

MINAM RIVER WILDLIFE AREA MANAGEMENT PLAN



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EXECUTIVE SUMMARY

In September 2024, the Oregon Fish and Wildlife Commission approved the final sales transaction of a multi-phase acquisition of the Minam River Wildlife Area (MRWA). The completed acquisition added 16,646 acres to an existing 441-acre wildlife area along the Minam River. The achievement was grounded in a strong partnership with the Oregon Department of Fish and Wildlife (ODFW), Rocky Mountain Elk Foundation (RMEF), and Manulife Investment Management Timber and Agriculture, Inc. (Manulife). Funding for the purchase was made possible by the U.S. Fish and Wildlife Service's (USFWS) Wildlife Restoration Program (Pittman-Robertson Act), the U.S. Department of Agriculture Forest Legacy Grant Program, and generous private donors.

Situated at the northern edge of the Wallowa Mountains between the towns of La Grande and Enterprise, the MRWA has long been recognized for its exceptional wildlife habitat values. Generations of biologists and wildlife enthusiasts have observed the importance of the MRWA as winter range for Rocky Mountain Elk and Mule Deer. Its location serves as a high value corridor for wildlife migration between the Wallowa and Blue Mountains, and among several areas of high conservation value including the Eagle Cap Wilderness. With 9 miles of the Minam River flowing through the property, the MRWA now has an important role in protecting regional connectivity among aquatic habitats as well as terrestrial.

Habitat management will focus on enhancing habitats that are currently limited by historic land use impacts and building landscape resilience to current and future impacts from climate change. MRWA has areas of high-functioning terrestrial and aquatic habitats in need of protection that are mixed with habitats that need restoration and enhancement. For the latter, ODFW plans on applying active multi-species management principles with an emphasis on a working lands approach. This approach has proven to be effective at conditioning and enhancing forest and grassland habitats, especially where historic natural disturbance regimes (such as fire) are too risky and not socially tolerable. Working lands also offer opportunities for ODFW to partner with local communities so that conservation actions can also provide economic benefit.

Within the themes listed above, examples of terrestrial habitat enhancement include conditioning forage and ensuring a mosaic of habitat types for all wildlife species and life stages. Forest habitat enhancement on the MRWA will seek to open canopy cover within overstocked stands to promote early seral growth of shrubs and assist with stand resistance to disease and insects. These treatments will also balance the need to retain some late seral forest communities that provide important habitat features such as snags for cavity nesters and downed wood for reptiles and amphibians. Grassland habitat actions will focus on conditioning forage at strategic times of the year to sustain the MRWA's role as critical winter range. Aquatic habitat restoration actions will focus on mitigating the legacy effects of splash dam logging practices in the lower reaches of the Minam River and encouraging more interaction with the floodplain and riparian areas. When accomplished, these actions will result in a high-functioning ecosystem

that will have substantial benefits to wildlife species of concern and fish that are listed under the Endangered Species Act.

The MRWA also has a long and rich history of use by ancestral tribes, early settlers, and contemporary recreationalists. ODFW's acquisition of the MRWA provides the ability to recognize and continue this history by providing public access for a myriad of opportunities. Visitors of all interests and abilities will have a means to connect with this incredible landscape, whether that be exploring the rugged backcountry or taking a short day hike from the adjacent state highway. Hunting, angling, foraging and gathering opportunities will be available to the public where they complement wildlife conservation goals. In addition, visitors will connect to the land through various hiking, wildlife watching, and photography opportunities. With the proximity of the MRWA to several local communities and ancestral tribal lands, ODFW looks forward to developing partnerships that emphasize education and the continuance of important cultural uses.

This document conveys ODFW's vision for managing this unique and important landscape. That vision is broken down into goals, objectives, and strategies that relate to the preservation of local and regional connectivity, restoration and enhancement of habitats, and access for enjoyment by all. The plan will provide ODFW staff with direction and guidance and transparently communicate priorities to the public. Capturing all of that in this plan helps ensure future management understands and builds on the original intent of this acquisition and provides a basis for the responsible administration of public resources.

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Plan Overview

The Oregon Department of Fish and Wildlife (ODFW) owns and manages more than 200,000 acres of publicly owned land on 20 unique wildlife areas throughout Oregon. These wildlife areas represent the breadth of species and habitats present in Oregon. Considering that loss of natural habitat poses the greatest threat to native fish and wildlife, and that loss is further accelerated by climate change, wildlife areas play a critical role in achieving ODFW's conservation mission.

In addition to protecting lands and water for wildlife habitat and for people, ODFW manages land to preserve Oregon's natural and cultural heritage, provide access for hunting, fishing, and wildlife-related recreation, and to foster outdoor experiences and exploration throughout the state. ODFW develops management plans for each wildlife area to address specific aspects of resource management, convey stewardship needs, highlight opportunities for public recreation, education, and alignment with statewide conservation goals.

This Minam River Wildlife Area (MRWA) management plan conveys the property's intent and guides ODFW's management actions, and specifically for the following purposes:

- Provide ODFW staff with clear direction for management of MRWA.
- Communicate management priorities for MRWA to its neighbors, visitors, and the public.
- Ensure management programs on MRWA are consistent with the original intent and purpose of the area as first established.
- Ensuring management of MRWA is consistent with federal and state laws, in addition to state and local natural resource plans.
- Provide a basis for budget planning to support the management of MRWA including staffing, operations, maintenance, and capital improvements.

The plan is organized around an overall vision for the MRWA. That vision is supported with goals and objectives that address current limiting factors and desired future outcomes. Each objective outlines proposed strategies (or implementation actions) that contribute to the accomplishment of objectives. All actions described in this plan are focused on maintaining and enhancing key habitats and providing significant wildlife oriented public use and may be implemented during the life of this plan but are always subject to availability of funding and personnel.

This management plan will be reviewed in five years to gauge the progress of implementation and make necessary revisions, and it may be revised in its entirety in ten years.

Introduction

Location

The Minam River Wildlife Area (MRWA) is in northeastern Oregon, approximately 33 miles northeast of the town of La Grande and 31 miles northwest of Enterprise (Figure 1). The MRWA is situated along the State Highway 82 corridor and resides within the Blue Mountains Ecoregion of the State Wildlife Action Plan (SWAP).

The MRWA is surrounded by a mix of public and private lands. The south boundary is shared with the Wallowa-Whitman National Forest / Eagle Cap Wilderness Area. The north boundary is the Wallowa River and Forest Road 8270 and is also adjacent to the Minam State Recreation Area. Both the east and west boundaries of the MRWA are shared with a mix of private lands, Bureau of Land Management (BLM) parcels, and National Forest. The Minam River is a major watershed running from south to north that divides the wildlife area into eastern and western portions. Figure 1 shows the locations and key features of the MRWA.

Terrestrial habitats on the MRWA are characterized by long finger-like ridges that extend from south to north at the northern tip of the Wallowa Mountain range. The MRWA contains seven habitat types which consist of: grassland/shrubland, ponderosa pine, mixed conifer forest, sagebrush steppe, aspen woodland, riparian, and freshwater aquatic (Figure 2). Higher elevations near the southern boundary of the property, in addition to shaded north aspects, support a variety of forested habitats. Towards the northern, lower elevation areas, the landscape transitions from forested to grassland habitats shared by expansive open ridges and steep rugged canyons.

The MRWA has abundant aquatic resources throughout the property. The Minam River flows along the western edge of the MRWA, and Deer Creek forms the eastern border of the wildlife area. The Wallowa River flows along the northern boundary of the wildlife area. The interior includes many perennial and ephemeral streams including Weelikécet Creek, Gunderson Creek, and the lower reaches of Cougar Creek. For more information about habitat resources, see Appendix A.

The MRWA contains a diverse array of fish and wildlife species found within the Blue Mountain Ecoregion. The most prevalent group of species are birds, with over 131 species inventoried on the MRWA. Mammals are highly represented on the MRWA with 54 total species that include large ungulates, bats, carnivores, and others that reside in various MRWA habitats. The MRWA supports 18 species of fish and includes several that are listed under the Endangered Species Act (ESA). In addition, 13 species of amphibians and reptiles have been found on the MRWA. All groups include species that reside year-round and seasonally on the MRWA and have varied conservation status. For more information on fish and wildlife resources on the MRWA, see Appendix B.

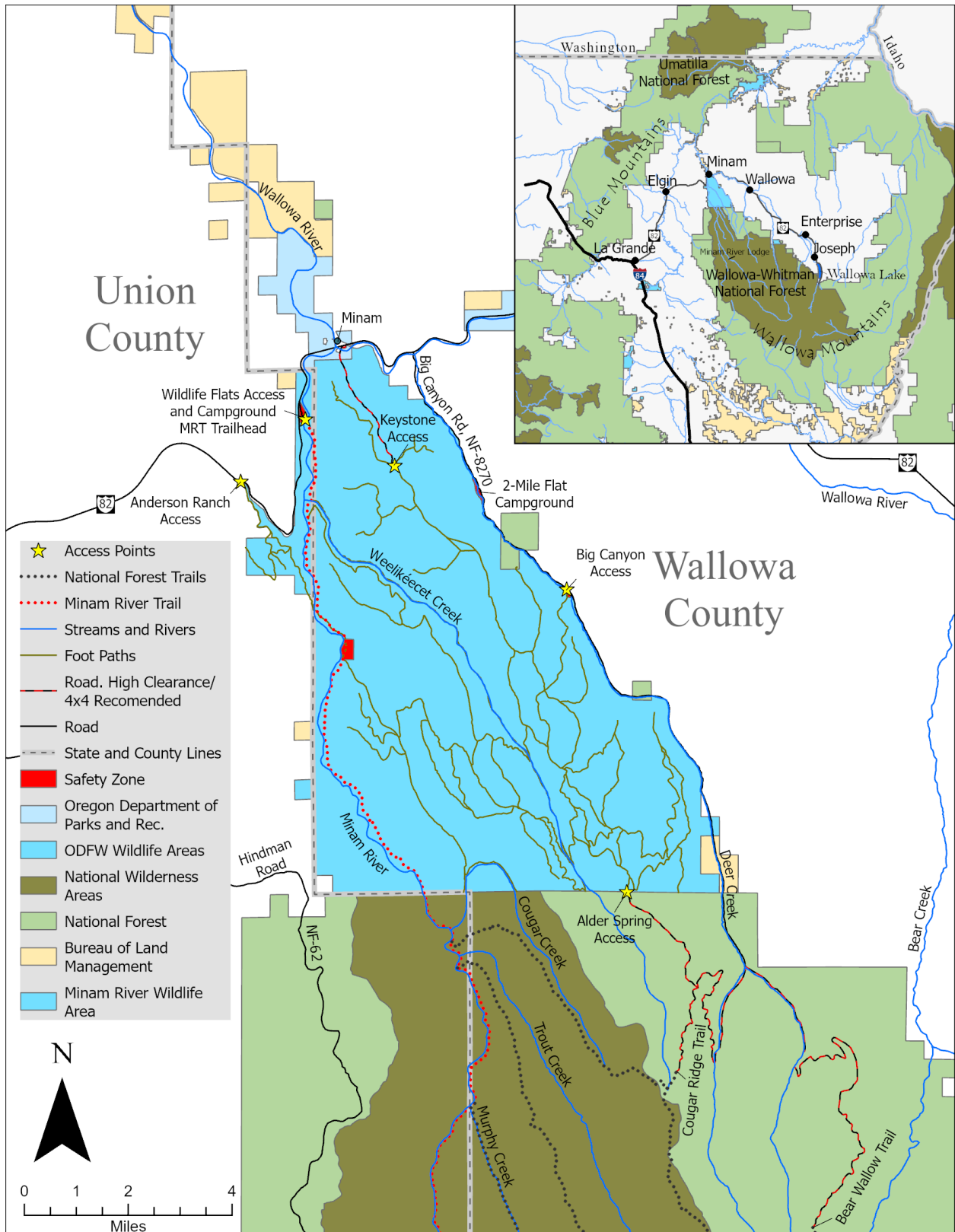


Figure 1. The Minam River Wildlife Area (MRWA), surrounding land ownership and key features including access sites, streams and rivers, trails, and existing road network.

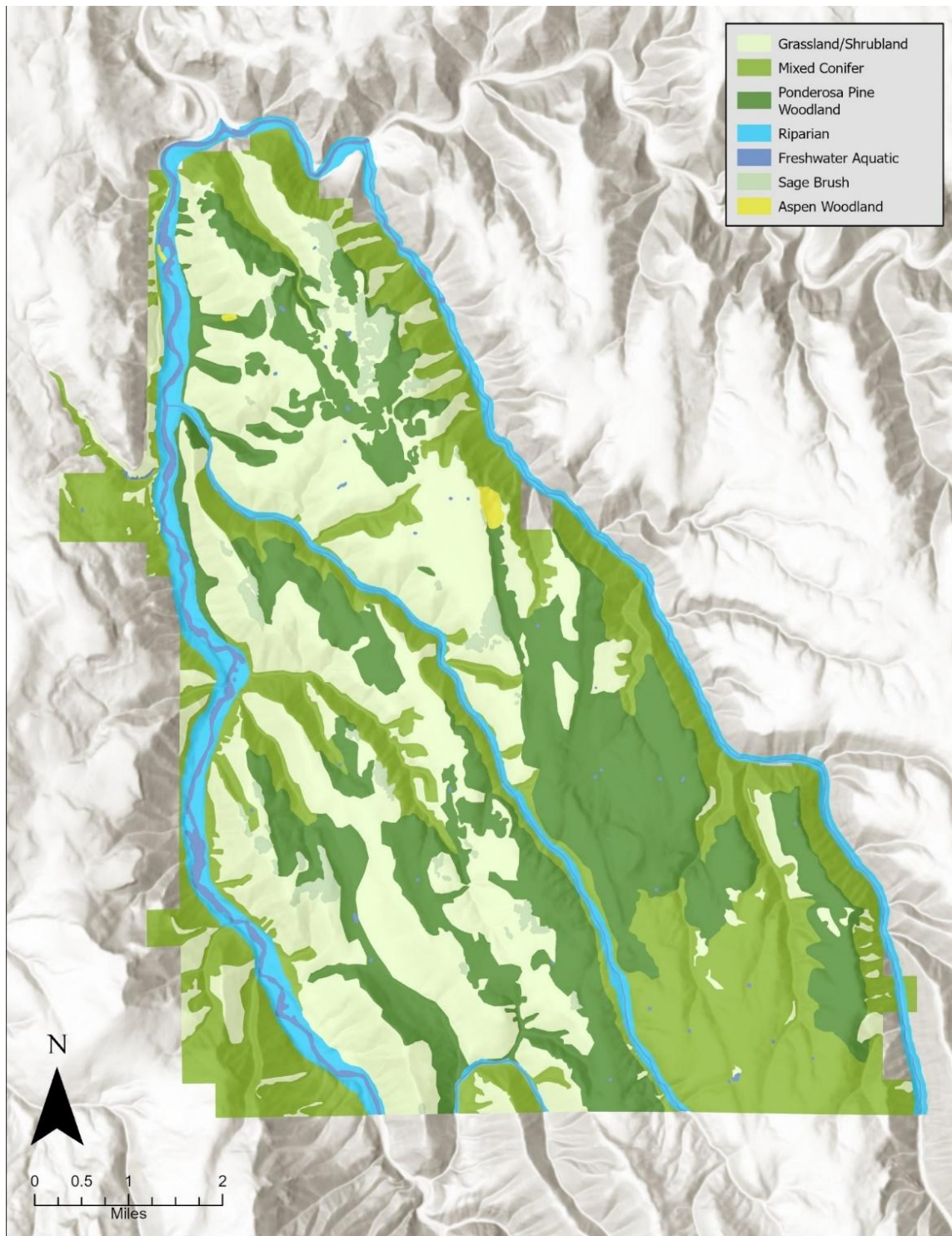


Figure 2. Types of habitats and their distribution across the Minam River Wildlife Area (MRWA)

History

Historic and ethnographic evidence indicates that the vicinity of the Minam River Wildlife Area (MRWA) occurs within the traditional territory of the Waláwama band of Nez Perce (or Niimípu, meaning "the people"). The area was also used seasonally by the Umatilla and Cayuse (now part of the Confederated Tribes of the Umatilla Indian Reservation). The Nez Perce Tribe and the Confederated Tribes of the Umatilla Indian Reservation have occupied their homelands since time immemorial. Archaeological evidence confirms that ancestors of the Nez Perce have occupied their traditional territory for more than 11,000 years, and numerous traditional use areas near the MRWA support that evidence. These areas suggest the Minam drainage was incredibly important to the Nez Perce, Walla Walla, Umatilla, Cayuse, and Palus for camping, fishing, gathering, and hunting.

The U.S. Treaty of 1855 reserved 7.5 million acres of land for the Nez Perce Tribe. The Minam drainage is within and near the western border of these reserved lands. Old Chief Joseph (Tuekakas) built rock and pole monuments on the west side of the Minam Canyon (outside of the current MRWA boundary) to identify 1855 Treaty lands. Despite the Treaty, settlers and gold miners continued to move into reservation lands. The U.S. government responded by creating a new treaty in 1863 that drastically reduced the size of the reservation and removed all reservation lands in Oregon.

Further displacement of the Nez Perce associated with the 1863 Treaty caused distrust and conflict with the U.S. government and eventually led to the outbreak of the Nez Perce War In 1877. The Nez Perce and U.S. military became embroiled in a long war that spanned 1,300 miles and ended with the Nez Perce surrender near Bear Paw Mountain in Montana (Schwendiman et al. 2023). Following the war, the U.S government did not allow members of the Chief Joseph Band of Nez Perce to return to the Reservation. Instead, they were relocated to the Confederated Tribes of Colville Reservation in northeast Washington.

Shortly after the Nez Perce surrender and relocation, European settlers began to occupy the Minam area. Unregulated livestock grazing was the predominant land use during this time. Local ranchers ran several hundred head of cattle on the prairie grasslands of 'Minam-On-Top' (now the MRWA) during spring, summer, and fall. Domestic sheep were also brought in by the thousands and thrived in the higher reaches of the Minam drainage where it was inefficient to work cattle (Schwendiman et al. 2023). Several homesteaders built homes, granaries, sheds, and a school from boards produced at a local sawmill. These families planted large fruit tree orchards, farmed and ranched on hundreds of prairie grass uplands, where remnants are still visible today.

Late in the 19th century, near the confluence of the Minam and Wallowa Rivers, the construction of transportation infrastructure supported the development of a town known as 'Minam City'. Timber at 'Minam-On-Top' was abundant, and through congressional acts such as the 1873 Timber Culture Act and the 1878 Timber and Stone Act, non-

local businesspeople claimed sections of land and sold the standing timber to big lumber firms. The lumber industry brought activity to Minam City, which by then had a store, hotel, mill and a planar. In 1918 the mill was bought by the Minam Lumber Company, and timber was harvested up the Minam River and floated to the mill with the assistance of a splash dam. The contract was a huge boost to the Minam City economy until the Minam Lumber Company failed in 1926.

For decades after the Minam Lumber Company and the brief boom at Minam City, the Minam-On-Top community continued to farm and ranch the uplands. Ranching operations continued until the mid-20th century even though most of the families no longer homesteaded there after the 1930s. Eventually, most of the land that comprised Minam-On-Top was bought by large timber companies, logged to an extent most practical, and further held for investment purposes. For a more comprehensive list of historical ownership and land transactions, please see Appendix C.

The Wilderness Act of 1964 bundled the Eagle Cap Primitive Area (which included large portions of the Minam drainage) into the national wilderness system. This act broadened the purpose of the land to also include recreational, scenic, scientific, educational, conservation, and historical endeavors and considerations. In 1962, the Minam River was selected by the USGS as one of only twelve rivers in the western U.S. to compare the chemical and physical characteristics of pristine rivers with those of more developed rivers. The Minam River was the only river in Oregon to receive this selection. In 1988, the Minam River was inducted into the Wild and Scenic Rivers Act of 1968 (Schwendiman et al. 2023).

Acquisition History

Establishment of the MRWA began when ODFW purchased 441 acres along the Minam River in 1967, just upstream from the Minam City townsite. This parcel served as public fishing access to the Minam River and secured public ownership of the Minam River Trailhead. Long recognized for its importance as big game winter range, ecological richness, and public recreation ODFW attempted multiple acquisitions of the current MRWA from various private landowners dating back to the 1960's.

