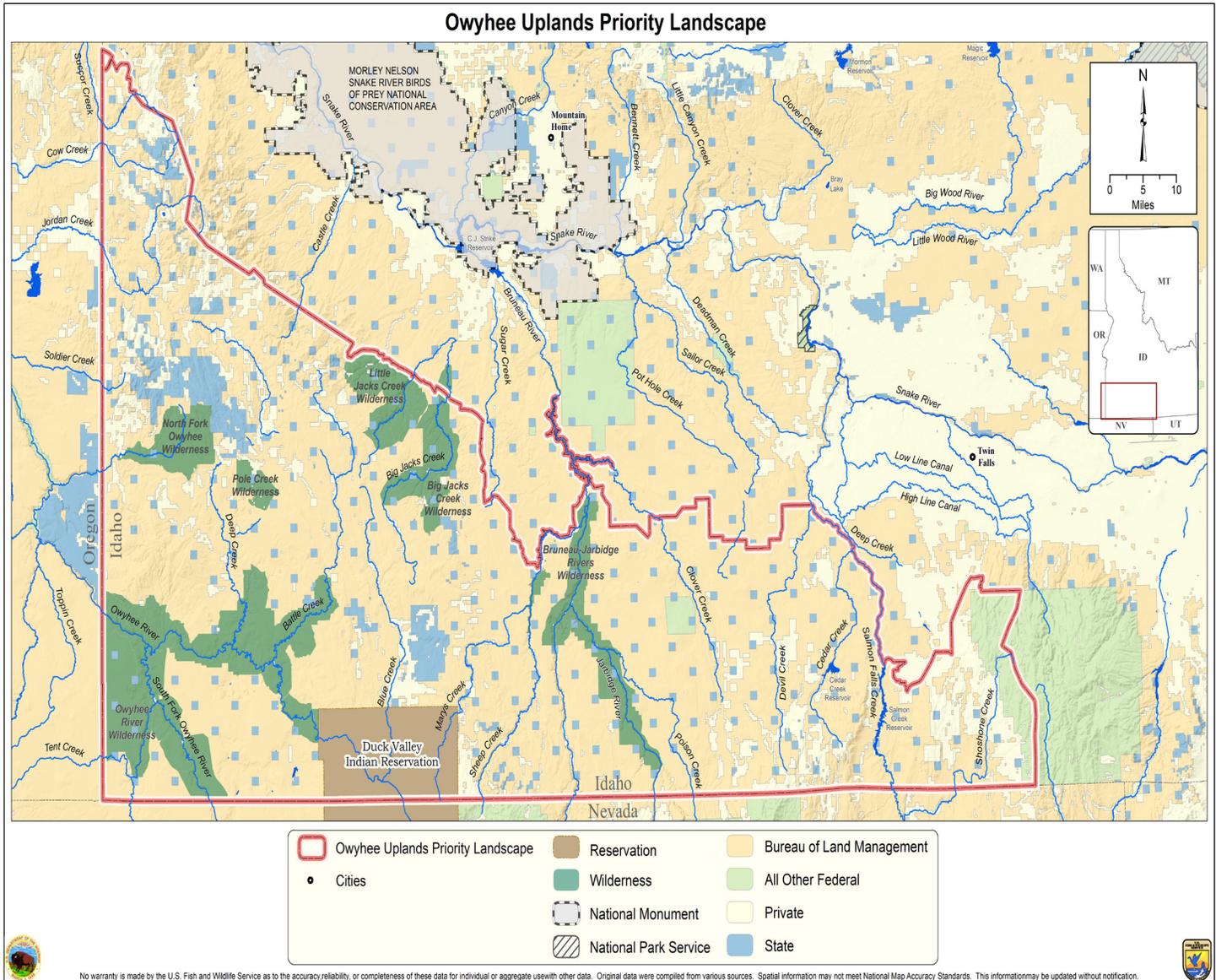


Figure 4. Owyhee Uplands Priority Landscape in southwest Idaho borders large areas of Oregon and Nevada. It contains important habitats for greater sage-grouse and other sagebrush obligate species. Landscape Strategies were developed for those targets that provide habitat mosaics for the species in this region, aquatic-wet meadow and aspen. The Owyhee Uplands Landscape covers approximately 7.2% of the total state area.

Landscape Strategy 1: Secure and enhance native, obligate sagebrush species and their habitats in the Owyhee Uplands Priority Landscape.

Priority Species: *Greater sage-grouse, Pygmy rabbit, Slickspot peppergrass, Sagebrush sparrow, Sage thrasher, Brewer's sparrow.*

Goal 1a: Ensure resilient, ecologically functioning sagebrush ecosystems capable of supporting native species and habitats in the Owyhee Uplands Priority Landscape.

Conservation Objectives

- i. Conserve remaining functional blocks of sagebrush habitats supporting sagebrush Priority Species.
- ii. Identify and restore large enough blocks of functioning sagebrush habitat to support sagebrush Priority Species. Focus habitat restoration efforts to maintain or enhance resistance and resiliency of sagebrush habitats.
- iii. Identify and address threats to sagebrush habitats.
- iv. Promote connectivity between important sagebrush habitat patches.
- v. Protect mosaics of sagebrush habitat at multiple scales.
- vi. Conserve sage-grouse Priority Habitat Management Areas (PHMA) and Important Habitat Management Areas (IHMA) in Idaho as developed in BLM and USFS Greater Sage Grouse Decision Land Use Plan Amendments of 2015.

