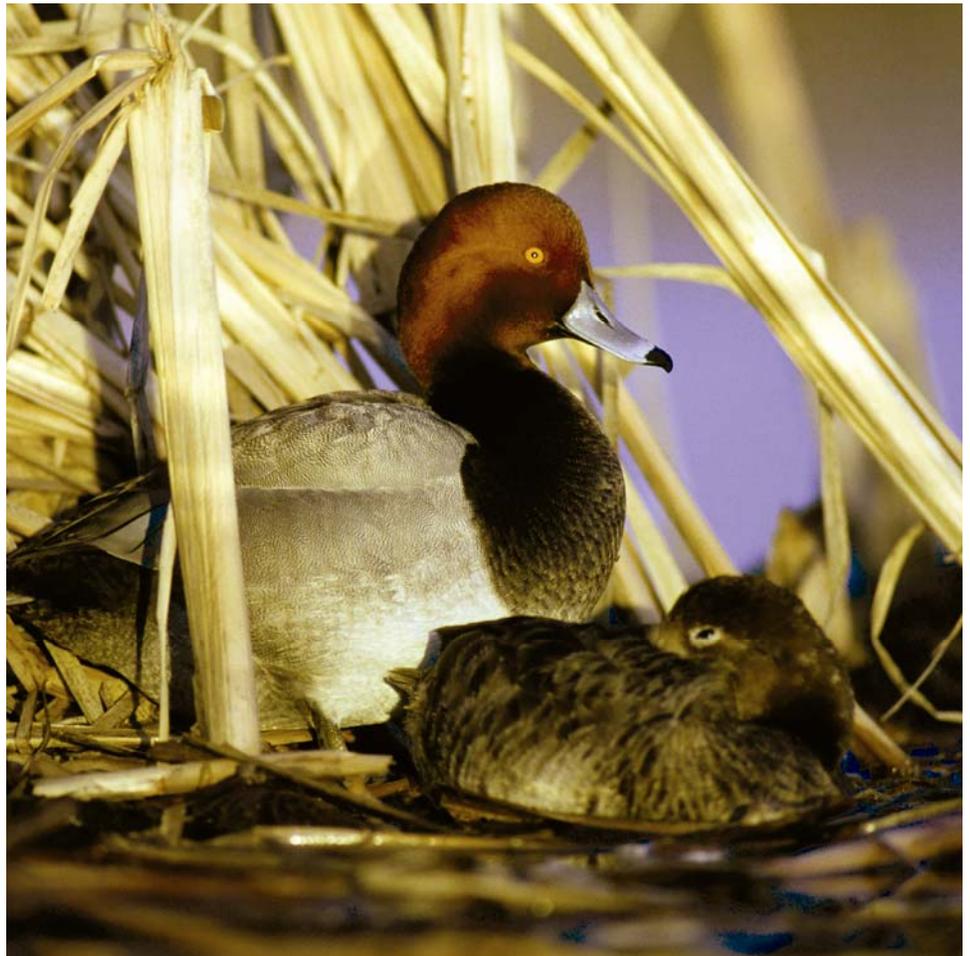




FORT BOISE

Wildlife Management Area

including Roswell Marsh Habitat Area



Clair Kofoed



FORT BOISE
Wildlife Management Area
Roswell Marsh Habitat Area

Management Plan
July 2003

Idaho Department of Fish and Game
Southwest Region
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EXECUTIVE SUMMARY

Fort Boise Wildlife Management Area is a 1,200-acre wetland/upland riparian habitat located near Parma in Southwest Idaho. Gold Island in the Snake River is included in the Area. Due to similar habitat, Roswell Marsh Habitat Area (RMHA), which is located five miles to the south, is also included in this plan. The goal of habitat managers on these lands is to provide a mix of quality wetland and upland habitats for diverse wildlife production and wildlife-related recreation. A variety of techniques will be employed to optimize wildlife production, eliminate noxious weeds, and operate in cooperation with the local community. The wildlife produced will be available to the people of Idaho for consumptive and non-consumptive recreation, now and into the future. To ensure that stakeholders are an integral part of the management process and to keep this plan relevant, periodic public meetings will be held and surveys will be taken to monitor the quality of the recreation and outdoor experience on the Area. After these consultations, changes to the plan and Area management will be made to suit the needs of wildlife and the majority of users.

INTRODUCTION

Fort Boise Wildlife Management Area (FBWMA) is located four miles northwest of Parma, Idaho, in Canyon County. It is one of several wildlife management areas in Idaho managed by the Department of Fish and Game (Department) to provide wildlife-producing habitat and wildlife-related recreation. In total, there are 1,209 acres owned by the Department located on the north bank of the Boise River at its junction with the Snake River. The Area also includes a 330-acre island in the Snake River which was deeded to the Department in 1956 by Idaho Power Company as partial compensation for habitat lost by the construction of Brownlee Dam. Access to this island is by boat only and management options at this time are limited. Funding for additional land purchases has come from the Land Acquisition and Habitat Development account and Ducks Unlimited at Roswell. Operating money comes from state license sales and Federal Aid cost-share funds (Pittman-Robertson). Primary management objectives include providing waterfowl, upland bird, and non-game wildlife populations and habitat. Providing compatible consumptive and non-consumptive wildlife-related recreation is also a primary management objective.

Roswell Marsh Habitat Area (RMHA) is a 680-acre wetland/upland habitat located about five miles south of FBWMA near the small town of Roswell. It has considerably less habitat diversity than FBWMA, consisting mainly of marsh and grass/shrub upland. It also has 230 acres of row-crop farmland that is sharecropped by competitive bid. About 25% of the crops produced are left standing for wildlife use and hunting cover. All crop residues are also left standing to benefit wildlife. The wetland portion of RMHA is managed as a three day-a-week hunting zone to enhance quality.

This plan spells out the vision and mission for FBWMA; the goals, objectives, and strategies for its management; the description of its location, wildlife, vegetation; and its history. It supplements the Department's Policy Plan 1990-2005: A Vision for the Future, and was developed using public involvement. Any future management activities that significantly affect public access to or use of wildlife-related recreation on FBWMA will undergo the Department's

public involvement process. This is a long-term plan for management of FBWMA and has an indefinite life span. The plan will be modified as necessary to accommodate changes in demographics and to incorporate new knowledge and techniques. Because of its similar habitat, wildlife, recreation, and management issues, RMHA is included in this planning document. FBWMA personnel administer both areas.

The mission of FBWMA is to provide habitat for waterfowl and upland game birds, to manipulate wetlands and uplands to optimize production of game and non-game wildlife, and to provide consumptive and non-consumptive wildlife-based activities that are compatible with maintaining high quality habitat and recreation.

Large blocks of permanent, dense nesting and hiding cover will be planted and maintained to provide secure habitat for puddle ducks and pheasants. A variety of management tools, which may include fire, mowing, herbicides, and grazing, will be used to maintain desirable habitat conditions for wildlife production and to control noxious weeds. Activities that disturb nesting game birds and other wildlife production will be prohibited. Food plots will be planted to provide game bird production habitat and winter food. Monitoring will be conducted to record wildlife production, public use, weed control, and habitat management effectiveness.

Public use will be restricted in the core nesting portion of FBWMA from 1 February through 31 July. Tours scheduled with staff will be provided to allow wildlife viewing in the closed area. Monitoring other areas on FBWMA will determine if public use should be restricted due to wildlife production or habitat damage. Motorized vehicles will be allowed to travel and park in established areas only. A nighttime curfew will continue to be enforced while camping and fires will be allowed in designated areas. Bicycle and horse riding will continue on designated walking trails if there are no negative impacts. Hunter numbers will be monitored and may be adjusted to achieve safety or quality objectives. Youth hunts will be allowed and encouraged whenever they are authorized. If the number of users on the area reaches a level that the resources of FBWMA can no longer support, additional property may need to be evaluated and prioritized for acquisition under current Commission guidelines. Prioritized properties should be earmarked for purchase from willing sellers.

Part of the success of FBWMA has been due to a good working relationship with neighboring property owners and the local community. In order to continue this tradition, it is important that FBWMA cooperate with the community on areas of weed control, wildlife-user related economics, irrigation water delivery, fire suppression, and public education relating to wildlife issues.

VISION

Fort Boise Wildlife Management Area will be managed to showcase exemplary wetland, upland, and riparian wildlife habitats; promote positive working relations with neighbors; and offer high quality wildlife-based recreational opportunities to the public.

MISSION STATEMENT

The mission of the Idaho Department of Fish and Game is:

“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 only be 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)

Within the larger role of the Agency, it is the mission of the Fort Boise Wildlife Management Area to provide production habitat for waterfowl and upland game birds; to manipulate wetlands and uplands to provide successional conditions and diversity beneficial to game and non-game wildlife; and to provide opportunities for consumptive and non-consumptive wildlife-based activities that are compatible with maintaining high quality habitat and recreation.

DURATION OF THE PLAN

This plan provides broad, long-term management of FBWMA, and will be evaluated every five years to determine if adjustments are warranted. The plan will be modified as necessary following the periodic five-year reviews to accommodate changing conditions and goals and to incorporate available advancements in management knowledge, tools, and techniques.

LOCATION

FBWMA is located four miles northwest of Parma in Canyon County, Idaho. The WMA is situated on the north bank of the Boise River at its confluence with the Snake River (Figure 1). Roswell Marsh is about five miles south of FBWMA and three miles west of the town of Roswell (Figure 2).