In 2019, ODFW in partnership with the Rocky Mountain Elk Foundation (RMEF) negotiated a two-phase purchase totaling 15,573 acres with Hancock Natural Resource Group (later Manulife Investment Management Timber and Agriculture Inc., or Manulife). The first phase was completed in 2021 adding 4,609 acres, and the second phase was secured in 2023 adding another 10,964 acres. A third phase acquired another 1,073 acres from Manulife in 2024. The total acreage of the wildlife area is 17,087 acres and forms a contiguous block of protected landscape between Deer Creek and Minam River, from State Hwy 82 south to the U.S. Forest Boundary (Figure 1).

Funding for all phases of the acquisition were secured from multiple sources including generous private donations, the U.S. Fish and Wildlife Service's (USFWS) Wildlife Restoration Program (Pittman-Robertson Act), and the U.S. Department of Agriculture

Forest Legacy grant program.

Oregon Department of Fish and Wildlife Mission and Authority

The Minam River Wildlife Area is owned and operated by the Oregon Department of Fish and Wildlife (ODFW). The mission of ODFW is “to protect and enhance Oregon’s fish and wildlife and their habitats for use and enjoyment by present and future generations.”

The Department is the only state agency charged exclusively with protecting Oregon’s fish and wildlife resources. The State Wildlife Policy (ORS 496.012) and Food Fish Management Policy (ORS 506.109) are the primary statutes that govern management of fish and wildlife resources. Wildlife areas are managed under the Oregon Administrative Rules (OARs), specifically within Chapter 635 - Department of Fish and Wildlife, under Division 8 - Lands: Department of Fish and Wildlife Lands. Specific rules for MRWA are listed under 635-008-0126 (also see Appendix D).

Organizationally, the MRWA operates within ODFW’s Grande Ronde Watershed (East Region). Project coordination is also provided by ODFW’s Wildlife Division that integrates wildlife area management activities with large scale landscape planning. For example, collaboration with federal land agencies, Federal-Private-State-Tribal partnerships (1990 Blue Mountain Elk Initiative), and cooperative agreements with private landowners. In addition, management activities on the MRWA support myriad individual wildlife species plans in Oregon, (e.g. 2025 State Wildlife Action Plan Revision, 2003 Elk Management Plan, 2024 Mule Deer Management Plan, 2003 Bighorn Sheep and Rocky Mountain Goat Management Plan, 2017 Cougar Management Plan, 2019 Oregon Wolf Conservation and Management Plan, and 2018 Wild Turkey Management Plan).

Management Approach

The primary purpose of the MRWA is to maintain and protect landscape level connectivity, conserve key habitats, and sustain ecological functions that support numerous endemic species. ODFW plans to accomplish this with the application of active management principles with an ecosystem-based management philosophy. Of primary importance, enhancing historic winter range for Rocky Mountain elk and other iconic species native to Oregon; including sensitive species identified within the State Wildlife Action Plan (SWAP; for more information about biological resources see Appendix B). When managed to support the goals and objectives outlined below, habitat management techniques employed on the MRWA will ensure protection of the ecological drivers that support healthy, resilient ecosystems.

Minam River Wildlife Area Vision Statement

Protect, enhance, and promote landscape level connectivity and ecological functions that provide high-quality, resilient habitats for terrestrial and aquatic species for use and enjoyment by present and future generations of Oregonians.

Goals, Objectives, and Strategies

ODFW's plan for achieving the vision statement is communicated through goal statements, which are supported by objectives and strategies. Wildlife area goals are broad, qualitative statements regarding desired future conditions. Goals are founded on ecosystem-based management principles whereby habitat enhancements are achieved by integrating diverse natural ecological drivers and processes, including actively managed surrogates.

Primary natural drivers on MRWA include hydrology, local climate conditions, and fire. As a result of historical anthropogenic influences, most habitat types are only partially supported by these natural ecological processes. Where natural functions are limited, active management will serve as a proxy to these processes. For example, active management will include working lands approaches to habitat enhancement. Working lands serve an important role where a landscape has experienced a shift in plant community assemblages, loss of historic ecosystem form and functions, and other anthropogenic related impacts. A host of modern land use practices and management activities serve as a surrogate for the loss of natural disturbance regimes when natural processes are not available or socially tolerable.

Objectives are quantifiable statements, what ODFW plans to achieve, in a manner that supports each goal. Objectives are met with the implementation of related strategies and emphasize how terrestrial and aquatic resources will be managed to protect critical habitats and promote resilience. Resilience is considered in a long-term context as it pertains to the effects of climate change, and in a short-term context such as resistance to short-term disturbances. Objectives provide the basis for determining strategies (implementation actions), monitoring wildlife area accomplishments, and evaluating the success of strategies.

Due to the variety of ecosystems and associated habitats present on MRWA, a wide variety of fish and wildlife species will benefit from proposed management actions, including habitats of conservation concern and sensitive species included in the State Wildlife Action Plan (SWAP; ODFW 2025; Appendix B).

As a state wildlife area, recreational opportunities are important and will be available to the public when compatible with other goals and objectives and balanced with resource needs.

Goal 1: Protect and enhance connectivity at a regional and local scale in a manner that supports critical ecological functions for fish and wildlife species.

The location of the MRWA is uniquely positioned to connect some of the most intact, highly functioning ecosystems in Oregon. The MRWA creates a contiguous corridor of public land; specifically with the 600-acre Minam State Recreation Area, 1,750 acres of Bureau of Land Management (BLM) managed lands, and the 2.4 million-acre Wallowa-Whitman National Forest (including the 360,000-acre Eagle Cap Wilderness, Figure 1). This corridor links local and meta-populations of native flora and fauna, protects the movement of individuals, and supports population level gene flow.

At a regional scale, the MRWA is the only point of forested habitat connectivity between the Blue and Wallowa Mountains, which at a larger scale connects the Rocky and Cascade Mountains. A large portion of the MRWA is designated as a 'Region' within ODFW's Priority Wildlife Connectivity Area network (ODFW 2024). This designation highlights the wildlife area's role in providing the highest-value habitat for facilitating the movement of wildlife throughout the state of Oregon. Big game collar data shows MRWA as crucial winter, year-round, and transitional habitat along this migration corridor. Protecting and enhancing connectivity in this area is key to implementing ODFW's Elk and Mule Deer Management Plans in northeast Oregon. With the rich diversity of terrestrial and aquatic habitats, ODFW will emphasize the protection and enhancement of connectivity between uplands and riverine ecosystems.

The MRWA connects the Eagle Cap Wilderness Area with the Lower Grande Ronde Conservation Opportunity Area (COA) under the Conservation Strategy, thereby linking Oregon's largest wilderness area with a high-priority area where broad fish and wildlife conservation goals would best be met (ODFW 2016, ODFW 2025). Given the significance of this area for conservation values, MRWA management actions are focused on maintaining regional flow and access to productive habitats.

The primary link between these two high-priority areas is the Minam River, of which 9 miles flow through the MRWA. The Minam River and surrounding watershed is a substantial source of regional biodiversity and has outstanding ecological value. It was identified as a top 20 river in Oregon for Outstanding National Resource Water and top two Wild and Scenic River for protection in Oregon (Conservation Science Partners, Inc. 2021). With the acquisition of the MRWA, all but 0.5 miles of the 51-mile Minam River and its tributaries are in public ownership and connects the headwaters to the confluence with the Wallowa River.

Streams throughout the MRWA support federally threatened Chinook salmon, steelhead, and bull trout. The Minam River is designated as a wild production area for Snake River spring/summer spring Chinook salmon, and Snake River summer steelhead (NMFS, 2017a). The Minam River and its tributaries are listed as critical habitat for bull trout (U.S. Fish and Wildlife Service, 2015a). These waters also serve as habitat for recently reestablished populations of Pacific lamprey and coho salmon. For more information about fishery resources on the MRWA, see Appendix B.

The Minam River watershed has been identified as a high priority area for protection in ODFW's Aquatic Habitat Prioritization Assessment. This high ranking is based on the current and projected state of streamflow, temperature, and adjacent landscape characteristics that are necessary to support native aquatic fish and wildlife populations now and with a changing climate.

Protecting and enhancing connectivity is largely supported through a suite of habitat and administrative management actions that removes barriers and incentivizes fish and wildlife to utilize the MRWA for local and regional movements. As such, Goal 1 objectives are closely related to management objectives and strategies also covered in subsequent sections of this plan. The rationale for those strategies can be referenced within Goals 2 through 4. To highlight the importance of connectivity in the management of the MRWA, ODFW plans to achieve this goal through the following objectives and strategies:

Objective 1.1: Protect large and small-scale connectivity among important habitat types by enhancing movement for terrestrial wildlife across the MRWA.

Strategy 1.1.1: Minimize wildlife disturbance by administering a year-round motorized vehicle closure on the MRWA (see Strategy 4.1.6).

Strategy 1.1.2: Enhance security for ungulates and other wildlife during critical periods by closing the MRWA to public access during winter months (12/31 through 3/31; see Strategy 4.1.7).

Strategy 1.1.3: Remove fencing as appropriate to facilitate wildlife movements across the MRWA while managing a rotational grazing program (see Strategies 2.2.3, 2.3.3, and 4.14).

Strategy 1.1.4: Where needed, replace existing fence with wildlife-friendly and/or virtual fencing to encourage movements between pastures while limiting the risk of entanglement (see Strategies 2.2.3, 2.3.3, and 4.1.4).

Strategy 1.1.5: Ensure that habitat enhancement projects are implemented in a manner that provides a diversity of habitat types to support wildlife movement (see Goal 2).

Strategy 1.1.6: Condition forage on the wildlife area to be of quality and quantity such that wildlife are incentivized to utilize the MRWA for regional and local movements at strategic times of the year (see Strategies 2.1.3, 2.1.7, 2.1.8, 2.1.9, 2.2.1, 2.2.2, and 2.2.6).

Strategy 1.1.7: Collaborate with the USFS Wallowa Whitman National Forest, Vale District BLM and ODF to initiate cross-boundary

restoration initiatives that maintain and promote landscape scale connection, restoration and management actions (see Goal 2).

Objective 1.2: Protect and enhance connectivity among 187 miles of perennial and ephemeral streams and drainages, including 9+ miles of the Minam and Wallowa Rivers.

Strategy 1.2.1: Collaborate with the USFS Wallowa Whitman National Forest to maintain administrative protections that promote connectivity from the Minam River's headwaters within the Eagle Cap Wilderness to its confluence with the Wallowa River (see Strategies 2.1.10 and 2.3.4).

Strategy 1.2.2: Within the MRWA boundary, implement restoration projects on the mainstem Minam River and tributaries that increase the channel width-to-depth ratio, floodplain connectivity, and lower water temperatures to encourage usage by native migratory fish species (see Objective 2.3).

Strategy 1.2.3: Promote aquatic habitat connectivity within MRWA tributaries by assessing and removing man-made barriers to movement, through road obliteration and/or culvert replacement where appropriate (see Objective 2.3).

Strategy 1.2.4: Ensure that aquatic connectivity projects meet the needs of diverse wildlife species, such as amphibians and reptiles, by adhering to aquatic organism passage best management guidelines.

Strategy 1.2.5: Encourage connectivity between riparian and upland habitats for different species and life stages of wildlife by replacing and maintaining riparian livestock enclosure fencing with wildlife-friendly alternatives (see Strategy 2.1.6, 2.2.3, and 2.3.3).

Goal 2: Actively manage MRWA for high-quality and resilient terrestrial and aquatic habitat that supports diverse fish and wildlife species.

The opportunity to protect, restore, and enhance the exceptional habitat values on the MRWA for fish and wildlife is foundational to ODFW's ownership of the property. Habitat management will be supported by a suite of strategies applied to both terrestrial and aquatic ecosystems that sustain a diverse community of fish and wildlife species. Habitat management will focus on two main themes; 1) restoring and enhancing habitats that are currently limited by historical land-use impacts; and 2) building landscape resilience to current and future impacts from climate change.

Conservation of MRWA habitats will include strategies that complement, support and enhance ecosystem functions. This approach to addressing ecosystem structure and

function will be informed with a suite of scientific tools, including the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) Ecological Site Descriptions (ESD) and State and Transition Models (STM). ESD provide detailed descriptions of site characteristics, plant communities, site interpretations and supporting information. STMs are diagrams indicating plant community pathways based on soil properties and disturbance. STMs depict different states, or stable communities, that a site can achieve, and the transitions between those states, including the mechanisms, triggers, and thresholds that drive those transitions.

With an ecosystem approach, management is intended to benefit as many species as possible that reside or migrate through the MRWA. With that, actions may be tailored to support specific life history needs of groups or individual species. For example, management will emphasize the maintenance and enhancement of upland habitats that support winter range, a critical habitat that is regionally limited for Rocky Mountain elk, mule deer and other native wildlife. This especially applies to habitats that support sensitive, threatened, and species of concern that will receive special management consideration, including SWAP species and their habitats.

Where high-functioning habitats exist on the MRWA, ODFW will identify and protect those areas to continue supporting fish and wildlife in their current state (see Appendix A). Where habitats have been impacted by past land-use, or where habitats are not fully functioning, an active management approach may be considered (also see Appendix A). Actively managed lands and waters can play a significant role in reducing risk from extreme events (e.g., flooding, fire) to human health, safety and property (ODFW Climate Policy). For example, many of Oregon's open structured habitats, which are dominated by grasses, forbs, and/or shrubs, were historically maintained by disturbance including wildfire and flood (Oregon Conservation Strategy 2016).

In the presence of climate change and where natural disturbance regimes alone cannot maintain habitats, a working lands approach has proven to serve as an effective surrogate. As referenced in the State Wildlife Action Plan (SWAP), working land and active management can address key conservation issues identified in the Blue Mountains Ecoregion. Working lands are particularly beneficial when ecosystem functions are lost or degraded because of anthropogenic activities. Management practices such as fuels treatments and selective thinning improve forest health while strategic grazing improves plant vigor and increases nutritive values. Other active management techniques include aquatic and riparian restoration to promote habitat connectivity, while active treatment of invasive species protects biodiversity, restores healthy plant communities that improve water quality and quantity. These actions and tools not only protect and enhance habitats, but by partnering with professionals and contractors to accomplish work, also benefit local communities and economies.

Objectives and strategies are presented by habitat types on the MRWA that include forests, shrublands, grasslands, riparian, and rivers and streams. For each objective, current conditions are summarized, and strategies are proposed that will contribute to each habitat type meeting desired conditions.

Objective 2.1: Manage and enhance 9,000+ forested acres, to create and maintain forested habitats that support native ungulates and other wildlife.

Rationale: Roughly 56% of the MRWA consists of forested habitats including Ponderosa pine, dry mixed conifer stands, aspen and their associated habitat types (Table 1). Past land management practices have significantly altered vegetation groups and historic disturbance regimes that maintained MRWA forest communities. Prior to the recent acquisition, fiscal investments were a primary driver of forest management practices on the MRWA. Profitable commercial harvest on the MRWA’s remote and rugged landscape proved challenging and eventually resulted in limited forest management due to low cost-benefit ratios. In addition, like many forests throughout the western United States, the monetary value of existing timber stands was preserved through fire suppression.

Table 1. Estimated acreage of habitat types found within the Minam River Wildlife Area (MRWA).

Habitat Type	Acreage	Percent of Total
Grassland/Shrubland	5,864	35.23 %
Mixed-Conifer Forest	4,931	29.63%
Ponderosa Pine Woodland	4,276	25.69%
Riparian	1,061	6.37%
Sagebrush Steppe	244	1.47%
Freshwater Aquatic	246	1.48%
Aspen Woodland	24	0.14%

Prior management eventually led to plant communities transitioning to late seral and climax plant assemblages, which has resulted in overstocked and stressed forest stands. Stressed forest stands result in reduced tree vigor and increased susceptibility to insects and disease. Ultimately, stressed and overstocked forests are more likely to be lost due to high-intensity wildfire. Compounded with climate change resulting in a drier, warmer environment on the MRWA, loss of forested habitats due to catastrophic wildfire is a high concern to ODFW.

Desired future conditions will better represent historic stand densities and plant assemblages providing enhanced forage, nesting cover and resiliency to the effects of climate change. Periodic and low-intensity wildfire was the natural driver that historically managed forests to be productive and resilient. Given the current state of forested habitats on the MRWA, effects of climate change that make catastrophic wildfire more probable, and potential impacts to surrounding landowners and local communities, it is unrealistic to rely solely on natural wildfire to accomplish goals on the MRWA. Therefore, active forest management will serve as a surrogate to natural wildfire to accomplish objectives while recognizing current limitations and social tolerance.

Active forest management will include a suite of forest health applications including pre-commercial thinning, commercial harvest, tree planting, and prescribed burning to protect and enhance forest stands throughout the wildlife area. Forest management strategies and desired conditions will be informed by current site restrictions and desired future conditions. All prescriptions and implementation will use best management practices and comply with the State of Oregon's Forest Practices Act.

Active forest management has considerable benefits to wildlife, particularly to increase the quantity and quality of forage for large ungulates. Overstocked forest stands are associated with high percentages of canopy cover, which limits sunlight from reaching the forest floor. This limits the growth potential for shrubs and browse that ungulates rely on, especially mule deer. Thinning overstory canopy to 20-40% cover provides the greatest benefit to mule deer and elk, and benefits can last for approximately 15 years. In addition, more intensive timber harvest also has shown to provide similar benefits to elk and can last approximately 25-30 years.

Forest management projects will vary in size, space and time to create a mosaic of forest stand conditions on the MRWA landscape. This not only benefits ungulates, but all wildlife that depend on varied stand conditions to provide nesting, cavities, brush piles and other cover types for various birds, mammals, reptiles, and amphibians. Species of Greatest Conservation Need (SGCN) associated with ponderosa pine habits in the Blue Mountain Ecoregion include flammulated owl, Lewis's woodpecker, long-legged myotis, and pallid bat. Applying landscape level planning while incorporating "skips and gaps" to enhance uneven age stands, individual trees and clumps will provide habitat for a variety of wildlife species associated with different forest types and associated age classes.

Habitat improvements are expected to increase forest health, reduce wildfire threats, conserve habitat, enhance forage conditions, and improve access. In addition, these projects have strong potential to provide economic benefits through forestry related jobs that help to support local economies.

Strategy 2.1.1: Maintain a long-standing Intergovernmental Agreement (IGA) with the Oregon Department of Forestry (ODF) that provides expert forestry recommendations and project implementation to meet desired objectives on forested habitats.

Strategy 2.1.2: Scope and implement forest management projects that result in forest stands that are resilient to the potential impacts of insects, disease and catastrophic fire events.

Strategy 2.1.3: Scope and implement forest management projects that increase the prevalence of early seral vegetation communities that increase ungulate forage, biodiversity, and SWAP habitats.

Strategy 2.1.4: Increase spacing, structure, and vigor on 4,000+ acres

of Ponderosa Pine stands to protect against insects and disease while increasing resilience to a changing climate.

Strategy 2.1.5: Diversify age structure, increase spacing, clumping, and forest openings across 4,500+ acres of Dry Mixed-Conifer stands to benefit forest health, resiliency, and ecosystem function. Within this forest type, this strategy will pay special attention to enhance habitat complexity that features hardwood pockets, riparian areas, meadows, and shrub patches.

Strategy 2.1.6: Where appropriate, remove conifers and use exclusion fencing to enhance aspen stands throughout the wildlife area. In addition, aspen stands will benefit from noxious weed control and other measures that protect this unique habitat type from catastrophic fire.

Strategy 2.1.7: Enhance quantity and quality of winter forage and browse through compensatory growth by utilizing a rest rotation livestock grazing program on 9,000+ acres of forested habitat.

Strategy 2.1.8: Reduce fine and woody fuels while increasing plant nutrition, vigor, and desired cover values by utilizing prescribed fire as a tool for native vegetation enhancement and manipulation.

Strategy 2.1.9: Increase species diversity, richness, abundance, cover and forage values by planting desired tree and shrub species within 9,000+ acres of Ponderosa pine, Dry Mixed-Conifer stands and grassland savannah.

Strategy 2.1.10: Protect trees with old growth characteristics within the National Wild and Scenic Corridor, along the Minam River and tributaries. This will enhance carbon sequestration in a manner aligned with ODFW's Climate Change Policy.

Objective 2.2: Manage and enhance 5,500+ grassland and 200+ sagebrush/shrubland acres to benefit ungulates and other wildlife.

