



Carey Lake Wildlife Management Area



Management Plan
2014

Magic Valley Region



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2014 – 2023 Management Plan
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Idaho Department of Fish and Game
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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 lands, or private lands protected by conservation easements. 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

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 from construction of various dams 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 also benefit from the broad range of recreational opportunities and conservation values provided by Department WMAs.

The primary purpose of Carey Lake Wildlife Management Area (CLWMA) is to provide quality wetland and upland habitat to meet the needs of migratory and resident wildlife resources. This will be accomplished through protection and restoration of the Carey Lake open water and wetlands. The CLWMA will also provide quality recreational opportunities consistent with the primary purpose.

This document provides direction in the form of Priorities, Management Directions, Performance Targets, and Strategies for the management of CLWMA. The Priorities for Carey Lake were determined through a combination of public and staff input, mitigation requirements identified in the cooperative agreements that formed CLWMA, and Department statewide priorities identified in *"The Compass."* A draft version of the CLWMA 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 Carey Lake Wildlife Management Area (CLWMA). It replaces an earlier management plan written in 1999 and was developed in 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.

Carey Lake WMA Vision

The CLWMA will be managed to provide high quality, diverse open water, wetland, and upland habitat. The area will also provide public access for multiple outdoor recreational activities that do not adversely impact the integrity of the habitat or the wildlife resources.

Modification of Plan

This plan provides broad, long-term management of CLWMA and has a 10-year life span. It will be evaluated every five years to determine if adjustments are warranted. The plan will be modified as needed to accommodate changing conditions and goals and to incorporate available advancements in management knowledge, tools, and techniques.

Other Considerations

All strategies proposed in this plan are bound by the contractual agreements between cooperating agencies, the mission of CLWMA, 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 properties acquired for CLWMA (see Figure 1 and Appendix IX) have a long history of waterfowl and shorebird use. This area supports thousands of migrating, breeding, and summering waterfowl and shorebirds. The acquisition and management of these properties has ensured that these flocks of waterfowl and shorebirds would continue to have migration stopovers, breeding, and brood-rearing areas. Carey Lake WMA currently provides habitat for numerous tundra swans, geese, ducks, and numerous other waterbirds annually.

Carey Lake WMA is located 1/2 mile east of Carey, Idaho in Blaine County. The first acquisition by the Department was made in 1949 from the Carey Lake Reservoir Company. Additional lands were purchased from several sources between 1951 and 1957. The lake's surface area is approximately 700 acres at full pool. Four hundred acres of the lake are within the WMA. The remaining 350 acres within the WMA consist of irrigated cropland, shrub-steppe, and lava outcroppings (Figure 1).

The CLWMA has moderately severe winters with temperatures as low as -35°F and snow depths ranging from 10 to 24 inches (USDA 1981). The lake usually freezes over in mid-November. The ice generally melts in mid- to late March. Summers are moderately hot and dry with temperatures often reaching 95°F. The growing season averages about 110 days. Annual precipitation varies from 10 to 12 inches with less than half falling during the growing season (USDA 1981).

The CLWMA provides an important stop-over for migrating waterfowl and shore birds as well as breeding and brood-rearing habitat for resident birds.

The lake is a shallow natural basin fed by local runoff, springs, and occasionally spill from Fish Creek Reservoir. Agricultural land borders the west side of the marsh while U.S. Highway 93 bounds the north. The south and east parts of the basin are formed by basalt lava flows. During drought periods, the lake can dry up entirely. Input from adjacent hot springs maintains a small amount of open water for overwintering waterfowl through the winter. In 1955 and 1977, deep water channels were constructed to help improve fish survival. The spoil banks were planted to dense nesting cover. This project substantially improved fish survival and provided waterfowl habitat in low water years. In 1992, a 10,000 foot channel was dug that surrounds the spoil dike from the 1977 channel. By isolating this dike, it provides 20 acres of permanent dense nesting cover as well additional fish and waterfowl habitat. In 1960, the Little Wood reservoir dam was reconstructed to increase the capacity of the reservoir. The Department was granted 2,000 acre-feet of Little Wood Reservoir water to augment Carey Lake's water level. This additional water is supplied through the Little Wood irrigation canal system throughout the summer.

Carey Lake is primarily a tall emergent marsh dominated by cattail (*Typha latifolia*) and bulrush (*Schoenoplectus* spp.) with areas of open water and submerged or floating aquatic plants. Short-height emergent marsh characterized by common spikerush (*Eleocharis palustris*) and water smartweed (*Polygonum amphibium*) occupy open water margins in some areas. Foxtail barley

(*Hordeum jubatum*) colonizes drawdown areas. Baltic rush (*Juncus balticus*) wet meadow occurs in low-lying areas adjacent to the emergent marsh. Approximately 40 acres of tree and shrub shelterbelts have been planted in the WMA for wildlife cover. Several small seasonal ponds (filled during high water years) occur in the lava beds on the east side of the marsh. Adjacent uplands on the south and east sides include areas of Wyoming big sagebrush (*Artemisia tridentata* ssp. *vaseyana*)-steppe with western wheatgrass (*Pascopyrum smithii*) and cheatgrass (*Bromus tectorum*) being common grasses.

Carey Lake WMA receives considerable use from anglers, estimated at 2,500 annually (R. Morris, Department Conservation Officer, pers. comm.), early-season waterfowl hunters, and bird watchers. Visitors may also enjoy other nature-based activities on the WMA (Appendix IV).

Noxious weeds, such as Canada thistle (*Cirsium arvense*), continue to be controlled by a variety of methods. This protects wildlife habitat from invasion by undesirable plant species.

The CLWMA is home to a variety of migratory and resident mammals, birds, reptiles, amphibians, and fish (Appendix VII).

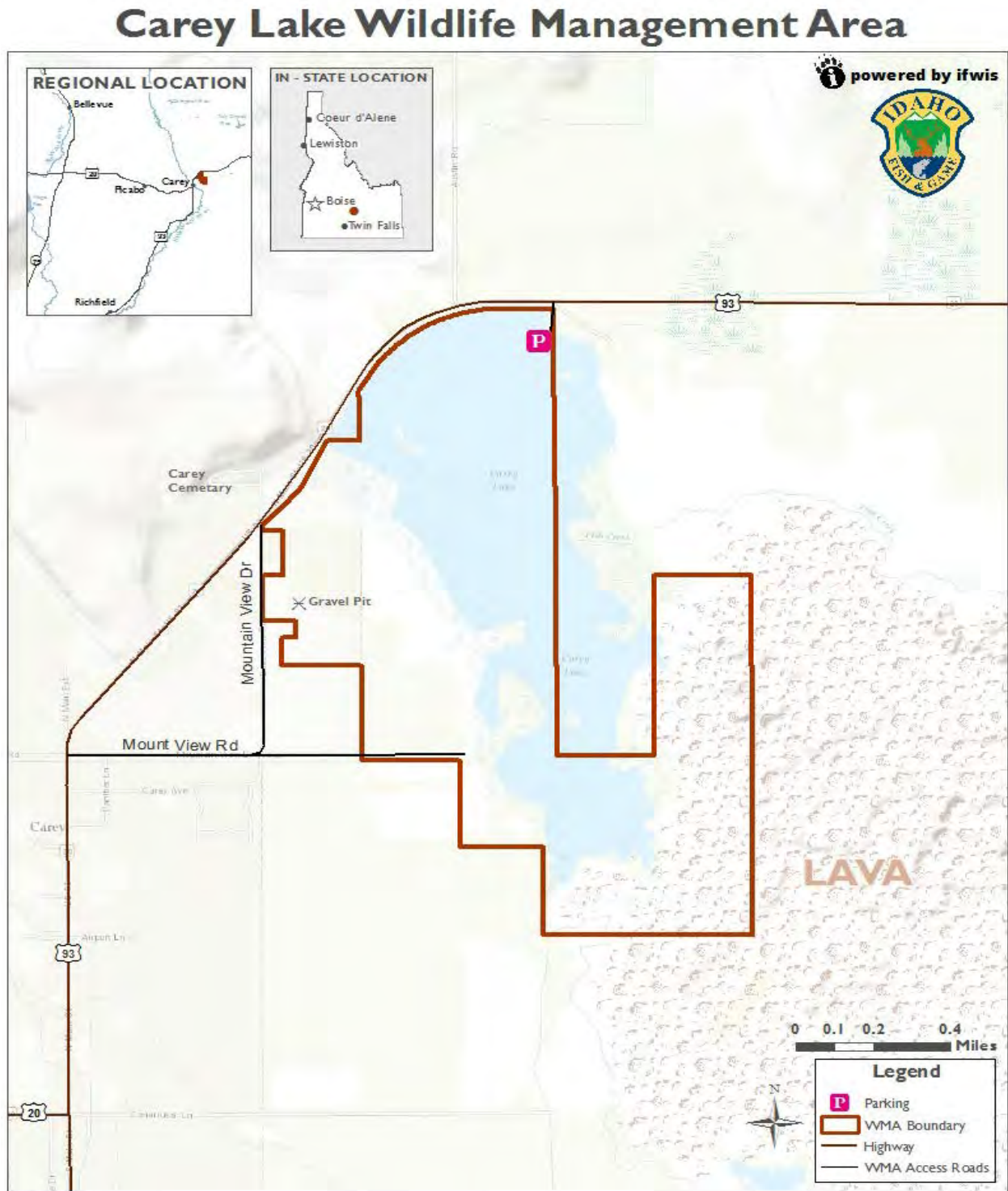


Figure 1. Map of Carey Lake Wildlife Management Area.

Management Issues

Regional habitat staff presented information on the WMAs and solicited input from the public 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 we need to address in our future management. We directed attendees to the online survey available on the Department website and provided a form at the meetings for those wishing to provide written comments.

Throughout 2012 (Feb-Dec), 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 24 online surveys specific to CLWMA. Most of those who participated in the surveys were either satisfied or very satisfied with the current management of CLWMA (70% satisfied/very satisfied). We accumulated 64 comments from our users on CLWMA sign-in sheets during 2011 and 2012. Additional information gathered from these surveys on visitor use trends is available in Appendix IV.

The following is a list of all management issues mentioned by members of the public during this survey process, Department policy direction and WMA 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 CLWMA.

Habitat Management

1. Emergent wetlands can develop decadent unproductive vegetation and soils over time.

Discussion: Stable water levels over several years can negatively impact emergent wetland communities and impact the quality of wildlife habitat. Water level management should include periodic partial (moist-soil management) or complete drawdowns. Drawdowns allow decomposition of aquatic vegetation, freeing nutrients for plant and animal production, and expose mudflats that allow germination of diverse emergent vegetation. When re-flooded, the nutrient and plant rich communities provide an abundant insect and seed food source for waterfowl.

Complete drawdowns are not possible at Carey Lake (except in extreme drought years), because the lake sits down in a basin. The water level in the lake, after spring runoff, can vary as much as four to five feet. In a basin this shallow, this variance can alter the surface area and shoreline length dramatically. Once the lake has reached its spring runoff level, we start to add water from Little Wood Reservoir. This augmentation keeps the lake at a fairly constant level through mid-summer. At this point, natural losses in the lake exceed the augmentation and the lake level starts to fall. When the irrigation season ends in the fall, the lake continues to decline throughout the winter. This drawdown can expose hundreds of acres of previously flooded shoreline annually. The extent of the drawdown varies from one to three feet depending on the water year.