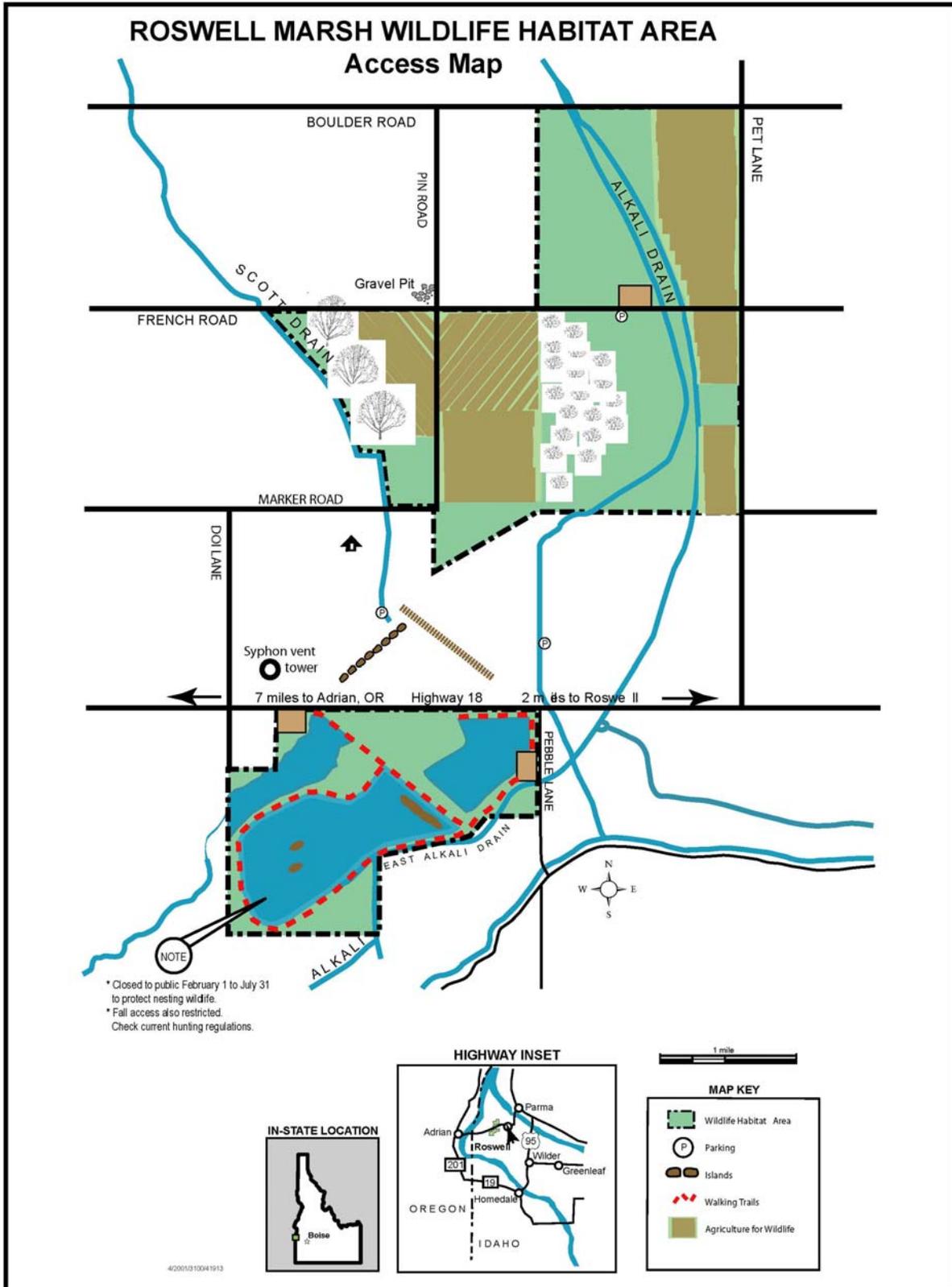


Figure 2. Map of Roswell Marsh Habitat Area.

DESCRIPTION

Fort Boise Wildlife Management Area includes 1,209 acres of wetland, riparian, and upland habitat on the north bank of the Boise River, where it joins the Snake River in southwestern Idaho. A 330-acre island in the Snake River is also part of the area. All of the property is deeded to the IDFG.

At 2,245 feet elevation, the hot, dry summers and soil types result in a salt desert-shrub vegetation type on about 15% of the area. Other vegetation types are cattail/bulrush marsh and cottonwood/willow adjacent to riparian areas. About 240 acres are irrigated, agricultural land.

Roswell Marsh is a 680-acre wetland/grass desert-shrub community located five miles south of the Boise River at the same elevation. It consists of 185 acres of marsh divided into two wetland units and approximately 200 acres of greasewood/saltgrass upland. It also has 230 acres in sharecrop irrigated agriculture (generally corn) of which approximately 25% is left standing for wildlife.

Both areas provide nesting and winter habitat for upland birds and waterfowl. Mallards and gadwall are common waterfowl nesting species while ring-necked pheasant and California quail inhabit the uplands. Other game species present include mule and white-tailed deer, turkey, cottontail, mourning dove, and Canada geese. The island-like aspect of the riparian, wetland, and upland habitats provides habitat for numerous non-game species and neo-tropical migratory birds. A list of mammals, birds, amphibians and reptiles, and fish can be found in Appendix VI.

HABITAT MANAGEMENT

Habitat is the key ingredient for the health of wildlife populations. They need adequate amounts of quality food, water, cover, and space throughout their life stages. The alteration, degradation, fragmentation, or loss of habitat can significantly impact the distribution and abundance of wildlife, along with the associated recreational opportunities they provide.

The Regional Wildlife Biologist assigned to the Fort Boise Habitat District manages the variety of habitats on FBWMA under the supervision of the Regional Habitat Manager in the Southwest Region. From the onset of acquisition, FBWMA has been managed as waterfowl-upland game bird habitat. With close proximity to three major rivers, extensive waterfowl use on the area has been common, especially in the winter. To encourage nesting, waterfowl production, and public hunting, many artificial wetlands have been constructed over the years at FBWMA. Many of the early wetland ponds were built using limited resources, techniques, and planning. All artificial wetland impoundments require continual annual maintenance and improvement to prevent the failure of water structures and dikes. Burrowing rodents, settling, the action of waves and ice, flooding, and freezing all take effect to degrade the integrity of dikes. Because of these requirements of artificial impoundments, much of the wetland habitat management and funding of FBWMA will focus on maintenance of dikes and water structures. The primary sources of water supplying FBWMA wetlands carry a heavy silt load from agricultural irrigation return flows which leads to great effort and expense annually to remove material that has settled into

ditches, canals, and the wetlands themselves. During maintenance of wetlands, islands and channels have and will be constructed to provide secure nesting and loafing areas for waterfowl whenever possible.

Beyond the physical maintenance of wetland structures, habitat management efforts will be made to influence water quality and wetland plant composition through water level manipulation and control of invasive vegetation and fish. Carp, introduced into North America from Europe, have had a tremendous negative impact on wetlands wherever they occur. Annual winter draw-down of wetland areas will be necessary to remove carp. Barriers, which have been installed to slow carp re-infiltration, will be maintained and cleaned at least every other day. Chemical control of carp will be considered as a last resort. Invasive plants such as purple loosestrife have been successfully controlled using biological agents. In the future, other plants will be removed by physical or chemical means if bio-agents prove ineffective. Whenever possible, water levels will be kept at depths that will provide the optimal mix of open water and emergent vegetation to encourage waterfowl production.

Gold Island has a location and physiography that makes any land management activity there a special challenge. The island is only accessible by jet boat from the mainland; all equipment, fuel, seed, and supplies must be carried by boat. Further, the island is subject to flooding, erosion, and sub irrigation by the river. Soils on the island are not generally classified as fertile; much of the island is sand/gravel and other large areas are silt. In recent drought years (1999, 2000, 2001, 2002, and 2003), the water level in the Snake River has remained very low throughout the high-runoff season. Whereas, high water flows in the spring and early summer would normally provide subsurface water to "irrigate" perennial grasses and shrubs on the island, conditions were so dry as to only allow growth of annual (cheat) grass four to six inches high. The irrigation system on the island is in disrepair and does not have the capacity, when in full operation, to supply more than about 10 acres of the 330-acre island. At that, an employee is needed 20 hours a week to operate the irrigation system. Within these limitations, it is a management priority to control noxious weeds on the island, establish permanent desirable wildlife habitat, and irrigate a small food plot for upland game birds. In the future, if funding for more equipment and personnel time becomes available, extensive alterations could occur on the island to make habitat more productive.

Because of the largely non-native plant community and the presence of artificial surface water, FBWMA is not a candidate for hands-off upland vegetation management. This approach in the past has resulted in a monoculture of noxious weeds and non-native woody vegetation. Burning, mowing, grazing, fire, and chemicals are all methods that will be used to manage upland habitat sites for the dense nesting cover required by puddle ducks and upland game birds. Plantings, fertilizer, and irrigation are also techniques that will be used to manage nesting habitat. In areas suitable for food and cover development with available irrigation water, common agricultural techniques will be used to plant crops for use by wildlife. Noxious weeds will be controlled to comply with legal requirements and achieve overall vegetation management objectives using all available methods, including use of biological agents whenever possible.

Every practical effort will be made to monitor the effectiveness of habitat management through mapping, photography, and the measured response of wildlife populations. Brood counts and fall check station data will continue to assist in providing information on the effectiveness of habitat management actions on desired species. In the future, other methods to measure and monitor habitat management will be explored. For example, volunteers could be used to record breeding-bird indices or survey populations of amphibians and small mammals. Geographic Information System (GIS) technology may be employed to aid in evaluating vegetation changes over time and optimizing future habitat manipulations.