Rationale: Grasslands and associated shrubland habitat currently constitute 36% of the total available habitat on the MRWA and support a substantial amount of biodiversity (Table 1, also see Appendix B). Most notably, these habitats serve as winter browse and are especially important to native ungulates in late fall, winter and spring to meet various nutritional demands. Grasslands and shrublands also serve numerous indigenous wildlife species for a variety of habitat purposes and life history needs. Species of Greatest Conservation Need (SGCN) for this habitat type includes Swainson hawks, Long-billed curlews, Common Nighthawks, Grasshopper Sparrows, and Upland sandpipers.

The current condition of shrubland habitat on the MRWA is interrelated to the current condition of forested habitats listed above. The lack of natural ecological drivers and forest management has substantially reduced the growth potential of shrubland habitat, and the habitat's ability to support large amounts of ungulates and other wildlife. Completing forest habitat strategies above, especially opening canopy and promoting early seral growth, will encourage growth and vitality of shrubland habitats on the MRWA.

Grassland habitat dominates the long, open finger-like ridges that characterize the northern portions of the MRWA. These habitats are why the MRWA is recognized as critical winter range and was a primary driver in acquiring the property for conservation values. The quality of grassland habitat on the MRWA has been maintained through the utilization of a well-managed grazing program. The current program increases herbaceous biomass production and conditions forage by removing senesced grass stems and leaves. This results in enhanced plant vigor and increases nutritive value of grasses. In addition, grazing results in compensatory growth (secondary growth) of green stems and leaves by stimulating meristematic tissue and or tillering. A well-managed grazing program also offers other benefits such as seed shattering (dispersal) and hoofing action to incorporate or scarify seeds into the soil.

Management of grasslands in this manner provides abundant, palatable forage and cover for all wildlife. As such, prescribed livestock grazing will continue to be utilized as a fundamental tool to promote desirable forage conditions for wintering big game populations. When timed properly, prescribed grazing will condition forage prior to fall rain events, leading to enhanced compensatory growth. This provides a valuable resource to wildlife that migrate from higher-elevation areas in late fall/early winter. Incentivizing wildlife to hold on the MRWA during the winter not only increases life cycle survival but also helps to reduce human-wildlife conflict in adjacent agricultural lands.

Grassland and shrubland habitats on the MRWA are threatened by several factors including altered fire regimes, changing climate conditions, and invasive species: particularly non-native invasive annual grasses. Management actions such as grazing, noxious weed suppression, and planting can help maintain grassland structure where other natural disturbances such as fire are not practical or desired (Oregon Conservation Strategy 2016).

Climate change and the associated impacts of a warmer and drier environment will certainly influence forage availability on the MRWA. With that, management of these habitats will rely on a thoughtful and strategic grazing management plan, including commensurate range monitoring and adaptive management. Environmental conditions will play a factor in determining stocking rates and any necessary changes to grazing dates. As currently occurs with the existing program, the timing, intensity and duration of livestock grazing will be adjusted to limit competition with elk and deer for forage resources. Additionally, ODFW plans will evaluate pasture design, location and layout to identify opportunities to incorporate virtual fence applications, remove unnecessary fence and convert other segments to wildlife friendly designs consistent with Goal 1

above.

Strategy 2.2.1: Condition ungulate forage, maintain biodiversity, and mitigate effects of catastrophic wildfire by utilizing a deferred, rest rotation grazing program as a management tool.

Strategy 2.2.2: With strategy 2.2.1, develop a strategic grazing management plan that emphasizes the benefits of conditioning forage for wildlife, and that includes range monitoring and associated adaptive management.

Strategy 2.2.3: Limit trespass livestock and ensure beneficial livestock distribution and placement by maintaining necessary boundary and interior pasture fences. This may also include the removal of fence and incorporating virtual fencing technology.

Strategy 2.2.4: Promote uniform livestock distribution and limit impacts to riparian areas by maintaining and developing off channel watering resources including ponds, troughs, solar operated wells and spring developments. In addition, utilize nutritional supplements on the landscape.

Strategy 2.2.5: Suppress invasive plant species and noxious weeds by utilizing Integrated Pest Management (IPM). Noxious weed control efforts will entail surveying, monitoring, and treating infestations utilizing best management practices and techniques.

Strategy 2.2.6: Enhance plant communities, species diversity, richness, abundance, and/or cover values by planting native and other desirable grass and shrub species within appropriate habitat types. Where needed to promote establishment, consider short-term fencing to protect from excessive browsing.

Strategy 2.2.7: Implement prescribed fire projects for native vegetation enhancement and manipulation by reducing fine and woody fuels.

Objective 2.3: Protect and enhance 1,000+ acres of riparian habitat and approximately 200 miles of rivers and streams for high quality instream habitat, water quality and quantity, and ecosystem functions that sustain native fish and wildlife species.

Rationale: Riparian and freshwater aquatic habitats provide a high level of biodiversity and critical ecological functions. These features support a variety of habitats that fulfill life history requirements for numerous terrestrial wildlife, invertebrates, and aquatic species. For example, forested and riparian habitats provide ungulates with seasonal travel corridors, thermal cover, security cover, fawning and escapement cover. Riparian

habitats also provide high quality ungulate foraging areas during spring and summer months. These habitats also provide foraging, nesting, cover and travel corridor values for many other terrestrial species such as neotropical migrants.

With 9 miles of the Minam River and 187 miles of perennial and ephemeral streams and drainages on the MRWA, riparian and aquatic habitats are an important focal area. With the wildlife species listed above, these habitats on the MRWA are also utilized by several focal fish species including spring Chinook salmon, summer steelhead, and bull trout; all listed as threatened under the Endangered Species Act (ESA). In addition, two other fish species that have been recently reintroduced and documented on the MRWA (coho salmon and pacific lamprey).

Within the MRWA, restoration and enhancement actions are needed on these habitats to correct impacts from current and historical land-use practices. Despite the wilderness characteristics that define the Minam River, much of the river's lower reaches suffered extensive damage from splash-damming (or stop-log) practices early in the 20th century. As a result of periodic, large flushes of water, sediment, and logs; the river channel was extensively scoured and homogenized. Currently, the river channel is wide, shallow, and disconnected from the floodplain. With that, the lower reaches of the Minam River on the MRWA lack diverse, high-quality instream habitat. In addition, and most significantly, the shallow channel and lack of shading cause water temperatures to reach lethal levels for many fish species.

Also resulting from these legacy impacts, floodplains along the Minam River have become disconnected in many areas along the lower 9 miles. This connection between the floodplain and the main channel is important to sustaining wetland habitats, establishment of water-tolerant tree species like cottonwoods, and sub-surface percolation of river flows that moderate river temperatures. Currently, perched floodplain habitats on MRWA are not being seasonally inundated and are not serving to cool high-water temperatures, provide wetland habitats, and are being impacted by conifer encroachment.

Outside the Minam River, a thoughtful assessment and approach to restoring tributary riparian and instream habitats is needed as well. Many miles of tributaries on the MRWA are ephemeral, but the lower reaches of larger tributaries (Weelikéecet Creek, for example) are perennial and serve as important spawning and rearing areas. Along reaches of Weelikéecet Creek, and Deer Creek on the eastern boundary of the MRWA, adjacent logging roads have straightened and limited lateral movement of the stream channel. These tributary riparian habitats are also affected by forest and land management practices that occur adjacent to the riparian area and higher in the watershed, such as logging and livestock grazing.

Management strategies will focus on restoring and enhancing riparian and adjacent forested habitats to provide high quality instream habitat that benefits anadromous and resident fish, aquatic invertebrates and to improve water quality and quantity. Where appropriate, restoration actions will encourage the creation and maintenance of beaver

modified habitat that encourages floodplain connectivity and subsurface flow. The Lower Grande Ronde Conservation Opportunity Area (Oregon Conservation Strategy 2016) is located adjacent to the northern boundary of the MRWA and highlights key strategies to conserve riparian and aquatic habitats that exist throughout the MRWA. These include, but are not limited to, the following strategies:

Strategy 2.3.1: Enhance instream aquatic habitat along the Minam River by implementing habitat improvement projects that include placing large woody debris to increase width-depth ratios and provide diverse instream habitat.

Strategy 2.3.2: Reconnect floodplain habitats along the Minam River to promote off-channel fish habitat, lower water temperatures, and promote wetland environments and cottonwood galleries for native fish, invertebrates and wildlife.

Strategy 2.3.3: Protect riparian areas from livestock entry, in conjunction with a managed grazing program, through the maintenance and addition of fencing as needed and in a manner that compliments Goal 1. In addition, explore virtual fencing to restrict livestock access to riparian areas while removing barriers on the landscape.

Strategy 2.3.4: Protect and enhance riparian vegetation and stream shade within approximately 1,000 acres of riparian and adjacent forested habitats along the National Wild and Scenic River Corridor by managing habitats in a manner consistent with the Oregon Forest Protection Act.

Strategy 2.3.5: Increase species diversity, richness, abundance, and/or cover values by planting desired tree and shrub species within riparian areas.

Strategy 2.3.6: Control invasive plant species and noxious weeds within riparian habitats by utilizing Integrated Pest Management (IPM). Noxious weed control efforts will entail inventorying, monitoring, and treating infestations utilizing best management practices and techniques within these habitat types.

Strategy 2.3.7: Comply with DEQ TMDL implementation requirements as they are finalized. Work to restore natural stream processes and instream flow to mitigate water quality impacts.

Goal 3: Provide access and a variety of recreational opportunities to a diverse array of users, in a manner compatible with Goals 1 and 2.

With connectivity and habitat values described above, the 17,000+ acres of the Minam River Wildlife Area (MRWA) also provides exceptional recreation opportunities. MRWA lands, including the Minam River, have a rich history of enjoyment by hunters, anglers, foragers, and wildlife watchers. These activities are uniquely important to the local community, as these activities provided over \$33 million in local spending and 379 jobs in Union and Wallowa Counties in 2019 (Mojica et al. 2021).

Recreation opportunities will be managed to complement wildlife and habitat protection and enhancement goals. ODFW will use existing knowledge of historic recreational use and open interactions with the public to better understand desired opportunities. With that information, administrative decisions will balance managing public use both temporally and spatially to minimize impacts on wildlife and their habitats. Examples may include, but are not limited to, managing public access during certain times of the year or in sensitive habitats, maintaining public access points and signage, and monitoring public use for adaptive management purposes.

ODFW will work to provide recreational opportunities on the MRWA for visitors with diverse interests and abilities. Hunting, angling, wildlife watching, and hiking activities, amongst others, will be supported by allowing public access during key seasons, where those activities are balanced with wildlife and habitat protection. A key component of recreation management will be enhancing and maintaining access points at several locations on the MRWA. In addition, administrative rules will be considered that help support the unique manner and scale of the MRWA.

Objective 3.1: Provide recreational opportunities for visitors with diverse interests and abilities in a manner that is compatible with Goals 1 and 2.

Rationale: Hunting is the major public activity on the MRWA during the fall and spring months. Public use surveys indicate that, proportionally, hunting constitutes the largest annual recreational use on the MRWA. In addition, with the Minam River flowing through the MRWA and adjacent to Minam River Trail #1673, trout angling is an important opportunity during summer and fall. Public access will be emphasized during primary big game hunting and angling seasons; however, access for upland game bird hunting and trapping will be partially limited during the January through March big game winter range closure.

Wildlife viewing, foraging, and other activities outside the hunting and angling seasons constitute an increasing portion of public use for ODFW owned and managed wildlife areas. Management of MRWA will develop and foster those activities including hiking, foraging, gathering, viewing, photography, educational and general enjoyment of the area for a diverse array of visitors where compatible with Goals 1 and 2. As the MRWA is situated in proximity to communities in Wallowa and Union Counties, staff will coordinate with schools and non-profit organizations to provide educational opportunities. In addition, the MRWA is located on ceded and usual and accustomed lands for both the Nez Perce Tribe and the Confederated Tribes of the Umatilla Indian Reservations. ODFW looks forward to developing partnerships with both tribes to utilize

the MRWA for foraging and gathering of ancestral foods.

Strategy 3.1.1: Promote big game hunting opportunities by allowing public access during all primary fall and spring seasons.

Strategy 3.1.2: Promote upland game bird and trapping opportunities by allowing public access outside of annual winter range closures from January 1st through March 31st to protect vulnerable wildlife.

Strategy 3.1.3: Promote angling opportunities by allowing access during primary trout seasons.

Strategy 3.1.4: Contribute to fish and wildlife management by conducting wildlife population and distribution surveys, and with intermittent hunter and angler use surveys on the MRWA. This information will be communicated to district and divisional programs within ODFW for adaptive management purposes.

Strategy 3.1.5: Promote utilization of the MWRA for foraging and gathering opportunities by allowing public access outside the winter range closures from January 1st through March 31st to protect vulnerable wildlife.

Strategy 3.1.6: Promote utilization of the MWRA for hiking, wildlife watching, photography, viewing, and all other compatible uses not listed above by allowing public access during traditional high-use periods for outdoor recreation (late-spring through fall).

Strategy 3.1.7: Provide educational and informational events as requested by schools, non-profit organizations, civic groups, conservation organizations, and/or other institutions.

Strategy 3.1.8: Coordinate with tribes to utilize the MRWA for foraging and gathering of ancestral foods, in addition to other traditional ceremonies.

Objective 3.2: Enhance and maintain access points and infrastructure that supports recreational opportunities listed above in Objective 3.1, and in a manner compatible with Goals 1 and 2.

Rationale: Supporting the variety of recreational uses above depends on visitors having the ability to access the MRWA in a diverse and varied fashion. The size and remote nature of the MRWA will make comprehensive access for all user groups challenging. ODFW will include primitive camping opportunities in a manner that supports Goals 1 and 2 and minimizes risk of resource damage.

Located along Oregon State Hwy 82 (Hells Canyon Scenic Byway), the MRWA provides several visitor access points and opportunities. The northern boundary of the MRWA is adjacent to existing facilities managed by the Oregon Parks and Recreation Department (OPRD). These areas also provide opportunities for day-use activities for visitors.

For all user groups, a primary focus for ODFW will be reconnecting the Minam River Trail (FS Trail #1673) with access points along Hwy 82. The Minam River trailhead at the current northern terminus (Wildlife Flat within the MRWA) is the lowest elevation point of access to the Eagle Cap Wilderness and associated trail network. Final acquisition of the MRWA established public ownership of the entire 49-mile trail. This trail can be used to access remote areas of the 360,000-acre Eagle Cap Wilderness and Huckleberry Mountain Inventoried Roadless Area and can also be used for a short-day hike. However, currently this trail is only accessed by a river crossing which can be difficult and unsafe during most months of the year.

Strategy 3.2.1: Maintain 5 points of access and up to 62 miles of primitive road for walk-in access and administrative use.

Strategy 3.2.2: Support visitors at access points by enhancing and maintaining amenities where appropriate (parking, campsites, toilets, picnic areas, horse handling facilities, etc.).

Strategy 3.2.3: Promote safe use and navigation of the MRWA by improving and maintaining informational signs (entry, boundary, interpretive, etc.), at access points and along the Minam River Trail.

Strategy 3.2.4: Develop administrative rules that allow for overnight camping on the MRWA that supports backcountry hunting opportunities and public use of the Minam River corridor.

Strategy 3.2.5: Partner with Oregon State Parks and Recreation Department (OPRD) for opportunities that reconnect the Minam River Trail #1673 with Minam State Recreation Area.

Strategy 3.2.6: Enhance and maintain the Minam River Trail #1673 for year-round access from the Minam State Park to USFS Eagle Cap Wilderness boundary.

Strategy 3.2.7: Identify funding and partners for developing year-around access to the Minam River Trail #1673 through an equestrian suspension bridge across the Minam River.

Goal 4: Provide administration necessary to accomplish MRWA goals.

The achievement of all the goals listed above in this plan is underpinned by successful

program administration. This occurs by sustainably funding and staffing the MRWA to carry out agency guidance, administrative rules, regulation and statutes that help achieve area management goals. With that, program administration develops and maintains facilities and infrastructure to ensure safe operation and use by ODFW staff and visitors. This attention is not just limited to current infrastructure on the MRWA but also administering the history of this land through preservation of its cultural resources. Finally, to accomplish the myriad strategies listed in the plan, such as habitat management projects, program administration will serve to write grants, work with partners, plan, implement, and execute projects that support the MRWA management plan.

Objective 4.1: Administer MRWA programs to maintain and enhance wildlife area facilities, structures, infrastructure and equipment to conduct habitat management and public access projects on the MRWA.

Rationale: Infrastructure and equipment are integral to the overall operation of the MRWA. On-site facilities are located at Anderson Ranch, a historic collection of buildings and structures within the MRWA. These buildings consist of a residence converted to a bunkhouse for the current grazing program, a corrugated metal barn, and associated corals. Other on-site infrastructure and public facilities include the Minam River Trailhead (currently at Wildlife Flat access), 9 miles of the Minam River trail, Minam River bridge, Deer Creek bridge and access, and over 60 miles of administrative access roads.

The MRWA is administratively divided into five Habitat Management Units (HMU's) and 12 HMU sub-units (Figure 3). Four of the five HMU's are respective boundaries for the main grazing pastures within the MRWA. Lands situated west of the Minam River form the fifth HMU. Sub-unit boundaries reflect distinguishable physical, administrative and operational characteristics. Establishing HMUs reduces the large and varied landscape into smaller manageable sections to focus and monitor treatments and management actions, in addition to more efficient utilization of resources. HMUs also assist with developing rotational management of habitat features and the grazing program. For more detailed information and descriptions of the HMUs, see Appendix A.

MRWA has approximately 20 miles of boundary and pasture fencing associated with the current grazing program. With that, the MRWA contains 90+ ponds/stock water developments, in addition to numerous natural springs and seeps. All the water resources located on MRWA are traditionally used by wildlife and livestock to aid in sufficient distribution across the landscape.

Off-site, staff and equipment for the MRWA are housed at Ladd Marsh Wildlife Area headquarters near La Grande. At the time this plan was developed, ODFW does not have plans to construct new on-site facilities (office or shop space). However, this will be continually evaluated as ODFW learns how to effectively manage the property. Whether on-site or off-site, all facilities that contribute to MRWA must be constructed, maintained, and upgraded as necessary to accomplish habitat and wildlife management

objectives and provide public access.

Strategy 4.1.1. Fund operations of the MRWA through an annual budget that is managed in a balanced manner.

Strategy 4.1.2. Maintain adequate staffing and administrative oversight to carry out provisions within this plan.

Strategy 4.1.3. Maintain and improve office and storage space at various off-site and on-site locations for personnel workspace and equipment storage. Work may include repair and improvements to office and shop facilities, improvements to storage areas and structures, and general structural maintenance and improvement.

Strategy 4.1.4: Support the implementation of goals 1 through 3 by maintaining critical infrastructure across the MRWA. This includes, but not limited to, 20 miles of perimeter and cross fence, two bridges, five parking areas and points of access, campsites and 9+ miles of the historic Minam River Trail (FS Trail #1673). Work will include planning, maintaining, repairing, monitoring, and evaluating the functionality of these elements on an annual basis.

Strategy 4.1.5: Allow for administrative access, emergency response and wildland fire management while protecting wildlife habitat values by maintaining and managing 62 miles of administrative roads. Work will entail improving connectivity of roadways through grading, graveling, pruning, thinning, hand-piling, and prescribed burning. To accomplish goals 1 and 2, work may also include road obliteration.

Strategy 4.1.6: Support goals 1 and 2 by implementing a year-round restriction on motorized access on the MRWA. Motorized access may be allowed for administrative purposes only.

Strategy 4.1.7: Support goals 1 and 2 by maintaining a winter closure of the MRWA January 1 through March 31st and/or adjust as deemed necessary for resource protection.

Strategy 4.1.8: Acquire, maintain, and improve capital items and disposable assets required for wildlife habitat management. Work will entail inventory, maintenance, repair, upgrades, and acquisitions of equipment (e.g. tractors, seeders, sprayers) and supplies (e.g. seed and herbicide).

Strategy 4.1.9: Identify and implement catastrophic fire protection/reduction projects for areas of key habitats and/or habitat attributes. These efforts will entail pruning, thinning, prescribed burning,

and hand-piling vegetation as well as improving emergency response access to applicable areas.

