

Swanson Lakes Wildlife Area Management Plan

Including Revere and Reardan Audubon Lake Wildlife Areas



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Swanson Lakes, Reardan Audubon Lake
and Revere Wildlife Areas

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Summary

Swanson Lakes, Revere and Reardan Audubon wildlife areas encompass roughly 25,000 acres of shrub-steppe, grasslands and wetlands habitat in eastern Washington. The nearby areas support mule deer, reptiles and more than 200 bird species including sharp-tailed and sage grouse, which are listed by the state as threatened species.

All three landscapes are managed by the Washington Department of Fish and Wildlife (WDFW). The department developed this management plan – with input from a stakeholder-based advisory group – to address the status of wildlife species and their habitat, restoration efforts and public recreation on the wildlife areas.

WDFW manages more than a million acres of land divided into 33 designated wildlife areas across the state. Wildlife areas provide habitat for fish and wildlife as well as land for outdoor recreation. Outdoor activities, in turn, support local economies and contribute to Washington’s wildlife-related recreation industry.

Like other wildlife areas across the state, Swanson Lakes, Revere and Reardan Audubon not only provide key habitat for fish and wildlife but also offer recreational opportunities for wildlife area visitors.

Swanson Lakes Wildlife Area consists of approximately 21,000 acres in Lincoln County, about 10 miles south of the town of Creston. Within the channeled scablands of the Columbia Plateau, Swanson contains shrub-steppe and riparian area habitats. Much of the area is rangeland and several hundred acres of restored grassland habitat.

Swanson Lakes was acquired in the 1990s as a Bonneville Power Administration wildlife mitigation project, primarily for Columbian sharp-tailed grouse. The area also supports mule deer, upland game birds, raptors, songbirds, and several reptiles and amphibians.

Located in northeast Lincoln County, **Reardan Audubon Lake** includes an 80-acre lake, wetlands, grasslands and channeled scablands all set on a 277-acre property north of the town of Reardan. The wildlife area supports more than 200 bird and other wildlife species.

Birds are drawn to Reardan Audubon Lake’s shallow basin for its food-rich alkaline mudflats, especially migrating waterfowl and shorebirds. So many birdwatchers have been coming to this site since the 1950’s that it became known simply as “Audubon Lake.” The wildlife unit is part of the Ice Age Floods National Geologic Trail and the Great Washington State Birding Trail.

The **Revere Wildlife Area** encompasses 2,291 acres in northwest Whitman County, nine miles southeast of the town of Lamont. It was acquired in 1992 to make up for habitat lost to inundation from dams on the Snake River.

Revere consists of Palouse grassland, shrub-steppe and scabland terrain with seeps and springs in the Rock Creek drainage. It supports mule deer, coyotes, badgers, various raptors and upland game birds including pheasants and quail.

Habitat restoration activities take place across Swanson Lakes, Revere and Reardan Audubon Lake wildlife areas. The loss of natural habitat poses the greatest single threat to Washington’s native fish and wildlife. Washington’s wildlife areas play a critical role in maintaining the state’s natural heritage and providing habitat for fish and wildlife species listed as threatened or endangered under the federal Endangered Species Act (ESA).

Swanson Lakes lies within one of the last remaining large areas of shrub-steppe habitat in the Columbia Plateau and is a priority for protection of imperiled species. Agriculture, development, wildfires, fire suppression, grazing and spread of exotic plants have all contributed to shrub-steppe degradation.

In recent years, WDFW has restored 1,685 acres of shrub-steppe and grassland. Restoration activities include weed control, replanting and monitoring. Shrub-steppe habitat is essential for species such as white-tailed jack rabbit, Columbian sharp-tailed grouse and greater sage-grouse.

In Washington, both sharp-tailed and greater sage grouse are listed as state threatened species. Greater sage-grouse are being considered by the federal government for protection under the ESA.

WDFW and its partners have worked to build the population of both grouse species at Swanson Lakes Wildlife Area. Through 2014, WDFW had released 240 greater sage-grouse on the wildlife area. A new breeding site, called a lek, had also been established. About 205 sharp-tailed grouse were released on the wildlife area and a lek was established.

Restoring shrub-steppe also means more habitat for mule deer and upland birds. Hunting for mule deer, as well as wildlife watching, is a popular activity on both Swanson and Revere wildlife areas.

Birdwatching has also been enhanced across the three areas by the restoration of more than 600 acres of riparian and wetlands in these three wildlife areas.

Over the next 8-10 years, WDFW plans to continue its efforts to recover Columbian and greater sage-grouse species and enhance mule deer and upland game populations. This plan provides details on management goals and strategies. It also explains management challenges – such as limited funding and increased use – to accomplishing those goals.



Introduction

Purpose

The purpose of the Swanson Lakes Wildlife Area Management Plan (Plan) is to guide all management activities that occur on the wildlife areas (WLA) and establish management priorities and objectives for the wildlife area for the next 10 years. The plan will ensure lands are managed consistent with the Washington Department of Fish and Wildlife (WDFW) mission, strategic plan and original funding source requirements. The purpose also includes clear communication to the public on how the wildlife areas will be managed. The Plan includes three wildlife areas under the umbrella of the Swanson Lakes Wildlife Area Management Plan: Swanson Lakes, Revere and Reardan Audubon Lake.

Wildlife Area Management Overarching Document

WDFW owns and/or manages approximately one million acres of land, divided into 33 wildlife areas. Each area is unique - in size, habitats, presence of threatened and endangered species, recreational uses, and types of restoration and conservation activities. Each of the wildlife areas is guided by the fish and wildlife mission and strategic plan. Management activities are further guided by state and federal laws, and by priorities and plans developed by staff in the department's Wildlife, Habitat and Fish programs. This information is summarized in the draft Wildlife Planning Overarching Document, which is a reference and resource for all wildlife area plans. Additional wildlife area planning and management information can be found in the 2006 Swanson Lakes Wildlife Area Management Plan <http://wdfw.wa.gov/publications/00542/>

Wildlife Area Goals

The goals of the Swanson Lakes, Revere and Reardan Audubon Lake Wildlife Areas support the continued achievement of the vision and include:

1. Maintain or improve the ecological integrity of priority sites.
2. Recover Columbian sharp-tailed and greater sage-grouse populations in and around the wildlife area.
3. Maintain and enhance mule deer and upland game bird populations.
4. Achieve species diversity at levels consistent with healthy ecosystems.
5. Support and maintain appropriate recreation opportunities.
6. Offer multiple and varied opportunities for stakeholder participation and engagement.
7. Maintain productive and positive working relationships with neighbors, partners and permittees.

The Plan is part of 33 wildlife areas around the state managed by WDFW to provide protection of fish and wildlife and opportunities for recreation. This Plan provides the 10 year vision for the wildlife area developed by the regional and headquarters staff.

The Swanson Lakes, Revere, Reardan Audubon Lake Wildlife Areas location within the Columbia Plateau is characterized by fragments of native habitat within a predominately agricultural landscape. The Swanson Lakes WLA lies within one of the last remaining large areas of shrub-steppe habitat in the Columbia Plateau and is a priority for protection of imperiled species, which will be increasingly more difficult with increased population, development, and climate change. Estimates of remaining amount of original shrub-steppe habitat in eastern Washington

range from 40-48% (Welch 2005). Lincoln County is reported to have a 62% loss of shrub-steppe (Dobler et al 1996). Agriculture, development, wildfires, fire suppression, grazing and spread of exotic plants have all contributed to shrub-steppe degradation (Johnson and O'Neil 2001).

Conservation of shrub-steppe habitat and associated species are critical to WDFW mission to “protect,

restore, and enhance fish and wildlife and their habitat” in Washington State. Sustaining diverse and abundant shrub-steppe wildlife also provides Washington citizens with recreational and educational opportunities. These opportunities enhance the quality of life for local communities and can provide a reliable, long-term source of revenue (WDFW 2010).



Vision: The Swanson Lakes Wildlife Area

Swanson Lake Wildlife Area vision is to contribute to the recovery of sustainable populations of greater sage-grouse and Columbian sharp-tailed grouse, mule deer, restore native shrub- steppe, grasslands and riparian habitat and provide a variety of public recreational opportunities.

The Swanson Lakes Wildlife Area was originally established to protect the Columbian sharp-tailed grouse and shrub-steppe habitat. The primary management emphasis on the wildlife area is to provide year round habitat for Columbian sharp-tail grouse, a State-listed Threatened Species. Swanson Lakes WLA also provides year round habitat for the greater sage-grouse, which is a Federal Candidate and State-listed Threatened Species. The Swanson Lakes WLA provides important spring and summer habitat for mule deer, a WDFW Priority Game Species.



Vision: Revere Wildlife Area

Revere Wildlife Area vision is to maintain and enhance habitat for mule deer, upland bird population; protect and enhance riparian and aquatic habitat and provide a variety of public recreational opportunities.

The Revere Wildlife Area management focus is similar – emphasizing wildlife habitat and public hunting opportunities. The wildlife area is primarily managed for mule deer habitat restoration. Specifically these lands provide food and cover for pheasants and access for public hunting.



Vision: Reardan Audubon Lake Wildlife Area

Reardan Audubon Lake Wildlife Area vision is to provide watchable wildlife opportunities for the public, protection of wetland, riparian and shrub-steppe habitats which provide protection for migratory birds and associated wildlife species.

Reardan Audubon Lake Wildlife Area provides valuable habitat for migrating waterfowl, shorebirds, mule deer and upland birds; and offers watchable wildlife opportunities for local and regional birders. Riparian and wetland areas provide important habitat for amphibians, waterfowl and other aquatic wildlife on Reardan Audubon Lake.



Success Stories

In conjunction with other partners; Swanson Lakes, Revere and Reardan Audubon Lake Wildlife Areas have been the site of several success stories. These activities recognize the valuable contribution the wildlife areas make to maintain and enhance the ecological integrity of limited shrub-steppe habitat within the state. Across the landscape, the three wildlife areas play an important role in a regional connected network of habitat areas for many wildlife species; as described in the Habitat Connectivity section of this document (page 23).

Sage- grouse and Columbian Sharp-tailed grouse recovery

In 2008 the WDFW, in cooperation with the U.S. Bureau of Land Management (BLM), initiated a project to reintroduce greater sage-grouse to the Swanson Lakes WLA. The project was designed to establish an additional population site for the species in the state. As of 2014, 240 greater sage-grouse (115 females and 125 males) have been released on the Swanson Lakes WLA. With the establishment of a new lek (breeding site), observation of up to 18 males and 9 females on the lek, successful nesting and brood rearing, and observation of non-marked males and females indicating local recruitment, the translocation project has so far been considered a success.

WDFW, in cooperation with the Colville Confederated Tribes, has translocated 368 Columbian sharp-tailed grouse from central British Columbia, southeastern Idaho, and north-central Utah to Washington State in spring 2005–2013. The goals of these translocations were to augment isolated native populations. 205 of the sharp-tailed grouse were released on the Swanson Lakes WLA. Monitoring of the translocated birds showed integration with the local population, including successful nesting and brood rearing by translocated hens. Lek monitoring in the area likewise showed small increases in counts in the years following release, as well as, the establishment of a new lek in the area.

Restoration

Shrub-steppe and grassland restoration is a significant management activity on the three wildlife areas. Restoration activities include weed control, replanting and monitoring. On Swanson Lakes WLA, a total of 1,685 acres of shrub-steppe and grassland restoration was achieved to benefit sharp-tailed grouse, mule deer, greater sage-grouse and white-tailed jackrabbit. Z-Lake has been the site of a successful riparian restoration project in which 50 acres of wetland, 570 acres of non-forest riparian and 40 acres of forest riparian were restored in the Lake Creek basin. This project provides nearshore habitat improvement for species by restoring functioning wetlands, increasing shallow water storage in the vicinity of Z-Lake, providing habitat for shorebirds, waterfowl, and other species. Restoration activities on the Swanson Lakes WLA have been funded by Bonneville Power Administration and Recreation Conservation Office. For a summary of restoration activities conducted please see Appendix E.

Coordination with Partners

WDFW works collaboratively with partners, including the BLM, which owns about 30,000 acres of shrub-steppe in the Twin Lakes and Telford Recreation Areas, adjacent to the Swanson Lakes WLA. Over the last 15 years, the two agencies have coordinated habitat management and restoration activities, conducting grouse monitoring, translocation, and implementing habitat and wildlife protection measures. This includes the provision of BLM funding for research by Washington State University and over 100 acres of shrub-steppe and grassland restoration on the WLA, see Appendix E. The National Audubon Society designated Swanson Lakes WLA and the surrounding BLM and private lands within the Lake Creek drainage as a state-level Important Bird Area because of the sage-grouse and habitat restoration work. Working in conjunction with Trout Unlimited, wetland and riparian restoration of Z Lake on Swanson Lakes WLA has

created a popular trout-fishing opportunity. Near the Revere Wildlife Area (Packer Creek), there has been a successful cooperative effort between BLM and WDFW on developing 30 acre food plots for mule deer and pheasants

Reardan Audubon Lake – Washington Birding Trail

The Reardan Audubon Lake Wildlife Area has been added to the “Palouse to Pines” Washington Birding Trail. Inland Northwest Land Trust, Spokane Audubon, Ducks Unlimited, City of Reardan and Reardan Chamber of Commerce are committed to cooperatively preserving and developing this unique ecosystem and wildlife-viewing site. Partnerships are the key to the success of this acquisition. This project implements the Washington State Legislature’s directive to develop wildlife viewing sites near small rural communities. In addition, 179 distinct plant species and 10 plant associations have been identified on the wildlife area (Appendix D); including two rare

habitat types – Palouse Prairie grasslands and vernal pools (see definition on page 22).

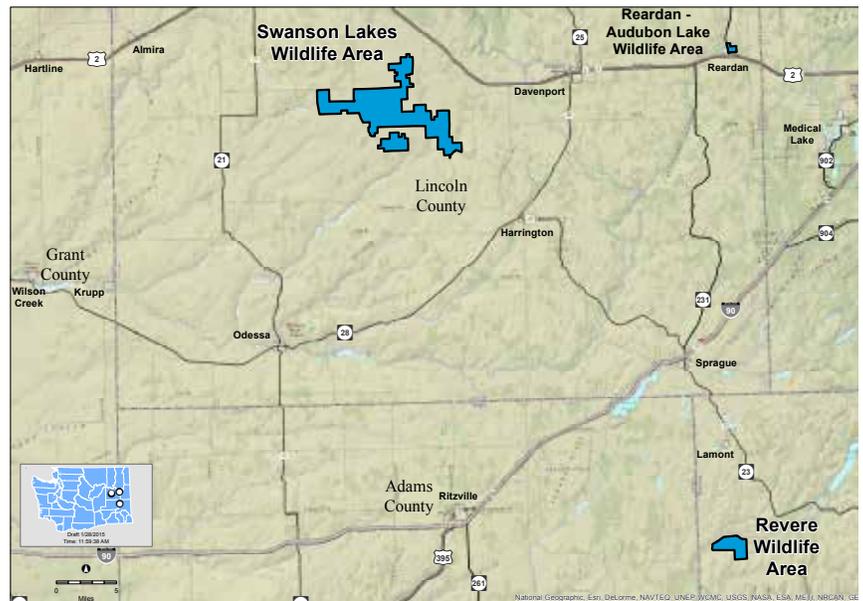
Public Process

The Wildlife Area Management Overarching Document includes the overall statewide strategy for involving the public and stakeholders in the wildlife area planning process, and recommendations for customizing the public involvement process for each wildlife area depending on local site conditions and stakeholders. For Swanson Lakes planning process, the public process included three elements: 1) public and Wildlife Area Advisory Committee (WAAC) meetings; 2) development and distribution of fact sheets, meeting announcements and news releases; and 3) solicitation of public comment through the department website, phone and email. A complete summary of the public outreach activities is included in Appendix (H).



Wildlife Area Overview

This section will provide a description of each of the three wildlife areas including property location and size, acquisition history and purpose, leases, habitat management, local land use planning, working relationships, management challenges, administration and staffing, facilities and maintenance and cultural resources.