In addition to the needs of FBWMA wildlife, the needs of the recreating public will be addressed in habitat management choices. Efforts will be made to leave screens of Russian olive trees along selected fields to create a hedgerow effect. These trees will provide winter cover and food for birds and give recreationists the impression that fewer people are using the area on any given day. A variety of vegetation management techniques will be used to control olive invasion into open meadow and upland habitats. Grasses and other permanent cover will be planted to grow to heights and densities that allow hunters ease of passage. Field openings will be maintained to maximize edge for wildlife and access for hunters.

MANAGEMENT GOALS BY PRIORITY

GOALS, OBJECTIVES, STRATEGIES

- I. Goal: Provide quality production habitat for waterfowl and upland game birds, and non-game wildlife.
 - A. Objective: Manage approximately 200 acres of upland nesting habitat for waterfowl and upland game birds.
 1. Strategies:
 - a) Large blocks of permanent, dense nesting and hiding cover will be provided to secure habitat for puddle ducks and pheasants.
 - b) A variety of methods will be employed to establish and maintain nesting cover. These may include physical manipulation with farm machinery, the use of herbicides, fire, or grazing with livestock.
 - c) Fire will be used as a management tool to remove woody vegetation and maintain grasses and will only be used on selected portions of the area. Springtime burns, which remove residual vegetation, will be kept small to minimize nest disruption.
 - d) Weeds will be controlled to encourage grasses and forbs for nesting and use by broods.
 - e) Wheat food plots will be established and managed to provide optimal upland nesting conditions. Crop residue may be grazed after 15 February to prepare for replanting.

- f) Active and passive predator management will be applied to increase the success of ground-nesting birds in accordance with current Commission policy.
 - g) Activities that disturb birds during the nest initiation and brood-rearing season will be prohibited.
 - h) Scattered food plots will be planted to supply winter nutrition and thermal cover for birds. Winter escape and roost cover will be maintained.
 - i) Residue from food plots will not be removed until 15 February at the earliest, the end of the critical winter period.
2. Monitoring: Nesting success will be monitored with annual brood counts recording species, number of broods, and average size. Nesting success data will be gathered periodically within funding constraints.
- B. Objective: Manage approximately 400 acres of wetland habitat for waterfowl and non-game production.
1. Strategies:
- a) Winter draw-down, pumping, and if necessary, chemicals will be used to reduce or eliminate carp populations from wetland areas and provide aquatic vegetation for waterfowl use.
 - b) Silt will be removed annually to keep water-ways open and allow flows adequate for waterfowl habitat.
 - c) Water levels will be managed to provide an optimal mix of open water and emergent vegetation.
 - d) Bio-control agents will be used to keep noxious weeds, especially purple loosestrife, from invading wetlands.
 - e) Draw-downs for dike maintenance or habitat improvement will be performed after the peak summer nesting season.
 - f) Invading trees will be removed from wetlands to reduce raptor roosts.
 - g) Wetlands will be monitored to identify invasion by Eurasian water milfoil so that measures can be taken to prevent its spread.
 - h) Human activities that contribute to excessive disturbance of the core waterfowl-nesting habitat on FBWMA will be prohibited.
- II. Goal: Manage access to provide quality opportunities for hunting, trapping, and wildlife appreciation.
- A. Objective: Maintain quality recreational experiences for approximately 15,000 recreation use-days at FBWMA.

1. Strategies:

- a) Core waterfowl production areas will be closed to public entry annually from 1 February through 31 July to protect wildlife production. Tours in the closed area may be scheduled with FBWMA staff to allow public wildlife viewing.
- b) Public use on the remaining year-round open portion of FBWMA will be allowed if production of game and non-game wildlife is not affected. Restrictive measures may be employed if necessary to reduce impacts to habitat or wildlife production. Monitoring will include vehicle counts and brood count data.
- c) Motorized vehicles will only be allowed on designated roads and parking areas (see Appendix VIII).
- d) A curfew will be enforced for nighttime use of the area.
- e) Bicycle and horseback riding will be permitted on designated walking trails only. Use will be monitored and restrictive measures may be employed if necessary to limit negative impacts.
- f) Access for persons with disabilities will be managed under FBWMA travel plan (Appendix VIII).
- g) Hunting at Roswell Marsh Habitat Area will be limited to three days per week to maintain quality.
- h) Campfires will be allowed only in designated areas.
- i) Interpretive materials will be provided at FBWMA Headquarters to assist the public in using and enjoying the Area.
- j) As alternative funding approaches by non-consumptive users are incorporated into Department budget management, they will be extended to funding of related activities on FBWMA.
- k) As administrative rules affecting activities on Department lands are revised, the management of public use on FBWMA will be adapted to ensure compliance.
- l) Special youth hunts will be encouraged and allowed whenever they are approved by the Department.
- m) The use of dogs on FBWMA, other than during upland bird and waterfowl seasons, will be allowed only if consistent with other Commission regulations.

2. Monitoring:

- a) Use vehicle counters at area access points to provide user-sampling data to estimate use days by interest groups.

- b) Use survey forms and stratified sampling techniques to determine public opinion and policy direction on user-density issues beginning in 2004 and ongoing every three years after that.
 - c) Measure hunter numbers and use appropriate management techniques to achieve safety or quality objectives.
 - d) Use FBWMA “Working Group” to assess quality objectives, provide workable alternatives, and provide input from a variety of stakeholders.
 - B. Objective: Acquire additional land through easements, leases, or fee title to increase current recreational use.
 - 1. Strategies:
 - a) Identify opportunities and develop acquisition proposals that promote public access opportunities.
 - b) Ensure that county and local governments are apprised of Department intentions regarding purchases.
- III. Goal: Mark and identify boundaries, easements, and access areas; address neighbors concerns and complaints.
 - A. Objective: Identify all boundaries and maintain signs annually.
 - 1. Strategies:
 - a) Survey any boundaries that are not recorded or known.
 - b) Maintain all existing boundary markers and erect new markers if needed.
 - c) Maintain boundary fences.
 - B. Objective: Work with neighbors to minimize conflicts with visitors and wildlife.
 - 1. Strategies:
 - a) Assist neighbors with trespass, litter, and vandalism issues.
 - b) Establish curfews and vehicle restrictions at access points if appropriate.
 - c) Plant lure crops and food plots where appropriate to alleviate depredation problems. Assist Regional and Federal authorities with local depredation complaints.
- IV. Goal: Continue efforts to control noxious weeds (as mandated by law) and identify and correct weed issues, which affect neighbors and quality wildlife habitat.
 - A. Objective: Control Canada thistle, white-top, and perennial pepperweed on FBWMA. Continue efforts with purple loosestrife. Monitor area for new invasive species.

1. Strategies:

- a) Identify noxious weeds and map them annually.
- b) Apply current bio-control methods for noxious weeds.
- c) Use tractor, 4-wheeler, and backpack mounted sprayers for weed species on which bio-control is not appropriate.
- d) Observe weed-free hay policy.
- e) Cooperate with county, state, and federal weed-control organizations. Encourage CWMA formation by local counties.
- f) Continue to work with University of Idaho on biological control research and experimental control programs.

2. Monitoring:

- a) Area staff will log chemical and biological treatment of noxious weeds.
- b) Areas treated will be GIS mapped to monitor effectiveness.
- c) Outside experts will be sought to identify any suspicious new plants and assess control treatments.

APPENDIX I

PHYSICAL DESCRIPTION

FBWMA is contained in the Payette section of the Columbia Plateau Province. The region consists of an upland plain of unconsolidated lacustrine and fluvial materials that is dissected by the Snake and Boise Rivers. In the surrounding zone, a few butte-like hills rise above the plain. The flood plain of the Snake and Boise Rivers is 1-2 miles wide. Terraces of stream-laid deposits rise in steps above the rivers. The bottomlands of the area adjacent to the rivers consist of a widely varied mixture of soil and deposition types. Gravel, sand, silt, and extremely sodic soils all exist within a very short distance from one another. Because of this patchy and unpredictable substrate, the area was not suitable historically for row-crops.

The semi-arid to arid climate of the area is attractive to both people and wildlife. At 2,200 feet elevation, winters are short and mild. Although most of the precipitation (10 inches per year average) falls as winter snow, it seldom exceeds 12 inches in depth or lasts more than 40 days on the ground. Fog is common in winter due to industrial emissions and the presence of warm river water. Spring is early and long, grading into hot, dry summers. Temperatures can reach 105°F in summer and -10°F in winter. The growing season averages 150 days and irrigation is required from June through September for successful agricultural production.

APPENDIX II

HISTORICAL PERSPECTIVE

FBWMA gets its name from a series of outposts built near the junction of the Boise and Snake rivers near the current WMA site. The first fort, built by John Reed, was abandoned in 1814 after he and nine other trappers were killed in a conflict with Indians. Several tribes, including the Nez Perce from the north, Bannocks from the east and the local Shoshone, traditionally gathered in the Boise Valley in early summer to celebrate the start of the salmon fishing season and to trade.

In 1834, the Hudson Bay Company built a post named Fort Boise somewhere near the head of Gold Island on the mainland on the management area. At this point, the gravel load carried by the Boise River is deposited into the lower Snake River and forces the Snake to become braided into a series of islands and shallow channels. These shallow, gravel-bottomed channels form a convenient fording spot. The fort was first heavily involved in the beaver pelt trade, but later served the travelers on the Oregon Trail as they forded the river. In 1853, the fort was destroyed by flooding, and after repeated attempts at rebuilding, the site was abandoned in 1855. In 1986, the University of Idaho conducted an extensive survey to locate any artifacts from the fort. Nothing was found due to the devastating effects of the early floods.

