

MANAGEMENT GUIDELINES AND STRATEGIES

GUIDELINES

Objectives will be accomplished by managing selected habitats found on the Refuge in the fee title area. The habitats within the easement area will be managed by the landowner and the Refuge will probably have limited influence in the management with the exception of those items covered in the agreement. Habitat acreages are shown in Appendix E. Fish and wildlife requirements met by each landscape are shown in Appendix D.

Habitats have been categorized into 10 types: upland, dry mudflat, wet mudflat, wet meadow, shallow emergent marsh, mid-depth emergent marsh, deep emergent marsh, shallow submergent marsh, deep submergent marsh, and open channels.

The Refuge will use socially, ecologically, and economically sound management practices which benefit wildlife and habitat. All management will strive for biological diversity and ecosystem health.

Legal responsibilities, Department of the Interior Policy, Service Policy, and System Policy are the basis for the following guidelines.

THREATENED & ENDANGERED SPECIES

The protection, enhancement, and recovery of endangered and/or threatened species will receive priority consideration in evaluating any management actions. Actions that would harm any of the federally or state-listed species or their habitat will be avoided. Biological consultation procedures will be followed if there is any doubt as to the possible effects of any action on these species. Conflicts between endangered species and other wildlife management or public use programs will be resolved in favor of endangered species.

MIGRATORY BIRDS

Waterfowl management will be guided primarily by the provisions of the North American Waterfowl Management Plan. Pacific Flyway plans, Regional plans, and the Refuge Waterbird Plan will also be consulted. All waterfowl management will be balanced with other migratory bird management practices.

Predators will be controlled when their population levels adversely impact migratory bird populations. Predators such as skunks, raccoons, red fox, ravens, and gulls will be limited in favor of expanding waterfowl and other migratory bird production and use.

The management of other migratory birds will be guided by the Regional nongame bird plan and biodiversity strategies. As always the guiding principle will be to maintain diverse and healthy ecosystems which provide the life requirements for migratory birds and other plants and animals.

RESIDENT FISH AND WILDLIFE

Emphasis will be placed on maintaining a natural diversity of native wildlife species and their habitats.

Congress, in the Refuge Recreation Act, has recognized the authority of the states and territories to manage resident fish and wildlife. Therefore the special interest of the State of Utah in the management of resident animals is recognized and considered in actions for those species.

Fishery management will be limited to control of rough fish species. Fishing will be allowed on the main Bear River channel upstream from the old headquarters area and on the Reeders Overflow channel a distance of 1.5 miles downstream from the road crossing. Fishing will not be allowed downstream from the main water control structures (bridges) at the old headquarters site.

PUBLIC USE AND EDUCATION

All public use activities will be compatible with the Refuge's purposes, goals, objectives, and in strict conformance with applicable Federal and State statutes. Public use programs will foster activities directly associated with the utilization, observation, interpretation, and/or understanding of fish and wildlife populations, their habitats, and conservation values. Public use programs will promote the concept of a healthy Great Salt Lake ecosystem and biodiversity.

Public use programs, including hunting and fishing, will be developed to minimize impacts on wildlife resources while providing a quality experience.

Public use development will incorporate "Minimum Public Use Standards" and meet the "Uniform Federal Accessibility Standards."

Off-site public use will include environmental education programs coordinated with other Federal, State, and local agencies, educational institutions, conservation organizations, and private landowners and their representative organizations.

CULTURAL RESOURCES

Consideration will be given to cultural resources before undertaking actions, such as construction, land use, resource management, and land acquisition or disposal. When developments are planned, the area will be surveyed to identify the location of cultural resources that need to be protected.

If a site, listed or eligible for listing, in the National Register must be altered or demolished, the State Historic Preservation Officer will be consulted and steps will be taken to record the site according to the standards established by the Secretary of the Interior.

STRATEGIES

HABITAT MANAGEMENT

UPLAND

As these agricultural lands are acquired in the expansion proposal, they will be placed into permanent cover. This cover will be a mixture of grasses and legumes to provide upland nesting habitat for dabbling duck species, upland game birds and a variety of other migratory and resident birds.

Upland nesting cover for dabbling duck species has been limited in the past, and held production at lower levels than might otherwise have been achieved. This habitat will need occasional treatment to maintain plant vigor. Haying, grazing, or burning will be utilized as tools for management of this landscape.