Map 1: Swanson Lake Wildlife Areas

Management Approach

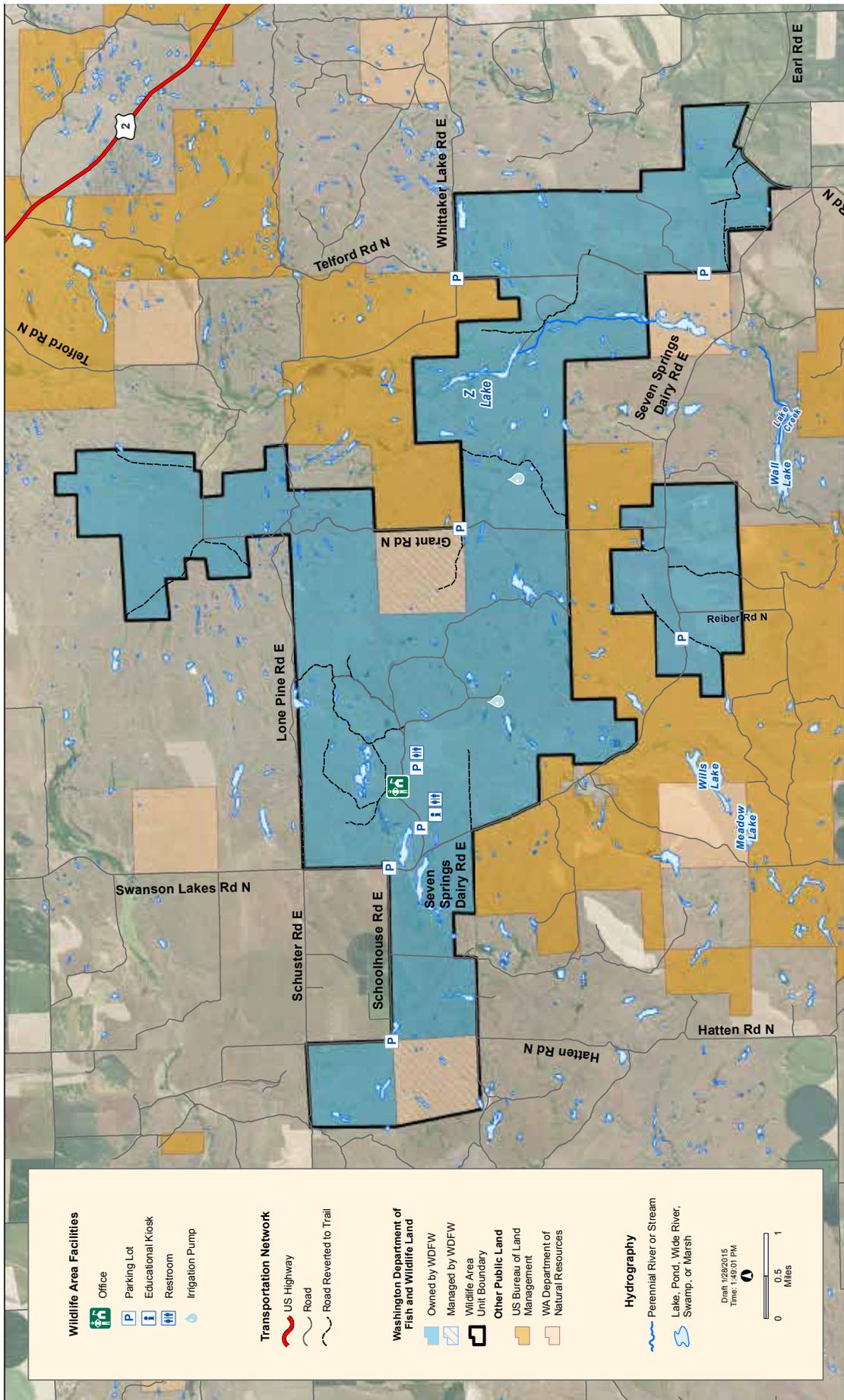
Property location and size

The Swanson Lakes Wildlife Area encompasses 21,000 acres in Lincoln County in eastern Washington, approximately 10 miles south of Creston, 20 miles west southwest of Davenport and 60 miles west of Spokane (maps 1, 2). The major habitat types within the wildlife area include shrub-steppe, riparian, wetlands, vernal pools, channel scablands and former agriculture fields, with average elevation at 2,275 ft. The majority of the wildlife area was rangeland, with old Conservation Reserve Program fields, several hundred acres of restored grassland habitat, and a small amount of leased cropland that continues to be farmed.

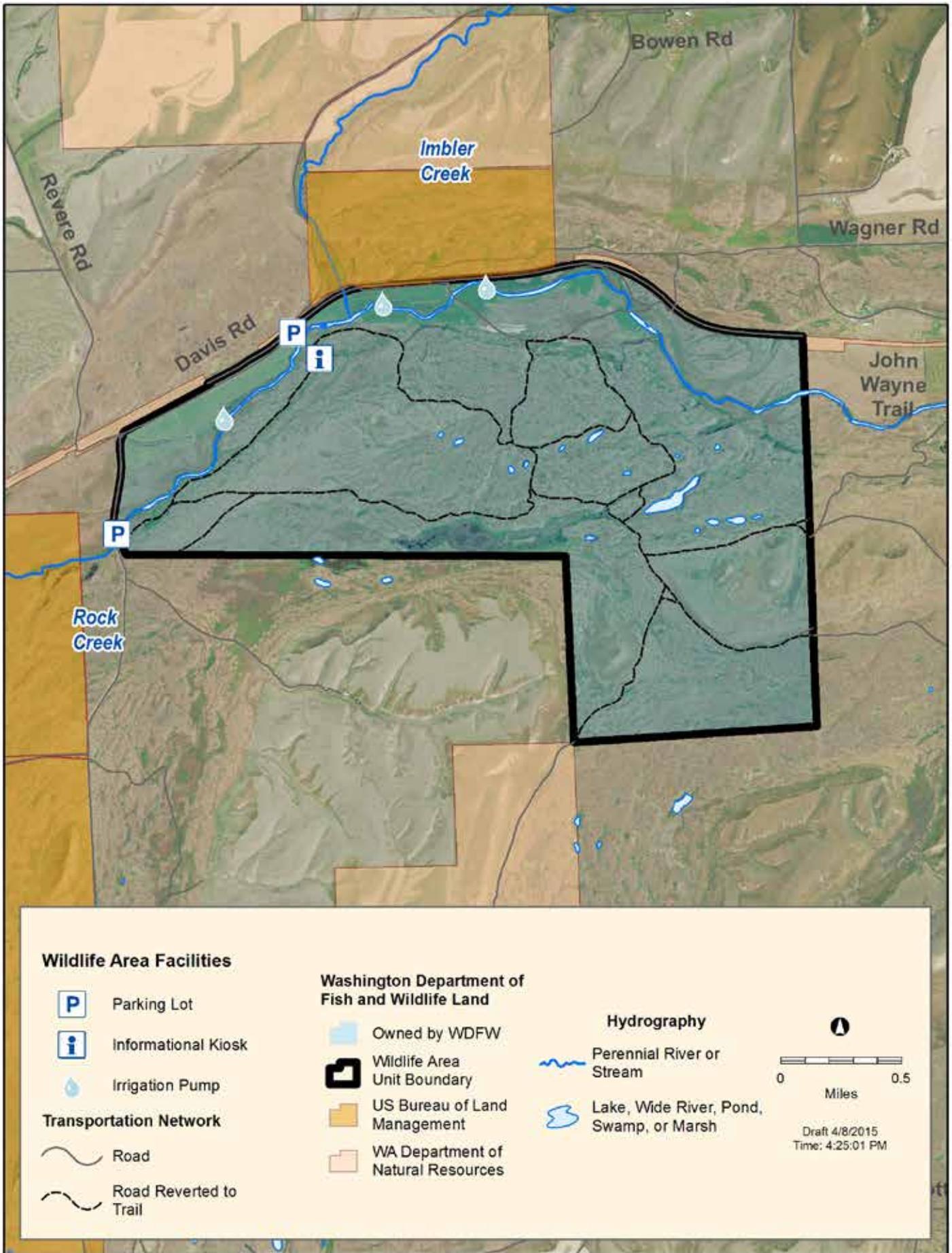
The Revere Wildlife Area includes 2,291 acres located in northwest Whitman County and 13 miles east of St. John (maps 1, 3). Vegetation consists primarily of shrub-steppe and 150 acres of irrigated agricultural land leased for hay production, with average elevation at 1,175 ft. The agricultural land provides food for upland birds and mule deer and income dedicated to operations and maintenance. Over the last ten years, several small food plots have been developed. Dryland agriculture is the primary

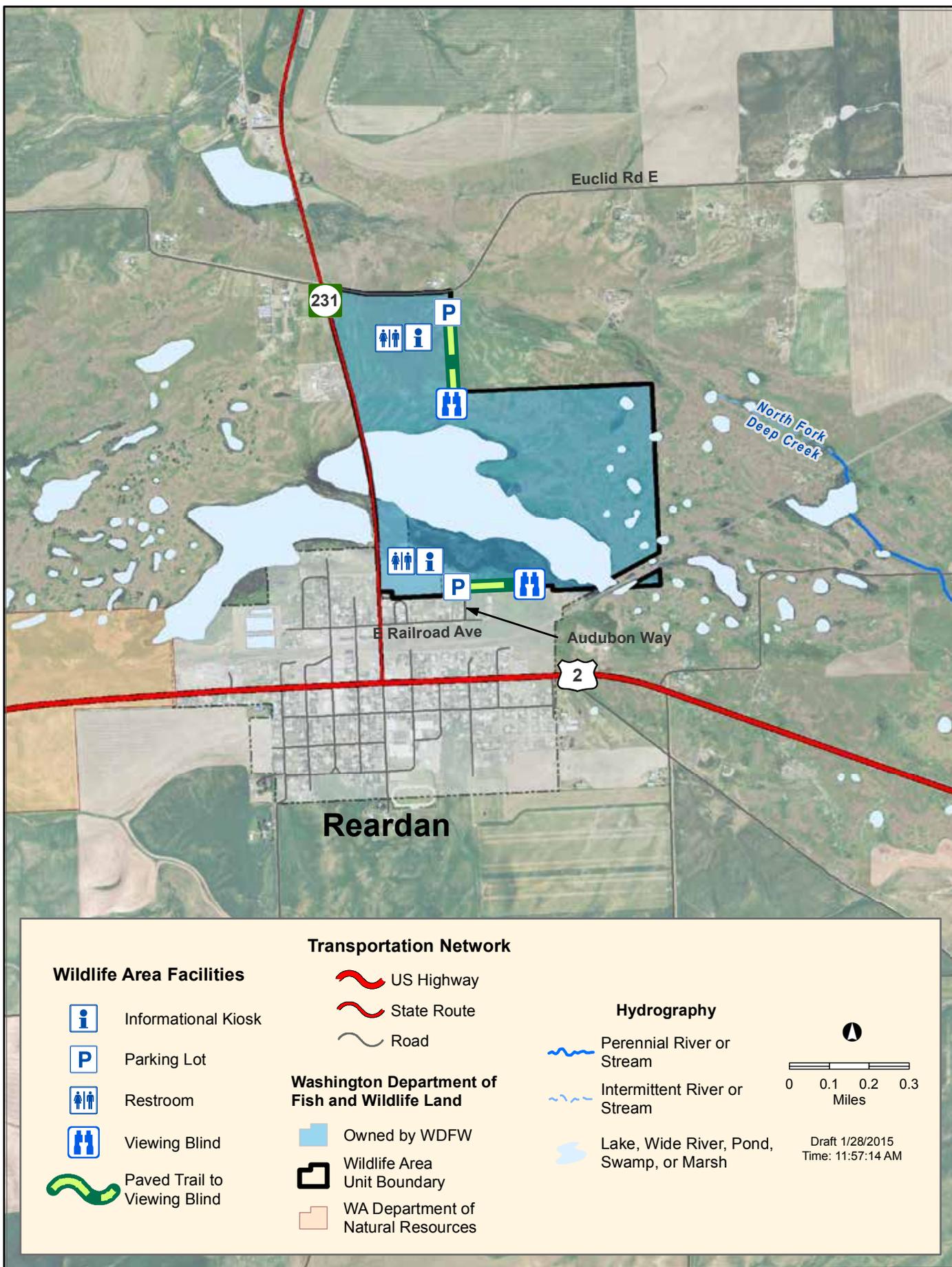
land use in the watershed. Anglers fish for rainbow and brown trout in Rock Creek. Rock Creek is not stocked with fish but, during high water, trout emigrate downstream and occupy waters on the wildlife area. Prior to WDFW ownership the area was used for cattle grazing.

Reardan Audubon Lake Wildlife Area is located in Lincoln County just north of the town of Reardan (maps 1, 4). It includes 277 acres of wetlands, vernal ponds, grasslands, channeled scablands, and uplands supporting more than 200 species of birds and other wildlife, with average elevation at 2,500 ft. Over 180 distinct plant species have been identified on this wildlife area (Asher and Swedberg 2006 - Appendix D). The wetlands and lakes provide critical habitat in the dry arid environment to both local and migratory wildlife. It is also important for regional water quality, since this area is the headwater source for both Crab Creek, which drains west to the Columbia River, and Deep Creek, which drains east to the Spokane River. Roughly 80 upland acres has recently been restored to Palouse Prairie grassland.



Map 2: Swanson Lakes Wildlife Area





Map 4: Reardan Wildlife Area

Acquisition history and purpose

Swanson Lakes Wildlife Area was purchased with two funding sources, Bonneville Power Administration (BPA) and Washington Recreation Conservation Office. The majority (12,796 acres) were purchased by BPA during the 1990s, and later deeded to WDFW. The land was purchased for the mitigation of shrub-steppe and riparian habitat loss, due to construction of the Grand Coulee Dam. Between 1991- 1992 remaining acreage was purchased with funds from the Recreation Conservation Office. BPA provided funding for initial habitat restoration and provides ongoing operations and maintenance of the Swanson Lakes WLA. For access to the BPA contract details see the following link:

<https://pisces.bpa.gov/release/reports/ReportViewer.aspx?RptName=PISC1099S+SOW+Work+Elements+Milestones&rs%3aFormat=PDF&piContractAgreementRevisionID=18628>

Revere Wildlife Area was purchased with funding from the Snake River mitigation funds from the U.S. Army Corps of Engineers in 1992. These mitigation lands replaced shrub-steppe and riparian wildlife habitat and public fishing access impacted by the construction of dams on the Snake River. The Revere WLA is primarily managed for mule deer habitat restoration. Specifically these lands provide food and cover for pheasants and access for public hunting. Income derived from existing agricultural lease provides the operation and maintenance funding for this site. In 2007, the property was transferred to the Swanson Lakes WLA from the WDFW Private Lands program.

Reardan Audubon Lake Wildlife Area was purchased in 2006 with RCO's Washington Wildlife and Recreation Program - Critical Habitat funding. The focus of the acquisition was for wildlife habitat protection for migratory birds (primary shorebirds and waterfowl) and wildlife viewing. This property was acquired with support from the Spokane Chapter of the Audubon Society and the Inland Northwest Land Trust. The Reardan Audubon Lake WLA provides outstanding wildlife viewing of migratory shorebirds, waterfowl and birds of prey. Conserving this important public recreation asset and protecting this significant wildlife habitat the primary reasons for purchase of the property.

State Leases

The WDFW leases two sections of Washington Department of Natural Resources (DNR) land (1,280 acres, included in the 21,000 acres) which are managed as part of the Swanson Lakes WLA. These lands are managed consistent with wildlife area management practices. This land is managed primarily for wildlife habitat and for public recreation, including 20 acres that provides water access for fishing

Habitat Management

Fire History & Management

Fire History

While wildfires historically burned most shrub-steppe portions of the wildlife area every 30 to 35 years, the fire regime has been altered since modern settlement of the area due to grazing, agriculture, and fire suppression (LANDFIRE 2010). Fire management, in particular, helps maintain a mosaic of plant communities and prevents excessive accumulations of fuels. However, if large fires were to become too frequent or too intense, vegetation could be altered in favor of invasive annual grasses.

Nine fires occurred on or near the Swanson Lakes WLA since 2004 (see table 1). Most of these fires were human-caused, with a few known to be caused by lightning.

Fire Management

Fires ignited in the area of the Swanson Lakes Wildlife Area are initially fought by the Lincoln County Fire District. Larger fires prompt state mobilization, with the DNR, federal fire-fighting entities, and additional fire districts. WDFW has firefighting agreements with the three fire districts in the Swanson Lakes area (Appendix G). Wildlife Area staff also renew their state “red card” certification each year, so that they may assist with various tasks, during fires that affect the Swanson Lakes WLA.

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Table 1. Fire History on or near Swanson Lakes Wildlife Area

Year	Name	Estimated Acres
2004	Hatten Road Fire	7,213
2005	Wall Lake Fire	5,178
2007	Stehr Road Fire	1,377
2007	Highland Road Fire	1,202
2008	Swanson Lakes Fire	18,058
2012	Apache Pass Fire	23,274
2012	Grant Road	6
2012	Twin Lakes	30
2012	Lone Pine	5

Other Entities Operating on WDFW Lands

Agriculture Leases

Agricultural activities occur on the wildlife areas primarily to produce food and cover for wildlife, and secondarily for commercial purposes. WDFW issues and manages agricultural permits/leases to private individuals to conduct agriculture on wildlife areas, and conducts its own agriculture practices. These agreements provide multiple benefits including: 1)

providing food for resident and migratory wildlife; 2) providing income for operations and maintenance activities; 3) supporting working lands of ranchers and farming neighbors; and 4) maintaining hunting opportunities, primarily for mule deer.

There are two agricultural leases, a 104-acre hay plot on Swanson Lake WLA, and a 150 acres hay plot on the Revere WLA.