The lower Boise River Valley was settled in the late 1880s as row-crop farms. Most of the area of FBWMA was used as irrigated pasture or waste ground due to the unsuitability of the soil for crops. Because of the marginal nature of the land, it was available for wildlife production at prices agencies could afford. Today, with the exponential population growth in the region, land that was once wasteland is selling as recreational property at a very high cost.

APPENDIX III

DEVELOPMENT HISTORY

FBWMA was initiated in 1959 when Idaho Power Company deeded 330-acre Gold Island to the Department as partial mitigation for Brownlee Dam. This Snake River island had been farmed using a cable-ferry for vehicle access and to remove crops. In the early 1980s, the Army Corps of Engineers directed the Department to remove the cable, citing navigable waterway statutes. A large flood event in 1984 destroyed existing pumps for irrigation. Department Engineers designed and installed a new limited irrigation system on the island in the late 1980s. At this time, the only access to the island is by boat.

Starting in 1960, a series of mainland purchases by the Department added small to medium sized parcels to FBWMA (Appendix IV). The last of these purchases, a 95-acre addition in 1991, brought the total FBWMA acres to 1,539. Managers began wetland developments almost immediately by plugging drain ditches and installing overflow pipes. Many of the efforts were superficial, using existing culverts and minimal fill material that the limited equipment and funding dictated. Starting in 1986, most of the old culverts and water structures were replaced and the process of rebuilding dikes was initiated. In 1984, the irrigation/wetland diversion dam on Sand Hollow Creek failed. It was replaced with a new structure the same year. Three new wetland areas, Ralph's, Pintail, and Wood Duck, were constructed in 1986 while Mallard Pond was enlarged by 30%. A new culvert crossing to replace a burned out bridge on Sand Hollow Creek was also completed that year. In 1991, a 14-acre wetland, Reed Pond, was finished. In 1993, 20-acre Canvasback Pond was completed. Headquarters Pond, at 15 acres, was finished in 1995, and the three-acre moist-soil management site, Sedge Pond, was completed in 2000. During years of high runoff, the Boise River began to erode its north bank, adjacent to Ralph's Pond. To minimize future damage, a series of large angular rock bank barbs were installed in 1996. Numerous other small wetland and upland improvements have been completed on FBWMA since its inception.

RMHA began in 1986 with a 150-acre, Ducks Unlimited/Department acquisition. Further additions were made, ending with a 475-acre parcel in 1988. Development of the 135-acre wetlands complex was completed in 1991, when three miles of diking and water structures were installed.

APPENDIX IV

LAND AND WATER CONTROL

LAND ACQUISITIONS:

<i>Year</i>	<i>Funds Used</i>	<i>Acres</i>	<i>Acquired From</i>
<u>Fort Boise WMA</u>			
1959	Mitigation	330.91	Idaho Power for partial mitigation after construction of Brownlee Dam
1960	PR	60.23	L.E. Martin
1960	PR	74.90	Everett Watkins
1962	PR	332.16	H.L. Holland
1963	FG	3.29	C.C. Mann
1968	PR	585.73	Don Wielmunster & Herb Reuth
1970	FG	42.61	Don Wielmunster
1981	FG	14.17	Herb Reuth
1991	FG	95.00	Charles Mann
Total		1,539.00	
<u>Roswell Marsh WMA</u>			
1986	FG/DU	150	Earl Sanders
1986	HB530	35	Dennis Barnard
1988	HB530	475	Hurt Trust
Total		680	

WATER RIGHTS

July 27, 1960: 61 shares of capital stock in McConnel Island Ditch Company

March 18, 1968: 296 shares of River Flat Ditch Company (each share represents one inch of water)

Cfs from Sand Hollow Drain diversion and pumps, and cfs from Snake River from one pump on Gold Island

One share of Riverside Irrigation District

Shares of Roswell Park and Lateral Company for Roswell area cropland

EASEMENTS AND RIGHTS-OF-WAY

1961: PR funds used to acquire Union Pacific railroad signal crossing on Old fort Boise Road

APPENDIX V

VEGETATION, HABITAT TYPES, AND SOILS

Species List for Fort Boise Wildlife Management Area, Boise and Snake Rivers, September 30; 1 and 6 October, 1999

compiled by Chris Murphy, Conservation Data Center, Idaho Department of Fish and Game

TREES

Scientific Name	Common Name
<i>Acer negundo</i>	silver maple
<i>Acer saccharinum</i>	box elder
<i>Elaeagnus angustifolia</i>	Russian olive
<i>Fraxinus pennsylvanica</i>	red ash
<i>Populus deltoides</i>	poplar
<i>Populus fremontii</i>	Fremont cottonwood
<i>Robinia pseudoacacia</i>	black locust
<i>Salix alba</i>	white poplar
<i>Salix alba x fragilis</i>	
<i>Salix amygdaloides</i>	peachleaf willow
<i>Ulmus americana</i>	American elm
<i>Ulmus pumila</i>	Siberian elm

SHRUBS

Scientific Name	Common Name
<i>Amorpha fruticosa</i>	lead plant
<i>Artemisia tridentata</i> var. <i>tridentata</i>	big sage
<i>Chrysothamnus nauseosus</i>	gray rabbitbrush
<i>Chrysothamnus viscidiflorus</i>	Douglas rabbitbrush
<i>Lycium halimifolium</i>	matrimony vine
<i>Ribes aureum</i>	golden current
<i>Rosa woodsii</i>	Woods rose
<i>Salix exigua</i>	sandbar willow
<i>Salix lasiandra</i>	
<i>Salix lutea</i>	yellow willow
<i>Sarcobatus vermiculatus</i>	greasewood
<i>Tamarix</i> sp.	saltcedar
<i>Toxicodendron rydbergii</i>	poison ivy

FORBS

Scientific Name	Common Name
<i>Achillea millefolium</i>	yarrow
<i>Amaranthus retroflexa</i>	pigweed
<i>Anthemis arvensis</i>	mayweed camomile
<i>Apocynum cannabinum</i>	dogbane
<i>Arctium minus</i>	burdock
<i>Artemisia biennis</i>	wormwood
<i>Artemisia ludoviciana</i>	wormwood
<i>Asclepias speciosa</i>	showy milkweed
<i>Asparagus officinalis</i>	garden asparagus
<i>Aster ascendens</i>	aster
<i>Atriplex heterosperma</i>	
<i>Atriplex patula</i>	spearscale
<i>Atriplex rosea</i>	red orache
<i>Atriplex subspicata</i>	
<i>Bassia hyssopifolia</i>	bassia
<i>Bidens cernua</i>	nodding beggartick
<i>Bidens frondosa</i>	devil's beggartick
<i>Brachyactis ciliata</i>	
<i>Brachyactis frondosa</i>	
<i>Centunculus minimus</i>	
<i>Chamaesyce serpyllifolia</i>	
<i>Chenopodium album</i>	netseed lambsquarter
<i>Chenopodium botrys</i>	Jerusalem oak
<i>Cirsium arvense</i>	Canada thistle
<i>Cirsium vulgare</i>	bull thistle
<i>Conium maculatum</i>	poison hemlock
<i>Conyza canadensis</i>	horseweed
<i>Coreopsis atkinsoniana</i>	coreopsis
<i>Descurainia sophia-pinnata</i>	flixweed
<i>Dipsacus sylvestris</i>	common teasel
<i>Draba verna</i>	draba
<i>Echinocytis lobata</i>	wildcucumber
<i>Epilobium brachycarpum</i>	willow weed
<i>Epilobium ciliatum</i>	hairy willowherb
<i>Euthamia occidentalis</i>	western goldenrod
<i>Galium aparine</i>	bedstraw
<i>Gaura parviflora</i>	gaura
<i>Glycyrrhiza lepidota</i>	wild licorice
<i>Gnaphalium palustre</i>	western marsh cudweed
<i>Grindelia squarrosa</i>	gum-plant
<i>Helianthus annuus</i>	common sunflower
<i>Iris pseudacorus</i>	iris
<i>Iva axillaris</i>	poverty weed
<i>Iva xanthifolia</i>	marshelder
<i>Kochia scoparia</i>	kochia
<i>Lactuca serriola</i>	prickly lettuce
<i>Lemna minor</i>	duckweed

FORBS (Continued)

Scientific Name	Common Name
<i>Lepidium latifolium</i>	perennial pepperweed
<i>Lepidium perfoliatum</i>	clasping pepperweed
<i>Lycopus asper</i>	bugleweed
<i>Lythrum salicaria</i>	purple loosestrife
<i>Marrubium vulgare</i>	white horehound
<i>Melilotus</i> sp.	sweet clover
<i>Mollugo verticillata</i>	
<i>Nepeta cataria</i>	catnip
<i>Oenothera</i> sp.	evening primrose
<i>Onopordum acanthium</i>	Scotch thistle
<i>Plantago lanceolata</i>	buckhorn plantain
<i>Plantago major</i>	broadleaf plantain
<i>Polygonum persicaria</i>	ladysthumb
<i>Polygonum coccineum</i>	water smartweed
<i>Polygonum lapathifolium</i>	persicaria
<i>Potamogeton nodosus</i>	long-leaf pondweed
<i>Potamogeton pectinatus</i>	sago pondweed
<i>Potentilla biennis</i>	cinquefoil
<i>Ranunculus testiculatus</i>	bur buttercup
<i>Rorippa nasturtium-aquaticum</i>	yellow cress
<i>Rorippa palustris</i>	water cress
<i>Rumex crispus</i>	curly dock
<i>Rumex</i> sp.	dock
<i>Sisymbrium altissimum</i>	tumble mustard
<i>Solanum dulcamara</i>	bitter nightshade
<i>Solidago canadensis</i>	goldenrod
<i>Sonchus asper</i>	spiny sowthistle
<i>Suaeda calceoliformis</i>	seepweed
<i>Triglochin maritimum</i>	seaside arrow-grass
<i>Typha latifolia</i>	cattail
<i>Urtica dioica</i>	stinging nettle
<i>Verbascum thapsus</i>	mullein
<i>Verbena bracteata</i>	prostrate vervain
<i>Veronica americana</i>	American speedwell
<i>Veronica anagallis-aquatica</i>	water speedwell
<i>Xanthium strumarium</i>	common cocklebur