2. The presence and spread of noxious weeds can decrease the quality of habitat on CLWMA.

Discussion: An integrated noxious weed control program is employed annually on the WMA and will continue to be high priority. One temporary technician spends a significant portion of their time actively treating noxious weeds with chemical and mechanical control methods. Management staff participates on the local Weed Management Area Advisory Board to securing funding, information, and resources to implement successful weed control on the WMA and with public and private landowners in Blaine County.

3. The grasslands on the CLWMA should have a higher component of native grass and forb species.

Discussion: Sections of grassland will be targeted for replanting to native grass and forb species. Small sections will be treated over a period of years due to the amount of time and level of maintenance required for native grass and forb species to become established. Once the weed species and non-native grasses are reduced or eliminated, a native grass and forb mix will be seeded into the sites. Providing high quality wildlife habitat is the primary goal of CLWMA. The Management Program outlined in the following section is designed to achieve this goal.

4. The CLWMA needs to be expanded through land acquisitions.

Discussion: The Department has no active land acquisition program for CLWMA. Since the last lands were set aside for wildlife in 1957, no new property has been acquired for CLWMA. Potential properties considered for acquisition are evaluated by the Regional and State Habitat Managers and brought before the Commission. In recent years, land values have increased greatly while Department revenues have decreased, making land acquisition very difficult. We will continue to seek opportunities to add to the WMA when properties and funds are available

5. There is a lack of habitat for upland species and big game on the CLWMA.

Discussion: The WMA has planted over 50,000 feet of shelterbelts. There are over 35 species of fruiting shrubs or trees and five species of conifers. There are 15 to 20 acres of food plots planted annually including corn, millet, sunflowers, and vetch/peas.

Wildlife Management

1. Wetlands should be managed for waterfowl and shorebird nesting and brood rearing.

Discussion: Wetlands will be managed with waterfowl and shorebird reproduction as a primary goal. Water levels will be managed for nesting conditions in the spring (high water levels) and brood rearing in the summer (receding water levels for food availability and loafing areas). Upland nesting habitat will be protected and maintained. Artificial nesting structures will be employed when natural conditions are not sufficient.

The CLWMA currently has 80 acres of dense nesting cover that has been planted and maintained. Drawdowns have been discussed in the Habitat section.

2. Wetlands should be managed for migrating waterfowl and shorebirds.

Discussion: Wetlands will be managed to support migrating waterfowl and shorebirds and provide abundant food sources and resting areas. Water levels in the areas that can be manipulated will be maintained at high levels in the spring and periodically throughout the summer. Declining water levels in the fall provide access to an abundant food source for dabbling ducks and wading shorebirds.

3. Manage CLWMA to benefit all native wildlife species, not just game species.

Discussion: Carey Lake WMA was created to provide high quality wetlands for waterfowl. Therefore, these species will remain priorities for Carey Lake management. Fortunately, waterfowl have varied habitat needs that overlap the habitat needs of many other native wildlife species, including a variety of wading shorebirds. Additionally, the Conservation Target approach used to develop this plan has helped us better identify the needs of Species of Greatest Conservation Need (SGCN) and plan accordingly. The CLWMA Management Program outlined in the following section considers the needs of a wide variety of native wildlife species, identifies species that have habitat needs that are not being addressed under the Conservation Target management system, and identifies monitoring or management actions to address these needs.

4. Manage CLWMA to improve the upland bird populations.

Discussion: When the current manager took over CLWMA in 1992, all of the upland was either in alfalfa or heavily grazed. Currently there are 80 acres of dense nesting cover, 30 acres of trees and shrubs, and 20 acres of food plots. In 2012, 150 California quail were

introduced onto CLWMA. If these can reproduce and maintain a population, we will consider introducing ring-necked pheasant.

Public Use Management

1. Improve public facilities.

Discussion: The area where the majority of the public visits has a relatively new outhouse that is maintained by the Department Fishing and Boating Access program. There is no shade and no picnic table. We will consider adding these facilities as time and funding allows. We did receive two comments to improve this facility.

2. Provide interpretive signs.

Discussion: We are planning an information board that will provide a map of the CLWMA and information on waterfowl and wetland ecology.

Carey Lake WMA Management Program

The Department is responsible for the conservation, protection, perpetuation, and management of all wildlife, fish, and plants in Idaho. Wildlife Management Areas enable the Department to directly affect habitat to maximize suitability for species in key areas and are an integral component in the Department's approach to fulfill its legal mandate in Idaho. Management to restore and maintain important natural habitats and create hyper-productive habitats that enhance carrying capacity for selected wildlife species remain key strategies on CLWMA. 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, typically come from outside the WMA's boundary. Therefore, WMA managers must recognize and create opportunities to collaborate with adjacent landowners, expanding our collective conservation efforts for WMA-dependent wildlife.

We propose that an effective way to enable a broader influence over the future of CLWMA is through the use of Conservation Targets to guide management. Conservation Targets can be either a focal species or a habitat-type that benefits numerous species. According to Noss et al. (1999), focal species are those used by resource 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 CLWMA, a carefully selected suite of Conservation Targets can help provide for the conservation needs of many species. Additionally, identifying landscape-scale Conservation Targets across ownership boundaries helps address wildlife-related issues on CLWMA and creates a platform for conservation partnerships on the surrounding landscape.

The following six-step process was used to create the CLWMA 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) Selection of Conservation Targets
- 4) Viability Assessment of Selected Conservation Targets
- 5) Spatial Delineation of Conservation Target Landscapes
- 6) Creation of Management Program Table

Summary of Management Priorities

Legal mandates associated with the 2001 appropriation of federal funding for the State Wildlife Grants program guide the Department's management priorities. U.S. Congress appropriated federal funds through the State Wildlife Grants program help to 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 in 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.

Carey Lake WMA Management priorities (in order of priority):

1. Enhance and Maintain Emergent Wetland Habitat
2. Enhance and Maintain Grassland, Woodland, and Shrubland Habitat
3. Provide Recreational Fishery
4. Provide for Wildlife-based Recreation and Education

Focal Species Assessment

This section of the CLWMA plan is an assessment of various wildlife species on CLWMA 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, 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 is an example of a group that meets the criteria for flagship species. In addition, they are a culturally and economically important species in Idaho and represent a founding priority for establishment of CLWMA. Therefore, waterfowl is an important flagship species group considered in the CLWMA 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., mule deer and elk) along with formally designated conservation priorities (e.g., bald eagle and greater sage-grouse). Categories of at-risk vertebrate species considered in this assessment are: 1) species designated as Idaho

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 Idaho Comprehensive Wildlife Conservation Strategy document is now referred to as the Idaho SWAP. Idaho's SWAP 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.

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 was 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 Conservation Priority Species on the Carey Lake WMA including their potential suitability as focal species for management.

Species	Status Designation(s)	Occurrence Context in Carey Lake WMA Landscape	Threats	Beneficial Management and Conservation Actions	Suitability as a Focal Species for Carey Lake WMA
American Avocet (<i>Recurvirostra americana</i>)	SGCN	American Avocet is known to breed on CLWMA. Suitable breeding and foraging habitat is present.	The loss of wetland and riparian habitats is a pervasive threat.	A focus of American Avocet conservation populations should be the stabilization and rehabilitation of habitat for extant breeding populations. Emphasis is needed in riparian restoration to increase available wetland habitat	Unsuitable as a focal species. Nomadic ecology makes population monitoring difficult. Limited information on distribution in the project area. Unknown distribution limits potential management feedback
American White Pelican (<i>Pelecanus erythrorhynchos</i>)	BLM Sensitive; SGCN	Occurs on CLWMA, but area not large enough to provide suitable nesting habitat.	Habitat loss due to either flooding or draining areas can destroy breeding sites and foraging areas.	Protect and maintain wetland habitats and water levels.	Unsuitable as a focal species. Occurs on CLWMA, but area not large enough to provide suitable nesting habitat.
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	USFS Sensitive; BLM Sensitive; SGCN	Present year-round on CLWMA. Nesting occurs in the area.	Shooting, poisoning, electrocution; disturbance during the nesting season.	Minimize disturbance around nest sites.	Unsuitable as a focal species. Limited information on distribution in the project area. Unknown distribution limits potential management feedback.
Black Tern (<i>Chlidonias niger</i>)	BLM Sensitive, SGCN	Breeding population on the WMA.	Greatest threat is loss of marsh habitat.	Protect and maintain suitable shallow marsh habitat with emergent vegetation.	Unsuitable as a focal species. Limited information on distribution in the project area.
Black-crowned Night Heron (<i>Nycticorax nycticorax</i>)	SGCN	Generally breed in mixed-species colonies on trees, shrubs, islands, and in emergent (e.g., bulrush/cattail marsh; Trost and Gerstell 1994). Has been seen on CLWMA.	Disturbance of nesting islands; conflicts with trout hatcheries; presence of pesticides and other contaminants in eggs and chicks.	Maintenance of quality wetland and riparian habitats, including maintaining suitable water levels (Ivey and Herziger 2005).	Unsuitable as a focal species. Limited information on distribution in the project area.
Black-necked Stilt (<i>Himantopus mexicanus</i>)	SGCN	Black-necked Stilt is very common on CLWMA	Greatest threat is loss of marsh habitat.	Protect and maintain suitable shallow marsh habitat with emergent vegetation.	Unsuitable as a focal species. Nomadic ecology makes population monitoring difficult. Limited information on distribution in the project area.
California Gull (<i>Larus californicus</i>)	SGCN	This species has been observed on CLWMA.	Low water levels, disturbance during nesting.	Maintenance of water levels that separate nesting islands from dry land.	Unsuitable as a focal species. Habitat unsuitable for nesting.
California Quail (<i>Callipepla californica</i>)	Flagship	Quail were introduced into CLWMA in 2012.	Habitat destruction and degradation resulting in the loss of native shrub and grassland cover.	Maintenance, protection, and creation of dense cover, shelterbelts and food plots.	Unsuitable as a focal species. At this time limited information on distribution in CLWMA. We will know more once the reintroduction is successful.
Caspian Tern (<i>Sterna caspia</i>)	SGCN	This species has been observed on CLWMA.	Low water levels, disturbance during nesting.	Maintenance of water levels that separate nesting islands from dry land.	Unsuitable as a focal species. Habitat unsuitable for nesting.
Clark's Grebe (<i>Aechmophorus clarkii</i>)	SGCN	Not known to nest on CLWMA.	Declines in water quality and fluctuating water levels	Monitoring water quality and reducing drastic water level fluctuation during the breeding season.	Unsuitable as a focal species. Limited information on distribution in the project area.
Common Loon (<i>Gavia immer</i>)	USFS Sensitive, SGCN	Rare, non-breeding occurrence on the WMA.	Degradation of habitat through shoreline development, human recreational use of nesting and nursery sites may force loons into marginal, less protected nesting sites.	Protect and maintain suitable marsh habitat with emergent vegetation.	Unsuitable as a focal species. The WMA does not provide breeding habitat. Infrequent use of the WMA would not provide feedback to managers.
Forster's Tern (<i>Sterna forsteri</i>)	SGCN	Breeding occurs primarily in freshwater and brackish marshes, including marshy borders of lakes, islands, and streams.	Water level fluctuations may result in nest failure (Ivey and Herziger 2005). Winter fish kills may be limiting population in Idaho (Trost and Gerstell 1994).	Maintaining water levels (Ivey and Herziger 2005).	Unsuitable as a focal species. Limited information on distribution in the project area. Unknown distribution limits potential management feedback.