Management Consistency with Local Land Use Plans

Local Land Use Planning

Swanson Lakes and Reardan Audubon Lake Wildlife Areas fall under the jurisdiction of Lincoln County, and land use must be consistent with the county’s Comprehensive Plan, Shoreline Management Plan, and Critical Areas Ordinance. Revere Wildlife Area is located within Whitman County and is subject

to the county’s corresponding local plans. Lincoln and Whitman counties are currently updating their Shoreline Management Plans and Critical Areas Ordinances. The Wildlife Area is consistent with the current and expected land use designations of these plans (Table 2):

Table 2

Wildlife Area	Comprehensive Plan Land Use Designation	Zoning	Shoreline Management Plan Designation	Comments
Swanson Lakes	Residential, agriculture and rangeland	Agriculture	Rural	84% of Lincoln County land use is agriculture lands
Reardan Audubon Lake	Residential agriculture	Residential agriculture	Rural*	Federal Emergency Management Agency designated 100 year floodplain
Revere		Agriculture	Rock Creek designated as a shoreline	Any work (grading, filling, building construction, etc.) within the 200-foot buffer of the shoreline requires a permit

*The lakes are designated as Shorelines of the State and the Environment is Rural, however they are considered “Unnamed”. Lincoln County Shoreline Master Program

Working Relationships

Surrounding ownership consists of BLM, DNR, and private property. BLM and Swanson Lakes Wildlife Area employees closely coordinate management to protect and maintain healthy shrub-steppe habitat.

Several neighbors are active members of the Wildlife Area Advisory Committee. WDFW’s Private Lands’ biologists also work with neighboring farmers on habitat management cost-share programs and other public-private partnerships.

Management Challenges

Challenges that will influence management for the three wildlife areas over the next ten years include:

1. limited operations and maintenance funding;
2. inconsistent restoration success;
3. increasing numbers and diversity of public users;
4. and influences of climate change.

Swanson Lakes Wildlife Area

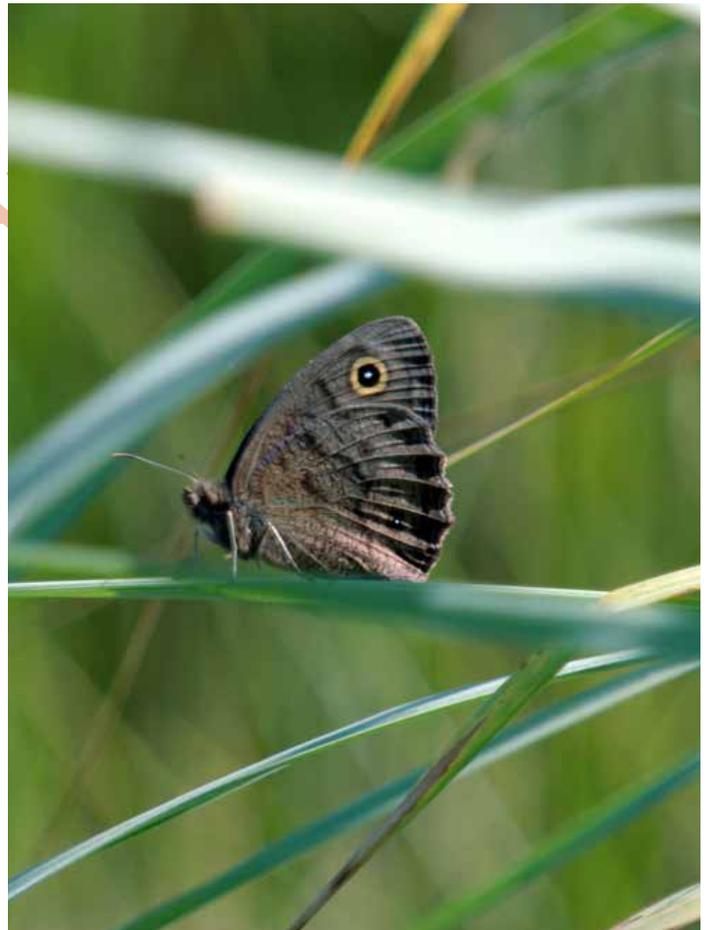
- Operations and maintenance funding provided by BPA needs to be continuously adjusted for inflation. Each year it becomes more challenging to complete required operations and maintenance activities on the wildlife area.
- Wildfire risks are increasing on the wildlife area (see table 1) due to climate changes and associated drought. As a result, wildlife area staff is coordinating with the Lincoln County Conservation District and BLM on developing low-fuel buffers along strategic roads.

Revere Wildlife Area

- Operations and maintenance funding is limited to the revenue generated by the agricultural lease. Volunteers help maintain boundary fences and signs but this is not consistent or predictable in the long-term.
- Increased public use requires more staff time to manage facilities such as parking, and coordinate activities between different user groups (e.g. equestrian groups and hunters).
- Time and effort it takes for wildlife area staff to access the wildlife area. Revere is located approximately 70 miles from the Swanson Lakes office.

Reardan Audubon Lake Wildlife Area

- Located adjacent to the town of Reardan, the WLA benefits from a local audience and must manage neighbor concerns from increased traffic on local roads.
- Lack of dedicated funding for routine operations and maintenance
- Balancing public interest in additional access and facilities, including new trails, with potential impacts to wildlife



Administration and staffing

Administration and staffing

Day to day management of the wildlife areas is the responsibility of wildlife area staff based out of the Swanson Lakes Wildlife Area; other activities (e.g. wildlife surveys) are often undertaken by other agency staff and experts in coordination with wildlife area staff. Personnel consists of one full-time Wildlife Area Manager, one full-time Wildlife Area Assistant Manager, and one six-month career seasonal Natural Resource Worker.

Facilities and Maintenance

Operations and maintenance activities on WDFW lands include monitoring, fences, roads and trail, signs, weed control, campgrounds, facilities maintenance. The goal is to ensure wildlife areas facilities and infrastructure remains in good working order over time. Maintenance activities on the Swanson Lakes WLA are consistent with BPA guidelines.

Roads

There are approximately 48.6 miles of roads within the Swanson Lakes Wildlife Area. Public access to the wildlife area is provided on 1 mile of WDFW road (not named) leading to the headquarters office, on 12 miles of county road which bisects the wildlife area, and about 8 miles of county road that runs along the perimeter of the wildlife area. In addition to public access roads, WDFW has a 35.6 mile network of interior roads and trails (not named) that are for administrative use only. The names of the county roads that bisect and run along the perimeter of the SLWLA are Schuster, Lone Pine, Grant, Whittaker Lake, Schoolhouse, Hatten, Highland, Swanson Lake, Seven Springs Dairy, Reiber, Telford, Cole Ranch, and Valley Roads.

There are no roads accessible to vehicles on the Revere and Reardan Audubon Lakes WLAs.

Facilities

According to the Office Financial Management there are 26 structures recorded on the Swanson Lakes Wildlife Area (4 barns, 7 sheds, 2 shops, 2 residence, water tower, garage, water tower, etc). Revere WLA has one barn documented on site.

Fences

Fences are used on the Swanson Lakes WLA to control trespass cattle and to control motorized vehicles (e.g., ATVs, jeeps, etc).

Weed control

The goal of weed control in this Plan is to maintain or improve the habitat for fish and wildlife, meet legal obligations, and protect adjacent private lands (See Appendix B).

Cultural Resources

State and federal law requires the protection of cultural, geological, and other non-renewable resources. Such resources may not be removed unless determined to be beneficial to wildlife, habitat, or for scientific or educational purposes. WDFW coordinates with appropriate agencies and tribes for the protection of such resources whether it is the public or department staff who are initiating an activity that will affect cultural, archaeological or historic resources. This includes the removal of various rock formations, Native American artifacts, plants, seeds, and other items. The Spokane Tribe and Confederated Tribes of the Colville Reservation collect traditional tribal foods on the wildlife areas. Please see Appendix F for a detailed cultural resources summary.

Soils and Geology

The Swanson Lakes, Revere and Reardan Audubon Lake wildlife areas are located on the Columbia Plateau, which was created by lava flows hundreds of feet thick, modified by glacial action and scoured by repeated floods during the Miocene and Pliocene eras. This fairly level, rough topography is called the Channeled Scablands and includes features such as plateaus, buttes, and channels. Channels are made up of outwash terraces, bars, loess islands and basins. The plateaus contain circular mounds of loess (biscuits) surrounded by cobble-size fragments of basalt. Soils generally consist of silt loams with varying amounts of rock or gravel, and basaltic rock outcroppings. Specific soil types commonly found on Swanson Lakes include: Anders silt loam, Anders-Bakeoven-Rock outcrop complex, and Roloff-Bakeoven-Rock outcrop complex.

Much of Whitman County (Revere Wildlife Area) is mantled by eolian (wind-deposited) silt, or loess. The loess is underlain by a great thickness of basalt. In the western part of Whitman county, large areas have been swept by floods that removed most of the loess and locally scoured the basalt to considerable depth (channel scablands) (Walters and Glancy 1969).

Missoula Floods

During the last Ice Age, a finger of the Cordilleran ice sheet crept southward into the Idaho Panhandle, blocking the Clark Fork River and creating Glacial Lake Missoula. As the waters rose behind this 2,000-foot ice dam, they flooded the valleys of western Montana. Periodically, the ice dam would fail. These failures were often catastrophic, resulting in a large flood of ice- and dirt-filled water that would rush down the Columbia River drainage, across eastern and central Washington. The glacial lake, at its maximum height and extent, contained more than 500 cubic miles of water. When Glacial Lake Missoula burst through the ice dam and exploded downstream, it did so at a rate 10 times the combined flow of all the rivers of the world. The Missoula Floods left their mark along a course of more than 550 miles, extending from western Montana to the Pacific Ocean, but the most spectacular flood features were carved into the black volcanic rock terrain in eastern Washington. This rock, the “floor” of the Scablands, is basalt—a dense crystalline lava that covers more than 100,000 square miles in parts of Washington, Oregon, and Idaho.

<http://www.iceagefloodsinstitute.org/>



Hydrology

Swanson Lakes Wildlife Area is located in the upper portion of the Crab Creek Watershed. Numerous pothole lakes, and a handful of rim rock lakes are found on the wildlife area. Drainage generally runs from northeast to southwest. Surface water is known to be alkaline. One intermittent stream, Lake Creek, runs through Swanson Lakes Wildlife Area, on its way to Rock Creek. Lake Creeks' headwaters originate a few miles northeast of the wildlife area, and the stream widens into perennial rim rock lakes at several locations. The first of these rim rock lakes, known as Z-Lake, is located at Swanson Lakes Wildlife Area.

Revere Wildlife Area is located within the Rock Creek watershed. As one of the major tributaries of the Palouse River drainage, Rock Creek makes up 13% of the entire Palouse River Sub-basin (NWPPC 2004). Also draining through the Revere Wildlife Area is Imbler Creek, which is a significantly large tributary to Rock Creek. Multiple native fish species inhabit these waters.

Reardan Audubon Lake is located in close proximity to the headwaters of the Crab Creek watershed, north of Highway 2. "Audubon Lake is two hundred and seventy-seven acres of wetlands, vernal ponds,

grasslands, and channeled scablands supporting more than 200 species of birds" (WWRP, 2005). The western section of Audubon Lake receives effluent year round from the Reardan Waste Water Treatment Plant, and it is believed that the lake would dry up in the summer and fall months if it did not receive this discharge from the plant (per the City of Reardan Staff). The effluent enriches the lake water and supports the surrounding wildlife, which in turn helped transform the lake into a habitat for migratory birds and an aesthetic tourist site for the City of Reardan (Ecology 2012).

Crab Creek drains over half of Lincoln County, with it and its tributaries generally flowing to the south and southwest off the drainage divide adjacent to the Lake Roosevelt valley. The major tributaries of Crab Creek and from east to west its major tributaries are Rock Creek, Bluestem Creek, Lords Valley Creek, Coal Creek, Duck Lake Creek, Lake Creek, Marlin Hollow, Canniwai Creek, and Wilson Creek. Crab Creek tributaries hose a number of lakes. Several of these lakes have dried out over the last several decades, which is a significant issue of surface water resources in Lincoln County. A drastic decline in stream flows and lake volume has occurred in much of Lincoln County and adjacent portions of Grant and Adams Counties (Anchor 2013).



Ecological Systems and Ecological Integrity

WDFW's strategic objectives include protecting and restoring ecological integrity of critical habitats. Swanson Lakes, Revere and Reardan Audubon Wildlife Areas have a total of eight National Ecological Systems of Concern on the landscape. The following text on each of these systems is taken from the Washington Natural Heritage Program website.

1 - Columbia Basin Foothill Riparian Woodland and Shrubland

Low-elevation riparian system found along the mainstem of the Columbia River and associated major tributaries on the periphery of the mountains surrounding the Columbia River Basin at and below lower tree line.

2 - Columbia Basin Palouse Prairie

A once-extensive grassland system, characterized by rolling topography, composed of loess hills and plains over basalt, is now limited to small patches in Washington.

3 - Columbia Plateau Steppe and Grassland

Extensive grasslands, not grass-dominated patches within the sagebrush shrub-steppe ecological system, dominated by perennial bunchgrasses and forbs sometimes with a sparse shrub layer. Often forms a landscape mosaic with the Columbia Plateau Scabland Shrubland ecological system. Very little exposed bare ground due to mosses and lichens carpeting the area between plants, comprising a biological soil crust that is very important characteristic in this ecological system.

4- Inter-Mountain Basins Big Sagebrush Steppe

Shrubs are dominated by *Artemisia* spp., and/or *Purshia tridentata* in an open to moderately dense shrub layer and with at least 25% total perennial herbaceous cover. The natural fire regime of this ecological system maintains a patchy distribution of shrubs, so the general aspect is that of grassland. This ecosystem can support a biological soil crust of up to 90% or more cover. Biological

soil crust cover generally decreases with vascular plant cover, elevation, increasing disturbance of soil surface, loose surface rock, and coarseness of soil so that its presence and diversity indicates better integrity.

5 - North American Arid West Emergent Marsh

Marshes occurring below lower treeline. Typically surrounded by savanna, shrub-steppe, steppe or desert vegetation. Occur in depressions, lake fringes and along slow-flowing streams and rivers.

6- Northern Rocky Mountain Ponderosa Pine Woodland and Savanna

These woodlands and savannas are, or at least historically were, fire-maintained.

Summer drought and frequent, low-severity fires created woodlands composed of widely spaced, large trees with small scattered clumps of dense, even-aged stands. Fire suppression has transformed this ecosystem from open and park-like to a closed, multi-layer canopy with a younger tree cohort, often including Douglas-fir and true firs.

7- Rocky Mountain Aspen Forest and Woodland

Aspen forests and woodlands are a minor type found on the eastside of the North Cascades and in the Okanogan. Although aspen can be associated with streams, ponds, or wetlands, this system consists of upland aspen stands found from low to moderate elevation. Aspen can be found on well-drained mountain slopes or canyon walls that have some moisture. Rockfalls, talus, or stony north slopes are often typical sites and the system may occur in steppe on moist microsites. Quaking aspen stands originate in and are maintained by stand-replacing disturbances such as crown fire, insect outbreak, disease and windthrow within the matrix of conifer forests. Fire plays an important role in maintenance of

this habitat. Quaking aspen will colonize sites after fire or other stand disturbances through root sprouting. Stems in established stands are killed by ground fires, but quickly resprout. Fire reduces establishment of conifers in aspen stands. A stand of quaking aspen, with sufficient fire disturbance, can live for centuries or even millennia.

8 - Rocky Mountain Lower Montane-Foothill Riparian Woodland and Shrubland

Riparian woodland and shrubland consisting of deciduous, coniferous, and mixed conifer-deciduous forests that occur on stream banks and river floodplains of the lower montane and foothill zones. Annual flooding is a key ecological process, and beaver activity is an important driver of hydrological change. Woodlands are often dominated by black cottonwood which is the key indicator species.

Habitat Special Features:

Vernal Pools

Vernal pools are typically formed in shallow depressions where soils have impermeable hardpans, or are underlain by impermeable bedrock. Vernal pools fill with water from winter rains and snowmelt and gradually dry during late spring and early summer through evapotranspiration (Crowe et al 1994). In eastern Washington, Bjork and Dunwiddie (2004) found vernal pools in Lincoln County where they are limited to the flat, impervious basalt bedrock exposed by the Missoula Floods. The greatest concentration of pools was in the central channel, in and around the Swanson Lakes Wildlife Area. Vernal pools also sometimes support unique endemic varieties of invertebrates, such as fairy shrimp.

Stressors

This section describes aquatic and terrestrial habitat stressors that may affect the functions provided by habitats in and surrounding the three wildlife areas in Lincoln/Whitman Counties. The focused habitat

types are shrub-steppe, grassland, wetland and riparian functions such as foraging, breeding/nesting and migration elements for terrestrial species; and migration requirements for aquatic species. Factors that provide stress to the ecological systems within the Plan include:

- Fragmentation (reduction in total area of habitat or isolation of one habitat fragment from other patches of the same habitat)
- Land use in adjacent uplands (grazing, development)
- Hydrology changes (irrigation)
- Vegetation changes (invasive species)
- Historic grazing
- Altered fire regime (climate change, invasive species)
- Soil surface disturbance (recreation, management activities)
- Herbicide use on plant stand diversity

Habitat Connectivity

Key wildlife habitat connectivity linkage networks in the Columbia Plateau region were identified by the Washington Wildlife Habitat Connectivity Working Group (WHCWG 2012). The linkage networks, comprised of suitable habitats and the linkages connecting them, were derived from two modeling approaches: focal species and landscape integrity. The focal species approach identified important habitat areas and the best linkages between habitat areas for 10 wildlife focal species on the three wildlife areas (see Table 6); Swanson Lakes Wildlife Area has the highest concentration of focal species. Focal species were carefully selected to represent the connectivity needs of a broader assemblage of wildlife (WHCWG 2012). The best linkages provided the least resistance to movement between habitat areas for that animal in that area. This means that some of the linkages may not be comprised of ideal habitat, but provide opportunities for movement through a human-modified landscape. The landscape integrity approach

identified core habitat areas that were relatively free from human modification and the least human-modified linkages between them (WHCWG 2012).