FERNS AND ALLIES

Scientific Name	Common Name
<i>Azolla</i>	duckweed fern
<i>Equisetum arvense</i>	meadow horsetail
<i>Equisetum hymenale</i>	scouring rush
<i>Marsilea vestita</i>	hairy water fern

GRAMINOIDS

Scientific Name	Common Name
<i>Agropyron elongatum</i>	tall wheatgrass
<i>Agrostis scabra</i>	ticklegrass
<i>Agrostis stolonifera</i>	creeping bentgrass
<i>Apera interrupta</i>	
<i>Bromus japonicus</i>	Japanese brome
<i>Bromus tectorum</i>	cheatgrass
<i>Carex douglasii</i>	sedge
<i>Carex lanuginosa</i>	sedge
<i>Carex praegracilis</i>	sedge
<i>Crypsis alopecuroides</i>	
<i>Cyperus erythrorhizos</i>	heleochloa
<i>Cyperus squarrosus</i>	red-rooted flatsedge
<i>Cyperus strigosus</i>	awned flatsedge
<i>Distichlis spicata</i>	inland saltgrass
<i>Echinochloa crus-galli</i>	watergrass
<i>Eleocharis obtusa</i>	
<i>Eleocharis palustris</i>	common spikerush
<i>Elytrigia repens</i>	quack grass
<i>Eragrostis cilianensis</i>	stink-grass
<i>Eragrostis hypnoides</i>	
<i>Eragrostis pectinacea</i>	
<i>Hordeum jubatum</i>	foxtail barley
<i>Juncus balticus</i>	Baltic rush
<i>Juncus bufonius</i>	toad rush
<i>Juncus ensifolius</i>	rush
<i>Juncus torreyi</i>	Torrey's rush
<i>Leersia oryzoides</i>	cutgrass
<i>Leptochloa fascicularis</i>	sprangletop
<i>Leymus cinereus</i>	basin wild rye
<i>Leymus triticoides</i> var. <i>triticoides</i>	creeping rye
<i>Lolium arundinaceum</i>	witchgrass
<i>Panicum capillare</i>	switchgrass
<i>Pascopyrum smithii</i>	
<i>Pennisetum glaucum</i>	fountain grass
<i>Phalaris arundinacea</i>	reed canarygrass
<i>Phragmites australis</i>	common reed
<i>Poa compressa</i>	Canada bluegrass
<i>Poa pratensis</i>	Kentucky bluegrass
<i>Polypogon monspeliensis</i>	rabbitfoot grass
<i>Puccinellia nuttaliana</i>	alkali grass
<i>Schoenoplectus acutus</i>	
<i>Schoenoplectus americanus</i>	
<i>Secale cereale</i>	rye
<i>Sporobolus airoides</i>	alkali sacaton
<i>Sporobolus cryptandrus</i> (upland)	sand dropseed

Emergent Marsh = mudflats, riverbanks, *Schoenoplectus acutus*, and *Typha latifolia* communities.

Alkaline Wetlands = *Distichlis spicata*, Mesic Alkaline Graminoid Meadow, and *Sarcobatus vermiculatus*/*Distichlis spicata* communities.

Mesic Graminoid Wetlands = *Agropyron smithii* and *Phragmites australis* communities; miscellaneous *Carex* spp., *Eleocharis palustris*, and *Juncus* spp. patches; weedy pasture/old hay fields.

Scrub-Shrub Wetlands = mixed shrub (including *Amorpha fruticosa*), *Salix exigua*/Barren-Recent Alluvial Bar, *Salix* spp./Mesic Graminoid (weedy), and *Salix lasiandra*/Mesic Forb communities.

Forested Wetlands = *Elaeagnus angustifolia*, exotic hardwood floodplain forest, *Populus* spp./Recent Alluvial Bar, *Populus* spp./Mesic Graminoid (weedy), and *Salix amygdaloides* patches.

HABITAT TYPES

<i>Habitat Class</i>	<i>Acres</i>
Salt Desert Shrub	15
Marsh	55
Lakes and Reservoirs	135
Other Riparian	238
Islands	435
Streams	8
Irrigated agricultural lands	239
Non-irrigated agricultural lands	414
Total	1,539

SOILS

Most soils on Fort Boise WMA are of the Moulton-Bram-Baldock formation, consisting of somewhat poorly drained to moderately-well drained fine sandy loams to silt loams on lowlands. Some areas are part of the Turbyfill-Cencove-Feltham association, which are well drained and somewhat excessively drained fine sandy loams and loamy fine sands. Riverwash is common in areas next to the Boise and Snake rivers, which are flooded frequently. Poor drainage has led to high soil alkalinity in low areas.

<i>Capability Class</i>	<i>Acres</i>
II	200
III	935
IV	281
VIII	123
Total	1,539

APPENDIX VI

WILDLIFE AND FISH

MAMMALS

Species	Scientific Name
Mule Deer	<i>Odocoileus hemionus</i>
White-tailed Deer	<i>Odocoileus virginianus</i>
Mountain Cottontail	<i>Sylvilagus nuttalli</i>
Black-tailed Jackrabbit	<i>Lepus californicus</i>
Yellowbelly Marmot	<i>Marmota flaviventris</i>
Beaver	<i>Castor canadensis</i>
Muskrat	<i>Ondatra zibethica</i>
Townsend Pocket Gopher	<i>Thomomys townsendi</i>
Porcupine	<i>Erethizon dorsatum</i>
Coyote	<i>Canis latrans</i>
Red Fox	<i>Vulpes fulva</i>
Raccoon	<i>Procyon lotor</i>
Longtail Weasel	<i>Mustela frenata</i>
Mink	<i>Mustela vison</i>
Badger	<i>Taxidea taxus</i>
Striped Skunk	<i>Mephitis mephitis</i>
Eastern Fox Squirrel	<i>Sciurus niger</i>
Western Harvest Mouse	<i>Reithrodontomys megalotis</i>
Deer Mouse	<i>Peromyscus maniculatus</i>
Meadow Vole	<i>Microtus pensylvanicus</i>

BIRDS

Species	Scientific Name
Common Loon	<i>Gavia immer</i>
Pied-billed Grebe	<i>Podilymbus podiceps</i>
Horned Grebe	<i>Podiceps auritus</i>
Eared Grebe	<i>Podiceps nigracollis</i>
Western Grebe	<i>Aechmophorus occidentalis</i>
American White Pelican	<i>Pelecanus erythrorhynchos</i>
Double-crested Cormorant	<i>Phalacrocorax auritus</i>
American Bittern	<i>Botaurus lentiginosus</i>
Great Blue Heron	<i>Ardea herodias</i>
Great Egret	<i>Casmerodius albus</i>
Snowy Egret	<i>Egretta thula</i>
Cattle Egret	<i>Bubulcus ibis</i>
Green-backed Heron	<i>Butorides striatus</i>
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>
White-faced Ibis	<i>Plegadis chihi</i>
Sandhill Crane	<i>Grus canadensis</i>
Trumpeter Swan	<i>Cygnus buccinator</i>

BIRDS (Continued)

Species	Scientific Name
Tundra Swan	<i>Cygnus columbianus</i>
Greater White-fronted Goose	<i>Anser albifrons</i>
Snow Goose	<i>Chen caerulescens</i>
Ross' Goose	<i>Chen rossii</i>
Canada Goose	<i>Branta canadensis</i>
Mallard	<i>Anas platyrhynchos</i>
Gadwall	<i>Anas strepera</i>
Green-winged Teal	<i>Anas crecca</i>
American Widgeon	<i>Anas americana</i>
Northern Pintail	<i>Anas acuta</i>
Northern Shoveler	<i>Anas clypeata</i>
Blue-winged Teal	<i>Anas discors</i>
Cinnamon Teal	<i>Anas cyanoptera</i>
Ruddy Duck	<i>Oxyura jamaicensis</i>
Wood Duck	<i>Aix sponsa</i>
Canvasback	<i>Aythya valisineria</i>
Redhead	<i>Aythya americana</i>
Ring-necked Duck	<i>Aythya collaris</i>
Greater Scaup	<i>Aythya marila</i>
Lesser Scaup	<i>Aythya affinis</i>
White-winged Scoter	<i>Melanitta fusca</i>
Harlequin Duck	<i>Histrionicus histrionicus</i>
Oldsquaw	<i>Clangula hyemalis</i>
Common Goldeneye	<i>Bucephala clangula</i>
Barrow's Goldeneye	<i>Bucephala islandica</i>
Bufflehead	<i>Bucephala albeola</i>
Hooded Merganser	<i>Lophodytes cucullatus</i>
Common Merganser	<i>Mergus merganser</i>
Red-breasted Merganser	<i>Mergus serrator</i>
Virginia Rail	<i>Rallus limicola</i>
Sora	<i>Porzana carolina</i>
American Coot	<i>Fulica americana</i>
Black-necked Stilt	<i>Himantopus mexicanus</i>
American Avocet	<i>Recurvirostra americana</i>
Snowy Plover	<i>Charadrius alexandrinus</i>
Semipalmated Plover	<i>Charadrius semipalmatus</i>
Black-bellied Plover	<i>Pluvialis squatarola</i>
Killdeer	<i>Charadrius vociferus</i>
Marbled Godwit	<i>Limosa fedoa</i>
Long-billed Curlew	<i>Numenius americanus</i>
Willet	<i>Catoptrophorus semipalmatus</i>
Greater Yellowlegs	<i>Tringa melanoleuca</i>
Lesser Yellowlegs	<i>Tringa flavipes</i>
Solitary Sandpiper	<i>Tringa solitaria</i>
Spotted Sandpiper	<i>Actitis macularia</i>
Wilson's Phalarope	<i>Phalaropus tricolor</i>
Red-necked Phalarope	<i>Phalaropus lobatus</i>

