Wanaket Wildlife Area Management Plan

**A Five-Year Plan for Protecting, Enhancing, and Mitigating
Wildlife Habitat Losses for the McNary Hydroelectric Facility**

**Confederated Tribes of the Umatilla Indian Reservation
Wildlife Program**

Bonneville Power Administration

September 2001

Wanaket Wildlife Area Draft Management Plan
9/2001

TABLE OF CONTENTS

Introduction	1
Project Location	1
Purpose and Need	1
Program Goals and Objectives	4
Guiding Policies	5
Bonneville Power Administration	5
Confederated Tribes of the Umatilla Indian Reservation	6
General Council and Board of Trustees	6
CTUIR Committees and Commissions	6
Relationship to Other Plans and Decisions	7
Common Elements and Assumptions	7
CTUIR Responsibilities and Obligations	7
Federal and State Laws and Regulations	7
Cultural Resources Protection	8
Threatened, Endangered, and Sensitive Species	8
Wetland Protection	9
Public Access	9
Right-of-Way	9
Coordination and Public Involvement	10
Project History	11
Plan Organization	16
Key Issues	17
Identification of Key Issues	17
Wildlife and Wildlife Habitat Mitigation	17
Plant Community Changes	18
Public Use/Access and Travel Management	18
Vector Production	19
Affected Environment	20
Project Location	20
Topography	20
Soils	20
Climate/Precipitation	21
Shrub-steppe and Grassland Habitat	21
Qualifying Shrub-steppe and Grassland Habitat	23
Shrub-steppe/Grassland Habitat - Existing Conditions	23
Identifying Desired Future Conditions for Shrub-steppe and Grasslands	25
Shrub-steppe and Grasslands – Desired Future Conditions	26
Wetlands and Associated Riparian Habitats – Existing Conditions	27

Wanaket Wildlife Area Draft Management Plan
9/2001

Identifying Desired Future Conditions for Wetlands and Associated Riparian Habitats	31
Wetlands and Associated Riparian Habitats - Desired Future Conditions	31
Noxious Weeds	33
Existing Conditions	33
Desired Future Conditions	35
Competing and Unwanted Vegetation	36
Existing Conditions	36
Desired Future Conditions	37
Special/Unique Habitats	
Existing Conditions	37
Desired Future Conditions	38
Public Use and Access	38
Hunting – Existing Condition	38
Hunting – Desired Future Condition	39
Fishing – Existing Condition	39
Fishing – Desired Future Condition	39
Plant Gathering – Existing Conditions	40
Plant Gathering – Desired Future Conditions	40
Non-Consumptive Uses – Existing Conditions	40
Non-Consumptive Uses – Desired Future Conditions	40
Travel Management	40
Motorized Access – Desired Future Conditions	41
Non-motorized Access – Desired Future Conditions	41
Transportation System – Existing Conditions	41
Roads	41
Trails	41
Roads - Desired Future Conditions	41
Trails – Desired Future Conditions	42
Property Improvements	42
Existing Conditions	42
Desired Future Conditions	43
Proposed Management Activities	45
Enhancement and Protection Strategies	45
Intact Habitat	46
Restorable Habitat	46
Compromised Habitat	46
Eliminated Habitat	47
Habitat Enhancements	47
Proposed Restoration Sites	47
Site Preparation Activities	48
Planting	48

Wanaket Wildlife Area Draft Management Plan

9/2001

Habitat Protection	49
Intact Habitat.....	49
Establishment of Refuge Areas.....	49
Habitat Additions.....	50
Public Use and Access and Travel Management.....	50
Consumptive Uses and Allowable Access Periods.....	50
Waterfowl and Upland Bird Hunting.....	50
Plant Gathering	51
Prohibited Uses	51
Non-Consumptive Uses and Allowable Access Periods	51
Prohibited Non-Consumptive Uses	51
Operations and Maintenance	52
Irrigation	52
Vector Control	53
Noxious Weed Control	53
Fence Maintenance	54
Sign Maintenance	54
Waste Disposal.....	54
General Administration.....	54
Law Enforcement.....	54
Fire Protection.....	54
Monitoring and Evaluation	57
NPPC Criteria	57
Habitat Monitoring	58
Biological Monitoring.....	59
Access and Travel Management Compliance.....	60
Monitoring and Evaluation Elements	61
Five-Year Action Plan and Budget.....	62
Itemized Estimated Budget	63
Appendices.....	64
Glossary of Terms.....	73
Literature Cited	77

List of Tables

Table 1. Shrub-steppe/grassland Habitat Indices and Desired Future Conditions.	22
Table 2. Shrub-steppe Grassland Habitat Suitability Indices and Habitat Units.....	22
Table 3. Pre-fire Shrub-steppe/grassland Habitat Indices.	22
Table 4. Shrub-steppe/grassland Habitat Indices and Desired Future Conditions.	27
Table 5. Wetland/Riparian Habitat Indices and Optimum Conditions.	30
Table 6. Target Mitigation Species Habitat Suitability Indices and Habitat Units.	31
Table 7. Wetland/Riparian Wildlife Habitat Indices and Desired Future Conditions.	33
Table 8. Noxious Weeds Occurring at the Wanaket Wildlife Area.....	34

Wanaket Wildlife Area Draft Management Plan

9/2001

Table 9. Criteria Examples of Possible Strategies.....	46
Table 10. Target species, cover types, and habitat parameters measured	58
Table 11. Monitoring and Evaluation Elements.....	60
Table 12. Five-Year Action Plan and Budget.....	61
Table 13. Itemized Estimated Budget.....	62

List of Figures

Figure 1. Project Vicinity.....	2
Figure 2. Project Area.....	3
Figure 3. Burn Area Boundary.	14
Figure 4. Wetlands and Irrigation Canals.	29
Figure 5. Access and Travel Management.....	44
Figure 6. Proposed Enhancements and Operations and Maintenance Activities.	56

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Wanaket Wildlife Area Draft Management Plan

9/2001

INTRODUCTION

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) propose to continue to protect, enhance, and mitigate wildlife and wildlife habitat at the Wanaket Wildlife Area. The Wanaket Wildlife Area was approved as a Columbia River Basin Wildlife Mitigation Project by the Bonneville Power Administration (BPA) and Northwest Power Planning Council (NWPPC) in 1993. This management plan will provide an update of the original management plan approved by BPA in 1995.

Wanaket will contribute towards meeting BPA's obligation to compensate for wildlife habitat losses resulting from the construction of the McNary Hydroelectric facility on the Columbia River. By funding the enhancement and operation and maintenance of the Wanaket Wildlife Area, BPA will receive credit towards their mitigation debt.

Project Location

The 2,817 acre Wanaket Wildlife Area is located in northeastern Oregon and lies adjacent to the south shore of the Columbia River along Lake Wallula between the Port of Umatilla (river Mile 295) on the west and Hat rock State Park (River Mile 299) on the east. It is bisected from west to east by State Highway 730 (see Project Vicinity and Area Maps, pages 2 and 3). The legal description for Wanaket includes T.5N., R.28E., portions of Sections 13, 23, 24, and T.5N., R.29E., portions of Sections 16, 17, 18, 19, 20, and 21. The area consists primarily of sagebrush dominated shrub/steppe habitats and emergent wetlands that occur in small closed basins known as "the McNary Potholes."

PURPOSE AND NEED

Purpose

The purpose of the Wanaket Wildlife Area management plan update is to provide programmatic and site-specific standards and guidelines on how the Wanaket Wildlife Area will be managed over the next five years. This plan provides overall guidance on both short and long term activities that will move the area towards the goals, objectives, and desired future conditions for the planning area. The plan will incorporate managed and protected wildlife and wildlife habitat, including operations and maintenance, enhancements, and access and travel management.

Need

The development of dams for hydropower, navigation, flood control, and irrigation in the Columbia River Basin resulted in widespread inundation of riparian, riverine, and upland wildlife habitats (NWPPC 1994; BPA et. al., 1993). The 1980 Pacific Northwest Electric Power Act (Power Act) established and charged the NWPPC with the task of developing a comprehensive fish and wildlife mitigation program to protect, mitigate, and enhance fish and wildlife habitat in the Columbia Basin. This program, initially adopted in 1982, was amended in 1984, 1987, 1991-1993, and 1994. Consistent with Section 1003(7) of the Northwest Power

Wanaket Wildlife Area Draft Management Plan **9/2001**

Figure 1. Project Vicinity.

Wanaket Wildlife Area Draft Management Plan

9/2001

Figure 2. Project Area.

Wanaket Wildlife Area Draft Management Plan

9/2001

Planning Council Fish and Wildlife Program, BPA is authorized and obligated to fund implementation of projects that will help reach the NWPPC wildlife mitigation goals and objectives.

The *Draft Wildlife Impact Assessment, McNary Project* (Rasmussen and Wright, 1990), provided estimated losses of and/or impacts to 34,951 Habitat Units as a result of the McNary Hydroelectric facility construction. Loss and impact assessments included mainland, island, and river habitats. Mainland habitats, totaling an estimated 12,898 acres, consisted of shrub/steppe grassland, riparian hardwood, riparian shrub, riparian herb, emergent wetland, sand dune, sand/gravel/cobble/mud, disturbed/bare/riprap, and open water cover types. Islands were estimated to have provided 2,741 acres of shrub/steppe grassland, riparian hardwood, riparian shrub, riparian herb, emergent wetland, and sand dune, sand/gravel/cobble/mud cover types. River habitat consisted of an estimated 18,952 acres of open water.

PROJECT GOALS AND OBJECTIVES

The Northwest Power Planning Council's Fish and Wildlife Program provides the following vision statement for the Columbia Basin:

"The vision for this program is a Columbia River ecosystem that sustains an abundant, productive, and diverse community of fish and wildlife, mitigating across the basin for the adverse effects to fish and wildlife caused by the development and operation of the hydrosystem and providing the benefits from fish and wildlife valued by the people of the region. This ecosystem provides abundant opportunities for tribal trust and treaty right harvest and for non-tribal harvest and the conditions that allow for the recovery of the fish and wildlife affected by the operation of the hydrosystem and listed under the Endangered Species Act. Wherever feasible, this program will be accomplished by protecting and restoring the natural ecological functions, habitats, and biological diversity of the Columbia River Basin. In those places where this is not feasible, other methods that are compatible with naturally reproducing fish and wildlife populations will be used. Where impacts have irrevocably changed the ecosystem, the program will protect and enhance the habitat and species assemblages compatible with the altered ecosystem. Actions taken under this program must be consistent with an adequate, efficient, economical and reliable electrical power supply.

This is a habitat-based program, rebuilding healthy, naturally producing fish and wildlife populations by protecting and restoring habitats and the biological systems within them, including anadromous fish migration corridors. Artificial production and other non-natural interventions should be consistent with the central effort to protect and restore habitat and avoid adverse impacts to native fish and wildlife species.

Wanaket Wildlife Area Draft Management Plan

9/2001

Management actions must be taken in an adaptive, experimental manner because ecosystems are inherently variable and highly complex. This includes using experimental designs and techniques as part of management actions, and integrating monitoring and research with those management actions to evaluate their effects on the ecosystem.”

Specific project objectives are related to protection and enhancement of wildlife habitats and are expressed in terms of habitat units (HU's). Habitat units were developed by the US Fish and Wildlife Service's Habitat Evaluation Procedures (HEP), and are designed to track habitat gains and/or losses associated with mitigation and/or development projects. Habitat Units for a given species are a product of habitat quantity (expressed in acres) and habitat quality estimates. Habitat quality estimates are developed using Habitat Suitability Indices (HSI). These indices are based on quantifiable habitat features such as vegetation height, shrub cover, or other parameters, which are known to provide life history requisites for mitigation species. Habitat Suitability Indices range from 0 to 1, with an HSI of 1 providing optimum habitat conditions for the selected species. One acre of optimum habitat provides one Habitat Unit.

The objective of continued management of the Wanaket Wildlife Mitigation Area, including protection and enhancement of upland and wetland/wetland associated cover types, is to provide and maintain 2,334 HU's of protection credit and generate 2,495 HU's of enhancement credit by the year 2004.

In 1991, the *Conforth Ranch Wildlife Mitigation Feasibility Study, McNary Oregon* (Rasmussen, Wright and Geiger, 1991) was prepared by the US Fish and Wildlife Service to conduct a baseline study of wildlife habitat on the ranch to estimate existing wildlife values, and to estimate future changes in wildlife values and benefits resulting from management and enhancement actions. The study estimated that management of the property for wildlife would result in Habitat Unit gains of 519 for meadowlark, 420 for quail, 431 for mallard, 466 for Canada goose, 405 for mink, 49 for downy woodpecker, 172 for yellow warbler, and 34 for spotted sandpiper. The estimated total was 2,495 habitat units, a 110% gain over the estimated 2,274 existing habitat units.

GUIDING POLICIES

Bonneville Power Administration Direction for Development and Implementation of Columbia River Basin Wildlife Mitigation Projects

The Bonneville Power Administration has set forth a standard project planning process that has been applied to this Management Plan. The process includes eight steps and requires that a given management plan addresses each step commensurate with project scale and complexity. The process is summarized as follows:

1. Define area of interest;
2. Involve stakeholders;
3. Develop statement of desired future condition;
4. Characterize historical and present site conditions and trends;

Wanaket Wildlife Area Draft Management Plan

9/2001

5. Establish project goals;
6. Develop and implement action plans for achieving goals;
7. Monitor conditions and evaluate results; and
8. Adapt management according to new information.

For a complete description of this process consult the Department of Energy's Wildlife Program Mitigation Program Final Environmental Impact Statement (DOE/EIS-0246) and Record of Decision (ROD, June, 1997).

Confederated Tribes of the Umatilla Indian Reservation Policy Direction

Policies guiding development of this Plan are also provided by Confederated Tribes of the Umatilla Indian Reservation. Principle guiding policies and goals and objectives related to the management of natural and cultural resources are provided by the CTUIR General Council, Board of Trustees, Fish and Wildlife Committee, Natural Resources Commission, Cultural Resources Commission, and the Department of Natural Resources Fish and Wildlife Program.

General Council and Board of Trustees

The General Council consists of Tribal members of the CTUIR over the age of eighteen. While the Board of Trustees provides formal policy direction, the General Council provides input into this plan through responses to scoping efforts conducted by the CTUIR Department of Natural Resources Fisheries and Wildlife Program.

The Board of Trustees, elected by and held accountable to the General Council, is the governing body of the Confederated Tribes of the Umatilla Indian Reservation. The Board of Trustees serves the General Council by representing the CTUIR to Federal, State, and local governments, managing the affairs of the Confederated Tribes, and developing Tribal policy and law.

CTUIR Fish and Wildlife, Natural Resource, and Cultural Resource Commissions

Established and maintained by the Board of Trustees, the Commissions consist of five members each and implement the policies and programs of the Umatilla Indian Reservation for the management of wildlife, other natural resources, and cultural resources.

The Fish and Wildlife Committee's duties include the issuance of rules and regulations such as the establishment seasons and harvest limits for Tribal members and for Non-member sport and recreation seasons. It is empowered to engage in programs and actions that protect, promote, and enhance wildlife resources of the Tribe. For example, the Committee may adopt regulations identifying and protecting specific wildlife species and their habitat on or off the Reservation due to special considerations including but not limited to, the threat of extinction on the reservation, specific activities threatening populations, nesting areas, or special habitats.

The Cultural and Natural Resource Commissions are responsible for reviews and makes recommendations relating to the enactment, enforcement, or administration of all laws, codes, and ordinances affecting the cultural and natural resources of the Umatilla Indian Reservation.

Wanaket Wildlife Area Draft Management Plan

9/2001

These Commissions, particularly the Wildlife and Cultural Resources Commission, will provide reviews and necessary policy recommendations throughout the development and implementation of this plan.

RELATIONSHIP OF THIS PLAN TO OTHER PLANS AND DECISIONS

The Wanaket Wildlife Area Management Plan is tiered to the CTUIR Wildlife Mitigation Plan (Childs, 1997), Power Act, Northwest Power Planning Council Fish and Wildlife Program, and BPA's Regional Programmatic Wildlife Mitigation Program Environmental Impact Statement and Record of Decision (BPA, 1997).

Common Elements and Assumptions

This section identifies major assumptions, elements, or components of applicable resource management on the Wanaket Wildlife Area that will apply to all potential management strategies developed by the CTUIR and BPA. Other assumptions and elements of individual management strategies identified during the management plan development process will be more fully developed through public input and further review by the Bonneville Power Administration.

CTUIR Responsibilities and Obligations

The CTUIR is a sovereign entity with rights reserved in the Treaty of Walla Walla, 1855. These rights include, among others, the authority to co-manage wildlife and wildlife habitat in the area ceded by the CTUIR to the United States of America.

Obligations of the CTUIR in regard to ownership and management of the property is more fully described in the formal CTUIR/BPA Memorandum of Agreement for Disbursal of Wildlife Mitigation Funds and Wildlife Mitigation Crediting (MOA). In relevant part, Section 8, subsection A states: "The CTUIR shall protect, mitigate, and enhance the Properties acquired in fee and conservation easement Properties as wildlife habitat on behalf of BPA permanently..."

Federal and State Laws and Regulations

The overall framework for developing management strategies for the Wanaket Wildlife Area is embedded in the Pacific Northwest Electric Power Planning and Conservation Act, P.L. 96-501 (Act). The Act directs BPA to protect, mitigate, and enhance fish and wildlife affected by the development and operation of federal hydroelectric projects on the Columbia River and its tributaries. Consistent with the purposes of this act, the program adopted the Pacific Northwest Electric Power and Conservation Planning Council (Council) under subsection 4(h) of the Act, and other environmental laws. BPA has authority pursuant to sections 2 (e) and (f) of the Bonneville Project Act, 16 U.S.C. 832a (e), (f) to transfer real properties to the CTUIR.

Furthermore, both Federal and State laws and regulations administered by various governmental agencies apply to the Wanaket Wildlife Area. Compliance with the Federal Endangered Species Act and Cultural and Historic Properties laws including but not limited

Wanaket Wildlife Area Draft Management Plan

9/2001

to, the Native American Graves Protection and Repatriation Act and the Archaeological Resources Protection Act, and State land use regulations all apply to the property.

Cultural Resources Protection

Section 106 of the National Historic Preservation Act requires federal agencies having direct or indirect jurisdiction over a proposed federal or federally assisted undertaking to take into account the effect of the undertaking on any district, site, building structure, or object that is included in or eligible for inclusion in to the National Register of Historic Places.

The Native American Graves and Repatriation Act requires that federal agencies consult with Native American tribes when activities and operations encounter cultural items or when cultural items are inadvertently discovered. The Archeological Resources Protection Act prohibits the purposeful excavation and removal of archeological resources on federal land without a permit from the federal land manager. The American Indian Religious Freedom Act requires federal agencies to protect the integrity of Native American religions on lands under federal jurisdiction.

For all wildlife mitigation projects, cultural resource management planning will be integrated with wildlife management plans as a means of avoiding impacts to cultural and historic resources. Cultural/historic resource surveys shall be completed by the CTUIR Cultural Resources Program before ground-disturbing activities are undertaken. Sites identified during the survey which are on or eligible for the National Register will be protected. Under Section 106 of the National Historic Preservation Act, BPA is responsible for funding all necessary activities associated with protection of cultural resources.