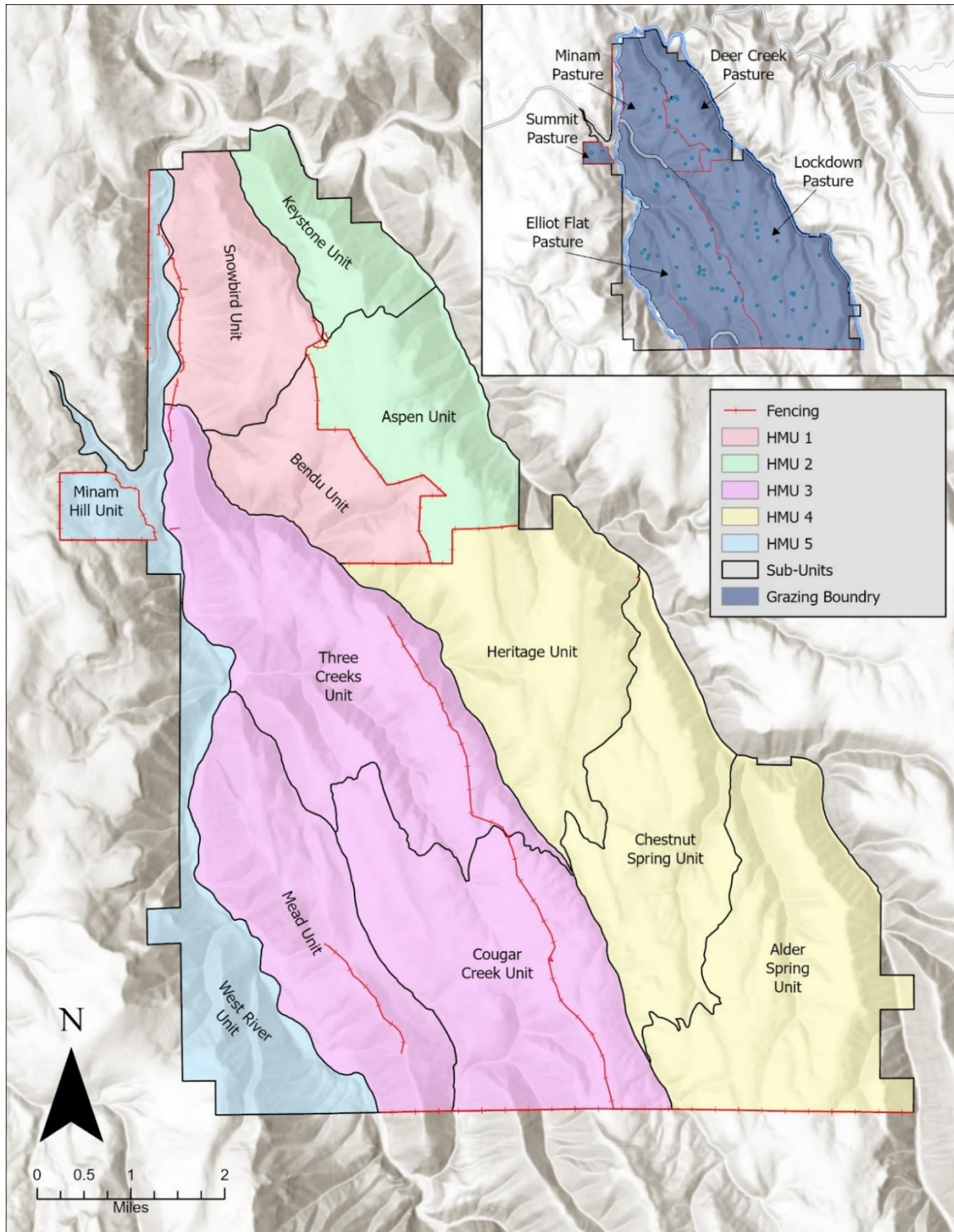


Figure 3. Administrative Habitat Management Units (HMU) and subunits, including

existing pastures (see inset), across the Minam River Wildlife Area (MRWA).

Strategy 4.1.10: Conduct project administration activities to address easements, property boundaries, land uses, and other issues impacting MRWAs operations. Work will entail identifying issues, preparing briefing documents, and soliciting internal and external assistance where appropriate.

Objective 4.2: Preserve the history of the MRWA through compliance with all pertinent laws and regulations relating to cultural resources.

Rationale: As described above, the MRWA has a rich cultural history that extends back to time immemorial. ODFW has a strong commitment to respecting the history of all those that resided on the MRWA before the wildlife area was acquired. All relevant ground disturbing activities are coordinated with the State Historic Preservation Office by ODFW's archaeological staff. Also, per the National Historic Preservation Act, the department also consults on ground disturbing activities through the USFWS when applying for federal grant funds. With that, ODFW does operate under an adopted Programmatic Agreement that includes a list of activities exempted from consultation, because the potential effects of the undertakings upon historic properties are foreseeable and likely to be minimal or not adverse.

Baseline archaeological survey information informs ODFW when proposed actions may impact historic and/or pre-historic resources. A comprehensive baseline cultural resource survey and report were completed for Phase 1 of the MRWA in 2023. A second baseline survey including a built-resources reconnaissance report is contracted for Phase 2 and 3, with completion due June of 2026.

Strategy 4.2.1: Complete a comprehensive baseline cultural resource survey across the MRWA (anticipated completion June 2026).

Plan Implementation

Funding: Operation and maintenance of the MRWA is currently funded through USFWS's Office of Conservation Investment (Wildlife Restoration Program). Authorized by the Pittman-Robertson Act in 1937, funds from manufacturer taxes on ammunition, firearms, and archery equipment go toward projects to restore, conserve, manage and enhance wild birds and mammals and their habitats. Other sources of funding or match available to the MRWA include volunteers, state, federal and private grants. Additionally, timber receipts and grazing fees generated from area programs are directed back to the wildlife area program for use.

Staffing/Organization: Currently the MRWA is operated by staff from the Grande Ronde Wildlife Area program. Minam River Wildlife Area staff includes one full-time

Wildlife Area Program Manager stationed at the Elkhorn Wildlife Area, in North Powder, Oregon and one full-time Senior Fish and Wildlife Technician. A four-month Seasonal Fish and Wildlife Technician assists with area operation from May through September.

In addition to the Wildlife Area program, staff from several other ODFW programs will contribute to implementing elements of this plan. Fish and wildlife resources are primarily managed by staff from the Wallowa and LaGrande/Union fish and wildlife districts. These staff conduct monitoring and make recommendations and management decisions regarding fishing and hunting seasons, habitat enhancement projects, and public access. Habitat enhancement projects will be scoped and implemented by the regional habitat program biologist, and aquatic habitat projects will be led by the Grande Ronde / Umatilla Fish Habitat Program. Staff from several other programs, such as fish/wildlife research, private forest accord, conservation and recovery, and others will also contribute to making recommendations and implementing actions covered in this plan.

Oregon State Police (OSP) has the authority to enforce fish, wildlife, and access laws for the state of Oregon. Regular coordination will occur between ODFW and OSP to plan and implement regular patrols that ensure users are adhering to laws and regulations while recreating on the MRWA.

Partnerships: Partnerships with federal, state and local agencies, Tribes, universities, NGOs, individual volunteers and private landowners are vital to achieving ODFW's mission and MRWA goals. Partnerships occur through project funding assistance, research assistance, public and private land access and/or other types of collaboration. MRWA management will continue to rely on these and other partnerships in the future as new opportunities arise. ODFW welcomes and encourages such participation to assist in the management and operation of the MRWA as desired. The Department recognizes that MRWA is just one component of managing habitat and wildlife at a regional scale and looks forward to participating in regional working groups as opportunities arise.

Adaptive Management / Monitoring: This plan provides for adaptive management of the MRWA. Adaptive management is a flexible approach to long-term management of resources that is directed by the results of ongoing monitoring activities and latest data. Management techniques and strategies are regularly evaluated considering monitoring results, new scientific understanding, and other new information. These periodic evaluations are used over time to adapt both management techniques and strategies to better achieve the wildlife area goals.

Monitoring is an essential component of adaptive management, and specific monitoring strategies have been integrated into goals and objectives described in this plan whenever possible. Monitoring fish, wildlife and habitat within the MRWA will be mainly conducted by Grande Ronde Watershed Wildlife Area personnel and other regional ODFW staff. ODFW may also partner with tribes, universities, non-government organizations or volunteers to assist with conducting monitoring activities.

As a newly established wildlife area, the MRWA has many information gaps to fill. Some baseline information exists, largely big game census data for the Minam Wildlife Management Unit (WMU) along with fisheries information for the Wallowa and Minam Rivers and their tributaries. However, this information is intended for a much larger scope than the MRWA. Wildlife area personnel will work directly with ODFW district and divisional staff to collect fisheries and wildlife data specific to the MRWA and identify additional monitoring and inventories necessary for successful management.

A vegetation monitoring program with formalized protocol will be developed to determine vegetative attributes across the wildlife area. MRWA personnel will develop a landscape photo monitoring program to track changes in area vegetation as management actions are taken. Staff will take photos every year or as necessary at pre-established and monumented sites. Photographs from various cardinal directions at these sites will record visual change over time on the MRWA.

The vegetation monitoring program also intends to survey one pasture each year on a rotational basis, where permanent transects are sampled. These surveys will determine trends for production/yield, species frequency, composition, and percent cover of the current growing season. Vegetation transect locations will be selected randomly with the constraints of soil type, aspect, and distance to water/salt, to yield an accurate representation of the pasture. This adaptively managed program will direct and measure success of management activities on rangeland and forested pastures. Forage cages and vegetation enclosures may also be adapted at each transect site to assist with annual ocular comparison.

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Appendix A: Habitat and Botanical Resources

Habitat Types

The MRWA contains seven different habitat types which consist of: grassland/shrubland, ponderosa pine, mixed conifer forest, sagebrush steppe, aspen woodland, riparian, and freshwater aquatic. Table 1 and Figure 1 summarize and illustrate the distribution of these habitats across the MRWA. Most habitats on the MRWA have been altered to some degree with respect to species composition and/or diversity due to anthropogenic activities. These alterations may be attributed to fire suppression and past land use practices such as overgrazing, agriculture, and the introduction of invasive plant species.

Although MRWA habitat types and the vegetative species that occupy those sites are actively and passively managed for certain attributes, they are largely influenced by ecological factors such as temperature, aspect, elevation, precipitation, soil, invasive species, and wildfire. Common plant species found within the habitat types are listed in Table 2.

Table 1. Estimated acreage of habitat types found within the Minam River Wildlife Area (MRWA).

Habitat Type	Acreage	Percent of Total
Grassland/Shrubland	5,864	35.23 %
Mixed-Conifer Forest	4,931	29.63%
Ponderosa Pine Woodland	4,276	25.69%
Riparian	1,061	6.37%
Sagebrush Steppe	244	1.47%
Freshwater Aquatic	246	1.48%
Aspen Woodland	24	0.14%

Ponderosa Pine Woodlands

Ponderosa pine woodlands vary considerably based on soil type, moisture, micro-climate, aspect, past management activities and fire history. This habitat type is generally characterized by open canopies (10%-40%) which are predominately ponderosa pine, with potential understory species of Douglas fir, lodgepole pine, and western larch. Within the MRWA, ponderosa pine habitat occurs across a variety of site conditions. Understory within this habitat type varies but may contain such species as snowberry (*Symphoricarpos albus*), Woods' rose (*Rosa woodsii*), sagebrush (*artemisia* spp.), antelope bitterbrush (*purshia tridentata*), huckleberry (*Vaccinium* spp.), and various grass and forb communities. Stands of large diameter at breast height (DBH) Ponderosa pines with open canopies (<10%) and grass understory provide savanna conditions throughout MRWA.

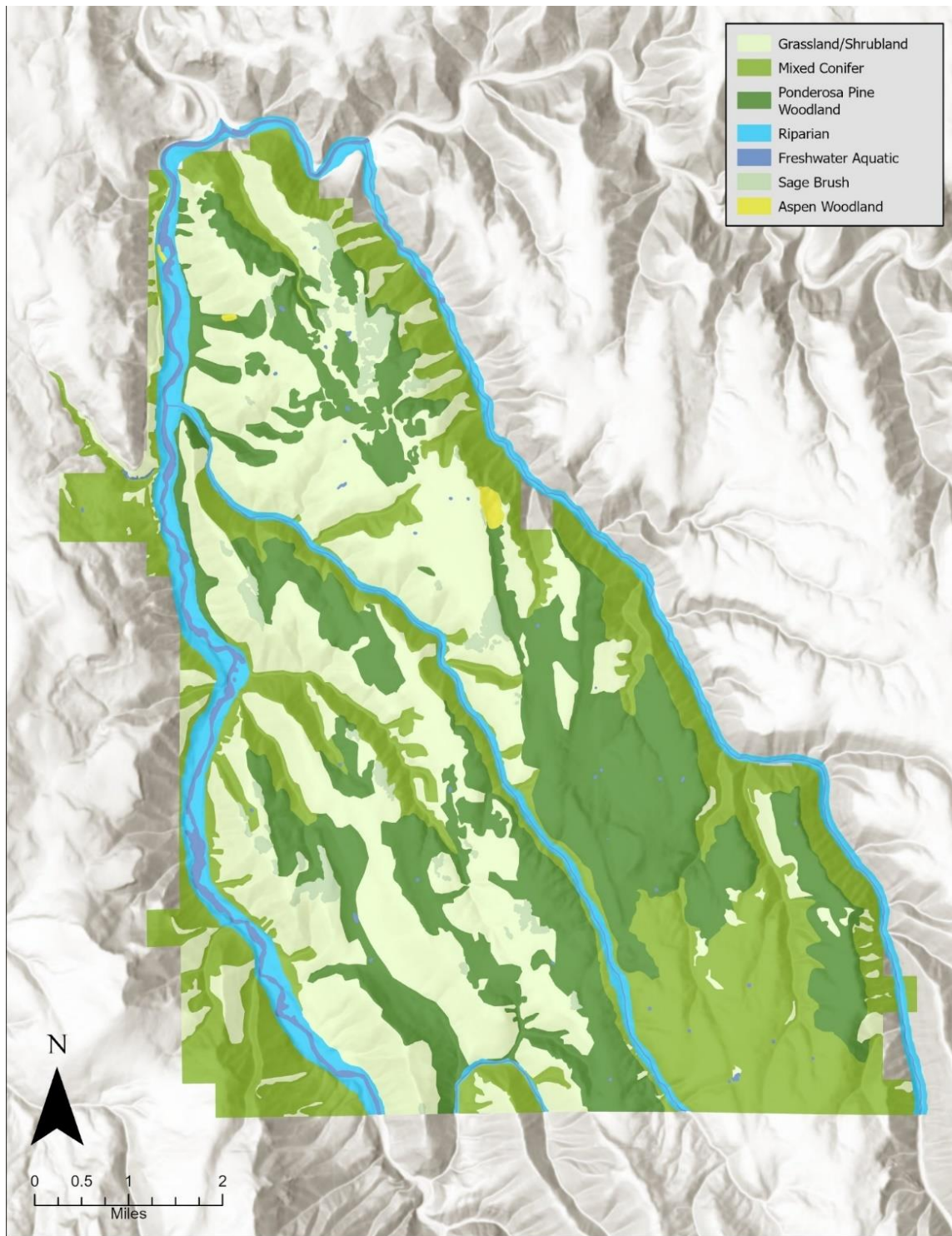


Figure 2. Types of habitats and their distribution across the Minam River Wildlife Area (MRWA)

Due to past timber management activities and other landscape disturbances, the age and structure of these stands varies widely across MRWA. As a SWAP strategy habitat, ponderosa pine woodlands are valuable to a variety of wildlife species. This habitat type provides thermal cover, travel corridors, nesting, and foraging opportunities for many species including multiple SWAP strategy species such as, white-headed woodpecker (*Picoides albolarvatus*), flammulated owl (*Psiloscopus flammeolus*), long-legged myotis (*Myotis Volans*), and pallid bats (*Antrozous pallidus*).

Mixed Conifer Forest

Historically characterized by an uneven-aged mosaic of widely spaced individual trees, tree clumps and openings these characteristics were maintained through disturbance factors of various size and severity (Franklin et al. 2013). Presently, this habitat type within the MRWA is characterized as an even-aged, multilayered canopy, dominated by various conifer species including Douglas fir (*Pseudotsuga menziesii*), Ponderosa pine (*Pinus ponderosa*), western larch (*Larix occidentalis*), and Grand/White fir (*Abies spp.*) Understory vegetation consists primarily of serviceberry (*Amelanchier spp.*), snowberry (*Symphoricarpos spp.*), Woods' rose (*Rosa woodsii*), huckleberry (*Vaccinium spp.*), ferns and assorted forb and grass communities.

This habitat type provides an abundance of resource values for a variety of wildlife species including forage, security and thermal cover for elk and deer. Foraging and nesting habitat for several SWAP species including great grey owls (*Strix nebulosa*) and pileated woodpeckers (*Dryocopus pileatus*). Several species of bats such as the hoary bat (*Lasiurus cinereus*) and California myotis (*Myotis californicus*) rely heavily on this habitat type. Due to past forest management practices, including even aged management practices and fire suppression, stands of mixed conifer forest habitat within the MRWA are overstocked and lack heterogeneity in age class and habitat structure.

Aspen Woodland

This unique and highly valued wildlife habitat type makes up the smallest percentage of MRWA acreage. Typical vegetation composition includes multiage canopy dominated by quaking aspen (*Populus tremuloides*) with a characteristic understory of grasses that include Idaho fescue, pinegrass, Great Basin wildrye, or blue wildrye, and shrubs include sagebrush, snowberry, serviceberry, and roses (OCS, 2016). On MRWA, this habitat grows in small, disconnected stands on moist microsites with north facing aspects, and in riparian areas that are wet but not regularly flooded.

Aspen woodlands have high wildlife values and are used heavily by a multitude of species including deer, elk, black bear (*Ursus americanus*), rabbits, and bats. Aspens are also heavily used by tree swallows (*Tachycineta bicolor*), woodpeckers, and other cavity nesting birds. Ruffed grouse (*Bonasa umbellus*) are especially dependent on aspens for food, nesting, and mating.

Aspen stands often depend on natural fire to reduce competition from conifers and stimulate the growth of suckers from roots. Chronic overgrazing can prevent overstory recruitment, allow invasive plant species to take hold, and degrade understories (OCS. 2016). Protection and proper management of aspen woodlands is essential to maintain and promote future expansion of this highly valued habitat type.

Grassland

On MRWA, this habitat type is dominated by communities of Idaho fescue, Bluebunch wheatgrass, Sandberg bluegrass, and prairie junegrass. Forb components within these communities typically includes western yarrow (*Achillea millefolium*), lupine (*Lupinus spp.*), arrowleaf balsamroot (*Balsamorhiza sagittata*), and mules ear (*Wyenthia amplexicaulis*). Grassland habitats are a critical component to the success of the MRWA in wintering large numbers of elk and deer by providing quality forage during a physiologically stressful time. Grasslands are also beneficial to other species by providing foraging, nesting, and rearing habitat for various passerines, reptiles and small mammals. Due to its relative importance to a range of species and its relative decline in quality throughout the western U.S., the proper conditioning, use, and management of this habitat type is essential.

A rotational livestock grazing management system is employed across the majority of MRWA. This system conditions forage for wintering elk and assists with providing a range of habitat attributes (vertical and horizontal cover/structure) for a multitude of wildlife species utilizing these habitats. Livestock grazing stimulates compensatory growth of native perennial bunchgrass communities, aids in natural recruitment and dispersal through seed shattering and hoofing action and assists in reducing fine fuels and overall severity/frequency of catastrophic fire.

With the introduction of invasive species such as ventenata (*Ventenata dubia*), Medusahead wildrye (*Taeniatherum caput-medusae* (L.) Nevski) and cheat grass (*Bromus tectorum*), it is important to protect the overall integrity of this habitat type. Management activities are intended to aid and assist grassland habitats, while particular care is given to not over-stress or reduce vigor of native plant communities.

Shrubland

This habitat type on MRWA is not typical of standard shrublands. Within the MRWA shrubland habitat exists as the transition area commonly between grassland and forested habitat. Sites supporting shrublands typically occur in areas where soil conditions are not suitable to support large tree species. This habitat type contains open grass communities that are typically dominated by shrub species such as bitterbrush (*Purshia spp.*), currant (*Ribes spp.*), rabbitbrush (*Chrysothamnus spp.*), mountain mahogany (*Cercocarpus spp.*), snowberry (*Symphoricarpos spp.*), and serviceberry (*Amelanchier spp.*). Sagebrush species may also be present in this habitat but are not the dominant plant community.

On the MRWA this habitat type typically serves as edge habitat and provides an array of forage and cover options for wildlife. In the spring, this habitat provides important cover for concealment of fawns and elk calves. Additionally, shrub species provide an abundance of high protein browse and forage for bird species such as blue (*Dendragapus obscurus*) and ruffed grouse (*Bonasa umbellus*), chukar (*Alectoris chukar*) and wild turkey (*Meleagris gallopavo*).