Actions: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 28, 29, 30, 31 (see complete list of Actions below).

Goal 1b: Ensure abundant, diverse, and resilient populations of sagebrush obligate species within their habitats in the Owyhee Uplands Priority Landscape.

Conservation Objectives

- i. Identify sagebrush Priority Species as well as appropriate indicator(s) as needed. Identify additional sagebrush obligate species that require special consideration as appropriate (e.g., federally listed species or other species identified by partners.)
- ii. Protect or restore native sagebrush habitats that support key life history components of sagebrush Priority Species.
- iii. Identify and address threats to sagebrush Priority Species and their habitats.
- iv. Promote connectivity between important sagebrush habitat patches.
- v. Promote genetic diversity of sagebrush Priority Species.
- vi. Promote recovery of sagebrush Priority Species.
- vii. Protect mosaics of sagebrush habitat at multiple scales.
- viii. Protect unique sagebrush native species associated with the Owyhee Uplands Priority Landscape.
- ix. As identified in the BLM and USFS Greater Sage-grouse Decision Land Use Plan Amendments of 2015, protect sage-grouse populations at the established level (based on counts of males on leks).

Actions: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31 (see below).

Goal 1c: Ensure that sagebrush habitats within the Owyhee Uplands Priority Landscape are biologically connected to adjacent habitats outside of the landscape area.

Conservation Objectives

- i. Identify existing and potential corridors to existing functional blocks of sagebrush habitats in the Owyhee Uplands Priority Landscape that will provide connectivity to sagebrush Priority Species.
- ii. With partners, promote connectivity between important habitat patches adjacent to the Owyhee Uplands Priority Landscape.
- iii. With partners, plan restoration and/or mitigation efforts for sagebrush habitats that connect adjacent Priority Landscapes or functional blocks of sagebrush habitat.

Actions: 13, 14, 32 (see below).

Conservation Actions for Owyhee Uplands Landscape Strategy 1:

Action 1: Assist the BLM with implementing land-use plans (LUPs) developed for sage-grouse conservation.

Action 2: Assist BLM with implementing priority actions identified by the Boise District and Twin Falls District Fire & Invasives Assessment Team (FIAT).

Action 3: Assist BLM with Burned Area Emergency Rehabilitation (BAER) and Emergency Stabilization and Rehabilitation (ES&R) efforts.

Action 4: Assist BLM with planning, funding, and implementation of Bruneau Owyhee Sage-Grouse Habitat (BOSH) Project.

Action 5: Assist BLM with planning, funding, and implementation of the Tri-State Fuels Breaks Project.

Action 6: Assist the State of Idaho with implementing the Idaho Department of Lands Greater Sage-grouse Conservation Plan

Action 7: Provide funding and technical assistance to Sage-grouse Initiative (SGI) Strategic Watershed Action Team biologists.

Action 8: Provide funding and assistance to establish Sage-grouse in the Schools programs.

Action 9: Assist IDFG with lek counts.

Action 10: Assist NRCS and other partners with conservation strategy for the Owyhee Uplands Priority Landscape.

Action 11: Identify and address species-specific threats and habitat needs for Priority Species in the Owyhee Uplands Priority Landscape.

Action 12: Support research projects in the Owyhee Uplands Priority Landscape that will help refine management strategies for Priority Species in sagebrush habitats.

Action 13: Identify existing and potential corridors for Priority Species in the Owyhee Uplands PL that are needed for conservation

Action 14: Work with partners to develop implementation and effectiveness monitoring plans for all actions.

Action 15: Using climate and resiliency models, assess predicted habitat suitability for slickspot peppergrass and pygmy rabbit (Focal Sagebrush Habitat), within the Owyhee Uplands Priority Landscape.

Action 16: Collaborate with BLM, NRCS, IDFG, IDL, Mountain Home Air Force Base (MHAFB), private landowners, and tribes to focus habitat restoration in Focal Sagebrush Habitat that will provide for sustainable populations of obligate sagebrush species as well as connectivity between Focal Sagebrush Habitat areas for pygmy rabbit and slickspot peppergrass.

Action 17: Collaborate with partners to develop a recovery plan for slickspot peppergrass, including within the Owyhee Uplands Priority Landscape.

Action 18: Encourage BLM, IDL, NRCS, and private landowners, and BLM livestock permittees to employ a suite of tools to reduce invasive non-native annual grasses (e.g., cheatgrass, medusahead) within and adjacent to slickspot peppergrass occupied habitat and pygmy rabbit suitable habitat within the Owyhee Uplands Priority Landscape.

Action 19: Encourage BLM, NRCS, IDFG, IDL, private landowners, Tribes, and BLM livestock permittees to employ a suite of tools to increase species diversity within and adjacent to slickspot peppergrass occupied habitat and pygmy rabbit suitable habitat, that dominated by non-native vegetation, including areas seeded post-fire with non-native plants.

Action 20: Fund pilot projects that will identify new techniques for maintaining or re-establishing resilience and resistance of sagebrush habitats, with an emphasis on native shrubs, grasses, and forbs.

Action 21: Collaborate with BLM, NRCS, IDFG, IDL, Mountain Home Air Force Base, and tribes to accelerate the re-establishment of shrub cover in areas with limited mid- to late-seral sagebrush within identified Focal Sagebrush Habitat for slickspot peppergrass and pygmy rabbit in the Owyhee Uplands Priority Landscape.