Threatened, Endangered, and Sensitive Species

In 1994, The NPPC Fish and Wildlife Program identified the principle to “*Protect high quality native or other habitat or species of special concern, whether at the project site or not, including endangered, threatened, and/or sensitive species.*” The Wanaket Wildlife Area provides habitats that meet part or all of the life history needs of both federal endangered and threatened species and State of Oregon Sensitive Species.

The northern bald eagle (Threatened), utilizes the area as feeding habitat during migration periods, and the American peregrine falcon is a potential, though not documented, seasonal user as well. Waterfowl utilizing the Area wetlands provide a prey base for both species.

Several stocks or Ecologically Significant Units (ESU's) of listed salmonids utilize the Columbia River, from which water is pumped to irrigate the wetlands at Wanaket. These include Snake River fall, spring, and summer run chinook ESU's (threatened), Snake River sockeye ESU (endangered), and Upper Columbia (endangered), Snake River Basin (threatened), and Middle Columbia River Steelhead (Threatened).

State of Oregon Sensitive Species include the Western painted turtle (Critical), which utilize the ponds and wetlands year round, and the burrowing owl (Critical) which nests and rears broods on the project area, the long-billed curlew (vulnerable), and white pelican

Wanaket Wildlife Area Draft Management Plan

9/2001

(vulnerable). “Critical” species are those for which listing as threatened or endangered is pending, or for which listing as threatened or endangered may be appropriate if immediate conservation actions are not taken. “Vulnerable” species are those which listing as threatened or endangered is not believed to be imminent and can be avoided through continued or expanded protective measures and monitoring.

Wetland Protection

The Wanaket Wildlife Area Land Use and Wildlife Management Plan will adhere to State and Federal regulations for all activities in or near wetlands, whether for maintenance or improvement, including: 1) Clean Water Act, Section 404; 2) Protection of Wetlands, Executive Order 11990.

Public Access

The CTUIR/BPA MOA states that: “the general public shall have reasonable access to the Properties. The CTUIR may regulate access consistent with its laws, customs, and management plan objectives, provided that road and trail access and transportation restrictions shall apply equally to tribal members and non-tribal members. Nothing in this Agreement limits the right or ability of the CTUIR to manage the Properties to preserve and protect cultural, historic, and religious sites.”

Federal law protects treaty rights of members of the CTUIR. The MOA also recognizes in Section 12 that: “Hunting, gathering, and Tribal cultural and religious activities on the Properties according to Tribal custom and law are not prohibited by this Agreement. Nothing in this Agreement shall be construed to limit or diminish any right or privilege of the CTUIR or its members provided by Federal law.”

Right of Ways

All management alternatives in the Wanaket Wildlife Area management plan will provide access commensurate with the conditions of the right-of-ways. The Hermiston Irrigation District (HID) maintains a right-of-way through portions of Wanaket to conduct operations and maintenance for canal operation and maintenance.

The HID right-of-way is located adjacent to the “O”canal and “OA” lateral in the southwest portion of Wanaket, Section 23 (see map). The “O” canal and “OA” lateral are features of the Umatilla Project, built and owned by the US Bureau of Reclamation (Reclamation). The HID operates and maintains the canals under a repayment contract with the United States.

The “OA” lateral has an U.S. right-of-way, which extends 20 feet from canal center on the north side, and 30 feet on the south side. The “OA” lateral easement is part and parcel of the Wanaket Wildlife Area and the HID is required to maintain the lateral on behalf of the United States. Roads parallel to the canals are not open to the general public as thoroughfares; they are designed for canal maintenance. In regard to use of locks on canal road gates, Reclamation and HID must have keys to all locked gates on canal systems owned by the United States.

Wanaket Wildlife Area Draft Management Plan

9/2001

Bonneville Power Administration transmission lines transect the south half of Wanaket through the southwest quarter of Section 13, the northeast quarter Section 24, and the north half of Section 19. Bonneville will maintain access along the transmission lines for operations, maintenance, and repair activities.

COORDINATION AND PUBLIC INVOLVEMENT

Scoping of issues, concerns, opportunities, and proposed actions was conducted with the Confederated Tribes of the Umatilla Indian Reservation Natural Resources Committee, Cultural Resources Commission, Fish and Wildlife Commission, state and federal natural resource management agencies, conservation groups, and area businesses to help guide development of this plan.

A public scoping document for the Wanaket Wildlife Mitigation Area Management Plan update was mailed out on July 21, 2000, with the objective of formally soliciting public participation in the development of the management plan update. The comment period for the document ended August 18, 2000. Refer to Appendix A for a list of stakeholders receiving a copy of the public scoping document.

Distribution of the scoping document in July of 2000 resulted in the solicitation of three comment letters. The following issues and comments were identified in response to the scoping document. Copies of letters are available on file at the CTUIR DNR Wildlife Program office. Additional public involvement opportunities will be available through review of this Draft Plan and involvement in Plan implementation.

1. Umatilla County Weed Control was concerned that exclusion of livestock grazing as proposed in the scoping document would eliminate the opportunity to utilize livestock as tools for habitat protection and enhancement, specifically noxious weed control.

Response: In the “Guidelines for Enhancement, Operation, and Maintenance Activities for Wildlife Mitigation Projects” (Columbia Basin Fish and Wildlife Authority Wildlife Managers, June 1998), grazing is identified as an acceptable method of vegetation management when and where it is used to accomplish desired habitat management objectives. Revenue generation should not be the primary objective of grazing on Wildlife Mitigation lands. Because of this recommendation, and because the Umatilla County Weed Control is investigating new techniques for noxious weed control utilizing livestock, the opportunity for the use of livestock for vegetative manipulation and noxious weed control will be added as a caveat in the Draft Management Plan.

2. The Oregon Department of Fish and Wildlife submitted the following comments:
 - a) They recommended against the proposal to administer the regulated hunt program with private volunteers. Their concerns were that private entities would have less accountability in administering the program equitably for all hunters, may not have an

Wanaket Wildlife Area Draft Management Plan

9/2001

adequate knowledge of current regulations, and would have little or no authority in the case of regulation violations.

- b) They concurred that the February 15 – March 31 open period for wildlife viewing would have little or no impact on waterfowl, and stated that based on their experience at near-by state wildlife areas, visitor use would be infrequent.
- c) They recommended that for ease of administration, open periods for non-consumptive access have a full seven days of visitor use available per week, rather than the Wednesday, Saturday Sunday format proposed in the scoping document. With the Wildlife Area open the full week, there would be no need to patrol and no enforcement issues related to trespass. They advise that visitor use will probably be infrequent, and that use that does occur will occur on weekends. They also recommended that horse use of the area be discouraged.

Response: The CTUIR will not consider the use of volunteers for the administration of the regulated hunt program. The CTUIR Wildlife Program experimented with volunteers on an experimental basis and did in fact encounter some of the problems mentioned by the ODFW.

The CTUIR will also take into consideration the recommendation to provide non-consumptive access seven days per week during permitted periods to simplify administration of the access program.

- 3. The Sage Basin Chapter of Pheasants Forever provided a positive, supportive review of the scoping document and proposed actions. The Chapter President offered the Chapter's assistance in future enhancement efforts.

Response: Having completed a co-operative fencing project with the Chapter, the CTUIR Wildlife Program appreciates the Chapter's offer for continued involvement in habitat protection and enhancement activities. It is expected that proposed upland habitat enhancements will be of key interest to the Chapter, and the CTUIR Wildlife Program will involve the Chapter when and where possible.

Draft Management Plan Publication and Review

A draft Management Plan for the Wanaket Wildlife Mitigation Area was mailed out on June 6, 2001, to incorporate meaningful stakeholder comment provided as a result of the scoping efforts. The comment period for the draft ended July 9, 2001. Refer to Appendix A for a list of stakeholders receiving a copy of the draft management plan.

PROJECT HISTORY

The Wanaket Wildlife Area was formerly known as the Conforth Ranch, and for many years was utilized primarily to produce livestock. Water rights and irrigation facilities were utilized to provide water for livestock and to flood uplands to provide and maintain increased forage productivity. A unique feature of the Conforth Ranch, Box Canyon, was utilized as a feedlot, and provided bunk space for several thousand cattle. Important milestones that led to

Wanaket Wildlife Area Draft Management Plan

9/2001

the acquisition of the Conforth Ranch for wildlife mitigation and subsequent management are highlighted below.

1991

The *Conforth Ranch Wildlife Mitigation Feasibility Study, McNary Oregon*, was prepared by the US Fish and Wildlife Service (USFWS) to conduct a baseline study of wildlife habitat on the ranch to estimate existing wildlife values, and to estimate future changes in wildlife values and benefits resulting from management and enhancement actions. The estimated total was 2,495 habitat units, a 110% gain over the estimated 2,274 existing habitat units. It was assumed that these habitat units would be credited for acquisition, thereby precluding future development adverse to wildlife. A survey of local interests in the concept of utilizing the Conforth Ranch as wildlife mitigation was for the most part favorable, with opposition limited to industrial development interests.

1993

The Wanaket Wildlife Project, formerly known as the Conforth Ranch, was purchased by BPA in June under the Columbia Basin Fish and Wildlife Program. The CTUIR assumed management responsibility, and with the acquisition, secured an estimated 2,274 HU's of protection credit towards BPA's mitigation debt.

1993-94

Interim management was conducted pending development of a management plan. Interim management activities included; 1) removal of and exclusion of livestock, 2) flood irrigation of the McNary potholes for the provision of open water and emergent wetland habitats, 3) noxious weed survey and initiation of control measures, 4) development of a regulated hunt program to provide ratepayer access to the mitigation project.

1995

A management plan and Environmental Analysis were finalized (Finding of No Significant Impact) and approved by BPA. The proposed action and selected alternative of the management plan was a "balanced use management approach." The objectives of the proposed action were to:

1. Provide quality habitat for migratory waterfowl and shorebirds;
2. Protect and enhance habitat for Federal and State recognized threatened, endangered, and sensitive species;
3. Protect and enhance native shrub/steppe/grassland habitats and associated wildlife species;
4. Protect, enhance, and create wetland and riparian habitats on the property; and;
5. Provide a variety of cultural and recreational opportunities consistent with wildlife protection, enhancement and mitigation.

- a) Key management activities proposed in the preferred alternative included upgrading the irrigation infrastructure, providing protection of upland and wetland habitats, providing public access, updating original habitat evaluations, and providing biological monitoring of waterfowl and upland birds.

Wanaket Wildlife Area Draft Management Plan

9/2001

An update of the original HEP was conducted by the CTUIR in October to incorporate adjustments to the wildlife area boundary and subsequent changes in cover type acreage. A net decrease in acres occurred in shrub-steppe, irrigated pasture (agriculture), and emergent wetland cover types. A corresponding decrease of 46 HU's from the original HEP analysis occurred (2,380 to 2,334 HU's).

1996 - 1999

Irrigation system improvements were initiated as per management plan direction, including installation of new fish screens, pump intakes and electrical system. Other improvements included the overhaul/rebuild of irrigation pumps, rehabilitation (mortar lining) of 600 feet of 24 inch diameter irrigation pipe and replacement of an additional 600 feet .

A co-operative agreement was developed with Ducks Unlimited for design, construction, and construction oversight of water control structures in the water delivery canal system. The agreement included a \$10,000 in-kind contribution from Ducks Unlimited for project survey, design, and contract oversight. The co-operative effort achieved Fish and Wildlife Program goals of forming partnerships with other entities to reduce project costs and increase project benefits.

A draft map and application for "transfer of water rights application" was submitted to Oregon Water Resources Department for review. The approved transfer order application allows for transfer of water rights from lands adjacent to the Wanaket project to lands within the Wanaket project, therefore creating the opportunity for additional wetland habitat creation.

2001 – July 28 Wildfire Incident

On July 28, 2001, a wildfire ignited in a hog-fuel pile on industrial lands owned by the Boise-Cascade Corporation at the Port of Umatilla. The fire continued to burn on July 29, and quickly spread east across the Wanaket Wildlife Area and to the western edge of Hat Rock State Park. The wildfire, and subsequent backfire suppression activities taken by an inter-agency fire suppression crews, burned approximately 1,720 acres of the Wanaket Wildlife Area. Consumption of upland vegetation by the fire was nearly complete. Wetland vegetation however, remains intact. A map of the fire area is shown on page 14.

Property infrastructure incurred damage as well. The wildfire damaged several power poles that support power lines to our pumpstation, and also damaged wiring and switches in our pumpstation. The Umatilla Electric Co-Operative replaced the damaged poles on August 7 and 8, 2001. Once electrical service to the pumpstation was restored, wildfire-related electrical damage to the pumpstation wiring was discovered. Repairs to the electrical service were initiated August 15, 2001, and completed August 22, 2001. The loss of electrical service due to the wildfire resulted in a loss of 25 days of irrigation.

A scalehouse and two pumphouses in Box Canyon were also completely destroyed by the fire. Approximately 5 miles of boundary fence were damaged and will require replacement, and 3.5 miles of boundary fence require repair.

Wanaket Wildlife Area Draft Management Plan 9/2001

Figure 3. Burn Area Boundary.

Wanaket Wildlife Area Draft Management Plan

9/2001

As a consequence of the fire, schedules for achieving upland habitat objectives will be lengthened to account for the shrub component and the increased complexity of restoring the habitats. Additionally, the operations and maintenance budget will be adjusted to reflect changes in project activities related to the fire. These adjustments will include 1)reducing funding for vector control, 2)reducing funding for pump maintenance, 3)increasing the budget for control of noxious weeds and competing and unwanted vegetation, 4)increasing the available budget for native plant material acquisition, and 5)providing funds for fence construction and maintenance. These adjustments represent changes within the budget as proposed in the draft plan, and do not include increases to the budget. All changes are detailed in later portions of this plan.

Annual Operation and Maintenance Activities (1993 - 2000)

Several activities are conducted to meet management plan goals and objectives of protecting and enhancing upland and wetland habitats. Flood irrigation is practiced during the permitted irrigation season (March 1 - October 31), access and travel are regulated throughout the year, and noxious weed control activities are conducted by Umatilla County Weed Control Department.

To supplement naturally occurring, ephemeral wetlands found in the McNary Potholes, flood irrigation is practiced in late spring/early summer and late summer/early fall months utilizing a pumpstation located on the McNary Pool. Early season application (March 1 – April 15) is timed to provide waterfowl brood rearing habitat for McNary Wildlife Target Species (mallard) as well as 10 other waterfowl species. Moist-soil management is practiced by allowing natural drawdown of flood irrigated habitats to provide habitat for seven species of shorebirds. Late summer/early fall applications provide feeding and resting habitat for McNary Wildlife Target Species (mallard and Canada goose), and as many as 18 other waterfowl species that utilize Wanaket during migration.

Access and travel management is implemented through a year-round restriction of vehicle access and implementation of a regulated hunt program. The restricted access is intended to minimize disturbance to wildlife during critical periods such as nesting. Between 1993 and 2000, there were 7,427 hunter visits and 29,218 hours of recreational use provided by the regulated access program. The annual average use is 1,098 hunter visits and 4,142 hours of hunter effort.

Sub-contracts are developed annually with Umatilla County Weed Control for survey and control of noxious weeds. Weed Control Staff conduct surveys at the start of each growing season, which is dependent on weather and plant phenology, for rush skeletonweed, pepperweed, Austrian peaweed, knapweeds, spikeweed, and scotch and Canada thistle. Herbicide applications may be made 2 - 3 times per growing season depending on the target species life cycle and growth habit, and success of initial application. Application equipment includes backpack, All Terrain Vehicles, and Tractor mounted spray units.

To meet management plan goals and objectives for monitoring, ecological monitoring plots and photopoints have been established and recorded with Global Positioning Surveys

Wanaket Wildlife Area Draft Management Plan

9/2001

dataloggers to detect changes in upland and wetland habitats over time. Biological surveys conducted annually include two breeding pair surveys and three brood counts.

In 1999, development of the management plan update was initiated to establish project goals and objectives, allow for stakeholder input, and determine management activities for the next five years.

Cooperative Ventures

In 2000, the CTUIR Wildlife Program established additional partnerships with the Sage Basin Chapter of Pheasants Forever, the Bureau of Reclamation, and the Oregon Duckhunters Association. Pheasants Forever assisted in the construction of approximately 1.25 miles of barbwire fence to reduce livestock trespass from adjacent private land parcels. The Bureau of Reclamation (BOR) also cooperated by allowing the fence construction to include a 40-acre BOR parcel directly adjacent to Wanaket. The CTUIR and BOR will explore the possibility of and actions necessary to incorporate the parcel into the Wanaket Wildlife Area.

The Oregon Duckhunters Association (ODA) approached the CTUIR Wildlife Program in 1999 with an interest in funding habitat enhancements on the Wildlife Area. A project was developed to create additional emergent wetland habitats, install three additional irrigation headgates, and remove and control approximately 20 acres of Russian olive. In order to take advantage of this opportunity to create additional wetland habitat, the CTUIR applied for and received an extension on the Water Rights Transfer. The Transfer is now scheduled for completion October 1, 2001.

PLAN ORGANIZATION

The remaining sections of this management plan are organized as follows: 1) Key Issues, 2) Affected Environment, including existing conditions and desired future conditions; 3) Proposed Management Activities, including enhancements, operations and maintenance, and access and travel management; 4) Monitoring and Evaluation, including biological, habitat, and access and travel management compliance, 5) Five Year Action Plan with accompanying budget.

KEY ISSUES

IDENTIFICATION OF KEY ISSUES

The purpose of this section is to focus the analysis on key elements relevant to the resource conditions, management goals and objectives, and values of the Wanaket Wildlife Area. The NPPC Fish and Wildlife Program planning assumptions, over-arching objectives, and scientific principles served as a framework for issue development.

Planning Assumptions:

- There is an obligation to provide fish and wildlife mitigation where habitat has been permanently lost due to hydroelectric development;
- This is a habitat-based program, rebuilding healthy, naturally producing fish and wildlife populations by protecting, mitigating, and restoring habitats and the biological systems within them; and
- Management actions must be taken in an adaptive, experimental manner because ecosystems are inherently variable and highly complex. This includes using experimental designs and techniques as part of management actions, and integrating monitoring and research with those management actions to evaluate their effects on the ecosystem.

Issues were also included or modified as a result of CTUIR Policy direction and formal solicitation of input through the scoping document as described in “Coordination and Public Involvement.” Four issues were subsequently incorporated into this plan for evaluation and development of management proposals. Considerations for issue prioritization included:

- The purpose and need of this management plan and;
- public values and uses.

Following are the four key issues utilized to develop and/or modify proposed management activities:

Wildlife and Wildlife Habitat Mitigation

The Wanaket Wildlife Project was developed by the BPA and CTUIR to offset habitat losses related to the McNary hydroelectric project. As part of the agreement between the CTUIR and BPA, BPA will receive credit against the losses for protecting and enhancing habitat values at Wanaket. The amount of credit BPA receives for a given project is determined through the use of a habitat assessment methodology and accounting tool referred to as the Habitat Evaluation Procedures (HEP), as developed by the US Fish and Wildlife Service.

