



Hagerman Wildlife Management Area



Management Plan
2014

Magic Valley Region



Hagerman Wildlife Management Area

2014 – 2023 Management Plan
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Executive Summary

Idaho Department of Fish and Game (Department) manages 32 Wildlife Management Areas (WMAs). Researchers from the University of Idaho and The Nature Conservancy evaluated the value of Idaho's WMAs to wildlife. They found the WMA network, created to support game species, "also conserves the full range of Idaho's wildlife and other ecological features" (Karl et al. 2005). Surveys and monitoring work conducted by Department biologists on Magic Valley Region WMAs confirms their value to big game, nongame, and many at-risk species identified in Idaho's State Wildlife Action Plan. In many cases, WMAs provide the principal habitat for at-risk species in the Magic Valley Region.

Wildlife Management Areas often abut other protected lands such as National Forests, Bureau of Land Management (BLM) lands, or private lands protected by conservation easement. Due to the wildlife-focused management, WMAs often serve as highly productive core areas of the landscapes in which they exist. Management of these areas involves a combination of restoring and maintaining important natural habitats to contribute to landscape-level habitat function (e.g., sage-steppe, slough wetlands) and creating hyper-productive habitats (e.g., food plots, impounded wetlands) to enhance the carrying capacity for certain wildlife species.

Wildlife Management Area management plans strive to direct management that upholds these values. They may also be bounded by legislative and/or funding mandates, Department species plans, the State Wildlife Action Plan, conservation partner objectives, national wildlife conservation strategies and plans (federal and non-government organizations), and especially the Department's own strategic plan, *The Compass*. Priorities, Management Directions, Performance Targets, and Strategies have been developed to be as consistent as possible with all of these documents and to capture the broader conservation values already provided by WMAs and ensure these values are protected and enhanced.

The Department's Magic Valley Region manages six WMAs that collectively comprise 11,141 acres of land. Wildlife Management Area management focus is to maintain highly functional wildlife habitat and provide wildlife-based recreation. These WMAs include:

- Niagara Springs WMA, a combination of riparian and cliff habitats along the Snake River in Gooding County
- Hagerman WMA, a spring-fed wetland complex critical for wintering waterfowl in Gooding County
- Billingsley Creek WMA, which provides a mosaic of upland and wetland habitats in Gooding County
- Camas Prairie-Centennial Marsh WMA, a high prairie, seasonally-flooded wetland in Camas County
- Carey Lake WMA, a lake and upland complex in Blaine County
- Big Cottonwood WMA, a canyon landscape in the Big Cottonwood Creek drainage in Cassia County

Examples of at-risk species partially dependent on WMAs include: Ute ladies' tresses orchid, northern leopard frog, greater sage-grouse, Columbian sharp-tailed grouse, sandhill crane, trumpeter swan, lesser scaup, northern pintail, white-faced ibis, long-billed curlew, and yellow-billed cuckoo.

All regional wildlife areas (WMAs, WMUs, and WCAs) are funded through a combination of hunting license dollars, appropriations from federal excise taxes derived from the sale of ammunition, and funding provided by the Bonneville Power Administration and Bureau of Reclamation to mitigate habitat loss in the region. Hunters pay a large portion of the management tab, and they are rewarded with habitat management areas that sustain many of the region's big game herds and provide consistent waterfowl and upland game bird production and hunting opportunities. Non-hunters, who value the varied benefits provided by the Magic Valley Region's WMAs, also benefit from the broad ranging conservation values associated with Department WMAs.

The Hagerman Wildlife Management Area (HWMA), Idaho's first WMA, was established principally to provide habitat for waterfowl and upland game birds. Using Pittman-Roberson funding, the Department purchased 423 acres of land in 1940 and established the Hagerman Valley Refuge. The fledgling wildlife refuge consisted primarily of pastureland and a portion of Riley Creek. Since then, the area's name has changed and several parcels of adjacent land have been acquired, expanding HWMA to 882 acres.

This document provides direction in the form of Priorities, Management Directions, Performance Targets, and Strategies for the management of HWMA. The Priorities for HWMA were determined through a combination of public and staff input, and Department statewide priorities identified in *The Compass*. A draft version of the HWMA Management Priorities, Management Directions, Performance Targets, and Strategies was offered for public inspection and comment in July 2013.

This plan will serve as a guide for current and future managers in planning where to direct efforts and resources for maximum wildlife benefit, public enjoyment, and efficient operation. As new information and technology becomes available, and as more property is acquired, Strategies may be modified to most effectively reach the Management Directions and Performance Targets in this plan. All Management Directions, Performance Targets, and Strategies are dependent on adequate funding, personnel, and public support.

Introduction

This management plan is designed to provide broad guidance for the long-term management of Hagerman Wildlife Management Area (HWMA). It replaces an earlier management plan written in 1999. This updated plan was completed during 2012 and 2013 with extensive public input. This plan is tiered off other Idaho Department of Fish and Game (Department) plans and policies summarized below.

- State Wildlife Action Plan (2005)
- Statewide management plans for:
 - waterfowl (1991)
 - upland game (1991)
 - mule deer (2010)
 - white-tailed deer (2005)
 - elk (2014)
 - moose (1991)
 - furbearer (1991)
- Statewide big game depredation management plan (1988)
- Conservation Plan for the Greater Sage-grouse in Idaho (2006)
- Policy for Avian and Mammalian Predation Management (2000)

Department Mission

All wildlife, including all wild animals, wild birds, and fish, within the state of Idaho, is hereby declared to be the property of the state of Idaho. It shall be preserved, protected, perpetuated, and managed. It shall be only captured or taken at such times or places, under such conditions, or by such means, or in such manner, as will preserve, protect, and perpetuate such wildlife, and provide for the citizens of this state and, as by law permitted to others, continued supplies of such wildlife for hunting, fishing and trapping (Idaho Code Section 36-103).

Department Strategic Goals

The Department's 2005 Strategic Plan, *The Compass*, is the primary guiding document for all other Department plans and outlines four goals for the Department:

- Fish, Wildlife and Habitat: Sustain Idaho's fish and wildlife and the habitats upon which they depend.
- Fish and Wildlife Recreation: Meet the demand for fish and wildlife recreation.
- Working With Others: Improve public understanding of and involvement in fish and wildlife management.
- Management Support: Enhance the capacity of the Department to manage fish and wildlife and serve the public.

The 2014 Wildlife Management Area (WMA) plans describe the management direction for each of the 32 WMAs the Department manages to help accomplish these goals. The specific *Compass* goals and objectives relevant to WMA management are included in Appendix I.

Statewide WMA Vision

Our WMAs are managed to provide and showcase important habitat for all wildlife and to offer high quality, wildlife-based public recreation.

Hagerman WMA Mission

To protect, manage, and enhance wildlife and fish populations and their habitats, and to provide for compatible uses of these wildlife resources by the public.

Modification of Plan

This plan provides broad, long-term management direction for HWMA. It will be evaluated at least every five years to determine if adjustments are needed. The plan will be modified as needed to accommodate changing conditions and goals and to incorporate available advancements in management knowledge and techniques.

Other Considerations

All strategies proposed in this plan are bound by the contractual agreements between cooperating agencies, the mission of HWMA, and all applicable Department species management plans and policies. Issues and strategies that are inconsistent with the mission were not considered. In addition, the implementation of all strategies will be subject to available funding, personnel, and safety considerations.

Area Description and Current Status

The 880-acre HWMA is located two miles south of Hagerman, Idaho, in southwestern Gooding County (Figure 1). State Highway 30 divides a portion of the management area. Hagerman WMA is situated on a gentle south-facing slope between the Snake River canyon wall and the river.

Sixteen ponds are located at HWMA and include: 6-Oster Lakes, 4-Anderson Ponds, 2-Bass Ponds, 1-Goose Pond, 1-Riley Pond, 1-Hatchery Settling Pond, and 1-Highway Pond (Figure 1). The water supply for the ponds is the Brailsford Ditch (Len Lewis Spring), Big Bend Ditch (Tucker Springs), and Riley Creek (approximately 17 springs flowing from the escarpment above the Hagerman National Fish Hatchery). Spring water is 58° F. Despite a constant inflow of 58° F spring water; several ponds freeze during the winter when temperatures stay below freezing for extended periods.

Habitats include an estimated 163 acres of open water ponds and wetlands, 119 acres of cottonwood-willow riparian, and over 460 acres of sagebrush (*Artemisia* spp.) steppe. Additional narrow belts of aquatic and riparian habitats occur along Riley Creek, natural springs, and irrigation ditches and drains. Russian olive (*Elaeagnus angustifolia*) trees are scattered throughout the area. There are also 70 acres of irrigated waterfowl and upland game bird nesting and brood-rearing habitat and annual food plots. There are 30 acres of irrigated tree and shrub plantings. A Department trout hatchery (Hagerman State Fish Hatchery) occupies 35 acres in the middle of HWMA.

Most of the HWMA soils consist of loamy fine sand as classified in the following list (Natural Resources Conservation Service, In Press):

- WPC - Wako-Ackley loamy fine sand complex, 2 to 6% slopes
- FKE - Fathom-Kudlac-Anchustequi complex, 8 to 35% slopes
- FAC - Fathom loamy fine sand, 4 to 10% slopes
- KVR - Kecko-Vining-Rock out crop complex, 2 to 15% slopes

The typical upper soil profile (0 to 7 in.) consists of loamy fine sand. The soils are well drained. Depth class ranges from moderately deep (20 to 40 in. to a duripan) to very deep (more than 60 in.). Hazard of erosion by water is slight, but by wind is severe.

Wetland soils change dramatically and are described as:

- CHB - Fluvaquents-Histic Haplaquolls complex, 0 to 3% slopes

The soil profile (0 to 7 in.) is fine sandy loam. Depth class is very deep (60 in. or more). This soil is poorly drained with flooded frequent. Restriction to rooting depth is a high water table at 6 to 18 in. Hazard of erosion is none.

A National Weather Service Cooperative Reporting Site is located in the town of Hagerman. The average daily maximum temperature is 67.2° F and minimum temperature is 36.3° F with extremes at 104° F and -25° F. Average precipitation is 10.31 in. with most of it falling in late winter and early spring. The frost-free growing season is 110-140 days.

Hagerman WMA is dominated by 460 acres of shrub/steppe, 163 acres of open water ponds and wetlands, 116 acres of cottonwood (*Populus* spp.)-willow (*Salix* spp.) riparian, 70 acres of irrigated nesting and brood-rearing habitat and annual food plots, and 30 acres of irrigated tree and shrub plantings.

The sagebrush steppe is characterized by basin big sagebrush (*Artemisia tridentata tridentata*), rabbitbrush (*Crysothamnus* spp.), Indian ricegrass (*Oryzopsis hemenoides*), Sandberg bluegrass (*Poa sandbergii*), sand dropseed (*Sporobolus cryptandrus*), cheatgrass brome (*Bromus tectorum*), penstemon (*Penstemon* spp.), and mustard (*Sisymbrium* spp.). Four acres of silver sagebrush (*Artemisia cana cana*) was successfully planted in 1993.

Most of the ponds within HWMA were constructed in the 1940s and 1950s. All are fed from springs that emerge from the nearby basalt cliffs. The ponds are dominated by hardstem bulrush (*Scripus acutus*), cattails (*Typha* spp.), sedges (*Carex* spp.), and rushes (*Juncus* spp.).

The riparian zones along the spring seeps, irrigation canals, and Riley Creek have a mixture of Russian olive, willow (*Salix* spp.), cottonwood (*Populus trichocarpa*), black locust (*Robinia pseudoacacia*), poplar (*Populus* spp.), skunkbrush sumac (*Rhus trilobata*), Woods' rose (*Rosa woodsii*), sedges, rushes, and cattails (*Typha latifolia*).

Nine fields are available to be irrigated. Irrigation is done with gated pipe, siphon tubes, handlines, and a wheel line. Nesting cover includes various plantings of alfalfa (*Medicago sativa*), intermediate wheatgrass (*Agropyron intermedium*), pubescent wheatgrass (*A. trichophorum*), and sand dropseed. One 10-acre field is planted to alfalfa as a food source for waterfowl.

Domestic livestock grazing has been used as a tool for managing vegetation to benefit wildlife species on HWMA. For example, livestock grazing has been applied to the 10-acre irrigated goose pasture to remove accumulated dense and decadent grass residue and provide the short, succulent vegetation that geese utilize when grazing. Grazing is implemented through a lease agreement consistent with goals of Department Policy No. FW-17.00. Target wildlife species intended to benefit from grazing includes mainly geese, but can benefit other waterfowl. Removal of dense grass residue also permits more efficient detection and treatment of undesirable weed species. Grazing management has been utilized in late winter and late fall of 2012.

Irrigated tree and shrub plantings were accomplished in the 1960s. Some of these plantings remain today. Trees planted included evergreens (*Pinus* spp.), black locust (*Robinia pseudogocacia*), poplar, Russian olive, plum (*Prunus* spp.), wild mulberry (*Morus* spp.), and mountain ash (*Sorbus* spp.). The shrub plantings included multiflora (*Rosa multiflora*) and

yellow rose (*R. spp.*), honeysuckle (*Lonicira spp.*), cotoneaster (*Cotoneaster spp.*), snowberry (*Symphoricarpos spp.*), blackberry (*Rubus spp.*), creeping raspberry (*Rubus spp.*), elderberry (*Sambucus spp.*), dogwood (*Cornus spp.*), currant (*Ribes spp.*), and cherries (*Prunus spp.*) (Manchurian, sand, Korean, mayday, and nanking (*P. tomentosa*)).