Action 22: Actively engage in and encourage partner collaboration with tribes, Nevada Department of Wildlife, and Oregon Department of Fish and Wildlife to promote sagebrush habitat connectivity for pygmy rabbit across tribal and state boundaries, where appropriate.

Action 23: Encourage BLM, NRCS, IDFG, IDL, and tribes to maintain adequate shrub cover (>30 percent total shrub cover) in deep soil areas of Focal Sagebrush Habitat Areas to promote conservation of pygmy rabbit within the Owyhee Uplands Priority Landscape.

Action 24: In collaboration with the LEPA Technical Team, BLM, Mountain Home Air Force Base, IDL, BLM livestock permittees, and IDFG, identify priority Element Occurrences (EOs) within the Owyhee Uplands Priority Landscape for slickspot peppergrass habitat restoration and population augmentation or re-establishment through the recovery planning process.

Action 25: In collaboration with BLM, MHAFB, IDL, BLM livestock permittees, and IDFG, maintain or re-establish native grasses, forbs, and shrubs as well as biological soil crusts at identified priority EOs to benefit slickspot peppergrass and the insect pollinators on which it depends.

Action 26: In collaboration with BLM, MHAFB, IDL, BLM livestock permittees, and IDFG, avoid or minimize ground disturbance and the incidence of invasive non-native plants within and adjacent to identified priority EOs to benefit slickspot peppergrass and the slickspot microsites on which it depends.

Action 27: In collaboration with BLM, MHAFB, IDL, and IDFG, identify appropriate locations for population augmentation or reintroduction as part of slickspot peppergrass recovery.

Action 28: In collaboration with BLM, MHAFB, IDL, NRCS, tribes, and IDFG, develop implementation and monitoring plans for sagebrush habitat activities to ensure pygmy rabbit conservation objectives are being met.

Action 29: In collaboration with BLM, MHAFB, IDL, and IDFG, continue to implement implementation and

effectiveness monitoring to ensure slickspot peppergrass conservation objectives are being met. Develop and implement appropriate monitoring to determine success of population augmentation and reintroduction efforts, as needed.

Action 30: Collaborate with BLM, IDFG, IBO, Audubon to establish breeding bird survey route(s) within the Owyhee Uplands PL for long term monitoring of sagebrush obligate songbirds (brewers sparrow, sagebrush sparrow and sage thrasher) and sagebrush habitats.

Action 31: Collaborate with partners to incorporate sagebrush obligate songbird monitoring as early indicators to evaluate restoration effectiveness of habitat improvement projects within the Owyhee Uplands Priority Landscape.

Action 32: Actively engage in and encourage partner collaboration with tribes, IDFG, Nevada Department of Wildlife, and Oregon Department of Fish and Wildlife to promote sagebrush habitat connectivity for pygmy rabbit across tribal and state boundaries, where appropriate.

Landscape Strategy 2: Secure and enhance American beaver, Columbia spotted frog, and interior redband trout populations and their habitats (lotic, lentic, and wet meadow) within the Jarbidge, Bruneau, and Owyhee watersheds of the Owyhee Uplands Priority Landscape.

Priority Species: American beaver, Columbia spotted frog (Great Basin DPS), and Interior redband trout.

Goal 2a: Ensure resilient, ecologically functioning aquatic habitats capable of supporting native aquatic species in the Owyhee Uplands Priority Landscape.

Conservation Objectives

- i. Conserve remaining functional lotic, lentic, and wetland aquatic habitats supporting aquatic Priority Species.
- ii. Identify and restore large enough blocks of functioning aquatic habitat to support aquatic Priority Species. Focus habitat restoration efforts to maintain or enhance resistance and resiliency of aquatic habitats.
- iii. Identify and address threats to aquatic habitats.
- iv. Promote connectivity between important aquatic habitat patches.
- v. Protect aquatic habitat at multiple scales.

Actions: 1, 2, 3, 4, 5, 6, 7, 8 (see complete list of Actions below).

Goal 2b: Ensure abundant, diverse, and resilient populations of native aquatic species within their habitats in the Owyhee Uplands Priority Landscape.

Conservation Objectives

- i. Identify aquatic Priority Species as well as appropriate indicator species as needed. Identify additional aquatic species that require special consideration as appropriate (e.g., federally listed species or other species identified by partners.)
- ii. Protect or restore aquatic habitats that support key life history components of aquatic Priority

Species.

- iii. Identify and address threats to aquatic Priority Species and their habitats.
- iv. Promote connectivity between important aquatic habitat patches.
- v. Promote genetic diversity of aquatic Priority Species.
- vi. Promote recovery of aquatic Priority Species.
- vii. Protect mosaics of aquatic habitat at multiple scales. Protect unique aquatic native species associated with the Owyhee Uplands Priority Landscape.

Actions: 1, 2, 3, 4, 5, 6, 7, 8 (see below).

Goal 2c: Ensure that aquatic habitats within the Owyhee Uplands Priority Landscape are biologically connected to adjacent habitats outside of the landscape area.

Conservation Objectives

- i. Identify existing and potential corridors to existing functional reaches of aquatic habitats in the Owyhee Uplands Priority Landscape that will provide connectivity to aquatic Priority Species.
- ii. With partners, promote connectivity between important habitat patches adjacent to the Owyhee Uplands Priority Landscape.
- iii. With partners, plan restoration and/or mitigation efforts for aquatic habitats that connect adjacent Priority Landscapes or functional reaches of aquatic habitat.