BIRDS (Continued)

Species	Scientific Name
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>
Short-billed Dowitcher	<i>Limnodromus griseus</i>
Stilt Sandpiper	<i>Calidris himantopus</i>
Common Snipe	<i>Gallinago gallinago</i>
Red Knot	<i>Calidris canutus</i>
Dunlin	<i>Calidris alpina</i>
Sanderling	<i>Calidris alba</i>
Semipalmated Sandpiper	<i>Calidris pusilla</i>
Western Sandpiper	<i>Calidris mauri</i>
Least Sandpiper	<i>Calidris minutilla</i>
Baird's Sandpiper	<i>Calidris bairdii</i>
Pectoral Sandpiper	<i>Calidris melanotos</i>
Franklin's Gull	<i>Larus pipixcan</i>
Bonaparte's Gull	<i>Larus philadelphia</i>
Ring-billed Gull	<i>Larus delawarensis</i>
California Gull	<i>Larus californicus</i>
Thayer's Gull	<i>Larus thayeri</i>
Caspian Tern	<i>Sterna caspia</i>
Common Tern	<i>Sterna hirundo</i>
Forster's Tern	<i>Sterna forsteri</i>
Black Tern	<i>Chilidonias niger</i>
Turkey Vulture	<i>Cathartes aura</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Golden Eagle	<i>Aquila chrysaetos</i>
Northern Harrier	<i>Circus cyaneus</i>
Sharp-Shinned Hawk	<i>Accipiter striatus</i>
Cooper's Hawk	<i>Accipiter cooperii</i>
Northern Goshawk	<i>Accipiter gentilis</i>
Red-shouldered Hawk	<i>Buteo lineatus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Swainson's Hawk	<i>Buteo swainsoni</i>
Rough-legged Hawk	<i>Buteo lagopus</i>
Ferruginous Hawk	<i>Buteo regalis</i>
Osprey	<i>Pandion haliaetus</i>
American Kestrel	<i>Falco sparverius</i>
Merlin	<i>Falco columbarius</i>
Peregrine Falcon	<i>Falco peregrinus</i>
Prairie Falcon	<i>Falco mexicanus</i>
Ring-necked Pheasant	<i>Phasianus colchicus</i>
Wild Turkey	<i>Meleagris gallopavo</i>
Northern Bobwhite	<i>Colinus virginianus</i>
California Quail	<i>Callipepla californica</i>
Rock Dove	<i>Columba livia</i>
Mourning Dove	<i>Zenaida macroura</i>
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>
Common Barn Owl	<i>Tyto alba</i>
Short-eared Owl	<i>Asio flammeus</i>

BIRDS (Continued)

Species	Scientific Name
Long-eared Owl	<i>Asio otus</i>
Great horned owl	<i>Bubo virginianus</i>
Western Screech Owl	<i>Otis kennicottii</i>
Northern Pygmy Owl	<i>Glaucidium gnoma</i>
Northern Saw-whet Owl	<i>Aegolius acadicus</i>
Common Nighthawk	<i>Chordeiles minor</i>
Vaux's Swift	<i>Chaetura vauxi</i>
White-throated Swift	<i>Aeronautes saxatalis</i>
Black-chinned Hummingbird	<i>Archilochus alexandri</i>
Rufous Hummingbird	<i>Selasphorus rufus</i>
Belted Kingfisher	<i>Ceryle alcyon</i>
Lewis' Woodpecker	<i>Melanerpes lewis</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Hair Woodpecker	<i>Picoides villosus</i>
Northern Flicker	<i>Colaptes auratus</i>
Western Kingbird	<i>Tyrannus verticalis</i>
Eastern Kingbird	<i>Tyrannus tyrannus</i>
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>
Western Wood-pewee	<i>Contopus sordidulus</i>
Say's Phoebe	<i>Sayornis saya</i>
Willow Flycatcher	<i>Empidonax traillii</i>
Western Flycatcher	<i>Empidonax difficilis</i>
Horned Lark	<i>Eremophila alpestris</i>
Tree Swallow	<i>Tachycineta bicolor</i>
Violet-green Swallow	<i>Tachycineta thalassina</i>
Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
Bank Swallow	<i>Riparia riparia</i>
Cliff Swallow	<i>Hirundo pyrrhonota</i>
Barn Swallow	<i>Hirundo rustica</i>
Steller's Jay	<i>Cyanocitta stelleri</i>
Blue Jay	<i>Cyanocitta cristata</i>
Clark's Nutcracker	<i>Nucifraga columbiana</i>
Black-billed Magpie	<i>Pica pica</i>
American Crow	<i>Corvus brachyrhynchus</i>
Common Raven	<i>Corvus corax</i>
Black-capped Chickadee	<i>Parus atricapillus</i>
Mountain Chickadee	<i>Parus gambeli</i>
Red-breasted Nuthatch	<i>Sitta canadensis</i>
White-breasted Nuthatch	<i>Sitta carolinensis</i>
Pygmy Nuthatch	<i>Sitta pygmaea</i>
Brown Creeper	<i>Certhia americana</i>
House Wren	<i>Troglodytes aedon</i>
Winter Wren	<i>Troglodytes troglodytes</i>
Marsh Wren	<i>Cistothorus palustris</i>
Golden-crowned Kinglet	<i>Regulus satrapa</i>
Ruby-crowned Kinglet	<i>Regulus calendula</i>
Western Bluebird	<i>Sialia mexicana</i>

BIRDS (Continued)

Species	Scientific Name
Mountain Bluebird	<i>Sialia currucoides</i>
Townsend's Solitaire	<i>Myadestes townsendii</i>
American Robin	<i>Turdus migratorius</i>
Varied Thrush	<i>Ixoreus naevius</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Northern Shrike	<i>Lanius excubitor</i>
Gray Catbird	<i>Dumatella carolinensis</i>
Northern Mockingbird	<i>Mimus polyglottos</i>
American Pipit	<i>Anthus spinoletta</i>
Bohemian Waxwing	<i>Bombycilla garrulus</i>
Cedar Waxwing	<i>Bombycilla cedrorum</i>
European Starling	<i>Sturnus vulgaris</i>
Solitary Vireo	<i>Vireo solitarius</i>
Warbling Vireo	<i>Vireo gilvus</i>
Orange-crowned Warbler	<i>Vermivora celata</i>
Nashville Warbler	<i>Vermivora ruficapilla</i>
Yellow-rumped Warbler	<i>Dendroica coronata</i>
Yellow Warbler	<i>Dendroica petechia</i>
MacGillivray's Warbler	<i>Oporornis philadelphia</i>
Wilson's Warbler	<i>Wilsonia pusilla</i>
Common Yellowthroat	<i>Geothlypis trichas</i>
Yellow-breasted Chat	<i>Icteria virens</i>
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>
Lazuli Bunting	<i>Passerina amoena</i>
Green-tailed Towhee	<i>Pipilo chlorurus</i>
Rufous-sided Towhee	<i>Pipilo erythrophthalmus</i>
Chipping Sparrow	<i>Spizella passerina</i>
Vesper Sparrow	<i>Pooecetes gramineus</i>
Savannah Sparrow	<i>Passerculus sandwichensis</i>
Song Sparrow	<i>Melospiza melodia</i>
Lark Sparrow	<i>Chondestes grammacus</i>
American Tree Sparrow	<i>Spizella arborea</i>
Chipping Sparrow	<i>Spizella passerina</i>
Dark-eyed Junco	<i>Junco hyemalis</i>
Harris' Sparrow	<i>Zonotrichia querula</i>
White-crowned Sparrow	<i>Aonotrichia leucophrys</i>
Fox Sparrow	<i>Passerina iliaca</i>
Lincoln's Sparrow	<i>Melospiza lincolnii</i>
Western Meadowlark	<i>Sturnella neglecta</i>
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalu</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
Northern Oriole	<i>Icterus galbula</i>
Western Tanager	<i>Piranga ludoviciana</i>
House Sparrow	<i>Passer domesticus</i>
Pine Siskin	<i>Carduelis pinus</i>

BIRDS (Continued)

Species	Scientific Name
American Goldfinch	<i>Carduelis tristis</i>
Lesser Goldfinch	<i>Carduelis psaltria</i>
House Finch	<i>Carpodacus mexicanus</i>
Evening Grosbeak	<i>Coccothraustes vespertinus</i>

AMPHIBIANS AND REPTILES

Species	Scientific Name
Bullfrog	<i>Rana catesbeiana</i>
Northern Leopard Frog	<i>Rana pipiens</i>
Common Garter Snake	<i>Thamnophis sirtalis</i>
Gopher Snake	<i>Pituophis melanoleucus</i>
Racer	<i>Coluber constrictor</i>
Western Painted Turtle	<i>Chrysemys picta belli</i>