Hagerman WMA is an important wintering area for waterfowl. During the winter, HWMA is occupied by approximately 30,000 to 40,000 ducks and 1,500 to 2,000 Canada geese (*Branta canadensis*). Mallards make up most (approximately 95 %) of the duck population, but many other species are present.

Many wildlife species occupy HWMA. Ring-necked pheasants (*Phasianus colchicus*) and California quail (*Lophortyx californicus*), are year-round residents and several broods are produced each year. Mourning doves (*Zenaidura macroura*) utilize HWMA during the spring, summer, and fall. Nuttall's cottontails (*Sylvilagus nuttallii*) and yellow-bellied marmots (*Marmota flaviventris*) are common in rocky and sagebrush covered habitat. Mule deer (*Odocoileus hemionus*) take advantage of the interspersed woody thickets and open fields. Muskrats (*Ondatra zibethicus*), beaver (*Castor canadensis*), mink (*Mustela vison*), raccoon (*Procyon lotor*), striped skunks (*Mephitis mephitis*), weasels (*Mustela spp.*), coyotes (*Canis latrans*), and river otters (*Lontra canadensis*) can be found in the wetland and upland habitats.

Hagerman WMA includes the Hagerman State Fish Hatchery and supports many small ponds which are popular fisheries for rainbow trout (*Oncorhynchus mykiss*), largemouth bass (*Micropterus salmoides*), and bluegill (*Lepomis macrochirus*). Between 2010 and 2012, an average of 25,000 hatchery rainbow trout were stocked in the ponds. Because the HWMA is located near a number of Magic Valley communities, the area receives heavy fishing use. A list of some of the fish and wildlife present on HWMA can be found in Appendix VI.

Most of the ponds to the north of the state fish hatchery are managed primarily for warm water fish, while the ponds to the south are managed as put-and-take trout fisheries. The Riley Pond is the only pond north of the hatchery that is regularly stocked with trout. Because of the WMA's importance as a waterfowl resting area during the winter and nesting area during the spring, the fishing season on the Anderson Ponds, Goose Pond, and Highway Pond is open from July 1 to October 31. All other waters on the WMA are open from March 1 to October 31, except Riley Creek upstream of the state fish hatchery diversion is open to fishing year-round.

The aquatic habitat is suitable for both cold water and warm water fish species depending on spring inflow and distance from spring heads. The ponds are shallow with mean water depths of approximately 3 ft. and maximum depths of 6.5-8.0 ft. All ponds are characterized by muck (decaying organic matter) bottoms which, during the summer, support extensive algae growth. Hardstem bulrush is common along shoreline areas and provides cover for fish. Overhanging vegetation surrounds all the ponds at Oster Lakes and the Anderson ponds. The majority of vegetation surrounding the Oster Lakes is dominated by Russian olive, while a mixed community of Russian olive and willow exist around the Anderson ponds.

Two distinct fisheries exist on the HWMA for cold water and warm water fish species. An early spring season opener of March 1 provides the angler an opportunity to fish for cold water fish including trout on the Oster Lakes, Hatchery Settling Pond, Riley Pond, and Riley Creek. A later season opener of July 1 provides anglers an opportunity to fish for warm water fish including largemouth bass and bluegill. An angler survey conducted in July-October 1984 (late season opener), found anglers expended 24,000 hours of effort. This survey did not cover the March-June period which is the peak period for trout anglers on the Oster Lakes, Hatchery Settling Pond, Riley Pond, and Riley Creek (early fishing opener) where as much or more effort would be expended. A follow up creel survey completed in 2011 found anglers expended $4,661 \pm 156$ (80% C.I.) hours of effort fishing between July and October.

In addition to trout, largemouth bass and bluegill provide fair to excellent fishing opportunity depending on the individual pond. The warm water fishery may be enhanced with adjusted water flows in the ponds and habitat enhancement; however, additional evaluation of current pond conditions and potential changes needs to be done prior to suggesting any significant changes. Changes in water management probably would not have any significant effects on waterfowl since fishery improvements wouldn't be necessary in the winter. Some summer flows may be improved with additional water structures (i.e., an outlet on the northwest end of Anderson #2 would move water through a larger part of Anderson #3) (F. Partridge, Regional Fisheries Manager, pers. comm.).

Historically, the HWMA provided some of the best bass and bluegill fishing opportunities in the Magic Valley Region. The Bass Ponds, Anderson Ponds, and Highway Pond all provided a unique small pond fishery. In the mid- to late 1990s, that all changed with the introduction of common carp (*Cyprinus carpio*). Common carp are native to Asia and are known to alter water quality, reduce primary productivity, and severely impact warm water fisheries. They compete heavily for food and habitat, are fast growing, and can produce millions of offspring. Since their introduction, carp have been documented in all of the Anderson Ponds, the Highway Pond, the Riley Pond, Riley Creek below the state fish hatchery, and Oster Lakes 1, 2, 3, and 4. Carp have severely impacted the fisheries on the HWMA, particularly the warm water fisheries.

In 2011, the Department started a multifaceted approach to understanding the fishery dynamics on the HWMA. This included conducting an angler creel survey for comparison to the 1980s survey. It also included inventorying water structures and water movement, as well as the current situation with carp. The long term goal of the project on the HWMA was to remove or suppress carp to a point where bass and bluegill fisheries could rebound. In 2011, all water control structures were surveyed to document barriers against carp movement between fisheries on the HWMA. By controlling carp movement, the Department could then survey each fishery separately. Fisheries were surveyed in 2011 and 2012, and carp eradication using rotenone was completed on Anderson Ponds 1 and 2 in 2012. Further carp eradications are planned on the HWMA in the future.

Hagerman WMA is open for recreational uses year-round and is visited by thousands of people each year. Visitors come to enjoy the hunting, fishing, and other nature-based activities offered on the WMA and utilize the roads, trails, and ponds maintained by the Department.

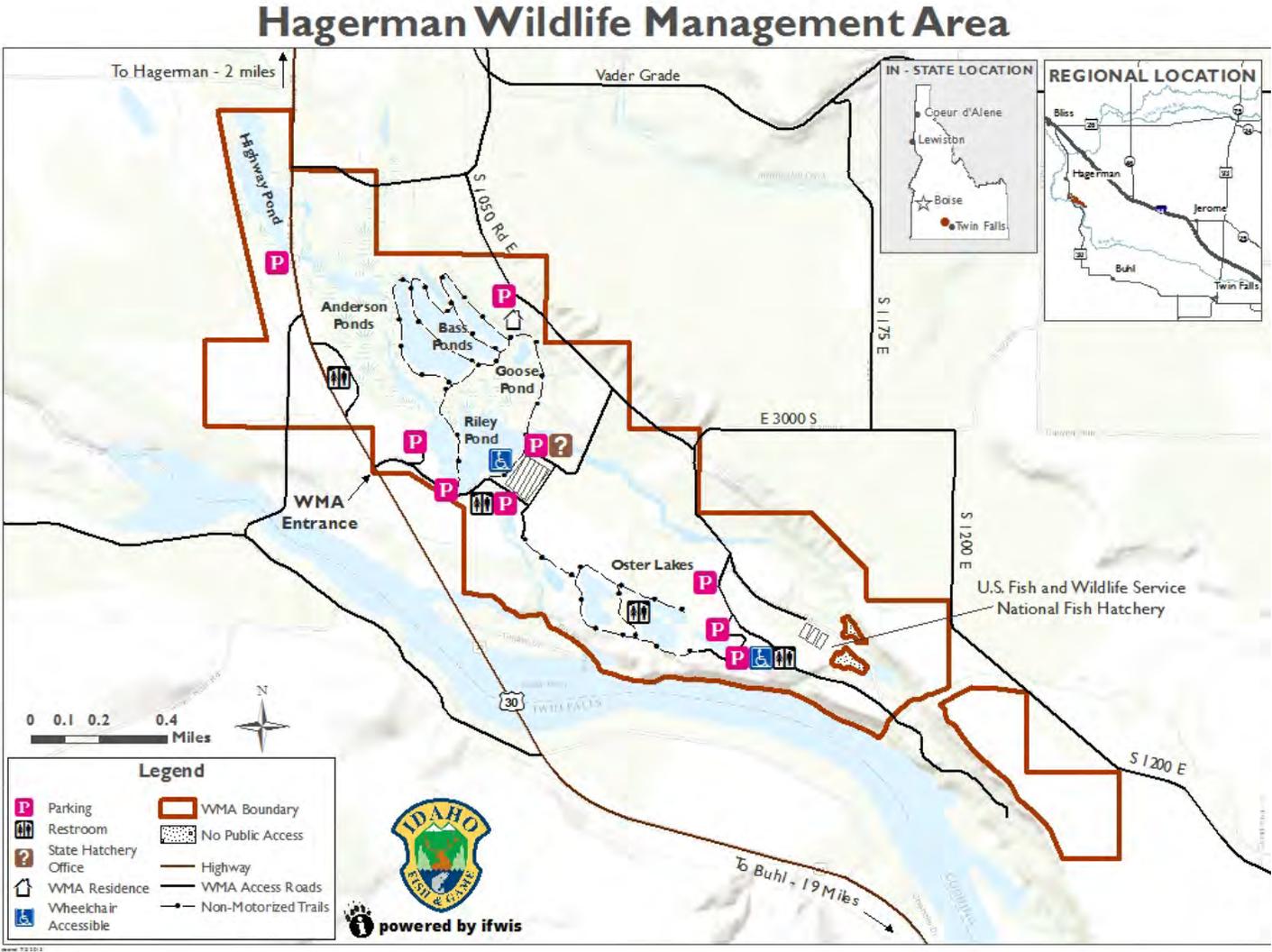


Figure 1. Map of Hagerman Wildlife Management Area.

Management Issues

Magic Valley Region habitat staff presented information on the WMAs in the Magic Valley Region and the preparation of the 2013 WMA plans at four big game season setting public meetings during March and April of 2012; a total of 120 people attended the four meetings. These meetings were held in Hailey, Burley, Jerome, and Hagerman. Regional habitat staff participated in each meeting and manned displays that highlighted the WMAs, the planning process, and management issues that we had identified prior to the meetings. We encouraged the attendees to give us written comments regarding management of the WMAs and any issues they felt that we need to address in our future management. We directed attendees to the online survey available on the Department website (described below) and provided a form at the meetings for written comments.

Throughout 2012 (Feb-Dec), and in May and June of 2014 an online survey form was available on the Department website. The survey allowed participants to answer questions and provide feedback on WMA management statewide and the management of specific WMAs. A news release was printed in several newspapers located in the Magic Valley Region inviting the public to take the online survey and to participate in the public meetings mentioned previously.

We received 84 online surveys specific to HWMA and only two on-site paper surveys from HWMA users during 2012 and 2014; many of the attendees at the public meeting opted to submit their comments via the online survey. Most of those who participated in the surveys were either satisfied or very satisfied with the current management of HWMA (95% satisfied/very satisfied).

The following is a list of all management issues mentioned by members of the public during this survey process. Two general groups provided input, WMA users and neighboring landowners. Department policy direction and HWMA staff management experience also helped shape the list of current issues. The issues identified were grouped, based on similarity, into three general categories: Habitat Management, Wildlife Management, and Public Use Management. Similar comments were then combined to form management issue statements under each category. In the section below, we summarize each management issue and discuss some potential management options on HWMA.

Habitat Management

1. Lack of annual inputs to historically disturbed portions of the HWMA is leading to decreased upland wildlife habitat value.

Discussion: A large portion of the HWMA consists of irrigated fields of perennial herbaceous cover and dry uplands that have historically been farmed or disturbed in some fashion. Many of these areas were historically planted to irrigated, perennial herbaceous cover for game birds and/or a mixture of trees and shrubs. Much of these areas have not received active annual management for prolonged periods and have experienced natural

succession leading to lowered plant diversity, increased annual weeds, and lowered habitat value. Providing high quality wildlife habitat is the primary, overarching goal of HWMA.

Maintaining a mosaic of successional habitats through the application of inputs such as periodic disturbance by fire, farming practices, etc., will help maintain a diversity of high quality wildlife habitats. In addition, the WMA has several irrigation water rights that may be utilized to develop new or improve existing habitats. Maintaining and improving upon the infrastructure of the irrigation delivery system will enable the Department to best utilize these water rights to produce quality wildlife habitat.

2. Noxious weeds are displacing more desirable plant species leading to a reduction in wildlife habitat quality on HWMA.

Discussion: Hagerman WMA is located in a very xeric climate. This harsh climate coupled with historical disturbance to the landscape has led to establishment of multiple noxious weed species. These include, but are not limited to Canada thistle, purple loosestrife, perennial pepperweed, puncture vine, Russian knapweed, and Russian olive. These noxious weeds displace desirable vegetation that would otherwise provide a higher quality of wildlife habitat.