Actions: 8, 9 (see below).

Conservation Actions for Owyhee Uplands Landscape Strategy 2:

Action 1: Use climate and resiliency models and GIS mapping to identify the configuration of predicted moderate to high quality future habitat for Columbia spotted frog, interior redband trout, and beaver in the Jarbidge, Bruneau, and Owyhee watersheds. Identify these areas as Focal Drainages and Focal Ponds/Wetlands.

Action 2: Collaborate with TNC, Trout Unlimited (TU), BLM, Ducks Unlimited (DU), IDL, and IDFG to restore or enhance beaver populations and their habitat, where appropriate.

Action 3: Collaborate with BLM, TU, and IDFG to remove stream passage barriers to benefit redband trout within Focal Drainages. Projects to remediate current stream passage barriers may include culvert replacement, fish ladder installation, fish screen installation, and thermal barrier remediation.

Action 4: Collaborate with IDFG to evaluate the presence of invasive non-native species and remove/control invasive non-native fish (primarily small-mouth bass) and bullfrogs, as needed, focusing on Focal Drainages and Focal Ponds/Wetlands.

Action 5: Collaborate with BLM, IDA, NRCS, APHIS, and TU and provide funding to reduce sedimentation and pesticide contamination of streams and wetlands in Focal Drainages.

Action 6: Collaborate with USGS, DU, and IDFG to fund assessments of non-native disease and/or parasite infection (interior redband trout; Columbia spotted frog) and to treat as needed and feasible.

Action 7: Collaborate with NRCS, TU, DU, private landowners, and IDFG to encourage the use of flood irrigation within historic floodplains (rather than pivot irrigation) for conservation of wetland habitats.

Action 8: Collaborate with BLM, NRCS, USGS, TU, and IDFG to develop implementation and monitoring plans

for aquatic habitat activities.

Action 9: Actively engage in and encourage partner collaboration to promote aquatic habitat connectivity across tribal and state boundaries, where appropriate.

Landscape Strategy 3: Secure and enhance aspen habitats in the Owyhee Uplands Priority Landscape and the species that depend upon them.

Priority Species: Aspen, Beaver, and Mule Deer

Goal 3a: Ensure resilient, ecologically functioning aspen habitats capable of supporting native species and habitats in the Owyhee Uplands Priority Landscape.

Conservation Objectives

- i. Conserve remaining functional blocks of aspen habitats supporting aspen Priority Species.
- ii. Identify and restore large enough blocks of functioning aspen habitat to support aspen Priority Species. Focus habitat restoration efforts to maintain or enhance resistance and resiliency of aspen habitats.
- iii. Identify and address threats to aspen habitats.
- iv. Promote connectivity between important aspen habitat patches.
- v. Protect aspen habitat at multiple scales.

Actions: 1, 2, 3, 4, 5, 6, 7, 8 (see complete list of Actions below).

Goal 3b: Ensure abundant, diverse, and resilient populations of aspen and species that depend on this habitat in the Owyhee Uplands Priority Landscape.

Conservation Objectives

- i. Identify aspen Priority Species as well as appropriate indicator species as needed.
- ii. Identify additional species dependent on aspen that require special consideration as appropriate (e.g., federally listed species or other species identified by partners.)
- iii. Protect or restore native aspen habitats that support key life history components of aspen Priority Species.
- iv. Identify and address threats to aspen Priority Species and their habitats.
- v. Promote connectivity between important aspen habitat patches.
- vi. Promote genetic diversity of aspen Priority Species.
- vii. Promote recovery of aspen Priority Species.
- viii. Protect mosaics of aspen habitat at multiple scales.
- ix. Protect unique native species dependent on aspen that are associated with the Owyhee Uplands Priority Landscape.

Actions: 1, 2, 3, 4, 5, 6, 7, 8 (see below).

Goal 3c: Ensure that aspen habitats within the Owyhee Uplands Priority Landscape are biologically connected to adjacent habitats outside of the landscape area.

Conservation Objectives

- i. Identify existing and potential corridors to existing functional blocks of aspen habitats in the Owyhee Uplands Priority Landscape that will provide connectivity to aspen Priority Species.
- ii. With partners, promote connectivity between important habitat patches adjacent to the Owyhee Uplands Priority Landscape.
- iii. With partners, plan restoration and/or mitigation efforts for aspen habitats that connect adjacent Priority Landscapes or functional blocks of aspen habitat.

Actions: 7, 9 (see below).

Conservation Actions for Owyhee Uplands Landscape Strategy 3:

Action 1: Meet with IDFG and other partners to determine their willingness to collaboratively develop an aspen conservation strategy for the Owyhee Uplands Priority Landscape.

Action 2: Using climate and resiliency models and land condition data, assess predicted habitat changes in the aspen habitats within the Owyhee Uplands Priority Landscape. Identify resilient aspen habitat patches (Focal Aspen Sites) with TNC, IDFG, NRCS, USGS, and BLM. Prioritize predicted moderate to high quality future habitat (Focal Aspen Areas) to focus future conservation / restoration actions in these Focal Aspen Sites/Areas.

Action 3: Collaborate with IDFG, BLM, NRCS, private landowners, USGS, tribes, Mule Deer Foundation (MDF), and Audubon to maintain or enhance Focal Aspen Sites. Techniques could include silvicultural practices (coppice management), prescribed burning, or domestic and wild large ungulate management through fencing or herd control.

