U.S. Fish & Wildlife Service

McNary National Wildlife Refuge

Comprehensive Conservation Plan Management Direction

Vision for the McNary National Wildlife Refuge

Stretching along the bend in the middle Columbia River where the waters of the Snake and Walla Walla Rivers join the Columbia, the McNary National Wildlife Refuge links a network of diverse habitats stretching dozens of miles from Richland, Washington, to the Wallula Gap and beyond. The Refuge's shrub-steppe, basalt cliff, riparian, river islands and aquatic habitats will be managed to fulfill the needs of native fish, wildlife, and plants. By actively restoring habitat, controlling exotic species, and enhancing existing habitats and resources, the Refuge will serve as an anchor for biodiversity and a model for habitat restoration and land management.

Just as the Columbia River is an important corridor for the transportation of people and goods, it is also an important natural corridor for migratory birds and fish, including endangered salmon and steelhead stocks. Food, rest and sanctuary will be provided for large concentrations of migratory and wintering waterfowl and shorebirds using the Refuges each year. Extensive corridors of riparian and floodplain habitat will be restored and enhanced for nesting and migrating neo-tropical songbirds. Management and enhancement of the Refuge's waters, shorelines, channels and bays will contribute to the needs and recovery of endangered salmon and steelhead passing through and rearing in Refuge waters. By reaching out to neighbors and building strategic partnerships, the Refuge will seek new and innovative ways to conserve and protect fish and wildlife resources along the entire stretch of river.

Wildlife abundance and well planned and high quality interpretive facilities will attract thousands of visitors to the Refuges. We will work with partners and volunteers to provide a wide range of high quality recreational and environmental education programs, build Refuge support, and attract visitors. Encouraging an understanding of and appreciation for the Refuge and the mid-Columbia River environment will be a focus of the McNary Refuge for generations to come.

Disclaimer

CCPs provide long term guidance for management decisions and set forth goals, objectives, and strategies needed to accomplish refuge purposes and identify the Service's best estimate of future needs. These plans detail program planning levels that are sometimes substantially above current budget allocations and, as such, are primarily for Service strategic planning and program prioritization purposes. The plans do not constitute a commitment for staffing increases, operational and maintenance increases or funding for future land acquisition.

McNary National Wildlife Refuge

Comprehensive Conservation Plan

Northern pintail – Dave Menke/USFWS

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CHAPTER 1. Introduction

Three American Avocets Landing - © Tim Bush

1.1 Introduction

When first encountered by Lewis and Clark and early settlers in the Pacific Northwest, the Columbia River was enormous, wild, and seemingly uncontrollable. Yet for all its enormous flows, the river was nearly unusable in its native state as a source of irrigation water. Early settlers found that agriculture was nearly impossible in most of the hot, arid Columbia Plateau (Dietrich 1995).

A grassroots effort to provide water for struggling small farmers culminated in the construction of Grand Coulee Dam. When it was completed in 1941, it was–at that time–the largest concrete structure ever built anywhere in the world. Successful construction of it and the other initial Columbia River dams led to increased confidence and enhanced expectations for development of the water and hydroelectric resources in the basin. Within a few decades, more than 400 dams had been constructed, including 11 run-of-the-river dams on the mainstem, and hundreds of major and modest structures on tributaries. These dams tapped into a large portion—21 million kilowatts—of the Columbia's generating capacity. The Columbia River is now considered the most hydroelectrically developed river system in the world (Dietrich 1995).

McNary National Wildlife Refuge (Refuge) was established subsequent to the authorization of McNary Lock and Dam on the mainstem of the middle Columbia River, as part of the Federal Columbia River Power System. McNary Refuge is located upstream of the McNary Lock and Dam, on waters of the impounded Columbia River known as Lake Wallula, and on adjoining uplands, near the cities of Pasco, Kennewick, and Richland (together known as the Tri-Cities). Map 1, the Vicinity Map, shows the major features within the vicinity of the Refuge. Map 2 shows the Refuge's boundary and units.

Dam structures fundamentally alter riverine systems. Rivers are transformed by large dams from seasonally fluctuating, dynamic flows of water, into deep lakes, with slow-moving waters. In recognition of this, the U.S. Congress passed the Fish and Wildlife Coordination Act, which requires consultation with the U.S. Fish and Wildlife Service (Service) and state fish and wildlife agencies for federally-licensed dams and diversions. Consultation is to be undertaken for the purpose of "preventing loss of and damage to wildlife resources." In addition, the Fish and Wildlife Coordination Act authorizes land to be made available to the Secretary of the Interior for wildlife protection purposes. McNary Refuge was established directly as a consequence of the Coordination Act requirements for dams, and as such is often spoken of as a "mitigation" refuge. However, there is no direct language in any establishing documents referencing mitigation.