Species	Status Designation(s)	Occurrence Context in Carey Lake WMA Landscape	Threats	Beneficial Management and Conservation Actions	Suitability as a Focal Species for Carey Lake WMA
Franklin's Gull (<i>Larus pipixcan</i>)	SGCN	Migratory/transient species utilizing CLWMA on a temporary basis	Fluctuating water levels; exotic plant species and overgrowth of marsh plants can create habitat too dense for nesting (Burger and Gochfeld 1994); presence of substantial carp populations (Herziger and Ivey 2003).	Maintaining suitable water levels (Burger and Gochfeld 1994); maintaining vegetation open enough for nest construction (Ivey and Herziger 2005).	Unsuitable as a focal species. Migratory/transient species utilizing CLWMA on a temporary basis.
Great Egret (<i>Ardea alba</i>)	SGCN	Observed foraging on CLWMA.	Pesticides and other contaminants; human disturbance of nesting locations.	Monitoring for presence and potential effects of pesticides and contaminants.	Unsuitable as a focal species. Limited information on distribution in the project area. Unknown distribution limits potential management feedback.
Sandhill Crane (<i>Grus canadensis</i>)	Flagship, SGCN	Sandhill cranes in CLWMA and vicinity are part of the Rocky Mountain Population (RMP). The area provides limited breeding habitat for sandhill cranes.	Loss and degradation of wetland/riparian breeding habitat is an issue.	Protect and restore wetland/riparian habitat for breeding sandhills. Document breeding locations on the WMA, including nesting and brooding locations.	Unsuitable as a focal species. Limited information on distribution in the project area. Unknown distribution limits potential management feedback.
Hooded Merganser (<i>Lophodytes cucullatus</i>)	SGCN	Migrating populations occur on the WMA.	Hooded merganser populations have suffered on both breeding and wintering grounds from habitat alteration, mostly associated with changing forestry practices and especially snag removal.	Protect and maintain wetland habitats and water levels.	Unsuitable as a focal species. Species is an indicator of wetland systems. Continued use of the WMA as migrating grounds would help guide priorities for wetland management. Limited information on distribution in the project area.
Long-billed Curlew (<i>Numenius americanus</i>)	SGCN	Documented breeding occurs on CLWMA.	The greatest threat to long-billed curlews in Idaho is loss of habitat. Conversion of grasslands to croplands, residential development, and increasing recreational use have all resulted in the loss of suitable habitat in Idaho.	Protect habitat areas that are >42 ha (104 ac) (enough habitat for at least 1 breeding pair.) Protect nesting areas from detrimental human disturbance.	Unsuitable as a focal species. Limited information on distribution in the project area. Unknown distribution limits potential management feedback.
Mule Deer (<i>Odocoileus hemionus</i>)	Flagship	CLWMA is used as breeding and summer and fall range by mule deer.	Rural residential and commercial development in Blaine County. Habitat fragmentation from conflicting land uses on adjacent public and private lands; loss of aspen habitat. Conflicts with agricultural producers and potential for increased conflicts with loss of CRP contracts.	Support management that increases aspen on the landscape; work collaboratively with BLM and USFS to maintain thriving mule deer herds on the landscape. 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 is a culturally and economically important wildlife species in central Idaho.
Myotis Guild	SGCN; BLM Sensitive and Watch List	California myotis, fringed myotis, western small-footed myotis, Yuma myotis	Individuals are long-lived and exhibit low reproductive potential. Roost sites tend to be colonial, and may be limiting in some areas; aggregations are susceptible to disturbance and intentional persecution. High prey densities are often associated with wetlands and other highly productive habitat. Habitat use rates and, at the population level, survival and recruitment rates likely track aerial insect prey availability. Accessible surface water also likely affects local distribution and abundance. Local populations potentially affected by wind turbine installations situated in flyways or	Minimize broad-spectrum insect control activities that reduce prey base. Where possible, document natural roosting habitat such as cliffs. Create day-and night-roosting habitat through installation of bat boxes. Deploy escapement devices on troughs and water tanks, and develop natural and artificial pooled water sources.	Potentially suitable as a focal species. Unknown scope of occurrence and composition of guild on CLWMA would require preliminary work to determine the extent of occurrence. Could possibly be added to the Riparian Habitat assemblage, considering that management of this habitat would be central to meeting the needs of Myotis spp.

Species	Status Designation(s)	Occurrence Context in Carey Lake WMA Landscape	Threats	Beneficial Management and Conservation Actions	Suitability as a Focal Species for Carey Lake WMA
			near high-use areas, such as wetlands or roosts.		
Peregrine Falcon (<i>Falco peregrinus</i>)	Flagship, SGCN, USFS Sensitive, BLM Sensitive	Peregrines are seen occasionally on CLWMA. Suitable foraging habitat is present.	Loss, degradation, and fragmentation of grasslands and wetland habitats, residential development, and increasing recreational use, have all resulted in the loss of suitable habitat in Idaho. Because of their hunting techniques peregrines in proximity to roads and power lines are potentially subject to high mortality due to vehicle and wire collisions.	Maintain healthy wetland and riparian habitat	Unsuitable as a focal species. Limited information on distribution in the project area. Species is important indicator of riparian, wetland and grassland systems in southern Idaho.
Pygmy Rabbit (<i>Brachylagus idahoensis</i>)	At-risk Species; SGCN; USFS Sensitive; BLM Sensitive	No historic or recent records of Pygmy Rabbit exist for the WMA. The WMA falls within predicted range of Pygmy Rabbit. The species can be secretive and is often confused with other rabbits/hares, thus, targeted surveys for this species would be beneficial.	Minimize disturbance to occupied habitat and retain stands of mature sagebrush-steppe. Initiatives benefiting the conservation of Greater Sage-grouse may provide general guidance for conserving sagebrush habitats and associated sagebrush obligates such as Pygmy Rabbit and Brewer's Sparrow.	Loss, degradation, and fragmentation of sagebrush habitat from alteration of historic fire regimes, conversion of native habitats to farming or intensive livestock forage production, water developments, use of herbicides and pesticides, establishment of invasive species, urbanization, energy development, mineral extraction, and recreation. Efforts are needed to evaluate spatial connectivity among populations of Pygmy Rabbits at local, regional, and ecosystem scales.	Unsuitable as a focal species. Limited information on distribution in the project area.
Snowy Egret (<i>Egretta thula</i>)	SGCN	Breeding occurs at 9-10 sites in southern half of the state. Observed foraging at CLWMA.	Monitoring for effects of pesticides (Ivey and Herziger 2005).	Presence of pesticides and contaminants in eggs and adults (Parsons and Master 2000).	Unsuitable as a focal species. Limited information on distribution in the project area.
Swainson's Hawk (<i>Buteo swainsoni</i>)	SGCN	Swainson's hawk is very common on and around CLWMA.	Main threats are vulnerability of this species as it congregates in large numbers during migration and on the wintering grounds (e.g., Argentina). On breeding grounds, conversion of native grasslands to crops can degrade or eliminate nesting habitat. Development of wind farms may cause direct mortality if migrating hawks collide with turbines during spring and fall migration.	Maintain and/or restore native grasslands in order to retain adequate foraging and nesting habitats. Avoid disturbance to nest trees during breeding. Migration corridors should be identified and important stopover habitat protected. Better data on mortality rates of migrating Swainson's hawks (and other raptors) as a result of wind farm development are needed.	Unsuitable as a focal species. Nomadic ecology makes population monitoring difficult. Limited information on distribution in the project area.
Trumpeter Swan (<i>Cygnus buccinator</i>)	USFS Sensitive; BLM Sensitive; SGCN	Found mostly in southeast Idaho. Observed occasionally at CLWMA.	Periodic drought, crowded winter grounds, and low local productivity (Shea 2000); disturbance to swan nesting habitat (Mitchell 1994).	Habitat improvement through water flow control; installation of bird diverters to limit collisions with power lines (IDFG 2005).	Unsuitable as a focal species. The WMA does not provide breeding habitat. Infrequent use of the WMA would not provide feedback to managers.
Waterbird Guild	Flagship or At-risk Species; SGCN; USFS Sensitive; BLM Sensitive	CLWMA supports a diversity of waterbirds from April-July, including several SGCN species. IBIS surveys conducted in spring/summer have also documented Eared and Pied-billed Grebes, American Coot, Sora, Virginia Rail, and American Bittern. CLWMA is a designated Important Bird Area and Site SW34 of the Idaho Birding Trail.	Drought, low water levels, and/or diversion of water from existing marsh/wetland/riparian habitat can result in temporary or permanent abandonment of traditional nesting sites. Some waterbirds forage extensively in agricultural fields, increasing their exposure to pesticides.	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. Continue IBIS 3-year monitoring plan to assess status of WMA populations.	Potentially suitable as a focal guild. Species are 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.