Grasslands within the easement areas are managed by the landowner, not by the Refuge. Technical assistance regarding grassland management will be provided by the Refuge staff when possible.

DRY MUDFLATS

Areas below spillways or on water courses will be contour furrowed to spread the shallow water across a broad area and at the same time create small raised contours. These raised contours provide habitat for salt grass as well as spread water. Several small dikes located near the south boundary will impound several inches of water. These dikes will contain no water control structures and the excess water will spill around the ends. Salt cedar may expand on both the contour furrows and small diked areas, requiring control measures to-limit the spread.

WET MUDFLATS

Management will be aimed at maintaining a mix of bare mud and low growing vegetation. Naturally occurring high river flows flood the mudflats during springtime and thus maintain bare mud and sparse vegetation. Should excessive vegetation build up, prescribed burning or planned grazing could be used to reduce it.



WET MEADOW

Management may prove to be rather difficult, as the annual flooding of this habitat to irrigate the grass creates ideal conditions for the invasion of salt cedar. Once grass cover is established, salt cedar will have a hard time becoming established. Periodic burning or grazing will be necessary to maintain this habitat.

SHALLOW, MID-DEPTH, AND DEEP EMERGENT MARSH

Proper water depth is important to ensure that emergent plant species thrive. This will require lower water levels in the late spring to allow the plants to begin growth and then increasing the water levels as plant growth progresses. Once waterfowl nesting is initiated, water levels must be stabilized to avoid flooding nests. This is important brood cover for waterfowl and other water birds.

Ample water is generally available through the spring to early summer period to maintain marsh levels. Some units may be drawn down in late spring in order to maintain other units at more optimum levels through the water scarce summer months.

These marshes should have about 50 to 60 percent emergent vegetation to open water. To maintain this ratio, burning, mowing and/or grazing may be used as a tool when vegetation becomes too dense.

SHALLOW AND DEEP SUBMERGENT MARSH, AND OPEN CHANNELS

Management techniques are to maintain water levels and restrict the introduction of large carp. Carp tend to create turbidity which reduces light penetration and restricts growth of submerged aquatics. Reduced aquatics restrict the amount of invertebrates present. The challenge will be to manage the units based on predicted summer river flows which are usually low. Approximately one third of the units will remain dry each year due to lack of water and also to reduce carp infestations.

POPULATION MANAGEMENT

THREATENED AND ENDANGERED SPECIES

Two species presently occur on the Refuge. Their status is summarized below:

<u>Species</u>	<u>Status</u>	<u>Frequency on Refuge</u>
Bald Eagle	Threatened	Common, 300/Yr.
Per. Falcon	Endangered	Resident, 5/Yr.

In line with the mandate to protect and enhance habitat for and the status of each of these species, the following strategies have been developed.

Bald Eagle No active management currently needed other than monitoring numbers and Refuge areas used.

Peregrine Falcon Continue monitoring numbers and managing habitat for prey species. Maintaining and enhancing wetland habitats assures a food source for peregrines. An active hack site is located on the Bear River Club, an easement area, where one pair have raised chicks for the last three years.

MIGRATORY BIRDS

Waterfowl management will be directed toward six areas: (1) habitat for molting waterfowl and swans; (2) disease free habitat (botulism); (3) nesting habitat for diving duck species; (4) nesting habitat for dabbling duck species; and (5) feeding areas for waterfowl, and (6) reestablishing the migratory corridor of trumpeter swans.

Newly designed facilities on the Refuge will continue to provide the large open bodies of water preferred by molting waterfowl and swans. Some units are designed to provide deep water habitat where emergent vegetation will not grow. This habitat will provide large amounts of submerged aquatic food in the form of sago pondweed, a preferred food source for many wildlife species. Inlet water control structures will be screened to prevent the introduction of large carp which degrade habitat.

While considerable research has been done on identifying those things which are conducive to botulism outbreaks, additional research is needed to identify management tools for preventing or reducing outbreaks. The Refuge will support research in this area. Water quality and quantity in late summer appears to be a major influence on the outbreaks. New Refuge water facility designs will alleviate some of the past problems. Birds killed by botulism will be picked up immediately to prevent the spread of bacteria. The botulism contingency plan, prepared during 1991, will be followed during outbreaks.