Sagebrush Steppe

This habitat type comprises a relatively small portion of the MRWA. Occurring in scattered patches throughout the area, sagebrush steppe habitat ranges in size from 0.5 acres to over 100 acre clumps. Characterized predominately by grass and forb communities with an open shrub community, this habitat type is primarily comprised of sagebrush (*Artemisia spp.*), as well as interspersed numbers of bitterbrush (*Purshia spp.*), and rabbitbrush (*Chrysothamnus spp.*).

Within the MRWA these habitats are often considered dry and occur in nutrient deficient, rocky soil sites around the ridgetops and flats. In addition to contributing to the overall diversity of MRWA, this habitat type is particularly valuable for management purposes as winter browse for mule deer. Management of these areas is intended to maintain and/or enhance natural recruitment of flora and wildlife cover/forage values.

Riparian

Riparian habitats, and their supporting vegetation, occur adjacent to waterways (rivers, streams, intermittent streams, springs, seeps, etc.) and are primarily shaped or maintained through seasonal periods of flooding, drought, scouring, and soil deposition. MRWA riparian vegetation occurs in naturally varying stand densities adjacent to the Minam River, Deer Creek, Weelikéecet Creek, Cougar Creek, and other intermittent or seasonal streams. The width of riparian habitats are terrain dependent and vary from less than 100 feet to nearly 1000 feet wide.

Shrub and deciduous tree species within these habitats may include black cottonwood (*Populus trichocarpa.*), alder (*Alnus spp.*), ninebark (*Physocarpus malvaceus*), oceanspray (*Holodiscus spp.*), serviceberry (*Amelanchier spp.*), currant (*Ribes spp.*), Woods' rose (*Rosa Woodsii*), willow (*Salix spp.*), quaking aspen (*Populus tremuloides*), hawthorn (*Cretaegus spp.*) and others. Riparian habitats within the MRWA may also contain or be dominated by conifers.

Riparian habitats have high species diversity, rich resource values and provide travel corridors linking populations and/or seasonal ranges. Riparian habitats typically support large invertebrate populations which benefit a host of fish and wildlife species. Neo-tropical migrants, upland game bird species and a numerous SWAP sensitive species rely heavily on riparian habitat for all or part of their life history requirements. MRWA management of riparian areas on is intended to provide multiple attributes that fulfill a variety of species life history and/or habitat requirements. Management in this manner not only ensures propagation and protection of fish and wildlife species but also encourages the overall enhancement and protection of water quality and quantity within

the Grande Ronde Watershed. Exclusionary measures such as barbed wire fence, upland salting stations, and numerous pond developments are maintained as part of the grazing program to assist with livestock dispersal and protect riparian habitat.

Freshwater Aquatic

This habitat type consists of 33 miles of perennial waterways, including the Minam River, Cougar Creek, Deer Creek, and Weelikéecet Creek, 154 miles of ephemeral streams and drainages, and 80+ ponds, both groundwater and runoff fed. MRWA freshwater aquatic habitat also includes assorted seasonal and permanent wetlands throughout the area. Associated tree species consist of black cottonwood (*Populus trichocarpa*), alder (*Alnus spp.*), and willow (*Salix spp.*). Shrub species may include elderberry (*Sambucus spp.*), red-osier dogwood (*Cornus stolonifera*), and Woods' rose (*Rosa woodsii*).

Fresh water aquatic habitat can also be associated with aquatic or semi aquatic vegetation such as cattail (*Typha spp.*), sedges (*Carex spp.*) and bulrush (*Schoenoplectus spp.*). Portions of the MRWA are characterized as wet meadows, comprised of a complex community of grasses, sedges, rushes, and wildflowers. The entirety of the Minam River and Deer Creek, and the lower portion of Weelikéecet Creek and Cougar Creek, are designated fish bearing streams used by federally listed Snake River summer steelhead (*Oncorhynchus mykiss irideus*), and bull trout (*Salvelinus confluentus*). Management of this habitat, as well as adjacent riparian habitat, is conducted to prevent degradation, enhance water quality, and to improve aquatic habitat for fish.

Non-native Plants

Non-native plants present a threat to the persistence of desirable and endemic flora. On the MRWA, non-native plant species present or previously recorded warrant one of the greatest management concerns (Table 3). If left unchecked, these species could significantly alter native plant communities and reduce the overall quality of wildlife habitat. Invasive plant species that have been documented on the wildlife area consist of yellow star thistle (*Centaurea solstitialis*), diffuse knapweed (*Centaurea diffusa*), spotted knapweed (*Centaurea stoebe*), Russian knapweed (*Acroptilon repens*), whitetop (*Lepidium draba L. Desv.*), and meadow hawkweed (*Hieracium spp.*; Table 3).

There are current and past monitoring/treatment programs in place working to control/eradicate these noxious weeds. Other plant species which are of great concern are Invasive Annual Grasses (IAG's), consisting of cheatgrass (*Bromus tectorum*), medusahead wild rye (*Taeniatherum caput-medusae*) and ventenata (*Ventenata dubia*). Due to the scale of annual grass infestations, management options for these species are challenging. A long-term pasture restoration/enhancement plan will be initiated which entails multiple strategies for control of IAG's. Chemical suppression, along with seeding native flora and desirable introduced species, will provide an increase in forage production and competition. Restoration/enhancement efforts coupled with conservative

stocking rates and an efficient rotational grazing management system is expected to yield desirable bunchgrass communities, ultimately exhibiting natural recruitment.

Climate

Due to the relative size and topography of the Blue Mountain Ecoregion, the climate of the region varies significantly depending on the specific geographic location. The MRWA exhibits some characteristics indicative of the ecoregion with short dry summers and long cold winters. Precipitation on the MRWA ranges from 16-22 inches annually of which approximately six inches is received during the growing season of April through July. The remainder of annual precipitation is largely composed of late season (Fall) rain showers and winter snowfall (November-March).

Average annual temperatures on the MRWA range from 19°F in January to 87°F in August. Prevailing winds on the MRWA vary significantly in speed and are from the north in the summer and south in the winter.

Topography and Soils

The MRWA is characterized by long finger like hills and steep drainages that are dominated by a general north aspect. Elevation on MRWA greatly fluctuates across the landscape, and ranges from 2,540' on the most northern boundary, to approximately 4,740' above Alder Spring along the southern boundary.

Forty-one soil types and/or complexes are present on the MRWA. The largest soil classifications present on the MRWA are the Harlow-Snell-Imnaha and Klicker-Anatone complexes (Figure 3). Generally, the soil types present have a loamy texture, and contain varying levels of stone, cobble, and decomposing plant material. They are shallow to moderately deep, well drained, and have a low to moderate risk of erosion. Soil types range in available water content from 1in/in to 9.5in/in, and rooting depths from 12" to 79".

Individual soil type characteristics largely dictate the presences of existing plant communities. These plant communities vary but largely contain such species as: Idaho fescue (*Festuca idahoensis*), bluebunch wheatgrass (*Pseudoroegneria spicata*), prairie junegrass (*Koeleria cristata*), Sandberg bluegrass (*Poa secunda*), pinegrass (*Calamagrostis rubescens*), elk sedge (*Carex geyeri*), serviceberry (*Amelanchier alnifolia*), common snowberry (*Symphoricarpos albus*), ponderosa pine (*Pinus ponderosa*), Woods' rose (*Rosa woodsii*), bitterbrush (*Purshia tridentata*), Douglas fir (*Pseudotsuga menziessi*), western larch (*Larix occidentalis*), and lodgepole pine (*Pinus contorta*).

Dry weight forage production may range significantly within soil types/classifications across MRWA from unfavorable soils and/or years of 200 lbs/acre to favorable soils and/or years of 5,000 lbs/acre (2024 USDA Natural Resource Conservation Service).

Description of Habitat Management Units

The MRWA is composed of 5 Habitat Management Units (HMU's) and 12 HMU sub-units. Four of the five HMU's are the respective boundaries for the main grazing pastures within the MRWA (Figure 4). Lands situated west of the Minam River form the fifth HMU. Sub-unit boundaries were created based on distinguishable physical, administrative and operational characteristics. MRWA HMUs are established to reduce the considerable acreage into smaller, manageable sections to focus and track individual treatments and management practices. Targeted treatments allow for improved utilization of resources and personnel time. HMUs fundamentally fit with assisting in developing rotational management of habitat features and grazing program. The increased description allows for more detailed explanations while tracking activities and accomplishments for constituents and funding agencies. Figure 4 shows the HMU's and their relation to the grazing pastures.

HMU 1 - 1,831 acres - Snowbird and Bendu Units

Boundaries:

- West: Minam River east bank south from boundary line to the Weelikéecet Creek
- North: intersection of the wildlife area boundary and the Minam River and follows the boundary east to Keystone Road
- Eastern: southeast up Deer Creek to intersects the fence between the Minam and Deer Creek pastures, continuing southeast along the shared fence line until it terminates into the perpendicular fence separating Minam and Deer Creek pastures from Lockdown pasture
- South: follows the Lockdown pasture fence west until it ends in Weelikéecet Creek and continues downstream along the creek to terminate at its mouth.

Inversely, the HMU has the lowest proportion of forested habitat comprised of 10.4% mixed conifer forest and 19.47% ponderosa woodland. This HMU also has the lowest percentage of sagebrush habitat on the wildlife area at 0.38%.

Due to its abundance of southern aspects and lack of tree cover, HMU 1 is subject to the most solar radiation of all five HMU's, making it the warmest and driest unit on the wildlife area. Wintering big game are abundant here during peak winter conditions when snow pushes animals out of higher elevations to find an unrestricted food supply. Large elk and deer herds can be spotted grazing throughout the winter on the steep slopes above the Minam River.

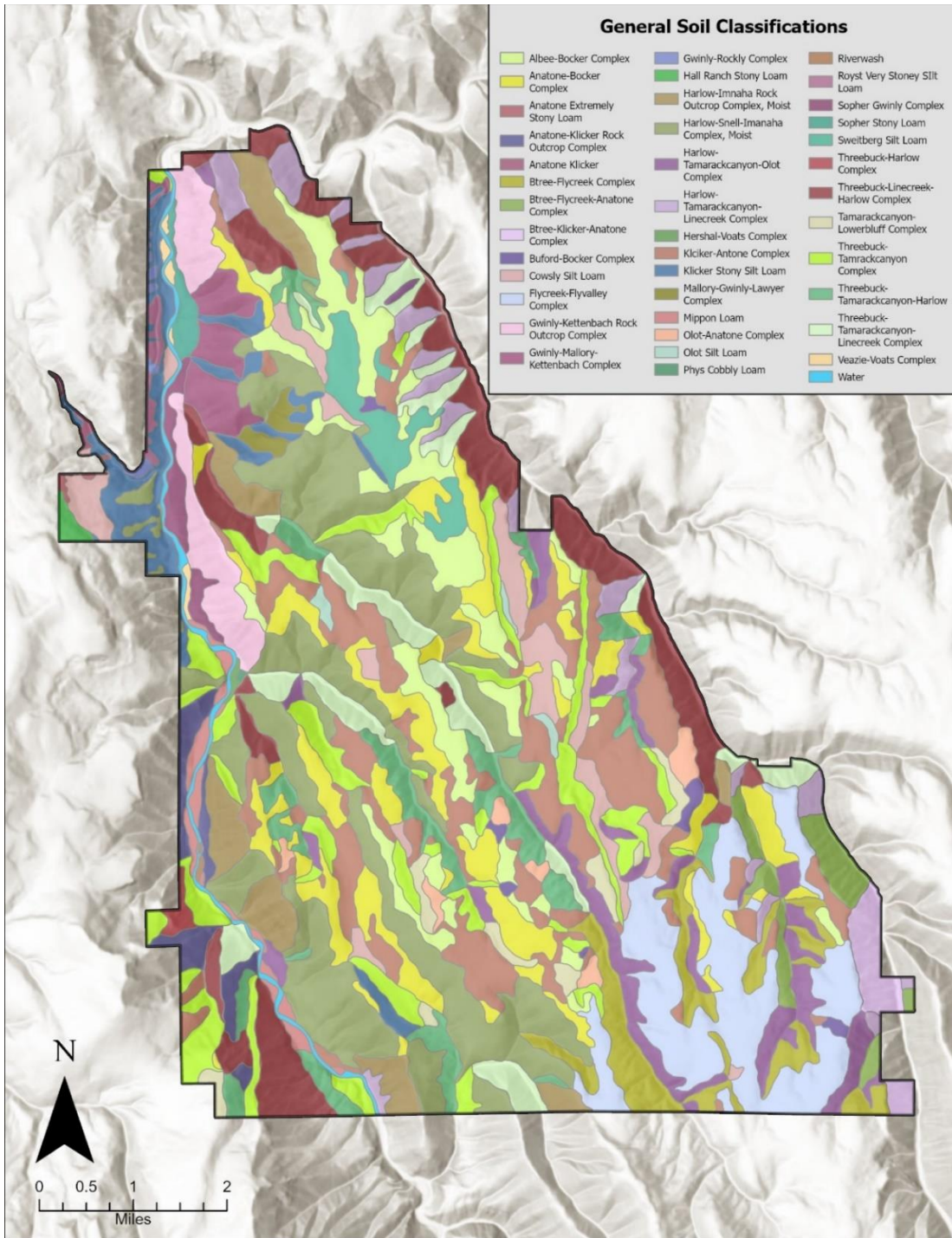


Figure 3. Distribution of different soil complex classification across the MRWA.

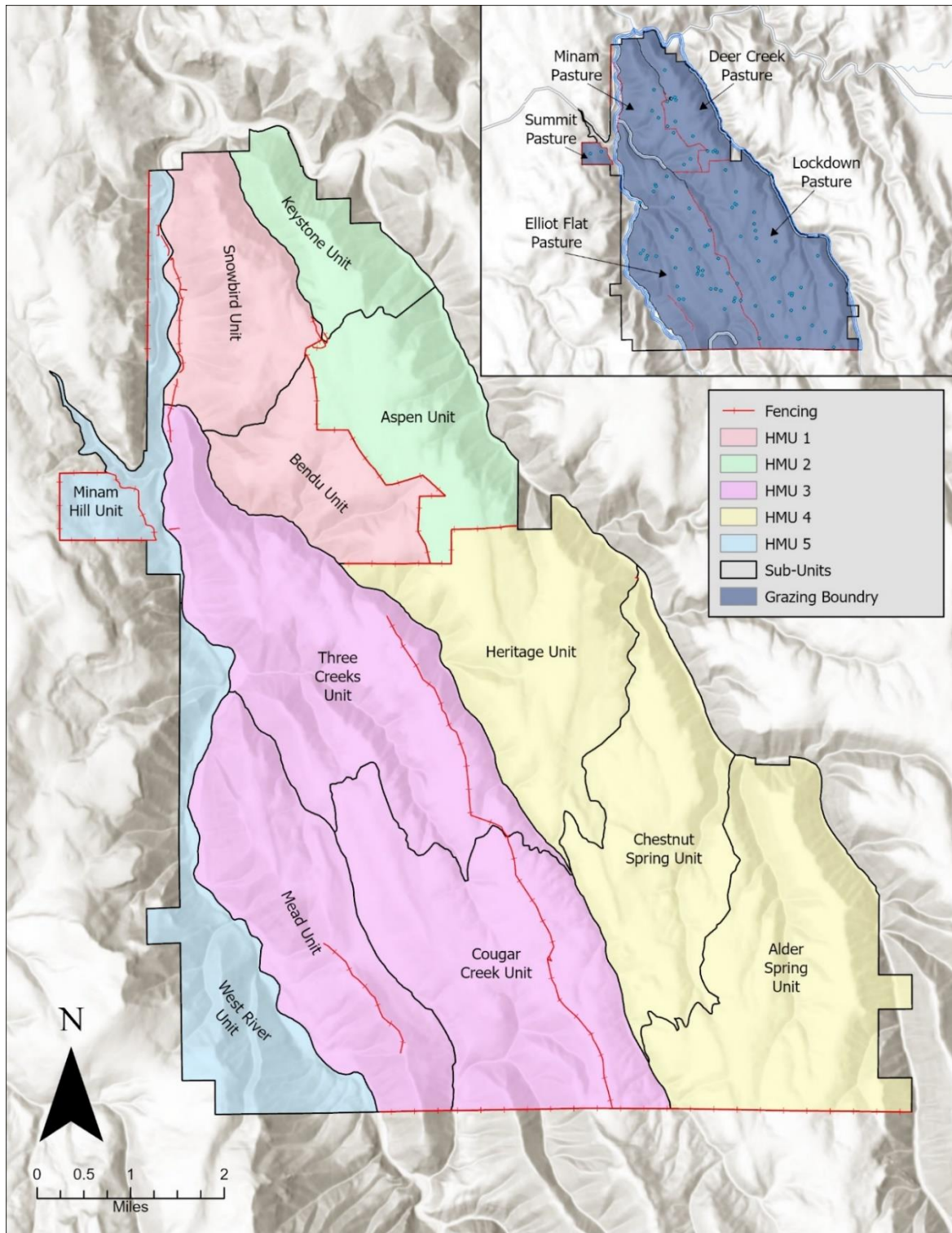


Figure 4. Administrative Habitat Management Units (HMU) and subunits, including existing pastures (see inset), across the Minam River Wildlife Area (MRWA).

HMU 2 - 1,708 acres Keystone and Aspen Units

Boundaries:

- West: Keystone Road until intersection of the fence between the Minam and Deer Creek pastures continuing southeast along the shared fence line until it terminates into the perpendicular fence line that separates the Minam and Deer Creek pastures from Lockdown pasture
- North: intersection of the wildlife area boundary and Keystone Road following the wildlife area boundary east until it terminates into Big Canyon Road
- East: boundary and Big Canyon Road southeast to a tract of U.S. Forest Service inholding then diverted south to terminate at the eastern most point of the Lockdown pasture fence
- South: Lockdown pasture fence west until intersecting with the fence line of the Minam and Deer Creek pastures

HMU 2 has the highest level of habitat diversity, containing all 7 habitat types present on the wildlife area. It is composed of 40.11% grassland, 30.32% Dry mixed-conifer, 18.72% ponderosa woodland, 0.67% freshwater aquatic, and 3.3% riparian. As well as the highest percentage of sagebrush at 5.59% and aspen at 1.3%. The aspen stand in this unit is one of 3 on the wildlife area and makes up 95% of the total acreage for this habitat type.

HMU 3 - 6,095 acres - Three Creeks, Cougar Creek, and Mead Units

Boundaries:

- West: Intersection of Weelikéecet Creek and the Minam River heading south along the river until terminating with the southern wildlife area boundary
- North & East: combined to follow the entirety of Weelikéecet Creek southeast from mouth until terminating at intersection with the southern wildlife area boundary and Wallowa-Whitman National Forest
- South: southern wildlife area boundary line between Weelikéecet Creek and the Minam River

HMU 3 has the second highest component of grasslands at 46.64% and the second highest percentage of riparian habitat at 6.08%. The remaining habitat types consists of 15.38% Dry mixed-conifer forest, 28.6% ponderosa woodland, 1.83% sagebrush, and 1.47% freshwater aquatic.

HMU 3 shares similar terrain features with HMU 1 providing an increased area of snow-free conditions favorable to wintering big game. This HMU differs however in that it contains a greater percentage of forest habitat, northern aspect, and water sources. These differences make it more favorable for year-round big game utilization.

HMU 4 - 5,325 acres - Heritage, Chestnut Spring, and Alder Spring Units

Boundaries:

- West: intersection of the pasture 4 fence and Weelikéecet Creek and runs upstream until terminating into the southern wildlife area boundary
- North: east along the pasture 4 fence from the Weelikéecet Creek intersection, then along the tract of U.S. National Forest inholding until terminating into Big Canyon Road and the eastern wildlife area boundary
- East: southeast along Big Canyon Road to the wildlife area boundary continuing south along the eastern wildlife area boundary until it terminates at the Wallow-Whitman National Forest boundary
- South: runs from the southeast corner of the wildlife area west to Weelikéecet Creek

This HMU 4 holds the highest percentage of forested habitat consisting of 43.7% Dry mixed-conifer forest and 34.85% ponderosa woodland. The remaining habitat makeup consists of 16.29% grassland, 0.57% sagebrush, 0.39% freshwater aquatic, and 4.2% riparian.

HMU 5 - 1,684 - West River and Minam Hill Units

Boundaries:

- West: borders the eastern boundaries of HMU 1 and 3
- North: northern property boundary
- East: eastern property boundary
- South: southern property boundary

This HMU also has the smallest of the three aspen stands, which makes up for 0.08% of the unit. Access to units west of the Minam River are extremely limited due to topography and neighboring private lands west of the wildlife area boundary.