The Department has historically and is currently utilizing several kinds of biological, mechanical, and chemical means of weed control. The weeds in the irrigated and actively farmed acres of the WMA are controlled either through herbicide applications or through mechanical removal. Mechanical removal consists primarily of mowing and/or haying practices. Mechanical removal has proven to dramatically decrease annual weed occurrence and increase the competitiveness of desirable perennial species.

Outside of the intensely-managed irrigated acres and where feasible, a biological control program is the preferred method of noxious weed control. Many weed species such as purple loosestrife can be controlled with releases of biological control agents more economically and effectively than by mechanical or chemical means. However, many weed species do not have approved biological control agents or are not present in high enough densities to support a biological control agent population. In such cases, the most effective method of control has been found to be through selective herbicide applications. Herbicide applications should be selective for target species and should be minimized whenever possible.

Wildlife Management

1. Waterfowl hunting on HWMA is a controversial activity with the public users and should be evaluated to ensure it is compatible with the mission of the WMA.

Discussion: The HWMA was purchased and is managed with funds derived from Pittman-Robertson and the sale of hunting and fishing licenses. As the property is purchased and managed with sportsmen dollars, the Department strives to provide high quality wildlife habitat while maintaining sportsmen opportunity. However, the Department closed the WMA

to waterfowl hunting in order to provide a small resting refuge for wintering migratory waterfowl. Upland game and big game hunting, as well as trapping, are still allowed on portions of the WMA. The location and timing of these activities are designed to minimize the impact to wintering waterfowl.

The primary concern associated with this management issue is related to duck hunting on the HWMA and its potential to disturb wintering waterfowl. A limited, mentored youth waterfowl hunt has been allowed on the HWMA since 2006. This hunt normally occurs during November prior to the arrival of the majority of ducks that winter on the area. This hunt offers a great opportunity for inexperienced hunters to have an opportunity to hunt birds in an area that is otherwise not open to hunting. Places to hunt waterfowl in the Magic Valley are limited because of limited access to the Snake River. The Department will continue to evaluate the impacts of limited youth waterfowl hunting in conjunction with other uses on the WMA.

The HWMA should continue to be managed as a wildlife management area and not a refuge which allows for multiple uses and opportunities as long as they don't negatively impact the protection and enhancement of wildlife and fish populations or their habitats. On-site monitoring is needed to quantify the effects of all of these activities.

2. Fishing access on the HWMA may be impacting wildlife during critical periods.

Discussion: Fish habitat and angling have been an integral part of management on the HWMA since the development of ponds in the early 1940s. Fishing seasons and access have been adjusted over time to reduce the impacts to wildlife during critical periods. The focus of season closures has been on area where high densities of waterfowl winter and were both waterfowl and upland bird nesting occurs. These areas are typically only closed during the waterfowl winter refuge and the spring nesting season. During the low impact periods of late spring through fall, all waters are open to fishing to offer sportsmen opportunity. The Department will continue to evaluate fishing access so that existing uses and future management are compatible.

Public Use Management

1. Hagerman WMA has many unique spatial and temporal use regulations that may be confusing to the WMA users.

Discussion: Hagerman WMA has fishing and hunting regulations that are unique to the WMA. In addition, the access is limited to non-motorized in the majority of the WMA. This may restrict or reduce utilization by the public due to uncertainty in the users. Improved signage and access information would be beneficial to HWMA users and may help the Department achieve its goal to “Sustain fish and wildlife recreation on public lands” as outlined in *The Compass*. The public should be aware, however, that vandalism and theft of signs routinely thwart this management objective and signs are costly to replace. Improved trails, where compatible with wildlife habitat goals, would improve access on the WMA;

however, funding for improved and/or hardened trails is expensive. The Department should continue to investigate opportunities to improve access and information dissemination on the HWMA.

2. Littering on the HWMA is an ongoing problem and reduces the aesthetics and habitat value of the WMA.

Discussion: Because of high levels of public use, limited Department personnel and funding, and the open nature of HWMA, litter control is an ongoing issue. Many of the fishing areas such as the Oster Lakes have very intensive use for eight months of the year. Some areas have garbage cans and regular pick up of garbage by National Fish Hatchery personnel. The Department will continue to have enforcement efforts and signage to educate the public on littering, and will continue to enlist the help of volunteers to clean up the high use areas.

Hagerman WMA Management Program

The Department is responsible for the preservation, protection, perpetuation, and management of all wildlife, fish, and plants in Idaho. Wildlife Management Areas allows the Department to directly affect habitat to maximize suitability for species in key areas. Management to restore and maintain important natural habitats, and create hyper-productive habitats to enhance carrying capacity for selected wildlife species remains a key strategy on HWMA. However, the most pervasive threats to WMA ecological integrity, such as noxious weeds, rural residential/commercial development, increased water diversion, and conflicting land uses on public lands, likely come from outside their boundaries. Therefore, WMA managers must recognize and create opportunities to participate in collaborative conservation and management programs with adjacent landowners, enabling broader influence to maintain the ecological functions that sustain WMA-dependent wildlife.

We propose that an effective way to enable a broader influence over the future of HWMA is through the use of focal species management. According to Noss et al. (1999), focal species are those used by planners and managers to determine the appropriate size and configuration of conservation areas. Conservation of species within landscapes used for other enterprises such as forestry, recreation, agriculture, grazing, and commercial development requires managers to determine the composition, quantity, and configuration of landscape elements required to meet the needs of the species present (Lambeck 1997). Since it is impractical to identify key landscape elements for all species dependent on HWMA, a carefully selected suite of focal species can act as a surrogate for the conservation of many species.

Identifying landscape-scale species priorities across ownership boundaries comprehensively addresses wildlife-related issues on the HWMA and creates a platform for conservation partnerships in the surrounding landscape. This step is also crucial for increasing the likelihood that WMA functions are resilient to inevitable changes in their associated landscapes.

The following five step process was used to create the HWMA management program described in this plan. Each of these steps is described in detail on the ensuing pages.

- 1) Summary of Management Priorities
- 2) Focal Species Assessment
- 3) Focal Species/Habitat Selection
- 4) Spatial Delineation of Selected Focal Species/Habitat Landscapes
- 5) Spatial Delineation of Conservation Target Landscapes
- 6) Creation of Management Program Table

Summary of Management Priorities

Hagerman WMA, like many other WMAs, was created for a specific purpose and therefore has inherent management priorities incorporated in the cooperating agency agreements and land ownerships that formed the WMA. Hagerman WMA was established principally to provide

habitat for waterfowl and upland game birds. Pittman-Robertson funds were used to purchase the property.

Additionally, legal mandates associated with the 2001 appropriation of federal funding for the State Wildlife Grants program also guide the Department's management priorities. The U.S. Congress appropriated federal funds through the State Wildlife Grants program to help meet the need for conservation of all fish and wildlife. Along with this new funding came the responsibility of each state to develop a State Wildlife Action Plan (SWAP). The Department coordinated this effort in compliance with its legal mandate to protect and manage all of the state's fish and wildlife resources (IDFG 2005). The SWAP does not distinguish between game and nongame species in its assessment of conservation need and is Idaho's seminal document identifying species at-risk. Therefore, at-risk species identified in the SWAP, both game and nongame, are a management priority for the Department.

In addition to the biological goals of preserving, protecting, and perpetuating all fish and wildlife in the state of Idaho, the Department also has a statewide goal of protecting and improving wildlife-based recreation and education. The Department's strategic plan, *The Compass*, outlines multiple strategies designed to maintain or improve both consumptive (e.g., hunting, trapping, fishing) and non-consumptive (e.g., wildlife watching) wildlife-based recreation opportunities across the state.

Taking the biological and funding resources of HWMA into consideration, in concert with these foundational priorities of HWMA and statewide Department priorities, the Department developed the following list of broad-scale HWMA Management Priorities.

Hagerman WMA Management Priorities:

1. Waterfowl Habitat
2. Upland Game Bird Habitat
3. Fishing Access
4. Public Hunting, Fishing, and Wildlife-based Recreation Opportunity and Education

Focal Species Assessment

This section of the HWMA Plan is an assessment of various fish and wildlife species on the HWMA in order to identify Conservation Targets to guide management. Table 1 evaluates taxa that are either flagship species (Groves 2003) and/or at-risk species identified by the Department in the Idaho Comprehensive Wildlife Conservation Strategy (IDFG 2005) and key federal agencies.

Flagship species are popular, charismatic species that serve as symbols and catalysts to motivate conservation awareness, support, and action (Heywood 1995). Flagship species often represent a landscape or ecosystem (e.g., Willow Creek watershed or foothills ecotone), a threat (e.g., habitat loss or climate change), organization (e.g., state government or non-government organization), or geographic region (e.g., protected area, Department Region or state; Veríssimo et al. 2009).

Waterfowl are an example of a group that fit the criteria as both a focal and flagship species. In addition, they are a culturally and economically important species in Idaho and represent a founding priority for establishment of the HWMA. Therefore, waterfowl are an important flagship species group considered in the WMA assessment.

A principal limitation of the flagship species concept is that by focusing limited management resources on culturally and economically important species, more vulnerable species may receive less or no attention (Simberloff 1998). To overcome this limitation, we are explicitly considering a wide variety of at-risk species (Groves 2003); yielding a more comprehensive assessment that includes culturally and economically important species (e.g., waterfowl and upland game birds) along with formally designated conservation priorities (e.g., bald eagle and trumpeter swans). Categories of at-risk vertebrate species considered in this assessment are: 1) species designated as Idaho Species of Greatest Conservation Need (SGCN); 2) species designated as Sensitive by Region 4 (Intermountain Region) of the U.S. Forest Service (USFS); and 3) species designated as Sensitive by the Idaho State Office of the Bureau of Land Management (BLM).

The Idaho SGCN list was developed as part of the Idaho Comprehensive Wildlife Conservation Strategy (IDFG 2005). The Comprehensive Wildlife Conservation Strategy document is now referred to as the SWAP. Idaho's plan serves to coordinate the efforts of all partners working toward conservation of wildlife and wildlife habitats across the state. Although the Idaho SWAP SGCN includes most of the special status species identified by land management agencies in Idaho, some species not listed as SGCN are considered priorities by other agencies.

United States Forest Service Sensitive Species are animal species identified by the Intermountain Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution. The Forest Service Manual (FSM 2670.22) directs the development of sensitive species lists. This designation applies only on USFS-administered lands.

Bureau of Land Management Sensitive Species are designated by State Directors in cooperation with the State fish and wildlife agency (BLM manual 6840). The Idaho State BLM Office updated these designations in 2003. The sensitive species designation is normally used for species that occur on BLM public lands and for which BLM has the capability to significantly affect the conservation status of the species through management.

The Intermountain West Joint Venture (IWJV) also maintains a list of priority species. The IWJV has identified 40 priority species from which to base conservation planning.

Information on species status, occurrence, beneficial management/conservation actions and threats were derived through consultation with Department staff, occurrence records in the Department's Idaho Fish and Wildlife Information System database, consultation with various BLM and USFS species lists, and species summaries provided in the Idaho SWAP.

Suitability of assessed species as a focal species were estimated by Magic Valley Regional Habitat and Diversity staff based on descriptions in Groves (2003) and USFWS (2005). Potentially suitable focal species may include species with one or more of the following five characteristics:

- *Species with high conservation need*
- *Species or habitats that are representative of a broader group of species sharing the same or similar conservation needs*
- *Species with a high level of current program effort*
- *Species with potential to stimulate partnerships*
- *Species with a high likelihood that factors affecting status can realistically be addressed (USFWS 2005)*

Table 1. Status of flagship and special status species on Hagerman WMA, including their potential suitability as a focal species for management.