The management objective is to enhance habitats and provide approximately 2,495 units of enhancement credits. Protection and enhancement HU’s generated by this project contribute

Wanaket Wildlife Area Draft Management Plan

9/2001

towards the 1994 Columbia Basin Fish and Wildlife Program goal of fully mitigating for wildlife losses from hydropower in the Columbia River Basin (11.1)

As summarized in “Project History”, operations and maintenance, and enhancements at Wanaket to this point have focused on improving irrigation infrastructure in order to provide and increase the amount of emergent wetland habitat. Concurrently, livestock were removed to promote passive recovery of riparian, wetland, and upland vegetation. Access has been regulated to prevent disturbance to wildlife during nesting and brood rearing, and provide public recreation opportunities. The provision of emergent wetlands has been vital to providing on-site, and in-kind habitats to mitigate for the McNary inundation impacts.

The greatest habitat impacts from the McNary Project however, were the loss of shrub-steppe and grassland habitats. An estimated 7,416 acres of these habitats were impacted by the McNary facility. Commensurate with those losses, the emphasis of this plan and five-year planning period will be to determine the appropriate, cost-effective strategies for maintaining, enhancing, and restoring shrub-steppe and grassland habitats, particularly those impacted by the 7/28/01 wildfire. Protection strategies will be developed and applied to protect and maintain recently created and enhanced wetland habitats.

Plant Community Changes

Plant communities at Wanaket are thought to be less diverse than they were prior to livestock grazing, disruption of natural fire regimes, and the invasion of noxious weeds and competing and unwanted vegetation. The 7/28/01 wildfire eliminated perhaps more than 80% of the shrub cover, further reducing the structural and species diversity of upland habitats.

The NWPPC, in its Program scientific principles, recognizes the value of restoring and maintaining diversity. In their current and simplified state, the plant communities do not address the NPPC goals of promoting regional/landscape biodiversity and protecting natural ecosystems and species diversity. Additionally, these simplified communities are thought to be producing less than their potential in terms of habitat value and units.

Public Use/Access and Travel Management

In the Draft Fish and Wildlife Program, the NPPC identified and adopted the following principle:

Ecosystem function, habitat structure, and biological performance are affected by human actions. As humans, we often view ourselves as separate and distinct from the natural world. However, we are integral parts of ecosystems. Our actions have a pervasive impact on the structure and function of ecosystems, while, at the same time, our health and well-being are tied to these conditions.

Additionally, the CTUIR/BPA Memorandum of Agreement (MOA) between the states that the general public will have reasonable access to the Wildlife Area.

The issue therefore becomes a question of how we balance human uses of the Wanaket Wildlife Area with the need to provide secure habitats that address the purpose and need of this

Wanaket Wildlife Area Draft Management Plan

9/2001

plan. Thus far, the only public access offered at Wanaket has been the regulated hunt program for waterfowl and upland bird hunting. Opportunities exist to develop non-consumptive forms of access for non-hunting segments of the public. The development of additional access forms and opportunities will need to be consistent with objectives of protecting and enhancing wildlife and wildlife habitats.

The term “access and travel management” refers to the means by which members of the public travel the Project Area to enjoy permitted uses. Different types of use and access have the potential to result in varying effects and intensities of effects on wildlife and their habitat. Access and travel management includes consideration for both motorized and non-motorized transportation, and their compatibility with the primary purpose of the wildlife area.

Motorized vehicle use generates audio and visual disturbance that can reduce use of habitats by wildlife. In wetland areas, sandy soils, or soils with fragile cryptogams, motor vehicle use can cause erosion and bare soil conditions that result in physical damage to existing plant communities, create sites for the establishment of noxious weeds and competing and unwanted vegetation, and increase the potential for wind erosion. Motor vehicle use also increases the potential for accidental fire starts. For example, vehicles may ignite dry grasses with hot catalytic converters. This is of particular concern at Wanaket because of the predominance cheatgrass, which ignites easily and has a high rate of fire spread. Unplanned ignitions may result in damage or loss of shrub species, further simplifying the structure and diversity of shrub-steppe habitats.

Road closures are an effective method for protecting wildlife and wildlife habitat, preventing physical degradation of habitat and reducing audio/visual disturbance. This is particularly important during critical periods such as nesting.

Vector Production

The provision and maintenance of wetland habitats at Wanaket contributes to the production of vectors (mosquitoes). To reduce off-site problems created by vectors and potential threats to human health, it may be necessary to practice control methods that limit vector production. Control methods typically involve the application of materials that terminate vectors in the larval and/or adult stages of their life cycle. A management goal of implementing vector control will be to utilize materials that are as specific as possible to the target vectors while minimizing effects to non-target species of insects. Insects constitute a critical food source for a variety of wildlife, including mitigation species such as the mallard, downy woodpecker, California quail, western meadowlark, and spotted-sandpiper.

Wanaket Wildlife Area Draft Management Plan

9/2001

Affected Environment

PROJECT LOCATION

The 2,817 acre Wanaket Wildlife Area is located in northeastern Oregon and lies adjacent to the south shore of the Columbia River along Lake Wallula between the Port of Umatilla (river Mile 295) on the west and Hat rock State Park (River Mile 299) on the east. It is bisected from west to east by State Highway 730 (see Project Area Map Page 3). The legal description for Wanaket includes T.5N., R.28E., portions of Sections 13, 23, 24, and T.5N., R.29E., portions of Sections 16, 17, 18, 19, 20, and 21. The area consists primarily of sagebrush dominated shrub/steppe habitats and emergent wetlands that occur in small closed basins known as “the McNary Potholes.”

TOPOGRAPHY

Wanaket is located on an outwash plain along the Columbia River. It is part of the Umatilla Plateau west of the Blue Mountains. The microtopography is one of undulating knobs and swales. The rock knobs are part of the Columbia Basin basalts that are overlain by sand deposited by the Bretz Flood (syn. - Spokane Flood) following the repeated episodes of ice-dam flooding from Glacial Lake Missoula ending in the Wisconsinian Ice Age (Thornbury – 1969). These floods occurred 15,500 to 13,000 years ago with Lake Missoula emptying an estimated 400 cubic miles of water in an episode. Other lakes were formed as a result of the water and debris downstream. Effecting the Wanaket area were Lake Lewis (1000 ft. deep) at Wallula Gap and Lake Condon at The Dalles area of the Columbia.

Slopes throughout the project area are typically flat, with slight undulations, basalt rock outcroppings, scattered intermittent and permanent wetlands, small closed basins (potholes), and areas of relatively flat open expanses. Cliffs, ranging from several to approximately 30 feet in height, exist on the north side of the project area above the Columbia River and on the east and west walls of Box Canyon. Elevations in the project area range from approximately 400 – 500 feet above Mean Sea Level.

SOILS

The *Soil Survey of Umatilla County Area, Oregon* (USDA Soils Conservation Service, 1988) was reviewed to determine soil map units for the Wanaket Wildlife Area. Map unit descriptions in the survey are used to determine the suitability and potential of a unit for specific uses or management considerations.

On the landscape, soils have the characteristic variability of all natural phenomena. The range of some observed soil properties may extend beyond the limits defined for mapped soil units. Areas of soils of a single taxonomic class can rarely, if ever, be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some “included” areas that belong to other taxonomic classes.

Soil map units mapped for the Wanaket Wildlife Area include 3A – Adkins fine sandy loam, 78B-Quincy Rock outcrop complex, 85F-Rock outcrop-Xeric Torriorthents Complex,

Wanaket Wildlife Area Draft Management Plan

9/2001

93B-Starbuck very fine sandy loam, 94A-Starbuck-Rock outcrop complex, and 122B - Winchester Sand. Low natural fertility and rainfall limit the production of forage on these soil units.

Soils were sampled with an auger, and sand depths ranging from 36" to 52" + were measured covering the knobs and swales. In some areas along the breaks above the Columbia River canyon, the underlying basalts were burnished free of sand deposits by the pre-historic floodwaters. Here the soil depth was only 2" to 4".

Permeability of the soils typically ranges from moderate to rapid for the mapped soil units, with available water capacities ranging from 1.5 to 10 inches. Rooting depth ranges from 6 to 60 inches. Erosion hazard ratings range from slight to moderate, and soil blowing hazard ratings from moderate to very high.

CLIMATE AND PRECIPITATION

Records for temperature and precipitation are available from nearby Hermiston, Oregon, approximately 5 air miles to the southwest of the project area. The average winter temperature is 35 degrees Fahrenheit, with an average daily minimum temperature is 27 degrees. In summer, the average temperature is 73 degrees, with an average daily maximum of 85 degrees.

The total annual precipitation at Hermiston is nine inches. Of this, 30 percent usually falls in April through September. Thunderstorms occur on average of 10 days per year, mostly during summer months. Average seasonal snowfall is 11 inches. Prevailing winds are from the southwest, with average windspeeds highest during the spring at about 11 miles per hour.

SHRUB-STEPPE AND GRASSLAND HABITATS

For the purpose of quantifying habitat structure, wildlife habitats are grouped into cover types in the Habitat Evaluation Procedures (HEP) process. Cover types are areas defined by their physiognomy, or overall outward appearance, including similar vegetative structure and composition, and/or topographical characteristics. Upland cover types included in the loss assessments for the McNary Project that occur at Wanaket include shrub/steppe grassland and talus rock. Shrub-steppe habitats suffered the greatest inundation impacts of all cover types, with an estimated 7,416 acres impacted by the McNary facility. Wanaket provides approximately 2,493 acres of shrub/steppe and grasslands.

Wildlife mitigation species associated with the shrub-steppe and grassland cover types include the western meadowlark and California quail. The following table summarizes the habitat needs of wildlife species selected to represent shrub-steppe/grassland cover types.

Wanaket Wildlife Area Draft Management Plan

9/2001

Table 1. Shrub-steppe/grassland Habitat Indices and Desired Future Conditions.

Mitigation Species	Rationale for Selection	Habitat Suitability Indices	Optimum Habitat Conditions
California quail	A species that utilizes the shrub-steppe/grassland habitat, the largest habitat type flooded by hydroelectric projects.	<ol style="list-style-type: none"> 1. Percent ground cover. 2. Average shrub height. 3. Distance to escape cover. 4. Average diameter of escape cover. 5. Distance between escape-cover patches. 	<ol style="list-style-type: none"> 1. 50 – 75%. 2. 5 feet +. 3. 225 feet. 4. 10 – 20 feet. 5. 75 - 200 feet.
Western Meadowlark	A species common to shrub-steppe/grassland habitat. Feeds primarily on insects and secondarily on seeds.	<ol style="list-style-type: none"> 1. Percent cover herbaceous plants. 2. Percent cover herbaceous canopy composed of grass. 3. Average height herbaceous canopy. 4. Distance to perch sites. 5. Percent shrub canopy cover. 	<ol style="list-style-type: none"> 1. 60 – 80 %. 2. 60% +. 3. 7 – 20 inches. 4. <= 125 feet. 5. < 15 percent.

Habitat Suitability Indices (HSI's) for the cover types and the associated Habitat Units (HU's) provided by each are summarized in the table below for habitat conditions existing *prior* to the wildfire. Recall that the HSI is an index of habitat quality, with 0 having no value, and 1 representing the optimum for the cover type.

Table 2. Pre-Fire Habitat Suitability Indices and Habitat Units.

Evaluation Species	Shrub-Steppe HSI	Grassland HSI	Total Habitat Units
	1716 ac	777 ac	
Western Meadowlark	.4		686
California quail	.5	.7 HSI	1402
TOTAL			2088

Table 3. Estimated Post-Fire Habitat Suitability Indices and Habitat Units.

Evaluation Species	Shrub-Steppe HSI	Grassland HSI	Total Habitat Units
	1716 ac	777 ac	
Western Meadowlark	.5		858
California quail	.2	.7 HSI	887
TOTAL			1745

Reductions in post-fire indices are primarily a consequence of shrub loss. For the California quail, the fire-induced shrub loss significantly reduces average shrub height, increases distance to escape cover, reduces the diameter of escape cover patches, and increases the distance between escape cover patches. An estimated 343 California quail habitat units were lost as a result of the fire.

Wanaket Wildlife Area Draft Management Plan

9/2001

Changes to meadowlark habitat suitability indices are not as severe. The grass cover loss was dominated by cheatgrass, an annual grass that completes its life cycle in one growing season. Therefore herbaceous cover will likely remain similar to pre-fire levels within the next growing season. Optimum shrub cover conditions for meadowlark are less than 15%, so habitat suitability for meadowlark will slightly increase on the 1,716 acres of shrub-steppe, where pre-fire shrub cover ranged from 5 – 40%. An estimated 172 habitat units may be gained for the western meadowlark as a result of the fire.

Qualifying Shrub-steppe/Grassland Habitat Conditions

To better describe and qualify shrub/steppe and grassland habitats, permanent ecological reconnaissance plots were established to estimate species composition, seral stage, and ecological conditions. In establishing the plots, monitoring locations were selected to exemplify a particular plant community, stand, or site. Eleven locations were established in May of 2000 to portray the variation within shrub-steppe and grassland communities across the landscape.

Sampling consisted of establishing 1/10 acre plots and characterizing the topography, soils, and composition of vegetation within the plot. Vegetation was classified into plant community types or associations to characterize plant assemblages frequently observed on the Project Area. The term “plant community type” is an abstract classification term, and is used to represent early seral stages of vegetative development. A summary of the survey methodology and results is provided in Appendix C.

Shrub-Steppe & Grasslands – Existing Conditions

Successional changes in shrub-steppe are most often associated with grazing, fire, or cultivation. Grazing most seriously affects the larger perennial grasses since they are preferred and are not well-adapted to withstand grazing. Heavy grazing tends, therefore, to eliminate bluebunch wheatgrass, Idaho fescue, Sandberg’s bluegrass, Cuscuta bluegrass, etc. and perennial forbs, and to increase annual grasses, particularly cheatgrass. Without management intervention, cheatgrass will relinquish ground only very slowly, if at all, once grazing pressure is lifted. Fire seriously affects non-sprouting shrubs such as basin big sagebrush and antelope bitterbrush. These species must gradually reoccupy sites after re-establishment and slow expansion. A combination of burning and overgrazing can result in development of annual rangeland dominated by cheatgrass in which rabbitbrush may be the only significant shrub.

The consequence of severe overgrazing is that cheatgrass-dominated communities can be a permanent and widespread feature of the landscape, obscuring much of the original environmental diversity of the original shrub-steppe associations. Generally, shrub-steppe and grassland plant communities at Wanaket reflect the chronic effects of intensive, long-term grazing. Surveyed plant communities were found to be in early seral stages and in poor condition. Only the shrub overstory contains a predominance of native species, including Wyoming big sagebrush, stiff sage, green or grey rabbitbrush, and antelope bitterbrush. The understory of shrub/steppe, and the overstory of grasslands, is dominated by cheatgrass. Nevada bluegrass and Sandberg’s bluegrass occurred adjacent to rock outcrops or other rocky areas with extremely limited soil depths. Bluebunch wheatgrass is extremely limited and only several

Wanaket Wildlife Area Draft Management Plan

9/2001

plants were observed during reconnaissance surveys. The diversity and coverage of perennial grasses is limited, and perennial forbs, an indicator of mid and late seral stages, are extremely scarce.

Based on the results of the ecological reconnaissance surveys, literature reviews, and consultation with shrub-steppe ecologists of Battelle's Pacific Northwest National Laboratory at the Hanford Nuclear Reservation in Richland Washington, and the Washington Natural Heritage Office in Olympia, Washington, vegetation was grouped into five plant community types as follows:

Wyoming big sagebrush/Sandberg's bluegrass

This type has not been described in publication but has been proposed (Crawford – 1999). The sagebrush community occurs on deep sands and cannot support deep-rooted bunchgrasses (e.g. – bluebunch wheatgrass, needlegrasses). The short-rooted Sandberg's bluegrass is the perennial bunchgrass that is potential on these droughty sites. The sagebrush was 5-6 ft. tall (coverage was usually 30%). The rest of the vegetation associated was either annual forbs (e.g. - fiddleneck, filaree, draba) or annual grasses (cheatgrass). On severely overgrazed sites, the bluegrass was present at only a trace to 1% cover while occupying its niche was a cheatgrass cover of up to 70%. Cryptogams (mosses and lichens) averaged 15-40% in mid to later seral communities while coverage fell to less than 5% in early seral communities. Herbage clipped was from 500 to 570 lb./ac. Approximately 5-10% of the sagebrush was dead in sampled stands. Wildlife observed were long billed curlew (flyover), meadowlarks, and pheasants.

Wyoming big sagebrush/bluebunch wheatgrass

Where the aspect shifts to N – NE and below the escarpment and palisades of the Columbia River Canyon breaks, the sands are capable of supporting deep-rooted bunchgrasses. This type contained 15-40% cover by Wyoming big sagebrush. However, due to severe overgrazing, the bluebunch wheatgrass was relict at only 1% to trace. Sandberg's bluegrass was present at 15-25% cover. Two perennial forbs were prominent – balsamroot (5%) and snow buckwheat (1-5%). Cryptogams covered 10-15% of the surface. Cheatgrass was present at up to 70% cover in early seral communities. Clipped herbage was 380 lb./ac. near Hat Rock (a comparative site selected under State administration). Wildlife observed were deer and swallows.

Bitterbrush/snow buckwheat

Bitterbrush communities carried as a potential either Idaho fescue, bluebunch wheatgrass, or needlegrasses in the Columbia Basin. Bitterbrush communities found on Wanaket and at Hat Rock were highly disturbed from past overgrazing. The only perennial bunchgrass found was Sandberg's bluegrass (20-25%) under bitterbrush cover of 10-30%. Wyoming big sagebrush was present at 5-20% cover. Perennial forbs present were snow buckwheat, long-leaved phlox, and balsamroot. The annual vegetation was dominated by cheatgrass (35-60%). At Hat Rock fiddleneck was very weedily present at 10% and greater. Here cryptogams occurred at only 15% while at Wanaket they covered 40-50% of the ground surface. Herbage clipped at Wanaket averaged only 350-400 lb./ac. and even lower at Hat Rock (270lb./ac.). Wildlife observed were deer, pheasant, meadowlarks, and harrier (flyover). Indian ricegrass

Wanaket Wildlife Area Draft Management Plan

9/2001

is possibly the potential bunchgrass under bitter-brush on these sandy sites. It was found at 1-3% cover on the Wanaket plots. This type has not been described for the Columbia Basin.

Stiff sagebrush/Sandberg's bluegrass

These communities were found on basalt flow outcrops where soil depth was only 2-4". Here stiff sage was present with cover at 15-20%. Covering the ground was a tight, dense bluegrass-cryptogam cover averaging 95%. This is due to the gentle, stable substrate with light trampling impact by ungulates. Here cheatgrass was at its lowest coverage of any site on Wanaket (1-5%). The only forbs of note were snow buckwheat, filaree, and draba (herbage was 30-150 lb./ac.). Wildlife observed were meadowlarks and pheasants.

Sandberg's bluegrass knob

Present at Wanaket were oval-shaped outcrop knobs shaped (sculpted) by the Bretz flood debris. Of interest here were two morphologic forms of Sandberg's bluegrass (*Poa secunda*). A shorter, denser bluegrass form occurred on the sides of the knob while a taller, less-dense bluegrass form occurred on the knob crest. A significant difference in herbage was found (30 lb./ac. on the crest; 400 lb./ac. on the sides). The sand depth on the crest was much less than on the sides. Meadowlarks were observed at the site. The axis of the knobs was NE to SW with a slope of 25% on the NE and a slope of 10% on the SW. This supports the probable flow of the debris from NE to SW out of Wallula Gap.