Water management will be used to encourage growth of emergent vegetation in the mid-depth water units. Vegetation consists primarily of hardstem and alkali bulrush and provides the nesting habitat for diving duck species. An interspersed of vegetation and open water will provide this habitat. Water depths in these areas will be raised slowly as the growing season progresses to encourage plant growth and provide brood habitat for many species. Inlet water control structures will be screened to prevent the introduction of large carp into the habitat.

Insufficient acreage of upland nesting habitat for dabbling duck species has historically been a problem. This deficiency will be corrected through acquisition and management of upland habitat. Acquired upland habitat currently in cropland will be planted into nesting cover consisting of a mixture of grasses and legumes. The large blocks of nesting cover will reduce predation rates which is extremely high on the relatively narrow dike slopes. New water management facilities will prevent the flooding of early nesting species as water facilities will allow for the bypass of high spring flows.

In cooperation with the State of Utah and the Pacific Flyway Council, the Refuge will serve as a translocation site for migrating trumpeter swans. Activities aimed at moving trumpeter swans onto the Refuge will be done under an approved and coordinated plan.

FISH-EATING, WATER, AND SHOREBIRDS

The marshes of the Great Salt Lake have been designated as a "Western Hemispheric Shorebird Reserve" indicating its importance to this group of birds. Many species of marsh and water birds utilize the Refuge in great numbers. Important consideration must be given to these species, since the Refuge is known for their use throughout the world. Species occurrence will be monitored to establish baseline information and detect changes in various ecological communities of the Refuge which would adversely affect this group. Water depths will be held at appropriate levels to ensure that these birds have access to food resources in the substrate. Undisturbed, open areas devoid of emergent vegetation will be maintained for staging.

PUBLIC USE MANAGEMENT

INTERPRETATION

The Refuge visitor center is the focal point for interpretation. Vehicular approach, parking areas and building design are still in the planning stages. When completed, the facility will contain an exhibit area,



Canada Geese

elevated viewing area, and auditorium/theater for program presentations. Outside, in the adjacent marshes, will be auto tour routes, and nature trails utilizing boardwalks through the marsh. An environmental education center will be available for group use.

The existing auto tour route around Unit 2 will be upgraded with interpretive signs, installation of a kiosk at the old headquarters site, a pavilion, and restrooms.

RECREATION

Wildlife observation, hunting, fishing, and photography are the most popular recreational pursuits on the Refuge. Wildlife observation will be aided by improving the old auto tour route as well as creating new auto tour routes and nature trails.

LAND ACQUISITION

Acquisition of up to 16,891 acres of privately owned land will provide a site for the educational center/headquarters complex and associated public visitation as well as grassland and wetland habitats to meet the needs of migratory and resident birds. Protection of 21,309 acres of additional river delta wetlands will be accomplished through wetland easements. These lands will remain in private ownership, however provisions of the easement will ensure that water supplies into the wetlands are not diverted to other uses.

Land acquisition activities are ongoing and from willing sellers only. Therefore, land purchases will extend for a number of years into the future and proceed as opportunities arise.

COMPATIBILITY DETERMINATIONS

Uses will be reviewed annually according to Fish and Wildlife Service guidelines. Compatibility determinations will be issued from that review. Incompatible uses will be modified or ended. No uses will be allowed unless determined to be compatible.

WILDERNESS REVIEW

A wilderness study area covering 39,936 acres of former lake bed was evaluated during the 1960's for designation as wilderness. It was concluded that the area did not meet the criteria to be officially designated as wilderness. The area was deemed unsuitable in providing an acceptable form of pedestrian recreation, and rocket motor testing by the Thiokol Corporation interrupted the solitude. Wetland developments, needed to meet Refuge objectives, required use of equipment to construct dikes, water control structures and contour furrows. Therefore, wilderness classification would prevent carrying out development plans.

STAFFING AND FUNDING

Refer to Appendix G for current, minimum and full objective funding and staffing. An organizational chart is displayed in Appendix H. Finally, a list of Refuge Operating Needs projects is presented in Appendix I.