FISHES

Species	Scientific Name
Largemouth Bass	<i>Micropterus salmoides</i>
Smallmouth Bass	<i>Micropterus dolomieu</i>
Black Bullhead	<i>Ictalurus melas</i>
Channel Catfish	<i>Ictalurus punctatus</i>
Rainbow Trout	<i>Salmo gairdneri</i>
Carp	<i>Cyprinus carpio</i>
Bluegill	<i>Lepomis macrochirus</i>
Chiselmouth	<i>Acrocheilus alutaceus</i>
Largescale Sucker	<i>Castostomus macrocheilus</i>
Bridgelip Sucker	<i>Catostomus columbianus</i>
Goldfish	<i>Carassius auratus</i>
Northern Squawfish	<i>Ptychocheilus oregonensis</i>

APPENDIX VII

WATERFOWL AND UPLAND BIRD PRODUCTION

Year	Species ^a	Average Number of Broods	Average Brood Size
1986	Puddle Ducks	21	3.7
	Diving Ducks	0	-
	Wood Duck	14	9.5
	Ring-necked Pheasant	18	5.9
1987	Puddle Ducks	32	3.9
	Diving Ducks	4	6.8
	Wood Duck	22	10.2
	Ring-necked Pheasant	24	5.1
1988	Puddle Ducks	39	3.5
	Diving Ducks	14	6.1
	Wood Duck	19	9.6
	Ring-necked Pheasant	16	4.9
1989	Puddle Ducks	33	3.1
	Diving Ducks	21	6.7
	Wood Duck	26	9.3
	Ring-necked Pheasant	19	4.5
1990	Puddle Ducks	25	3.5
	Diving Ducks	29	5.9
	Wood Duck	31	10.5
	Ring-necked Pheasant	16	4.6
1991	Puddle Ducks	29	3.9
	Diving Ducks	37	6.2
	Wood Duck	34	9.1
	Ring-necked Pheasant	19	5.1
1992	Puddle Ducks	22	4.6
	Diving Ducks	41	6.7
	Wood Duck	38	9.7
	Ring-necked Pheasant	19	4.6
1993	Puddle Ducks	29	5.2
	Diving Ducks	49	5.9
	Wood Duck	31	8.8
	Ring-necked Pheasant	24	4.1
1994	Puddle Ducks	35	4.1
	Diving Ducks	55	5.6
	Wood Duck	37	9.7
	Ring-necked Pheasant	18	5.2
1995	Puddle Ducks	39	5.1
	Diving Ducks	59	5.8
	Wood Duck	32	9.1
	Ring-necked Pheasant	21	4.6
1996	Puddle Ducks	42	5.6
	Diving Ducks	51	6.1
	Wood Duck	25	10.3

Year	Species ^a	Average Number of Broods	Average Brood Size
1997	Ring-necked Pheasant	16	4.9
	Puddle Ducks	37	5.9
	Diving Ducks	52	6.5
	Wood Duck	39	9.5
1998 ^b	Ring-necked Pheasant	19	4.9
	Puddle Ducks	18	4.1
	Diving Ducks	15	3.8
	Wood Duck	41	10.9
1999	Ring-necked Pheasant	29	5.8
	Puddle Ducks	25	5.3
	Diving Ducks	10	4.2
	Wood Duck	25	8.9
2000	Ring-necked Pheasant	19	4.7
	Puddle Ducks	32	4.9
	Diving Ducks	8	5.6
	Wood Duck	24	9.2
2001 ^c	Ring-necked Pheasant	15	5.1
	Puddle Ducks	45	8.4
	Diving Ducks	21	7.3
	Wood Duck	29	9.5
2002	Ring-necked Pheasant	20	4.8
	Puddle Ducks	53	7.9
	Diving Ducks	38	6.9
	Wood Duck	22	8.7
	Ring-necked Pheasant	12	5.8

^a Puddle ducks include mallard, gadwall, cinnamon teal, and shoveler. Diving ducks include redhead and ruddy duck. Wood duck data came from examination of used nest boxes and brood counts.

^b Very wet spring, 5" rain in May.

^c Predator management program initiated.

APPENDIX VIII

TRAVEL PLAN

Because of FBWMA's proximity to large population centers and its concentrated public use, travel, camping, and off-road-use on the management area requires special regulations beyond those on some Department-owned lands. There are two main access roads maintained by the county that serve the area and another main road that is Department maintained. All other interior roads on the area are designated as trails and are not open to motorized travel except by persons with disabilities (PWD). The road paralleling the Union Pacific tracks on the east boundary of FBWMA is owned by the railroad. Use of this rail access road and hunting along the railroad right-of-way is viewed as trespassing by Union Pacific. Every attempt has been made in the plan to address current and future issues, but with rapidly changing use patterns, additional modifications to the travel plan may be needed to protect public safety or wildlife resources.

I. Parking and Motor Vehicle use

There are a number of designated parking areas within FBWMA (Figure 1). Vehicles are required to park in these areas, which are delineated by signs and curbs. Motorized vehicles are otherwise restricted to established roads. Only those vehicles licensed for travel on public roads are allowed on FBWMA. Some of the parking areas have been designed for PWD access and are identified with the familiar blue logo. Keys are available from the area manager to persons with disabilities to open locked gates for motorized vehicle access to hunting areas. A "Hunt from Vehicle" permit must be displayed and the vehicle must stay on established roadways or designated trails. If this program impacts public safety on the area, alternative PWD access will be considered. A PWD duck blind is also available by appointment with the area manager.

II. Closed areas

Certain portions of FBWMA are closed to public entry year-round. Other portions are open year-round and some areas are closed to public entry part of the year. The area immediately north of the headquarters is closed year-round to provide a nesting and resting area for waterfowl (sanctuary). Most of the FBWMA core wetland area is closed from 1 February - 31 July to provide security for nesting waterfowl (Figure 1). The area on the south side of Sand Hollow Creek is open for year-round public use. Horses and bicycles are permitted in this area, but are confined to established roads. Motorized vehicles are prohibited.

III. Boat Ramps

A small boat ramp and parking area is provided on the Snake River to provide river access for hunting. The ramp is not to be used for parking. The access road to the boat ramp and western trailhead will be maintained as a single-lane gravel road with pullouts.

IV. Camping

Overnight camping is allowed in the four designated camping sites on the area; fires are allowed only in established fire pits. Under certain weather conditions, fires will be prohibited. Use of the camping areas is on a first-come, first-served basis and is restricted to five days in any 30 day period. Garbage service will not be provided.

V. Curfew

FBWMA will be operated as a day-use area. As a service to license holders, limited overnight camping is allowed. Campers and other users are restricted from entry on the entrance road past headquarters after 10:00 p.m. in the summer (April-September) and after 8:00 p.m. in the winter (October-March). Campers in the curfew area later than those hours are allowed to stay or exit, but area users are not allowed to return during curfew hours.

APPENDIX IX

PUBLIC INVOLVEMENT PROCESS

To identify issues and concerns, the IDFG went to the public in 1998 with a series of open house meetings around the Southwest Region. Comments were solicited, recorded, and tabulated. In-house discussions and comments were taken as well as comments from neighbors and other agencies.

The open houses were conducted after an advertising campaign in print and television. Mailed invitations were sent out to those people and groups identified as users of the Southwest Idaho WMAs (taken from check station interviews). During the open house, a series of display boards presented each Southwest Region WMA and the specific resources and management practices on the area. Interaction with agency personnel and the public helped to focus those areas of special concern for each WMA. Written comments were then taken and tabulated for each area.

In May 1998, an FBWMA working group was established to further the process begun with the public meetings. Interested groups and individuals were joined with agency people and special users. From that group, additional issues and options for management were obtained. The working group will be an ongoing part of FBWMA public involvement and problem solving. All future management activities that significantly affect the public's access to or participation in wildlife-related recreation will go through the Department's Public Involvement process.

Issue 1. Noxious Weed Control

Discussion: Most respondents felt that the Department should do more to control noxious weeds. Indeed, by state law, the IDFG is required to control noxious weeds identified on the area. Currently, a combination of management practices are used to curb establishment and proliferation of weeds. Herbicides, cultivation, water level management, and biological control are all employed.

Issue 2. Livestock Grazing

Discussion: Should IDFG graze domestic livestock on FBWMA? Winter grazing as now practiced was not seen as an incompatible use of the area by most people. Two people felt that early winter grazing of food plots might jeopardize pheasant survival. Three other respondents welcomed the practice to open up the area for better hunter access and the attraction of waterfowl to grazed down corn stubble.

Issue 3. Public Hunting

Discussion: Should IDFG try to improve the quality of hunting at FBWMA? There were no comments regarding the legitimacy of hunting on the WMA, as hunting license dollars and Federal Aid funds from the Pittman-Robertson program pays for acquisition and management of the area. However, within the ranks of hunters, there are several issues of disagreement. Most of these surround the question of conflicts between user groups; i.e. pheasant hunters vs. duck hunters and hunting quality. Duck hunters are concerned that increasing numbers of pheasant

hunters are decreasing their duck hunting effectiveness. Pheasant hunters wearing blaze orange clothing and walking through wetland areas while ducks are decoying is seen as disruptive. Waterfowl hunters are also concerned with “sky busting” or high shooting. Pheasant hunters are concerned that new wetland projects are decreasing hunting cover. Both groups voiced concerns about crowding affecting hunting quality.

Issue 4. Pheasant Stocking

Discussion: Should rooster pheasants continue to be stocked on FBWMA? This was an item that seemed subject for debate both by the public and agency professionals. Some biologists feel that pheasant stocking is an archaic practice that wastes money that would be better spent on habitat development. Upland gunners that do not hunt game farm pheasants resent having to pay for the program. With the establishment of the WMA pheasant permit by the legislature, a “user fee” now partially pays for the program. This program will continue to be controversial until the special fee totally pays for the stocking and biologists see that stocked pheasants are not different than stocked catchable trout.

