

## 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.

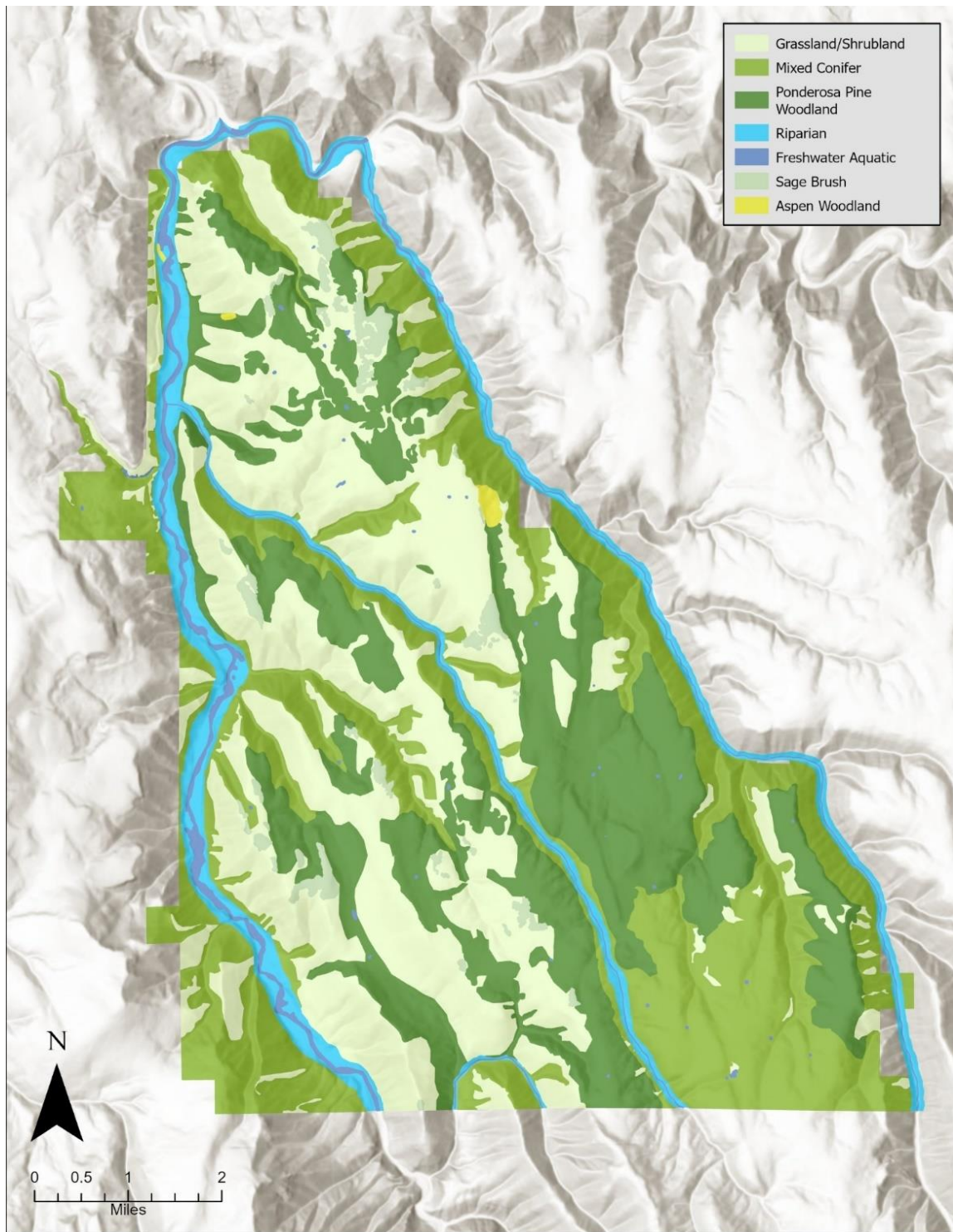
Although MRWA habitat types and the vegetative species that occupy those sites are actively and passively managed for certain attributes, they are largely influenced by ecological factors such as temperature, aspect, elevation, precipitation, soil, invasive species, and wildfire. Common plant species 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 (*Psilosops 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 (*Crataegus 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. Neotropical 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**