Species	Status Designation(s)	Occurrence Context in Hagerman WMA Landscape	Beneficial Management and Conservation Actions	Suitability as a Focal Species for Hagerman WMA
Waterfowl Guild	Flagship; SGCN (Trumpeter Swan, Northern Pintail, Lesser Scaup)	A combination of mild winter weather and open water draws more than 30,000 ducks and several thousand Canada geese to HWMA during winter months, providing excellent opportunities for wildlife viewing recreation. The WMA's riparian and wetland habitats support critical resting, feeding, and nesting areas for waterfowl species including Canada geese, green-winged teal, cinnamon teal, mallard, and wood duck.	Maintenance and restoration of wetlands and riparian systems through cooperative joint ventures and integration of waterfowl management with agricultural practices. Site power lines and infrastructure away from flight paths.	Highly suitable as a focal guild. Guild is a good indicator of quality wetland habitat. WMA provides critical overwintering, migratory, and nesting habitat for waterfowl. Hagerman WMA is a designated Idaho Birding Trail site due in part to spectacular concentrations of waterfowl in winter months and is designated as an Important Bird Area by the Department and the National Audubon Society.
Upland Game Bird Guild (Ring-necked Pheasant, California Quail, Mourning Dove)	Flagship	A combination of dense woody cover, abundant forage and good nesting cover provide excellent habitat for ring-necked pheasant, California quail and mourning doves.	Maintenance and restoration of nesting cover and food plots coupled with control of noxious weeds and integration of upland game management with agricultural practices. Protecting key habitats from human disturbance during critical periods.	Highly suitable as a focal guild. Guild is a good indicator of quality upland habitat. The HWMA provides excellent nesting, foraging and security habitats for upland game bird species.
Mule Deer (<i>Odocoileus hemionus</i>)	Flagship	Hagerman WMA is important year-round habitat for mule deer in Department game management Unit 53. In recent years HWMA and the immediate vicinity has provided important habitat for approximately 40 mule deer.	Maintenance of woody cover and food plots. Thin dense stands of Russian olive to provide more usable areas of security cover. Provide technical assistance to private landowners to expand tolerance and available habitat on private lands; provide technical assistance to county planning and zoning staffs to minimize loss or degradation of habitat.	Potentially Suitable as a focal species. Mule deer are a culturally and economically important wildlife species in the Hagerman Valley and are a species with a good potential for developing conservation partnerships.
White Sturgeon (<i>Acipenser transmontanus</i>)	At-risk Species; SGCN; BLM Sensitive	The Snake River population of White Sturgeon in Idaho ranges upstream to Shoshone Falls and has been introduced below American Falls dam. In Idaho, the two viable populations are located between Bliss and C.J. Strike dams and from Hells Canyon Dam downstream to Lower Granite Dam in Washington. Hagerman WMA lies within the White Sturgeon "conservation population" management reach from Lower Salmon Falls Dam to Bliss Dam. With very limited natural recruitment expected in this reach, maintenance of white sturgeon populations and fishing opportunity would be reliant on periodic supplementation with hatchery fish or by translocating wild fish from other reaches.	Conservation measures are addressed in the Snake River White Sturgeon Conservation Plan (http://fishandgame.idaho.gov/public/fish/planSnakeWhiteSturgeon.pdf). The short river reach from Lower Salmon Falls Dam to Bliss Dam limits the available habitat and is likely conducive to high downstream losses of white sturgeon eggs, larvae, and juveniles. Restoring an abundant self-sustaining population does not appear feasible under existing conditions. With very limited natural recruitment expected in this reach, maintenance of White Sturgeon populations and fishing opportunity would be reliant on periodic supplementation with hatchery fish or by translocating wild fish from other reaches. Use spot creel surveys or other techniques (e.g., mail surveys) to assess angler participation, catch rates, and satisfaction. Conduct periodic (every 3-5 years) sampling within and below this reach to assess survival, growth, condition, and movement of stocked fish.	Potentially suitable as a focal species. Critically imperiled statewide and designated at highest sensitivity ranking by BLM. Largest freshwater fish in North America. Unique game fish deserving of higher public profile.
Inland Redband Trout (<i>Oncorhynchus mykiss gairdneri</i>)	At-risk Species; SGCN; BLM Sensitive	Found in the interior Columbia River Basin from east of the Cascades upstream to geologic barriers such as Shoshone Falls on the Snake River. Current range wide abundance in Idaho is unknown. Species occupies a range of stream habitats from desert areas in southern Idaho to forested mountain streams in central and northern Idaho. The drainages surrounding HWMA are within the predicted range for this species.	Continue a sterile fish planting program in areas where Inland Redband Trout and introduced hatchery fish overlap. Maintain or reestablish connectivity of current Inland Rainbow Trout metapopulations. Develop conservation status and management plan. Continue statewide population distribution and trend monitoring program.	Potentially suitable as a focal species. Native trout are important to Idaho biologically because they evolved here and are best adapted to their historical waters; ecologically, because their presence is an indicator of the overall health of Idaho's waters, and socially, because Idaho anglers place a high value on native trout. Many anglers also specifically target native trout for

Species	Status Designation(s)	Occurrence Context in Hagerman WMA Landscape	Beneficial Management and Conservation Actions	Suitability as a Focal Species for Hagerman WMA
				their uniqueness thus adding great value to Idaho's economy.
Shoshone Sculpin (<i>Cottus greenei</i>)	At-risk Species; SGCN; BLM Sensitive	The Shoshone sculpin is restricted in distribution (endemic) to the springs and spring creeks in the Hagerman Valley and to Blue Hearts Springs in the Snake River. This species has been collected from 25 springs/streams in the Hagerman area. These waters enter the river from the north and are usually <0.15 mile in length. Shoshone sculpin are most common in the slower moving waters of these spring/stream systems. Smaller Shoshone sculpin are found in areas with considerable aquatic vegetation. Most smaller springs contain populations of a few dozen to a few hundred fish. The species needs clear and nearly constant-temperature springs and associated outlet streams.	Collaboratively develop agreements with land and water managers to protect remaining habitat, recover degraded habitat, and to reconnect fragmented populations. Implement a monitoring program to determine population size, distribution, and trends. Implement molecular genetic studies to determine the genetic implications of population fragmentation.	Potentially suitable as a focal species. Unique endemic fish with restricted natural distribution. Good indicator of water quality and stream health. Species' life history attributes would be of high interest from interpretive and conservation standpoints.
Amphibian Guild	At-risk Species; SGCN; BLM Sensitive	Northern Leopard Frog (<i>Rana pipiens</i>) was at one time the most commonly encountered amphibian in Twin Falls County. Hagerman WMA is within historic/predicted distribution for this species. The ACD shows several records in the HWMA vicinity (1894 to 1957); one record from 2006, 15 miles south of WMA. Presence of bullfrogs (1 ACD record on-site) suggests possible limiting factor and/or threat. The ACD shows one record for Western Toad (<i>Anaxyrus boreus</i>) on the WMA (2005) and several in a 15-mile radius. The WMA is outside of the range of the Southern Rockies Distinct Population Segment of Western Toad, which has been petitioned for listing under ESA. The WMA is also within the predicted distribution of Woodhouse's Toad (<i>Bufo woodhousii</i>) and Great Basin Spadefoot (<i>Spea intermontana</i>), though the nearest records are >40 mile downstream and 30 miles northeast, respectively. Suitable breeding habitat exists on the WMA for all four species, though presence and conservation status for all four species are currently unknown.	Wetland protection and/or restoration of degraded sites, disease management, cataloging and monitoring population status, delineating important habitat, and protecting delineated habitat are beneficial to the Northern Leopard Frog, Western Toad, Woodhouse's Toad, and Great Basin Spadefoot, but will also benefit other amphibians (i.e., Boreal Chorus Frog, Sierran Chorus Frog) and wetland-associated fish and wildlife.	Potentially suitable as a focal guild. Amphibians are an important indicator of healthy riparian and wetland systems in southern Idaho. Management for this guild would enhance habitat connectivity across an arid landscape and benefit multiple wetland/riparian-dependent species. Highly desirable watchable wildlife species.
Waterbird Guild	Flagship or At-risk Species; SGCN; USFS Sensitive; BLM Sensitive	Hagerman WMA supports a diversity of waterbirds year-round, including several SGCN species (Common Loon, Western Grebe, American White Pelican, Great Egret, Snowy Egret, Cattle Egret, Black-crowned Night Heron, California Gull, Caspian Tern, Forster's Tern, Black Tern). IBIS surveys conducted in spring/summer have also documented Pied-billed Grebe, Double-crested Cormorant, Great Blue Heron, Virginia Rail, Sora, American Coot, and American Bittern. Riley Pond supports a large flock of wintering gulls, including Herring, Thayer's, Glaucous, and Glaucous-winged Gulls. Nearby Heron Island supports breeding rookeries of Great Blue Heron, Black-crowned Night Heron, Snowy Egret, and Cattle Egret. WMA is a designated Important Bird Area and a "Blue Ribbon" Idaho Birding Trail site.	Monitoring water quality and reducing drastic water level fluctuations during the breeding season at key sites is recommended. Closing off important breeding areas to recreational activities during the nesting period helps to alleviate disturbance pressures. Secure adequate water supplies and water rights to ensure the persistence of waterbirds on the WMA. Monitor invasive plant species (i.e., Russian Olive) and treat (i.e., hand-pull, herbicide) to prevent their spread on the WMA and surrounding lands. Continue IBIS 3-year monitoring plan to assess status of WMA populations.	Highly suitable as a focal guild. Species is a good indicator of quality wetland and riparian systems. Waterbirds are a notable watchable wildlife group due to their showy courtship displays, conspicuous vocalizations, and colonial behavior. Importance of HWMA to conservation of waterbirds noted in its designation as an Important Bird Area and Idaho Birding Trail "Blue Ribbon" site.

Species	Status Designation(s)	Occurrence Context in Hagerman WMA Landscape	Beneficial Management and Conservation Actions	Suitability as a Focal Species for Hagerman WMA
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	At-risk Species; SGCN; USFS Sensitive; BLM Sensitive	Wintering waterfowl concentrations and open water attract 15-20 Bald Eagles during winter months. Hagerman WMA falls within Pacific Bald Eagle Recovery Zone 20, covering a wide swath of the Snake River from Idaho Falls to below Bruneau. This reach of the Snake River supports approximately 20 nesting territories. The nearest Bald Eagle nest to HWMA is located about 14 river miles upstream at Niagara Springs WMA.	For wintering Bald Eagles, identify and protect roost sites and foraging perches. Maintenance and restoration of wetlands and riparian systems through cooperative joint ventures will sustain winter populations of waterfowl, the primary prey resource for wintering Bald Eagles. For nesting Bald Eagles, establish buffer zones around primary and alternate nest sites and identify and protect important perch and roost sites. Avoid or minimize disturbance around nest sites. Site power lines and infrastructure away from Bald Eagle flight paths and nest sites to avoid bird strikes and electrocutions.	Potentially suitable as a focal species. Bald Eagles have a high public profile as our national bird and as an Endangered Species Act recovery success. Winter concentrations of Bald Eagles, and their interactions with waterfowl and other water-associated birds, provide a highly desirable watchable wildlife opportunity for the public.

Selection of Conservation Targets

The biodiversity of HWMA is represented by numerous vertebrates, invertebrates, plants, and ecological communities. It is impractical to evaluate and plan for the conservation of all these elements. Therefore, Conservation Targets, a sub-set of species and communities, were selected to represent the biodiversity of HWMA for management and conservation while still reflecting the management priorities of HWMA.

Conservation Targets for the HWMA Management Plan were selected from species ranked as potentially suitable focal species in Table 1. Vertebrates and plants are not included in this assessment due to practical considerations including lack of data and funding. Conservation Targets could also include habitats that effectively represent suites of the flagship and special status species evaluated in Table 1, regardless of their potential suitability as a focal species. A final consideration in the selection of Conservation Targets was the best professional judgment by the Magic Valley Regional staff and HWMA staff. Effective Conservation Targets cannot be selected based solely on species assessments. They must reflect regional threats, priorities, existing conservation partnerships, and the limitations of WMA personnel and funding.

The Conservation Targets selected to guide management on HWMA (corresponding HWMA Priority in parentheses) are:

1. Mallard (Waterfowl Habitat)
2. Ring-necked pheasant (Upland Game Bird Habitat)
3. Riparian/Pond Habitat (Fishing Access and Public Hunting, Fishing, and Wildlife-Based Recreation Opportunity and Education)

Mallard

Mallards were selected as a Conservation Target to represent Waterfowl Habitat on the HWMA because:

- Mallards are a flagship species that are historic and current management priorities on HWMA.
- Mallards rely on a broad array of habitat components including wetland and riparian habitat, forage crops, and secure winter habitat to thrive within the HWMA landscape. Therefore, efforts to sustain mallards by conserving these varied habitat components will benefit a wide range of other species.

Ring-necked pheasant

Ring-necked pheasants were selected as a Conservation Target to represent Upland Game Bird Habitat on the HWMA because:

- Ring-necked pheasants are a flagship species that are historic and current management priorities on HWMA.

- Ring-necked pheasants rely on a broad array of habitat components including dense woody cover, good nesting cover, and abundant forage habitat to thrive within the HWMA landscape. Therefore, efforts to sustain ring-necked pheasants by conserving these varied habitat components will benefit a wide range of other species.

Riparian/Pond Habitat

Riparian/Pond habitat was selected as a Conservation Target on HWMA because:

- A majority of the species evaluated in Table 1 will benefit from efforts to protect and restore riparian/pond habitat. Riparian protection and restoration is the primary recommended beneficial management and conservation action for most of the species evaluated.
- Riparian habitat extent is easily mapped and monitored on HWMA and the adjacent landscape.
- Given the high species value of riparian/pond habitat—particularly of priority species such as waterfowl, bald eagles, black crowned night heron, northern leopard frog, etc.—riparian restoration partnerships are very achievable.

Coverage Assessment of Selected Conservation Targets

We define an effective Conservation Target as one providing meaningful conservation benefits for multiple species that share similar habitat requirements or life history traits. They are useful for directing limited management resources and maximizing conservation effort. One measure of effectiveness is to assess the number of species that a Conservation Target benefits (or covers) within the management landscape.

Regional Habitat and Diversity staff worked together to complete the coverage assessment table (Table 2). We evaluated each of the Conservation Targets to determine which species from Table 1 would benefit from management activities focused on that target. Evaluations are based on knowledge of species habitat requirements, occurrence within the management landscape, and the scope of current and planned management actions. The assessment considered only those habitat features or needs relevant to the species as it occurs on the management landscape. For instance, we emphasized the importance of resting and foraging habitat needs for the Waterfowl/Mallard Guild, knowing that most breeding activity for these species occurs elsewhere. Our results indicate that the selected Conservation Targets on HWMA provide substantial, but variable habitat benefits for an array of assessed species.