Species	Status Designation(s)	Occurrence Context in Carey Lake WMA Landscape	Threats	Beneficial Management and Conservation Actions	Suitability as a Focal Species for Carey Lake WMA
Waterfowl Guild (ducks, geese)	Flagship Northern Pintail and Lesser Scaup SGCN	CLWMA receives extensive use by a variety of waterfowl	Loss, degradation, and fragmentation of grasslands and wetland habitats, residential development, and increasing recreational use, have all resulted in the loss of suitable habitat in Idaho	Protect and restore wetland/riparian habitat for breeding and rearing. Protect and enhance grassland habitats. Protect nesting areas from detrimental human disturbance.	Potentially suitable as a focal species. CLWMA has been managed for waterfowl habitat since acquisition.
Western Burrowing Owl (<i>Athene cunicularia</i>)	SGCN	Limited occurrence on CLWMA. No documented breeding has occurred on CLWMA	Burrowing owls breed in open, well-drained grasslands, prairies, farmlands, steppes, and may have some association with irrigated agriculture. In Idaho, burrowing owls typically use burrows excavated by badgers. Loss of nesting habitat through urbanization and agricultural conversion is a serious threat throughout Idaho. Pesticides are a potentially significant threat to this species as it often nests close to agricultural fields.	Many of the recommended conservation actions in Idaho's SWAP relate to statewide population assessments or monitoring to better understand threats. However, management that identifies nesting areas, limits human disturbance in known nesting areas and reduces exposure to pesticides will benefit nesting burrowing owls on CLWMA.	Unsuitable as a focal species. Limited occurrence on CLWMA limits potential management feedback.
Western Grebe (<i>Aechmophorus occidentalis</i>)	SGCN	Breeding occurs along the Snake River drainage in the southern and southeastern parts of Idaho. Has been recorded on CLWMA.	Water quality and water level fluctuations, nesting colony disturbance, gill nets, oil spills, and pesticides.	Monitoring water quality and reducing drastic water level fluctuation during breeding season, closing important breeding areas during the nesting period.	Unsuitable as a focal species. Limited information on distribution in the project area.
Western Toad (<i>Anaxyrus boreas</i>)	USFS Sensitive, BLM Sensitive	Has been abundant on CLWMA. Current distribution and status on the area is poorly documented.	Chytrid fungus, <i>Batrachochytrium dendrobatidis</i> , is the primary threat to western toad populations throughout the Southern Rocky Mountains. This is compounded by habitat alteration around wetlands. Habitat fragmentation isolates breeding populations, which increases the effects of these widespread threats and the risk associated with other threats.	Managing disease, cataloging and monitoring population status, delineating important habitat, and protecting delineated habitat, and identifying and protecting current breeding sites from habitat degradation.	Unsuitable as a focal species. Limited information on distribution in the project area. Unknown distribution limits potential management feedback.
White-faced Ibis (<i>Plegadis chihi</i>)	BLM Sensitive; SGCN	Breeding occurs at 5-7 locations in Idaho. Observed foraging on CLWMA.	Drought and/or diversion of water away from existing marsh/wetland habitat have resulted in temporary or permanent abandonment of traditional nesting sites (IDFG 2005); pesticide exposure risk (Ivey et al. 2005)	Providing suitable water levels during the nesting period; minimization of human disturbance (Oakleaf et al. 1996).	Unsuitable as a focal species. Species is an indicator of wetland systems. Continued use of the WMA as foraging grounds would help guide priorities for wetland management. Limited information on distribution in the project area.
Wilson's Phalarope (<i>Phalaropus tricolor</i>)	BLM Sensitive; SGCN	Nesting occurs in isolated wetlands throughout Idaho.	Loss of high-quality fresh water habitat; collisions with power transmission lines over wetlands (Malcom 1982); selenium leaching from agricultural fields and pesticides (Dechant et al. 2003)	Burning and mowing may improve upland nesting habitat (Eldridge 1992; Kantrud 1981); protection of wetland complexes that include seasonal and semi-permanent wetlands (Dechant et al. 2003).	Unsuitable as a focal species. Limited information on distribution in the project area.
Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	Candidate for ESA listing; USFS Sensitive; BLM Sensitive; SGCN	Historically a rare summer visitor and breeder in the Snake River Valley. Not known to occur on CLWMA.	Loss and degradation of breeding habitat (Hughes 1999); replacement of native riparian vegetation with invasive non-native plants.	Protection of areas where breeding birds appear to be well established; acquisition and protection of suitable riparian habitat.	Unsuitable as a focal species. Limited information on distribution in the project area.

Selection of Conservation Targets

The biodiversity of CLWMA 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 CLWMA for management and conservation; while still reflecting the management priorities of CLWMA. Conservation Targets may also be 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.

Conservation Targets for the CLWMA Management Plan were selected from species ranked as potentially suitable focal species in Table 1. Sensitive plants are not included in this assessment due to practical considerations including lack of data and funding. 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 focal species assessment identified five species or guilds that are potentially suitable focal species for management on the CLWMA. We selected the mule deer, sandhill crane, waterfowl guild, waterbird guild, and myotis guild. We selected three habitat types that represent the majority of CLWMA's habitat available to the chosen focal species.

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

1. Emergent Wetland Habitat (Enhance and Maintain Emergent Wetland Habitat)
2. Grassland Habitat (Enhance and Maintain Grass/Forb Habitat)
3. Woodland and Shrubland Habitat (Enhance and Maintain Woodland and Shrubland Habitat)

Emergent Wetland Habitat

We chose to designate emergent wetland habitat as a Conservation Target for management on CLWMA due to the number of focal species that are dependent on functioning wetland habitat. All of the focal species selected utilize the wetlands during some time of the year. Providing quality wetland functions and values on CLWMA is of high priority for the Department. A multitude of wildlife species rely on wetlands for all or a portion of their life requirements, including waterfowl game species and many other focal species chosen here.

Our vision for wetland areas on the WMA is that they will support an array of physical, chemical, and biological processes that provide a mosaic of habitat components including shoreline, grassland nesting areas near water, herbaceous emergent wetlands, shallow wetlands, and mudflats. We envision wetlands that will provide cover, resting and refueling areas for breeding and migrating waterfowl and wading shorebirds.

Grassland Habitat

We chose to designate grassland habitat as a Conservation Target as it provides important nesting habitat for bird species, including ground nesting waterfowl (mallard, lesser scaup, northern pintail), and other grassland nesting birds. Grassland areas provide brood-rearing habitat for some waterfowl and upland game birds species, such as the Canada goose and ring-necked pheasant. A multitude of other species find forage and cover in grasslands, including upland game species such as California quail, sandhill cranes, and mule deer.

Our vision for grassland habitat is that it will include native grass species with a native forb component, will have complex structure and healthy vigor, and will support diverse insect populations. Improving or maintaining highly functional grassland habitat has the potential to directly benefit many species of wildlife.

Woodland and Shrubland Habitat

We chose to designate woodland and shrubland habitat as a Conservation Target as it provides important habitat features for migratory song birds, mule deer, California quail, and many other shrub or tree-dependent species.

Woodland and shrubland habitats have high structural diversity, thus more places to forage, hide, and build nests. This habitat provides cover and browse for mule deer, cottontail rabbits, and western rattlesnake, among other species. Avian species associated with shrub and tree-dominated communities include yellow warbler, California quail, Swainson's hawk, western tanager, and black-billed magpie.

Our vision for woodland and shrubland habitat is that it will occur in continuous sections large enough to provide cover and travel corridors for wildlife. Healthy woodland and shrubland habitat will provide browse for big game throughout the year, and nesting and brood-rearing habitat for many bird species.

Viability Assessment of Selected Conservation Targets

Some analysis of the amount of coverage that a Conservation Target provides toward conservation of other species is essential to determining if the selected targets are viable. For this analysis, each of the three Conservation Targets was carefully evaluated to determine what other species would benefit from management actions taken to conserve the target. Table 2 indicates that the suite of species and habitats selected for Conservation Targets on CLWMA satisfy beneficial management and conservation actions and address threats for a number of species examined as potential focal species.

This assessment identified several guilds for which there is little or no management action being taken and/or where further data would be useful to inform the next planning process. These management voids merit attention and broad strategies are identified in the following Management Program Table (pages 30-32) that further conservation for these species.

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

Species Assessed in Table 1	Conservation Targets ^a			Conservation Need
	Wetland Habitat	Grassland Habitat	Woodland and Shrubland Habitat	
Mule Deer	P	P	P	
Water bird guild	X	X		
Bald Eagle	P	P	P	
American White Pelican	X			
Sandhill Crane	P	P		
Long-billed Curlew	X	X		
Waterfowl Guild	X	X		
Peregrine Falcon	P	P	P	
Short-eared Owl	P	P		
Black Tern	X			
Black-necked Stilt	X			
American Avocet	X			
Western Toad	X	X		
Yellow-billed Cuckoo			P	
Pygmy Rabbit				Yes
Myotis Guild	X	X	X	
California Gull	P			
Swainson's hawk	P	P	P	
Great Egret	X	X		
Forster's Tern	X			
Western Grebe	X			
Black-crowned Night Heron	X		X	Yes
Caspian Tern	X			
Clark's Grebe	X			
California Quail		X	X	
Franklin's Gull	P			
Wilson's Phalarope	P			
Hooded Merganser	P			
Common Loon	P			
Snowy Egret	P	P		
Trumpeter Swan	P			
Western Burrowing Owl		P		
White-faced Ibis	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 Selected Focal Species/Habitat Landscapes

Each of the focal species selected as Conservation Targets for CLWMA also utilize habitats off of CLWMA to meet their annual needs. In the case of the Wetland Habitat Conservation Target, a few of the species benefit from flooded pasture and small wetlands in the area; others rarely range off of CLWMA except during migration. The small size of the WMA makes these off-site foraging areas important in maintaining the integrity of the WMA. The WMA is dependent on what occurs within the surrounding landscape.

This section describes the methods used to define spatial landscapes for each of our CLWMA Conservation Targets. We used the best data available (i.e., species survey data utilizing CLWMA, scientific literature, species ecology data from the scientific literature, and local knowledge) to construct these Conservation Target-specific landscapes. These landscapes are then utilized in the Management Program Table (pages 30-32) to identify Conservation Target-specific Management Directions, Performance Targets, and Strategies for both CLWMA and the landscape. All GIS operations were conducted with ArcGIS 10 unless otherwise specified.

Each of the focal habitats for CLWMA (Emergent Wetland, Grassland Habitat, and Woodland and Shrubland Habitat) is associated with the Carey Lake Basin. Together, they provide a spectrum of habitat features, from open water to wetland herbaceous cover, shrub-tree, and grassland cover.

Emergent Wetland

The wetlands on the WMA are primarily contained within the CLWMA boundary and one adjacent landowner (Figure 2). A small number of both waterfowl and shorebirds use irrigated pasture, isolated wetlands, mesic and wet meadows, and creeks within the Fish Creek and Little Wood drainages. These are all on private land and do not contribute significantly to the wetland habitat within the WMA.