Rex Crawford (Washington Natural Heritage office, Olympia Washington) has begun a classification effort for the adjacent central Columbia Basin where he determined the big sagebrush to be sub-species *Wyomingensis*. Daubenmire in 1970 called it basin big sagebrush. In classifying these communities, Crawford has been followed as being more to date. Daubenmire considered basin big sagebrush/Sandberg's bluegrass to be an edaphic (soil induced) type. Certainly the sands, with their inability to hold water at depth, influence the ability of bunchgrasses to establish and persist with lack of disturbance. However, Wanaket has had a long history of overgrazing prior to the acquisition by the CTUIR. Daubenmire considered this kind of vegetation to be the hottest, driest unit in a classification where big sagebrush and bluebunch wheatgrass were climax (potential). Essentially Daubenmire's view and Crawford's lend credence to a potential at Wanaket where Sandberg's bluegrass is the potential bunchgrass. Management should not force deeper-rooted bunchgrasses to be part of a restoration effort here with two exceptions. Bluebunch wheatgrass or Indian ricegrass could be seeded on the north aspect canyon slopes and on the bitterbrush sites. Idaho fescue should not be used.

Identifying Desired Future Conditions for Shrub-steppe and Grasslands

While the five plant communities described above were severely altered by the wildfire, the ecological reconnaissance surveys provide valuable information for identifying potential plant community potential and desired future conditions. Desired future conditions for shrub-steppe and grassland habitats will be based on a combination of estimates of the historical composition of plant communities HEP model suitability indices.

The intent is to identify a range of values for species composition and structure that represent sustainable habitats while meeting H.S.I. objectives of the models. Plant communities are not static, and the performance of plant communities in terms of percent cover or other

Wanaket Wildlife Area Draft Management Plan

9/2001

structural characteristics fluctuates over time depending on inputs such as precipitation, disturbance (such as fire), and modifying effects such as herbivory from animals and insects or interactions (such as competition) with other plant community members as succession occurs. An estimated range of species composition, and therefore community structure, is obtained from research literature and from available relict sites with relatively intact shrub-steppe vegetation. Once that range is reasonably established, values within that range can be used as objectives for HEP suitability indices. Because of the arid growing environment and low natural productivity of soils at Wanaket, conservative estimates of plant community production are prudent.

For example, in the basin big sage/bluebunch wheat grass association of southeastern Washington, Daubenmire measured Big Sagebrush and bluebunch wheatgrass cover ranging from 9 – 19% and 36 – 63% respectively, with coverage of all native perennial grass species combined as high as 99% (Franklin and Dryness, 1973). According to HEP models, optimum shrub cover for western meadowlark is less than 12%, and optimum herbaceous cover composed of grasses is greater than 70%. Therefore, DFC's for HEP suitability indices for shrubs would be targeted for the lower end of the coverage scale as reported by Daubenmire, but still within the natural range of variability, and the DFC for percent cover of grasses based on the upper limits of grass coverage, but again within the natural range of variability. Identifying DFC's outside the range of variability would likely result in unsustainable habitats requiring greater management inputs in terms of time, effort, and costs.

Shrub-steppe and Grasslands – Desired Future Conditions

The wildfire simplified plant community structure and diversity by removing perhaps 80% or more of the shrub cover. Therefore, schedules for attaining habitat objectives in this cover type were lengthened to account for the time required to re-establish the shrub component.

In 5 - 10 years, identified shrub-steppe restoration sites will possess 60-80 percent herbaceous cover, with a minimum of 60 percent of that cover composed of native perennials. Sandberg's bluegrass is the potential bunchgrass. Twenty percent of these areas may be comprised of annual grasses, native forbs, legumes or other herbaceous species. Noxious weeds and competing and unwanted vegetation will occur at less than 40% cover.

In 15 – 20 years, shrubs, including big sagebrush, antelope bitterbrush, and green and grey rabbitbrush, will be present at a range of 5 – 15 percent total cover. Shrubs will occur in patches, with patch diameter averaging approximately 20 feet and a spaced an average of 100 feet apart. Native perennial forbs will be present at a minimum of 10 percent cover. Noxious weeds and competing and unwanted vegetation will be controlled and occur at less than 20 percent cover.

The following table summarizes habitat suitability indices for shrub-steppe and grassland species, the western meadowlark and California quail.

Table 4. Shrub-steppe/grassland Habitat Indices and Desired Future Conditions.

Wanaket Wildlife Area Draft Management Plan

9/2001

Mitigation Species	Habitat Suitability Indices	Desired Future Conditions
California quail	<ol style="list-style-type: none"> 1. Percent ground cover. 2. Average shrub height. 3. Distance to escape cover. 4. Average diameter of escape cover. 5. Distance between escape-cover patches. 	<ol style="list-style-type: none"> 1. 50 – 75%. 2. 5 feet +. 3. < 200 feet. 4. 10 – 20 feet. 5. 75 - 200 feet.
Western Meadowlark	<ol style="list-style-type: none"> 1. Percent cover herbaceous plants. 2. Percent cover herbaceous canopy composed of grass. 3. Average height herbaceous canopy. 4. Distance to perch sites. 5. Percent shrub canopy cover. 	<ol style="list-style-type: none"> 1. 60 – 80 %. 2. 60% +. 3. 7 – 20 inches. 4. <= 125 feet. 5. < 15 percent.

WETLANDS AND ASSOCIATED RIPARIAN HABITATS – EXISTING CONDITIONS

A flood irrigation system is in place to irrigate potholes and wetlands. The irrigation system consists of a pumping station on the Columbia River with two 150-horsepower centrifugal pumps. Each intake is screened with a 3' X 6' stainless steel barrel screen to prevent fish intake or entrainment. Twelve hundred feet of irrigation pipe delivers the water to approximately 15 miles of open canals that are used to distribute water throughout the property by gravity flow. Thirty headgates have been installed throughout the canal system to manipulate water direction and flow rates to wetland habitats. Property rights include rights for Columbia River water.

Two Certificates of Water Rights and their associated permits allow the CTUIR to apply a total of 4,763.5-acre feet of water. The permitted irrigation season is March 1 to October thirty-one. Overall water withdrawal is not to exceed 7.8 cubic feet per second.

Cover types provided by wetland and riparian areas important to mitigation species include emergent wetland, sand/gravel/cobble/mud cover types, riparian shrub, and riparian tree. Wildlife mitigation species associated with these cover types include the mallard, spotted sandpiper, mink, yellow warbler, downy woodpecker, and California quail. Construction of the McNary facility resulted in the inundation and loss of an estimated 248 acres of emergent wetlands, 1,028 acres of riparian hardwoods, 284 acres of riparian shrub, 7 acres of riparian herb cover types, and 577 acres of sand/gravel/cobble/mud cover types.

The Wanaket Wildlife Area contains approximately 160 acres of emergent wetland habitats. There are 64 ponds providing emergent wetland habitat and 6 ponds providing approximately 14 acres of open water habitat. Ponds ranges in size from .25 to 10.5 acres with an average pond size of 2.2 acres and an average pond perimeter of 1,560 feet. Total amount of shoreline provided by the ponds is approximately 18.3 miles (see Wetland Cover Type map).

Plant species common to these wetlands included areas include Russian olive, cottonwood, peach-leaved and Columbia River willows, American and hardstem bulrush, and broadleaf and thinleaf cattails. Herbaceous vegetation includes alkali saltgrass, creeping spikerush, tall fescue, common velvetgrass, pepperweed, catnip, reed canarygrass, smartweed, rabbitfoot grass, and stinging nettle. Lack of emergent vegetation in open water habitats is

Wanaket Wildlife Area Draft Management Plan
9/2001

generally the result of steep, rocky pond banks lacking soil, or was attributed to the presence of carp.

The following table summarizes the habitat needs of wildlife species selected to represent wetland and riparian associated cover types.

9/2001

Figure 4. Wetlands and Irrigation Canals.

Wanaket Wildlife Area Draft Management Plan **9/2001**

Table 5. Wetland/Riparian Habitat Indices and Optimum Conditions.

Mitigation Species	Rationale for Selection	Habitat Suitability Indices	Optimum Habitat Conditions
Mallard	Utilizes a broad range of cover types, including riparian herb, emergent wetlands, and islands for nesting, brood rearing, and wintering habitat. Species with recreational significance.	<ol style="list-style-type: none"> Distance between nest habitat and emergent wetlands. Height of nesting cover. Percent canopy cover. Disturbance by people/dogs. 	<ol style="list-style-type: none"> <= .25 miles. 15 – 24 inches tall. 75% +. None between April 1, - August 14.
Spotted Sandpiper	Represents migratory shorebirds which utilize sparsely vegetated islands, mudflats, shorelines, and sand and gravel bars. This habitat was the third largest loss of terrestrial acreage from development of the John Day and McNary Hydroelectric projects.	<ol style="list-style-type: none"> Nesting cover. Nesting cover less than 2' high and <= 50% cover. Nesting distance from water. Foraging habitat. 	<ol style="list-style-type: none"> 10 – 50% herbaceous vegetation cover. < 75 feet. Open/sparsely vegetated shorelines <= 150 ft from water.
Mink	Carniverous furbearer utilizing shoreline and shallow water habitats.	<ol style="list-style-type: none"> Percent of year with surface water present. Percent tree canopy cover. Percent shrub canopy cover. Percent canopy cover of emergent vegetation. Percent canopy cover of trees and shrubs <= 328 ft water. Percent shoreline cover 	<ol style="list-style-type: none"> 75% +. 75% +. 75% +. 50 – 75%. 75% +. 100%.
Yellow Warbler	Represents a species that reproduces in riparian shrub vegetation and make extensive use of adjacent wetlands.	<ol style="list-style-type: none"> Percent deciduous crown cover. Ave. height deciduous shrub canopy. Percent comprised of hydropytic shrubs. 	<ol style="list-style-type: none"> 50 – 75%. 6.5 ft +. 100%.
Downy Woodpecker	Selected to represent riparian tree cover type, feeds and reproduces in trees.	<ol style="list-style-type: none"> Basal area. No. snags pre acre. 	<ol style="list-style-type: none"> 44 – 87 sq. ft/ac. 5+.
California Quail	Selected primarily for shrub-steppe/grasslands, but also makes extensive use of riparian shrub and herb habitats. Requires interspersions of surface water with food and cover habitats.	<ol style="list-style-type: none"> Percent ground cover. Average shrub height. Distance to escape cover. Average diameter of escape cover. Distance between escape-cover patches. 	<ol style="list-style-type: none"> 50 – 75%. 5 feet +. <= 200 ft. 10 – 20 ft. 75 - 200 ft.

The following table summarizes the existing condition of wetland and riparian cover types at Wanaket, their associated Habitat Suitability Indices (HSI), and the number of Habitat Units (HU's) provided by each. The HSI is an index of habitat quality, with 0 having no value, and 1.0 representing optimum conditions for the cover type

Wanaket Wildlife Area Draft Management Plan

9/2001

Table 6. Target Mitigation Species Habitat Suitability Indices and Habitat Units.

Evaluation Species	Emergent Wetlands 148 Acres	Riparian Tree 5 Acres	Riparian Shrub 30 Acres	Riparian Herb 35 Acres	Sand/Gravel /Cobble/Mud 25 Acres	Total Habitat Units
Mallard	.6			.1		93
Spotted Sandpiper					.8	20
Mink	.5	.5		.1	.1	83
Yellow Warbler			.1			3
Downy Woodpecker		.2				1
California quail			.7	.7		46
TOTAL						246

The HSI values presented in the above table are based on a HEP update completed in 1995. Key habitat suitability indices related to the amount of riparian tree, shrub, and herb cover have improved markedly following livestock removal in 1993. In particular, cottonwood, peach-leaved and Columbia River willow, hardstem bulrush, and broad and thinleaf cattail cover have improved. The values for the suitability indices will be updated in a 2003 HEP analysis.

Identifying Desired Future Conditions for Ponds, Wetlands, and Associated Riparian Habitats

The wetland habitats at Wanaket are substantially supplemented and enhanced through flood irrigation. As such, these cover types may be viewed as artificial. However, their provision through artificial means is necessary to provide on-site mitigation for inundation impacts of the adjacent McNary facility. Because of their artificial nature, desired future conditions will be based estimates of habitat structure and suitability as provided in HEP models for the selected species.

Ponds, Wetlands, and Associated Riparian Habitats – Desired future Conditions

Emergent wetlands

Emergent wetland habitats will be provided and maintained utilizing the existing water right during the March 1 – October 31 irrigation season. On an average annual basis, surface water will be present at a minimum of nine out of 12 months. Approximately 155 to 165 acres of emergent wetlands will be provided on an annual basis. Emergent wetlands will be free from disturbance April 1 through August 14 to provide security for waterfowl and other birds during nesting and brood rearing periods.

Riparian Tree

Riparian tree habitat will decrease within 5 years as Russian olive, defined in this plan as competing and unwanted vegetation, is removed from irrigation canals and wetland margins. Because of the extremely competitive nature of Russian olive, it is not expected that the species will be eradicated from riparian areas, but rather reduced and controlled.

Wanaket Wildlife Area Draft Management Plan

9/2001

In 6 – 10 years, riparian tree cover will increase as Russian olive are replaced with eastern and black cottonwood. Cottonwood cover will continue to increase as a result of grazing rest and natural regeneration.

Riparian Shrub

Riparian shrubs will continue to increase through natural dispersal and regeneration. Within 5 years, emergent wetland margins will possess a minimum of 50% cover of hydrophytic shrubs, dominated principally by peach-leaved and Columbia River Willow. Average shrub height will be 6.5 feet or greater.

Riparian Herb

Plant communities adjacent to emergent wetlands will contain herbaceous vegetation 15 – 25 inches high, with an average of 75% canopy cover. Habitat structural diversity will be provided by American and hardstem bullrush, and broad and thin-leaved cattail. Due to difficulty of control, perennial pepperweed is expected to be present at an average of 25% cover in riparian areas and wetland margins.

Sand/Gravel/Cobble/Mud

Emergent and open water wetlands will be allowed to draw down annually to provide mudflats, and sand/gravel/cobble cover types. Areas within 75 feet of the draw-down/low-water mark will be relatively open, possessing less than 50% vegetative cover.

Wanaket Wildlife Area Draft Management Plan **9/2001**

Table 7. Wetland/Riparian Wildlife Habitat Indices and Desired Future Conditions*.

Mitigation Species	Habitat Suitability Indices	Desired Future Conditions
Mallard	<ol style="list-style-type: none"> 1. Distance between nest habitat and emergent wetlands. 2. Height of nesting cover. 3. Percent canopy cover. 4. Disturbance by people/dogs. 	<ol style="list-style-type: none"> 1. Provide suitable vegetation height, coverage, within .25 miles of emergent wetlands. 2. 15 – 24 inches tall. 3. 75% +. 4. None between April 1, - August 14.
Spotted Sandpiper	<ol style="list-style-type: none"> 1. Nesting cover. Nesting cover less than 2' high and <= 50% cover. 2. Nesting distance from water. 3. Foraging habitat. 	<ol style="list-style-type: none"> 1. 10 – 50% herbaceous vegetation cover. 2. < 75 feet. 3. Open/sparsely vegetated shorelines <= 150 ft from water.
Mink	<ol style="list-style-type: none"> 1. Percent of year with surface water present. 2. Percent tree canopy cover. 3. Percent shrub canopy cover. 4. Percent canopy cover of emergent vegetation. 5. Percent canopy cover of trees and shrubs < = 328 ft water. 6. Percent shoreline cover 	<ol style="list-style-type: none"> 1. 100%. 2. 75% +. 3. 75% +. 4. 50 – 75%. 5. 75% +. 6. 100%.
Yellow Warbler	<ol style="list-style-type: none"> 1. Percent deciduous crown cover. 2. Ave. height deciduous shrub canopy. 3. Percent comprised of hydronymic shrubs. 	<ol style="list-style-type: none"> 1. 50 – 75%. 2. 6.5 ft +. 3. 100%.
Downy Woodpecker	<ol style="list-style-type: none"> 1. Basal area. 2. No. snags pre acre. 	<ol style="list-style-type: none"> 1. 44 – 8 sq. ft/ac. 2. 5+.
California Quail	<ol style="list-style-type: none"> 1. Percent ground cover. 2. Average shrub height. 3. Distance to escape cover. 4. Average diameter of escape cover. 5. Distance between escape-cover patches. 	<ol style="list-style-type: none"> 1. 50 – 75%. 2. 5 feet +. 3. < = 200 ft. 4. 10 – 20 ft. 5. 75 - 200 ft.

*Based on USFWS HEP Models.

NOXIOUS WEEDS – EXISTING CONDITIONS

Noxious weeds are defined as any non-native plant species that is injurious to public health, crops, livestock, land, or other natural resources. When noxious weed populations become established, they may expand at an exponential rate. Because they are non-native, they are typically free from the natural controls of their native range. They can negatively impact wildlife habitat by decreasing biological diversity, reducing the amount of palatable forage, and reducing available nesting cover.

Noxious weeds can infest an area in numerous ways. Primary vectors operating at Wanaket include; 1)seed transport and dispersal from vehicles, 2)seed transport and dispersal in irrigation waters, 3)seed dispersal by domestic or wild animals, and 4)expansions of infestations from adjacent, untreated lands.

In Umatilla County, noxious weeds are divided according to control requirement categories as established by Umatilla County Weed Control Board and Board of County Commissioners. The designations area as follows;

Wanaket Wildlife Area Draft Management Plan

9/2001

“A” Designated Weed – a weed of known economic importance which occurs in the state in small enough infestation to make eradication and containment possible; or is not known to occur, but its presence in neighboring states make future occurrence in Oregon seem imminent. Prevention, early detection, and eradication are high priority for these species.

“B” Designated Weed – a weed of known economic importance which is regionally abundant, but which may have limited distribution in some counties. Where implementation of a fully integrated statewide management plan is feasible, biological control shall be the main approach where biological agents are available.

All species on the Umatilla County Noxious Weed List are surveyed for at Wanaket. The following “A” and “B” designated species have been documented at the Wanaket Wildlife Area.

Table 8. Noxious Weeds Occurring at the Wanaket Wildlife Area.

Species	Designation	Ave. Acres Treated Annually
Perennial Pepperweed (<i>Lepidium latifolium</i>)	A	40
Swainsonpea (<i>Sphaerophysa salsula</i>)	B	40
Diffuse Knapweed (<i>Cetnaurea diffusa</i>)	B	60
Russian Knapweed (<i>Centaurea repens</i>)	B	60
Musk Thistle (<i>Cardus nutans</i>)	B	<1
Canada Thistle (<i>Cirsium arvense</i>)	B	<1
Yellow starthistle (<i>Centaurea solstitialis</i>)	B	<1

Perennial Pepperweed

Perennial pepperweed or tall whitetop is a member of the Mustard family. It was introduced from either southern Europe or western Asia. It is a deep-rooted perennial plant with an extensive, vigorous creeping root system which reproduces by seeds and root stalks. The plant stands 3 to 5 feet high with a heavy, sometimes woody, crown. The lower leaves are oblong with toothed margins, and flowers are white. The plant possesses deep-seated rootstocks and a waxy leaf coating that make it resistant to control. At Wanaket, the plant is usually associated with wetland margins or near irrigation canals where moist soils occur. It is less frequently found in dry upland sites.