We also evaluated which species or guilds would receive little or no tangible benefit from management actions for specific Conservation Targets; these are designated “conservation needs.” We identified conservation needs for several species or guilds and determined that further data will be useful to inform the next WMA planning process. Recent studies suggest the conservation needs of some of these species (e.g. the Myotis guild) are increasing dramatically. A prudent management strategy is to consider a landscape where these species may be prioritized for management in the future. Broad strategies for addressing these management needs are

identified in the following Management Program Table (pages 31-33), but typically include collection of additional baseline data.

Table 2. Analysis of Conservation Target coverage and identification of conservation needs.

Species Assessed in Table 1	Conservation Targets ^a			Conservation Need
	Mallard	Ring-necked Pheasant	Riparian / Pond Habitat	
Waterfowl Guild	X	P	X	
Upland Game Bird Guild	P	X	P	
Mule Deer	P	P	P	
Inland Redband Trout	P	P	X	
Amphibian Guild	X	P	X	
Waterbird Guild	X		X	
Shoshone Sculpin	P		X	
Bald Eagle	P	P	P	
White Sturgeon	P		P	

^a Entries marked with “X” indicate that the majority or all habitat needs for an assessed species within the management landscape are being met by management actions benefitting the Conservation Target. Entries marked with “P” indicate only a portion of the species habitat needs are being met by management actions for the Conservation Target. Conservation needs exist where target-specific management actions provide little or no tangible habitat benefit for an assessed species. Blank cells under conservation targets may indicate a conservation need or where dissimilar habitat needs preclude conservation benefits.

Spatial Delineation of Conservation Target Landscapes

Some of the focal species selected as Conservation Targets for HWMA also utilize habitats off of the WMA to meet their annual needs. The Mallard Conservation Target species will benefit from management directed off of HWMA. Therefore, it is crucial that we actively participate in habitat conservation efforts within the landscape, beyond the borders of the WMA, if we are to maximize the potential benefits of management actions on the WMA. As a hypothetical example, if agricultural lands surrounding HWMA were converted to non-agricultural lands such as sub-divisions, it removes the main food resource for wintering waterfowl on HWMA. Bossenmaier and Marshall (1958) and Reed (1971) reported the maximum distance of flights for ducks from roosting areas to feeding areas (agricultural fields) was 17.6 and 19.2 km, respectively. Jorde et al. (1983) documented foraging flights of mallards increased from 3.2 to 20 km during periods of severe weather; this movement was associated with ducks seeking out grazed cornfields or feedlots which provided better access to corn than ungrazed fields. If waterfowl did not have a food source on the immediately surrounding landscape that was within an acceptable foraging flight distance, they would leave the refuge of HWMA to look for other roosting areas.

The following sections describe the methods used to define spatial landscapes for each of our HWMA Conservation Targets. We used the best data available (i.e., professional knowledge from Department biologists and Conservation Officers who were familiar with waterfowl movements on HWMA, feeding patterns, foraging flight movement data, and other ecological data from peer reviewed scientific literature, and local knowledge) to construct these Conservation Target-specific landscapes. These landscapes are then utilized in the Management Program Table (pages 31-33) to identify Conservation Target-specific Management Directions, and Performance Targets and Strategies, for both HWMA and for the delineated landscape.

Mallard Landscape

The HWMA lies along the Snake River and is surrounded by agricultural lands which influence the winter flight patterns of all ducks in the vicinity, particularly mallards. Many of the acres under agricultural production grow small grains (e.g., corn, wheat) which are critical to mallards to survive the winter.

We used the following steps to estimate the HWMA Mallard Landscape from these data:

- Reviewed literature about feeding ecology of mallards, daily movements of mallards and movement distances of mallards to derive ranges mallards move for feeding purposes (Link et al. 2011; Davis and Afton 2010; Jorde et al. 1983).
- Gathered personal observations from regional staff about winter mallard movements throughout the Magic Valley, particularly mallards that use the HWMA (Figure 2).

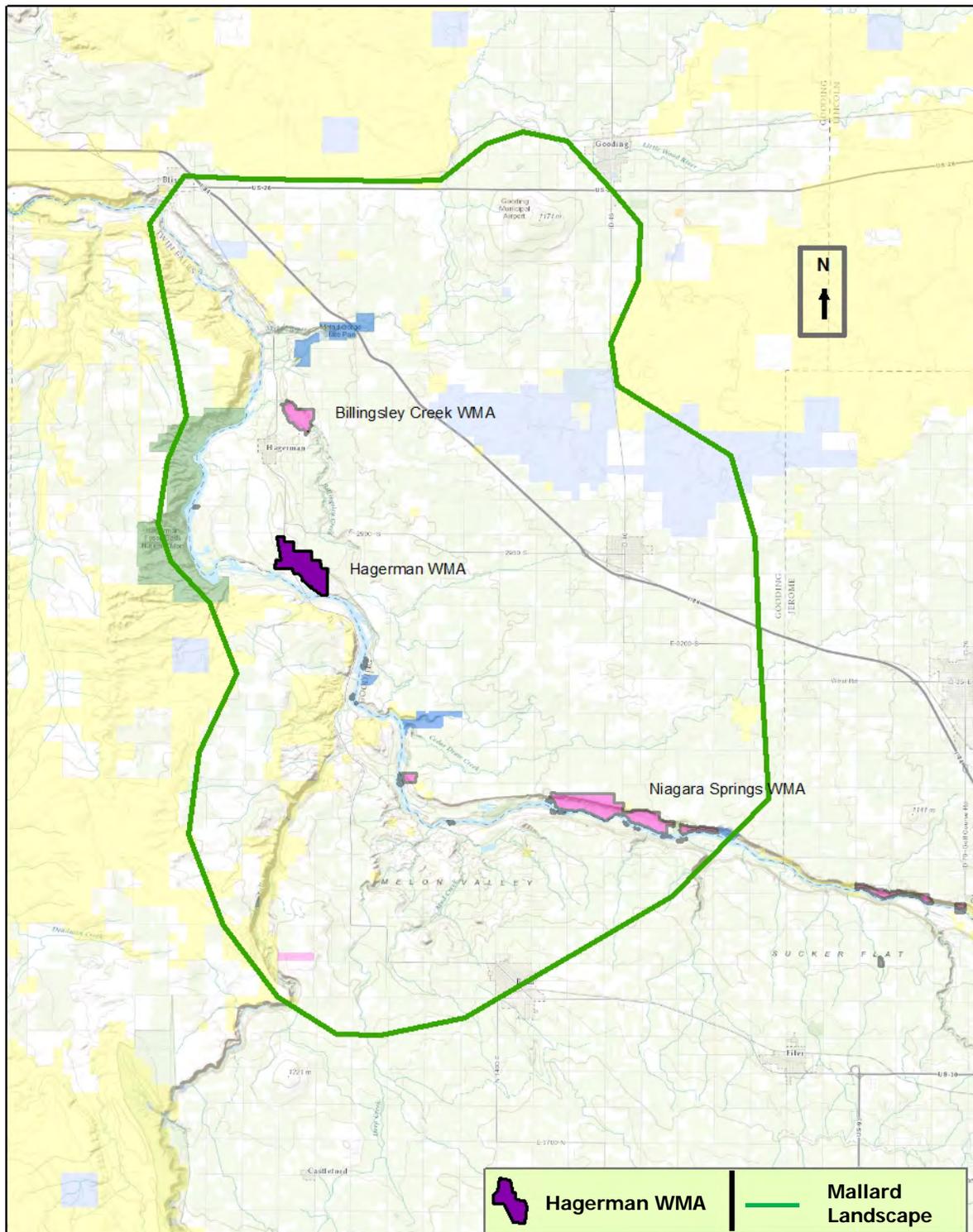


Figure 2. Hagerman WMA Mallard Landscape depicting the typical year-round landscape used by mallards wintering on Hagerman WMA.

Upland Game Bird Guild Landscape

The boundary for the landscape polygon for upland game bird guild (Figure 3) was developed using the following information:

- A study of hen pheasants during their nesting season by Kuck et al. (1970) found the home range of broods ranged from two to 11 hectares.
- In a South Dakota study, 73% of radioed male pheasants dispersed an average of 3.2 km in the spring from wintering areas. (Leif 2005).
- Leif (2005) also found home ranges of male pheasants varied from 18.4 hectares to 45.4 hectares.
- Gatti et al. (1989) studied the habitat use and movements of female pheasants during fall and winter and documented average home ranges of 24.2 hectares.
- Emlen (1939) reported on home ranges of California quail during the winter of four coveys in the Central Valley of California. He found that these coveys had home ranges of 7.7, 8.9, 6.9 and 18.2 hectares, respectively.
- Mean home range size of radio-marked female California quail in western Oregon ranged from 4 to 22 hectares (Kilbride 1991).

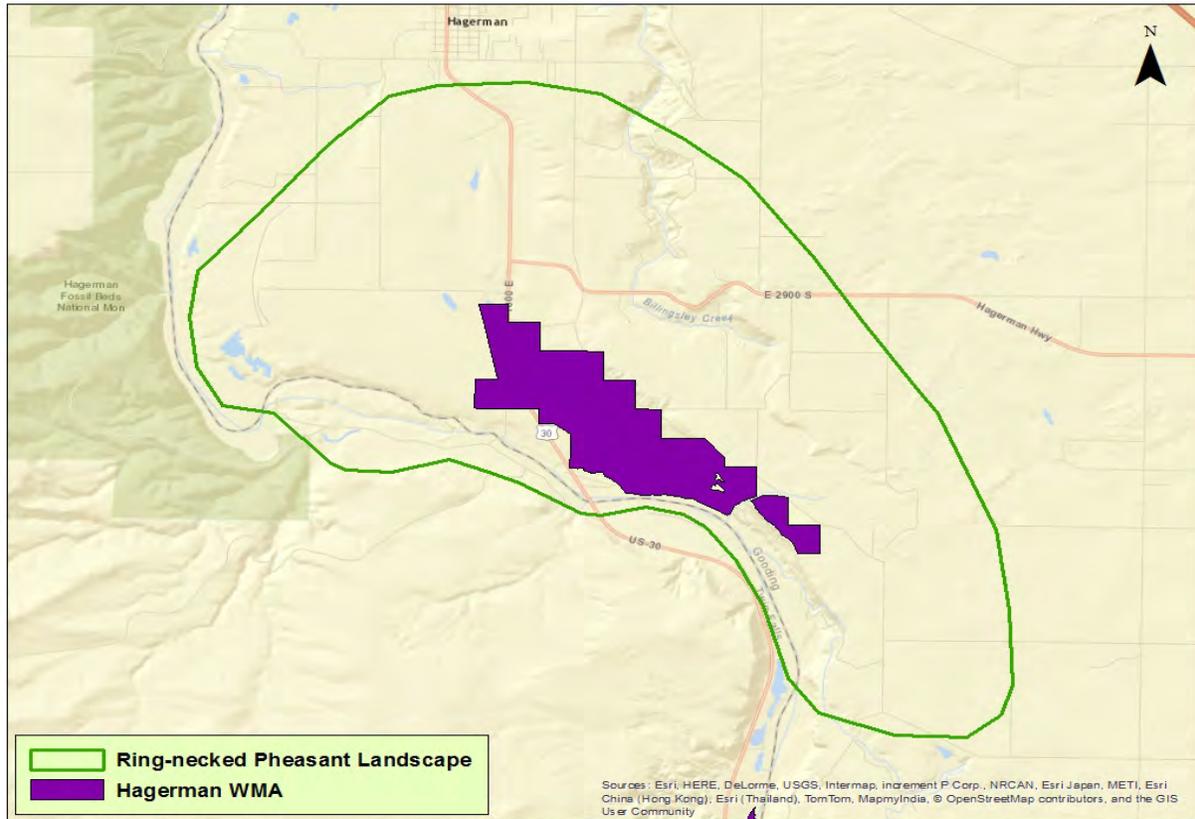


Figure 3. Hagerman WMA Ring-necked Pheasant Landscape map depicting year round landscape use of habitat by Ring-necked pheasants found on the WMA.

Hagerman WMA Management Program Table

The following table outlines the Management Directions, Performance Targets, Strategies, and Outcome Metrics HWMA staff will use to manage for the Conservation Targets selected (page 25) to represent each HWMA Priority (page 19) at both the HWMA and Conservation Target-specific landscape scale. The Compass Objective column links the Management Directions in this table to the objectives of the Department’s strategic plan, *The Compass* (Appendix I).