1.2 Summary of Comprehensive Conservation Plan

This Comprehensive Conservation Plan (CCP) for McNary National Wildlife Refuge sets forth management guidance for the Refuge for the years 2007-2022, as required by the National Wildlife Refuge System Administration Act of 1966. This document is based on the McNary and Umatilla National Wildlife Refuges Comprehensive Conservation Plan and Environmental Assessment (US FWS 2007), hereon referred to as the CCP/EA or the final CCP/EA. The final CCP/EA revises a Draft CCP/EA (US FWS 2006) that was made available to the public (approximately 700 persons and organizations), and members of partner agencies and other

governments including States and Tribes, in January, 2007. The document was posted on the Refuge's website and local media were notified. Public open house meetings were held to allow members of the public to review the draft and talk with members of the staff and planning team about the preferred and other alternatives. Comments received were analyzed and are presented in Appendix L of the final CCP/EA, together with Service responses.

The McNary and Umatilla National Wildlife Refuges Comprehensive Conservation Plan and Environmental Assessment (US FWS 2007) was signed by the U.S. Fish and Wildlife Service's Pacific Region Regional Director in May 2007. The CCP will implement Alternative 2, which, as modified after public comment, was approved as the preferred alternative under a Finding of No Significant Impact (FONSI), also signed by the Regional Director in May 2007. The FONSI noted that this alternative best achieves the mission of the National Wildlife Refuge System and the purposes, vision, and goals for the McNary and Umatilla Refuges; maintains and restores the ecological integrity of habitats and populations on the Refuges; addresses the important issues identified during the scoping process; addresses the legal mandates of the Service and the Refuges; is consistent with scientific principles of sound wildlife management and endangered species recovery; and facilitates appropriate priority public uses compatible with the Refuges' purposes and the Refuge System's mission.

This CCP provides reasonable, scientifically grounded guidance for improving the Refuge's shrub-steppe, riparian, wetland, and cliff-talus habitats, for the long-term conservation of native plants and animals and migratory birds. The Refuge will emphasize control and reduction of weeds and improvement of riparian, shrub-steppe, island, and cliff habitats. It identifies appropriate actions for protecting and sustaining the cultural and biological features of the river islands, the Refuge's wintering waterfowl populations and habitats, the growing migratory shorebird populations that use the Refuge, and threatened, endangered, or rare species. The CCP also provides guidance for maintaining or improving high quality public use programs in wildlife-dependent uses (hunting, fishing, wildlife observation, photography, environmental education, and interpretation). Finally, the CCP provides guidance for non-wildlife dependent uses, including horseback riding, beach use, and boating; addresses strategies for illegal uses on Refuge lands, including off road use and trash dumping; and provides goals and strategies for better protecting cultural resources. A Washington State pheasant augmentation/ release program will be phased out in two years. Disturbance to island resources will be reduced through closure of all beach use on Refuge islands.

In July 2007, after the FONSI was signed and the Final CCP/EA approved, the Service and the Corps signed Amendment No. 2 to their Cooperative Agreement DACW68-4-00-13. The amendment revised the premises under the agreement by removing Madame Dorion Memorial Park (Madame Dorion Park), Crescent Island, Badger Island, Foundation Island, lands and waters in the area known as the Villard Ponds, the delta at the mouth of the Walla Walla River and nearby associated lands, and the Lower Snake River Fish and Wildlife Compensation Plan lands known as the Cummins property including south shore fisherman access and shallow water areas of the Columbia River up to an elevation of 340.5 feet above mean sea level (MSL) except lands and waters within the Cooperative Agreement boundaries. The agreement returned these areas to Corps management, substantially shrinking the boundary of McNary Refuge (see Section 1.4 (E)).

In November 2007, the Congress passed P.L. 110-114, the Water Resources Development Act of 2007 (WRDA). Section 3164 of WRDA included a directive for transfer of administrative jurisdiction for lands managed under the cooperative agreement DACW68-4-00-13 from the Secretary of the Army (Corps) to the Secretary of the Interior (U.S. Fish and Wildlife Service).

In addition, the WRDA bill included specific direction to the Service for the Cummins property and Madame Dorion Park. These areas had been administratively removed from the McNary Refuge under Amendment 2, but the WRDA did not acknowledge this, instead, the WRDA specified that:

- Retention of credits under the Compensation Plan for the "Cummins property" shall be retained by the Secretary of the Army, and any future management change at that property shall require approval by the Washington Department of Fish and Wildlife.
- The Director of the U.S. Fish and Wildlife Service shall continue operation of the Madame Dorion Park for public use and boater access.