Table 2. Plant Species Known to Occur on Minam River Wildlife Area

Order - Common Name	Species Name	Family
Apiales		
Desert Parsley	<i>Lomatium spp.</i>	Apiaceae
Golden Alexander	<i>Zizia aurea</i>	Apiaceae
Poison Hemlock	<i>Conium maculatum</i>	Apiaceae
Asparagales		
Daffodil	<i>Narcissus spp.</i>	Amaryllidaceae
Asterales		
Arrowleaf Balsamroot	<i>Balsamorhiza sagittata</i>	Asteraceae
Blanket Flower	<i>Gaillardia aristata</i>	Asteraceae
Canada Thistle	<i>Cirsium arvense</i>	Asteraceae
Diffuse Knapweed	<i>Centaurea diffusa</i>	Asteraceae
Dwarf Yellow Fleabane	<i>Erigeron chrysopsidis</i>	Asteraceae
Elk Thistle	<i>Cirsium foliosum</i>	Asteraceae
Groundsel	<i>Senecio spp</i>	Asteraceae
Heartleaf Arnica	<i>Arnica cordifolia</i>	Asteraceae
Mulesears	<i>Wyenthia amplexicaulis</i>	Asteraceae
Oregon Sunshine	<i>Eriophyllum lanatum</i>	Asteraceae
Rabbitbrush	<i>Ericameria nauseosa</i>	Asteraceae
Ragwort	<i>Packera spp.</i>	Asteraceae
Rush Skeletonweed	<i>Chondrilla juncea</i>	Asteraceae
Russian Knapweed	<i>Acroptilon repens</i>	Asteraceae
Sagebrush	<i>Artemisia spp</i>	Asteraceae
Scotch Thistle	<i>Onopordum acanthium</i>	Asteraceae
Tansy Ragwort	<i>Senecio jacobaea</i>	Asteraceae
Western Hawkweed	<i>Hieracium albertinum</i>	Asteraceae
Western Yarrow	<i>Achillea millefolium</i>	Asteraceae
Woolly Goldenweed	<i>Haplopappus lanuginosus</i>	Asteraceae
Brassicales		
White Top	<i>Lepidium draba</i>	Brassicaceae
Boraginales		
Bluebells	<i>Mertensia spp.</i>	Boraginaceae
Capparales		
Western Wallflower	<i>Erysimum capitatum</i>	
Caryophyllales		
Bitterroot	<i>Lewisia rediviva</i>	Portulacaceae
Four-wing Saltbush	<i>Atriplex canescens</i>	Amaranthaceae
Miner's Lettuce	<i>Claytonia perfoliata</i>	Portulacaceae
Prickly Pear Cactus	<i>Opuntia polyacantha</i>	Cactaceae
Springbeauty	<i>Claytonia lanceolata</i>	Portulacaceae
Winterfat	<i>Ceratoides lanata</i>	Chenopodiaceae
Cornales		
Red-osier dogwood	<i>Cornus stolonifera</i>	Cornaceae
Cyperales		
Basin Wildrye	<i>Leymus cinereus</i>	Poaceae
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i>	Poaceae

Order - Common Name	Species Name	Family
Bottlebrush Squirrel Tail	<i>Sitanion hystrix</i>	Poaceae
Cheatgrass	<i>Bromus tectorum</i>	Poaceae
Elk Sedge	<i>Carex geyeri</i>	Cyperaceae
Idaho Fescue	<i>Festuca idahoensis</i>	Poaceae
Intermediate Wheatgrass	<i>Thinopyrum intermedium</i>	Poaceae
One spike Oatgrass	<i>Danthonia unispicata</i>	Poaceae
Oniongrass	<i>Melica bulbosa</i>	Poaceae
Orchardgrass	<i>Dactylis glomerata</i>	Poaceae
Pinegrass	<i>Calamagrostis rubescens</i>	Poaceae
Praire Junegrass	<i>Koeleria cristata</i>	Poaceae
Ross Sedge	<i>Carex rossii</i>	Cyperaceae
Sandberg Bluegrass	<i>Poa secunda</i>	Poaceae
Timothy	<i>Phleum pratense</i>	Poaceae
Ventenata	<i>Ventenata dubia</i>	Poaceae
Yellow Star Thistle	<i>Centaurea solstitialis</i>	Poaceae
Dipsacales		
Blue Elderberry	<i>Sambucus nigra</i>	Caprifoliaceae
Common Snowberry	<i>Symphoricarpos albus</i>	Caprifoliaceae
Common Teasel	<i>Dipsacus fullonum</i>	Dipsacaceae
Ericales		
Greenleaf Manzanita	<i>Arctostaphylos patula</i>	Ericaceae
Kinnickinnick	<i>Arctostaphylos uva-ursi</i>	Ericaceae
Pinemat Manzanita	<i>Arctostaphylos nevadensis</i>	Ericaceae
Fabales		
Lupine	<i>Lupinus spp</i>	Fabaceae
Mountain Alder	<i>Alnus tenuifolia</i>	Betulaceae
White Clover (Dutch)	<i>Trifolium repens</i>	Fabaceae
Vetch	<i>Vicia spp.</i>	Fabaceae
Geraniales		
Sticky Geranium	<i>Geranium viscosissimum</i>	Geraniaceae
Redstem Stork's Bill	<i>Erodium cicutarium</i>	Geraniaceae
Lamiales		
Blue-eyed Mary	<i>Collinsia verna</i>	Plantaginaceae
Common Lilac	<i>Syringa vulgaris</i>	Oleaceae
Fiddleneck (Buglass) Tarweed	<i>Amsinckia intermedia</i>	Boraginaceae
Narrowleaf Skullcap	<i>Scutellaria angustifolia</i>	Lamiaceae
Liliales		
Common Camas	<i>Camassia quamash</i>	Liliaceae
False Hellebore	<i>Veratrum spp</i>	Liliaceae
Glacier Lilly	<i>Erythronium grandiflorum</i>	Liliaceae
Grass Widows	<i>Olsynium douglasii</i>	Iridaceae
Robinson's Onion	<i>Allium robinsonii</i>	Liliaceae
Tapertip Onion	<i>Allium acuminatum</i>	Liliaceae
Western Blue Flax	<i>Linum lewissii</i>	Linaceae
Western Trillium	<i>Trillium ovatum</i>	Liliaceae
Wing-fruited Mariposa Lily	<i>Calochortus eurycarpus</i>	Liliaceae
Yellow Fritillary	<i>Fritillaria pudica</i>	Liliaceae

Order - Common Name	Species Name	Family
Myrtales		
Elkhorn Clarkia	<i>Clarkia pulchella</i>	Onagraceae
Pinales		
Douglas Fir	<i>Pseudotsuga menziessi</i>	Pinaceae
Grand Fir	<i>Abies grandis</i>	Pinaceae
Lodgepole Pine	<i>Pinus contorta</i>	Pinaceae
Ponderosa Pine	<i>Pinus ponderosa</i>	Pinaceae
Western Juniper	<i>Juniperus occidentalis</i>	Cupressaceae
Western Larch	<i>Larix occidentalis</i>	Pinaceae
Western White Pine	<i>Pinus monticola</i>	Pinaceae
Poales		
Medusahead	<i>Taeniatherum spp.</i>	Poaceae
Polygonales		
Buckwheat	<i>Eriogonum spp</i>	Polygonaceae
Primulales		
Shootingstar	<i>(Dodecatheon)Primula spp.</i>	Primulaceae
Ranunculales		
Oregon Grape	<i>Berberis repens</i>	Berberidaceae
Red Columbine	<i>Aquilegia formosa</i>	Ranunculaceae
Rhamnales		
Snowbrush Ceanothus	<i>Ceanothus velutinus</i>	Rhamnaceae
Rosales		
American Red Raspberry	<i>Rubus strigosus</i>	Rosaceae
Apple	<i>Malus domestica</i>	Rosaceae
Bitterbrush	<i>Purshia tridentata</i>	Rosaceae
Cinquefoil	<i>Potentilla spp</i>	Rosaceae
Curlleaf Mountain Mahogany	<i>Cercocarpus ledifolius</i>	Rosaceae
Hawthorn	<i>Crataegus spp.</i>	Rosaceae
Mallow Ninebark	<i>Physocarpus malvaceus</i>	Rosaceae
Oceanspray	<i>Holodiscus discolor</i>	Rosaceae
Prairie Smoke	<i>Geum triflorum</i>	Rosaceae
Rocky Mountain Ash	<i>Sorbus scopulina</i>	Rosaceae
Serviceberry	<i>Amelanchier alnifolia</i>	Rosaceae
Wax Currant	<i>Ribes cereum</i>	Rosaceae
Wild Strawberry	<i>Fragaria vesca</i>	Rosaceae
Wood's Rose	<i>Rosa woodsii</i>	Rosaceae
Rununculales		
Larkspur	<i>Delphinium spp</i>	Ranunculaceae
Western Buttercup	<i>Ranunculus occidentalis</i>	Ranunculaceae
Salicales		
Black Cottonwood	<i>Populus trichocarpa</i>	Salicaceae
Quaking Aspen	<i>Populus tremuloides</i>	Salicaceae
Willow	<i>Salix spp.</i>	Salicaceae
Sapindales		
Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae
Rocky Mountain Maple	<i>Acer glabrum</i>	Sapindaceae

Order - Common Name	Species Name	Family
Saxifragales		
Woodland Star	<i>Lithophragma spp.</i>	Saxifragaceae
Scrophulariales		
Indian Paintbrush	<i>Castilleja spp</i>	Scrophulariaceae
Solanales		
Field Bindweed	<i>Convolvulus arvensis L</i>	Convolvulaceae
Skyrocket	<i>Ipomopsis aggregata</i>	Polemoniaceae
Phacelia	<i>Phacelia spp.</i>	Hydrophyllaceae
Typhales		
Cattail	<i>Typha latifolia L.</i>	Typhaceae
Violales		
Pioneer Violet	<i>Viola glabella</i>	Violaceae
Western Blue Violet	<i>Viola adunca</i>	Violaceae

Table 3. Noxious Weeds on the Oregon Department of Agriculture Noxious Weed List that are known to be or have been present on Minam River Wildlife Area. All species are subject to active control efforts. *Invasive plants identified in 2016 Oregon Conservation Strategy)

Common Name	Scientific Name	ODA Weed Class ^b
Canada Thistle	<i>Cirsium arvense</i>	B
Cheatgrass ^a	<i>Bromus tectorum</i>	B
Diffuse Knapweed ^a	<i>Centaurea diffusa</i>	B
Fiddleneck Tarweed	<i>Amsinckia intermedia</i>	B
Field Bindweed	<i>Convolvulus arvensis L.</i>	B
Medusahead Wild Rye	<i>Taeniatherum caput-medusae</i>	B
Puncture Vine	<i>Tribulus terrestris L.</i>	B
Russian Knapweed ^a	<i>Acroptilon repens</i>	B
Scotch Thistle ^a	<i>Onopordum acanthium</i>	B
Tansy Ragwort	<i>Senecio jacobaea</i>	B
Ventenata	<i>Ventenata dubia</i>	B
Whitetop	<i>Lepidium draba L. Desv.</i>	B
Yellow Star Thistle	<i>Centaurea solstitialis</i>	B
Meadow Hawkweed	<i>Hieracium caespitosum</i>	B
Sulfer Cinquefoil	<i>Potentilla recta</i>	B
Houndstongue	<i>Cynoglossum officinale</i>	B

^a Invasive plants identified in 2016 Oregon Conservation Strategy

^b All species listed as “B”, which designates a weed of known economic importance which is regionally abundant but may have limited distribution in some counties.

Appendix B: Fish and Wildlife Resources

The MRWA contains a diverse array of wildlife and plant species found within the Blue Mountain Ecoregion. Numerically, birds comprise the largest group of species known to occur on the wildlife area. With approximately 131 species currently inventoried, most of these species utilize the wildlife area seasonally with few year-round residents. Current and past species inventory data and surveys and incidental observations indicate that the MRWA is inhabited by 18 species of fish, 13 species of amphibians and reptiles, 54 species of mammals, and 119 plant species. Further research and surveys are required to establish information regarding the presence and abundance of invertebrates, other small mammals, and species of conservation concern to further understand abundance, timing and frequency of use on the MRWA. See Table 1 for a list of MRWA fish and wildlife species.

Birds

Birds are the most prevalent group of species present on the MRWA. Of the 131 species inventoried, passerines comprise the largest portion. As is the case with most forested land within the Blue Mountain Ecoregion, neotropical migrants seasonally visit or inhabit MRWA due to its abundance of foraging and nesting habitat, and the areas proximity to or use as migratory corridors linking summering and wintering habitats. Species such as the American goldfinch (*Carduelis tristis*), Bullocks oriole, western tanager, yellow-rumped warbler (*Dendroica coronata*), and bluebirds may be frequently observed on the area.

Downy (*Picoides pubescens*) and hairy woodpeckers (*Picoides villosus*) are found inhabiting much of the same habitat as the passerines and are commonly observed. Citizen science resources including eBird (<https://ebird.org/home>) and iNaturalist - Oregon (<https://www.inaturalist.org/places/oregon-us>) has documented the presence and status of other picoformes such as the white-headed woodpecker, pileated woodpecker, Lewis's woodpecker, black-backed woodpecker, American three-toed woodpecker, flicker, red-napped sapsucker and Williamson's sapsucker on the MRWA.

Raptors are common on the MRWA with bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), and American kestrel (*Falco sparverius*) accounting for most observations. Rough-legged hawk, northern goshawk, Swainson's hawk, prairie falcon, northern saw-whet owl, long-eared owl, northern pygmy owl, western screech owl, flammulated owl, great gray owl, great horned owl have also been observed. These species utilize the area seasonally and year-round for nesting, perching, and foraging habitat. Raptor abundance throughout the grassland and forested habitats is quite variable due to varying abundance and availability of ground nesting birds, small mammal and reptile populations.

Populations of upland game bird species on the MRWA include California quail (*Callipepla Californica*), chukar (*Alectoris chukar*), Hungarian partridge (*Perdix perdix*), Rio Grande turkey (*Meleagris galopavo intermedia*), blue grouse and ruffed grouse. MRWAs woodlands and riparian areas with a shrub understory provide foraging, nesting and escapement cover for quail and turkey. Similarly, canyon rims and benches dominated by shrub understory provide abundant populations of blue and ruffed grouse with the same habitat attributes for foraging, nesting, and escapement cover. Although infrequently encountered, chukar and Hungarian partridge may be observed on the MRWAs open canyon rims or immediately adjacent to these areas in grassland habitat. During the fall and spring months visitors may encounter sandhill cranes (*Grus canadensis*). Sandhill cranes often stop at the MRWA for short durations to rest and feed at stock/wildlife ponds and grasslands before continuing with their migration.

Mammals

Approximately 54 species of mammals are known to reside on the MRWA. Most of these species inhabit the area year-round, but many may only occur infrequently or occur in large numbers seasonally. Species which only occur seasonally are largely composed of the bat species. Although no bat surveys have been conducted on the MRWA to date, recent surveys near Lookingglass creek northwest of MRWA documented bat species that include Big brown bat, Hoary bat, Silver-haired bat, California myotis, Western small-footed myotis, Long-eared myotis, Little brown bat, Fringed myotis, Long-legged myotis, Yuma myotis. Bat habitat in the area modeled by Orbic and Compass includes all the species above plus pallid bat, and Townsend's big-eared bat. Little is currently known regarding these species' abundance upon the MRWA. Implementation of a similar survey within the MRWA shall provide insight into such information.

Mammal species which exhibit the most dramatic seasonal shifts in abundance include Rocky Mountain elk and mule deer. A large-scale collaring effort has been initiated in the greater Blue Mountain ecoregion to collect baseline temporal and spatial information on mule deer and elk; including those utilizing the wildlife area and adjacent lands. Information gained can provide a basis of habitat utilization and relative responses to pasture restoration and enhancement activities conducted on the wildlife area.

Additionally, collar data may provide localized spatial movements throughout the wildlife area and during high periods of use, in responses to weather events and environmental conditions, and larger seasonal movements upon the landscape. Found throughout MRWA habitats, elk range in population from approximately 50-100 in summer months to more than 1,000 during the winter months. Wintering elk populations can vary on the wildlife area based on the severity of winter weather conditions.

The variety of habitat types on the MRWA provides critical winter range for elk and summer/transitional/winter range for mule deer. Elk utilize the area most heavily from November-May when grassland, woodland, shrubland, and riparian habitats serve to meet nutritional requirements for overwinter survival. Nutritional requirements are critical for body maintenance, growth, recovery of energy stores, mid-late term fetal development, and post-parturition (lactation, etc.). It is critical that MRWA strive to meet or exceed the habitat and nutritional requirements of native ungulates. Providing the highest quality habitat also helps to alleviate potential damage on adjacent private lands.

Habitat for Rocky Mountain Bighorn Sheep (RMBS) is present and available within the MRWA. While a small population of RMBS are known to occupy an area south of the MRWA, it is unlikely that they would be found on the wildlife area. It is possible that dispersing RMBS would move through the MRWA but unlikely for them to take up permanent residence.

The MRWA also contain species such as American Beaver (*Castor Canadensis*), raccoon (*Procyon lotor*), mountain lion (*Puma concolor*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), and badger (*Taxidea taxus*) which are common and/or abundant. Comprehensive surveys to discern distribution, abundance, and presence of rodents are lacking. Incidental observations indicate species such as deer mice (*Peromyscus maniculatus*), bushy-tailed woodrat (*Neotoma cinerea*), and golden-mantled ground squirrel (*Spermophilus lateralis*) are present and common. Future surveys shall provide insight and representation of small mammal assemblages within the MRWA.

Gray wolves (*Canis lupus*) presence on the wildlife area has been documented. MRWA is part of the Bear Creek Pack's territory and is utilized by these wolves throughout the summer, fall, and winter, with occasional visits in the spring. [ODFW's gray wolves page](#) provides more information.

Amphibians and Reptiles

A total of thirteen species are documented or have modeled habitat available within the MRWA. This includes nine reptile and four species of amphibians. Reptile species present include western rattlesnake (*Crotalus oregonus*), bull snake (*Pituophis catenifer sayi*), northern rubber boa (*Charina bottae*), racer (*Coluber constrictor*), western fence lizard (*Sceloporus occidentalis*), western skink (*Eumeces skiltonianus*), common garter snake (*Thamnophis sirtalis*), Western terrestrial garter snake (*Thamnophis elegans*) and Western painted turtle (*Chrysemys picta bellii*).

These species are common and inhabit all MRWA habitats. Amphibian species include Columbia spotted frog, Pacific chorus frog (*Hyla regilla*), Rocky Mountain tailed frog

(*Ascaphus montanus*), and western toad (*Anaxyrus boreas*). It is believed that these species are present within riparian areas and ponds throughout the MRWA. These areas provide important habitat for spotted frogs and peripherally important for western toads. Future management should focus on inventory/surveys that identify species presence, distribution, and abundance on the MRWA.

Fish and Aquatic Invertebrates

The MRWA contains or is immediately adjacent to suitable habitat for 18 species of fish (Table 1) including three listed species (Table 2). Habitat enhancement activities for these species includes both passive and active management. Passive management is achieved through vegetation maintenance oriented/conducted to prevent degradation of water quality, enhancement of water quantity, and to improve aquatic habitat for fish. Active management may entail in-stream projects designed to aggrade the stream bed, roughen channels, reactivate old channel threads and connect to the historic flood plain. Summer steelhead/Columbia redband trout (*Oncorhynchus mykiss*) are present in the Minam River, Wallowa River, Deer Creek, Weelikéecet Creek, Gunderson Creek, and Cougar Creek. Bull trout (*Salvelinus confluentus*) inhabit the Minam River, Wallowa River, and Deer Creek. Both resident and fluvial bull trout inhabit the wildlife area.

Spring/summer Chinook salmon (*Oncorhynchus tshawytscha*) use the Minam River in the MRWA as a primary migratory corridor on their migrations to and from spawning and rearing areas upstream. Chinook salmon also migrate up the Wallowa River to spawn. Since being reintroduced in 2017, coho salmon (*Oncorhynchus kisutch*) have been observed migrating up the Minam River through the wildlife area, and natural origin juveniles have been collected near the confluence with the Wallowa River indicating there may be successful spawning and rearing in the Minam River and potentially on the wildlife area. Coho salmon migrate up the Wallowa River where their principal spawning and rearing habitat is located. Naturally produced coho salmon are becoming more common in the Wallowa River with an estimated 60 natural origin adult Coho Salmon returning to the Wallowa River in 2024.