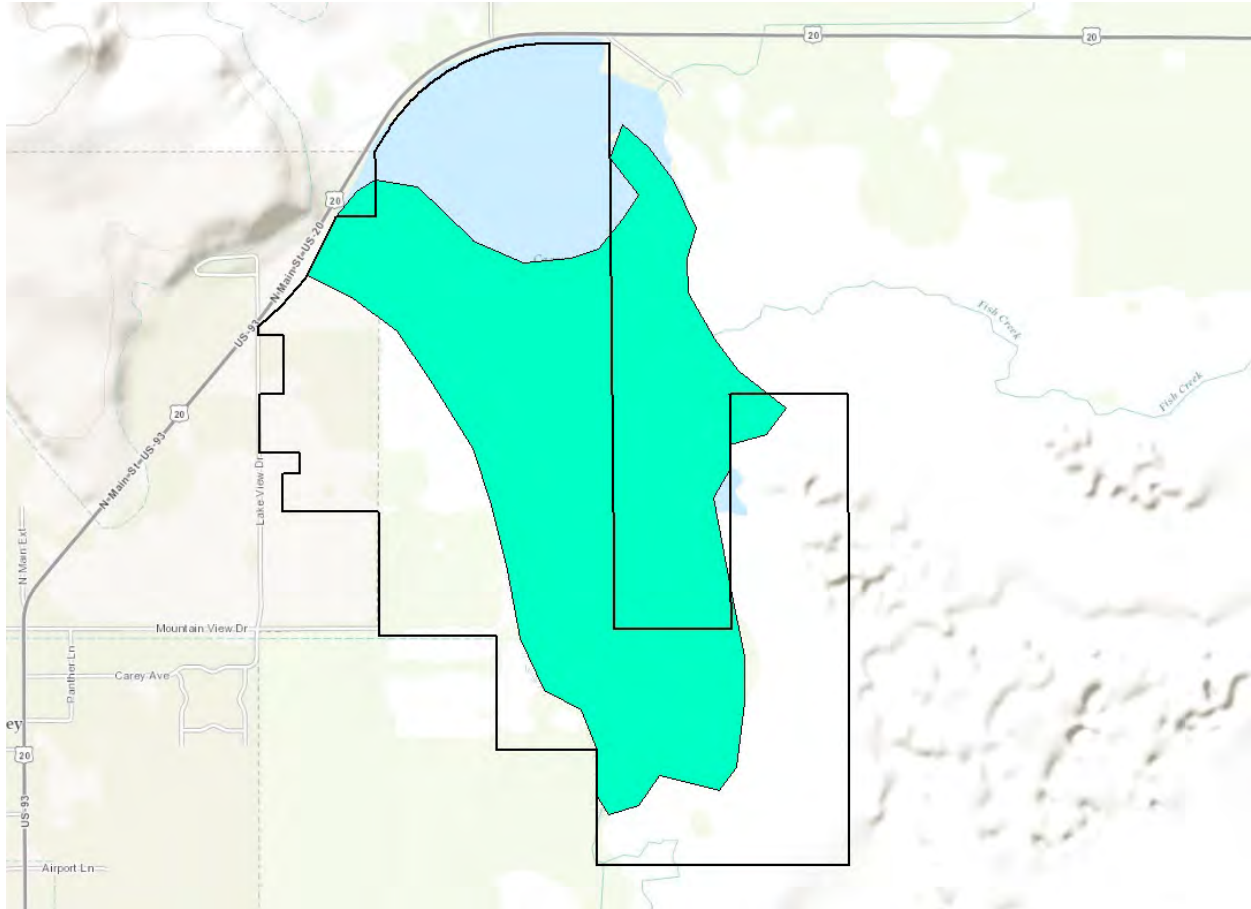


Figure 2. Carey Lake emergent wetland as the landscape scale for Focal Habitat consideration for Carey Lake WMA.

Grassland Habitat

There are 80 acres of permanent grassland and 100 acres of agricultural ground on the WMA (Figure 3). Depending on the crop and time of year, these acres also serve as temporary grassland. This agricultural ground is frequently utilized by a number of the focal species. The private agricultural grounds extend for several miles to the north and south of the WMA. To the east is Craters of the Moon National Monument which is primarily lava fields. The town of Carey lies on the western border of the WMA.

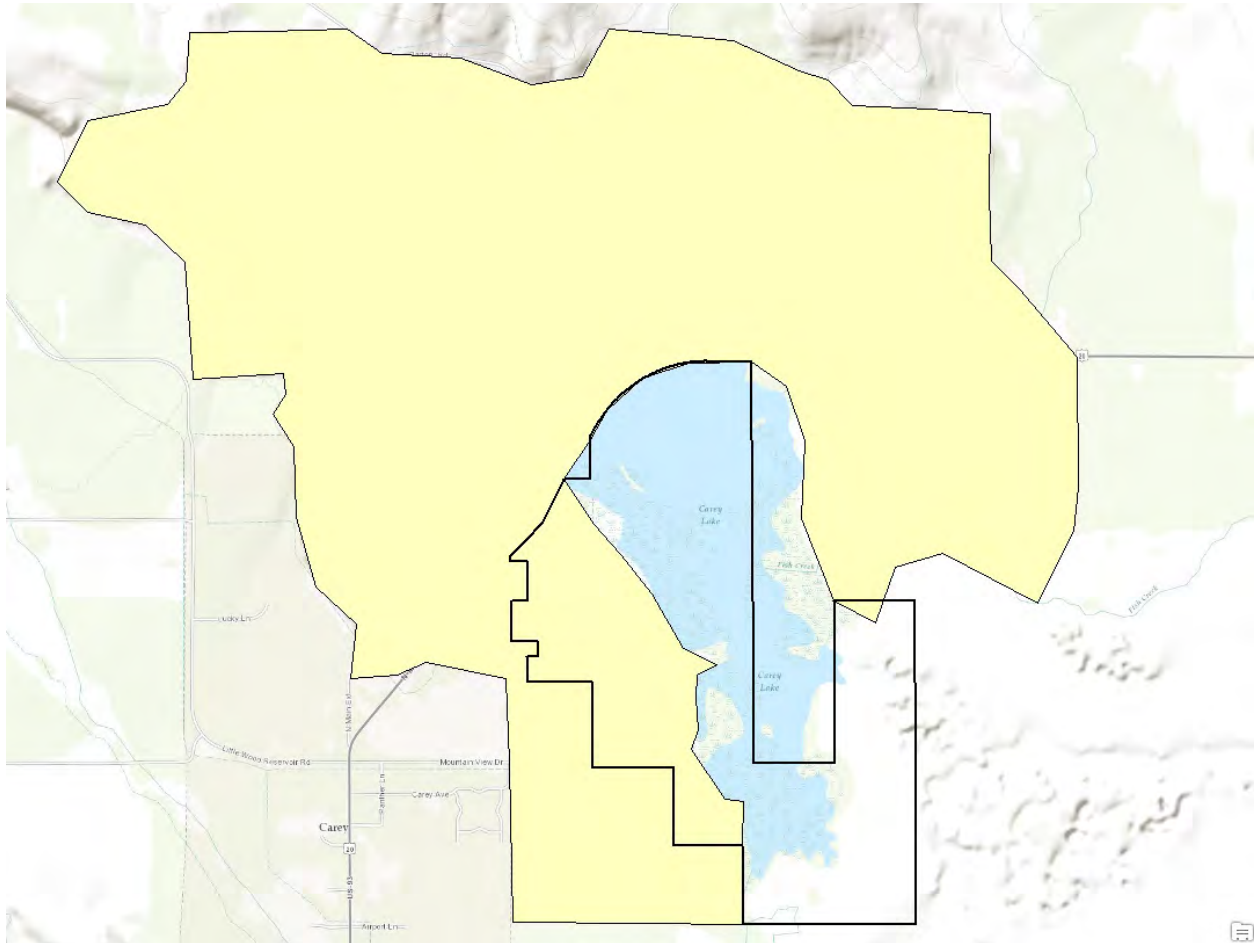


Figure 3 Carey Lake grassland as the landscape scale for Focal Habitat consideration for Carey Lake WMA.

Carey Lake WMA Management Program Table

The following table outlines the Management Directions, Performance Targets, Strategies, and Outcome Metrics CLWMA staff will use to manage for the Conservation Targets selected (page 23) to represent each CLWMA Priority (page 17) at both the CLWMA and Conservation Target-specific landscape scale. The last section of the table outlines strategies that will be used to increase our knowledge of the Conservation Needs identified in the Conservation Target coverage assessment (Table 2). 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 1: Enhance and Maintain Emergent Wetland Habitat					
Conservation Target: Emergent Wetland Habitat					
Scope	Management Direction	Performance Target	Strategy	Metric	Compass Objective (Appendix I)
CLWMA	Provide diverse, high quality, secure, and functioning waterfowl, waterbird, and shorebird breeding and migratory habitat that includes areas of deep and shallow open water, shallow emergent marsh vegetation, and mudflats, when appropriate	Within five years, treat 50% of unproductive, depauperate, and overgrown open water and tall emergent marsh habitat to approach an approximate 60:40 ratio of open water to tall marsh (e.g., cattail-bulrush) for the benefit of waterfowl breed pairing, brood rearing, and other functions; treat the remaining 50% within 10 years	Periodically drawdown marsh as much as possible to mimic natural drought cycles and maintain dynamic and productive wetland habitat. Use herbicide applications, mechanical treatments, and fire to rejuvenate stands of depauperate, unproductive marsh vegetation and maintain an approximate 60/40 mix of open water and marsh vegetation for waterfowl and other waterbirds	Percent of tall emergent marsh treated; ratio of open water to tall emergent marsh vegetation	B, C
		Annually, enhance or create habitat conditions on 10 acres for the purpose of maintaining or increasing successful nesting and brood rearing of waterfowl and other waterbirds. The target includes: maintain or increase the % of the WMA comprised of shallow water emergent marsh vegetation (e.g., common spikerush, water smartweed, etc.); ensure water levels are maintained through the nesting and brood-rearing periods	Manage shoreline and marsh vegetation to provide higher quality nesting habitat for waterfowl and black terns. Utilizing Little Wood Reservoir water to achieve performance targets.	Acres Treated	
		Annually, use management techniques including drawdown water levels in the fall to expose mudflats and food plants in short-emergent marsh and wet meadows, and to promote germination of plants; target includes: maintain or increase native species diversity and the % of the flora comprised of beneficial food plants (e.g., smartweed, beggartick, goosefoot, barnyard grass, etc.)	Install artificial nesting structures for Canada goose and mallards, if present conditions do not support plentiful, quality nesting conditions.	Number of artificial nest structures installed and occupied by waterfowl	
			Use mechanical disturbance and fire where appropriate to increase diversity and productivity of wet meadow and shallow marsh vegetation Manage water levels during the fall to maximize resting and feeding habitat for migrating waterfowl, waterbirds, and shorebirds (e.g., mudflats); explore the possibility of shallow re-flooding late in fall for waterfowl Utilize chemical and biological methods to control noxious and highly invasive weed infestations and limit the spread of invasive weeds on CLWMA	Acres Treated	
Fish Creek and Little Wood drainages	By coordinating with partners, provide high quality, and functioning wetland habitat (including riparian areas and wet/mesic meadows) to benefit a wide range of wildlife species	In 10 years, work with private landowners, land management agencies, and other partners to protect, create, enhance, and/or restore wetland habitats (especially wet/mesic meadows and riparian areas) on 200 acres.	Work with private landowners and partners (e.g., BLM, NRCS, Idaho Dept. of Environmental Quality, Ducks Unlimited, Wood River Land Trust, etc.) to prioritize projects, acquire funding and identify appropriate programs (e.g., Department programs such as HIP) for conservation and/or restoration of wetland habitat, including riparian areas	Acres Improved	