WMA Priority: Waterfowl Habitat					
Conservation Target: Mallard					
Scope	Management Direction	Performance Target	Strategy	Metric	Compass Objective (Appendix I)
HWMA	Provide high quality, secure wintering habitat for mallards	Provide open water on at least 50 acres throughout the WMA	Maintain adequate water flow through the Bass Ponds, Anderson’s 1 & 2 and Oster Lake #1 to keep them at least 75% open throughout the winter.	Ponds with open water	A, B, C, D, F, H, J
			Conduct annual maintenance on all water structures (replacing boards on control structures as needed) to keep water levels high enough to reduce freezing.		
			Replace or modify water control structure on north end of Anderson #1.		
		Close all hunting and fishing activities on at least 400 acres of the WMA from November 1 st through February 15 th to reduce disturbance to wintering waterfowl.	Acres Closed	Install interpretive signs on main dikes to educate the public on the critical nature of having undisturbed areas for wintering waterfowl.	
				Maintain waterfowl hunting area outside the WMA boundary except for limited youth hunt prior to arrival of migratory waterfowl.	
				Provide at least two viewing platforms/blinds for public viewing of wintering waterfowl.	
	Work with local Audubon chapter to reduce disturbance to wintering waterfowl during the Christmas Bird Count.				
	Maintain weekly HWMA personnel presence during the winter to report travel violations to enforcement personnel				
	Evaluate the feasibility of, and implement if feasible and necessary, adaptive access management strategies (e.g., localized, temporary human entry closures or additional road closures) to promote temporary security cover and prevent human actions that may encourage wintering mallards to leave HWMA				
	Provide high quality year-round habitat for mallards	Acres Maintained	Prohibit vehicle access to marsh complex		
			Monitor impacts of mentored youth hunt to wintering waterfowl.		
			Maintain dike systems around all ponds		
Measure and record water flows					
Maintain fences along the north boundary of the HWMA.					
Remove Russian olive trees around the edges near the Anderson and Bass ponds					
Annually plant a least 10 acres of winter forage food plots for waterfowl.					
Work with the state and national fish hatcheries to insure timely and adequate flows of water to ponds, and to cover and forage crops.					
Utilize chemical, mechanical, cultural, and biological methods to control noxious weed infestations and limit the spread of noxious weeds on HWMA					
Irrigate grass-alfalfa for grazing, nesting and brood rearing.					
Maintain and improve irrigation system (pump, mainline, wheel-lines, sprinkler hand and solid set line, etc.)					

WMA Priority: Waterfowl Habitat						
Conservation Target: Mallard						
Scope	Management Direction	Performance Target	Strategy	Metric	Compass Objective (Appendix I)	
HWMA	Provide high quality year-round habitat for mallards	Maintain at least 400 acres of seasonal waterfowl habitat on the HWMA annually.	Maintain stable water levels throughout the ponds	Acres maintained	A, B, C, D, F, H, J	
			Maintain and clean water structures			
			Maintain Canada geese nesting structures			
Mallard Landscape (Figure 1)	Develop 10 acres of waterfowl habitat with private land owners annually.	Improve waterfowl habitat on at least one private land parcel within the mallard landscape annually.	Utilize landowner assistance programs (e.g., HIP, MDI) and the USDA Farmbill programs to help private landowners provide or improve winter waterfowl habitat	Acres Improved	A, B, C, E, G, J, K	
			Work with local hunting clubs to coordinate habitat improvements and water management			
		Maintain existing documented waterfowl habitat within the mallard landscape.	Provide technical assistance to local landowners on waterfowl habitat requirements	Acres Maintained		
			Work with local planning and zoning committees to reduce the impacts of development on critical waterfowl habitat			
WMA Priority: Upland Game Bird Habitat						
Conservation Target: Ring-necked Pheasant						
Scope	Management Direction	Performance Target	Strategy	Metric	Compass Objective (Appendix I)	
HWMA	Provide high quality, year-round habitat for ring-necked pheasant	Improve and/or actively manage at least 100 acres of ring-necked pheasant habitat each year. These acres include a minimum of 5 acres of annual or perennial food plots.	Irrigate grass and alfalfa stands for nesting and brood rearing habitat	Acres Improved or Actively Managed	A, B, C, D, F, H, J	
			Maintain and improve irrigation system (pump, mainline, wheel-lines, sprinkler hand and solid set line, etc.)			
			Annually plant a least 10 acres of wheat, millet, sorghum and/or corn for winter forage			
			Work with the state and national fish hatcheries to insure timely and adequate flows of water to cover and forage crops.			
			Maintain shrub, tree and riparian habitat			
		Minimize disturbance during nesting/brood rearing on 200 acres of nesting habitat annually.	Utilize chemical, mechanical, cultural, and biological methods to control noxious weed infestations and limit the spread of noxious weeds on HWMA			
			Sign nesting and brood rearing areas to reduce disturbance			
			Prohibit dog use in nesting/brooding areas from May 1 to July 1			
		Maintain 100 acres of existing upland game bird habitat within the Ring-necked landscape annually.	Restrict WMA activities in nesting/brooding areas until after July 1.			Acres Maintained
			No firewood cutting permits after April 30			
	No group events in nesting/brood rearing areas between May 1 and July 1					
	Restrict haying from May 1 to July 1 in waterfowl nesting areas.					
	Work with local planning and zoning committees to reduce the impacts of development on critical waterfowl habitat					

WMA Priority: Public Hunting, Fishing, and Wildlife-based Recreation Opportunity and Education					
Scope	Management Direction	Performance Target	Strategy	Metric	Compass Objective (Appendix I)
HWMA	Provide opportunity for hunting, trapping, fishing, and wildlife based recreation and education.	Provide a minimum of 1,000 public hunting/trapping user days consistent with the HWMA mission annually.	Maintain upland game bird, small game, and big game hunting WMA in areas not immediately adjacent to waterfowl winter refuge.	User Days	A, B, C, E, G, J, K, M
		Provide a minimum of 4,000 user days for recreational fishing opportunity consistent with the HWMA mission annually	Maintain youth waterfowl hunt as long as the timing and administration of it align with WMA goal of providing critical winter waterfowl habitat.		
			Maintain current fishing access throughout the HWMA		
			Work with state and national fish hatchery personnel to maintain adequate water flows through ponds		
			Work with National Fish Hatchery personnel to improve existing road into Oster Lake #1		
			Maintain pond water levels to facilitate healthy fish populations		
			Work with fish management personnel to improve fish habitat in all ponds on the WMA		
		Maintain facilities, signage, and HWMA-managed roads/trails to facilitate recreation and education.	Maintain walking access corridors around ponds during open fishing seasons	Facilities Maintained	
			Provide improved informational signage and boundary markers		
			Maintain existing restroom facilities on the Oster Lakes and near the Riley Pond		
			Work with state and federal hatcheries to maintain or improve handicap access facilities		
			Conduct annual maintenance on all water structures (replacing boards on control structures as needed) to keep water levels adequate for healthy fish populations		
Replace or modify water control structure on north end of Anderson #1.					
WMA Priority: Riparian/Pond Habitat					
Scope	Management Direction	Performance Target	Strategy	Metric	Compass Objective (Appendix I)
HWMA	Provide high quality riparian habitat to benefit a wide range of fish and wildlife species	Maintain 20 acres of riparian habitat	Prioritize noxious weed control efforts in riparian habitats	Acres Improved	A, B, C, G, J, M
			Stabilize west bank of the Bass Ponds through riparian vegetation or willow plantings		
			Remove Russian olive trees around the edges of the Anderson and Bass ponds		
			Maintain stable water levels throughout the ponds		
		Maintain existing HWMA facilities and infrastructure to facilitate healthy riparian/pond habitats	Maintain dike systems around all ponds	Acres Maintained	
			Work with the state and national fish hatcheries to insure timely and adequate flows of water to ponds		
			Utilize chemical, mechanical, cultural, and biological methods to control noxious weed infestations and limit the spread of noxious weeds in riparian habitat		
			Conduct annual maintenance on all water structures (replacing boards on control structures as needed) to keep water levels adequate		
			Maintain stable water levels throughout the ponds		
			Measure and record water flows		

Monitoring

Monitoring and reporting are critical for tracking accomplishment of performance targets identified in the HWMA Management Program Table. Monitoring can be separated into three categories: compliance monitoring, biological monitoring, and public use monitoring.

Compliance Monitoring

Compliance monitoring documents the completion of regular management tasks that are essential to WMA operations. These include but are not limited to:

- Maintaining WMA facilities and access sites
- Maintaining infrastructure at ponds and wetlands
- Providing technical assistance to local agency staff and private landowners
- Maintaining public access sites

Compliance monitoring will be reported annually at work plan meetings between regional and headquarters staff.

Biological Monitoring

Wildlife Management Areas across the state have a range of established biological monitoring programs and needs. Additional monitoring needs may have been identified during development of the HWMA Management Program Table. Biological monitoring includes wildlife, vegetation, and habitat monitoring. It may also include assessing the effectiveness of management and restoration activities. Monitoring may occur at multiple spatial and temporal scales, depending on objectives.

Winter waterfowl surveys are conducted on HWMA annually. During the first two weeks of January each year, Magic Valley regional personnel conduct a mid-winter waterfowl count on all ponds that are ice-free on HWMA. The count is coordinated by the Population section of the Wildlife Bureau.

Ongoing noxious weed control measures including weed surveys are conducted annually on HWMA. In addition, weed control methods are logged annually to track chemical use and help detect chemical resistance in weeds. *Galerucella californiensis* beetles have been released as biological control agents on purple loosestrife infestations on HWMA. The density of purple loosestrife and the presence of the bio-control agent will be monitored annually to determine effectiveness and need for follow up introductions.

In Table 3, future monitoring needs associated with performance targets and strategies identified in the HWMA Management Program Table are summarized. The goal is to measure success or effectiveness of strategies that are implemented to reach performance targets. A detailed

monitoring plan including specific techniques will be completed for the WMA by December 31, 2014.

In 2010, the Department initiated a statewide, long-term habitat monitoring program for all WMAs. The goal of the program is to collect quantitative and comparable baseline data to monitor habitat change on all WMAs due to management actions or other causes. The baseline data collected will be specific to each WMA, based on the habitat types present and its unique management issues. Baseline data typically includes:

- Distribution and extent of cover types, including mapping of vegetation cover types
- Vegetation structure, composition, and condition
- Presence or abundance of noxious weeds and other invasive plants
- Riparian and wetland condition and function assessment
- Photo points

To date, this program has collected baseline data on five WMAs, with surveys of all 32 WMAs expected to be completed by 2019. This is a long-term program and will be repeated starting in 2020.

Public Use Monitoring

Wildlife Management Areas use public surveys and monitoring tools (e.g., traffic counters) to evaluate public satisfaction and use patterns as well as identify issues of concern. In some areas, hunter check stations monitor hunter success and satisfaction. These survey data help managers determine whether they are meeting the goals for the WMA.

Volunteer public use surveys and creel surveys are conducted on the WMA. The data collected is analyzed annually to determine levels of resource use and to collect public input on current management. In addition, occasional hunter check stations are conducted throughout the hunting season to monitor hunter use and success rate.

Traffic counters have been used sporadically since the last plan was written. Road maintenance activities on the WMA have precluded their use on the main roads through the WMA due to counters being damaged by graders. Counters are still a viable option on the HWMA but must be coordinated with the Hagerman Hatchery staff that does the road maintenance where the counters are located. Funding to replace the counters from damage during road maintenance has been limited, but an option would be to borrow counters from another Department region.

In 2012, regional habitat staff presented information on the WMA and solicited input from the public at four public meetings. The public provided written comments on the current resource status and management of the WMA. In addition, an online survey was solicited on the Department website. The results from the public meeting and online survey were utilized to assess use and management concerns from the public.

Public use monitoring will continue for the duration of this management plan. Monitoring will assess the amount, timing, and type of use on the WMA and will be utilized to direct current and future management activities.

Reporting

Each WMA will produce a five-year report on implementation of this WMA plan in 2019, including a summary of accomplishments and progress towards meeting performance targets. During the five-year review, WMA staff will determine whether modifications to the plan are needed to meet performance targets, to accommodate changing conditions and priorities, or to incorporate advancements in management knowledge and techniques.

Table 3. Biological Monitoring for Hagerman WMA, 2014-2023.

Performance Target	Survey Type	Survey Frequency
Provide open water on at least five ponds on the WMA during critical periods of year.	Visual assessment of open water.	Weekly – during winter and spring months.
Improve and/or actively manage at least 100 acres of Ring-necked pheasant habitat annually.	Vegetation species composition, % cover assessment, and GIS habitat type spatial distribution mapping	At least once pre project initiation and then annually for first four years post project completion.
Control access to 400 acres of wetland habitat to reduce disturbance to waterfowl.	Conduct waterfowl use survey.	Annually.
Provide opportunity for hunting, trapping, fishing, wildlife based recreation and education.	Conduct hunter check stations, creel surveys, and public surveys.	At least twice during each respective use season.

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Appendices

I. THE COMPASS – THE DEPARTMENT’S STRATEGIC PLAN

In 2006, the Department completed a strategic plan—*The Compass*—based on public input and legislative mandates. It continues to guide the Department in 2014 and is the primary guiding document for all other Department plans developed since 2006. The following table presents the goals, objectives, and strategies from *The Compass* that are most relevant to WMA management. *Compass* objectives are lettered on the left side for reference in the Management Program Table.