Robust populations of mountain whitefish (*Prosopium williamsoni*) use the Wallowa and Minam Rivers including the portions of both that are on the wildlife area. Mountain whitefish are highly migratory, and many of the whitefish occupying the Minam River Wildlife Area likely use large portions of the Wallowa and Grande Ronde watersheds. Pacific lamprey (*Entosphenus tridentatus*) occupy both the Wallowa and Minam Rivers. Currently, efforts are being led by the Confederated Tribes of the Umatilla Indian Reservation and the Nez Perce Tribe to bolster the population of Pacific Lamprey. Active translocations of adult Pacific lamprey occurred on the Minam River on the Minam River Wildlife Area.

Native Leuciscids (minnows) present on the wildlife area include northern pikeminnow (*Ptychocheilus oregonensis*), speckled dace (*Rhinichthys osculus*), longnose dace (*Rhinichthys cataractae*), redbreasted sunfish (*Richardsonius balteatus*), and peamouth (*Mylocheilus caurinus*). These minnow species most commonly occupy larger rivers like the Wallowa and Minam Rivers. Both species of daces occupy smaller tributaries in addition to mainstem habitats. Two species of suckers occupy the wildlife area in the Wallowa and Minam Rivers. Both bridgelip suckers (*Catostomus columbianus*) and largescale suckers (*Catostomus macrocheilus*) are common in the Wallowa River on the MRWA. Torrent sculpin (*Cottus rhotheus*), Paiute sculpin (*Cottus beldingii*), and shorthead sculpin (*Cottus confusus*) are all present in streams of the Minam River Wildlife Area.

Non-native fish are rare anywhere in the vicinity of the MRWA. The streams of the Minam River Wildlife area are unique in that the fish assemblages are made up nearly entirely of native species. The few non-native fish documented on the wildlife area are smallmouth bass (*Micropterus dolomieu*) captured in the Minam River near the confluence with the Wallowa River. These observations have been infrequent and isolated to periods of low and warm water.

Streams of the MRWA are home to a wide variety of aquatic invertebrates. Western pearlshell mussels (*Margaritifera falcata*) are common in the lower Minam River with some large beds present near Wildlife Flat trailhead. These mussels are sensitive to hydrologic alterations needing healthy streams to survive. In healthy streams western pearlshell mussels can live more than 60 years. They are listed by the International Union for Conservation of Nature as “near threatened” because of range wide population decreases including mass die-offs in some locations. The Wallowa River Watershed is also home to native signal crayfish (*Pacifastacus leniusculus*).

Diverse aquatic invertebrate communities exist in streams of the Minam River Wildlife Area. Common stonefly species include giant salmonflies (*Pteronarcys californica*) and golden stoneflies (*Hesperoperla pacifica*), both constitute important food resources for fish and riparian bird species. Robust communities of mayflies and caddisflies are also common including *Ephemerellid* mayflies, *Baetid* mayflies (pale morning dun), October caddis (family *Limnephilidae*), and *Brachycentridae* caddisflies. The robust community of aquatic macroinvertebrates provides a critical food base for aquatic and riparian consumers including fish, bats, riparian birds, and specialist aquatic insectivores like *Tetragnathid* spiders.

Species of Conservation Concern

Thirty-one species of conservation concern on MRWA either occur, have previously been observed/recorded, or have suitable habitat present within their distribution or range (Table 2; ODFW 2016 and USFWS 2025). These species of conservation

concern include 12 birds, 8 mammals, 3 amphibians/reptiles, and 4 fish. Birds include an assortment of raptors, waterfowl, woodpeckers, and passerines. Species such as Swainson's hawk (*Buteo swainsoni*), great gray owl (*Strix nebulosa*), Lewis woodpecker (*Melanerpes lewis*), white-headed woodpecker (*Picoides albolarvatus*), pileated woodpecker (*Dryocopus pileatus*), and olive-sided flycatcher (*Contopus cooperi*) may be common in some geographic locations but overall are in decline within their individual species distribution.

Mammals of conservation concern consist entirely of bat species. Species presence is likely due to a sufficient quantity of roosting sites within woodland and riparian habitats and invertebrate populations within riparian and grassland habitats.

Amphibian species of conservation concern include Columbia spotted frog and western toad. It is believed that these species occur on the MRWA as suitable habitat is present within riparian areas, permanent and intermittent streams, and ponds throughout the MRWA. Quality of habitat for these species is ensured through passive management activities, while quantity of habitat is provided through maintenance and management of 80+ developed stock/wildlife ponds located throughout the MRWA. Further surveys are required to adequately determine presence and abundance of amphibian populations. Fish species of conservation concern are found in the Wallowa River, Minam River, and several tributaries. These species consist of summer steelhead/Columbia redband trout, and spring Chinook. Weelikéecet Creek is designated as a fish bearing stream with use by federally listed steelhead. Management activities for these species includes both passive and active prescriptions through vegetation maintenance oriented/conducted to prevent degradation of water quality, enhancement of water quantity, and future in-stream work to improve aquatic habitat for fish.

Non-Native Species

Prior inventories and observations suggest the MRWA has seven non-native fish and wildlife species. Most are introduced game birds which are considered desirable for recreational benefit. These include upland game birds such as chukar, Hungarian partridge, California quail, and wild turkey. These species add to the diversity of the MRWA and provide additional recreational value to visitors. The sole non-native mammal is the house mouse. Smallmouth bass, an introduced fish species that are widely known to prey on native fish. Smallmouth bass make seasonal migrations into the lower sections of the Minam River from the Snake and Grande Ronde Rivers during late summer when water temperatures are more favorable.

Table 1. Fish and Wildlife Species Known to Occur on Minam River Wildlife Area

AVIAN Order-Common Name	Scientific Name	Winter	Spring	Summer	Fall
Anseriformes					
Blue winged teal	<i>Spatula discors</i>	X	R	R	R
Canada goose	<i>Branta canadensis</i>	O	C	C	C
Cinnamon teal	<i>Spatula cyanoptera</i>	X	U	R	R
Common merganser	<i>Mergus merganser</i>	C	C	C	C
Green-winged teal	<i>Spatula crecca</i>	U	U	U	R
Mallard	<i>Anas platyrhynchos</i>	U	C	C	C
Northern pintail	<i>Anas acuta</i>	X	R	R	R
Northern shoveler	<i>Spatula clypeata</i>	X	R	R	R
Redhead	<i>Aythya americana</i>	X	R	R	R
American Widgeon	<i>Anas americana</i>	X	R	R	R
Apodiformes					
Black-chinned hummingbird	<i>Archilochus alexandri</i>	X	U	U	R
Rufous hummingbird	<i>Selasphorus rufus</i>	X	C	C	R
Caprimulgiformes					
Common nighthawk	<i>Chordeiles minor</i>	C	C	C	C
Charadriiformes					
California gull	<i>Larus californicus</i>	X	R	R	R
Killdeer	<i>Charadrius vociferus</i>	X	U	U	R
Long-billed dowitcher	<i>Limnodromus scolopaceus</i>	X	X	U	U
Spotted Sandpipers	<i>Actitis macularius</i>	R	C	C	U
Upland sandpiper (Plover)	<i>Bartramia longicauda</i>		R	R	
Wilson's snipe	<i>Gallinago delicata</i>	X	U	U	R
Ciconiiformes					
Great blue heron	<i>Ardea herodias</i>	R	C	C	O
Turkey vulture	<i>Cathartes aura</i>	X	O	O	O
Columbiformes					
Mourning dove	<i>Zenaida macroura</i>	R	C	C	C
Coraciiformes					
Belted kingfisher	<i>Megaceryle alcyon</i>	C	C	C	C
Falconiformes					
American kestrel	<i>Falco sparverius</i>	C	C	C	C
Bald eagle	<i>Haliaeetus leucocephalus</i>	C	C	C	C
Coopers hawk	<i>Astur cooperii</i>	C	C	C	C
Ferruginous hawk	<i>Buteo regalis</i>	U	O	R	R
Golden eagle	<i>Aquila chrysaetos</i>	C	C	C	C
American goshawk	<i>Astur gentilis</i>	R	R	R	R

Occurrence Key: **C** = Common, **U** = Uncommon, **O** = Occasional, **R** = Rare, **X** = Status Unknown

AVIAN Order-Common Name	Scientific Name	Winter	Spring	Summer	Fall
Northern harrier	<i>Circus hudsonius</i>	X	U	U	R
Red-tailed hawk	<i>Buteo jamaicensis</i>	C	C	C	C
Rough-legged hawk	<i>Buteo lagopus</i>	C	S	X	O
Sharp-shinned hawk	<i>Accipiter striatus</i>	C	C	C	C
Swainson's hawk	<i>Buteo swainsoni</i>	X	R	R	R
Galliformes					
California quail	<i>Callipepla Californica</i>	U	U	U	U
Chukar	<i>Alectoris chukar</i>	O	O	O	O
Dusky grouse	<i>Dendragapus obscurus</i>	C	C	C	C
Gray partridge (Hungarian)	<i>Perdix perdix</i>	U	U	U	U
Mountain quail	<i>Oreortyx pictus</i>	U	U	U	U
Rio Grande wild turkey	<i>Meleagris galopavo intermedia</i>	U	U	U	U
Ruffed grouse	<i>Bonasa umbellus</i>	C	C	C	C
Spruce grouse	<i>Canachites canadensis</i>	R	R	R	R
Gruiformes					
American coot	<i>Fulica americana</i>	X	R	R	R
Sandhill crane	<i>Antigone canadensis</i>	X	O	O	O
Passeriformes					
American crow	<i>Corvus brachyrhynchos</i>	C	C	C	C
American dipper	<i>Cinclus mexicanus</i>	C	C	C	C
American goldfinch	<i>Spinus tristis</i>	X	C	C	O
American robin	<i>Turdus migratorius</i>	X	C	C	U
Barn swallow	<i>Hirundo rustica</i>	X	U	U	R
Black-billed magpie	<i>Pica hudsonia</i>	C	C	C	C
Black-capped chickadee	<i>Poecile atricapillus</i>	C	C	C	C
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>	X	C	C	O
Black swift	<i>Cypseloides niger</i>	X	O	O	U
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	R	C	C	U
Brown creeper	<i>Certhia americana</i>	C	C	C	C
Brown-headed cowbird	<i>Molothrus ater</i>	O	C	C	O
Bullock's oriole	<i>Icterus bullockii</i>	X	C	C	X
Canyon wren	<i>Catherpes mexicanus</i>	X	O	O	X
Cassin's finch	<i>Haemorhous cassinii</i>	R	O	O	U
Cassin's vireo (Solitary)	<i>Vireo cassinii</i>	R	O	O	R
Cedar waxwing	<i>Bombycilla cedrorum</i>	U	R	R	U
Chipping sparrow	<i>Spizella passerina</i>	X	X	X	X
Clark's nutcracker	<i>Nucifraga columbiana</i>	C	C	C	C
Common raven	<i>Corvus corax</i>	C	C	C	C
Dark-eyed junco (Oregon)	<i>Junco hyemalis</i>	C	C	C	C
Eastern kingbird	<i>Tyrannus tyrannus</i>	R	U	U	R
European starling	<i>Sturnus vulgaris</i>	C	C	C	C
Evening grosbeak	<i>Coccothraustes vespertinus</i>	U	C	C	U

Occurrence Key: **C** = Common, **U** = Uncommon, **O** = Occasional, **R** = Rare, **X** = Status Unknown

AVIAN Order-Common Name	Scientific Name	Winter	Spring	Summer	Fall
Golden-crowed kinglet	<i>Regulus satrapa</i>	X	O	C	O
Golden-crowned sparrow	<i>Zonotrichia atricapilla</i>	O	U	U	O
Gray jay (Canada)	<i>Perisoreus canadensis</i>	C	C	C	C
Green-tailed Towhee	<i>Pipilo chlorurus</i>	X	R	R	R
House Wren	<i>Troglodytes aedon</i>	R	R	R	R
Mountain Bluebird	<i>Sialia currucoides</i>	C	C	C	C
Mountain Chickadee	<i>Poecile gambeli</i>	C	C	C	C
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	X	R	R	X
Northern Shrike	<i>Lanius borealis</i>	U	U	U	U
Lazuli Bunting	<i>Passerina amoena</i>	X	U	U	R
Olive-sided Flycatcher	<i>Contopus cooperi</i>	X	U	U	R
Orange-crowned Warbler	<i>Leiothlypis celata</i>	X	C	C	U
Pine Grosbeak	<i>Pinicola enucleator</i>	U	U	U	U
Pine Siskin	<i>Spinus pinus</i>	C	C	C	C
Pygmy Nuthatch	<i>Sitta pygmaea</i>	C	C	C	C
Red-breasted Nuthatch	<i>Sitta canadensis</i>	C	C	C	C
Red Crossbill	<i>Loxia curvirostra</i>	O	C	C	O
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	X	C	C	O
Rock Wren	<i>Salpinctes obsoletus</i>	X	O	O	U
Ruby-crowed Kinglet	<i>Corthylio calendula</i>	X	U	U	R
Say's Phoebe	<i>Sayornis saya</i>	X	C	C	O
Song Sparrow	<i>Melospiza melodia</i>	O	C	C	O
Spotted Towhee	<i>Pipilo maculatus</i>	X	C	C	O
Steller's Jay	<i>Cyanocitta stelleri</i>	O	O	O	O
Swainson's Thrush	<i>Catharus ustulatus</i>	X	O	O	R
Townsend's Solitaire	<i>Myadestes townsendi</i>	X	U	U	U
Townsend's Warbler	<i>Setophaga townsendi</i>	X	O	O	U
Tree Swallow	<i>Tachycineta bicolor</i>	X	U	U	R
Varied Thrush	<i>Ixoreus naevius</i>	R	U	U	R
Vaux's Swift	<i>Chaetura vauxi</i>	X	C	C	O
Vesper Sparrow	<i>Poocetes gramineus</i>	U	C	C	U
Violet-green Swallow	<i>Tachycineta thalassina</i>	X	C	C	U
Warbling Vireo	<i>Vireo gilvus</i>	X	O	O	R
Western Bluebird	<i>Sialia mexicana</i>	X	C	C	C
Western Kingbird	<i>Tyrannus verticalis</i>	X	C	C	O
Western Meadowlark	<i>Sturnella neglecta</i>	X	C	C	O
Western Tanager	<i>Piranga ludoviciana</i>	X	C	C	O
Western Wood-Pewee	<i>Contopus sordidulus</i>	X	O	O	R
White-breasted Nuthatch	<i>Sitta carolinensis</i>	C	C	C	C
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	C	C	C	C
White-throated Swift	<i>Aeronautes saxatalis</i>	X	O	O	U

Occurrence Key: **C** = Common, **U** = Uncommon, **O** = Occasional, **R** = Rare, **X** = Status Unknown

AVIAN Order-Common Name	Scientific Name	Winter	Spring	Summer	Fall
Willow Flycatcher	<i>Empidonax traillii</i>	X	U	U	R
Yellow Warbler	<i>Setophaga petechia</i>	X	C	C	U
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	X	R	R	X
Yellow-rumped Warbler	<i>Setophaga coronata</i>	X	C	C	U
Piciformes					
American Three-toed Woodpecker	<i>Picoides dorsalis</i>	U	U	U	U
Black-backed Woodpecker	<i>Picoides arcticus</i>	O	O	O	O
Downy Woodpecker	<i>Dryobates pubescens</i>	C	C	C	C
Hairy Woodpecker	<i>Dryobates villosus</i>	C	C	C	C
Lewis's Woodpecker	<i>Melanerpes lewis</i>	X	U	U	R
Northern Flicker	<i>Colaptes auratus</i>	C	C	C	C
Pileated Woodpecker	<i>Dryocopus pileatus</i>	R	U	U	U
Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>	U	O	O	U
White-headed Woodpecker	<i>Dryobates albolarvatus</i>	R	O	O	U
Williamson's Sapsucker	<i>Sphyrapicus thyroideus</i>	U	U	U	U
Strigiformes					
Flammulated Owl	<i>Psiloscoops flammeolus</i>				
Great Gray Owl	<i>Strix nebulosa</i>	O	O	O	O
Great Horned Owl	<i>Bubo virginianus</i>	C	C	C	C
Long-eared Owl	<i>Asio otus</i>	O	O	O	O
Northern Pygmy Owl	<i>Glaucidium gnoma</i>	C	O	O	O
Northern Saw-whet Owl	<i>Aegolius acadicus</i>	O	O	O	O
Short-eared Owl	<i>Asio flammeus</i>	O	O	O	O
Western screech Owl	<i>Megascops kennicottii</i>				
MAMMAL Order-Common Name	Scientific Name	Winter	Spring	Summer	Fall
Artiodactyla					
Mule Deer	<i>Odocoileus hemionus</i>	C	C	C	C
Pronghorn	<i>Antilocapra americana</i>	R	R	R	R
Rocky Mountain Elk	<i>Cervus elaphus canadensis</i>	C	C	C	C
Rocky Mountain Bighorn Sheep	<i>Ovis canadensis</i>	R	R	R	R
Whitetail Deer	<i>Odocoileus virginianus</i>	C	C	C	C
Carnivora					
American Badger	<i>Taxidea taxus</i>	O	O	O	O
American Martin	<i>Martes americana</i>	R	R	R	R
Black Bear	<i>Ursus americanus</i>		C	C	C
Bobcat	<i>Lynx rufus</i>	C	C	C	C
Cougar	<i>Puma concolor</i>	C	C	C	C
Coyote	<i>Canis latrans</i>	C	C	C	C
Gray Wolf	<i>Canis lupus linnaeus</i>	C	O	C	C

Occurrence Key: **C** = Common, **U** = Uncommon, **O** = Occasional, **R** = Rare, **X** = Status Unknown

MAMMAL Order-Common Name	Scientific Name	Winter	Spring	Summer	Fall
American Mink	<i>Mustela vison</i>	O	C	C	C
Raccoon	<i>Procyon lotor</i>	C	C	C	C
Red Fox	<i>Vulpes vulpes</i>	X	X	X	X
Northern River Otter	<i>Lontra canadensis</i>	O	O	O	O
Striped Skunk	<i>Mephitis mephitis</i>		O	O	O
Weasel	<i>Mustela spp.</i>	O	O	O	O
Wolverine	<i>Gulo gulo</i>	X	X	X	X
Chiroptera					
Big Brown Bat	<i>Eptesicus fuscus</i>	X	X	C	X
California Myotis	<i>Myotis californicus</i>	X	X	C	X
Fringed Myotis	<i>Myotis thysanodes</i>	X	X	C	X
Hoary Bat	<i>Lasiurus cinereus</i>	X	X	C	X
Little Brown Bat	<i>Myotis lucifugus</i>	X	X	C	X
Long-eared Myotis	<i>Myotis evotis</i>	X	X	C	X
Long-legged Myotis	<i>Myotis volans</i>	X	X	C	X
Pallid Bat	<i>Antrozous pallidus</i>	X	X	X	X
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	X	X	C	X
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	X	X	X	X
Yuma Myotis	<i>Myotis yumanensis</i>	X	X	C	X
Lagomorpha					
American Pika	<i>Ochotona princeps</i>	X	X	X	X
Black-tailed Jackrabbit	<i>Lepus californicus</i>	R	R	R	R
Mountain Cottontail Rabbit	<i>Sylvilagus nuttallii</i>	C	C	C	C
Snowshoe Hare	<i>Lepus americanus</i>	O	O	O	O
White-tailed Jackrabbit	<i>Lepus townsendii</i>	X	X	X	X
Rodentia					
Beaver	<i>Castor canadensis</i>	O	O	O	O
Belding's Ground Squirrel	<i>Spermophilus beldingi</i>	X	X	X	X
Bush-tailed Woodrat	<i>Neotoma cinerea</i>	C	C	C	C
Columbian Ground Squirrel	<i>Spermophilus columbianus</i>	X	C	O	X
Deer Mouse	<i>Peromyscus maniculatus</i>	C	C	C	C
Golden-mantled Ground Squirrel	<i>Callospermophilus lateralis</i>	C	C	C	C
Heather Vole	<i>Phenacomys intermedius</i>	U	U	U	U
House Mouse	<i>Mus musculus</i>	U	U	U	U
Least Chipmunk	<i>Neotamias minimus</i>	O	O	O	O
Long-tailed Vole	<i>Microtus longicaudus</i>	C	C	C	C
Montane Vole	<i>Microtus montanus</i>	U	U	U	U
Muskrat	<i>Ondatra zibethicus</i>	O	O	O	O
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>	R	R	R	R
Northern Pocket Gopher	<i>Thomomys talpoides</i>	C	C	C	C
North American Porcupine	<i>Erethizon dorsatus</i>	C	C	C	C