WMA Priority 1: Enhance and Maintain Emergent Wetland Habitat					
<i>Conservation Target: Emergent Wetland Habitat</i>					
Scope	Management Direction	Performance Target	Strategy	Metric	Compass Objective (Appendix I)
Fish Creek and Little Wood drainages	By coordinating with partners, provide high quality, and functioning wetland habitat (including riparian areas and wet/mesic meadows) to benefit a wide range of wildlife species	In 10 years, work with private landowners, land management agencies, and other partners to protect, create, enhance, and/or restore wetland habitats (especially wet/mesic meadows and riparian areas) on at least one project affecting at least 200 ac of habitat.	Provide technical assistance to cooperating agencies and partners on projects that enhance or restore wetland/riparian habitat within the Fish Creek and Little Wood Drainages. Actions could include construction of protective fencing, maintaining nesting cover, planting native vegetation, weed control (after nesting), marsh management (incorporating drawdown and disturbance), and changing livestock management and agricultural practices to improve water quality	Acres improved or protected	B, C
WMA Priority 2: Enhance and Maintain Grass / Forb Habitat					
<i>Conservation Target: Grassland Habitat</i>					
Scope	Management Direction	Performance Target	Strategy	Metric	Compass Objective (Appendix I)
CLWMA	Provide diverse and productive grassland habitat dominated by native species, with a diverse forb component, to benefit a wide range of wildlife species and increase waterfowl nesting success	During next five years, maintain or enhance the health, diversity, and vigor of 50% of current grassland habitat to provide nesting cover and forage for waterfowl and wildlife; treat the remaining 50% in the next five years; in the next ten years aim to increase native species richness by 10%, decrease noxious and invasive weed cover by 25%, and decrease % of flora comprised of non-native species by 10%, on 100 acres.	Incorporate grassland disturbance regimes (mechanical treatment, burning, haying, or grazing) (after nesting) in areas that need to be rejuvenated to increase diversity	Acres treated	B, C
		Utilize chemical and biological methods to control noxious and highly invasive weed infestations and limit the spread of noxious weeds on CLWMA			
		Within 10 years, re-establish native grass dominance in all decadent stands and near monocultures of rhizomatous grass by native grass interseeding and/or replanting where needed; decreasing noxious/invasive weed cover by 25%, decreasing % of flora comprised of non-native species by 25%.	Mow grass stand and no-till drill native grass seed mix into existing non-native grass stand to increase diversity.		
		Within 10 years, increase shelterbelt footage by 10,000ft.	In candidate areas for native grass replanting, follow a several year process of cultivating the acreage for several years to allow for weed management and soil preparation prior to seeding		
		Annually plant 25 acres of wildlife food plots comprised of beneficial non-invasive wildlife food species.	Incorporate native forb species into restoration and new grassland plantings after weed control is accomplished		
Fish Creek and Little Wood drainages	Provide diverse and productive perennial grassland habitat dominated by native species, with a diverse forb component, to benefit a wide range of wildlife species and increase waterfowl nesting success	Work with private landowners and land management agencies to enhance CRP and/or restore 200 ac of grasslands to functioning, diverse habitat that provides food and cover for wildlife species in the next ten years.	Work with private landowners through private, state and federal conservation programs (e.g., HIP) to enhance and restore perennial grassland cover and forb food species for upland game birds and waterfowl on their lands (e.g., native grass seeding projects; forb planting)	Acres treated	
			Where possible, provide technical assistance and funding to cooperating agencies on projects that enhance and restore perennial grassland stands within the Fish Creek and Little Wood Drainage (e.g., native grass and forb seeding projects)		
			Work with SGI biologist and the NRCS to create high quality sage-steppe habitat within the drainage		

WMA Priority 3: Enhance and Maintain Woodland and Shrubland Habitat					
<i>Conservation Target: Woodland and Shrubland Habitat</i>					
Scope	Management Direction	Performance Target	Strategy	Metric	Compass Objective (Appendix I)
CLWMA	Provide high quality shrub-tree habitat to benefit a wide range of wildlife species	Maintain or Enhance 40 acres of shrub-tree habitat through implementation of vegetation improvement projects. Increase footage of shelterbelt by 10,000ft in five years	Plant native and non- native shrub and tree species	Acres Treated	B and C
			Utilize chemical and biological methods to control noxious weed infestations and limit the spread of noxious weeds on CLWMA		
			Protect from trespass livestock grazing		
			Protect natural regeneration of native shrub species		
Fish Creek and Little Wood drainages	Provide high quality shrub-tree habitat to benefit a wide range of wildlife species	Work with private landowners and land management agencies to create and enhance shrub-tree habitat.	Work with private land owners through private, state and federal conservation programs to provide sage-steppe cover and forage for upland gamebirds and waterfowl on private land	Number of projects	B and C
			Where possible, provide technical assistance and funding to cooperating agencies on projects that affect shrub-tree habitat in the Fish Creek and Little Wood Drainage	Acres Improved	
WMA Priority: Recreational Fishery					
Scope	Management Direction	Performance Target	Strategy	Metric	Compass Objective (Appendix I)
CLWMA	Provide high quality fish habitat to benefit a wide range of fish species	Maintain water levels to support a sustainable fishery	Utilize Little Wood Reservoir water to supplement water levels	User Days	B, C
WMA Priority: Provide for Wildlife-based Recreation and Education					
Scope	Management Direction	Performance Target	Strategy	Metric	Compass Objective (Appendix I)
CLWMA	Provide for public access and recreational use compatible with wildlife and habitat management objectives	Provide recreational hunting and fishing opportunity to 5,000 users annually, consistent with the CLWMA mission	Manage fall water levels to provide quality waterfowl hunting opportunities	User Days	E, F, G, H, K
			Provide vehicle access to handicapped big game hunters on CLWMA.		
		Provide non consumptive recreational opportunity to 2,000 users annually, consistent with the CLWMA mission	Provide marsh tours to schools, birding groups, artists groups and interested members of the public.	User Days	
			Provide access and improve visitor facilities and educational opportunities.	Provide and maintain parking, bathroom and picnic facilities.	
		Provide interpretive signage with WMA map and a discussion of wetland and waterfowl ecology.			
		Encourage private landowners to participate in the Access Yes Program to allow public recreational access			
Educate and foster communication and understanding between hunters and landowners on desires and concerns of each party					

Monitoring

Monitoring and reporting are critical for tracking accomplishment of Performance Targets identified in the CLWMA 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 CLWMA 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.

Currently, CLWMA monitors habitat, habitat treatments, spatial and temporal use of the WMA by a variety of bird species, weed infestations, Canada goose production, and habitat use.

Photo points are established on the WMA to monitor habitat changes over time and repeat photographs are taken at least every five years, or more often, during late July to early August.

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

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 CLWMA.

Reporting

Carey Lake WMA will produce a five-year report on implementation of this 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 Carey Lake WMA, 2014-2023.

Performance Target	Survey Type	Survey Frequency
Enhance or restore 50 acres of seasonal waterfowl habitat through moist soil and shallow water management by 2023	Vegetation monitoring (cover, frequency of species) for desired establishment	Before project initiation and twice within five years after project completion
Create or enhance 10 acres of upland nesting habitat for waterfowl and shorebirds in the next five years	Vegetation monitoring (cover, frequency of species) for desired establishment	Before project initiation and twice within five years after project completion
Experiment with different methods of converting undesirable grasses to native or functional species. Implement treatments on 50% of grassland acres by 2020.	Vegetation monitoring (cover, frequency of species) for desired establishment	Before project initiation and twice within five years after project completion
Expand woodland and shrubland Habitat 10,000 linear feet by 2020	Monitor plant survival and replace as necessary	Before project initiation and twice within five years after project completion
Gather visitor use data and information to help guide CL WMA management	Visitor use surveys	Annually

*Note - This monitoring table focuses on conversion, restoration, or enhancement projects, not standard annual CLWMA management practices

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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

Cultural History

Before Anglo-European settlement, CLWMA was a gathering area and summer hunting grounds for the Native Americans of the middle Snake River region. Bannock, Shoshoni, and Northern Paiute family bands were the most common tribes using the area in the spring, summer, and fall. During the harsh winters, the Tribes moved south to the Snake River area (Statham 1982).

In 1820, Donald Mackenzie, a Northwest Company fur trader, was the first recorded white man to explore the Carey area (USDA 1981). He passed through while returning from a trapping expedition in the Lost River area. Trappers subsequently used this as a travel route between Fort Hall and Fort Boise (USDA 1981).

The first farming community in the area was established along Spring Creek near Carey in 1879 (USDA 1981). The population of the early farming communities fluctuated with the boom and decline of the mining industry in the nearby Wood River Valley. Also contributing to the instability of the agricultural communities was the cool climate, which limited the number of suitable crops (USDA 1981).

Initial acquisition of CLWMA by the Department in 1949 was from Carey Lake Reservoir Company, after the company failed to make Carey Lake into an irrigation reservoir. The Company was unable to store the desired amount of water due to water loss through the lava faults on the south and east sides of the lake. The remaining land in CLWMA was acquired from several sources between 1951 and 1957.

Physical Features

Carey Lake WMA is located in south-central Idaho, at an elevation of 4,763 feet, on the northern border of the Snake River Plain (Figure 1). The CLWMA is a shallow natural basin formed when lava flows 3,000-4,000 years ago blocked the natural outlet of Fish Creek (USDA 1981). As the basin filled, the water found a new outlet around the lava at a slightly higher elevation leaving the flooded basin. A control structure was built at this outlet to increase the capacity of the lake but the porosity of the lava along eastern and southern edges prevented the lake from ever reaching depths of more than about three feet. Carey Lake has a surface area of about 700 acres at high water.

Climate

Carey Lake WMA has moderately severe winters with temperatures as low as -35°F and snow depths ranging from 10 to 24 inches (USDA 1981). The lake usually freezes over in mid-November. Summers are moderately hot and dry with temperatures often reaching 95°F. The growing season averages about 110 days. Annual precipitation varies from nine to 13 inches with less than half falling during the growing season (USDA 1981).

Soils

The CLWMA soils are segregated into five categories established by the NRCS (USDA 1981). Four of the soil types are characterized by clay loam, silty clay loam, and/or sand loam to a depth of 38 to 47 inches (USDA 1981). Below this depth, sand loam, gravelly sand, and/or coarse sand is prevalent. Loam and gravelly loam are the major soil types found above water on the WMA. These soils are 90% Class III and IV land that is suited for cultivation. The fifth soil type is composed of lava flows from the Cinderhurst complex and is in Class VI that is unsuited for cultivation (USDA 1981).

Geology

The mountains to the north are composed of granitic igneous rocks of the Cretaceous Age, Idaho Batholith, and Challis Volcanics of the Eocene Age (USDA 1981). From these mountains, alluvial fan terraces were deposited as proglacial outwash. These alluvium soils are well developed and well drained. On the outer reaches of these alluvial fans, the soils become progressively finer and heavier in clay. It was near this point where the fan underlying Carey Lake Basin was covered with the Cinderhurst lava complex 3,000 to 4,000 years ago (USDA 1981).

Hydrology

Carey Lake has a surface area of approximately 530 acres at high water. There are 30 acres of water 15 to 18 feet deep and 20 acres of five to six feet deep water in the excavated channels. The remainder of the lake varies from one to three feet. There are six water sources supplying CLWMA. Four with water rights: decreed water, storage water, canal stock, and spring run-off from Little Wood River. There are two additional sources; a hot spring located in the northeast section of the management area and overflow from Fish Creek Reservoir. The spring keeps one to two acres of the lake from completely freezing in the winter. The overflow of Fish Creek Reservoir runs through Fish Creek until it meets the lavas and gradually moves west filling the many pockets, holes, and a small lake in the lavas. If enough water overflows from the reservoir, it eventually reaches Carey Lake.

Fish Creek Reservoir was created in 1923 with the construction of a dam 92 feet high by 1,700 feet wide. The dam has been weakened by 90 years of constant exposure to the harsh and unyielding elements. Countless freeze-and-thaw events have steadily deteriorated the structure's concrete construction. In 2005, Department of Water Resources officials ordered the Fish Creek Reservoir Company to cut a larger spillway in one side of the multiple-arch dam to keep the maximum water level in the reservoir from rising too high. This new spillway reduced the storage capacity of the reservoir by almost two thirds. This change in the reservoir's holding capacity will have an effect on the amount of water reaching Carey Lake. There is speculation that the dam may be breached entirely. If this were to occur, the amount of water reaching Carey Lake would increase significantly.