SwainsonPea

Swainsonpea is a creeping perennial that reproduces by both seeds and lateral roots. Flowering occurs from May to July. The plant was introduced from Asia. It is often found in association with pepperweed at Wanaket. Approximately 40 acres of pepperweed/swainsonpea complexes were treated at Wanaket in 2000.

Diffuse Knapweed

This is a diffusely branched annual or short-lived perennial, one to two feet tall. Flowering occurs from July to September. The species was introduced from Eurasia, and poses a

Wanaket Wildlife Area Draft Management Plan

9/2001

threat to rangeland as it is highly competitive plant capable of excluding desirable species. This species is often associated with rock outcrop areas at Wanaket where little competition with other noxious weeds occurs.

Russian Knapweed

Russian knapweed is a perennial, forming dense colonies by adventitious shoots from widely spreading black roots. Roots of the plant have been measured at depths exceeding eight feet. Stems are from 18 – 36 inches tall. Flowering occurs from June to September. The plant is a native of Eurasia, and at best estimate was probably introduced in North America in the late 1890's. In upland habitats at Wanaket, Russian knapweed is usually found in well drained, seasonally damp swales and depressions. Approximately 60 acres of knapweeds were treated in 2000 at Wanaket.

Musk Thistle

Musk thistle can be a biennial or a winter annual, and may grow up to six feet tall. Leaves are deeply lobed and spiny margined, while flower heads are terminal, solitary, up to three inches in diameter, and usually bent over. The plant is a native of southern Europe and was introduced to the United States in the early part of the century. It is capable of spreading rapidly and forming dense stands that crowd out desirable plant species. Only infrequent, spot infestations of the plant have been observed at Wanaket. Herbicide control of these small infestations has been effective in reducing the plant's spread.

Canada Thistle

Canada thistle is a colony-forming perennial that spreads from deep and extensive horizontal stems. Stems are one to four feet tall, rigid, and branched above, and topped with purple flowers. Flowering occurs in July and August. The species is native to southeastern Asia, and was introduced into Canada in the late 18th century. It differs from other species of thistle in that there are male and female flower heads, and these are on separate plants. This aggressive weed is difficult to control, as breaking up its roots serves to increase the number of plants. At Wanaket, the species occurs in small, scattered infestations in dry upland areas.

Yellow Starthistle

Yellow starthistle is an annual, two to three feet tall, and has rigid branching, winged stems. Flower heads are yellow and armed with thorns up to three inches long. Yellow starthistle was introduced from Europe. Small, isolated infestations of yellow starthistle have been located along the "OA-Lateral" irrigation canal maintenance road at Wanaket.

Noxious Weeds – Desired Future Conditions

The desired condition in regard to noxious weeds is to: 1) control the spread of noxious weeds and eradicate if and where possible; and 2) increase the health and amount of native plant community cover (referenced in grassland/shrubland section above). Over the next 5 years, the desired condition is to completely control noxious weeds along road networks and control weed spread along canals among wetlands. In conjunction with the access and travel management

Wanaket Wildlife Area Draft Management Plan

9/2001

plan, weed management along roads will help prevent the further spread of noxious weeds into currently uninfested areas and limit seed redistribution within the project area.

Over the next ten year period, the DFC is to minimize noxious weed colonization of burned areas and to observe an overall decrease in the percentage of noxious weeds, particularly in wetland margins and along canals. A proven strategy to achieve eradication of noxious weeds is not currently available and managers therefore need to recognize that some noxious weeds are likely to be present following treatment strategies. Of particular concern within the study area is the abundance of perennial pepperweed and its negative effect on nesting habitat for waterfowl and other birds. A combination of prevention, control by manual, chemical, and biological agents, in conjunction with aggressive seeding and planting will be utilized to move the area towards the desired condition.

COMPETING AND UNWANTED VEGETATION – EXISTING CONDITIONS

Competing and unwanted vegetation may include noxious weeds, but also any other species that interfere with management objectives at any given time or place. Examples of such vegetation at Wanaket include cheatgrass, Russian thistle, tumble pigweed and mustard, and Russian olive. These species are present largely because of past disturbances including grazing and intensive feedlot use.

Cheatgrass

Cheatgrass is a winter annual that competes readily with desirable native perennial bunchgrasses. While it does provide forage for wildlife, it is typically low in nutrients and cures out early. Controlling cheatgrass while attempting grassland and shrub-steppe restoration activities such as planting native grasses can be expected to increase restoration costs.

When cheatgrass is the dominant grass in plant communities, it can increase the rate of fire occurrence, increase the length of the fire season, and increase the potential for fire spread. Because of its early curing habit, the species effectively lengthens the period in which fires can occur, therefore increasing the opportunity for fire occurrences. It is a prolific seed producer, and as it establishes it forms fuel beds with a higher degree of continuity that may result in increased potential for carrying flames, or fire spread. The combination of these factors may increase threats of damage or loss to the shrub component of the shrub-steppe. Big sage and bitterbrush in particular are intolerant of fire.

Russian Thistle & Tumble Pigweed

Russian thistle and tumble pigweed and mustard interfere with management objectives including vegetation restoration and irrigation. These species compete aggressively with desirable vegetation, such as shrubs, or perennial grasses and forbs that exist on the project area or would be planted in the course of restoration activities. Irrigation activities are also affected by Russian thistle, and tumble pigweed and mustard, as these species accumulate in canals, and plug culverts and headgates, therefore increasing irrigation maintenance needs.

Wanaket Wildlife Area Draft Management Plan

9/2001

Russian Olive

Russian olive is another form of competing and unwanted vegetation at Wanaket. The tree is fast growing, reaching heights of 1- to 25 feet. Trunks and branches have 1 – 2 inch woody thorns. Leaves are narrow and two – three inches long, and have a silvery appearance. The fruit of the tree, shaped like small olives, are silvery when first formed than tan to brown at maturity. The species is introduced from Europe, and has been promoted as an ornamental shade tree and as a source of food and cover for wildlife. The species is highly competitive and may form monotypic stands with little understory production or diversity. At Wanaket, it forms dense stands along wetland perimeters and irrigation canals, trapping floating debris and increasing irrigation maintenance needs and costs. Approximately 5 miles of canal and 200 acres of uplands are infested with Russian olive.

Competing and Unwanted Vegetation - Desired Future Condition

Within 10 years, competing and unwanted vegetation, including cheatgrass, Russian thistle, tumble pigweed and mustard, will be occur at 40% cover or less on identified shrub-steppe/grassland restoration sites.

Within 15 years, competing and unwanted vegetation on restoration sites will occur at a coverage of 20% or less. On non-restoration sites, competing and unwanted herbaceous vegetation will not be actively controlled due to the extent of the coverage of these species. Restoration sites will serve as demonstration areas for shrub-steppe/grassland restoration. Dependent on results, techniques will be applied to other upland sites in the future as appropriate.

Russian olive will be removed from all irrigation canals within 5 years. Vegetative re-sprouting will be controlled on an annual basis with physical removal and herbicide treatment of remaining stumps.

On upland sites, Russian olive cover will be reduced by 75% within 10 years. It is expected that because of the adjacent seed sources, and the species' ability to reproduce by seed and persist through sprouting, that the complete eradication of the species will not be possible and that annual control of the plant will be required.

All Russian olive removed from irrigation canals and upland sites will be piled in slash piles averaging 20 feet in diameter and spaced approximately 250 feet apart to provide cover for California quail and small upland game species.

SPECIAL/UNIQUE HABITAT FEATURES - EXISTING CONDITIONS

Special and unique habitat features include the basalt cliffs rimming the Columbia River and the Box Canyon area. Basalt cliffs have the necessary features, such as cracks and ledges, that provide habitat for wildlife.

Cliffs provide physical protection for wildlife and may concentrate a variety of reptiles, birds, and mammals into relatively small but stable environments. Most species that use cliffs obtain their food and water nearby. Essentially, the higher a cliff, the more suitable habitat it

Wanaket Wildlife Area Draft Management Plan

9/2001

provides. With increasing height, there are more predictable upward-flowing warm air currents, or thermals, which provide conditions necessary for raptors. High cliffs within .25 miles of permanent water are by far the most important for those animals associated with them.

Cliffs are essential to the survival of some raptorial birds and other species such as bats. They are very important as secure places for a variety of raptors to nest and rear their young or perch. Prairie falcons, for example, use high cliffs because they have predictable thermals and because their height provides security from ground-dwelling predators. Cliffs and rock outcrops are also very important in providing reptiles sites for thermal regulation.

There are approximately 10,000 linear feet of cliffs in these areas, with heights ranging from several to approximately 40 feet. Mammals such as the yellow-bellied marmot are frequently observed using these cliffs in Box Canyon. Raptors, including various species of hawks and owls, have been observed perching on the cliffs as well.

Unique Habitat Features - Desired Future Conditions

Maintain/restore suitable shrub-steppe/grassland habitats as identified on page 23. By enhancing the cover and food values of adjacent habitats, cliff habitats are likely to receive more use from small mammals and raptors. Maintain current road closures to minimize disturbance near cliff habitats.

PUBLIC USE/ACCESS

The access component of the Wanaket Wildlife Area Management Plan will review potential uses of the area, determine which uses are compatible with mitigation goals and objectives, and determine seasons and levels of use for each. Uses are categorized as consumptive or non-consumptive. Consumptive uses result in the physical taking of natural resources, for example hunting, fishing, or plant gathering. Non-consumptive uses include hiking, wildlife viewing, photography, and natural resource education. Currently, only hunting access is provided at Wanaket, however, the development of non-consumptive forms of public use create the opportunity for a broader spectrum of the public to experience and enjoy Wanaket, and gain an understanding and appreciation of wildlife mitigation efforts and natural resources in general.

Hunting – Existing Condition

Waterfowl and upland bird hunting according to federal and state regulations is a permitted recreational activity at the Wanaket Wildlife Area. Hunting is permitted only by daily drawing on Wednesdays and weekends, with waterfowl hunting limited to 15 hunting parties (a hunting party is two hunters or one hunter/one non-hunter) for a total of 30 hunters. Thirty additional hunters are permitted to enter in the afternoon through a second, upland bird hunt drawing. Hunters must be present to participate in the drawing and are required to turn in the daily permit card/harvest report at the end of each hunt day. Big game hunting and the use of rifles or pistols is not permitted on the project area due to safety concerns for adjacent residential and commercial developments. Between 1993 – 2000, Wanaket received an annual average of 1,066 hunter visits and 4,170 hours of hunter-use.

Wanaket Wildlife Area Draft Management Plan

9/2001

In 1998, a mail-out survey was conducted to solicit 1) hunter views of the quality of the hunt program, 2) input on recommend changes to the program, and 3) gauge interest in developing non-consumptive forms of access. The CTUIR Wildlife Program mailed out 525 questionnaires and received 118 responses, with an overwhelming majority favorably reviewing the overall quality of the hunt program. Changes suggested by the respondents included numbering ponds for easier location and identification, improving project maps, and changing the random drawing process so that hunters did not race for available ponds. All changes have since been implemented.

Concern was raised by some hunters that the current, “day-of-hunt” drawing system favors local hunters. Because the drawing for a hunt day is held on the morning of that hunt day, it discourages non-local hunters who may not want to travel to the area because they risk not being drawn.

The Guidelines for Enhancement, Operations, and Maintenance Activities for Wildlife Mitigation Projects, prepared by the CBFWA Wildlife Managers in 1998, recommends against the use of mitigation funds for operating regulated hunt programs. The use of mitigation funds for incidental staff time to manage hunting activities is however considered acceptable.

Hunting – Desired Future Conditions

Hunting opportunities will continue to be limited to waterfowl and upland game birds, and will be provided within the context of federal and state seasons. Access for hunting will continue to be non-motorized, and regulated in a manner that affords refuge periods (non-hunt days) and areas for wildlife, complements other local and regional hunt programs, and offers equal access opportunities for hunters.

Fishing – Existing Condition

The Wanaket Wildlife Area offers extremely limited opportunities for sport fisheries. Ponds currently contain mosquito fish and carp. However, many fish were lost during in 1995-97, when water levels in wetlands were extremely limited due to necessary construction and maintenance improvements to the pump-station, main pipeline, and canal system. Providing fishing opportunities at Wanaket would require the introduction and maintenance of warm water fish species.

Fishing – Desired Future Condition

No fishing opportunities will be developed and offered at Wanaket. The stocking and maintenance of sport fish for recreational purposes is not consistent with the intent of the Wildlife Mitigation Program and funding. Guidelines prepared by the CBFWA Wildlife Managers in 1998 recommend against the use of mitigation funds for time spent managing fishing activities and developing regulations.

Plant Gathering – Existing Condition

The Wanaket Wildlife Area offers excellent opportunities for CTUIR members to gather cultural plants such as tule and sage. As stated in the “Common Elements and Assumptions”

Wanaket Wildlife Area Draft Management Plan

9/2001

section, federal law protects treaty rights of members of the CTUIR. The right for Tribal members to access those resources is highlighted in the MOA between BPA and the CTUIR as follows: "Hunting, gathering, and Tribal cultural and religious activities on the Properties according to Tribal custom and law are not prohibited by this Agreement. Nothing in this Agreement shall be construed to limit or diminish any right or privilege of the CTUIR or its members provided by Federal law."

Plant Gathering – Desired Future Condition

Continue to provide access for cultural uses as protected by federal law and the MOA between BPA and the CTUIR. Access periods for CTUIR Tribal members to gather cultural plants will be determined by plant phenology and which particular stage of development is the appropriate gathering time. Existing parking areas should provide adequate access to gathering areas.

Non-Consumptive Uses – Existing Conditions

To date, non-consumptive forms of public use/access have not been available at Wanaket. However, in the 1998 mail-out survey described above, 57 of 118 (48.3%) respondents favored developing other, non-consumptive public uses at Wanaket, 44 of 118 (37.3%) were opposed, and the remaining 17 (14.4%) were indifferent. By far the most common forms of uses suggested for inclusion into the public access program at Wanaket included birdwatching, hiking, and photography.

Educational opportunities in the Wanaket Wildlife Area are abundant. With both upland and wetland habitats present, it provides an ideal site for both community and public school education. Natural resources may be studied at different levels of complexity, depending on the age of the student. Habitat restoration projects can be living, working laboratories, where students can study growth patterns as they relate to different propagation techniques, water availability, and soils.

Non-Consumptive Uses – Desired Future Conditions

Diversify public use opportunities at Wanaket by providing an array of non-consumptive uses that will accommodate the interests of a broader public and allow visitors to enjoy natural resources at Wanaket. Access periods for non-consumptive uses will be primarily driven by the need to provide secure periods and habitats for wildlife.

TRAVEL MANAGEMENT

Travel management addresses the ways and means in which access to the project area for public uses and information is provided. Uses are generally provided through a transportation system that includes parking areas, roads, and trails, and associated facilities, such as kiosks or sign boards, trail markers, interpretative sites, and waste receptacles. In this section, the existing travel management infrastructure will be described, as well as the desired future condition of the necessary infrastructure to provide for the public uses. Motorized access is currently prohibited, and non-motorized use has been restricted to administrative access and regulated hunt program access.

Wanaket Wildlife Area Draft Management Plan

9/2001

Motorized Access – Desired Future Conditions

Motorized access, except for administrative or emergency purposes, will continue to be prohibited at the Wanaket Wildlife Area except in parking areas. The restriction includes conventional vehicles (passenger cars/trucks), motorcycles, and all-terrain vehicles. Motorized and non-motorized boats are not permitted within the Wanaket Wildlife Area. Administrative purposes shall include the access of right-of-ways by the Hermiston Irrigation District and Bonneville Power Administration, and access by the CTUIR and its subcontractors in the implementation of protection, enhancement, and operations and maintenance activities.

Non-motorized Access – Desired Future Conditions

Non-motorized access will be provided in defined periods for the purposes of hiking, and wildlife viewing/photography. Trail systems will be designed and subject to seasonal closures related to protected habitat and targeted species requirements. As an example, designated seasonal trails will limit access during specific time periods to minimize disturbance to waterfowl during the migratory and brooding periods.

TRANSPORTATION SYSTEM – EXISTING CONDITION

Roads

The Wanaket Wildlife Area contains 14.8 miles roads of native surface roads. To protect habitat, reduce disturbance to wildlife, and limit liability for the CTUIR, BPA, and HID, all roads are closed to public use. Roads are divided into primary and secondary classifications. For the purposes of this plan, primary roads are defined as roads that connect directly to public highways or other primary travel routes and comprise the basic network project administrative and management activities, including irrigation maintenance and right-of-way maintenance for the Hermiston Irrigation District and the Bonneville Power Administration. Because of their regular use, these roads are candidates for maintenance such as grading, spot rocking, and installation of drainage devices. There are 7.3 miles of primary roads.

Secondary roads serve smaller areas than primary roads, and are connected to primary roads. Secondary roads are usually operated for intermittent service depending on management objectives for the particular locale accessed. For example, a secondary road that provides access to outlying areas of the project area may be utilized only when surveying and treating noxious weeds, but otherwise used sparingly or not at all. There are approximately 7.5 miles of secondary roads.

Trails – Existing Condition

No formal designated hiking trails or paths currently exist at Wanaket.

Transportation System - Desired Future Conditions

Primary roads will be graded, spot-rocked, and have drainage devices installed where poor drainage or soil saturation increases difficulty of travel and results in damage to habitats.

Roads no longer necessary for project operations and maintenance will be returned to natural resource production through seeding of perennial grasses, transplanting native shrubs

Wanaket Wildlife Area Draft Management Plan

9/2001

where possible, and allowing for passive recovery of native shrubs. Approximately 3.1 miles of secondary roads are not necessary for the operations and maintenance of the area. Unnecessary roads are candidates for restoration activities involving the reestablishment of natural vegetation. Approximately 0.5 miles of the 3.1 miles of road identified as priority for restoration occur on State of Oregon Lands included within the Wanaket Wildlife Area. On many unused roads, establishment of the shrubs is occurring through natural seed dispersal.

When and where possible, travel for project operations and maintenance will be accomplished primarily with All-Terrain Vehicles to reduce wear on roads and vehicles and minimize soil compaction.

A map of the transportation system, including roads proposed for maintenance and restoration, is provided on page 41.

Trails – Desired Future Condition

Provide hiking trails and/or utilize existing roadways as hiking trails to provide non-mechanized access conforming to seasonal- and habitat-driven restrictions. Restrictions serve to:

- 1) manage and protect wildlife habitat;
- 2) prevent disturbance of wildlife during critical life history stages such as nesting;
- 3) provide recreational opportunities in keeping with improved stewardship, and managed and protected wildlife habitat.

Proposed seasonal trails are defined in this plan as a 4- to 6-foot wide multi-use, natural trails. Any overhead branches will be trimmed at 8 feet vertical clearance to improve visibility. Designated portions of trails may have an improved surface to accommodate handicapped access. Trails will be impacted by seasonal wildlife or wildlife habitat restrictions, and possibly seasonal flooding or wetland impacts. Signs will be placed on this type of trail to identify seasonal limitations. No motorized access will be permitted, except emergency and maintenance vehicles, on any trail. All trails will be interpreted by signage at the parking lot and at intersections to indicate directions and distances. Waste cans will be placed in appropriate areas. Extraneous existing trails, trails formerly used by 4WD and ATV vehicles, and sensitive habitat areas will be closed off and re-vegetated.