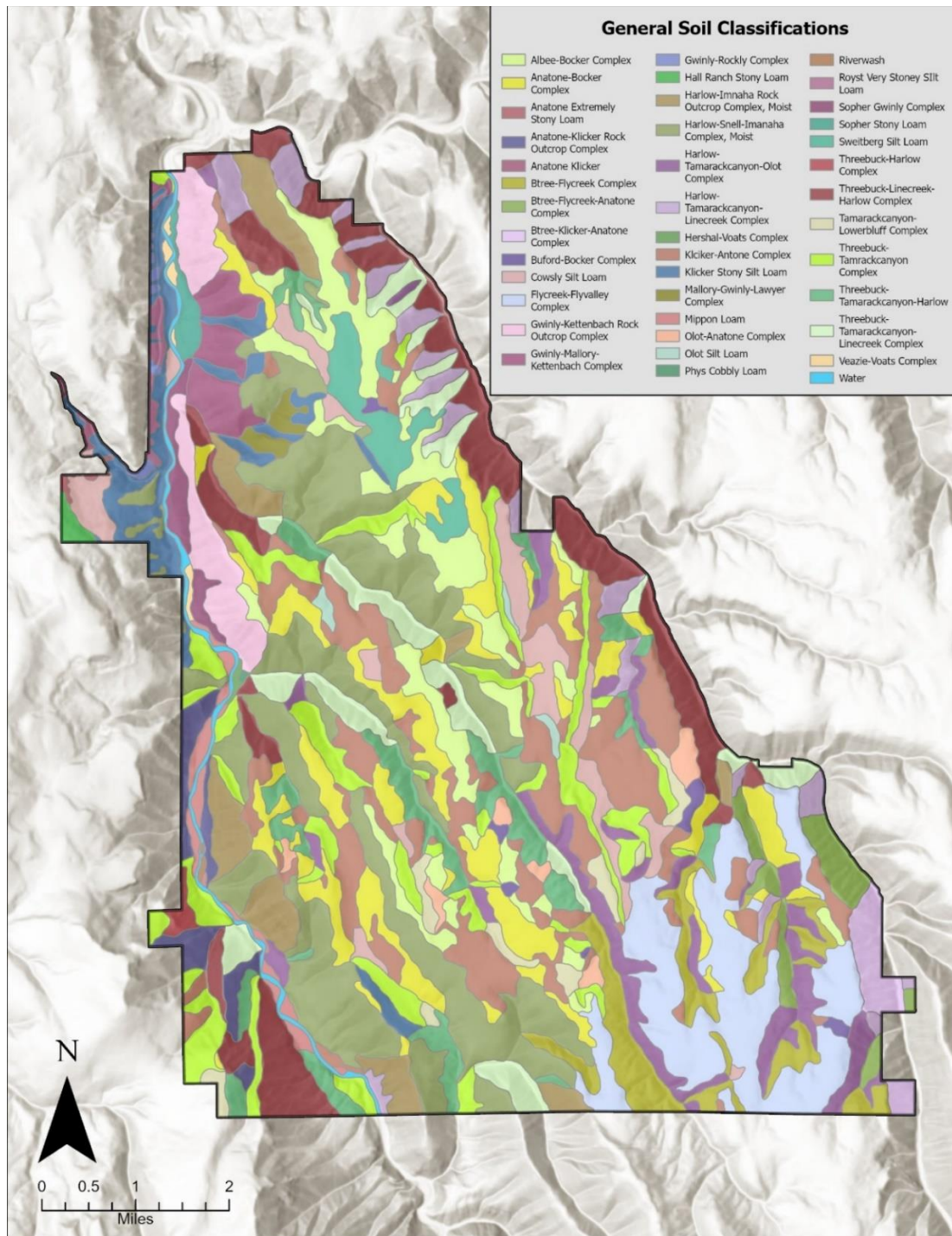
#### **Boundaries:**

- 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.