Action 4: Collaborate with IDFG, BLM, NRCS, private landowners, USGS, tribes, TNC, and TU to restore or enhance beaver populations, where appropriate.

Action 5: In collaboration with IDFG, BLM, NRCS, private landowners, USGS, tribes, TNC, TU, MDF, Audubon, and the Idaho Conservation League, provide funding and input on a public education program on the conservation of aspen habitat and its value to Idaho's wildlife legacy.

Action 6: In collaboration with BLM, NRCS, private landowners, USGS, tribes, and IDFG, lead an effort to monitor aspen stand health over time, inclusive of the extent of current and future Sudden Aspen Decline (SAD), within and adjacent to the Owyhee Uplands landscape through techniques such as satellite photo analyses, aerial photo analyses, and stand condition verification field visits.

Action 7: In collaboration with BLM, NRCS, private landowners, USGS, tribes, and IDFG, develop implementation and effectiveness monitoring plans for projects designed to benefit aspen.

Action 8: Collaborate with IDFG, tribes, and the MDF to enhance mule deer populations within aspen areas, where appropriate,

Action 9: Actively engage in and encourage partner collaboration between tribes, Nevada Department of Wildlife, Oregon Department of Fish and Wildlife, and the Humboldt Toiyabe National Forest to promote aspen connectivity across tribal and state boundaries, where appropriate.

APPENDIX IV: SELKIRK CABINET-YAAK PRIORITY LANDSCAPE

The Selkirk Cabinet-Yaak Landscape Team identified four conservation strategies: 1) native salmonids in the Priest and Pend Oreille Basins, 2) terrestrial species in the Selkirk Mountain ecosystem, 3) Kootenai Basin ecosystems and watersheds, and 4) restoration of riparian and wetland habitats (Figure 5). The landscape contains 14 species identified by the IFWO as priorities, 5 of which are federally listed as threatened or endangered.