For more background information on the Washington Wildlife Habitat Connectivity Working Group analyses and data follow this link: <http://waconnected.org/>

Habitat connectivity management priorities for Swanson Lakes, Revere and Reardan Audubon Lake are actions that will improve the habitat and linkages

between habitat areas for Columbian sharp-tailed grouse, Greater sage-grouse, white-tailed jackrabbit, and mule deer. Ongoing management and restoration of shrub-steppe, grassland and riparian habitats on Swanson Lakes WLA have benefitted Columbian sharp-tailed grouse, mule deer and other shrub-steppe obligate species. As demonstrated on the following maps, the three wildlife areas play an important role in regional connected network of habitat areas for many wildlife species. These products are available to inform the role of existing WDFW wildlife area

Table 3. Habitat connectivity focal species that occur on or adjacent to Swanson Lakes, Reardan Audubon Lake, and/or Revere Wildlife Areas (not focused on species presence based on habitat modeling)

Name	WLA	Listing Status*
Beaver	Reardan Audubon Lake, Revere	
Black-tailed jackrabbit	Swanson Lakes	SC
Greater sage-grouse	Swanson Lakes	FC, ST
Least chipmunk	Swanson Lakes (HCA within 1.7 mi.)	
Mule deer	Swanson Lakes, Revere	
Sharp-tailed grouse	Swanson Lakes	FSC, ST
Tiger salamander	Swanson Lakes, Revere	SM
Washington ground squirrel	Revere	FC, SC
Western rattlesnake	Swanson Lakes, Revere	
White-tailed jackrabbit	Swanson Lakes, Revere	SC

* Federal Status: FE=Endangered, FT=Threatened, FC=Candidate, FSC=Species of Concern
 State Status: SE=Endangered, ST=Threatened, SC=Candidate, SS=Sensitive, SM=Monitored

locations in overall landscape habitat connectivity and can be used for purposes ranging from identifying restoration areas, prioritizing acquisitions of new or expanded ownership, species and landscape conservation, and consideration of species adaptation to a changing climate.

Web Links will be provided for the following maps

Swanson Lakes, Revere, and Reardan Audubon Lake Wildlife Areas (yellow ovals or red highlights) and multiple species linkage networks within the Columbia Plateau WHCWG 2012)

Linkages between habitat areas are vital to recovery of imperiled species such as the sharp-tailed grouse and Greater sage-grouse and to meet the habitat needs of mule deer.

Figure_ Columbian sharp-tailed grouse Habitat Concentration Areas and linkages

Figure_ Greater sage-grouse Habitat Concentration Areas and linkages

Figure_ Mule Deer Habitat Concentration Areas and linkages

Figure_ White-tailed jack rabbit

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Fish and Wildlife

Swanson Lakes WLA Wildlife Diversity

The Swanson Lakes Wildlife Area supports a wide variety of species, including but not limited to Columbian sharp-tailed grouse, Greater sage-grouse, white-tailed jackrabbit, Merriam's shrew, black tern, sage thrasher, loggerhead shrike, badger, and western painted turtle (see table 4). The combination of shrub-steppe, rocky outcrops, wetlands, and riparian corridors, provide diverse habitats. The area is essential for supporting a population of Columbian sharp-tailed grouse, and is also the location of reintroduced populations of sage-grouse. Former cropland recently restored to native vegetation is heavily used by both grouse species. Surveys on adjacent BLM lands have identified at least six species of bats, as well as Columbia spotted frog, spadefoot toad, tiger salamander, up to six snake species, and short-horned lizard. Restoration and enhancement of shrub-steppe and riparian habitats focused on grouse also benefit mule deer and improves breeding and brood rearing conditions for upland birds including pheasant, California quail and gray (Hungarian) partridge.

Reardan Audubon Lake WLA attracts an abundance of waterfowl and shorebirds, as well as migrant raptors and passerines; birders have recorded 160 species at the site (eBird 2013).



The Revere WLA includes the banks of both Imbler and Rock Creek and has riparian shrubs and trees, rocky draws and upland grassland in a matrix of shrub-steppe, restored upland habitat plots, and irrigated hay fields, and is near the BLM's Escure Ranch property. The area currently supports mule deer, upland and nongame birds. The Revere WLA is within WDFW's pheasant focus area where habitat improvement efforts for upland birds have been one of WDFW's highest game management priorities. Because public landownership in the focus area is limited, WDFW is providing incentives or support for work on private and other public lands. These types of enhancements directed toward upland birds can also benefit other species such as deer and shrub-steppe or grassland dependent non-game species. The work on private lands in the immediate vicinity expands the wildlife population benefits of public lands by decreasing gaps in quality habitat and providing corridors for movement.

All three wildlife areas combined provide habitat for 13 Species of Greatest Conservation Need (SGCN); two which are Federal Candidate species; and nine which are state listed species and additional State priority species; and 18 Priority Habitat and Species (PHS) (Table 4). The following SGCN species will continue to benefit from planned management actions on the WLAs: white-tailed jackrabbit, black-tailed jackrabbit, Washington ground squirrel, loggerhead shrike, sage thrasher, sagebrush sparrow, and pygmy rabbit. Additionally the Priority Habitat and Species of Lincoln and Whitman County list are listed in Appendix C.

Table 4. State and Federal Conservation Status, WDFW Priority Habitats and Species (PHS) and Species of Greatest Conservation Need (SGCN) Criteria and Priority Areas that may occur on the wildlife areas

Common Name	Scientific Name	Federal/State Status/SGCN	PHS Criteria	PHS Priority Area	Wildlife Area
American white pelican	<i>Pelecanus erythrorhynchos</i>	SE	1, 2	Breeding/ Regular Concentration	Swanson Lakes
Black tern	<i>Chlidonias niger</i>	SGCN	2	Breeding	Swanson Lakes/Reardan-Audubon Lake
Burrowing owl	<i>Athene cunicularia</i>	SC, SGCN	1	Breeding Foraging areas, Regular Concentrations	Swanson Lakes/Revere
Columbia spotted frog	<i>Rana luteiventris</i>	SGCN	1	Any Occurrence	Reardan Audubon Lake/ Revere
Elk	<i>Cervus elaphus</i>		3	Regular Concentration	Swanson Lakes
Greater Sage- grouse	<i>Centrocercus urophasianus</i>	FC, ST, SGCN	1,3	Breeding	Swanson Lakes
Loggerhead shrike	<i>Lanius ludovicianus</i>	SC, SGCN	1	Breeding	Swanson Lakes
Mule deer	<i>Odocoileus hemionus hemionus</i>		3	Regular Concentration	Swanson Lakes/Reardan-Audubon Lake/Revere
Pygmy rabbit	<i>Brachylagus idahoensis</i>	FE, SE, SGCN	1	Breeding	Potential re-introduction on Swanson Lakes
Rainbow Trout	<i>Oncorhynchus mykiss</i>		1, 3	Occurrence/migration	Swanson Lakes/Revere
Ring-necked pheasant	<i>Phasianus colchicus</i>		3	Regular Concentration	Swanson Lakes/Revere
Sage thrasher	<i>Oreoscoptes montanus</i>	SC, SGCN	1	Breeding	Swanson Lakes
Sagebrush sparrow	<i>Artemisiospiza nevadensis</i>	SGCN			
Columbian Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	ST	1, 3	Breeding	Swanson Lakes/Revere
Tiger salamander	<i>Ambystoma tigrinum</i>	SGCN			Swanson Lakes/Reardan Audubon Lake
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SGCN	1, 2	Breeding	
Tundra swan	<i>Cygnus columbianus</i>		2, 3	Regular Concentration	Swanson Lakes/Reardan-Audubon Lake
Washington ground squirrel	<i>Urocitellus washingtoni</i>	FC, SC, SGCN	1	Regular Concentration	Swanson Lakes
Western painted turtle	<i>Chrysemys picta</i>				Reardan Audubon Lake/ Swanson Lakes
White-tailed jackrabbit	<i>Lepus townsendii</i>	SC, SGCN	1, 3	Regular Concentration	Swanson Lakes/Reardan-Audubon Lake/Revere
Yuma myotis	<i>Myotis yumanensis</i>		2	Regular Concentration	Swanson Lakes/Reardan-Audubon Lake

Abbreviations: State endangered (SE), State threatened (ST), State Candidate for listing (SC), Federal endangered (FE), Federal candidate (FC), Federal species of concern (FSC); Species of Greatest Conservation Need (SGCN)

Greater Sage-grouse Status

The declining population sizes and distribution of Greater sage-grouse (*Centrocercus urophasianus*) in Washington have resulted in serious concerns for their long-term conservation status. The overall population was estimated to be 902 in 2014, associated with 27 leks. The WDFW, in cooperation with the BLM, initiated a project in 2008 to reintroduce greater sage-grouse to the Swanson Lakes Wildlife Area in Lincoln County, Washington. The project was designed to establish a third population in the state in an area with more than 200 km² of shrub-steppe habitat on public lands. Prior to the first translocation in 2008 there were rare observations of sage-grouse in the release area. It was not clear whether these observations were birds dispersing from the closest population in Douglas County or whether these birds were 'remnants' from an endemic population known to occupy the area through the mid-1980s. From spring 2008 to spring 2014, 240 greater sage-grouse were translocated from southern Oregon to the Washington release site and their movements, productivity, habitat use, and survival have been monitored. In 2010 three males were observed strutting for two hens post release. In 2011, 200 meters to the north of the 2010 strut site a lek formed with seven males observed pre-release. Pre-release, 7, 12, and 14 males were observed on the lek in 2012, 2013 & 2014 respectively. Though the lek appears to be firmly established and growing, the overall population is still small and additional translocations of sage grouse will likely be needed.

Columbian Sharp-tailed Grouse Status

Declining populations and distribution of Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus*) in Washington have resulted in serious concerns for their long-term conservation status. The overall population was estimated to be 870 in 2014, associated with 39 leks. Translocations of sharp-tailed grouse from 'healthy' populations outside the state are being conducted to improve the genetic and demographic health of populations within Washington. The Washington Department of Fish and Wildlife, in cooperation with the Colville Confederated Tribes, translocated 368 Columbian sharp-tailed grouse from southeastern Idaho, north-central Utah, and central British Columbia to Washington State in spring 2005–2013. The release sites included Swanson Lakes WLA. In all release sites, sharp-tailed grouse declined through the year 2005, despite the acquisition and protection of habitat and ongoing habitat restoration efforts. Efforts to monitor movement, survival, and productivity of the augmented population at Swanson Lakes WLA are ongoing. 205 of the sharp-tailed grouse were released at Swanson Lakes Wildlife Area. Monitoring of the translocated birds showed integration with the local population, successful nesting and brood rearing by translocated hens. Lek monitoring in the area likewise showed small increases in counts in the years following release, as well as, the establishment of a new lek in the area. The future population response will determine whether the augmentations should be considered a success, the results to date have been promising

More information regarding sharp-tail and sage-grouse recovery are located at <http://wdfw.wa.gov/conservation/endangered/birds.html>

Specific Management Concerns for Selected Species of Greatest Conservation Need

Table 5 Describes SGCN species of interest and recommended management actions for Swanson Lakes, Revere and Reardan Audubon Lake Wildlife Areas

Table 5.

Action/management activity	Greater Sage-grouse	Columbian Sharp Tailed Grouse	White-tailed jackrabbit	Washington Ground Squirrel	Pygmy Rabbit	Loggerhead shrike	Sage thrasher	Sagebrush Sparrow	Burrowing owl	Ferruginous Hawk	Black Tern	<i>Yuma Myotis</i> Townsend's Big-eared	Amphibians, general	Columbia Spotted Frog	Tiger Salamander	Reptiles, general	Western Painted Turtle
Do not facilitate killing of burrowing mammals (ground squirrels, badgers, etc.)																	
Protect any nursery colonies and hibernacula from disturbance (See Bat Conservation Plan (Hayes and Wiles 2013))												X					
Buildings should be surveyed to determine seasonal occupancy, with appropriate precautions taken to minimize disturbance												X				X	
Maintain some fish-free breeding pools including some permanent water bodies													X	X	X		
Maintain areas of short emergent vegetation in water bodies														X			
Prevent wetland management activities that will enhance habitat for American bullfrogs													X	X	X		
Management for breeding habitat (oviposition habitat) - Maintain areas of short-emergent vegetation/ bare soils on the edges of wetlands in areas that will be inundated by shallow water (< 20 cm) in April. Where needed, reduce the height of reed canarygrass (e.g., fall mowing, haying, livestock grazing).														X			

Table 5.

Action/management activity	Greater Sage-grouse	Columbian Sharp Tailed Grouse	White-tailed jackrabbit	Washington Ground Squirrel	Pygmy Rabbit	Loggerhead shrike	Sage thrasher	Sagebrush Sparrow	Burrowing owl	Ferruginous Hawk	Black Tern	<i>Yuma Myotis</i>	Townsend's Big-eared	Amphibians, general	Columbia Spotted Frog	Tiger Salamander	Reptiles, general	Western Painted Turtle
Prevent alterations to rocky outcrops and talus																	X	
Avoid building structures, trails and/or roads near snake dens (hibernacula) or areas near dens where snakes are likely to disperse to and from summer habitat.																	X	
For established trails/roads near snake dens, prevent heavy use in spring (April-May) and fall (late September to early November) when snakes are most likely to be moving back to/from dens																	X	
Avoid activities that would crush underground tunnels and burrows																	X	
Avoid building roads between occupied wetlands and upland nesting areas. For established roads, close them to heavy use during periods when females are nesting (approx. June –July)																		X

Current Climate

Table 6. Key Impacts, Potential Management Actions and Information Gaps for grassland and shrubland habitats (Source: Glick and Moore NWF 2009)

Grassland and Shrubland Habitats		
Key Impacts	Potential Management Actions	Information Gaps
<ul style="list-style-type: none">• Altered hydrology including floods and drought• Increasing fires• Expansion of invasive species• Loss of endemics and species diversity	<ul style="list-style-type: none">• Increase water use efficiency• Project and restore habitat• Change agricultural practices to reduce the need for water• Change land use management• Raise public awareness	<ul style="list-style-type: none">• Migration patterns• Species interactions• Post-fire

Table 7. Potential climate impacts, effect on habitat and management action for the Plan

Potential Climate Impacts	Effect on habitat	Management Action	Status
Increased risk of fire	Less rebound of sage-brush	Develop fire break plan and coordinate with BLM/ Lincoln Conservation District	BLM taking the lead on Swanson Lakes WLA/BPA lands
Decreased precipitation	Increased grassland/ noxious weeds	May need to manage as grassland in the future	Incorporated into current restoration objectives
Increased tree encroachment	Loss of sagebrush and sagebrush obligate species. Higher predator populations may impact other species (e.g. great horned owl)	Remove ponderosa pines as needed	Current activity for the past 10 years

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Public Use

Current Use

Recreation uses for all three wildlife areas are focused primarily on hunting, fishing and wildlife viewing, except for Reardan Audubon Lake, which is closed to hunting and fishing (see Table 8). Recreation activities also include limited horseback riding, hiking and mountain biking, as well as collection of traditional foods by local tribes.

At **Swanson Lakes Wildlife Area**, the most common public use is mule deer hunting, and to a lesser extent, hunting of Hungarian partridge and pheasant. Z-Lake is planted with rainbow trout and provides fishing opportunities to all fishing enthusiasts, including disabled anglers who have motorized access to the site. The wildlife area also attracts bird watchers, and is the site of several environmental education opportunities including student tours, and volunteers (Citizen Scientists) who collect data to monitor the area's ecological conditions. Swanson has seven parking lots around the wildlife area boundary, and also offers multiple access points for park-and-hike activities.

Revere Wildlife Area is open to all legal hunting, but is primarily used by mule deer and pheasant hunters. Occasional hikers, mountain bikers and horseback riders visit the area, as well as anglers who fish for rainbow and brown trout in Rock Creek. Rock Creek is not stocked with fish but, during high water, trout will volitionally emigrate downstream and occupy waters on the wildlife area. Rock Creek upstream

of Jordan Knott Road is open year-round and managed under statewide rules. That portion of Rock Creek downstream (between Jordan Knott Road and Endicott W Road) is managed as a catch and release fishery and is under selective gear rules. Two parking lots serve this area; one with approximately 20 parking spaces and one with four spaces and an informational kiosk. The interior of the wildlife area is closed to motorized vehicles, except for authorized disabled hunters and lease operators, who use the primitive dirt road in the interior of the wildlife area.