Property Improvements – Existing Conditions

The Wanaket Wildlife Area currently provides ten, low standard parking areas. Parking areas are typically native surface, gated, and have waste receptacles.

Two large kiosks are located on the west and east ends of the project area along Oregon State Highway 730. These kiosks are utilized to display maps, area access restrictions, and hunting regulations.

Structural developments include approximately 12 miles of 4-strand barb-wire fencing along project boundaries. One shop building, tack shed, corral, and two scale houses are located in Box Canyon, which previously served as a feedlot. The feedlots contained two pumphouses

Wanaket Wildlife Area Draft Management Plan

9/2001

with pumps and pressure tanks, an underground irrigation system previously used to water stock, and a series of storage bays on a concrete pad. An additional corral is located on the west end of the property, directly south and adjacent to Highway 730.

Damage incurred by the infrastructure resulting from the wildfire was significant, and included the loss approximately 5 miles of boundary fence which will require replacement, and damage to approximately 3.5 miles of fence that will require repair. The two scale-houses, one of which provided office and storage space, were also completely lost, as were the two pump-houses and tack shed located in Box Canyon.

Property Improvements – Desired Future Conditions

General desired future conditions for facilities include:

- Replace 5 miles of boundary fence damaged by the wildfire and repair 3.5 miles.
- Replace scale-house building and the office/storage space it provided.
- Replace the two pump-house structures, pumps, and pressure tanks in the Box Canyon feedlots.
- Improve standard of parking areas (fencing, leveling as needed), and avoid placement of parking areas in right-of-ways.
- Provide waste collection receptacles at activity centers.
- Design and construct trails for seasonal wildlife viewing, photography, hiking, and natural resource education.
- Construct and maintain interpretive displays (kiosks, signboards) as needed to provide visitor information.

Improve conditions at parking areas one through eight. Parking areas will be low-standard, natives surface, spot-rocked as necessary for leveling and to prevent erosion, and delineated with smooth-wire or other fencing. Fencing will posses one walk-through with an associated sign board for posting of area access restrictions. Parking areas will be gated and closed during no-access periods as defined in this plan.

9/2001

Figure 5. Access and Travel Management.

Wanaket Wildlife Area Draft Management Plan
9/2001

PROPOSED MANAGEMENT ACTIVITIES

Management activities proposed in this section are intended to address key issues and move the project area towards desired future conditions. Proposed activities include habitat enhancements and protection, operations and maintenance, and public use/access and travel management.

Enhancement activities may be considered those actions designed and undertaken to increase the suitability of habitats above existing conditions. Enhancements will typically include active forms of restoration such as site preparation and planting. Protection activities are generally designed to protect existing habitat values from degradation or prevent disturbance to wildlife. However, protection and enhancement activities may occasionally overlap, such as in the case of livestock exclusion (habitat protection) and subsequent increase in the amount of riparian shrub habitats (enhancement). Operations and maintenance activities address the custodial needs of the project area, such as irrigation and irrigation infrastructure maintenance, vector control, and facilities maintenance. Public use and access and travel management includes the implementation of area and seasonal and access restrictions, including means of travel, and installation of facilities and trails necessary for visitor use and education.

ENHANCEMENT AND PROTECTION STRATEGIES

The NPPC Fish and Wildlife Program provides possible criteria linking biological objectives to management strategies (protection, restoration, substitution) based on habitat conditions. The Program identifies four categories of habitat conditions, including intact, restorable, compromised, and eliminated. Implementation strategies will vary depending on the current condition and the restoration potential of the habitat for the species and life stages of interest. For example, if the habitat for a given area is intact, and the biological potential of the target population is high, the area becomes a candidate for protection. If the habitat of an area is restorable, and the biological potential of the targets species is high, the area becomes a candidate for restoration. The following table illustrates possible applications of these biological objectives to strategies within the NPPC Fish and Wildlife Program.

Wanaket Wildlife Area Draft Management Plan
9/2001

Table 9. Criteria Examples of Possible Strategies (NWPPC Fish and Wildlife Program).

Habitat Condition	Description	Biological Potential of Target Species	Habitat Strategy
Intact	Ecological Functions and habitat structure largely intact.	High	Preserve
		Low	Preserve
Restorable	Potentially restorable to intact status without heroic measures.	High	Restore to intact
		Low	Moderate Restore
Compromised	Ecological function or habitat structure substantially diminished.	High	Moderate Restore
		Low	Low Restore
Eliminated	Habitat fundamentally altered or blocked.	High	Substitute
		Low	Substitute

Intact habitat: Where the habitat for a target population is largely intact, then the biological objectives for that habitat will be to preserve the habitat and restore the population of the target species up to the sustainable capacity of the habitat.

Restorable habitat: Where the habitat for a target population is absent or severely diminished, but can be restored without heroic efforts, then the biological objective for that habitat will be to restore the habitat with the degree of restoration depending on the biological potential of the target population. Where the target population has high biological potential, the objective will be to restore the habitat to intact condition, and restore the population up to the sustainable capacity of the habitat.

Where the target population has low biological potential the objective will be to restore the habitat up to the point that the sustainable capacity of that habitat is no longer a significant limiting factor for that population.

Compromised habitat: Where the habitat for a target population is absent or substantially diminished and cannot reasonably be fully restored, then the biological objective for that habitat will depend on the biological potential of the target species. Where the target species has high biological potential, the objective will be to restore the habitat to the extent

Wanaket Wildlife Area Draft Management Plan

9/2001

practicable, and restore the population of the target species up to the sustainable capacity of the restored habitat.

Where the target species has low biological potential, the objective will be to restore the habitat up to the point that the sustainable capacity of that habitat is no longer a significant limiting factor for that population.

Eliminated habitat: Where habitat for a target population is fundamentally altered or blocked, and therefore there are no opportunities to rebuild the target population by improving its opportunities for growth and survival in other parts of its life history, then the biological objective will be to provide a substitute. In the case of wildlife, where the habitat is inundated, substitute habitat would include setting aside and protecting land elsewhere that is home to a similar ecological community.

HABITAT ENHANCEMENTS

A variety of enhancement and restoration activities will be incorporated into the Wanaket Wildlife Area Management Plan. Activities prioritized for restoration and enhancement in the five-year planning period include shrub-steppe sites that may be characterized as compromised (severely diminished), but restorable. The scale and scope of habitat restoration has increased over proposals presented in Draft Plan due to the wildfire incident. For this five-year planning period, habitat restoration sites efforts will be focused in the 1,720 acres burned area. The goals of restoration will be to re-establish native vegetation and the habitat to intact condition. The proposed sites will serve as management experiments for restoring additional shrub steppe habitats at Wanaket in the future.

Proposed Restoration Sites

Activities to meet these goals will be implemented throughout the fire affected area, with monitoring emphasis on three sites; McNary Beach Road Flat, Box Canyon, and the South Shore of the Columbia River.

McNary Beach Road Flat - On the north side of Highway 730, directly east of McNary Beach Road, is an 80-acre area that formerly consisted of shrub-steppe grassland and is now a simplified grassland composed predominantly of cheatgrass. Sheet-flooded for many years to provide green forage for livestock grazing, the site is lacking in shrubs and has little to no structural or species composition diversity.

Box Canyon - Approximately 65 acres of shrub-steppe habitat once existed in Box Canyon. However, the area is severely disturbed due to past use of the area for livestock feedlot operations. The area has currently possesses little diversity in terms of habitat structure and species composition. Groundcover is dominated by cheatgrass and foxtail barley in the understory, with an overstory comprised of koccia, Russian thistle, and tumble pigweed.

South shore of the Columbia River – Approximately 38 acres of shrub-steppe habitat existed between the cliffs and the south shore of the Columbia River. This site is of interest because of its potential for providing Wyoming big sage/bluebunch wheatgrass communities and

Wanaket Wildlife Area Draft Management Plan

9/2001

Bitterbrush/Snow buckwheat communities with Indian ricegrass and bluebunch wheatgrass components.

Proposed restoration activities will include site preparation, grass seeding, herbicide control of competing and unwanted vegetation, and shrub planting. Site preparation will include prescribed burning of competing and unwanted vegetation, and follow-up, herbicide control of residual competing and unwanted vegetation.

Site Preparation Activities

Over the next five years, several site preparation activities will be implemented on the restoration sites. These activities are designed to remove or reduce competing and unwanted vegetation and prepare seed beds to improve seed and/or plant establishment.

Prescribed Burning

Prescribed burning is the controlled application of fire under such conditions as to allow the fire to be confined to a predetermined area while producing an intensity of heat and rate of spread required to accomplish site preparation objectives.

Prescribed burning will generally be accomplished with drip and propane torches. Control lines, at least 18 inches wide and consisting of bare mineral soil, will be constructed with hand tools or heavy equipment. Control lines may also be established by burning (black lining) burn-area boundaries, or by “wetlining” fire retardant foam and water with truck- or ATV-mounted sprayers. Following completion of a prescribed burn, the project perimeter will be surveyed in its entirety to insure the fire is extinguished. The project perimeter will be inspected again the immediate day following.

Prescribed burning conducted in the spring will be accomplished prior to April 15 to protect nesting birds. Fall burning will be conducted as allowed during burning seasons set by the Umatilla Rural Fire District. A burning permit will be obtained from the District each spring prior to any prescribed burning.

Herbicide Control of Competing and Unwanted Vegetation

To limit the production of exotic annual grasses and broad-leaved weeds, herbicide applications may be made following prescribed burning and prior to seed production by competing and unwanted vegetation. Applications will be made utilizing tractor, ATV, or aerial spray equipment. Treatments follow prescribed burning when competing and unwanted vegetation re-initiate growth and prior to seed-set by these species. Selected herbicides treatments will be repeated in the fall prior to grass seeding operations. Herbicides will typically include Round-up and/or Oust for control of cheatgrass.

PLANTING

Grass Seeding

Grass seed mixtures will be dominated by native perennial grasses. Seed sources will include native cultivars and seed collected on-site and propagated off-site. Based on the

Wanaket Wildlife Area Draft Management Plan

9/2001

findings and recommendations of ecological reconnaissance surveys and reviews of the Umatilla County Soil Survey, the primary species utilized in seeding operations will be Sandberg's bluegrass. Other seed mixture components may include bluebunch wheatgrass, Indian ricegrass, thick-spike wheatgrass, sand dropseed, and needle-and-thread. Seed application will be accomplished through a combination of aerial and vehicle (truck and ATV) methods.

Shrub and Forb Planting

Native forb and shrub species will be collected on-site and propagated off-site. Forbs and shrubs will be planted pending establishment of preferred grass species and control of competing and unwanted vegetation as described in desired future conditions for restoration sites. It is estimated that shrubs will not be planted until years 4 and 5 of the restoration effort. Species targeted for collection include arrowleaf balsamroot, green and grey rabbitbrush, Wyoming big sagebrush, and antelope bitterbrush. Shrub plantings will be of a prescribed spacing based on HEP model suitability indices to meet the habitat needs of western meadowlark and California quail.

Pending monitoring and evaluation results of the proposed activities, similar management activities may be proposed for additional sites in the following five-year planning period. Areas proposed for grass seeding and forb and shrub planting are shown on the Enhancement and Operations & Maintenance map (Figure 5, Page 57 (?)).

HABITAT PROTECTION

Intact habitat: Where the habitat for a target population is largely intact, then the biological objectives for that habitat will be to preserve the habitat. Plant communities classified as stiff sage and Sandberg's bluegrass provide an example of intact habitats at Wanaket, providing primarily feeding habitat for the western meadowlark. Rocky soils, high cryptogamic cover (45%) and the growth habitat of Sandberg's bluegrass at 55% cover, inherently limit the nesting suitability of these communities. Considering these limitations and the relatively low presence of exotic annual grasses on these sites (< 5% in sampled plots), they are prime candidates for protection. Livestock grazing will continue to be excluded on these sites, and no enhancements are proposed.

Establishment of Refuge Areas

A refuge area will be established to provide a disturbance-free, no-hunt area during federal and state hunting seasons. To provide effective refuge for wildlife and to make access restrictions clear to visitors, the refuge area; 1) will not be located within or between wetlands and ponds open to hunting, 2) will be clearly indicated on project maps, and 3) marked with signs/delineators on the ground. The area will contain both emergent wetlands and upland habitats in order to provide refuge for McNary target mitigation species mallard and California quail. The proposed protection area is shown on the Enhancement and Protection Activities map.

Wanaket Wildlife Area Draft Management Plan

9/2001

Habitat Additions

To increase the amount of protected habitat and increase habitat units, acquisition and incorporation of adjacent or interior land parcels will be pursued during the course of this planning period. Two potential opportunities provide logical additions to the Wanaket Wildlife Area:

State of Oregon Parcel – This parcel consists of approximately 160 acres of shrub-steppe habitat and is located within the current project boundaries. As an inclusion, it provides an excellent opportunity to add to shrub-steppe habitats at Wanaket. Tasks related to acquiring this parcel may include; 1) conducting negotiations with the State of Oregon, 2) completing a land appraisal to determine fair market value, 3) conducting a level I contaminant survey to determine if concerns exist regarding potential contaminants, 4) coordinating title reports, escrow/closing statements, and 5) recording the covenant for the acquired parcel. If fee title acquisition is not necessary to incorporate the parcel into common management with Wanaket, a Memorandum of Agreement may be developed with the State of Oregon to achieve habitat protection objectives and insure consistent, long-term management.

Bureau of Reclamation Parcel – The BOR possesses a 40 acre parcel adjacent to Wanaket that consists of 40 acres of grassland. In cooperation with the BOR, the parcel was fenced by CTUIR Wildlife staff to exclude livestock and with the goal of eventually incorporating the parcel into consistent management with Wanaket. Procedural requirements for completing the transfer are being investigated by BOR Realty. Presumably, the parcel will be acquired through transfer and not purchase.

Both parcels are shown on the Proposed Enhancement, Operations, and Maintenance Activities map.

Public Use/Access and Travel Management

For the purpose of this management plan, public use and access and travel management are categorized as protection activities. They are intended to prevent physical damage to habitats and reduce disturbance to wildlife by restricting access during critical nesting periods or regulate use and provide refuge periods during permitted consumptive uses.

Consumptive Uses and Allowable Public Access Periods

Waterfowl and Upland Bird Hunting

Waterfowl and upland bird hunting opportunities will be provided within state and federal waterfowl seasons, with the general exception of early (September) seasons. The proposed format for the hunt program is to provide open hunt days to the general public on Wednesdays and Saturdays. It is expected that the open format will result in an initial, sharp increase in hunter use. Because of the expected increase in use, and the less restricted access, the number of open hunt days will be reduced from three to two. Specific area regulations and restrictions, and means for reporting harvest, will be provided in pamphlet form and posted at parking areas. Project staff will monitor the hunt program incidentally to other project duties.

Wanaket Wildlife Area Draft Management Plan

9/2001

Plant Gathering

Plant gathering opportunities will be available during appropriate collection periods based on plant phenology. Parking areas will be available and walk-in access available to the project interior.

Prohibited Consumptive Uses

Big game hunting – Big game hunting will be prohibited at Wanaket. Recent and impending industrial development at the Port of Umatilla and possibly Tribal Trust lands poses concerns for human safety. Additionally, based on field observations, resident big game populations are small, with mule deer numbering approximately 30 animals.

Fishing - Recreational fishing will not be developed at Wanaket. Access for the purposes of fishing will continue to be prohibited.

Trapping - Trapping will not be permitted at Wanaket.

Non-Consumptive Uses and Allowable Public Access Periods

The following non-consumptive activities are proposed as allowable public use at Wanaket:

- 1) Hiking
- 2) Wildlife Viewing
- 3) Educational/Interpretative Access

The period for open access for non-consumptive use will be February 15 – March 31.

For ease of administration, open periods for non-consumptive uses will have seven days of access per week. Access will be for day use only. Visitor use is expected to be infrequent, with most use occurring on weekends.

Trail construction will be pursued through discussions with volunteers and development of cost-share projects. Wildlife program staff will coordinate with the Lewis and Clark Bicentennial committee to consider the inclusion of a short loop trail on the northeast portion of Wanaket that would connect to the Hat Rock State Park – McNary Beach trail that is part of the celebration trail system. Program staff will coordinate trail layout, and provide natural resources information as appropriate for public information on the loop trail. Wildlife mitigation funds will not be utilized to directly fund trail construction.

Prohibited Non-Consumptive Uses

Camping - Camping has been prohibited at Wanaket since project inception. Columbia Basin Fish and Wildlife Managers, in their Guidelines for Enhancement, Operation, and Maintenance Activities for Wildlife Mitigation Projects (June, 1998) determined that the use of wildlife mitigation funds for campsite development and maintenance is inappropriate. Primitive campsites are not desirable because of the probability of debris accumulation, associated increase in operations and maintenance costs (waste clean-up and disposal) and

Wanaket Wildlife Area Draft Management Plan

9/2001

accidental fire starts. Therefore, camping will continue to be prohibited at Wanaket. Visitor use will be restricted to day light hours during permitted seasonal access periods.

OPERATIONS AND MAINTENANCE

Perpetual operations and maintenance (O&M) requirements are reflected in basic, long-term custodial needs for management of the Wanaket Wildlife Area. Operation and maintenance needs may be categorized in terms of facilities, trails, wildlife and wildlife habitat management requirements. Facilities and trail O&M would require appropriate personnel, equipment and land management activities which would be funded jointly by the City and CTUIR through a variety of funding sources (grants, donations, general funds, etc.). Individual volunteers and supporting organizations will may play a role in accomplishing O&M activities. O&M needs for wildlife and wildlife habitat would include personnel, equipment, land management activities, and miscellaneous management needs. Funding would be provided by the BPA and continue indefinitely through annual funding allocations. Specific activities and needs would be documented and approved by BPA based on the Wanaket Wildlife Area Management Plan. Actual O&M costs would be determined on a project-by-project basis and should be based upon actual needs and per acre value estimates assigned to specific habitat types.

Irrigation

Screen Maintenance – Intake screens will be inspected for physical condition and cleaned twice during each irrigation season.

Irrigation/Pumping – Irrigation will be conducted through the permitted March 1 to October 31 irrigation season. Depending on winter and spring precipitation, and the subsequent water levels in wetlands, irrigation may begin as early as March 1 and continue through April 15, the onset of nesting. Irrigation may then be re-initiated May 15, and continued as necessary through the irrigation season to maintain wetland habitats for waterfowl and other wildlife. Wetland drawdown will occur following the end of the March 1 – April 15 irrigation period to provide mudflat and shoreline habitat for shorebirds.

Canal Maintenance – Irrigation canal maintenance will be conducted throughout the irrigation March 1 to October 15 irrigation season and will include removal of organic debris, and hand and machine repair or fortifying of earthen canal berms.

Russian olive removal – Russian olive removal will occur along irrigation canals as a part of irrigation maintenance. Removal will include hand and machine removal, herbicide treatment of stumps, and hand and machine piling of slash.

Vector Control

Vector control will be conducted to address 1) on site mosquito production in irrigation canals and wetlands and, 2) off-site concerns related to vector production and human health. Some species of mosquitoes are capable of transmitting diseases such as encephalitis, dengue fever, and malaria to humans, and a variety of diseases to wildlife and domestic animals. To combat mosquitoes and the public health hazards they present, Umatilla County has

Wanaket Wildlife Area Draft Management Plan

9/2001

established mosquito control districts. These programs, which are based on surveillance, can include non-chemical forms of prevention and control as well as ground and aerial application of chemical and biological pesticides. Wanaket lies within the West Umatilla Vector Control District.