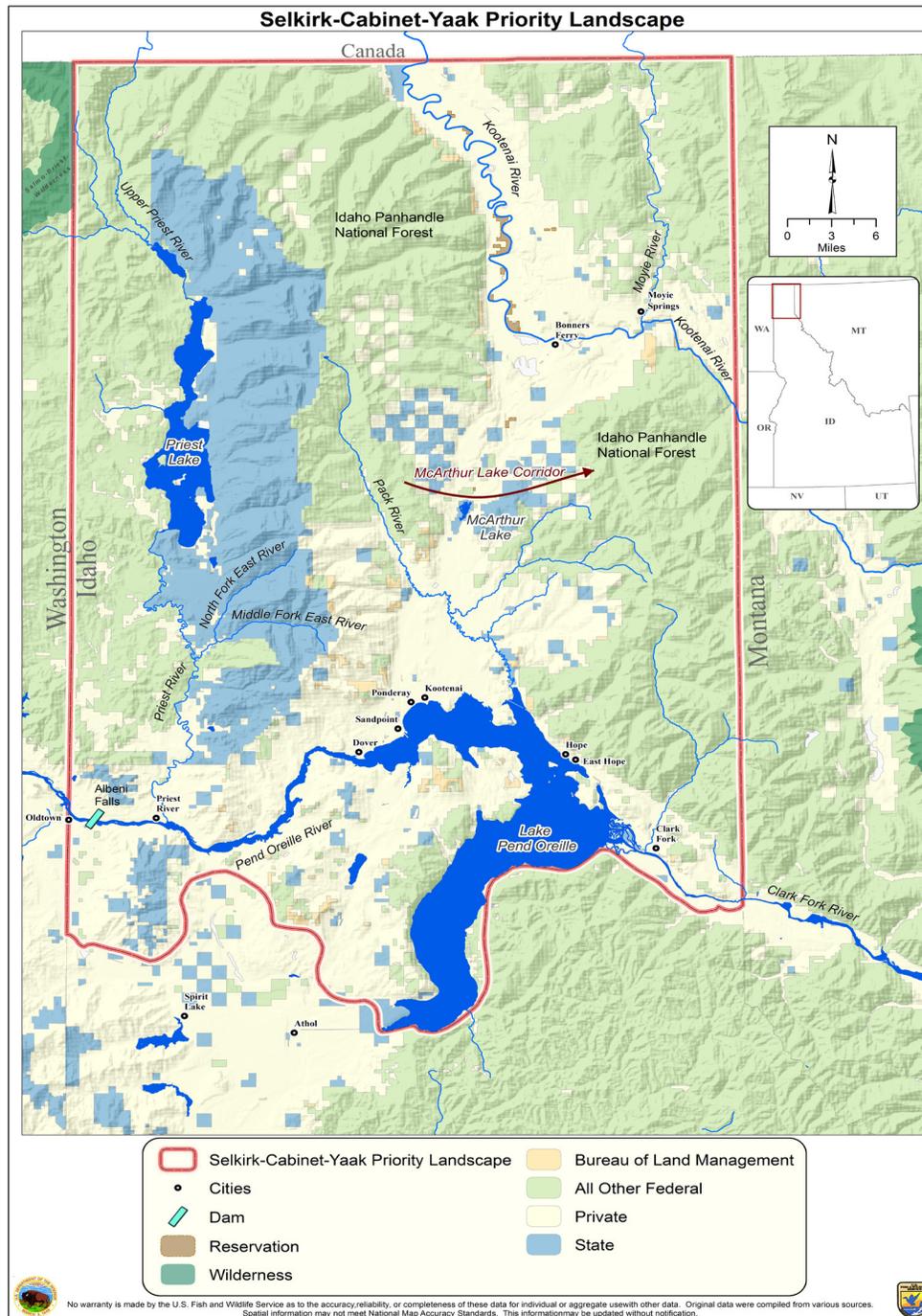


Figure 5. Selkirk Cabinet-Yaak Priority Landscape. Conservation Strategies prepared by this Landscape Team include: enhancing native salmonids in the Priest and Pend Oreille Basins, enhancing the viability of species in the Selkirk Mountain ecosystem, maintaining and restoring healthy ecosystems and watersheds in the Kootenai Basin, and restoration of riparian and wetland habitats within the Selkirk Cabinet-Yaak Ecosystem. This Landscape lies adjacent to Canada, Montana, and Washington and covers an area of about 3.3% of Idaho.

Landscape Strategy 1: Enhance native salmonid populations and their habitats within the Priest and Pend Oreille Basins.

Priority Species: Bull trout, Westslope cutthroat trout, Rocky Mountain tailed frog.

Goal 1a: Ensure resilient, ecologically functioning ecosystems capable of supporting native aquatic species and their habitats within the Priest and Pend Oreille Basins.

Conservation Objectives

- i. Conserve remaining functional networks of streams and rivers that are capable of supporting aquatic Priority Species.
- ii. Identify and restore impacted aquatic habitats to ensure their use by native and Priority Species. Maintain and enhance the resiliency of these habitats.
- iii. Promote connectivity between existing functional networks of aquatic habitat within the Priest and Pend Oreille Basins.
- iv. Identify and address threats to aquatic habitats and their surrounding terrestrial and riparian habitats to ensure aquatic integrity.
- v. Protect and restore mosaics of aquatic habitat types (lakes, rivers, streams, and associated wetland and riparian areas) to ensure that habitats for all life-history needs of aquatic Priority Species are available and connected.

Actions: 1, 2, 3, 4, 5, 6, 7 (see complete list of Actions below).

Goal 1b: Ensure abundant, diverse, and resilient populations of native aquatic species within their habitats of the Priest and Pend Oreille River Basins.

Conservation Objectives

- i. Protect or restore native aquatic habitats that support key life history components of Priority Species.
- ii. Identify and address threats to aquatic Priority Species and their habitat.
- iii. Promote connectivity between important habitat patches for aquatic Priority Species within the Priest and Pend Oreille Basins.
- iv. Promote genetic diversity in the aquatic landscape.
- v. Promote recovery of Priority Species.

Actions: 3, 4, 5, 7, 8, 9 (see below).

Goal 1c: Ensure that aquatic systems within the Priest and Pend Oreille Basins are biologically connected to other river systems within and adjacent to the Selkirk Cabinet-Yaak Priority Landscape.

Conservation Objectives

- i. Identify existing and potential aquatic corridors between existing functional aquatic habitats in the Priest and Pend Oreille River systems.

- ii. With partners, promote connectivity between important aquatic habitats within the Selkirk Cabinet-Yaak Priority Landscape.
- iii. With partners, focus restoration and/or mitigation efforts on aquatic habitats that connect functional blocks of aquatic habitats within the Selkirk Cabinet-Yaak Priority Landscape to adjacent landscapes.

Actions: 3, 9 (see below).

Conservation Actions for Selkirk Cabinet-Yaak Landscape Strategy 1:

Action 1: Protect, enhance, and restore key riparian habitats and their ecological function so that they support or contribute to sustainable population levels of Priority Species.

Action 2: Improve channel complexity within focal drainages.

Action 3: Restore fish passage at key dams.

Action 4: Restore and provide passage to migratory fish by removing potential human-caused barriers, i.e. impassable culverts, hydraulic headcuts, water diversion blockages, landslides, and impassable deltas.

Action 5: Incorporate climate adaptive planning when identifying key areas for conservation and restoration.

Action 6: Work with partners to prevent, identify, contain, and control invasive species, and to restore affected native habitats.

Action 7: Reduce threats from introduced fish species.

Action 8: Maintain or increase the total number of identified local populations of Priority Species, and maintain the broad distribution of local populations.

Action 9: Identify additional priority areas for connectivity between aquatic habitats within and adjacent to the Selkirk Cabinet-Yaak landscape.

Landscape Strategy 2: Enhance the viability of Selkirk Mountains for the continuing benefit of native species.

Priority Species: Woodland caribou, Canada lynx, Grizzly bear, Fisher, Whitebark pine.

Goal 2a: Ensure resilient, ecologically functioning ecosystems that are capable of supporting native species and their habitats within the Selkirk Mountains.

Conservation Objectives

- i. Conserve and enhance remaining functional habitat blocks or mosaics that support Priority Species.
- ii. Identify and address threats to habitats to ensure ecosystem integrity.
- iii. Identify and restore habitat blocks large enough to support native and Priority Species, and focus efforts on maintaining and enhancing the resiliency of these native habitats.
- iv. Promote connectivity between important habitat patches to sustain all life history stages of all native species within the Selkirk Mountains.
- v. Protect mosaics of habitat at multiple scales.

Actions: 1, 2, 3, 7, 8, 9 (see complete list of Actions below).

Goal 2b: Ensure abundant, diverse, and resilient populations of native Selkirk Mountain species within their habitats.