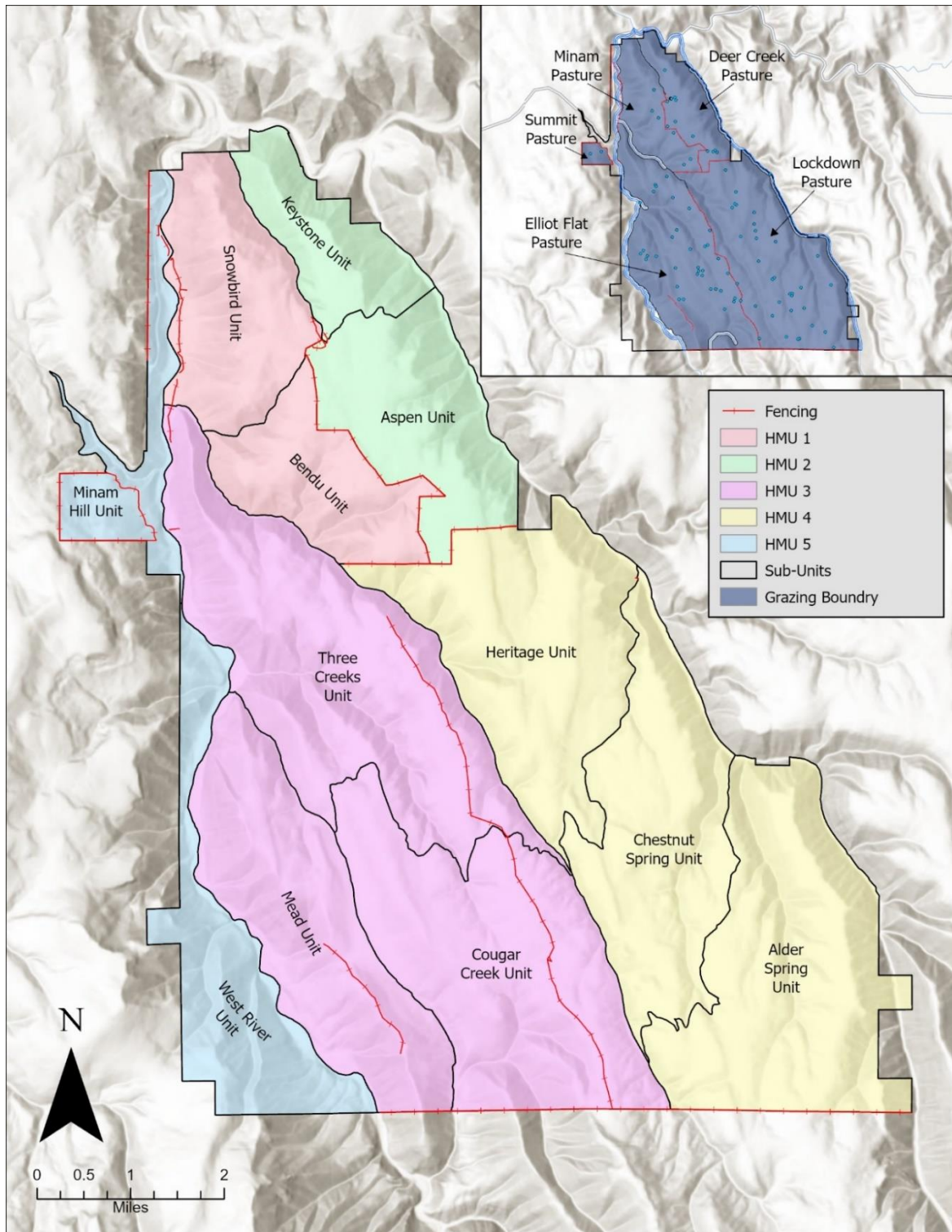
Inversely, the HMU has the lowest proportion of forested habitat comprised of 10.4% mixed conifer forest and 19.47% ponderosa woodland. This HMU also has the lowest percentage of sagebrush habitat on the wildlife area at 0.38%.