Reardan Audubon Lake Wildlife Area is a no-hunting or fishing site, with motorized vehicle access limited to the two parking lots, one on the north side and one on the south. Each parking lot serves approximately 15 vehicles, includes enough room for bus parking and turn-around, an ADA-accessible vault toilet, and an informational kiosk. With Audubon Lake bisecting the WLA into north and south parts, birding is the predominant recreational activity. Bird watching and other wildlife viewing are enjoyed with access via a short paved wheelchair-accessible trail and viewing blind on both the north and south sides. Each blind contains two permanently-mounted telescopes for a closer look at shorebirds and waterfowl, including one that is wheelchair-accessible. Future plans for the south trail include placement of a stone bench and several interpretive plaques.

Table 8. Recreation use on Swanson Lakes, Revere and Reardan Audubon Lake Wildlife Areas

Wildlife Area	Hunting	Other Recreation	Restrictions	Education/ Interpretation	Parking and other facilities
Swanson Lakes	Mule deer, elk, Hungarian (gray) partridge, and pheasant	Hiking, mountain biking, fishing, wildlife viewing, photography and tribal food gathering	Prairie grouse (sage-grouse and Columbian sharp-tailed grouse) and jackrabbit hunting is prohibited Motorized access limited to authorized disabled visitors	Informational kiosk on headquarters access road	7 parking lots, with room for 35 vehicles
Revere	Mule deer and pheasant	Hiking, mountain biking, fishing, wildlife viewing, photography	Motorized access limited to authorized disabled visitors	One informational kiosk	
Reardan Audubon Lake	Not permitted	Wildlife viewing, hiking and photography	Hunting is not permitted	One informational kiosk, 2 viewing blinds and 4 telescopes	2 parking lots, with bus parking, wheelchair-accessible paved trails, restroom



Management Direction and Approach

Management Goals and Objectives

This plan sets management priorities for Swanson Lakes, Revere and Reardan Audubon Wildlife Areas for the next 10 years. Goals and objectives were developed by regional and headquarters staff, with input from the Wildlife Area Advisory Committee and are consistent with the WDFW mission and strategic plan.

The goals of the Swanson Lakes, Revere and Reardan Audubon Lake Wildlife Areas are as follows:

1. Maintain or improve the ecological integrity of priority sites.
2. Recover Columbian sharp-tailed and greater sage-grouse populations in and around the wildlife area.
3. Maintain and enhance mule deer and upland game bird populations.
4. Achieve species diversity at levels consistent with healthy ecosystems.
5. Support and maintain appropriate recreation opportunities.
6. Offer multiple and varied opportunities for stakeholder participation and engagement.
7. Maintain productive and positive working relationships with neighbors, partners and permittees.
8. WLA staff are properly trained, equipped and licensed, as necessary, to meet operation and management needs of the wildlife area.
9. Maintain safe, highly functional, and cost-effective administration facilities and equipment.

Table 9 summarizes goals, objectives and performance measures for all three wildlife areas. Objectives express actions that will be taken to achieve a goal. The measurements that will be used to report progress towards objectives are identified as performance measures. In some cases, objectives apply to all of the Wildlife Areas, and can be measured collectively.

Table 9.

Goal	Objective	Performance Measure	Lead
Swanson Lakes			
1. Maintain or improve the ecological integrity of priority sites.	A. Establish ecological integrity baseline for 1) native shrub-steppe, 2) restored fields, and 3) wetland /riparian habitat and other stream habitats, and established EI goals by 2020	1. Baseline established (y/n) 2. EI goals established (y/n)	EIM
	B. By June 2016, develop and implement a shrub-steppe restoration and post-fire rehabilitation plan for Swanson Lakes WLA coordinating with Region 1 Habitat and Diversity Division	Plan developed and implemented (y/n)	Diversity/ WLA Manager
	C. Annually inspect 50% of boundary fencing and gates; repair/replace as needed and funding allows. Effort will include inspection for integrity of visual markers where placed	1. # miles of fencing inspected and repaired 2. # of gates inspected and repaired	WLA Manager
	D. Maintain or reduce the distribution and abundance of invasive weeds based on the Weed Management Plan	1. Shrub-steppe # acres inspected/# acres treated 2. Grassland # acres inspected/# acres treated 3. Riparian # acres inspected/# acres treated	WLA Manager
	E. Coordinate with BLM in the implementation of the fire break plan to reduce the likelihood that fires will have a major impact on habitat.	Plan completed (y/n)	WLA Manager
	F. Build and maintain a citizen science network to collect ecological integrity data.	1. % of photo points collected by citizen scientists annually 2. % of vegetation plots collected by citizen scientists every 5 years.	EIM

Goal	Objective	Performance Measure	Lead
2. Recover sharp-tailed and Greater sage-grouse populations in the Wildlife Area.	A. Annually monitor sage-grouse and sharp-tailed populations.	# of surveys conducted per year	District Wildlife Biologist
	B. Conduct re-introductions of sharp-tailed and greater sage-grouse as birds are needed and available.	1. # sharp-tailed grouse released on site 2. # Sage-grouse released on site	Diversity/ Science/District Wildlife Biologist
	C. By December 31, 2017, conduct an inventory of artificial structures that may support predators; and eliminate structures that support artificially high predator densities.	1. Inventory conducted (y/n) 2. % structures identified remaining	WLA Manager/ District Wildlife Biologist
	D. Maintain and monitor the existing 10 acres of sharp-tailed grouse winter forage plots. Reassess seed mix relative to guidelines, once the Western Association of Fish and Wildlife Agencies Columbia Sharp-tailed Habitat Guidelines are out.	Forage plots maintained (y/n)	WLA Manager
3. Maintain and enhance mule deer and upland game bird populations.	A. Develop and implement mule deer management and research activities with Mule Deer Foundation or other organizations to provide quality spring/summer forage habitat in riparian areas and uplands for mule deer (e.g. high-diversity self-sustaining forb plantings, weed control, etc.).	1. # projects developed 2. # projects implemented	District Wildlife Biologist/ Private Lands Biologist/ WLA Manager
	B. Restoration of shrub-steppe habitat to enhance upland game bird populations and other shrub-steppe obligates.	1. # of grants applied 2. # Acres restored	WLA Manager

Goal	Objective	Performance Measure	Lead
4. Achieve species diversity at levels consistent with healthy ecosystems.	A. Coordinate or participate in, species habitat and population management actions on wildlife areas consistent with recovery plans, management plans, agency and program priorities, and available funding.	1. # of species for which population management actions are implemented annually 2. # of species for which habitat management actions are implemented annually	Diversity
	C. Coordinate with the Science Division to expand CRP South passerine citizen science surveys on Swanson Lakes WLA within 2 years.	Implement program with Science Division	District Wildlife Biologist/ Research Scientist
5. Support and maintain appropriate recreational opportunities.	A. Maintain fishing opportunities at Swanson Lakes Wildlife Area	Z-lake aerated on schedule and frequency agreed to with Fish Program (y/n). 3,000 spring fry rainbow stocked per year at Z-Lake	WLA Manager R 1 Fish Program
	B. Monitor trout fishery at Z-Lake (e.g. periodic fish surveys and creel checks to determine stocking success and utilization, respectively).	Monitoring conducted periodically or on an as-needed basis	R 1 Fish Program
	A. Coordinate and maintain a Wildlife Area Advisory Committee	# Meetings per year	WLA Manager
6. Offer multiple and varied opportunities for stakeholder participation and engagement.	B. Coordinate communication with community groups about current wildlife management activities.	Number of groups/constituencies contacted	WLA Manager
	C. Coordinate and host at least two school tours annually.	Number of tours completed	WLA Manager
	D. Provide opportunities annually for the public and other stakeholders to volunteer on the Swanson Lakes WLA.	1. # of volunteers 2. # volunteer hours 3. # volunteer projects on site	WLA Manager

Goal	Objective	Performance Measure	Lead
7. Maintain productive and positive working relationships with neighbors, partners and permittees.	A. Maintain existing agricultural leases that benefit wildlife	Leases maintained (y/n)	WLA Manager
	B. Maintain active working relationship with BLM	# of cooperative projects completed between partner agencies per five years	WLA Manager
	C. Meet BPA annual reporting requirements	Annual contract approval by BPA (y/n)	WLA Manager
	D. Meet DNR annual lease requirements, 1) boundary fence maintenance, and 2) weed control	DNR annual lease requirements met (y/n)	WLA Manager
	E. Improve neighbors and stakeholders communications/relationships by producing an annual newsletter.	Published x 1 per year	WLA Manager
6. WLA staff are properly trained, equipped and licensed, as necessary, to meet operation and management needs of the wildlife area.	No unique objective for this wildlife area.		
7. Maintain safe, highly functional, and cost-effective administrative facilities and equipment	A. Identify possible remedies to Headquarters septic issues; define a plan of action and seek funding.	Identify a viable option by 2017	WLA Manager
Revere			
1. Maintain or improve the ecological integrity of priority sites.	A. Establish of ecological integrity baseline for 1) native shrub-steppe, and 2) restored fields, and establish EI goals by 2020	1. Baseline established (y/n) 2. EI goals established (y/n)	EIM
	B. By June 2016, develop a riparian habitat restoration plan for Revere WLA	Plan developed (y/n)	R1 Habitat/ WLA Manager
	C. Annually inspect 100% of boundary fencing and gates; repair/replace as needed and funding allows (conducted by volunteers).	1. # miles of fencing inspected and repaired 2. # of gates inspected and repaired	WLA Manager
	D. Maintain or reduce the distribution and abundance of invasive weeds based on the Weed Management Plan	1. Shrub-steppe # acres inspected/ # acres treated 2. Grassland # acres inspected/# acres treated 3. Riparian # acres inspected/# acres treated	WLA Manager

Goal	Objective	Performance Measure	Lead
	E. Acquire Revere addition property	Property acquired by 2016	WLA Manager
	F. Build and maintain a citizen science network to collect ecological integrity data.	1. % of photo points collected by citizen scientists annually 2. % of vegetation plots collected by citizen scientists every 5 years.	EIM
2. Recover sharp-tailed and greater sage-grouse populations in the Wildlife Area.	A. Conduct survey for sharp-tailed grouse on Revere Wildlife Area.	Surveys completed every 3-5 years	District Wildlife Biologist
	B. Develop a sharp-tailed grouse identification pamphlet for WDFW volunteers and public. Include sighting report process	Pamphlet Developed	Diversity
	C. Display pamphlet at wildlife area kiosks and distribute to volunteers and public.	# Pamphlets displayed and distributed	District Wildlife Biologist/WLA Manager
3. Maintain and enhance mule deer and upland game bird populations.	A. Develop and implement mule deer management and research activities with Mule Deer Foundation and Pheasants Forever and/or other organizations to provide quality spring/summer forage habitat in riparian areas and uplands for mule deer (e.g. high-diversity self-sustaining forb plantings, weed control, etc).	1. # projects developed 2. # projects implemented	District Wildlife Biologist/ Private Lands Biologist/ WLA Manager
	B. In conjunction with any restoration work initiated in "A" above develop a citizen science project to monitor for wildlife utilization.	Plan developed (y/n)	District Wildlife Biologist
	C. When the Revere acquisition is acquired, implement the Pheasants Forever habitat restoration plan.	1. # acres seeding grass 2. # acres seeding forbs 3. # acres planted with shrubs	R1 Private Lands

Goal	Objective	Performance Measure	Lead
4. Achieve species diversity at levels consistent with healthy ecosystems.	A. Coordinate or participate in, species habitat and population management actions on wildlife areas consistent with recovery plans, management plans, agency and program priorities, and available funding.	1. # of species for which population management actions are implemented annually 2. # of species for which habitat management actions are implemented annually	Diversity
	B. Coordinate with the Science Division to expand CRP South passerine citizen science surveys on Revere WLA within 2 years.	Implement program with Science Division	District Wildlife Biologist/ Research Scientist
5. Support and maintain appropriate recreational opportunities.	A. Maintain the recreational fishery in Rock Creek.	Monitoring conducted periodically or on an as-needed basis	R 1 Fish Program
6. Offer multiple and varied opportunities for stakeholder participation and engagement.	A. Coordinate and maintain a Wildlife Area Advisory Committee	# meetings per year	WLA Manager
	B. Coordinate communication with community groups about current wildlife management activities.	Number of groups/constituencies contacted	WLA Manager
	C. Provide opportunities annually for the public and other stakeholders to volunteer on the Revere WLA.	1. # of volunteers 2. # volunteer hours 3. # volunteer projects on site	WLA Manager
7. Maintain productive and positive working relationships with neighbors, partners and permittees.	A. Identify and maintain existing agricultural leases that benefit wildlife.	Leases maintained (y/n)	WLA Manager
8. Properly train, equip, and license WLA staff to meet operation and management needs of the WLA.	A. Develop fire district contract for the Revere Wildlife Area	Contract developed by December 2015	WLA manager
9. Maintain safe, highly functional, and cost-effective administration facilities and equipment.	No unique objective for this wildlife area.		

Goal	Objective	Performance Measure	Lead
Reardan-Audubon Lake			
1. Maintain or improve the ecological integrity of priority sites.	A. Establish of ecological integrity baseline for 1) native shrub-steppe/grassland, and 2) restored fields, and 3) wetlands, and establish EI goals by 2020	1. Baseline established (y/n) 2. EI goals established (y/n)	EIM
	B. By June 2016, develop a riparian habitat restoration plan for Reardan-Audubon Lake WLA	Plan developed (y/n)	R1 Habitat/
	C. Annually inspect 100% of boundary fencing and gates; repair/replace as needed and funding allows	1. # miles of fencing inspected and repaired 2. # of gates inspected and repaired	WLA Manager
	D. Maintain or reduce the distribution and abundance of invasive weeds based on the Weed Management Plan	1. Shrub-steppe # acres inspected/# acres treated 2. Grassland # acres inspected/# acres treated 3. Riparian # acres inspected/# acres treated	WLA Manager
	E. Acquire Reardan Audubon Lake Phase 2 property from Inland Northwest Land Trust by 2020.	Property acquired (y/n)	District Wildlife Biologist
	F. Work with Inland Northwest Land Trust, Audubon, and other groups on future acquisition phases.	1. # of meetings 2. # of grants applied	District Wildlife Biologist/WLA Manager
	G. Build and maintain a citizen science network to collect ecological integrity data.	1. % of photo points collected by citizen scientists annually 2. % of vegetation plots collected by citizen scientists every 5 years.	EIM

Goal	Objective	Performance Measure	Lead
2. Achieve species diversity at levels consistent with healthy ecosystems.	A. Coordinate or participate in, species habitat and population management actions on wildlife areas consistent with recovery plans, management plans, agency and program priorities, and available funding.	1. # of species for which population management actions are implemented annually 2. # of species for which habitat management actions are implemented annually	Diversity
	B. Coordinate with the Science Division to expand CRP South passerine citizen science surveys on Reardan Audubon Lake WLA within 2 years.	1. Implement program with Science Division	District Wildlife Biologist/ Research Scientist
3. Support and maintain appropriate recreational opportunities.	A. Install all planned remaining recreational access structures by 2020 (2 benches, ADA accessible viewing blind, interpretive signs).	All structures installed (y/n)	WLA Manager
	B. Work with Spokane Audubon, Inland Northwest Land Trust, and other interested groups on recreation planning and implementation on newly acquired parcels.	1. # meetings 2. Recreation plan completed (y/n) 3. # Recreational structures installed	WLA Manager/ District Wildlife Biologist
	C. Increase public awareness of impacts to wildlife by those walking off the trails to the shoreline.	Place additional signage on two kiosks by 2016	WLA Manager
4. Offer multiple and varied opportunities for stakeholder participation and engagement.	A. Coordinate and maintain a Wildlife Area Advisory Committee	# meetings per year	WLA Manager
	B. Coordinate communication with community groups about current wildlife management activities.	Number of groups/constituencies contacted	WLA Manager
	C. Provide opportunities annually for the public and other stakeholders to volunteer on the Reardan Audubon Lake WLA.	1. # of volunteers 2. # volunteer hours 3. # volunteer projects on site	WLA Manager
	D. Develop cooperative projects with the Inland Northwest Land Trust for operations and maintenance activities (e.g. weed control, fence repair) on the Reardan Audubon Lake WLA.	# of projects per year	WLA Manager

Goal	Objective	Performance Measure	Lead
5. Maintain productive and positive working relationships with neighbors, partners and permittees.	No unique objective for this wildlife area.		
6. Properly train, equip, and license WLA staff to meet operation and management needs of the WLA.	A. Develop fire district contract for the Reardan Audubon WLA by 2016.	Contract developed (y/n)	WLA Manager
7. Maintain safe, highly functional, and cost-effective administration facilities and equipment.	No unique objective for this wildlife area.		

Adaptive Management/Monitoring

Wildlife Area objectives are to be measured on an annual basis based on the associated performance measures and through staff annual evaluations. On a biennial basis, the Swanson Lakes Wildlife Area manager will review, report and revise, as appropriate, objectives and performance measures for the next two year-cycle. Staff will engage and develop recommendations for the two-year update with the wildlife area advisory committee. Such reporting will allow the manager, their staff, and the regional office,

to modify tasks and timelines as necessary to meet the associated objective. Further, over the term of the plan (10 years), performance illustrates the adequacy or inadequacy of funding and capacity to successfully manage the wildlife area, potentially influencing goals and objectives in the next planning term. Ecological integrity data is also being collected by citizen scientists on the Swanson Lakes Wildlife Area.