8) PUBLIC EDUCATION & RECREATION : Provide Visitor Services

10000 additional visitors will visit the station , 5000 existing visitors will have new opportunities
 HIRE OUTDOOR RECREATION PLANNER TO WORK WITH ENVIRONMENTAL EDUCATION PROGRAMS FOR SCHOOL GROUPS, ORGANIZATIONS AND AGENCIES.

FUNDS(\$000) & STAFF NEEDED:

	<u>Construction</u>	<u>Operations</u>	<u>FTEs</u>
First Year:	\$50	\$50	1.0
Subsequent Years:	\$50	\$50	1.0

OUTCOMES*:

<u>ES</u>	<u>WF</u>	<u>OMB</u>	<u>HEC</u>	<u>IAF</u>	<u>SDA</u>	<u>RFW</u>	<u>PED</u>	<u>PRC</u>	<u>TOT</u>
3	67	20	10	0	0	0	0	0	100

PLANNING LINK: Station CMP Station Step-down Mgmt Plan Ecosystem Goal/Plan
 Station Goal/Objective Recovery Plan Legal Mandate

ENVIRONMENTAL EDUCATION WAS IDENTIFIED AS A NEED IN THE PUBLIC USE MASTER PLAN

PROJECT #:96007.... **RANK - STATION:**8.... **DISTRICT:** ...999.. **REGION:** ...999.. **NATIONAL:** ...999..

6) 3) HABITAT MANAGEMENT : Manage Water Levels

10000 additional acres will be managed , .6 new unit(s) will be managed
 INSTALL 12 CONCRETE STOPLOGS WATER CONTROL STRUCTURES INTO CANALS TO SPILL/DRAIN WATER INTO INDIVIDUAL UNITS.

FUNDS(\$000) & STAFF NEEDED:

	<u>Construction</u>	<u>Operations</u>	<u>FTEs</u>
First Year:	\$180	\$0	0.0
Subsequent Years:	\$0	\$0	0.0

OUTCOMES*:

<u>ES</u>	<u>WF</u>	<u>OMB</u>	<u>HEC</u>	<u>IAF</u>	<u>SDA</u>	<u>RFW</u>	<u>PED</u>	<u>PRC</u>	<u>TOT</u>
3	67	20	10	0	0	0	0	0	100

PLANNING LINK: Station CMP Station Step-down Mgmt Plan Ecosystem Goal/Plan
 Station Goal/Objective Recovery Plan Legal Mandate

ENHANCEMENT OF THE REFUGE BY BREAKING THE EXISTING REFUGE UNITS INTO SMALLER UNITS WAS IDENTIFIED IN THE WATER MANAGEMENT PLAN, CMP AND ENVIRONMENTAL ASSESSMENT

PROJECT #:96008.... **RANK - STATION:**6.... **DISTRICT:** ...999.. **REGION:** ...999.. **NATIONAL:** ...999..

10) 2) HABITAT RESTORATION : Wetland Restoration: On-Refuge

10000 acres will be restored , .1 site(s) will be restored
 HIRE AN ADDITIONAL HEAVY EQUIPMENT OPERATOR TO RUN HEAVY EQUIPMENT TO RESTORE AND ENHANCE REFUGE FACILITIES.

FUNDS(\$000) & STAFF NEEDED:

	<u>Construction</u>	<u>Operations</u>	<u>FTEs</u>
First Year:	\$0	\$50	1.0
Subsequent Years:	\$0	\$50	1.0

OUTCOMES*:

<u>ES</u>	<u>WF</u>	<u>OMB</u>	<u>HEC</u>	<u>IAF</u>	<u>SDA</u>	<u>RFW</u>	<u>PED</u>	<u>PRC</u>	<u>TOT</u>
3	67	20	10	0	0	0	0	0	100

PLANNING LINK: Station CMP Station Step-down Mgmt Plan Ecosystem Goal/Plan
 Station Goal/Objective Recovery Plan Legal Mandate

ENHANCEMENT AND RESTORATION OF THE REFUGE WAS IDENTIFIED IN THE WATER MANAGEMENT PALN, ENVIRONMENTAL ASSESSMENT AND CMP

PROJECT #:96009.... **RANK - STATION:**10.... **DISTRICT:** ...999.. **REGION:** ...999.. **NATIONAL:** ...999..