<i>The Compass</i>	
GOAL—Fish, Wildlife, and Habitat	
A.	Objective – Maintain or improve game populations to meet the demand for hunting, fishing, and trapping.
B.	Objective – Ensure the long-term survival of native fish, wildlife, and plants.
C.	Objective – Increase the capacity of habitat to support fish and wildlife.
D.	Objective – Eliminate the impacts of fish and wildlife diseases on fish and wildlife populations, livestock, and humans.
GOAL—Fish and Wildlife Recreation	
E.	Objective – Maintain a diversity of fishing, hunting, and trapping opportunities.
F.	Objective – Sustain fish and wildlife recreation on public lands.
G.	Objective – Maintain broad public support for fish and wildlife recreation and management.
H.	Objective – Increase opportunities for wildlife viewing and appreciation.
I.	Objective – Increase the variety and distribution of access to private land for fish and wildlife recreation.
GOAL—Working With Others	
J.	Objective – Improve citizen involvement in the decision-making process.
K.	Objective – Increase public knowledge and understanding of Idaho’s fish and wildlife.
GOAL—Management Support	
L.	Objective – Attract and retain a diverse and professional workforce.
M.	Objective – Provide equipment and facilities for excellent customer service and management effectiveness.
N.	Objective – Improve funding to meet legal mandates and public expectations.

II. HISTORY

The Hagerman Valley region has extensive Native American history. Both Shoshone and Bannock Indians journeyed to the area now known as Hagerman WMA (HWMA), often from great distances, to feast on Chinook salmon and steelhead migrating up the Snake River to spawn. Semi-permanent camps were established and utilized year after year, as tribes made use of the fish and other wildlife resources found in Hagerman Valley (Hagerman Historical Society Files).

The Snake River's Lower and Upper Salmon Falls proved to be significant bottlenecks for migrating salmon and steelhead, concentrating fish in the pools below. There, they became vulnerable to the spears and nets of native fishermen. Fish not immediately eaten were smoked or salted for later use; others were traded to white immigrants for items normally unavailable to the Indian tribes (Hagerman Historical Society Files).

In the 1860s, homesteaders following the Oregon Trail through southern Idaho passed through the Hagerman Valley. The Trail skirted the southern edge of the Snake River, just a river's width from the southern boundary of HWMA. For some, this glimpse, combined with an already long, weary trip, was all the persuasion needed to end the journey and settle in the Hagerman Valley. During the mid-to late 1800s, a number of farms and ranches sprung up in the Hagerman Valley. The Tucker Ranch became the Hagerman Valley Refuge in 1940 and currently HWMA (Hagerman Historical Society Files).

Land was acquired for HWMA beginning in 1940 with the purchase of 423.47 acres from Richard W. Tucker. An additional 170.28 acres were purchased in 1941, and 58.37 acres were added in 1951. Beginning in 1953, and continuing today, 223 acres are licensed from the U.S. Fish and Wildlife Service. Subsequent, small acreage additions resulted in the current HWMA size of 880.52 acres.

Hagerman WMA, Idaho's first Wildlife Management Area, was established principally to provide habitat for waterfowl and upland game birds. Pittman-Robertson funds were used to purchase this property.

The majority of HWMA has always been closed to waterfowl hunting. However, waterfowl hunting did occur on Riley Creek, Oster Lakes, and the south end of HWMA until 1979. Firing lines surrounded the core of HWMA. Lead shot accumulated in wetland sediments and along the HWMA boundary for 20 years due to hunting in these areas. Between 1978 and 1980, 1,566 mallards were examined to assess lead poisoning at HWMA (Hompland 1981). Hompland (1981) did an x-ray analysis of gizzards from hunter-shot ducks and found a lead shot ingestion rate of 15%. Fluoroscopy of bait-trapped mallards and X-ray analysis of gizzards indicated that 9% contained ingested shot (Hompland 1981). Postmortem examination and analysis of kidney and liver tissues indicated that 15% of bait-trapped mallards contained toxic levels of lead (Hompland 1981).

The “firing line,” (hunters congregating along the HWMA waterfowl hunting boundary and pass shooting at ducks), was eliminated in 1979 by extending the area closed to waterfowl hunting outside the HWMA boundary. Waterfowl hunting remained closed on the HWMA until 2008 when a mentored youth waterfowl hunt was instituted. The hunt allows up to four youth per day for three weekends (six days) during November. Each youth or pair of youth has an adult mentor who guides them in waterfowl hunting from a predetermined blind on Anderson Pond #1 and the Bass Ponds.

III. MANAGEMENT REQUIREMENTS AND AUTHORITIES

Federal funds, including those derived from the Land and Water Conservation Fund and USFWS Federal Aid Program, have been used in part to acquire and manage HWMA lands. Certain activities are prohibited from funding with Federal Aid funds, and all provisions of Federal Aid funding will be followed.

Other federal and state laws also affect management of HWMA. The Department has responsibility under provisions of the Endangered Species Act to ensure that management actions protect threatened and endangered species, and responsibility under the Clean Water Act to ensure that water quality standards and guidelines are in place on HWMA lands and waters. Under the National Historic Preservation Act, the Department must ensure that historic properties are protected on the HWMA.

The Idaho Noxious Weed Law under Idaho Code 22-2405 requires all landowners to eradicate noxious weeds on their lands, except in special management zones. The counties are required to enforce the law and the State of Idaho is required to ensure the counties do so.

Consistent with Idaho Codes 38-101 and 38-111, and through a cooperative agreement with the Idaho Department of Lands, the Department is required to pay a fee for fire protection on all forest and some rangeland acreage it owns, and for residences in forest areas. Fees are submitted annually based on the number of qualified acres and residences owned by the Department.

The Department is required by Idaho Code 63-602A to pay a fee-in-lieu of taxes (FILT) for lands that are owned by the Department and meet certain code requirements. These fees are submitted annually to affected counties based on the number of qualifying acres and agricultural tax rates.

IV. OTHER MANAGEMENT ACTIVITIES

Noxious Weed Control

Noxious weeds have been under active control on HWMA since its acquisition in 1940. Control measures include proper land use practices, mechanical control, chemical control, and biological control. The six main weed species being controlled are Canada thistle (*Cirsium arvense*), field bindweed (*Convolvulus arvensis*), houndstongue (*Cynoglossum officinale*), puncturevine (*Tribulus terrestris*), poison hemlock (*Conium maculatum*) and purple loosestrife (*Lythrum salicaria*). Rush skeletonweed (*Chondrilla juncea*) has been identified on the WMA but is most prevalent on adjacent lands.

Biological control was initiated in the mid-1990s by the Department with the release of the purple loosestrife root boring weevil on HWMA. Subsequent releases in 1999 and 2002 have been very effective in controlling the outbreak of purple loosestrife.

Chemical control is used on infestations found along roadways, heavily used areas, new infestations, on crops and on nesting cover areas. Rapid re-vegetation of disturbed soil prior to noxious weed infestation is the preferred management option at HWMA. Establishment of desirable plants minimizes weed control naturally.

Mechanical control of annual and biennial weeds in irrigated cropland has proven to be effective. Whenever possible and outside nesting season, mechanical removal of annual weeds from desirable habitat is preferred over chemical control. Mechanical control is used to reduce the production of weed seed and reduce long term infestations.

V. 1999-2013 ACCOMPLISHMENTS

Since the HWMA plan was revised in 1999, these accomplishments have occurred relative to the Goals and Objectives of the 1999 plan.

Goal: Provide secure winter habitat for approximately 50,000 waterfowl.

Objective: Maintain security cover for approximately 50,000 waterfowl.

Strategies:

1. Continue the waterfowl hunting closure surrounding HWMA to hold large numbers of waterfowl in the Magic Valley throughout the season.
2. Prohibit public vehicle access to the pond and wetland complex.
3. Provide abundant and open water on as many ponds as possible.
4. Provide approximately 25 acres of food crops (e.g., grain and alfalfa) for waterfowl consumption.

Accomplishments:

- The waterfowl hunting closures surrounding HWMA have been maintained with no changes since the 1999 plan was written.
- The Magic Valley Goose Closure has been maintained with no changes since the 1999 plan.
- Prohibition of public vehicle access to the pond and wetland complex has been maintained. Vehicles are only allowed in designated parking areas and access is limited to foot traffic only. A new parking area was established in 2011 near the Oster Lakes.
- Open water has been maintained in most years on at least the Bass Ponds, Anderson Ponds 1 & 2, and Oster Lakes 1 & 2. Improved water control structures have helped maintain adequate water flows through these ponds to keep them ice-free except under the most frigid conditions.
- At least 10 acres of alfalfa or a small grain crop have been maintained each year. Decreased water availability and lack of funds to provide adequate water delivery devices (e.g., siphon tubes, handlines, gated pipe) has limited the amount of acreage the WMA can support.

Goal: Maintain waterfowl production.

Objective: Maintain nesting and brood-rearing habitat.

Strategies:

1. Provide 40 acres of irrigated grass/alfalfa mixtures for nesting habitat.
2. Maintain 460 acres of sagebrush steppe in an undisturbed condition.
3. Maintain stable impoundment water levels during the nesting period to facilitate production of over-water nesting ducks.

4. Delay the fishing season in the pond complex to July 1 to reduce disturbance of nesting waterfowl.
5. Maintain 20 artificial nesting platforms for Canada geese and eight wood duck nesting boxes.
6. Limit human activities within the pond-wetland complex during waterfowl breeding and nesting season (Mar thru Jun).
7. Maintain 26 acres of Canada goose irrigated grazing pasture through cooperation with adjoining landowner.

Accomplishments:

- The WMA continues to provide in most years approximately 40 acres of irrigated sand dropseed/intermediate wheatgrass mixtures for nesting habitat. This goal has not been maintained in recent years due to a loss of over 40% of the gated pipe from a wildfire on the WMA in 2001. Also an aging water delivery system and lack of seasonal personnel have made it difficult to irrigate 40 acres in the last three years. Additionally, fluctuations in water from the Bickel ditch prevented irrigation on these parcels. In 2004-2005, there was also no pressurized irrigation available.
- Most of the shrub-steppe habitat on the WMA was lost to a wildfire in 2001. There was a concerted effort made to rehabilitate many of the acres burned on the National Fish Hatchery property. Establishment of native grasses and forbs has been limited on these properties. Lack of funding to rehabilitate the Department portions of the HWMA has prevented any serious efforts to replace lost shrub communities.
- Water levels are checked at least twice per week to make sure levels are conducive to waterfowl nesting. Water control structures are checked at least once every year and repairs are made as needed.
- The fishing season on the Anderson Ponds, Bass Ponds, Goose Pond, and Highway Pond runs July 1 through October 31. The Riley Pond, Settling Pond, and Oster Lakes runs March 1 through October 31.
- Hagerman WMA personnel annually check and service twenty-six artificial goose nesting platforms. Wood duck boxes have received limited attention since the 1999 plan was implemented.
- No active program is underway to restrict human activity in the pond-wetland complex during waterfowl breeding and nesting; however, because the ponds are not open to fishing until July 1, very little human activity occurs.
- Loss of a cooperative agreement with an adjacent landowner in the early 2000s restricts irrigated grazing pasture to the 11-acre goose pasture on the HWMA.
- Removed Russian olive trees from the north end of the goose pasture to increase available habitat for geese.

Goal: Maintain upland Game Bird habitat.

Objective: Provide upland game bird habitat.

Strategies:

1. Maintain the upland habitat in good condition.
2. Provide approximately 40 acres of irrigated nesting cover.
3. Provide approximately 12 acres of irrigated food plots (e.g., wheat, sorghum, flax, corn).
4. Limit public access to main access roads.

Accomplishments:

- Most of the upland habitat is in good condition; however, one 14-acre parcel south of the State Hatchery has had several failed seedings and is currently in undesirable condition. The seedings were an attempt to rehabilitate this area following a wildfire in 2001.
- The HWMA is currently providing at least 40 acres of irrigated nesting cover in five locations. The entire 40 acres was mowed in 2013 to help invigorate older stands.
- The HWMA is providing approximately 12 acres of food plot rotating from wheat to corn. In late 2012, the corn food plot was rotated to alfalfa and in 2013, a 10-acre parcel of weeds was converted to spring wheat. The alfalfa will provide nesting cover and a foraging area for upland and waterfowl species.
- All public vehicles are currently restricted to the main access road running through the WMA and the State Hatchery, and to the entrance road to the Oster Lakes.
- Cleaned out the Bickel Ditch to increase water flows into Oster Lakes and provide additional water for irrigation on the WMA.

Goal: Provide fishing opportunities.

Objective: Continue to provide fishing opportunities.

Strategies:

1. Continue the present fishing schedule, unless modification is needed to provide waterfowl habitat:
 - a. The Anderson Ponds, Bass Ponds, Big Bend Ditch, Goose Pond and the West Highway Pond: July 1-October 31.
 - b. Riley Creek upstream from the State Hatchery Diversion: open all year.
 - c. All other waters: March 1-October 31.
2. Maintain access roads, parking lots, and three toilets.
3. Stabilize and monitor water levels.
4. Maintain signs designating seasons for fishing.

Accomplishments:

- The fishing seasons generally remain the same as in 1999 with the following exceptions:
 - The Big Bend Ditch was closed to fishing in 2012 to prevent removal of sturgeon used to clean the ditch.
 - Riley Creek from the falls upstream to the State Fish Hatchery Diversion is open March 1-October 31.