Conservation Objectives

- i. Protect or restore native habitats that support key life history components of Priority Species.
- ii. Identify and address threats to Priority Species and their habitats.
- iii. Promote connectivity between important habitat patches for Priority Species within the Selkirk Mountain Ecosystem.
- iv. Promote genetic diversity within the Selkirk Mountain Ecosystem.
- v. Promote recovery of Priority Species.

Actions: 3, 4, 5, 6, 7, 8, 9, 10 (see below).

Goal 2c: Ensure the Selkirk Mountains are biologically connected to other landscapes within and adjacent to the Selkirk Cabinet-Yaak Priority Landscape.

Conservation Objectives

- i. Identify existing and potential wildlife corridors that will provide connectivity for Priority Species.
- ii. With partners, promote connectivity between important habitat patches within the Selkirk Cabinet-Yaak Priority Landscape.
- iii. With partners, focus restoration and/or mitigation efforts on habitats that connect functional blocks of habitat between the Selkirk Cabinet-Yaak Priority Landscape and adjacent landscapes.

Actions: 3, 8, 9 (see below).

Conservation Actions for Selkirk Cabinet-Yaak Landscape Strategy 2:

Action 1: Work with partners to conserve, protect, and enhance forest mosaics that contribute to sustainable populations of Priority Species.

Action 2: Improve function and complexity of mainstem riparian habitats to levels that support or contribute to sustainable population levels of Priority Species.

Action 3: Incorporate climate adaptive planning when identifying key areas for conservation and restoration.

Action 4: Work with partners to reduce human-caused mortalities of Priority Species, particularly in the wildlife-urban interface.

Action 5: Working with partners, identify the current distribution and abundance of Priority Species within the Selkirk Mountain Ecosystem.

Action 6: Update and expand the population viability analysis (PVA) for trans-boundary woodland caribou in southern B.C.

Action 7: Work with partners to protect, restore, or enhance existing wildlife corridors within the Selkirk Mountain Ecosystem.

Action 8: Perform landscape resistance analyses to identify additional or potential wildlife corridors for priority

species between the Selkirk Mountain Ecosystem and adjacent ecosystems.

Action 9: Begin scoping efforts to provide a wildlife corridor between the Selkirk and Cabinet Mountains at McArthur Lake.

Action 10: Work with partners to implement standardized monitoring programs for Priority Species within the Selkirk Mountain Ecosystem.

Landscape Strategy 3: Maintain and restore healthy ecosystems and watersheds within the Kootenai Basin to ensure the continued persistence, health, and diversity of native species.

Priority Species: Kootenai white sturgeon, Bull trout, Westslope cutthroat trout, Harlequin duck, Rocky Mountain tailed frog.

Goal 3a: Ensure resilient, ecologically functioning aquatic habitats capable of supporting native aquatic species and their habitats within the Kootenai Basin.

Conservation Objectives

- i. Conserve remaining functional blocks of streams and rivers supporting aquatic Priority Species.
- ii. Restore functional blocks of impacted aquatic habitats capable of supporting native and Priority Species. Maintain and enhance the resiliency of these habitats.
- iii. Promote connectivity between existing functional blocks of aquatic habitat within the Kootenai Basin.
- iv. Identify and address threats to aquatic habitats and their surrounding terrestrial and riparian habitats to ensure aquatic integrity.
- v. Protect and restore all aquatic habitat types (lakes, rivers, streams, and associated wetland and riparian areas) to ensure habitats for all life-history needs of aquatic Priority Species are available and connected.

Actions: 1, 2, 3, 4, 5, 6, 7, 8 (see complete list of Actions below).

Goal 3b: Ensure abundant, diverse, and resilient populations of native Kootenai Basin species within their habitats.

Conservation Objectives

- i. Protect or restore native habitats that support key life history components of Priority Species.
- ii. Identify and address threats to aquatic Priority Species and their habitat.
- iii. Promote connectivity between important aquatic habitat patches within the Kootenai Basin.
- iv. Promote genetic diversity in the aquatic landscape.
- v. Promote recovery of Priority Species.

Actions: 1, 2, 7, 8, 9, 10, 11, 12 (see below).

Goal 3c: Ensure that aquatic habitats within the Kootenai Basin are connected to other aquatic systems within and adjacent to the Selkirk Cabinet-Yaak Priority Landscape.

Conservation Objectives

- i. With partners, promote connectivity between important aquatic habitat patches within the Kootenai basin.
- ii. With partners, focus restoration and/or mitigation efforts on aquatic habitats that connect the Kootenai basin to adjacent landscapes within and outside of the Selkirk Cabinet-Yaak Priority Landscape.

Action: 10 (see below).

Conservation Actions for Selkirk Cabinet-Yaak Landscape Strategy 3:

Action 1: Protect and maintain prime, functioning tributary habitat.

Action 2: Restore and provide passage to migratory fish by removing human-created barriers, i.e. impassable culverts, hydraulic headcuts, water diversion blockages, landslides, and impassable deltas.

Action 3: Working with Action Agencies, bring Libby Dam operations closer to normal hydrograph conditions during summer and spring while providing flood control.

Action 4: Improve riparian function and complexity to levels that support or contribute to sustainable population levels of Priority Species.

Action 5: Improve channel complexity and habitat function within focal drainages.

Action 6: Establish a more normative mainstem thermal regime to be more within the tolerance range of all life stages of Priority Species and their prey.

Action 7: Incorporate climate adaptive planning when identifying key areas for conservation and restoration.