Issue 5. Vegetation Management

Discussion: Should the native vegetation be restored on FBWMA? Some research has indicated higher use of riparian areas by neo-tropical birds where native vegetation exists. Federal agencies are directed to restore their lands to conditions dominated by native species of plants. Because a largely non-native plant community covers FBWMA, the option to return the area to native condition would be expensive and probably not beneficial to many game species. Much of the area is covered by artificial water developments that have completely changed native soils and ecological conditions. Therefore, most public comment favored allowing the Department to do what is necessary to provide optimal wildlife production and habitat within the existing exotic plant community. Activities such as Russian olive removal to enhance nesting cover and decrease corvid habitat were not opposed.

Issue 6. Sharecrop Agreements

Discussion: Some users have asked why food plots are planted in big blocks and not scattered throughout the area in small patches. Many of these decisions are tied to practical operations, considerations, and agreements with sharecrop cooperators. One agreement covers FBWMA and the two Roswell Marsh properties. These agreements are structured to provide maximum benefits to wildlife and still maintain a feasible farming operation for the potential cooperator. The agreement saves the public costs involved in providing food plots and cover with minimal loss to wildlife benefits.

Issue 7. Camping and Curfew Hours

Discussion: Should overnight camping be allowed on the area? Because of vandalism to Department facilities, fires, litter, and drug use, a “no entrance at night” curfew exists on FBWMA. Those people who are on the area before the curfew hour can camp overnight if desired. Additional traffic is restricted. This system has worked well without strict enforcement in the past. Recently, more people are violating the curfew. Public response in favor of a

vehicle barricade to prohibit vehicle entry after hours has been favorable. A portion of WMA users, particularly catfish anglers, have been opposed to prohibiting overnight use on the area.

ISSUES RAISED BY DEPARTMENT PERSONNEL

Issue 1: Perpetuation and enhancement of waterfowl, upland game bird, and non-game populations and habitat.

Discussion: It is the mission of the FBWMA to provide production habitat for waterfowl and upland game birds. Within the constraints of budgets and time, all reasonable methods will be employed to improve habitat. All habitat manipulation that takes place on FBWMA will be compatible with the mission of the area.

On the North American continent, wetlands have been disappearing at an alarming rate. Drainage, development, and drought have contributed toward this alarming trend. Because FBWMA has a relatively stable water supply, wetlands can be sustained year-round, even in drought years. These drought-resistant wetlands are crucial for the sustained health of North American waterfowl populations.

Upland bird populations, especially pheasants, have been declining statewide since the early 1980s. Habitat loss and changing agricultural practices have contributed to the decline. Even though FBWMA has a good population of upland birds, the local population cannot possibly meet the demand for upland hunting in the fastest growing and largest population center of the state.

Non-game wildlife species are becoming more important in southwest Idaho as the human population grows and wildlife habitat shrinks. Bird watchers, photographers, and hikers all place increasing demands on FBWMA for non-consumptive wildlife-related recreation. At the same time, certain species are at risk nationwide due to habitat fragmentation. Even though FBWMA was purchased and operates on funding derived from consumptive wildlife-related activities, non-game species receive many benefits. Only habitat activities that are compatible with the mission of the area relative to available funding sources will be carried out. Other wildlife species, including non-game, will undoubtedly benefit. Any activities targeted at non-game species exclusively will be funded from non-game sources.

Predators remain as a controversial issue in management of Department lands and wildlife populations. Studies have demonstrated that the key to managing the long-term impacts of predation on game bird populations is maintaining high quality habitat. Unfortunately, with increased development in North America, quality habitat is at risk due to habitat fragmentation that benefits predators. Meaningful predator reduction programs that are appropriately timed with the spring breeding and nesting season may have short-term benefits.

Issue 2: Provide consumptive and non-consumptive recreation compatible with FBWMA mission.

Discussion: Part of the mission of FBWMA is wildlife-related recreation. Fishing and hunting license holders pay for all of the acquisition and maintenance on the area. It is therefore appropriate that they are allowed use of their area to the maximum amount possible without compromising the mission. Part of the mission is to provide quality habitat and recreation.

Population growth in the adjacent metropolitan areas has been exponential. If use levels become incompatible with the quality of the experience or threatening to wildlife habitat, modifications will need to be made in the pattern of use.

Each year, non-consumptive use is a very important and major component of total annual visits to FBWMA. No direct annual funding is currently obtained from non-game wildlife activities. Methods should be found to incorporate non-consumptive users into the funding base so that important recreational, educational, and non-game habitat enhancement projects can be adequately addressed on the area.

Issue 3: Maintain good relationships with neighboring property owners.

Discussion: Over the years, the FBWMA has had good relationships with almost all of the surrounding property owners. It will be of the highest priority that these relationships continue. This success came about because of communication, cooperation, and involvement of the local community in management and planning. Special emphasis will continue to be placed on issues of local concern, such as noxious weed control, public trespass, and wildlife depredation. The economic, recreational, and educational value of FBWMA will also be stressed to local, educational, and civic organizations. Good relations will be fostered by cooperative involvement of FBWMA in weed control, irrigation delivery, and fire suppression organizations.

Issue 4: Additional property acquisitions to achieve FBWMA mission.

Discussion: The Treasure Valley, where FBWMA is located, contains the largest population center in the state. Growth has been extremely rapid with some outlying towns experiencing a three-fold population increase in as little as five years. Many of the new residents have come to the state for the outdoor recreational opportunities it provides. As farmland is developed, available hunting areas shrink. More people with less land places an extremely heavy demand for wildlife-related recreation on the limited acreage of FBWMA. Urban dwellers are starting to purchase large tracts along the lower Boise River Valley for private hunting areas. Land values have increased from \$600 to \$3,000 an acre for property that was considered “wasteland” by farmers. In user surveys, “more land acquisition” is a theme often repeated. In the current political and financial climate, land purchases by the Department are very unusual.

With these facts in mind, users and agency personnel need to identify and prioritize the amount and quality of land adjacent to FBWMA for possible purchase. The process needs to proceed expeditiously, as available land is shrinking fast.

APPENDIX X

EQUIPMENT AND FACILITIES

IMPROVEMENTS

Physical improvements on the area consist of approximately five miles of dikes for the 15 wetland units. Water control structures, ditches, and a diversion dam on Sand Hollow Creek also serve the artificially constructed wetlands. Two large culvert road crossings have been installed on Sand Hollow Creek. Numerous interior fences are used for the grazing system (discussed in management section). Lined concrete ditches provide water for approximately 200 acres of irrigated food plots and nesting cover. There are five pumps to supply wetland and irrigation water. At the Fort Boise headquarters, there is an office/shop building with four parking bays. Several outbuildings are also present for storage. Next to the office is a manager's residence, acquired as an existing farmhouse with an early land purchase.

<i>Year</i>	<i>Description</i>
1949	McCormick 20-row Grain Drill (Gold Island)
1950	Case 12-row Grain Drill (Gold Island)
1955	DMSTR 5-row Corrugator
1959	Ford 851 Wheeled Tractor (Gold Island)
1961	John Deere Disc Harrow (Gold Island)
1961	John Deere 3010 Wheeled Tractor (Gold Island)
1961	CHTTN 7093-V Ditcher
1961	3 sec. JF 30 Harrows
1961	John Deere 3-bottom Plow (Gold Island)
1962	Valley MND 4-row Corrugator (Gold Island)
1963	Wood Rotary Mower
1964	Evinrude 9.5 hp outboard motor
1964	12 ft. Aluminum Rowboat
1966	Wisconsin Gas-powered Water Pump (irrigation)
1967	BRNS Water Pump (irrigation)
1968	Berkley PTO Water Pump (irrigation)
1969	John Deere 2-bottom Plow
1969	John Deere Disc Harrow
1969	John Deere 4-row Corn Planter
1969	John Deere 20-row Grain Drill
1969	John Deere 2520 Wheeled Tractor
1970	Allis-Chalmers HD-4 Crawler Tractor
1970	Allis-Chalmers 6-wheel Implement Trailer
1970	Arc Welder
1972	Water Pump (irrigation)
1972	Servis Rotary Tractor Mower
1972	150-gallon Sprayer
1975	Dodge Dump Truck (G424)
1977	Case 6 Drawbar Harrows

<i>Year</i>	<i>Description</i>
1981	18 ft. Aluminum boat w/Trailer
1982	Shop Air Compressor
1983	Hitachi Excavator
1985	Johnson 115 Jet Outboard
1987	John Deere 185 Lawn Tractor
1988	Echo 20 in. Chainsaw
1990	GMC 1-ton Flatbed (G406)
1995	Coleman Portable Generator
2003	GMC ½ Ton Pickup (G142)

STRUCTURES

Office/Shop/Equipment Storage Shed
 Equipment Storage Shed (Gold Island)
 Seed Storage Shed
 Quonset Storage Shed
 Butler Granary (2)
 Residence

Fort Boise Wildlife Management Area Plan

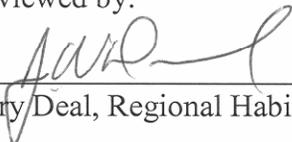
Submitted by:



Clair Kofoed, Regional Habitat Biologist

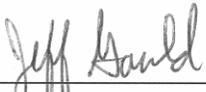
Date: 4/10/04

Reviewed by:



Jerry Deal, Regional Habitat Manager

Date: 4/12/04



Jeff Gould, State Wildlife Habitat Manager

Date: 4/10/04

Approved by:



Al Van Vooren, Regional Supervisor

Date: 4/20/04