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VII. Appendix

- A. Legal Description and Research Summary
- B. Weed Management
- C. Priority Habitat and Species County Lists
- D. Rare Plant List and Map (Reardan Audubon Lakes WLA)
- E. Restoration Summary
- F. Cultural Resources
- G. Fire District Information (Swanson Lakes WLA)
- H. Public Process Summary (Wildlife Area Advisory Committee/District Team Review and SEPA)

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APPENDIX A.

Legal Description and Research Summary

Swanson Lakes WLA Legal Description:

T25N, R33E: 25, 36 (DNR lease)
 T25N, R34E: 13, 24, 25, 26, 27, 28, 31, 32, 33, 34, 35, and 36 (DNR lease)
 T25N, R35E: 30, 32
 T24N, R34E: 1, 2, 3, 4, 10, 12, 13, and 14
 T24N, R35E: 3, 4, 5, 6, 7, 9, 10, 14, 15, 18, 22, and 23

Revere WLA Legal Description:

Township 18 North, Range 39 East, Sections 3, 4, 5, 8, 9 and 10

Reardan-Audubon Lake WLA Legal Description:

Township 25 North, Range 39 East, Section 10

Research Summary

A significant amount of research has been conducted on the Swanson Lakes Wildlife Area. Table 10 provides a summary of the important science contributions that have been made.

Name	Date	Description
Dr. Michael Schroeder, WDFW	1993 - Present	Monitor and research sharp-tailed grouse and sage-grouse on and around the Swanson Lakes Wildlife Area
Matthew McDonald	1990's	Ecology of Columbian sharp-tailed grouse in eastern Washington. M. S. Thesis. University of Idaho 1998
Kourtney Stonehouse	2010-2012	Habitat selection by sympatric, translocated Greater sage-grouse and Columbian sharp-tailed grouse in eastern Washington. M.S. Thesis. Washington State University, 2013.
Nick Paulson, M.S. student	2007	Spatial and habitat ecology of North American badgers (<i>Taxidea taxus</i>) in a native shrub-steppe ecosystem of eastern Washington. M. S. Thesis. Washington State University
Dr. Matthew Vander Haegen of WDFW	1990 - 2000	Songbird research on and around the Swanson Lakes WLA
Woody Myers	2002-2007	Body condition and reproduction, survival, habitat use, and seasonal movements of mule deer.
Tamara Johnstone-yellin	2002-2004	Survival of mule deer fawns in eastern Washington. M.S. Thesis, Washington State University
Megan Halabisky, UW Ph.D. Candidate	2012 - present	Pond water level monitoring at Swanson Lakes WLA
Rick Perleberg, Reardan High School	2011- present	Research includes evaluating nutritional value of sagebrush plants for utilization by sage-grouse; growth rate of sagebrush in restored sites.
Citizen Science/ Environmental Integrity Monitoring (EIM)	2012 - present	This public-private partnership approach has been implemented at the Swanson Lakes Wildlife Area. Data collected and uploaded to WDFW includes general habitat plot information, and photopoint locations.

APPENDIX B. Swanson Lakes Wildlife Area Weed Control Plan

Weed Control Goals at Swanson Lakes Wildlife Area

The goal of weed control on Department lands at Swanson Lakes Wildlife Area, which includes the Reardan Audubon Lake WLA and the Revere WLA, is to maintain or improve the habitat for fish and wildlife, meet legal obligations, and protect adjacent private lands.

To these ends, WDFW uses Integrated Pest (i.e. weed) Management (IPM), which is defined in RCW 17.15.010 as “a coordinated decision-making and action process that uses the most appropriate pest control methods and strategy in an environmentally and economically sound manner to meet agency programmatic pest management objectives.”

At the Swanson Lakes WLA, WDFW’s weed management objectives are:

- A. Shrub-steppe:** Check up to 11,200 acres annually for maintenance needs at Swanson Lakes, Reardan and Revere WLAs. It is estimated that between 112 – 1,112 acres requires some active management. Shrub-steppe is mostly self-maintaining, but some noxious weed control is occasionally needed. Work volume varies annually due to factors including timing and volume of precipitation timing and amount, results of trespass grazing or other disturbance, fires, unusual winter or summer temperatures for a long period, etc.
- B. Grasslands:** Check up to 448 acres annually for maintenance needs at Swanson Lakes and Reardan Audubon WLAs. It is estimated that up to 150 acres require annual maintenance.

- C. Riparian:** Check up to 168 acres annually for maintenance needs at Swanson Lakes, Reardan Audubon Lake and Revere WLAs. In an average year about 28 acres are treated, of which 25 acres are primarily hoary cress and a variety of other weeds. Hoary cress is a difficult weed to locate and suppress due to the patchy nature of the infestations. In addition, early season growth often occurs in areas that are seasonally inaccessible to vehicles. In areas where we have planted shrubs and trees, an additional 3 acres are treated annually.

Weed Species of Concern on Swanson Lakes WLA:

Weed species of concern on the Swanson Lakes WLA include but are not limited to: Yellow toadflax (*Linaria vulgaris*), Dalmatian toadflax (*Linaria dalmatica*), diffuse knapweed (*Centaurea diffusa*), whitetop or hoary cress (*Cardaria draba*), Canada thistle (*Cirsium arvense*), St. John’s wort (*Hypericum perforatum*), Scotch thistle (*Onopordum acanthium*), Russian thistle (*Salsola tragus*), tumble mustard (*Sisymbrium altissimum*), purple mustard (*Chorispora tenella*), common tansy (*Tanacetum vulgare*), common mullein (*Verbascum thapsus*), Ventenata (*Ventenata dubia*) and poison hemlock (*Conium maculatum*).

Weeds occurring on the Swanson Lakes WLA and associated WLAs are listed in Table 11. The table also describes the weed’s classification, an estimate of the acreage affected by the weed, how many acres were treated, the relative density of infestation, the general trend the weed infestation has been exhibiting, the control objective and/or strategy for the weed and finally, which wildlife WLAs have the weed present.

Table 11. Swanson Lakes, Revere and Reardan Audubon Lake weed table including the weed class and location on the wildlife areas.

Weed Species	2014 County	2013 Estimated Affected Acres	2013 Treated Acres	Qualitative Density	Annual Trend	Control Objective/Strategy	Wildlife Area Weed Distribution
Yellow toadflax	C	1	1	Low	Decreasing	Potential threat-kill all patches	Swanson Lakes
Diffuse knapweed	B	5	1	Low	Increasing	Limited distribution-roads/ROWs-kill all plants found	Swanson Lakes
Whitetop	C	6	0	Med	Stable	Limited distribution-monitor for trend changes	Swanson Lakes Reardan Audubon Lake
Canada thistle	C	50	5	Med	Stable	Established in moist areas-control/monitor	Swanson Lakes
		6	6	Med	Stable	In south field, near pond-control/monitor	Reardan Audubon Lake
St. John's wort	C	9	9	Med	Stable	Continue control/monitor trend	Swanson Lakes
Dalmatian toadflax	B-Designate	1	1	Low	Increasing	Listed weed-control/pull	Swanson Lakes
Scotch thistle	B-Designate	20	5	Low	Stable	Listed weed/control	Swanson Lakes
Russian thistle	n/a	5	5	Low	Stable	Problem in fallow fields/access areas-control	Swanson Lakes
Tumble mustard	n/a	50	5	Med	Stable	Interferes with establishing plantings-monitor	All
Purple mustard	n/a	25	5	Low	Stable	Interferes with establishing planting-monitor	Swanson Lakes
Common tansy	C	5	2	Med	Stable	Roadside/streamside-control/monitor	Revere
Common mullein	n/a	7.5	0	Low	Stable	Ag and pasture problem-monitor	Swanson Lakes
Ventenata	n/a	2.5	2.5	High	Decreasing	Small, pioneering patch, very aggressive Being removed via kill/site reseeding	Reardan Audubon Lake
Poison hemlock	C	2	0	Low	Stable	Streamside-monitor	Revere
General weeds	n/a	421	196	Low-Med	Stable	Problem in ROW and in degraded ag fields	Swanson Lakes
		4	4	Low	Decreasing	Roadsides	Reardan Audubon Lake
		2	2	Low	Decreasing	Roads	Revere

B - Designate – legally mandated for control. In regions where a Class B & C species are abundant, control is decided at the local level, with containment as the primary goal.

Detailed descriptions and natural history information for each of the above state-listed weed species listed above can be found at the Washington State Noxious Weed Control Board web site <http://www.nwcb.wa.gov/search.asp>. Information on other species contained in the list can be found at the University of California's IPM Online web site: http://www.ipm.ucdavis.edu/PMG/weeds_intro.html.

Weed management information for individual weed species can be found at the PNW Weed Management Handbook link at: <http://pnwhandbooks.org/weed/control-problem-weeds> and on WDFW's weed management website at: TBD.



APPENDIX C. Priority Habitat and Species County Lists (Lincoln and Whitman)

(These two lists represent the species and habitats identified for Lincoln and Whitman Counties. This list of species and habitats was developed using the distribution maps found in the PHS list. Species distribution maps depict counties where each priority species is known to occur as well as other counties where habitat primarily associated with the species

exists. Two assumptions were made when developing distribution maps for each species: 1) There is a high likelihood a species is present in a county, even if it has not been directly observed, if the habitat with which it is primarily associated exists. 2) Over time, species can naturally change their distribution and move to new counties where usable habitat exists.)

Table 12

LINCOLN COUNTY PHS

Fishes	White Sturgeon
	Bull Trout/Dolly Varden
	Kokanee
	Rainbow Trout/Steelhead/Inland Redband Trout
	Westslope Cutthroat
Amphibians	Columbia Spotted Frog
	Western Toad
Reptiles	Striped Whipsnake
	Sagebrush Lizard
Birds	American White Pelican
	Western grebe
	Eastern Washington breeding concentrations of Grebes, Cormorants
	Eastern Washington breeding Terns
	Black-crowned Night-heron
	Great Blue Heron
	Cavity-nesting ducks: Wood Duck, Barrow's Goldeneye, Common Goldeneye, Bufflehead, Hooded Merganser
	Tundra Swan
	Waterfowl Concentrations
	Bald Eagle
	Ferruginous Hawk
	Golden Eagle
	Peregrine Falcon
	Prairie Falcon
	Dusky Grouse
	Ring-necked Pheasant
Greater Sage-grouse	

Birds	Sharp-tailed Grouse
	Sandhill Crane
	Upland Sandpiper
	Eastern Washington breeding occurrences of Phalaropes, Stilts and Avocets
	Burrowing Owl
	Flammulated Owl
	Vaux's Swift
	Black-backed Woodpecker
	Lewis' Woodpecker
	Pileated Woodpecker
	White-headed Woodpecker
	Loggerhead Shrike
	Sage Sparrow
	Sage Thrasher
Mammals	Merriam's Shrew
	Preble's Shrew
	Roosting Concentrations of Big-brown Bat, Myotis bats, Pallid Bat
	Townsend's Big-eared Bat
	Black-tailed Jackrabbit
	White-tailed Jackrabbit
	Washington Ground Squirrel
	Bighorn Sheep
	Northwest White-tailed Deer
	Elk
Rocky Mountain Mule Deer	
Invertebrates	California Floater
Habitat	Aspen Stands
	Inland Dunes
	Old-Growth/Mature Forest
	Shrub-steppe
	Riparian
	Freshwater Wetlands & Fresh Deepwater
	Instream
	Caves
	Cliffs
	Snags and Logs
	Talus

Table 13

WHITMAN COUNTY PHS

Fishes	Pacific Lamprey
	River Lamprey
	White Sturgeon
	Leopard Dace
	Mountain Sucker
	Bull Trout/Dolly Varden
	Chinook Salmon
	Rainbow Trout/Steelhead/Inland Redband Trout
	Sockeye Salmon
	Westslope Cutthroat
Amphibians	Columbia Spotted Frog
	Western Toad
Reptiles	Sagebrush Lizard
Birds	American White Pelican
	Eastern Washington breeding concentrations of Grebes, Cormorants
	Eastern Washington breeding Terns
	Waterfowl Concentrations
	Great Blue Heron
	Upland Sandpiper
	Chukar
	Bald Eagle
	Ferruginous Hawk
	Golden Eagle
	Peregrine Falcon
	Prairie Falcon
	Ring-necked Pheasant
	Wild Turkey
	Eastern Washington breeding occurrences of Phalaropes, Stilts and Avocets
	Burrowing Owl
	Vaux's Swift
	Pileated Woodpecker
	Loggerhead Shrike
	Sage Sparrow
	Sage Thrasher

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Mammals	Merriam's Shrew
	Preble's Shrew
	Roosting Concentrations of Big-brown Bat, Myotis bats, Pallid Bat
	Townsend's Big-eared Bat
	Black-tailed Jackrabbit
	White-tailed Jackrabbit
	Washington Ground Squirrel
	Moose
	Northwest White-tailed Deer
	Elk
Rocky Mountain Mule Deer	
Invertebrates	Columbia River Tiger Beetle
	Mann's mollusk-eating Ground Beetle
	Giant Palouse Earthworm
	Shepard's Parnassian
	Silver-bordered Fritillary
Habitat	Aspen Stands
	Eastside Steppe
	Shrub-steppe
	Riparian
	Freshwater Wetlands & Fresh Deepwater
	Instream
	Caves
	Cliffs
	Snags and Logs
	Talus

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APPENDIX D. Plant List and Map (Reardan Audubon Lake Wildlife Area)

Table 14

Mel Asher and Dale Swedberg 2006

Scientific Name	Common Name	Duration	Origin	Habitat
<i>Achillea millefolium</i>	Yarrow	Perennial	Native	Uplands
<i>Achnatherum nelsonii</i>	Western needle- grass	Perennial	Native	Uplands
<i>Achnatherum thurberianum</i>	Thurber's needle-grass	Perennial	Native	Uplands
<i>Agoseris heterophylla</i>	Annual agoseris	Annual	Native	Uplands
<i>Agoseris sp.</i>	Large-flowered agoseris	Perennial	Native	Uplands
<i>Agropyron cristatum</i>	Crested wheatgrass	Perennial	Introduced	Uplands
<i>Agrostis capillaris</i>	Colonial bentgrass	Perennial	Introduced	Riparian/Wet Meadow
<i>Allium sp.</i>	Wild onion	Perennial	Native	Widespread
<i>Alopecurus saccatus</i>	Pacific foxtail	Annual	Native	Vernal Pools
<i>Alopecurus sp.</i>	Meadow foxtail			Wet Meadow
<i>Amelanchier alnifolia</i>	Serviceberry	Perennial	Native	Riparian
<i>Amsinckia menziesii</i>	Fiddleneck	Annual	Native	Uplands
<i>Anthemis cotula</i>	Stinking chamomile	Annual	Introduced	Along levee
<i>Apera interrupta</i>	Dense silky-bent	Annual	Introduced	Widespread
<i>Argentina anserina</i>	Silverweed	Perennial	Native	Riparian
<i>Artemisia rigida</i>	Stiff sagebrush	Perennial	Native	Uplands
<i>Artemisia tridentata var. wyomingensis</i>	Wyoming big sagebrush	Perennial	Native	Uplands
<i>Artemisia tripartita</i>	Three-tip sagebrush	Perennial	Native	Uplands
<i>Asperugo procumbens</i>	German madwort	Annual	Introduced	Riparian
<i>Besseyia rubra</i>	Red besseyia	Perennial	Native	Uplands
<i>Boisduvalia stricta</i>	Brook spike-primrose	Annual	Native	Vernal Pools
<i>Bromus arvensis</i>	Field brome	Annual	Introduced	Uplands
<i>Bromus inermis</i>	Smooth brome	Perennial	Introduced	Uplands
<i>Bromus tectorum</i>	Cheatgrass	Annual	Introduced	Widespread
<i>Buglossoides arvensis</i>	Corn gromwell	Annual	Introduced	Uplands
<i>Camassia quamash</i>	Camas	Perennial	Native	Riparian
<i>Cardaria draba</i>	White-top	Perennial	Introduced	Uplands
<i>Carex filifolia</i>	Threadleaf sedge	Perennial	Native	Uplands