III. MANAGEMENT REQUIREMENTS AND AUTHORITIES

Federal funds, including those derived from the Booneville Power Administration and USFWS Federal Aid Program, have been used in part to acquire and manage Centennial Marsh 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 the Centennial Marsh. 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 Centennial Marsh lands and waters. Under the National Historic Preservation Act, the Department must ensure that historic properties are protected on the Centennial Marsh.

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. PUBLIC INPUT SUMMARY

Survey Results

Twenty-five Responses

Unsatisfied	2	They were anglers
Neutral	5	
Satisfied	11	
Very Satisfied	4	
Reason for visit	13	Birding
1 st choice	3	Photography
	2	Wildlife Viewing
	4	Fishing
	1	Hunting

Things to Improve the Visit:

- More fish
- Encourage native flora and fauna, discourage exotic species
- Provide list of birds to see during each season
- Provide well-marked maintained trails
- Improve restrooms
- Protect species of concern; encourage native species; discourage non-native/invasive species

Results from Sign-in Sheets on Carey Lake WMA in 2011 and 2012:

Year	Total Signed In	Reason For Visit ^a				
		Birding	Sightseeing / Viewing / Wildlife	Photography	Fishing	Hunting
2011	33	4	3	2	12	11
2012	26	3	2	3	9	8

^a Many of the entries had listed multiple reasons for being there.

Some of the Comments:

- We received two comments about the need for interpretive signs.
- One requesting a viewing platform.
- Two complaining about the condition of outhouse.

V. 1999-2013 ACCOMPLISHMENTS

Since the CLWMA plan was revised in 1999, the following accomplishments relative to the goals and objectives of the 1999 plan have occurred. All the accomplishments listed below were completed by Department personnel, with one exception. The harvest of crops from the agricultural ground was completed by sharecroppers.

Goal: Develop habitat improvement projects.

Objective: Plant and maintain wood cover projects.

Accomplishment:

- Fifty thousand linear feet of tree and shrub shelterbelt was planted and maintained.

Objective: Plant and maintain food plots.

Accomplishment:

- Fourteen acres of food plots were planted and maintained annually.

Objective: Plant and maintain dense nesting cover.

Accomplishment:

- One hundred acres of dense nesting cover were planted and maintained.

Objective: Manipulate the water level in Carey Lake to optimize emergent vegetation and invertebrate production.

Accomplishment:

- The water level was maintained utilizing Little Wood Reservoir water.

Objective: Construct, maintain, and monitor nesting structures.

Accomplishment:

- Twenty-six goose boxes are maintained and monitored annually.

Goal: Use cooperative farming agreements to enhance wildlife habitat in areas where either manpower or lack of equipment would make it impossible for the Department to develop the area.

Objective: Design agreements so that CLWMA habitat development is enhanced.

Accomplishment:

- Over the past 14 years, numerous farming agreements have been in place. These have provided a fall food source in grain stubble fields for migrating waterfowl.

Objective: Ensure that the Department receives equitable compensation for any farming or grazing done on the WMA.

Accomplishment:

- The Department normally receives between 33 and 40% of the sale value of the crop. These funds are then used for other habitat projects.

Goal: Control Canada thistle, knapweed, rush skeletonweed, and other noxious weeds on CLWMA.

Objective: Use available resources to control noxious weeds through chemical, biological, and mechanical means.

Accomplishment:

- The Department has aggressively tried to control noxious weeds in upland nesting habitat. An annual ongoing effort was made to control thistle, knapweed, rush skeletonweed, and other noxious weeds through spraying and mowing.

Goal: Develop facilities for public access and recreational use compatible with wildlife and habitat management objectives.

Objective: Develop public access and use facilities.

Accomplishment:

- Facilities developed include one parking area, one restroom location, and non-motorized trail access across a portion of the WMA.

VI. VEGETATION

Palustrine Emergent Persistent Intermittently Exposed Wetland (Cowardin et al. 1979)

This habitat type dominates CLWMA and covers approximately 340 acres. The wetland vegetation type is a mix of shallow water tall emergents dominated by broad-leafed cattail (*Typha latifolia*) and hardstem bulrush (*Schoenoplectus acutus*). Throughout the year, the majority of this area is typically flooded to a depth of up to three feet. The lake elevation varies considerably by year and season. Because of the shallow nature of the lake, when the water level drops, a large area of shoreline is exposed. The intermittently exposed wetland is dominated by foxtail barley (*Hordeum jubatum*).

Lacustrine Aquatic Bed Rooted Vascular Permanently Flooded Wetland (Cowardin et al. 1979)

There are approximately 25 acres of deep water channels on CLWMA. These channels were excavated and range in depth from four to 12 feet. The dominant vegetation is the submerged aquatic coontail (*Ceratophyllum demersum*).

Upland Grass Cover Type

On the western shoreline, between the high water and irrigated cropland is a grass habitat which consists of basin wildrye (*Leymus cinereus*), Idaho fescue (*Festuca idahoensis*), Kentucky bluegrass (*Poa pratensis*), and bulbous bluegrass (*Poa bulbosa*). This cover type also occurs on the islands that were created from the excavated deep water channels. This cover type has the only noxious weed problem on CLWMA. Canada thistle (*Cirsium arvense*) has invaded the islands and Scotch thistle (*Onopordum acanthium*) has invaded the grass cover type.

Scrub-shrub Broad-leaved Deciduous Seasonally Flooded Wetland (Cowardin et al. 1979)

Where the main canal enters the lake, there is an area of approximately two acres of coyote willow (*Salix exigua*) with a reed canarygrass (*Phalaris arundinacea*) understory.

Agricultural Ground

There are approximately 70 acres of irrigated and 60 acres of dryland small grains, cover crops or alfalfa (*Medicago sativa*).

Lava Flows

Carey Lake WMA has approximately 200 acres of lava flows. The predominant vegetation includes mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), lava fernbush (*Chamaebatiaria millifolium*), antelope bitterbrush (*Purshia tridentata*), and Nevada bluegrass (*Poa nevadaensis*).

Dense Nesting Cover

Approximately 100 acres that were formerly farmed in barley (*Hordeum vulgare*) have been planted to dense nesting cover. The primary species planted include basin wildrye, altai wildrye (*Leymus angustus*), and tall wheatgrass (*Elytrigia elongata*).

Shelterbelt Habitat Type

This area encompasses about 30 acres, made up of 40 different species of deciduous fruiting trees and shrubs and five species of evergreens.

VII. WILDLIFE AND FISH SPECIES LIST

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

SPECIES		RELATIVE ABUNDANCE ^a			
		Spring	Summer	Fall	Winter
Mammals					
Coyote	<i>Canis latrans</i>	C	C	C	C
Wolf	<i>Canis lupus</i>	R	R	R	R
Beaver	<i>Castor canadensis</i>	C	C	C	-
Columbian ground squirrel	<i>Citellus columbianus</i>	C	A	R	-
Porcupine	<i>Erethizon dorsatum</i>	U	U	U	R
White-tailed jackrabbit	<i>Lepus townsendii</i>	C	C	C	C
Bobcat	<i>Lynx rufus</i>	R	R	R	R
Striped skunk	<i>Mephitis mephitis</i>	C	C	C	O
Mink	<i>Mustela vison</i>	O	O	O	R
Bushy-tailed wood rat	<i>Neotoma cinerea</i>	C	C	C	-
Mule deer	<i>Odocoileus hemionus</i>	A	A	A	-
Muskrat	<i>Ondatra zibethicus</i>	C	C	C	-
Great Basin pocket mouse	<i>Perognathus parvus</i>	O	O	O	-
Deer mouse	<i>Peromyscus maniculatus</i>	O	C	C	-
Mountain lion	<i>Puma concolor</i>	R	R	R	R
Shrew	<i>Sorex</i> sp.	O	O	O	-
Nuttall's cottontail	<i>Sylvilagus nuttallii</i>	O	O	O	O
Least chipmunk	<i>Tamias minimus</i>	C	C	C	-
American badger	<i>Taxidea taxus</i>	O	O	O	-
Northern pocket gopher	<i>Thomomys talpoides</i>	O	C	C	-
Western jumping mouse	<i>Zapus princeps</i>	C	C	C	-
Birds					
Cooper's hawk	<i>Accipiter cooperii</i>	U	O	U	-
Northern goshawk	<i>Accipiter gentilis</i> *	R	R	R	-
Sharp-shinned hawk	<i>Accipiter striatus</i>	O	O	O	-
Western grebe	<i>Aechmophorus occidentalis</i> *	U	U	R	-
Red-winged blackbird	<i>Agelaius phoeniceus</i>	A	A	O	-
Northern pintail	<i>Anas acuta</i> *	C	C	C	-
American widgeon	<i>Anas americana</i>	A	A	A	-
Green-winged teal	<i>Anas carolinensis</i>	A	A	A	-
Northern shoveler	<i>Anas clypeata</i>	A	A	A	-
Cinnamon teal	<i>Anas cyanoptera</i>	A	A	A	-
Blue-winged teal	<i>Anas discors</i>	O	U	U	-
Mallard	<i>Anas platyrhynchos</i>	A	A	A	-
Gadwall	<i>Anas strepera</i>	O	U	U	-
Golden eagle	<i>Aquila chrysaetos</i>	U	U	U	U
Black-chinned hummingbird	<i>Archilochus alexandri</i>	C	C	C	-
Great blue heron	<i>Ardea herodias</i>	A	A	O	-
Short-eared owl	<i>Asio flammeus</i> *	C	C	C	-
Long-eared owl	<i>Asio otus</i>	R	R	R	-