Action 8: Restore and enhance spawning and rearing habitat for Priority Species.

Action 9: Reduce threats from introduced species.

Action 10: Work with partners to maintain connectivity between the Kootenai Basin and important spawning stocks in British Columbia.

Action 11: Characterize, conserve, and monitor genetic diversity and gene flow among local populations of Priority Species, and maintain or increase the total number of genetically pure local populations.

Action 12: Maintain or increase the total number of identified local populations of Priority Species, and maintain the broad distribution of local populations across all existing core areas within recovery units.

Landscape Strategy 4: Restore riparian and wetland habitats within the Selkirk Cabinet-Yaak Priority Landscape to ensure the continued persistence, health, and diversity of native species.

Priority Species: Bald eagle, American beaver, Lewis's woodpecker, Willow flycatcher.

Goal 4a: Ensure resilient, ecologically functioning riparian and wetland habitats capable of supporting native species and their habitats.

Conservation Objectives

- i. Conserve and enhance remaining functional riparian and wetland habitats that support Priority Species

- ii. Restore large functional blocks of riparian and wetland habitats capable of supporting native and Priority Species. Maintain and enhance the resiliency of these habitats.
- iii. Identify and address threats to riparian and wetland habitats and their surrounding terrestrial and aquatic habitats to ensure ecosystem integrity.
- iv. Protect and restore all riparian and wetland habitat types (floodplain, vernal pool, peat, etc.) to ensure habitats for all life history needs of Priority Species are available and connected.
- v. Protect mosaics of riparian and wetland habitat at multiple scales.

Actions: 1, 2, 3, 4, 5, 6 (see complete list of Actions below).

Goal 4b: Ensure abundant, diverse, and resilient populations of native species within riparian and wetland habitats.

Conservation Objectives

- i. Protect or restore riparian and wetland habitats that support key life history components of Priority Species.
- ii. Identify and address threats to Priority Species and their habitats.
- iii. Promote connectivity between important habitat patches for Priority Species.
- iv. Promote genetic diversity within riparian and wetland habitats.
- v. Promote recovery of Priority Species.

Actions: 5, 6, 7, 8, 9 (see below).

Goal 4c: Ensure that riparian and wetland habitats within the Selkirk Cabinet-Yaak Priority Landscape are biologically connected to other landscapes adjacent to the Selkirk Cabinet-Yaak Priority Landscape.

Conservation Objectives

- i. Identify existing and potential wildlife corridors that will provide connectivity for Priority Species.
- ii. With partners, promote connectivity between important riparian and wetland habitat patches within the Selkirk Cabinet-Yaak Priority Landscape.
- iii. With partners, focus restoration and/or mitigation efforts on habitats that connect functional blocks of riparian and wetland habitat within the Selkirk Cabinet-Yaak landscape to adjacent landscapes.

Actions: 4, 9 (see below).

Conservation Actions for Selkirk Cabinet-Yaak Landscape Strategy 4:

Action 1: Work with partners to restore, protect, and enhance prime, functioning, and rare riparian and wetland habitats that support or contribute to sustainable population levels of Priority Species.

Action 2: Work with action agencies to reduce impacts to riparian and wetland habitat from development, agriculture, and hydrologic alteration.

Action 3: Reduce threats to riparian and wetland habitats by controlling for non-native species.

Action 4: Work with partners to reconnect functional blocks of riparian and wetland habitat.

Action 5: Restore and maintain the broad habitat diversity of riparian and wetland habitat types across the Selkirk Cabinet-Yaak Landscape.

Action 6: Incorporate climate adaptive planning when identifying key areas for conservation and restoration.

Action 7: Work with partners to maintain or increase the distribution and abundance of Priority Species that utilize riparian and wetland habitats.

Action 8: Work with partners to implement standardized monitoring programs for Priority Species within riparian and wetland habitats.

Action 9: Work with partners in surrounding landscapes to ensure connectivity of riparian and wetland habitats that provide wildlife corridors between the Selkirk Cabinet-Yaak Priority Landscape and adjacent landscapes.

GLOSSARY OF KEY TERMS

Conservation Actions: Specific actions that, when carried out, will result in on the ground conservation or inform future actions, that will support the stated Conservation Objectives for each of the Priority Landscapes.

Conservation Objectives: General objectives based on accepted conservation principles that support IFWO's stated goals for each of the selected Priority Landscapes. These are broad objectives lacking quantifiable or stated measurable outcomes.

Ecoregion Teams: Teams made up of IFWO staff assembled to identify important conservation landscapes within each of seven ecoregions of Idaho. Ecosystem Teams were disbanded after selection of four Priority Landscapes and replaced by Landscape Teams.

Landscape Strategies: Individual plans developed by the IFWO Landscape Teams that outline conservation goals, conservation objectives, and a suite of conservation actions to address important conservation targets.

Landscape Teams: Teams made up of IFWO staff assembled to identify and help implement conservation strategies (Landscape Strategies) within each of the Priority Landscapes.

Priority Landscapes: Large geographic areas inside of Idaho, determined by IFWO staff to be of elevated conservation value. Selection of Priority Landscapes was conducted to focus IFWO conservation efforts in an attempt to make coordinated and significant advances in achieving conservation goals and objectives on the ground.

Priority Species: Native species identified by IFWO staff to serve as habitat icons, indicators, or umbrella species, or with significant ecosystem values, to be used to garner public support and/or as monitoring metrics as proxies for habitat or ecosystem health.



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