Vector control will be accomplished through co-operative efforts with the West Umatilla Vector Control District. The West Umatilla Vector Control District typically employs a variety of techniques in an Integrated Pest Management (IPM) approach, which include *surveillance*, *source reduction*, *larviciding* and *adulticiding*.

Control at Wanaket will be accomplished through the use of microbial larvicides. Microbial larvicides are bacteria that are registered as pesticides for control of mosquito larvae in outdoor areas such as irrigation ditches, flood water, standing ponds, woodland pools, pastures, tidal water, fresh or saltwater marshes, and storm water retention areas. Targeting mosquito larvae before they reach adulthood reduces overall pesticide usage in a control program by reducing or eliminating the need for ground or aerial application of chemicals to kill adult mosquitoes.. The microbial larvicides used for mosquito control are *Bacillus thuringiensis israelensis* (Bti) and *Bacillus sphaericus* (Bs).

Bacillus thuringiensis israelensis (Bti) is a naturally occurring soil bacterium registered for control of mosquito larvae. Bti was first registered by EPA as an insecticide in 1983. Mosquito larvae eat the Bti product which is made up of the dormant spore form of the bacterium and an associated pure toxin. The toxin disrupts the gut in the mosquito by binding to receptor cells present in insects, but not in mammals.

Bacillus sphaericus is another naturally occurring bacterium that is found throughout the world. *Bacillus sphaericus* was initially registered by EPA in 1991 for use against various kinds of mosquito larvae. It effects larvae in the same manner as Bti.

Larvicides will be applied through a combination of aerial (helicopter or fixed wing aircraft) and ground-based (ATV, backpack) means. Three to four applications will be made on an annual basis, beginning in July and continuing through September.

Noxious Weed Control

Noxious weeds on the Umatilla County A & B weed list will be controlled through development of subcontracts for survey and control. Surveillance and early detection of listed species is considered a critical component of weed control. Surveys will be conducted on an annual basis by project staff and the selected subcontractor to determine the status of existing infestations and determine if newly listed noxious weed species threaten to infest project area. Noxious weed species of principle concern include perennial pepperweed and swainsonpea complexes associated with wetland complexes, and knapweed complexes occurring in uplands. Control of these species will primarily be herbicide-based. Herbicide application in upland sites will be achieved through aerial applications, vehicle (vehicle, tractor, and ATV's) applications, and backpack mounted sprayers. Aerial applications will not be made

Wanaket Wildlife Area Draft Management Plan

9/2001

in wetland areas, and application equipment will be limited to vehicle and backpack applications.

Fence Maintenance

Fence maintenance will be conducted throughout the year as needed. Fence maintenance will consist of replacing supporting structures such as h-braces, figure four's, and rock jacks, replacing or adding posts, and replacing or splicing and tightening wires. Maintenance will include gates, which may include replacing gates, supporting posts, bolts, and locking devices.

Sign Maintenance

Project boundary signs will be maintained on an annual basis as needed. Boundary signs will be installed and maintained at a frequency of one sign every 1/10 mile to provide clear boundary delineation.

Maps and informational signs will be posted and maintained at two kiosks year-round to provide visitor information regarding access opportunities and restrictions. Signs at the eight existing parking areas will only be maintained during open access periods.

Signs for waterfowl and upland gamebird seasons will be provided and maintained through out the hunt season. Refuge areas are indicated on project maps, and clearly marked with "No Hunting" delineators.

Waste Disposal

Waste receptacles will be placed at parking areas during permitted public access periods. Waste will be collected and dumped in a common, large dumpster, for collection and disposal on a periodic bases. The frequency of public visits, and the use of waste receptacles, will determine the frequency of waste collection and disposal. Initially, waste will be collected on a bi-weekly basis during non-consumptive use periods, and on a weekly basis during hunt seasons. Waste will be disposed of on a monthly basis as needed.

GENERAL ADMINISTRATION

Law Enforcement

It is not permissible to fund law enforcement with mitigation funds. However, project staff will coordinate with state and local law officials in the case of trespass incidences, violations of state and federal harvest regulations, property damage, and emergency situations.

Fire Protection

Wanaket falls within the protection jurisdiction of the Umatilla Rural Fire Protection District. Because Wanaket is owned by BPA and is not fee land, fire protection assessment fees are not collected against the project area. Fire protection fees will be negotiated with the Chief of the Umatilla Rural Fire Protection District and paid on an annual basis. The

Wanaket Wildlife Area Draft Management Plan
9/2001

cost of the protection will not be dependent on the number of fires in a given year or fire size, but will be a flat fee. A protection agreement will be drafted with the URFPD and will identify agency contacts, protection priorities, area access, and available water sources. The cost of the protection is expected to range between \$250 - \$350 annually.

Wanaket Wildlife Area Draft Management Plan 9/2001

Figure 6. Proposed Enhancements and Operations and Maintenance Activities.

Wanaket Wildlife Area Draft Management Plan

9/2001

MONITORING AND EVALUATION

The NPPC identifies the following as a scientific principle in its Draft Fish and Wildlife Program (August 2000):

“Many of the features of ecological systems counsel against the notion of command and control of the environment. Adaptive management – the use of management experiments to investigate biological problems and to test the efficacy of management directions—provides a model for experimental management of ecosystems. Experimental management does not mean passive “learning by doing”, but rather a directed program aimed at understanding key ecosystem dynamics and the impacts of human actions using scientific experimentation and inquiry.”

Programs designed to include adaptive management must then logically incorporate monitoring and evaluation (M&E). Monitoring and Evaluation of habitat and target wildlife populations will be conducted to evaluate how well management plan objectives are achieved. The monitoring and evaluation portion of this plan identifies tasks related to the biological objectives, identifies who will do the evaluation and on what schedule, what kind of independent review will be incorporated, and the necessary budget for completing the monitoring and evaluation work.

The NNPC set forth the following monitoring and evaluation criteria for wildlife mitigation projects:

1. The project must have measurable, quantitative biological objectives.
2. The project must either collect or identify data that are appropriate for measuring the biological outcomes identified in the objectives.
3. Projects that collect their own data for evaluation make this data available to the region in electronic form. Data and reports developed with Bonneville funds should be considered in the public domain. Data must be submitted within six months of their collection.
4. The methods and protocols used in data collection must be consistent with guidelines
5. approved by the Council. Bonneville, in its contracting process, should ensure that each project satisfies these four criteria.

Habitat, wildlife use, and access and travel management monitoring will be conducted during the five-year implementation of this plan. Habitat monitoring includes measuring changes in structural characteristics and species composition of plant communities. Biological monitoring will address trends in wildlife use of the project area, as use is at least partially related to on-site habitat conditions, including security. Public access and travel will be monitored to insure that the objective of providing periods of disturbance-free, secure habitat is met and user compliance with access regulations and restrictions is achieved.

Wanaket Wildlife Area Draft Management Plan **9/2001**

Habitat Monitoring

Habitat monitoring will be accomplished using the Habitat Evaluation Procedures (HEP) (USFWS 1980) to quantify changes in habitat conditions for the project area. The HEP analyses will be conducted in 2004 and then at ten year intervals thereafter. Habitat parameters (variables) measured are dependent on the selected Target Species and associated HEP Model(s). The following habitat variables (V#) are contained in HEP Models for the selected McNary Target species.

Table 10. Target species, cover types, and habitat parameters measured.

Target Species	Cover Type	Habitat Variable Measured/Monitored
California Quail (<u>Callipepla californica</u>)	Shrub-steppe	V1: % of herbaceous canopy cover. V2: Average shrub height. V3: Distance to escape cover. V4: Average diameter of escape-cover patches. V5: Distance between escape-cover patches.
Western Meadowlark (<u>Sturnella neglecta</u>)	Shrub-steppe	V1: Percent cover herbaceous plants. V2: Percent cover herbaceous cover composed Of grass. V3: Ave. height herbaceous cover. V4: Distance to perch site. V5: Percent shrub canopy cover.
Mallard (<u>Anas platyrhynchos</u>)	Riparian Herb & Emergent Wetlands	V3: Distance (miles) between nesting habitat & water with emergent vegetation. V4: Height of nesting cover (inches). V5: Percent canopy cover of herbaceous Vegetation. V6: Disturbance level (low, medium, high). V7: Ratio of cover:open water of emergent wetland.
Spotted Sandpiper (<u>Actitis macularia</u>)	Shoreline (sand/gravel/cobble/mud)	V1: % Herbaceous cover, 2 ft high. V2: Distance of herbaceous cover from water. V3: % organic ground cover <= 150 ft from Water.
Mink (<u>Mustela vison</u>)	Shoreline (sand/gravel/cobble/mud)	V1: % of year surface water present. V2: % tree canopy cover. V3: % shrub canopy cover. V4: % canopy cover of emergent vegetation V5: % canopy cover of trees and shrubs w/in 100 m of wetland's edge. V6: % shoreline cover.
Yellow Warbler (<u>Dendroica petechia</u>)	Riparian Shrub	V1: Percent deciduous crown cover. V2: Average height of deciduous shrub canopy. V3: Percent deciduous shrub canopy comprised of hydrophytic shrubs.
Downy Woodpecker (<u>Picoides pubescens</u>)	Riparian Tree	V1: Basal area of woody vegetation. V2: No. snags > 15 cm DBH/ha.

Additional habitat monitoring will include ecological reconnaissance surveys, which are to monitor changes in the species composition of plant communities. The protocol for the ecological reconnaissance methodology is provided in Appendix C.

Wanaket Wildlife Area Draft Management Plan

9/2001

Habitat surveys are complemented with photopoints to provide a visual representation of measured habitat values. Photos are generally taken with a 35mm camera and slide film. To insure repeatability, photopoints are staked and recorded with Global Positioning System (GPS) dataloggers. These data points are then converted to themes in Geographic Information System (GIS) software for mapping.

Biological Monitoring

Biological monitoring is conducted to monitor trends in habitat use by waterfowl, shorebirds, and upland birds. Breeding pair surveys are utilized to monitor waterfowl and shorebird use of the wetlands for pair bonding and breeding use, and brood counts provide a measure of trends in production. Breeding pair surveys have been conducted at Wanaket for six years, and brood counts for five years. Each will be conducted annually to maintain trend data on the number of breeding pairs and broods by species.

The wetlands at Wanaket are surveyed in their entirety. Wildlife technicians, working in pairs, systematically walk all ponds and ditches, recording all pairs of waterfowl and lone drakes during breeding pair counts, and all broods during brood counts. While the protocols are designed for waterfowl, observations of all shore, wading, and upland birds are also recorded during the surveys. The survey protocols are provided in Appendix D.

Data from the surveys is entered into an access database and trends in number of breeding pairs monitored over time. The number of breeding pairs is expected to increase over time due to increases in emergent wetland habitat quantity and quality. When carrying capacity for the number of breeding pairs is reached, counts will continue to determine if that number is maintained through habitat protection, enhancements, and the provision of habitat security (periods free from human disturbance).

Within the implementation of the regulated hunt program, waterfowl and upland game bird harvest are monitored, along with hours of visitor use. Records of harvest and use are maintained in an Access Database. This monitoring has been practiced for eight years, and includes all species species of waterfowl and upland birds recorded by hunters and/or observed in visitor bags (in the case of deliberate poaching or unintentional harvest of a protected species). The following HEP Target species are included in harvest monitoring: the mallard (John Day and McNary Target Species), scaup (John Day Target Species), Canada goose (John Day/McNary Target Species), and California quail (John Day and McNary Target Species).

At the local level, harvest information may serve as an index of waterfowl and upland game bird use of the project area and effects of harvest on selected John Day and McNary HEP Target species. At the regional level, information collected in this monitoring effort may also assist State and Federal wildlife agencies in estimating population trends and waterfowl use of the Columbia Basin.

The above biological monitoring methods and tasks provide a means of monitoring the Tribes and NPPC's goals and objectives of promoting regional and landscape biological diversity. Wanaket is located in the pacific flyway, and its management for shrub/steppe and wetland habitats directly complement federal wildlife agency efforts to provide habitat for

Wanaket Wildlife Area Draft Management Plan

9/2001

waterfowl and other resident and migratory wildlife species utilizing the Columbia Basin. Wanaket is located approximately 11.5 River Miles upstream (east) from the Umatilla National Wildlife Refuge, approximately 24 River Miles downstream (west) from the McNary National Wildlife Refuge, and approximately 4 air miles northwest of the Cold Springs National Wildlife Refuge.

Data collected in these monitoring efforts could potentially contribute to U.S. Fish and Wildlife Service and State of Oregon information needs regarding presence/absence and habitat use by threatened, endangered, and sensitive species.

Access and Travel Management Compliance Monitoring

Access and Travel Management monitoring indicates the success with which we are meeting project goals of providing secure habitats for wildlife and meeting the NPPC's Program Goal of providing compatible ratepayer access to wildlife mitigation projects. Project staff monitor access compliance by actively patrolling the project boundaries and interior and inspecting for evidence of human and livestock trespass, illegal dumping, or other trespass. Visitor use and compliance is also measured during the regulated hunt program, which requires hunters to record hours of use.

The following table summarizes biological objectives, measurements of those objectives, tasks, responsible agencies, schedule, forms of independent review of monitoring, and estimated costs.

Table 11. Monitoring and Evaluation Elements.

Biological Objective	Unit of Measure	Tasks	Responsible Agency(ies)	Schedule	Independent Review
Provide 2,334 Units of Habitat Protection Credit.	Habitat Units.	1. Conduct HEP surveys for target species. 2. Prepare HEP Analysis and Report.	CTUIR Lead, Interagency HEP Team Review.	Year 2004. 10-Year Interval Thereafter.	Inter-agency HEP Team Review of Protocols, Assumptions, Analysis and Results.
Provide 2,495 Units of Enhancement Credit.	Habitat Units.	1. Conduct HEP surveys for target species. 2. Prepare HEP Analysis and Report.	CTUIR Lead, Interagency HEP Team Review.	Year 2004. 10-Year Interval Thereafter.	Inter-agency HEP Team Review of Protocols, Assumptions, Analysis and Results.
Increase Diversity of Upland Plant Community Composition.	Percent Cover. Count of Native/ Preferred Species.	1. Conduct Ecological Reconnaissance Surveys. 2. Repeat Plot Photography. 3. Summarize/Report Results.	CTUIR	Year 2005. 5 – 10 Year Interval Thereafter.	USFS or Other Independent Ecologist.
Decrease Noxious Weeds, Competing and Unwanted Vegetation Cover.	Percent Cover.	1. Conduct Cover Surveys. 2. Repeat Plot Photography. 3. Summarize/Report Results.	CTUIR CTUIR	Year 2002, Annually Until 2005. 5-Year Interval Thereafter.	None.
Provide Habitat Security (Disturbance-Free Periods).	Human Presence & Compliance with ATM Restrictions.	1. Provide/Post Access/Travel Mgmt Restrictions. 2. Monitor Visitor Use & Compliance. 3. Summarize/Report Results.	CTUIR	Annually.	ATM Restrictions Reviewed Through Management Plan Scoping Process, ISRP review of project proposal.
Monitor Avian Use Trends in Wetlands Habitats.	Species Counts.	1. Conduct 3 Breeding Pair Surveys and 3 Brood Counts. 2. Summarize/Report Results.	CTUIR CTUIR	Annually. Annually.	Protocol Reviewed by NPPC ISRP, ODFW, and USFWS.

Wanaket Wildlife Area Draft Management Plan
9/2001

Five-Year Action Plan & Budget	FY02	FY03	FY04	FY05	FY06	Total
Planning and Design						
Develop Project Designs	2,226	2,226	1,667	1,755		7,874
Planning Coordination	6,350	6,667	7,001	7,001	3,175	30,194
Update 5-year Management Plan					12,700	12,700
Subtotal	8,576	8,893	8,668	8,756	15,875	50,768
Enhancements						
Implement subcontract for control of Competing and unwanted vegetation	15,041	11,458	10,967	11,265	11,578	60,309
Plant Material collection/propagation & Acquisition	8,688	13,900	14,600	15,330	8,048	60,566
Prescribed Burning			2,500	2,500		5,000
Planting	8,100	6,250	8,000	8,000	8,048	38,398
Subcontract Coordination/inspection	5,815	6,106	6,411	6,732	7,068	32,132
Coordination w/BOR re:parcel transfer	1,990					1,990
Subtotal	39,634	37,714	42,478	43,827	38,792	198,395
Operations & Maintenance						
Infrastructure maintenance	14,303	15,018	15,769	16,558	17385	79033
Irrigation pump maintenance	3,000					20541
Intake screen maintenance	1,578	1,657	1,740	1,827	1918	8720
Canal maintenance	19,733	20,720	21,756	22,843	23986	109037
Pumping costs (electricity)	11,101	12,433	13,925	15,596	17467	70522
Noxious weed control	10,800	11,608	12,188	12,797	13437	61086
Subcontract coordination/inspection	6,700	7,035	7,387	7,756	8144	37022
Access/Travel mgmt. implementation	12,503	13,128	13,785	14,474	15197	69087
Vector control	4,000	4,000	4,450	4,923	5,419	42792
Fire Protection Services	350	370	385	405	425	1,935
Coordination with BPA	30,188	31,695	32,983	34,947	336,694	166,807
Subtotal	114,256	117,664	124,348	132,421	145383	667990
Monitoring & Evaluation						
Repeat photography	3,587		3137	3293	3458	12733
Process/label/organize photography	1,961		1344	1411	1482	5456
Establish monitoring transects & photo points	2,369	1,976				3335
Plant taxonomist subcontract	3,877				4668	8545
Breeding pair surveys (2)	1,089	1,143	1201	1261	1324	6017
Brood counts (3)	1,448	1,520	1596	1676	1760	8001
Record hours recreation use	1,089	1,143	1201	1261	1324	6017
Habitat Evaluation Procedures Surveys		10,320				
Habitat Evaluation Procedures Report		2,979				
Subtotal	15,420	18,814	13743	14430	19820	68929
Indirect (.34)	38,867	41,678	41490	43447	48465	209087
Total	223,465	225,031	231,328	242,881	263,335	1,159,483

Wanaket Wildlife Area Draft Management Plan
9/2001

Table 12. Itemized Estimated Budget.