SPECIES		RELATIVE ABUNDANCE ^a			
		Spring	Summer	Fall	Winter
Birds (cont.)					
Burrowing owl	<i>Athene cunicularia</i> *	U	U	U	-
Cedar waxwing	<i>Bombycilla cedrorum</i>	O	R	C	-
Canada goose	<i>Branta canadensis</i>	A	A	A	-
Great horned owl	<i>Bubo virginianus</i>	U	U	U	U
Common goldeneye	<i>Bucephala clangula</i>	U	U	U	-
Red-tailed hawk	<i>Buteo jamaicensis</i>	C	C	O	R
Rough-legged hawk	<i>Buteo lagopus</i>	R	R	R	O
Ferruginous hawk	<i>Buteo regalis</i>	O	O	O	R
Swainson's hawk	<i>Buteo swainsoni</i> *	C	C	C	-
Western sandpiper	<i>Calidris mauri</i>	C	O	R	-
Turkey vulture	<i>Cathartes aura</i>	C	O	O	R
Sage-grouse	<i>Centrocercus urophasianus</i> *	R	R	R	-
Killdeer	<i>Charadrius vociferous</i>	C	C	O	-
Snow goose	<i>Chen caerulescens</i>	O	R	R	-
Black tern	<i>Chlidonias niger</i> *	A	A	O	-
Northern harrier	<i>Circus cyaneus</i>	C	C	O	-
Northern flicker	<i>Colaptes auratus</i>	C	C	C	R
Rock dove	<i>Columba livia</i>	C	C	C	O
American crow	<i>Corvus brachyrhynchos</i>	C	U	O	-
Common raven	<i>Corvus corax</i>	C	C	C	U
Steller's jay	<i>Cyanocitta stelleri</i>	O	O	O	-
Trumpeter swan	<i>Cygnus buccinator</i> *	R	R	R	-
Tundra swan	<i>Cygnus columbianus</i>	O	U	U	-
Brewer's blackbird	<i>Euphagus cyanocephalus</i> *	A	A	O	-
Merlin	<i>Falco columbarius</i> *	R	R	R	-
Prairie falcon	<i>Falco mexicanus</i> *	C	C	C	-
Peregrine falcon	<i>Falco peregrines</i> *	O	O	O	R
American kestrel	<i>Falco sparverius</i>	A	A	A	-
American coot	<i>Fulica americana</i>	A	A	A	-
MacGillivray's warbler	<i>Geothlypis tolmiei</i>	C	C	R	-
Sandhill crane	<i>Grus canadensis</i> *	O	O	R	-
Cassin's finch	<i>Haemorhous cassinii</i>	U	R	R	-
Bald eagle	<i>Haliaeetus leucocephalus</i> *	U	U	U	U
Black-necked stilt	<i>Himantopus mexicanus</i> *	A	A	U	-
Barn swallow	<i>Hirundo rustica</i>	O	O	O	-
Northern shrike	<i>Lanius excubitor</i>	R	R	O	R
Loggerhead shrike	<i>Lanius ludovicianus</i> *	O	R	R	R
California gull	<i>Larus californicus</i> *	A	A	O	-
Ring-billed gull	<i>Larus delawarensis</i>	A	A	O	-
Gray-crowned rosy finch	<i>Leucosticte tephrocotis</i>	R	R	R	-
Lewis's woodpecker	<i>Melanerpes lewis</i> *	U	U	U	-
Song sparrow	<i>Melospiza melodia</i>	C	C	C	-
Common merganser	<i>Mergus merganser</i>	R	R	R	-
Brown-headed cowbird	<i>Molothrus ater</i>	R	U	R	-

SPECIES		RELATIVE ABUNDANCE ^a			
		Spring	Summer	Fall	Winter
Birds (cont.)					
Long-billed curlew	<i>Numenius americanus</i> *	A	A	O	-
Black-crowned night heron	<i>Nycticorax nycticorax</i>	O	O	O	-
House sparrow (English)	<i>Passer domesticus</i>	R	R	R	-
Gray partridge	<i>Perdix perdix</i>	U	U	U	U
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	A	A	O	-
Black-billed magpie	<i>Pica hudsonia</i>	C	C	C	C
Hairy woodpecker	<i>Picoides villosus</i>	U	U	U	-
Green-tailed towhee	<i>Pipilo chlorurus</i>	C	C	C	-
White-faced ibis	<i>Plegadis chihi</i> *	O	O	R	-
Eared grebe	<i>Podiceps nigricollis</i>	A	A	O	-
Pied-billed grebe	<i>Podilymbus podiceps</i>	A	A	O	-
Black-capped chickadee	<i>Poecile atricapillus</i>	C	U	C	C
Vesper sparrow	<i>Poocetes gramineus</i>	C	C	C	-
American avocet	<i>Recurvirostra americana</i> *	A	A	U	-
Calliope hummingbird	<i>Selasphorus calliope</i>	C	C	O	-
Rufous hummingbird	<i>Selasphorus rufus</i>	C	C	C	-
Yellow-rumped warbler	<i>Setophaga coronata</i>	C	C	R	-
Yellow warbler	<i>Setophaga petechia</i>	C	C	R	-
Mountain bluebird	<i>Sialia currucoides</i>	C	C	C	-
American goldfinch	<i>Spinus tristis</i>	R	C	C	-
American tree sparrow	<i>Spizella arborea</i>	O	O	R	-
Chipping sparrow	<i>Spizella passerina</i>	C	U	C	-
Western meadowlark	<i>Sturnella neglecta</i>	C	C	U	-
European starling	<i>Sturnus vulgaris</i>	A	A	A	R
Tree swallow	<i>Tachycineta bicolor</i>	C	C	O	-
Violet-green swallow	<i>Tachycineta thalassina</i>	A	A	O	-
House wren	<i>Troglodytes aedon</i>	C	C	R	-
American Robin	<i>Turdus migratorius</i>	A	C	A	-
Barn owl	<i>Tyto alba</i>	R	R	R	-
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	A	A	O	-
Mourning dove	<i>Zenaida macroura</i>	C	C	U	-
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	U	R	C	-
Bats					
Big brown bat	<i>Eptesicus fuscus</i>	O	O	O	-
Western small-footed myotis	<i>Myotis ciliolabrum</i> *	O	O	O	-
Long-eared myotis	<i>Myotis evotis</i> *	O	O	O	-
Little brown myotis	<i>Myotis lucifus</i>	O	O	O	-
Yuma bat	<i>Myotis yumanensis</i> *	O	O	O	-
Amphibians & Reptiles					
Long-toed salamander	<i>Ambystoma macrodactylum</i>	R	R	R	-
Western toad	<i>Anaxyrus boreas</i> *	O	O	O	-
Rubber boa	<i>Charina bottae</i>	O	O	O	-
Racer	<i>Coluber constrictor</i>	O	C	O	-

SPECIES		RELATIVE ABUNDANCE ^a			
		Spring	Summer	Fall	Winter
Amphibians & Reptiles (cont.)					
Western rattlesnake	<i>Crotalus viridis</i>	O	C	O	-
Western skink	<i>Eumeces skiltonianus</i>	O	O	O	-
Night snake	<i>Hypsiglena torquata</i> *	O	O	O	-
Short-horned lizard	<i>Phrynosoma douglasii</i>	O	O	O	-
Gopher snake	<i>Pituophis catenifer</i>	O	C	O	-
Pacific tree frog	<i>Pseudacris regilla</i>	O	O	O	-
Columbia spotted frog	<i>Rana luteiventris</i> *	R	R	R	-
Sagebrush lizard	<i>Sceloporus graciosus</i>	O	C	O	-
Western terrestrial garter snake	<i>Thamnophis elegans</i>	O	C	O	-
Common garter snake	<i>Thamnophis sirtalis</i>	O	C	O	-
Fish					
Brown bullhead	<i>Ameiurus nebulosus</i>	A	A	A	A
Channel catfish	<i>Ictalurus punctatus</i>	C	C	C	C
Bluegill	<i>Lepomis macrochirus</i>	A	A	A	A
Large mouthed bass	<i>Micropterus salmoides</i>	A	A	A	C
Yellow perch	<i>Perca flavescens</i>	A	A	A	A

^a Spring (Mar-May), Summer (Jun-Aug), Fall (Sep-Nov), Winter (Dec-Feb). * - Indicates SGCN or federal sensitive species. A-Abundant, a species which is very numerous. C-Common, certain to be seen or heard in suitable habitat. U-Uncommon, present but not certain to be seen. O-Occasional, seen only a few times during the season. R-Rare, seen at intervals of two to five years.

VIII. NOXIOUS WEED CONTROL

Noxious weeds have been actively controlled on CLWMA since 1992. Control measures include proper land use practices and mechanical, chemical, and biological controls. The main weed species being controlled are Canada thistle (*Cirsium arvense*), Scotch thistle (*Onopordum acanthium*), rush skeletonweed (*Chondrilla juncea*), and poverty weed (*Baccharis neglecta*).

Chemical control is primarily used on infestations found along roadways, heavily used areas, and new infestations. Milestone® (*aminopyralid*) is the most commonly used herbicide on CLWMA, although other chemicals (e.g., 2,4-D and Roundup®) are also used for specific applications. Herbicides are applied with a blue dye and delivered with a 200-gallon sprayer, 25-gallon ATV sprayer, or backpack sprayer. Rapid revegetation of disturbed soil after noxious weed control is the preferred management option at CLWMA. Establishment of desirable plants minimizes reinfestation of the noxious weeds.

The most common methods of weed movement onto and within the WMA are vehicles and wind/water borne seed. Weed monitoring plots have been established throughout the area for permanent monitoring of infestations. Weeds are mapped; stem counts or ocular measurements of patch size are conducted annually to determine effectiveness of control measures.

IX. LAND ACQUISITIONS AND AGREEMENTS

<i>Land Acquisitions</i>					
Name	Funds	Conveyance	Date Acquired	Acquired From	Acres
Carey Lake WMA	PR	Warranty Deed	5/16/49	Carey Lake Reservoir Co.	130.00
Carey Lake WMA	PR	Warranty Deed	1/11/51	James Turnbull	42.00
Carey Lake WMA	PR	Warranty Deed	3/1/54	J. L. Bennett	98.55
Carey Lake WMA	PR	Warranty Deed	4/22/55	Forest Eldredge	55.00
Carey Lake WMA	PR	Warranty Deed	5/18/55	Adamson Brothers Inc.	6.06
Carey Lake WMA	PR	Warranty Deed	10/24/56	Oliver Eldredge	52.60
Carey Lake WMA	None	Agreement	10/30/56	BLM	320.00
Carey Lake WMA	PR	Corrected Deed	1/17/57	F. W. Davis	45.00

Water Rights

Four types of water are used on the CLWMA; 1) decreed water, 2) storage water, 3) canal stock, and 4) spring run-off from the Little Wood River.

- Decreed water is allocated by the courts to a specific parcel of land; the Department has 310 inches of decreed water for CLWMA.
- Storage water is the water stored in Little Wood Reservoir and can be used in the operation of CLWMA. In 1954, the old Little Wood Reservoir dam was raised in order to increase the capacity of the reservoir. In the years following the construction of the new dam, there was very little flood water available for CLWMA. In 1958, the Bureau of Reclamation (BOR) granted the Department 2,000 acre- feet of storage water in Little Wood River Reservoir. The BOR required that this water be used for maintaining the water level in CLWMA and/or developing wildlife habitat on CLWMA.
- The third type of water is canal stock water. The Department owns 13.05 shares of stock in the Little Wood River Canal Company that provides 417.6 inches of water for use on CLWMA. The amount of water received from canal stock is dependent on the river flow. At peak flow, one share of canal stock is worth 32 inches of water; at minimum flow, usually in August, one share is worth approximately 2.3 inches.
- The fourth type of water is 43 cfs of spring run-off after the Little Wood River Reservoir is filled. This water right was tied to the Carey Lake Reservoir Company property when it was purchased and is used to maintain water levels in Carey Lake.

X. INFRASTRUCTURE

Building/structures

24' x 36' metal sided pole barn
24' x 40' wooden open pole barn

Water improvements

1 – 50 hp pump
¼ mile of 12" underground mainline
13 – ¼ mile handlines
1 – ¼ mile pivot

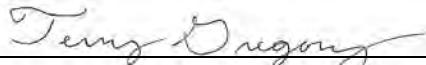
Fences

1 ½ mile of 3 or 4 strand barbwire

CAREY LAKE WILDLIFE MANAGEMENT AREA PLAN

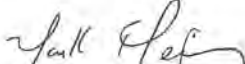
Approval

Submitted by:

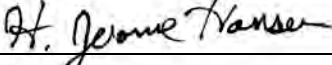


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Tom Hemker, State Habitat Manager

Approved by:



Virgil Moore, Director