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
<b>Apiales</b>		
Desert Parsley	<i>Lomatium spp.</i>	Apiaceae
Golden Alexander	<i>Zizia aurea</i>	Apiaceae
Poison Hemlock	<i>Conium maculatum</i>	Apiaceae
<b>Asparagales</b>		
Daffodil	<i>Narcissus spp.</i>	Amaryllidaceae
<b>Asterales</b>		
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>Wyentia 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
<b>Brassicales</b>		
White Top	<i>Lepidium draba</i>	Brassicaceae
<b>Boraginales</b>		
Bluebells	<i>Mertensia spp.</i>	Boraginaceae
<b>Capparales</b>		
Western Wallflower	<i>Erysimum capitatum</i>	
<b>Caryophyllales</b>		
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
<b>Cornales</b>		
Red-osier dogwood	<i>Cornus stolonifera</i>	Cornaceae
<b>Cyperales</b>		
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
Prairie 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
<b>Dipsacales</b>		
Blue Elderberry	<i>Sambucus nigra</i>	Caprifoliaceae
Common Snowberry	<i>Symphoricarpos albus</i>	Caprifoliaceae
Common Teasel	<i>Dipsacus fullonum</i>	Dipsaceae
<b>Ericales</b>		
Greenleaf Manzanita	<i>Arctostaphylos patula</i>	Ericaceae
Kinnickinnick	<i>Arctostaphylos uva-ursi</i>	Ericaceae
Pinemat Manzanita	<i>Arctostaphylos nevadensis</i>	Ericaceae
<b>Fabales</b>		
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
<b>Geraniales</b>		
Sticky Geranium	<i>Geranium viscosissimum</i>	Geraniaceae
Redstem Stork's Bill	<i>Erodium cicutarium</i>	Geraniaceae
<b>Lamiales</b>		
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
<b>Liliales</b>		
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
<b>Myrtales</b>		
Elkhorn Clarkia	<i>Clarkia pulchella</i>	Onagraceae
<b>Pinales</b>		
Douglas Fir	<i>Pseudotsuga menziesii</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
<b>Poales</b>		
Medusahead	<i>Taeniatherum spp.</i>	Poaceae
<b>Polygonales</b>		
Buckwheat	<i>Eriogonum spp</i>	Polygonaceae
<b>Primulales</b>		
Shootingstar	<i>(Dodecatheon)Primula spp.</i>	Primulaceae
<b>Ranunculales</b>		
Oregon Grape	<i>Berberis repens</i>	Berberidaceae
Red Columbine	<i>Aquilegia formosa</i>	Ranunculaceae
<b>Rhamnales</b>		
Snowbrush Ceanothus	<i>Ceanothus velutinus</i>	Rhamnaceae
<b>Rosales</b>		
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
<b>Rununculales</b>		
Larkspur	<i>Delphinium spp</i>	Ranunculaceae
Western Buttercup	<i>Ranunculus occidentalis</i>	Ranunculaceae
<b>Salicales</b>		
Black Cottonwood	<i>Populus trichocarpa</i>	Salicaceae
Quaking Aspen	<i>Populus tremuloides</i>	Salicaceae
Willow	<i>Salix spp.</i>	Salicaceae
<b>Sapindales</b>		
Puncture Vine	<i>Tribulus terrestris</i>	Zygophyllaceae
Rocky Mountain Maple	<i>Acer glabrum</i>	Sapindaceae

Order - Common Name	Species Name	Family
<b>Saxifragales</b>		
Woodland Star	<i>Lithophragma spp.</i>	Saxifragaceae
<b>Scrophulariales</b>		
Indian Paintbrush	<i>Castilleja spp</i>	Scrophulariaceae
<b>Solanales</b>		
Field Bindweed	<i>Convolvulus arvensis L</i>	Convolvulaceae
Skyrocket	<i>Ipomopsis aggregata</i>	Polemoniaceae
Phacelia	<i>Phacelia spp.</i>	Hydrophyllaceae
<b>Typhales</b>		
Cattail	<i>Typha latifolia L.</i>	Typhaceae
<b>Violales</b>		
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 <sup>b</sup>
Canada Thistle	<i>Cirsium arvense</i>	B
Cheatgrass <sup>a</sup>	<i>Bromus tectorum</i>	B
Diffuse Knapweed <sup>a</sup>	<i>Centaurea diffusa</i>	B
Fiddleneck Tarweed	<i>Amsinckia intermedia</i>	B
Field Bindweed	<i>Convolvulus arvensis</i> L.	B
Medusahead Wild Rye	<i>Taeniatherum caput-medusae</i>	B
Puncture Vine	<i>Tribulus terrestris</i> L.	B
Russian Knapweed <sup>a</sup>	<i>Acroptilon repens</i>	B
Scotch Thistle <sup>a</sup>	<i>Onopordum acanthium</i>	B
Tansy Ragwort	<i>Senecio jacobaea</i>	B
Ventenata	<i>Ventenata dubia</i>	B
Whitetop	<i>Lepidium draba</i> L. Desv.	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

<sup>a</sup> Invasive plants identified in 2016 Oregon Conservation Strategy

<sup>b</sup> 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.