	FY02	FY03	FY04	FY05	FY06
Personnel					
Administrative Staff .1 FTE					
Project Biologist .5 FTE					
Technician <u>1.6 FTE</u>					
2.1 FTEs	71,209	74,478	74,478	74,478	82,060
Fringe (.30 salaries)	21,363	22,343	22,343	22,343	24,618
Materials, Services & Supplies	11,615	15,163	16,476	22,231	18,884
Travel	10,093	10,598	10,598	10,598	10598
Indirect (.34)	38,855	41,677	42,124	44,082	46,294
Capital Acquisitions	0	0	0	0	0
Subcontracts					
• Weed control					
• Intake screen cleaning/maintenance					
• Irrigation Pump maintenance					
• Electricity					
• Nursery propagation					
• Planting					
• Seed application					
• Vector control					
• Fire Protection					
• Botanical Surveys	70,330	60,770	65,308	69,148	69,878
Sub-total					
Total	223,465	225,031	231,328	242,880	252,332

APPENDICES

Appendix A

Stakeholder List

Wanaket Wildlife Area Draft Management Plan

9/2001

Confederated Tribes of the
Umatilla Indian Reservation
Natural Resource Committee

Greg Rimbach
ODFW
80866 HWY 395 N
Hermiston, OR 97838

Confederated Tribes of the
Umatilla Indian Reservation
Cultural Resources Commission

US Fish and Wildlife Service
Umatilla National Wildlife Refuge
6th and I
Hermiston, OR 97838

Confederated Tribes of the
Umatilla Indian Reservation
Fish and Wildlife Commission

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Phil Havens
Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208

Jerry Pavelek
Oregon Duckhunter's Association
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Salem, Or 97304

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Jerry Lauer, Team Leader
Natural Resources
Bureau of Indian Affairs
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Mission, OR 97801

Ron Montgomery, Manager
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Hermiston, OR 97838

Mike Roxbury, Chief
Umatilla Rural Fire Protection District
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Umatilla, OR 97882

Appendix B

Ecological Reconnaissance Survey Methodology

Wanaket Wildlife Area Draft Management Plan

9/2001

SAMPLING VEGETATION FOR MONITORING PLANT COMMUNITIES

Introduction

A monitoring location is selected to exemplify a particular plant community, stand, or site. Several locations may be selected to portray the variation within the plant communities across a particular landscape. The decision when and where to locate a sample point for monitoring is made by the investigator for the purposes of a particular project need. This approach will help in the standardization of procedures utilized by the investigator once a decision is made to establish a monitoring point.

Plot Location and Orientation

Take time to locate the plot centers in order to avoid areas with variation due to site disturbance. Patches of disturbance may be included, however, to see how they change over time. In forested stands, old-growth vegetation representing site potential may be sought to serve as a reference point or benchmark to an adjacent monitoring plot located in an area of disturbance. The ecological condition or status of the vegetation is one of the foremost attributes evaluated in the decision as to where a plot should be located. Another rationale for plot center location is the desire for characterization of a specific plant species in relation to the associated vegetation.

Establishment of Permanent Monitoring Point

Each monitoring point, whether followed by extensive or intensive sampling, is important for trend analysis and comparative analysis at two or more points in time. Therefore, it is important to utilize metal stakes, which will withstand the ravages of time, fire, and other possible threats to the existence of the stake. In general, an 18-inch angle iron with 1 to 1-1/4 inch sides is utilized. Ideally this stake should be marked with location or reference information. The stake may be marked by either fixing a tag (which is aluminum) or marking with a letter and number punch. If the primary job is to leave a camera point behind, or conduct a reconnaissance level sampling procedure, the stake will then represent the plot center. Reconnaissance sampling techniques may be conducted in a circular plot:

1. 10.93 meters in radius (which is equivalent to 375 square meters) and 36 feet in radius.
2. One-tenth acre which is 37 feet in radius. After establishing the distance from plot center, locate a reference object such as a meter pole at the end of this measurement on the contour of the slope. This defines the perimeter of a visualized circle.

Photography of the Reconnaissance Plot

The plot center stake can become a camera point. A general view should be taken from the plot center to the perimeter. Additional photographic views can be taken in a clockwise fashion pivoting from the plot center to capture various views. These views should be recorded by azimuth on a form for future use when revisiting the camera point.

Additionally, it is recommended that a square yard be delineated using folding carpenter rulers at a point 5 feet distant from the plot center stake with the 5 foot mark in the center of the square

Wanaket Wildlife Area Draft Management Plan

9/2001

yard. This square yard defines an area which can be redefined in future years to assess the change in stand structure and composition. More than one can be established to show the vegetation at different locations within the sample area. The locations must be measured for distance from the plot center.

Sampling of the Reconnaissance Plot

The reconnaissance vegetation sample is conducted following the photography by traversing throughout the circular area. A species list is derived in this traverse and upon the conclusion, estimates are made of percent canopy coverage of all principle species found within the area. The estimates should be made to the nearest 5 percent. Additional information taken for the plant community should include surface cover by mosses and lichens, litter, bare ground, rock, gravel, and erosion pavement.

Environmental attributes are measured to conclude the measurement process. Some attributes should always be measured, such as: elevation, aspect, slope, position on the slope, the relief of the site, and the micro relief of the plot. Other information which might be derived if desired, would include: soils information, productivity information, utilization information, down woody material, wildlife signs, etc.

Completing the Sampling Process

After all photography and sampling has occurred, it is now time for the investigator to sit and reflect upon what has been observed at the site and to note those observations accurately and completely in prose on the front of the sampling form. Among the observations made should be the condition of the vegetation, disturbance indicators, additional species occurring in the stand but not located in the sample area, and any other factors influencing the health and vigor of the plant species within the community.

Referencing the Plot

Transect installation and sampling requires a good deal of energy and cost. Therefore, the most important event following this expenditure is to properly reference the permanent monitoring point location so that future investigators can relocate the site and the plot. Before leaving the plot, pinprick an aerial photo and place the appropriate designation of the plot on the back of the photo. Mark a map with the location (preferably a USGS quadrangle). Place location information on the plot form. The referencing of the monitoring point in the field should utilize semi-permanent objects located in the periphery of the plot. These include fenceposts, large rocks, and trees. Metal tags appropriate for referencing should be located on trees and fenceposts with rocks being referenced either silently or with paint. A sketch map should accompany the form showing the location of the plot center or the transects in relationship to the referenced objects. The azimuth and distances should be provided from these reference objects to the plot center or the Transect 1 zero end stake.

Wanaket Wildlife Area Draft Management Plan
9/2001

Breeding Pair and Brood Count Survey Methodologies

Wanaket Wildlife Area Draft Management Plan
9/2001

Waterfowl Breeding Pair Survey Protocol

- Census during that portion of the breeding season when site attachment by pairs and drakes is greatest (pre-nesting, laying, and early incubation).
- Census between 0800 and 1200 hours; this is the period of least mobility; and most pairs and lone drakes will be on waiting stations.
- Census only on bright days with temperatures above 4 degrees C (40 degrees F) and winds less than 15 mph. Avoid inclement weather (rain, heavy overcast, and low temperatures) which affects mobility and visibility of ducks.
- Conduct at least two censuses when sampling a multiple species population; four to six counts would be preferable, permitting a calculated average number of pairs for each species.
- Take counts from a vehicle or a vantage point at an adequate distance to prevent flushing birds.
- Tally all lone pairs and lone drakes greater than 15 feet apart as pairs; this type of enumeration, if conducted four to six times on the census area with proper timing, will provide relative abundance data between areas or between years on a given area.
- Canada geese pairs and lone geese (ganders) are recorded as pairs and groups are recorded as non-breeders.
- For Wanaket, survey the entire area. A team or individual will systematically walk and/or observe all ditches /ponds. Survey maps and forms are included in this file.

Wanaket Wildlife Area Draft Management Plan

9/2001

Brood Survey Protocol

Timing/conditions of brood surveys

- Counts should be conducted on or within 3 days of the following dates:
 1. June 24 - Mallards and pintails are tabulated through brood age class III.
 2. July 20 - All species are tabulated through brood age class II.
 3. August 15 - All species are tabulated through brood age class II.
- Counts should be made under the following weather conditions:
 1. Moderate temperatures.
 2. Winds less than 10 mph.
 3. Sky overcast
- The optimum time for counting is 15 minutes after sunrise. Counts should be conducted for 2 - 2.5 hours.
- Approach wetlands carefully - mallards and pintails may move overland as observer approaches.

Data recorded

1. Date and time survey conducted.
 2. Weather conditions.
 3. Zone surveyed.
 4. Observers name.
 5. Species.
 6. Number in brood. Enter the number in the brood in the appropriate species row and age class column. The number entered serves as a count of broods and as the number in the brood. For example, entering the number "5" under Age Class I for "mallard" indicates one brood of 5 mallards, Age Class I. It does not indicate five broods
 - a. Exact count (i.e. 9)
 - b. Approximate count (i.e. 9+/-)
 - c. Minimum count (i.e. 9+)
 - d. Unknown (?)
- For each species total the number of broods in the far right column.
7. Brood age according to Gallop and Marshall. Enter the number of chicks in the brood under the appropriate age class column. Age classes I, II, and III are defined as follows:
 - I. Downy young, no feathers visible, usually 1 - 18 days of age.
 - II. Partly feathered as viewed from side, usually 19 - 42 days of age.
 - III. Fully-feathered as viewed from side, "feathered flightless," no down visible, usually 43-55 days of age, flying at 56-60 days of age.

Counting Methodology

- "Broody hens":

If broody hens (for example performing distraction display) are observed but no brood is seen, record the broody hen as a brood, number unknown if chicks are not visible (i.e. Mallard,"?"). Estimate age class of brood based on age of other broods of same species observed during survey (or as unknown?).
- Unattended young:

Young not attended by a female would be assigned to a nearby brood of same species and age if such a brood is seen. If not, count the unattended young as a brood.
- Combined broods:

For example, 14 or more bluewings, redheads, tabulated as two or more broods.
- Unknown species:

If members of brood are not readily identifiable and/or adult is not seen, record brood as "unknown" species.
- Coots recorded as groups.

Coot are aged according to size relative to adult (i.e. 1/5, 1/4, 1/3, 1/2. etc.)

Wanaket Wildlife Area Draft Management Plan

9/2001

Glossary of Terms

Columbia Basin Fish and Wildlife Authority (CBFWA) - An organization established by Charter in 1987, whose membership consists of the four state and two federal fish and wildlife management entities and thirteen Indian tribes of the Columbia River Basin. Members are the legally recognized managers of the fish and wildlife resources. Responsibilities of CBFWA are provided through federal and state statutes, treaties, and court actions, and include 1) coordinating the efforts of its members to protect and enhance fish and wildlife resources, 2) providing an open forum for members to exchange information on matters affecting anadromous and resident fish, wildlife resources, and habitat concerns, 3) assuring comprehensive planning and implementation of the Northwest Power Planning Council's Fish and Wildlife Program, 4) improving the quality of fish and wildlife decision making, 5) influencing other regional decision makers. The Authority is a consensus organization, and provides the Northwest Power Planning Council and Bonneville Power Administration with recommendations representing the best available information from the fish and wildlife managers.

Community (Biotic): All plants and animals occupying a specific area under relatively similar conditions.

Critical Areas: Areas which include the following areas and ecosystems: (a) wetlands; (b) areas with a critical recharging effect on aquifers used for potable water; (c) fish and wildlife habitat conservation areas; (d) frequently flooded areas; and (e) geologically hazardous areas.

Critical Habitat: Any air, land, or water area determined (through a regulatory action under the *Endangered Species Act of 1973*) to be essential to the survival of a population of an endangered or threatened species or habitat deemed to be necessary for the recovery of a threatened or endangered species.

Cultural Resources: Areas or objects that are of cultural significance to human history at the national, state, or local level. Generally includes archaeological, historic, and prehistoric resources, as well as resources of traditional use or religious value to Native Americans.

Endangered Species: Defined in the Endangered Species Act of 1973 as "any species which is in danger of extinction throughout all or a significant part of its ranges"

Endangered Species Act of 1973: This Act requires Federal agencies, with the consultation and assistance of the Secretaries of the Interior and Commerce, to ensure that their actions will not likely jeopardize the continued existence of any endangered or threatened species or adversely affect the habitat of such species.

Fauna: Animals, especially those of a specific region, considered as a group.

Wanaket Wildlife Area Draft Management Plan

9/2001

Floodway: The channel of a river or watercourse and the adjacent land areas that must be reserved to discharge the one per cent probability flood without cumulatively increasing the water surface elevation more than a designated height, generally one foot.

Flora: Plants, especially those of a specific region, considered as a group.

Habitat: The place or type of site where a plant or animal naturally or normally lives and grows.

Infrastructure: The basic services, facilities, and equipment needed for the operation and growth of an area.

Marsh: An area of low-lying wetland, dominated by grasslike plants.

Mitigation: Avoiding, minimizing, rectifying, or compensating for adverse critical area (i.e., wetland) impacts. Mitigation, in the following order of preference is:

- (a.) Avoiding the impact altogether by not taking a certain action or parts of an action;
- (b.) Minimizing impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
- (c.) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment, and
- (d.) Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.

National Wetland Inventory (NWI): An national inventory of wetland locations containing maps and general hydrological and morphological data on listed sites maintained by the U.S. Fish and Wildlife Service.

Non-motorized: Any mode of transportation that utilizes a power source other than a motor. Primarily, non-motorized modes include walking (pedestrian), horseback riding (equestrian), and bicycling.

Northwest Power Planning Council (NWPPC) - The Northwest Power Planning Council is a four-state compact formed by Idaho, Montana, Oregon and Washington to oversee electric power system planning and fish and wildlife recovery in the Columbia River Basin. Congress initiated the Council through approval of the Northwest Power Act of 1980 (Public Law 96-501). Key to the Council's mandates is the directive to carry out its activities in a public forum.

Northwest Power Planning Council Fish and Wildlife Program (Fish and Wildlife Program) – The NWPPC's organized list of procedures, events, and other pertinent information for planning, policy-making and project review. The program is organized in three levels: 1) a basinwide level that articulates objectives, principles and coordination elements that apply generally to all fish and wildlife projects, or to a class of projects, that are implemented throughout the basin; 2) an ecological province level that addresses the 11 unique ecological

Wanaket Wildlife Area Draft Management Plan

9/2001

areas of the Columbia River Basin, each representing a particular type of terrain and corresponding biological community; and 3) a level that addresses the 53 subbasins, each containing a specific waterway and the surrounding uplands. The program is implemented by the Bonneville Power Administration, the U.S. Army Corps of Engineers, the Bureau of Reclamation and the Federal Energy Regulatory Commission and its licensees, and monitored by the NWPPC.

Pacific Northwest Electric Power Act (Power Act) - In 1980, Congress passed the Pacific Northwest Electric Power Planning and Conservation Act, which authorized the states of Idaho, Montana, Oregon and Washington to create the Northwest Power Planning Council. The Act directs the Council to prepare a program to protect, mitigate and enhance fish and wildlife of the Columbia River Basin that have been affected by the construction and operation of hydroelectric dams while also assuring the Pacific Northwest an adequate, efficient, economical and reliable power supply. The Act also directs the Council to inform the public about fish, wildlife and energy issues and to involve the public in its decision-making.

Palustrine Wetland: Includes the vegetated wetlands traditionally called by such names as marsh, bogs, swamps, fen, or prairie. There are no subsystems in the Palustrine System.

Preservation/Preserve: Areas of ecological, geological, archaeological, and cultural significance and sensitivity that are to be protected and managed so as to preserve their natural condition and value.

Raptor: A bird of prey, such as an eagle, hawk, or falcon.

Refuge Area – A specific sub-unit of the planning area providing protection from specified consumptive uses or disturbances related to consumptive uses.

Riparian Area: The land bordering a stream, pond or river; also pertaining to the vegetation typical of those borders (grasses, shrubs, and trees such as reed canary grass, spiraea, willows, ash and cottonwoods.

Riparian Habitat: A specialized form of wetland restricted to areas along, adjacent to, or contiguous with perennially flooded and intermittently flowing rivers and streams. Also, periodically flooded lake and reservoir shore areas.

Scope: In a document prepared pursuant to NEPA, the range of actions, alternatives, and impacts to be considered.

Scoping: Involves the solicitation of comments from interested persons, groups, and agencies at public meetings, public workshops, in writing, electronically, or via fax to assist DOE in defining the proposed action, identifying alternatives, and developing preliminary issues to be addressed in an EIS.

Sensitive Areas: Areas that because of the susceptibility to erosion, sliding, earthquake, or other geological events, are not suited to the siting of commercial, residential, or

Wanaket Wildlife Area Draft Management Plan

9/2001

industrial development consistent with public health or safety concerns. (RCW 36.70A.030)

Sensitive (Category 2) Species. An Oregon State category for plant species considered vulnerable or declining, that could become endangered or threatened without active management or removal of threats. Also sometimes used as a generic term for any plant and wildlife species that are threatened or endangered, rare, vulnerable or declining, or monitored by state or federal agencies.

Shorelines: All of the water areas of the state, including reservoirs and their associated uplands, together with the lands underlying them, except those areas excluded under RCW 90.58.030(2)(d). See RCW 90.58.030(2)(d) and WAC 173-18, 173-19 and 173-22.

Shrub-steppe: Typically a treeless area covered by grasses and shrubs and having a semiarid climate. Precipitation is typically very slight, but sufficient to support the growth of sparse grass and other plants adapted to living in conditions where water is scarce.

Surface Waters: Streams, rivers, ponds, lakes or other waters.

Threatened or Endangered Species: Animals, birds, fish, plants, or other living organisms threatened with extinction by man or natural changes in their environment. Requirements for declaring species endangered are contained in the Endangered Species Act of 1973.

Threatened Species: Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant part of its range.

Upland Area: Inland areas above the riparian areas.

Vegetation Type: A classification of the plant community on a site based on the dominant plant species in the community.

Wetland: Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in a saturated soil environment.

Wanaket Wildlife Area Draft Management Plan

9/2001

Literature Cited

Bonneville Power Administration. June 1997. DOE/EIS - 0246. Wildlife Program Final Environmental Impact Statement and Record of Decision.

Childs, Allen. 1997. Confederated Tribes of the Umatilla Indian Reservation Wildlife Mitigation Plan for the John Day and McNary dams, Columbia River Basin.

Confederated Tribes of the Umatilla Indian Reservation (CTUIR). March 1995. Columbia Basin Salmon Policy.

Confederated Tribes of the Umatilla Indian Reservation (CTUIR). 1949. Constitution and Bylaws, Wildlife Code (as amended in 1991).

Franklin, J.F. and C.T. Dryness. 1973. Natural Vegetation of Oregon and Washington. Oregon State University Press, Corvallis, Ore. 452 pp.

Northwest Power Planning Council. 1994. Columbia River Basin Fish and Wildlife Program.

Northwest Power Planning Council. 1989. Wildlife Mitigation Rule and Response to Comments. Publ. No. 89-35.

Oregon Trust Agreement Planning Project, October 1993, U.S. Department of Energy, Bonneville Power Administration, Division of Fish and Wildlife, Oregon Department of Fish and Wildlife, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Indian Reservation, Burns Paiute Tribe, Oregon Natural Heritage Program, U.S. Fish and Wildlife Service. 53pp.

Rasmussen, L. and P. Wright. 1990a. Wildlife impact assessment, Bonneville Project, Oregon and Washington. Prepared by U.S. Fish and Wildlife Service for U.S. Department of Energy, Bonneville Power Administration, Portland, Oregon. 37 pp.

Rasmussen, L. and P. Wright. 1990d. Draft wildlife impact assessment, McNary Project, Oregon and Washington. U.S. Fish and Wildl. Serv., Portland, Ore. 28 pp.

U.S. Department of Agriculture, Soil Conservation Service. November 1988. Soil Survey of Umatilla County Area, Oregon.

U.S. Department of Interior, Fish and Wildlife Service. 1980. Habitat Evaluation Procedures (HEP). Ecol. Serv. Manual 102. Div. Ecol. Servi., Washington D.C.

Rasmussen, L., P. Wright and R. Geiger. March 1991. Conforth Ranch Wildlife Mitigation Feasibility Study, McNary Oregon. DOE/Annual Report. BPA Division of Fish and Wildlife. Portland, Ore. 65 pp.