Occurrence Key: **C** = Common, **U** = Uncommon, **O** = Occasional, **R** = Rare, **X** = Status Unknown

AMPHIBIAN/REPTILE Order-Common Name	Scientific Name	Winter	Spring	Summer	Fall
Red Squirrel	<i>Tamiasciurus hudsonicus</i>	C	C	C	C
Southern Red-backed Vole	<i>Myodes gapperi</i>	R	R	R	R
Water Vole	<i>Microtus richardsoni</i>	X	R	R	R
Western Jumping Mouse	<i>Zapus princeps</i>	U	U	U	U
Yellow-bellied Marmot	<i>Marmota flaviventris</i>	R	R	R	R
Yellow-pine Chipmunk	<i>Neotamias amoenus</i>	C	C	C	C
Anura					
Columbia Spotted Frog	<i>Rana luteiventris</i>	X	X	X	X
Rocky Mountain Tailed Frog	<i>Ascaphus montanus</i>	X	X	X	X
Pacific Chorus Frog	<i>Pseudacris regilla</i>		C	C	C
Western Toad	<i>Anaxyrus boreas</i>		C	C	C
Squamata					
Bull Snake	<i>Pituophis catenifer sayi</i>		C	C	C
Common Garter Snake	<i>Thamnophis sirtalis</i>		C	C	C
Racer Snake	<i>Coluber constrictor</i>		C	C	C
Rubber Boa	<i>Charina bottae</i>		C	C	C
Western Rattlesnake	<i>Crotalus oregonus</i>		C	C	C
Western Fence Lizard	<i>Sceloporus occidentalis</i>		C	C	C
Western Skink	<i>Eumeces skiltonianus</i>		C	C	C
Western Terrestrial Garter Snake	<i>Thamnophis elegans</i>		C	C	C
Testudines					
Western Painted Turtle	<i>Chrysemys picta bellii</i>	X	X	X	X
FISH Order-Common Name	Scientific Name	Winter	Spring	Summer	Fall
Cypriniformes					
Bridgelip Sucker	<i>Catostomus columbianus</i>		Abundant		
Chiselmouth	<i>Acrocheilus alutaceus</i>		Abundant		
Coarsescale Sucker	<i>Catostomas macrocheilus</i>		Abundant		
Longnose Dace	<i>Rhinichthys cataractae</i>		Abundant		
Northern Pike Minnow	<i>Ptychocheilus oregonensis</i>		Abundant		
Redside Shiner	<i>Clinostomus elongatus</i>		Abundant		
Speckled Dace	<i>Rhinichthys osculus</i>		Abundant		
Perciformes					
Smallmouth Bass	<i>Myropteris dolomieu</i>		Rare		
Salmoniformes					
Bull Trout	<i>Salvelinus confluentus</i>		Uncommon		
Coho Salmon	<i>Oncorhynchus kisutch</i>		Occasional		
Mountain Whitefish	<i>Prosopium williamsoni</i>		Common		
Redband/inland Rainbow Trout	<i>Onchoryncus mykiss gairdnerii</i>		Abundant		

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FISH					
Order-Common Name	Scientific Name	Winter	Spring	Summer	Fall
Spring Chinook Salmon	<i>Onchoryncus tshawytscha.</i>	Seasonally common			
Steelhead	<i>Onchoryncus mykiss</i>	Abundant			
Scorpaeniformes					
Mottled Sculpin	<i>Cottus bairdii</i>	Common			
Paiute Sculpin	<i>Cottus beldingii</i>	Common			
Torrent Sculpin	<i>Cottus rhotheus</i>	Common			
Petromyzontiformes					
Pacific Lamprey	<i>Entosphenus tridentatus</i>	Abundant			
INVERTEBRATES					
Order-Common Name	Scientific Name	Winter	Spring	Summer	Fall
Araneae					
Black Widow Spider	<i>Latrodectus hesperus</i>		C	C	O
Jumping Spider	<i>Phidippus spp.</i>		C	C	
Running Crab Spider	<i>Philodromus spp.</i>		C	C	
Ornamental Orbweaver	<i>Larinioides patagiatus</i>		U	C	U
Stretch Spider	<i>Tetragnatha spp.</i>			C	U
Western Lynx Spider	<i>Oxyopes scalaris</i>		C	C	
Wolf Spider	<i>Pardoza spp.</i>	R	C	C	C
Coleoptera					
California Root Borer	<i>Prionus californicus</i>			C	R
Lady Beetle	<i>Hippodamia spp.</i>		X	X	
Diptera					
Willow Pinecone Gall Midge	<i>Trimerotropis fontana</i>		O	O	X
Hemiptera					
Brown Waterscorpion	<i>Ranatra fusca</i>	R	C	C	U
Common Water Strider	<i>Aquarius remigis</i>		C	C	U
Salmonfly Cicada				C	
Hymenoptera					
California Horntail Wasp	<i>Urocerus californicus</i>		X	C	X
Half-backed Bumble Bee	<i>Bombus vagans</i>		R	C	R
Nevada Bumble Bee	<i>Bombus nevadensis</i>		C	C	R
Thread-waisted Wasp	<i>Ammophila procera</i>			C	R
Western Yellowjacket	<i>Vespula pensylvanica</i>		C	C	U
Lepidoptera					
Anise Swallowtail	<i>Papilio zelicaon</i>		C	C	
Arrowhead Blue	<i>Glaucopsyche piasus</i>		C	C	
Asher's Blue	<i>Celastrina asheri</i>		C	C	
Banded Woollybear	<i>Pyrrharctia isabella</i>		C	C	C
Blinded Sphinx	<i>Paonias excaecata</i>			C	U

Occurrence Key: **C** = Common, **U** = Uncommon, **O** = Occasional, **R** = Rare, **X** = Status Unknown

INVERTEBRATES Order-Common Name	Scientific Name	Winter	Spring	Summer	Fall
Blue Copper	<i>Tharsalea heteronea</i>		R	C	
Boisduval's Blue	<i>Icaricia icarioides</i>		C	C	
California Tortoiseshell	<i>Nymphalis californica</i>		C	R	
Ceanothus Silkmoth	<i>Hyalophora euryalus</i>	U	C	C	
Common Ringlet	<i>Coenonympha californica</i>		C	C	U
Common Roadside-skipper	<i>Amblyscirtes vialis</i>		C	U	
Confusing Petrophila	<i>Petrophila confusalis</i>		C	C	U
Dreamy Duskywing	<i>Erynnis icelus</i>		C	C	
Echo Azure	<i>Celastrina echo</i>		C	C	U
Edith's Copper	<i>Tharsalea editha</i>			C	
Featherduster Moth	<i>Agriphila spp.</i>				
Field Crecent	<i>Phyciodes pulchella</i>		R	C	U
Greenish Blue	<i>Icaricia saepiolus</i>			C	
Hoary Comma	<i>Polygonia gracilis</i>		U	C	U
Indra Swallowtail	<i>Papilio indra</i>		C	C	
Lorquin's Admiral	<i>Limenitis lorquini</i>		C	C	U
Lupine Blue	<i>Icaricia lupini</i>		C	C	
Mormon Metalmark	<i>Apodemia mormo</i>		C	C	U
Mourning Cloak	<i>Nymphalis antiopa</i>			C	U
Northern Checkerspot	<i>Chlosyne palla</i>		C	C	
Northern Cloudywing	<i>Thorybes pylades</i>			C	C
Orange Sulphur	<i>Colias eurytheme</i>			C	C
Oreas Comma	<i>Polygonia oreas</i>		C	C	U
Pale Swallowtail	<i>Papilio eurymedon</i>		C	C	
Painted Lady	<i>Vanessa cardui</i>		O	C	C
Purplish Copper	<i>Tharsalea helloides</i>			C	U
Ranchman's Tiger Moth	<i>Arctia virginalis</i>		C	C	
Rocky Mountain Parnassian	<i>Parnassius smintheus</i>			C	
Silvery Blue	<i>Glaucopsyche lygdamus</i>		C	U	
Snowberry Checkerspot	<i>Euphydryas colon</i>		C	C	
Spotted Tussock Moth	<i>Lophocampa maculata</i>			C	U
Two-tailed Swallowtail	<i>Papilio multicaudata</i>			C	
Western Tiger Swallowtail	<i>Papilio rutulus</i>			C	
White-lined Sphinx	<i>Hyles lineata</i>	U	C	C	C
Woodland Skipper	<i>Ochlodes sylvanoides</i>			C	U
Yellow-veined Moth	<i>Microtheoris ophionalis</i>		C	C	U
Odonota					
Common Whitetail	<i>Plathemis lydia</i>		U	C	O
Pale Snaketail	<i>Ophiogomphus severus</i>		O	C	O
Orthoptera					
Carolina Grasshopper	<i>Dissosteira carolina</i>		C	C	U
Fontana Grasshopper	<i>Trimerotropis fontana</i>			C	U

Occurrence Key: **C** = Common, **U** = Uncommon, **O** = Occasional, **R** = Rare, **X** = Status Unknown

INVERTEBRATES Order-Common Name	Scientific Name	Winter	Spring	Summer	Fall
Migratory Grasshopper	<i>Melanoplus sanguinipes</i>		C	C	U
Pygmy Grasshoppers	<i>Paratettix spp.</i>		C	C	U
Two-striped Grasshopper	<i>Melanoplus bivittatus</i>			C	U
Plecoptera					
Golden Stonefly	<i>Hesperoperla pacifica</i>			C	
Shortwing Stonefly	<i>Claassenia sabulosa</i>			U	C
Tricoptera					
Free living Caddisflies	<i>Rhyacophila spp.</i>		O	C	
Grannom Caddisflies	<i>Brachycentrus spp.</i>		C	O	
October Caddisfly	<i>Dicosmoecus gilvipes</i>			R	C

Occurrence Key: **C** = Common, **U** = Uncommon, **O** = Occasional, **R** = Rare, **X** = Status Unknown

Table 2. Minam River Wildlife Area Species of Conservation Concern. Federal listing status is designated as follows: **LT** = Listed, Threatened, **LE** = Listed, Endangered, **C** = Candidate, **SOC** = Species of Concern. State listing status is designated as follows: **T** = Threatened, **E** = Endangered, **SC** = Sensitive, Critical, **S** = Sensitive. SWAP = State Wildlife Action Plan (ODFW 2025).

Birds-Common Name	Species	Federal Status	State Status	SWAP Strategy Species
American Three-toed Woodpecker	<i>Picoides dorsalis</i>		S	X
Black-backed Woodpecker	<i>Picoides arcticus</i>		S	X
Columbian Sharp-tailed Grouse	<i>Tympanuchus phasianellus columbianus</i>		SC	X
Flammulated Owl	<i>Psiloscops flammeolus</i>		S	X
Great Gray Owl	<i>Strix nebulosa</i>		S	X
Lewis's Woodpecker	<i>Melanerpes lewis</i>		SC	X
Loggerhead Shrike	<i>Lanius ludovicianus</i>		S	X
Olive-sided Flycatcher	<i>Contopus cooperi</i>		S	X
Pileated Woodpecker	<i>Dryocopus pileatus</i>		S	X
Swainson's Hawk	<i>Buteo swainsoni</i>		S	X
Trumpeter Swan	<i>Cygnus buccinator</i>		S	X
White-headed Woodpecker	<i>Picoides albolarvatus</i>		SC	X
Mammal-Common Name	Species	Federal Status	State Status	SWAP Strategy Species
American Pika	<i>Ochotona princeps</i>		S	X
Hoary Bat	<i>Lasiurus cinereus</i>		S	X
California Myotis	<i>Myotis californicus</i>		S	X
Fringed Myotis	<i>Myotis thysanodes</i>		S	X
Long-legged Myotis	<i>Myotis volans</i>		S	X

Mammal-Common Name	Species	Federal Status	State Status	SWAP Strategy Species
Pallid Bat	<i>Antrozous pallidus</i>		S	X
Silver-haired Bat	<i>Lasionycteris noctivagans</i>		S	X
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>		SC	X
Amphibian/Reptile-Common Name	Species	Federal Status	State Status	SWAP Strategy Species
Columbia Spotted Frog	<i>Rana luteiventris</i>		SC	X
Western Toad	<i>Bufo boreas</i>		S	X
Western Painted Turtle	<i>Chrysemys picta</i>		S	X
Fish-Common Name	Species	Federal Status	State Status	SWAP Strategy Species
Summer Steelhead (Snake River Basin ESU)	<i>Oncorhynchus mykiss</i>	LT	SC	X
Spring Chinook Salmon (Snake River spring/summer Chinook ESU)	<i>Oncorhynchus tshawytscha</i>	LT	LT	X
Pacific Lamprey	<i>Entoshpenus tridentatus</i>	SOC	S	X
Bull Trout (Mid-Columbia recovery unit)	<i>Salvelinus confluentus</i>	LT	S	X

Table 3. Introduced fish and wildlife species known to be or have been present on Minam River Wildlife Area.

Common Name	Scientific Name
California Quail	<i>Callipepla californica</i>
Chukar	<i>Alectoris chukar</i>
European Starling	<i>Sturnus vulgaris</i>
Gray Partridge (Hungarian)	<i>Perdix perdix</i>
Wild Turkey (Rio Grande)	<i>Meleagris galopavo intermedia</i>
House Mouse	<i>Mus musculus</i>
Smallmouth Bass	<i>Micropterus dolomieu</i>

Attachment 4-C

Appendix C. Land acquisitions, adjustments and easements involving the Minam River Wildlife Area.

Date	From	In Favor of:	Instrument	Purpose
3/11/1938	W.S. Fleser	State of Oregon, Board of Forestry	Right of Way	Telephone line for forest protection purposes over portions of Secs 29,30, 2N41
3/11/1938	S.C.Goff	State of Oregon, Board of Forestry	Right of Way	Telephone line for forest protection purposes over portions of Secs 29,30, 2N42
4/28/1955	E.C. Fleser	Pacific Power & Light Company	Easement	Utility lines and access over portions Secs 29, 2N41
4/28/1955	Hattie.M.Goff	Pacific Power & Light Company	Easement	Utility lines and access over portions Secs 29, 2N42
6/16/1956	Myron Fleser	State of Oregon	Easement	Roadway over portions Secs 29,30, 2N41
6/19/1963	Lowell Fleser, et.al	State of Oregon, State Highway Commission	Correction Warranty Deed	Conditions of access on portions of Secs 28,29,30,32, 2N41
6/19/1963	J. Herbert Bate Company	State of Oregon, State Highway Commission	Correction Warranty Deed	Conditions of access on portion of Sec 29, 2N41
6/21/1963	J. Herbert Bate Lumber Company	State of Oregon, State Highway Commission	Easement for Channel Change	Easement for access to Minam River in Sec 29, 2N41
2/15/1967	Boise Cascade Corporation	Walter Berreth & Anna W. Berreth	Easement	Easement for right-of-way on Minam Access Rd up to State Hwy No.82
2/15/1967	Boise Cascade Corporation	Buren D. Witherspoon and Margret Witherspoon	Easement	Easement for right-of-way on Minam Access Rd up to State Hwy No.82
3/29/1967	Boise Cascade Corporation	Jesse K Follett & Florence N. Follett	Easement	Easement for right-of-way on Minam Access Rd up to State Hwy No.82
3/30/1967	Boise Cascade Corporation	Buren D. Witherspoon and Margret Witherspoon	Easement	Easement for right-of-way on Minam Access Rd up to State Hwy No.83
4/17/1967	Boise Cascade Corporation	Fred Roulet, et al	Easement	Easement for access over portions Sec 1, 1N40, Sec 5,7,8,9,16,17,33,1N41
1/5/1968	Boise Cascade Corporation	Pacific Power & Light Company	Easement	Utility easement over portions Secs 21,28,29, 2N41
2/21/1968	Boise Cascade Corporation	United State of America	Roadway Easement	Roadway over portions Secs 3,11,14,23,24,25, 1N41, Sec 31, 1N42, Sec16,1S42
11/6/1975	Boise Cascade Corporation	Bessie Fleser	Easement	Easement for installation, maintenance and access to television antenna, cable, etc over portions Secs 29, 32, 2N41
6/7/1995	Witherspoon et al.	Boise Cascade Corporation	Easement exchange	Road easement Sec 7, 1N42

9/30/1997	Boise Cascade Corporation	United State of America	Ditches, canals	Secs 8,12,17,21,27,28,21,33, 34, 1N41 Sec 7, 1N42 & right of occupation under Federal Power Act on SW1/4SW1/4, Sec 8,NW1/4NE1/4
5/19/1997	Witherspoon et al.	Boise Cascade Corporation	Easement exchange	Road easaement Sec 7, 1N41
10/8/2004	United State of America	Boise Cascade Corporation	Roadway Easement	Secs 3,4,10,11,14, 24, 1N41, Sec 30, 1N42, Sec 31, 2N41
2/9/2005	Gallatin Northeast Oregon Land & Timber LLC	Boise Cascade, LLC	Road Use Agreement	Pedestrian and vehicle ingress and egress
11/25/2013	Hancock Timber X Inc	Green Diamond Resource Company	Reciprocal Access Easement Agreement	
12/16/2013	Hancock Timber X Inc	Tristar Northeast Oregon Timberlands LLC	Ingress & Egress Easement	Township 1 North, Range 41 East, Sec 7
12/9/2016	SFG HCK Timber Partership, L.P.	Green Diamond	Assignment and Assumption Agreement for Access Rights	All easements, agreements, rights-of-way
11/1/2021	Hancock Natural Resource Investment Group	Michael & Ann Trindle	Grazing Lease Agreement	Grazing lease on 15,573 acres
11/23/2021	John Hancock Life Insurance Company	Oregon Department of Fish and Wildlife	Purchase Sale	Phase 1
11/13/2023	Rocky Mountain Elk Foundation, Inc	Oregon Department of Fish and Wildlife	Purchase Sale	Phase 2
1/17/2024	Green Diamond Resource Company	Southern Pine Plantations of Georgia Inc	Assignment and Assumption Agreement for Access Rights	All easements, agreements, rights-of-way
1/31/2024	Southern Pine Plantations of Georgia Inc	MFCF TRS, LLC	Assignment and Assumption Agreement for Access Rights	All easements, agreements, rights-of-way
9/24/2024	MFCF TRS, LLC	Rocky Mountain Elk Foundation	Purchase Sale	Phase 3
9/24/2024	Rocky Mountain Elk Foundation	Oregon Department of Fish and Wildlife	Purchase Sale	Phase 3

Appendix D: Rules and Regulations

Legal Obligations Influencing Management of Minam River Wildlife Area

Federal Laws

Federal Aid in Wildlife Restoration Act
Pittman- Robertson Act of 1937
The Endangered Species Act of 1973, as amended
National Historic Preservation Act
National Environmental Policy Act
Americans with Disabilities Act

Oregon Revised Statutes

ORS 197.277 Forest Practices Act
ORS 477.747 Timber Salvage Operations
ORS 496.012 Oregon's Wildlife Policy
ORS 496.138 General Duties and Powers; Rulemaking Authority ORS 496.146
Additional Powers of the Commission
ORS 496.162 Establishing seasons, amounts and manner of taking wildlife; rules ORS
496.992 Penalties
ORS 526.905 Forest Management Plans
ORS 570.535 Landowner responsibility for weed control

Oregon Administrative Rules Governing Management of ODFW Lands

Division 008 - Department of Fish and Wildlife Lands
Division 011 - Statewide Angling Regulations
Division 051 - General Game Bird Regulations
Division 065 - Game Mammal General Seasons and Regulations
Division 900 – Climate and Ocean Change Policy

State Legislation for Forestlands

HB 3152: Requires the Department of Administrative Services to coordinate with the Department of Fish and Wildlife, the Parks and Recreation Department, the State Forestry Department, the Division of State Lands and other agencies with state forestland oversight responsibilities to adopt forest management plans or policies. The bill also establishes provisions whereby state forestland plans may address excess fuels build up and forest health. Calls for efforts to determine necessary silvicultural practices to improve and increase wildlife habitat, improve forest health, control insect-infested and diseased-stands of timber, and reduce fire danger.

HB 2344: Directs state agencies to develop plans for timber salvage operations to restore and recover forest lands burned by fire.