- All other sections of Riley Creek are open all year.
- All access roads, parking lots, and the three toilets are maintained regularly. In 2009, a new handicap accessible restroom was installed next to the Settling Ponds. In 2008, a new handicap accessible restroom was installed near Oster Lake #1, and a third new restroom near Oster Lake #3 was installed in 2011. In 2011, a new parking area with two kiosks was developed near the Oster Lakes to improve access to them. In 2009, an ADA parking pad and fishing dock were installed on the Riley Pond.
- All ponds on the HWMA are monitored weekly and all water control structures are maintained at least annually to stabilize water levels. All water delivery pipes entering the Bass Ponds are fitted with recording devices and are read once a week.
- Fishing season signs are maintained on the main access to the WMA off of Highway 30 and at the entrance to Oster Lake #1. Additional signs are posted at all walking access points leading to fishing areas.
- Fish management personnel have an active carp removal program on the ponds on the WMA. Rotenone removal efforts have been utilized on Anderson Ponds 1 & 2, the Bass Ponds, and Oster Lake #1. This effort continued in 2013 with carp removal being conducted on Oster Lakes 2-6.

Goal: Provide consumptive benefits to the public (e.g., upland hunting, trapping, fishing).

Objective: Provide miscellaneous consumptive benefits to the public (e.g., upland hunting, non-game hunting, trapping).

Strategies:

1. Allow upland bird hunting away from safety zones.
2. Allow trapping of furbearing animals.
3. Provide hunting opportunities for predatory and unprotected wildlife.

Accomplishments:

- The HWMA allows upland bird hunting in all areas of the WMA outside of safety zones around the State Fish Hatchery and WMA facilities.
- The HWMA allows trapping for all furbearing animals within the prescribed season framework.
- There are no restrictions on hunting of predatory and unprotected wildlife on the HWMA outside of safety zones.

Goal: Provide non-consumptive benefits to the public (e.g., hiking, sightseeing, photography).

Objective: Provide non-consumptive benefits to the public.

Strategies:

1. Maintain dikes and trails around Oster Lakes.
2. Maintain nongame habitat.

3. Maintain informational signs
4. Promote winter observation of waterfowl through an information brochure.

Accomplishments:

- The dikes and trails around Oster Lakes are maintained annually to promote non-consumptive use.
- Nongame habitat is maintained along with waterfowl and upland game habitat.
- Most signs on the HWMA are either regulatory or directional. Due to limited funds, very little has been done to provide non-consumptive user signs.
- No brochure was ever developed to promote winter observation of waterfowl. HWMA personnel are involved with a local committee promoting a winter birding festival in the Hagerman Valley which would include the HWMA.

VI. WILDLIFE AND FISH SPECIES LIST

(Selected Common Species; additional information available at www.idfg.idaho.gov)

Common Name	Scientific Name	Common Name	Scientific Name
Mammals		Fish	
Coyote	<i>Canis latrans</i>	Brown Bullhead	<i>Ameiurus nebulosus</i>
Beaver	<i>Castor canadensis</i>	Shoshone Sculpin	<i>Cottus greeniei</i>
Ord's Kangaroo Rat	<i>Dipodomys ordii</i>	Common Carp	<i>Cyprinus carpio</i>
Porcupine	<i>Erethizon dorsatum</i>	Bluegill	<i>Lepomis macrochirus</i>
Sagebrush Vole	<i>Lemmiscus curtatus</i>	Largemouth Bass	<i>Micropterus salmoides</i>
River Otter	<i>Lontra canadensis</i>	Rainbow Trout	<i>Oncorhynchus mykiss</i>
Yellow-bellied Marmot	<i>Marmota flaviventris</i>	Yellow Perch	<i>Perca flavescens</i>
Striped Skunk	<i>Mephitis mephitis</i>	Bullfrog	<i>Rana catesbeiana</i>
Long-tailed Vole	<i>Microtus longicaudus</i>	Birds	
Short-tailed Weasel	<i>Mustela erminea</i>	Cooper's Hawk	<i>Accipiter cooperii</i>
Long-tailed Weasel	<i>Mustela frenata</i>	Northern Goshawk	<i>Accipiter gentilis</i>
Mink	<i>Mustela vison</i>	Sharp-shinned Hawk	<i>Accipiter striatus</i>
Mule Deer	<i>Odocoileus hemionus</i>	Spotted Sandpiper	<i>Actitis macularius</i>
Muskrat	<i>Ondatra zibethicus</i>	Western Grebe	<i>Aechmophorus occidentalis</i>
Raccoon	<i>Procyon lotor</i>	Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Fox Squirrel	<i>Sciurus niger</i>	Northern Pintail	<i>Anas acuta</i>
Mountain Cottontail	<i>Sylvilagus nuttallii</i>	American Widgeon	<i>Anas americana</i>
American Badger	<i>Taxidea taxus</i>	Green-winged Teal	<i>Anas carolinensis</i>
Red Fox	<i>Vulpes vulpes</i>	Northern Shoveler	<i>Anas clypeata</i>
Reptiles and Amphibians		Cinnamon Teal	<i>Anas cyanoptera</i>
Racer	<i>Coluber constrictor</i>	Blue-winged Teal	<i>Anas discors</i>
Western Skink	<i>Eumeces skiltonianus</i>	Mallard	<i>Anas platyrhynchos</i>
Gopher Snake	<i>Pituophis catenifer</i>	Gadwall	<i>Anas strepera</i>
Pacific Tree Frog	<i>Pseudacris regilla</i>	Golden Eagle	<i>Aquila chrysaetos</i>
Northern Leopard Frog	<i>Rana pipiens</i>	Great Blue Heron	<i>Ardea herodias</i>
Western Terrestrial Garter Snake	<i>Thamnophis elegans</i>	Short-eared Owl	<i>Asio flammeus</i>
Side-blotched Lizard	<i>Uta stansburiana</i>	Lesser Scaup	<i>Aythya affinis</i>

Common Name	Scientific Name	Common Name	Scientific Name
<i>Birds (cont.)</i>		<i>Birds (cont.)</i>	
Redhead	<i>Aythya americana</i>	American Kestrel	<i>Falco sparverius</i>
Ring-necked Duck	<i>Aythya collaris</i>	American Coot	<i>Fulica americana</i>
Canvasback	<i>Aythya valisineria</i>	Bald Eagle	<i>Haliaeetus leucocephalus</i>
American Bittern	<i>Botaurus lentiginosus</i>	Evening Grosbeak	<i>Hesperiphona vespertina</i>
Canada Goose	<i>Branta canadensis</i>	Black-necked Stilt	<i>Himantopus mexicanus</i>
Great Horned Owl	<i>Bubo virginianus</i>	Barn Swallow	<i>Hirundo rustica</i>
Common Goldeneye	<i>Bucephala clangula</i>	Yellow-breasted Chat	<i>Icteria virens</i>
Bufflehead	<i>Bucephala albeola</i>	Dark-eyed Junco	<i>Junco hyemalis</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Northern shrike	<i>Lanius excubitor</i>
Rough-legged Hawk	<i>Buteo lagopus</i>	Loggerhead shrike	<i>Lanius ludovicianus</i>
Swainson's Hawk	<i>Buteo swainsoni</i>	Herring Gull	<i>Larus argentatus</i>
California Quail	<i>Callipepla californica</i>	California Gull	<i>Larus californicus</i>
Turkey Vulture	<i>Cathartes aura</i>	Ring-billed Gull	<i>Larus delawarensis</i>
Canyon Wren	<i>Catherpes mexicanus</i>	Hooded Merganser	<i>Lophodytes cucullatus</i>
Killdeer	<i>Charadrius vociferus</i>	Belted Kingfisher	<i>Megaceryle alcyon</i>
Snow Goose	<i>Chen caerulescens</i>	Western Screech Owl	<i>Megascops kennicottii</i>
Common Nighthawk	<i>Chordeiles minor</i>	Song Sparrow	<i>Melospiza melodia</i>
American Dipper	<i>Cinclus mexicanus</i>	Common Merganser	<i>Mergus merganser</i>
Northern Harrier	<i>Circus cyaneus</i>	Black Crowned Night Heron	<i>Nycticorax nycticorax</i>
Marsh Wren	<i>Cistothorus palustris</i>	Osprey	<i>Pandion haliaetus</i>
Northern Flicker	<i>Colaptes auratus</i>	House Sparrow	<i>Passer domesticus</i>
Rock dove	<i>Columba livia</i>	Savannah Sparrow	<i>Passerculus sandwichensis</i>
American Crow	<i>Corvus brachyrhynchos</i>	American White Pelican	<i>Pelecanus erythrorhynchos</i>
Common Raven	<i>Corvus corax</i>	Gray partridge	<i>Perdix perdix</i>
Trumpeter Swan	<i>Cygnus buccinator</i>	Ring-necked Pheasant	<i>Phasianus colchicus</i>
Tundra Swan	<i>Cygnus columbianus</i>	Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>
Western Flycatcher	<i>Empidonax difficilis</i>	Black-billed magpie	<i>Pica hudsonia</i>
Horned Lark	<i>Eremophila alpestris</i>	White-faced Ibis	<i>Plegadis chihi</i>
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	Eared Grebe	<i>Podiceps nigricollis</i>
Prairie Falcon	<i>Falco mexicanus</i>	Pied-billed Grebe	<i>Podilymbus podiceps</i>
Peregrine Falcon	<i>Falco peregrinus</i>	Vesper Sparrow	<i>Pooecetes gramineus</i>

Common Name	Scientific Name	Common Name	Scientific Name
<i>Birds (cont.)</i>		<i>Birds (cont.)</i>	
Sora	<i>Porzana carolina</i>	Forster's Tern	<i>Sterna forsteri</i>
Virginia Rail	<i>Rallus limicola</i>	Western Meadow Lark	<i>Sturnella neglecta</i>
American Avocet	<i>Recurvirostra americana</i>	European Starling	<i>Sturnus vulgaris</i>
Ruby-crowned Kinglet	<i>Regulus calendula</i>	Violet-Green Swallow	<i>Tachycineta thalassina</i>
Golden-crowned Kinglet	<i>Regulus satrapa</i>	American Robin	<i>Turdus migratorius</i>
Bank Swallow	<i>Riparia riparia</i>	Barn Owl	<i>Tyto alba</i>
Rock Wren	<i>Salpinctes obsoletus</i>	Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>
Say's Phoebe	<i>Sayornis saya</i>	Mourning dove	<i>Zenaida macroura</i>
Yellow Warbler	<i>Setophaga petechia</i>	White-crowned Sparrow	<i>Zonotrichia leucophrys</i>
Caspian Tern	<i>Sterna caspia</i>		

VII. LAND ACQUISITIONS AND AGREEMENTS

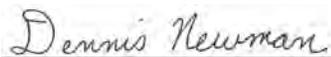
Land Acquisitions			
Year	Funds Used	Acres	Acquired From
1940	Pittman-Robertson	423.47	Richard W. Tucker
1941	Pittman-Robertson	35.07	John C. Peterson
1941	Pittman-Robertson	35.93	Emerson Boyer
1941	Pittman-Robertson	99.28	John W. Smeed
1950	Pittman-Robertson	32.00	W. W. Henslee
1951	Pittman-Robertson	20.00	Myrtle Clegg
1951	Pittman-Robertson	6.37	Nellis S. Corthell
1953	*License	223.26	U.S. Fish and Wildlife Service
1959	Land Exchange	1.45	E. M. Elmer
1979	Mitigation & Easement	3.69	Edna J. Radermacher
	<i>Total</i>	880.52	

*Cooperative agreement with U.S. Fish and Wildlife Service (Hagerman National Fish Hatchery)

Water Rights				
Water Right No.	Priority Date	Rate (c.f.s.)	Purpose	Source
36-00012	09/01/1889	2.20	Irrigation	Len Lewis Spring
36-00028	10/01/1908	0.16	Irrigation	Upper Tucker Spring
36-00133	12/17/1903	40 shares	Wildlife and irrigation	Upper Tucker Spring
36-02055	09/16/1947	64.00	Fish propagation / hatchery	Upper Tucker Spring
36-02056	09/16/1947	3.00	Fish propagation/bass ponds; Anderson 1,2,3 & impoundment ponds	Upper Tucker Spring
36-02158	04/22/1956	8.62	Irrigation, fish propagation Oster Lakes	Bickel Lake Len Lewis Spring
36-02159	04/23/1956	20.00	Fish propagation / hatchery	Upper Tucker Spring
36-02706	10/21/1952	45.00	Irrigation; fish propagation / hatchery	Riley Creek
36-07249	06/05/1972	24.00	Fish propagation / hatchery	Riley Creek
36-07836	01/10/1979	2.47	Fish propagation / Anderson Ponds 3 & 4	Anderson #3
36-07855	05/03/1979	19.22	Fish propagation / Anderson Ponds 1-4	Riley Creek
36-15153	03/15/1952	3.00	Wildlife / wildlife storage	Len Lewis Spring

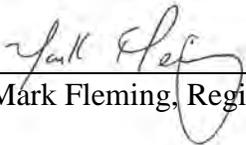
HAGERMAN
WILDLIFE MANAGEMENT AREA PLAN
Approval

Submitted by:

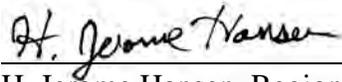


Dennis Newman, Habitat Biologist

Reviewed by:



Mark Fleming, Regional Habitat Manager



H. Jerome Hansen, Regional Supervisor



Tom Hemker, State Habitat Manager

Approved by:



Virgil Moore, Director