Scientific Name	Common Name	Duration	Origin	Habitat
<i>Carex praegracilis</i>	Clustered field sedge	Perennial	Native	Widespread
<i>Castilleja minor</i>	Lesser Indian paintbrush	Annual/ Perennial	Native	Riparian
<i>Centarium exaltatum</i>	Desert centaury	Annual	Native	Uplands
<i>Centaurea diffusa</i>	Diffuse knapweed	Biennial/ Perennial	Introduced	Uplands
<i>Centaurea stoebe</i>	Spotted knapweed	Biennial/ Perennial	Introduced	Uplands
<i>Chaenactis douglasii</i>	Dusty maidens	Biennial/ Perennial	Native	Uplands
<i>Chamaesyce glyptosperma</i>	Corrugate-seed spurge	Annual	Native	Vernal Pools
<i>Chondrilla juncea</i>	Rush skeletonweed	Perennial	Introduced	Uplands
<i>Chorispora tenella</i>	Purple mustard	Annual	Introduced	Uplands
<i>Cirsium arvense</i>	Canada thistle	Perennial	Introduced	Riparian
<i>Cirsium vulgare</i>	Bull thistle	Biennial	Introduced	Widespread
<i>Clarkia pulchella</i>	Elkhorns	Annual	Native	Uplands
<i>Collinsia parviflora</i>	Blue-eyed Mary	Annual	Native	Uplands
<i>Collomia grandiflora</i>	Grand collomia	Annual	Native	Uplands
<i>Convolvulus arvensis</i>	Field bindweed	Perennial	Introduced	Uplands
<i>Cornus sericea</i>	Red-osier dogwood	Perennial	Native	Riparian
<i>Crataegus douglasii</i>	Black hawthorn	Perennial	Native	Riparian
<i>Cyperus squarrosus</i>	Bearded flat sedge	Annual	Native	Riparian
<i>Danthonia unispicata</i>	One-spike oatgrass	Perennial	Native	Uplands
<i>Descurania sp.</i>	Tansymustard	Annual	Introduced	Uplands
<i>Dipsacus fullonum</i>	Fuller's teasel	Biennial	Introduced	Riparian
<i>Distichilis spicata</i>	Saltgrass	Perennial	Native	Riparian
<i>Dodecatheon pulchellum</i>	Shootingstar	Perennial	Native	Uplands
<i>Downingia sp.</i>	Calicoflower	Annual	Native	Vernal Pools
<i>Draba verna</i>	Spring draba	Annual	Introduced	Uplands
<i>Eleocharis palustris</i>	Common spikerush	Perennial	Native	Riparian/Vernal Pools
<i>Elymus elymoides</i>	Bottlebrush squirreltail	Perennial	Native	Uplands
<i>Elymus repens</i>	False quackgrass	Perennial	Introduced	Wet Meadow/ Riparian
<i>Elymus x pseudorepens</i>	Quackgrass	Perennial	Native	Wet Meadow/ Riparian
<i>Epilobium brachycarpum</i>	Tall annual willowherb	Annual	Native	Widespread

Scientific Name	Common Name	Duration	Origin	Habitat
<i>Epilobium densiflorum</i>	Dense spike-primrose	Annual	Native	Vernal Pools
<i>Erigeron linearis</i>	Desert yellow fleabane	Perennial	Native	Uplands
<i>Erigeron poliospermus</i>	Purple cushion fleabane	Perennial	Native	Uplands
<i>Erigeron pumilis</i>	Shaggy fleabane daisy	Perennial	Native	Uplands
<i>Eriogonum compositum</i>	Arrowleaf buckwheat	Perennial	Native	Uplands
<i>Eriogonum heracleoides</i>	Creamy buckwheat	Perennial	Native	Uplands
<i>Eriogonum niveum</i>	Snow buckwheat	Perennial	Native	Uplands
<i>Eriogonum thymoides</i>	Thyme-leaf buckwheat	Perennial	Native	Uplands
<i>Eriogonum umbellatum</i>	Sulfur-flower buckwheat	Perennial	Native	Uplands
<i>Eriophyllum lanatum</i>	Oregon sunshine	Perennial	Native	Uplands
<i>Festuca idahoensis</i>	Idaho fescue	Perennial	Native	Uplands
<i>Filago vulgaris</i>	Common cottonrose	Annual	Introduced	Widespread
<i>Fragaria virginiana</i>	Virginia strawberry	Perennial	Native	Riparian
<i>Fritillaria pudica</i>	Yellow bells	Perennial	Native	Uplands
<i>Fumaria officinalis</i>	Fumitory	Annual	Introduced	Riparian
<i>Gallardia aristata</i>	Blanketflower	Perennial	Native	Uplands
<i>Gallium aparine</i>	Sticky-willy	Annual	Native	Widespread
<i>Gallium boreale</i>	Northern bedstraw	Perennial	Native	Widespread
<i>Geranium pusillum</i>	Small geranium	Annual/ Biennial	Introduced	Uplands
<i>Geranium viscosissimum</i>	Sticky geranium	Perennial	Native	Uplands
<i>Glyceria striata</i>	Fowl mannagrass	Perennial	Native	Riparian
<i>Gnaphalium palustre</i>	Lowland cudweed	Annual	Native	Vernal Pools
<i>Grindelia squarrosa</i>	Curly-cup gumweed	Annual/ Biennial/ Perennial	Native	Uplands
<i>Helianthus sp.</i>	Sunflower	Perennial	Native	Uplands
<i>Hesperochiron pumilis</i>	Dwarf hesperochiron	Perennial	Native	Riparian
<i>Hieracium scouleri var. albertinum</i>	Scouler's woollyweed	Perennial	Native	Uplands
<i>Holosteum umbellatum</i>	Jagged chickweed	Annual	Introduced	Uplands
<i>Hordeum jubatum</i>	Foxtail barley	Perennial	Native	Riparian
<i>Hypericum perforatum</i>	St. John's wort	Perennial	Introduced	Uplands
<i>Idahoia scapigera</i>	Idahoia	Annual	Native	Uplands
<i>Iris missourienses</i>	Rocky mountain iris	Perennial	Native	Riparian
<i>Juncus balticus</i>	Baltic rush	Perennial	Native	Riparian

Scientific Name	Common Name	Duration	Origin	Habitat
<i>Koeleria macrantha</i>	Prairie junegrass	Perennial	Native	Uplands
<i>Lactuca serriola</i>	Prickly lettuce	Annual/ Biennial	Introduced	Widespread
<i>Lactuca tatarica</i>	Blue lettuce	Biennial/ Perennial	Native	Uplands
<i>Lagophylla ramossissima</i>	Branched lagophylla	Annual	Native	Uplands
<i>Lepidium perfoliatum</i>	Shield peppergrass	Annual	Introduced	Widespread
<i>Lewisia rediviva</i>	Bitterroot	Perennial	Native	Uplands
<i>Leymus cinereus</i>	Great Basin wildrye	Perennial	Native	Uplands
<i>Linaria dalmatica</i>	Dalmation toadflax	Perennial	Introduced	Uplands
<i>Linum lewisii</i>	Prairie flax	Perennial	Native	Uplands
<i>Lithospermum ruderales</i>	Hoary puccoon	Perennial	Native	Uplands
<i>Lomatium gormanii</i>	Gorman's biscuitroot	Perennial	Native	Uplands
<i>Lomatium macrocarpum</i>	Large-fruited biscuitroot	Perennial	Native	Uplands
<i>Lomatium sp.</i>	Biscuitroot	Perennial	Native	Uplands
<i>Lomatium triternatum</i>	Nineleaf biscuitroot	Perennial	Native	Uplands
<i>Lotus unifolius</i>	Bird's-foot trefoil	Annual	Native	Uplands
<i>Lupinus sp.</i>	Lupine	Perennial	Native	Uplands
<i>Madia gracilis</i>	Common tarweed	Annual	Native	Uplands
<i>Madia sp.</i>	Tarweed	Annual	Native	Vernal Pools
<i>Medicago lupulina</i>	Black medick	Annual/ Perennial	Introduced	Widespread
<i>Medicago sativa</i>	Alfalfa	Annual/ Perennial		Introduced
<i>Melilotus officinale</i>	Yellow sweet-clover	Annual/ Biennial/ Perennial	Introduced	Riparian
<i>Microsteris gracilis</i>	Annual phlox	Annual	Native	Uplands
<i>Muhlenbergia asperifolia</i>	Scratchgrass	Perennial	Native	Riparian
<i>Muhlenbergia filiformis</i>	Slender muhly	Annual	Native	Uplands
<i>Muhlenbergia richardsonis</i>	Mat muhly	Perennial	Native	Vernal Pools
<i>Myosotis stricta</i>	Strict forget-me-not	Annual	Introduced	Uplands
<i>Myosurus sp.</i>	Mouse-tails	Annual	Native	Vernal Pools
<i>Navarretia intertexta</i>	Needleleaf navarretia	Annual	Native	Vernal Pools
<i>Nepeta cataria</i>	Catnip	Perennial	Introduced	Widespread
<i>Orobanche uniflora</i>	Broom rape	Annual	Native	Uplands
<i>Orthocarpus tenuifolius</i>	Thin-leaf owl clover	Annual	Native	Uplands

Scientific Name	Common Name	Duration	Origin	Habitat
<i>Perideridia gairdneri</i>	Yampah	Perennial	Native	Uplands
<i>Phalaris arundinacea</i>	Reed canarygrass	Perennial	Native	Wet meadow
<i>Phlox longifolia</i>	Long-leaf phlox	Perennial	Native	Uplands
<i>Pinus ponderosa</i>	Ponderosa pine	Perennial	Native	Uplands
<i>Plagiobothrys scouleri</i>	Scouler's popcornflower	Annual	Native	Vernal Pools
<i>Plantago patagonica</i>	Hairy plantain	Annual	Native	Uplands
<i>Poa bulbosa</i>	Bulbous bluegrass	Perennial	Introduced	Uplands
<i>Poa compressa</i>	Canada bluegrass	Perennial	Introduced	Widespread
<i>Poa cusickii</i>	Cusick's bluegrass	Perennial	Native	Uplands
<i>Poa pratensis</i>	Kentucky bluegrass	Perennial	Introduced	Widespread
<i>Poa secunda</i>	Sandberg's bluegrass	Perennial	Native	Uplands
<i>Polygonum douglasii</i>	Douglas' knotweed	Annual	Native	Uplands
<i>Polygonum polygaloides</i>	Milkwort knotweed	Annual	Native	Vernal Pools
<i>Polypogon monspeliensis</i>	Rabbitsfoot grass	Annual	Introduced	Riparian
<i>Populus tremuloides</i>	Quaking aspen	Perennial	Native	Riparian
<i>Potentilla gracilis</i>	Northwest cinquefoil	Perennial	Native	Widespread
<i>Potentilla gracilis var. flabelliformis</i>	Northwest cinquefoil	Perennial	Native	Uplands
<i>Prunus virginiana</i>	Choke cherry	Perennial	Native	Riparian
<i>Pseudoroegneria spicata</i>	Bluebunch wheatgrass	Perennial	Native	Uplands
<i>Pseudotsuga menziesii</i>	Douglas fir	Perennial	Native	Uplands
<i>Ranunculus cymbalaria</i>	Alkali buttercup	Perennial	Native	Riparian
<i>Ribes aureum</i>	Golden currant	Perennial	Native	Riparian
<i>Rorippa curvisiliqua</i>	Western yellowcress	Annual/ Biennial	Native	Riparian
<i>Rosa woodsii</i>	Wood's rose	Perennial	Native	Riparian
<i>Rumex crispus</i>	Curly dock	Perennial	Introduced	Widespread
<i>Schedonorus phoenix</i>	Tall fescue	Perennial	Introduced	Wet Meadow
<i>Schoenoplectus acutus</i>	Hard-stem bulrush	Perennial	Native	Riparian
<i>Schoenoplectus pungens</i>	Three-square bulrush	Perennial	Native	Riparian
<i>Sedum sp.</i>	Stonecrop	Perennial	Native	Uplands
<i>Senecio serra</i>	Tall butterweed	Perennial	Native	Uplands
<i>Sidalcea oregana</i>	Oregon checkermallow	Perennial	Native	Uplands
<i>Sisymbrium altissimum</i>	Tall tumbled mustard	Annual/ Biennial	Introduced	Widespread

Scientific Name	Common Name	Duration	Origin	Habitat
<i>Sisymbrium loesellii</i>	Small tumbled mustard	Annual/ Biennial	Introduced	Widespread
<i>Solidago missouriensis</i>	Missouri goldenrod	Perennial	Native	Uplands
<i>Sonchus arvensis ssp. arvensis</i>	Perennial sowthistle	Perennial	Introduced	Riparian
<i>Spartina gracilis</i>	Alkali cordgrass	Perennial	Native	Riparian
<i>Stellaria nitens</i>	Shiny chickweed	Annual	Native	Uplands
<i>Symphoricarpos albus</i>	Common snowberry	Perennial	Native	Riparian
<i>Symphyotrichum campestre</i>	Western meadow aster	Perennial	Native	Uplands
<i>Symphyotrichum eatonii</i>	Eaton's aster	Perennial	Native	Riparian
<i>Taraxacum sp.</i>	Dandelion	Annual	Introduced	Uplands
<i>Thinopyron intermedium</i>	Intermediate wheatgrass	Perennial	Introduced	Uplands
<i>Tragopogon dubius</i>	Salsify	Annual/ Biennial	Introduced	Widespread
<i>Trichostema lanceolatum</i>	Vinegar weed	Annual	Native	Vernal Pools
<i>Trifolium fragiferum</i>	Strawberry clover	Perennial	Introduced	Wet Meadow
<i>Ventenata dubia</i>	Ventenata	Annual	Introduced	Widespread
<i>Verbascum thaspus</i>	Common mullein	Biennial	Introduced	Uplands
<i>Veronica arvensis</i>	Corn speedwell	Annual	Introduced	Uplands
<i>Vicia sp.</i>	Vetch	Perennial	Native	Uplands
<i>Vulpia microstachys</i>	Six-weeks fescue	Annual	Native	Uplands
<i>Woodsia oregona</i>	Oregon cliff fern	Perennial	Native	Uplands
<i>Wyethia amplexicaule</i>	Mule's ears	Perennial	Native	Uplands
<i>Zigadenus venenosus</i>	Death camas	Perennial	Native	Uplands
<i>Zizia aptera</i>	Heart-leaf alexanders	Perennial	Native	Uplands

APPENDIX E. Restoration Summary

Swanson Lakes Wildlife Area

The restoration objective for the Swanson Lakes Wildlife Area:

- Improve ecological integrity by reestablishing shrub-steppe habitat connectivity for the recovery of Columbian sharp-tailed grouse and sage-grouse.
- To restore/enhance wetland habitat and facilitate successional processes appropriate to site potential and capability (Z-Lake).

Restoration on the wildlife area has focused on old farm fields due to their deep soils. Areas selected provide the best restored habitat value for grouse; sites are selected based on their potential restoration success. Criteria includes deep soils and low sagebrush cover. Rocky shallow soils have a lower restoration success rate.

Restoration Techniques:

The shrub-steppe restoration protocol (WDFW 2011) was developed by the wildlife area staff based on over 20 years of experience. The protocol includes the following tasks: Year 1: mowing, herbicide application, initial disking and harrowing to remove existing vegetation. Year 2: fields are kept vegetation free with a combination of mechanical and chemical fallow operations through the growing season. The final seedbed field preparation will begin in late summer/early fall. Seeding will take place in late November. Air temperatures and precipitation will determine the actual date of planting. It is important to plant as late in the year as possible before the ground freezes, and avoid heavy rains post-seeding. Once the project is complete, the wildlife areas staff strives toward making each project self-sustaining, meaning very little operations and maintenance activities will be required in the future. Table 15 describes the current restoration priorities on the Swanson Lakes Wildlife Area

Table 15. Swanson Lakes WLA Priority Restoration Sites (corresponds to map 4)

Planned	Name	Acres	Description
In progress	Welch Anderson	120	Recreation Conservation Office funded, completed by Fall 2015
	Hawk Creek	275	BLM funded, completed by Fall 2015
	Marlin Hollow	66	BLM funded, completed by Fall 2015
Not funded	Phantom Butte	125	Former Conservation Reserve Program field. Applied for Recreation Conservation Office grant 2015.
	Sandegrin	207	BLM

Z-Lake

Z-Lake, located on the Swanson Lakes WLA, has been the site of a successful riparian restoration project. Between 2012-2014, 50 acres of wetland, 570 acres of non-forest riparian and 40 acres of forest riparian were restored in the Lake Creek basin. The project was funded by Federal Duck Stamps and technical guidance was provided by Ducks Unlimited. This project restored functioning wetlands, increasing shallow water storage in the vicinity of Z-Lake, providing habitat for shorebirds, waterfowl, and other species. The work was done to reverse artificial channelization required for agriculture activities between 1930 and 1960.

Revere Wildlife Area

The restoration objective for the Revere Wildlife Area:

- To provide forage habitat mule deer and upland birds

On the Revere Wildlife Area, restoration was funded in the mid-1990 by the U.S Army Corps of Engineers. This consists of 6-7 small (~0.6-acre) plots totaling about 11 acres, composed of shrubs and small trees, scattered throughout the property. These sites total 36 acres. The plots are visible to the public along the north side of the unit, above the banks of Rock Creek and near the irrigated hay fields. Seven small plots (11 acres) were also scattered around the unit, and planted to millet and corn annually from 1995 - 2007.

Reardan Audubon Lake Wildlife Area

The restoration objectives for the Reardan Audubon Lake Wildlife Area:

- To restore Palouse grassland for species such as sharp-tailed grouse, grasshopper sparrow, and burrowing owl
- Serves as a pilot for future Palouse grassland restoration projects in eastern Washington
- Plant vegetation to screen trail users from waterfowl and shorebirds using the pond to the north of the trail

Reardan Audubon Lake Wildlife Area restoration work was performed 2006-2011, after the wildlife area was purchased by WDFW. The restoration sites, consisting of two large fields formerly in small grains, were restored to native grassland. The north field (54 acres) was completed in 2010. The 10-acre south field was completed in 2011 using wetland-compatible seed mix appropriate to the site. Restoration was funded by the State Lands Restoration grant - Recreation Conservation Office.

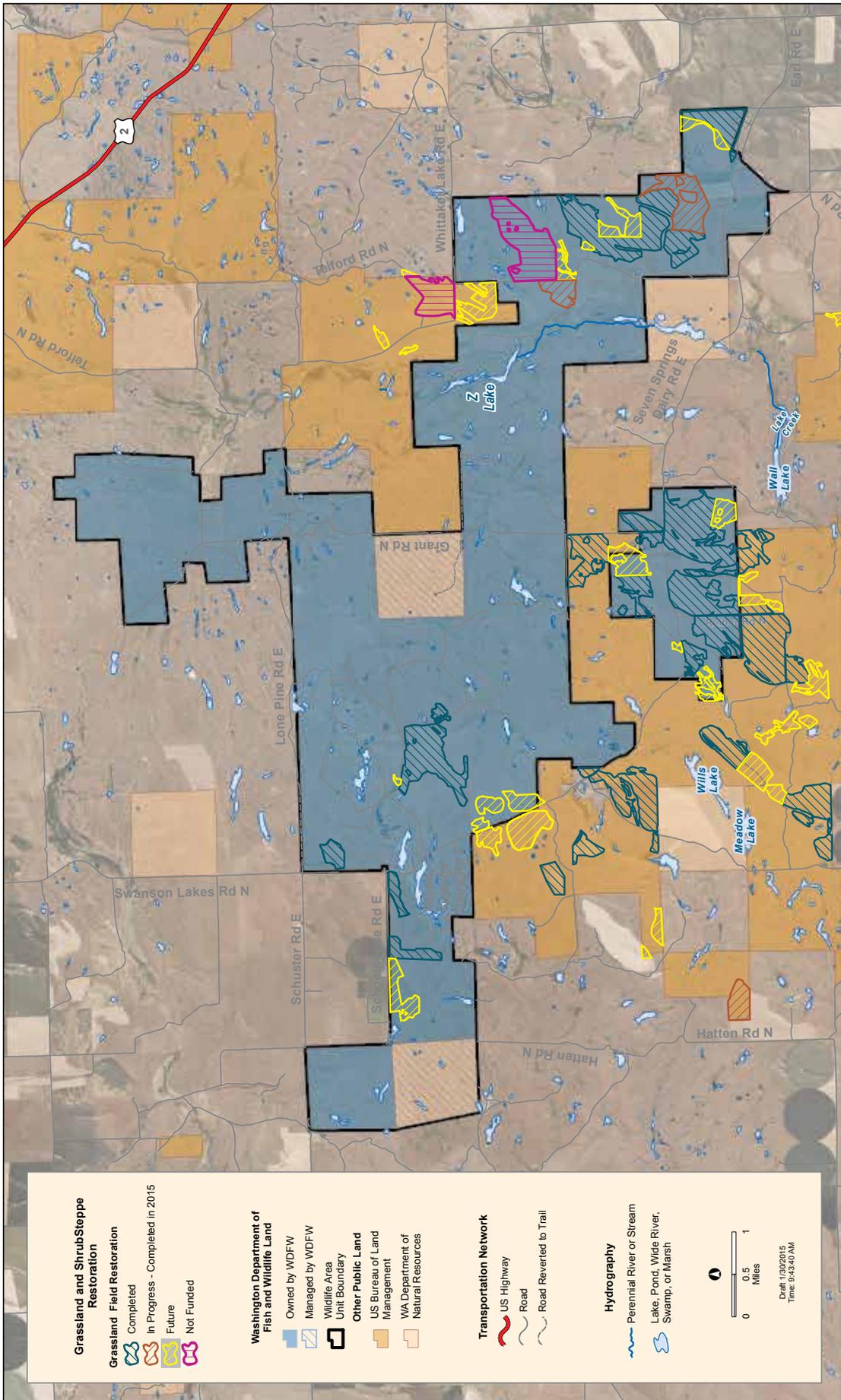
In 2010, the Lincoln County Conservation District also planted 200 native shrubs and trees along the trail and viewing blinds. The south side trailside plot is doing well, and meets the objective of.

Funding

Over the last 20 years, BLM has coordinated shrub-steppe restoration activities with Swanson Lakes WLA staff. To date, WLA staff has restored approximately 1,400 acres of BLM lands near WLA. This work has been funded by BLM. Swanson Lakes WLA staff is currently restoring 341 acres of BLM lands in Lincoln County, to be completed in late fall 2015. BLM's Spokane District generally lacks the resources to implement restoration. In 1995, Swanson Lakes WLA staff restored an old 250-acre wheat field on BLM ground adjacent to WLA. This field became the site of a new sharp-tail lek, the Reiber Lek, around 2010. No future specific projects are known to be in the works, at this time.

Future Needs

Two future restoration projects have been identified (Table 15) in the Plan; the Phantom Butte (125 acres) and Sandegrin restoration site on BLM lands located on the Telford/Twin Lakes Recreation Areas located adjacent to Swanson Lakes WLA. Swanson Lakes WLA staff submitted a State Lands Restoration – Recreation Conservation Office grant in 2015 for the Phantom Butte project. Other project will be identified for Swanson, Revere and Reardan Audubon Lake once the restoration plan is prepared in 2016.



Map 4

APPENDIX F. Cultural Resources Summary

Overview of cultural history

The landscape is within the traditional territory of the Spokane Tribe of Indians, members of the Interior Salish Group. The ancestral homelands of the Spokane people stretched from the Idaho border to the confluence of the Spokane and Columbia Rivers and included the landscape around the WLA. The Spokane had cultural and economic ties with the Kalispel (east) and Chewelah (north). According to Grant et al (1994),

The Spokane lived in small villages made up of bands, which were grouped into three divisions along the Spokane River. The Lower Spokane occupied the area around the mouth of the river and upstream to Tum Tum. Their camps centered around the Little Falls of the Spokane. The Middle Spokane occupied the area around Hangman or Latah Creek. Their territory bordered the Coeur d'Alene to the south, and extended west to Idaho. The Upper Spokane lived primarily along the Little Spokane River. They occupied the region from the mouth of Latah Creek to the village of Tum Tum, and east to Lake Coeur d'Alene.

According to Spier (1936), Ross (1998), and Sprague (1998) Rock Lake is considered one of the boundaries of the Sahaptian-speaking Palus (or Palouse) Indians, which means that it would not be unreasonable to assume that the landscape was also used traditionally by the Palus (or Palouse) Indians.

The economic activities of the Spokane and the Palus followed a seasonal round of resources procurement similar to other residents of the Columbia Plateau. The activities of these people were centered around permanent winter villages located on or near major waterways; temporary camps were established at traditional hunting, fishing, or gathering locations. The salmon fisheries provided subsistence and surplus for trade from spring until fall; deer, elk, and antelope were hunted during the fall and winter. Food plants (e.g., camas, lomatium, and bitterroot) were widely used.

In 1810, the North West Company established the Spokane House at the confluence of the Spokane and Little Spokane Rivers. The Spokane House was relocated to the future location of Ft. Colville following the merger of the North West Company and the Hudson's Bay Company in 1821. Ft. Colville was established in 1825. Early Settlement Period history (1800 – 1850) reflects the cyclical flow of tribal people and native and non-native fur traders, trappers, and explorers across the landscape, as they moved from resource areas to campsites or village sites, or to one or both of the established trading posts.

In the mid-1800s a series of Congressional Acts opened the land for settlement. The Oregon Act (1848) established the Oregon Territory and the Donation Act opened the inland territories for settlement. Washington Territory was created in 1853, with Isaac Stevens as appointed Governor. The relationships between the tribal peoples and non-Native immigrants changed- gold was discovered, land claims were established, and Governor Stevens' treaty program was initiated. The treaty program was interrupted by a war between the Yakama, Moses, Columbia, Wentachee, Spokane, Palouse, Walla Walla, Coeur d'Alene and Cayuse and the U. S. Army, but was revived in 1859 and most of Stevens' treaties were passed. Large numbers of the Palouse and Spokane people were moved onto reservations. The Spokane Reservation was established north of the Spokane River; many of the Palouse people were forced to move to one of the regional reservations (i.e., Colville, Coeur d'Alene, Nez Perce, Spokane, Umatilla, Warm Spring, or Yakama). Many Native American groups continue to return to the traditional gathering grounds in Lincoln and Whitman Counties for spring root harvest and other traditional activities.

The Swanson Lakes Wildlife Area consists of three Wildlife Areas. Although the broad history of the region provides a macro-scale context in which to evaluate the cultural resources in the WLA, the following WLA-level contexts may also be helpful.

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Reardan Audubon Lake Wildlife Area

History. The Wildlife Area is within the source area for Crab Creek, located in the channeled scablands of eastern Washington. The regional landscape is characterized by basalt outcrops supporting swales and dunes of loess deposit. The immediate landscape is a wetland bordered by low basalt hills. Historically, vegetation would have included ponderosa pine, aspen, serviceberry, wildrose, elderberry, forbes, and grasses in the upland areas and wetland species such as bulrushes, cattails, sedges, grasses, and submergent plants. The presence of water and the accompanying vegetation and wildlife suggest that the WLA would have a high potential to contain cultural resources.

Precontact tribal land use would have been associated with the trail systems surrounding the area, and water resources available within the WLA. There are no recorded Traditional Cultural Properties within or near the WLA; this does not preclude the possibility that such resources are present.

The early non-Native settlement, originally known as Capps, was established in the 1880s, the town was incorporated in 1903. Reardan was plotted by the Northern Pacific Railroad and named after C. F. Reardan, an engineer. Railroad development contributed to the rapid influx of settlers and later industry (e.g., the Washington Grain & Milling Company) brought more people in. Population growth plateaued in the 1920s. Historic maps (Page 1886) show the White Bluffs Road running south of town, while early General Land Office survey maps (1883) show a series of trail systems running to the east and west, through Sections 8, 9 and 11. Early roads often followed existing trail systems, the historic Colville-Walla Walla Road, for example, was developed from a precontact trail system, later used by settlers, and still later converted to a military road.

Several springs and sinks are also shown on early maps; these features would have made the area and attractive stop for any pre-modern traveler.

According to Land Patent data (BLM 2014), in 1891 the SW 1/4 of the SE 1/4 and the SE 1/4 of the SW 1/4 of Section 10 were owned by John Stanford Capps; the NW1/4 of Section 10 was owned by William Capps in 1894.

Archaeological Investigations. There are no recorded archaeological sites, historic sites, historic structures, cemeteries, or barns within the Wildlife Area. One cultural resource survey has been conducted within the WLA (Engseth 2007); an additional survey was conducted a few hundred feet west of SR 231, outside the WLA (Parks 1996).

Nearby archaeological sites, dating to the precontact and early historic eras, provide evidence of land use associated with water resources. Later historic sites tend to be associated with ranching activities or post-Settlement land use (e.g, the town dump, cisterns, foundations, or railroad)

Revere Wildlife Area

History. The Wildlife Area is located in the channeled scablands of eastern Washington. The regional landscape is characterized by basalt outcrops supporting swales and dunes of loess deposit. Historically, vegetation would have included forbes, grasses, and some shrubs in the upland areas and wetland species such as bulrushes, cattails, sedges, grasses, and submergent plants. The presence of water and the accompanying vegetation and wildlife suggest that the WLA would have a high potential to contain cultural resources.

Precontact tribal land use would have been associated with the trail systems surrounding the area, and water resources available within the WLA. There are no recorded Traditional Cultural Properties within or near the WLA; this does not preclude the possibility that such resources are present.

Archaeological Investigations. There are seven recorded archaeological sites; and no recorded historic structures, cemeteries, or barns within the WLA. Several cultural resource studies have been conducted within the WLA boundaries (e.g., Ives 2009, Valentine 1995, and Tracy 1995). The Ives (2009) and

Tracy (1995) surveys resulted in the identification of archaeological deposits. Six of the recorded archaeological sites are directly related to the historic occupation of the Revere Ranch House, the seventh site represents precontact-era Native American activities.

Nearby archaeological sites, dating to the precontact and early historic eras, provide evidence of land use associated with water resources. Later historic sites tend to be associated with ranching activities or post-Settlement land use (e.g, the town dump, cisterns, foundations, or railroad)

Swanson Lakes Wildlife Area

History. Not unlike the Revere WLA, the Swanson Lakes WLA is in a transition area in terms of language grouping. In very general terms, locations to the north were within territories of Salishan speaking people, while areas to the south were in the territories of Sahaptin-speaking peoples. According to research conducted by Bennett et al. (2001), the WLA is within "... the territorial sphere of influence of the Salishan speaking Sinkayuse or Sinkiuse tribe, also known as the Columbia, the Priest's Rapids and Rock Island People, and the Moses Columbia. They lived along the Columbia River from Priest Rapids to the north. Their territory extended into the coulees east of the Columbia in the area known as the Big Bend. The Sanpoil and Nespelem also used the northwestern portions of the area. The Salishan speaking Lower Spokane used the eastern portion of the SLWLA. The Sahaptin Middle Columbia also entered the area".

Non-Native settlement in the area occurred somewhat later than was the regional trend, around 1880 – 1889, perhaps because farmland here was not as productive as elsewhere in the county. Interestingly, early demographics indicate there were a higher percentage of foreign-born immigrants to this section of the county than elsewhere. This difference may also account for the differences in early agricultural practices, which represented a diversified production (grain, vegetables, poultry, beef, and dairy) versus a strong focus on wheat. The Wildlife Area is in honor

of one of these early Settler families, who were one of the earliest families to establish an agricultural operation in the central portion of Lincoln County. Nels and Olaf Swenson arrived in Lincoln County in 1882, during the summers they contracted their draft horse teams to the Central Washington Railway, leaving them to range free, while the brothers returned to Sweden every year. Eventually they settled in and built a small cabin, then purchased land and raised cattle and hay. Another early family, the Hucks, arrived from Canada and became ranchers and supplied the U. S. Army with horses. Early ranchers and farmers in Lincoln County were eventually forced out by a decline in wheat prices brought about by a market glut. In much of the county, the family farm gave way to commercial farming. With the help of the railroad and the advent of gold strikes in Alaska and Idaho, Lincoln County economy survived. Though this upheaval, settlers local to the area continued to practice diversified farming and, little impacted by the boom-and-bust cycles, were able to maintain the family farm system through the post-World War II industrialization of agriculture.

Archaeological Investigations. The most thorough survey of the WLA was conducted in 2001; research associated with the survey included interviews with members of the Spokane Tribe of Indians and members of the Confederated Tribes of the Colville Reservation, pedestrian survey, but with no subsurface testing. The survey resulted in the identification of fourteen precontact-era archaeological sites and two contact-era or ethno-historic archaeological sites. Subsequent archaeological investigations have been associated with specific projects (Derr and Harder 2014; Harder and Hannum 2013).

Bennett et al. (2001) recorded 24 residential properties and refuse scatters associated with 115 years of non-Native settlement. Many of the sites can be connected to the Swanson and Huck families, as well as other early documented settlers.

APPENDIX G. Fire District Information

Lincoln County Fire Districts

- Swanson Lakes WLA

Fire District #7, Wilbur
P.O. Box 445
Wilbur, WA 99185
509-647-5761 Fax 509-647-2042

Fire Chief, Wilbur Station:

Kevin Coffman

P.O. Box 334

Wilbur, WA 99185

509-641-2212

kcoffman698792@gmail.com

Fire Chief, Creston Station:

Pat Rosman

32755 Creston Butte Rd N

Creston, WA 99117

509-641-1235

farmtheotherplanetlater@centurytel.net

Lincoln Station:

Jim Derrer

26241 Bobcat Trail E

Creston, WA 99117

509-977-1189

Fire District # 6, Harrington

W 308 Willis, P.O. Box 665

Harrington, WA 99134

509-253-4333

Lcfpd6@gmail.com

Fire Chief

Scott McGowan

P.O. Box 58

Harrington, WA 99134

509-253-4781

Fire District #5, Davenport

701 Morgan, P.O. Box 267

Davenport, WA 99122

mjpiper@sisna.com

Fire Chief

Craig Sweet

P.O. Box 521

Davenport, WA 99122

509-725-8890

cdsweet@centurytel.net

Whitman County Fire Districts-WDFW lands

- Revere WLA

Fire District #5, Lamont

Whitman County Fire District 5

302 8th St

Lamont, WA 99017

509-257-2493

Fire Chief

Ed Bageant

22201 SR 23

St John, WA 99171

509-648-3242

Lincoln County Fire Districts

- Reardan Audubon Lakes WLA

Fire District #4, Reardan/Edwall/Long Lake

Lincoln County Fire District 4

135 S Lk St, P.O. Box 295

Reardan, WA 99029

509-796-2623 Fax: 509-796-2646

lcfire4@centurytel.net

Fire Chief

Ryan Rettkowski

32153 SR 231 N

Reardan, WA 99029

509-979-3371

APPENDIX H. Public Process Summary

(Wildlife Area Advisory Committee /District Team
Review and State Environmental Policy Act)

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