In discussion with refuge staff, Service management, and Department of the Interior solicitors, it became clear that the Congress likely did not possess the updated language of Amendment 2 to the cooperative agreement prior to the House and Senate conference on the final version of the WRDA on August 1, 2007. Therefore, the management changes that had occurred between the agencies in July 2007 were not acknowledged in the WRDA.

Discussions between the agencies are ongoing as to what this means for future management of McNary Refuge. In the meantime, this stand-alone CCP is being presented for the same McNary Refuge boundary area as was analyzed in the Final CCP/EA. In other words, all lands and waters that were being managed by the Service as McNary Refuge through May 2007, including the Cummins property, Madame Dorion Memorial Park, the Wallula Delta, Villard Ponds, and the Islands, are still included in the scope of this CCP.

1.3 National Wildlife Refuge System Laws and Directives

The U.S. Fish and Wildlife Service, an agency within the Department of the Interior, is the principal Federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. The Service manages the 96 million acre National Wildlife Refuge System, which encompasses 548 national wildlife refuges, thousands of small wetlands and other special management areas. More than 36 million visitors annually fish, hunt, observe and photograph wildlife, or participate in environmental education and interpretive activities on national wildlife refuges.

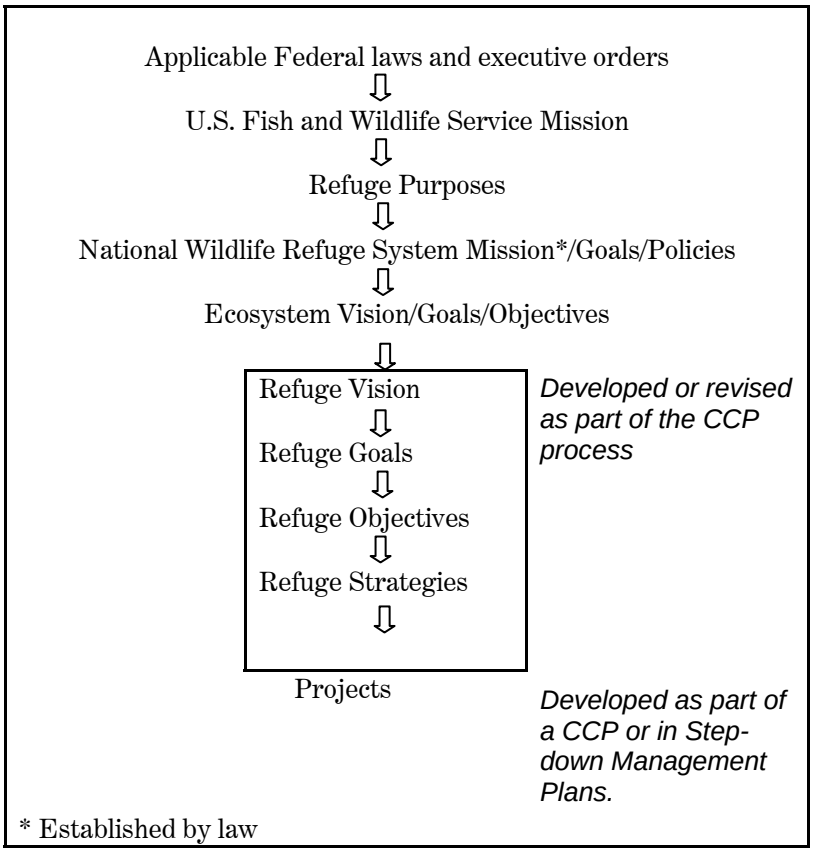
Refuges are guided by various Federal laws and executive orders, Service policies, and international treaties. Fundamental are the mission and goals of the National Wildlife Refuge System (NWRS or Refuge System) and the designated purposes of a refuge as described in establishing legislation, executive orders, or other documents authorizing, establishing, or expanding a refuge. The hierarchical relationship of these documents in regards to refuge-specific planning and management are illustrated in Figure 1.

Key concepts and guidance of the Refuge System are derived from the National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C. 668dd-668ee), the Refuge Recreation Act of 1962 (16 U.S.C. 460k-460k4) as amended, Title 50 of the Code of Federal Regulations, and the Fish and Wildlife Service Manual. The National Wildlife Refuge System Administration Act is implemented through regulations covering the Refuge System, published in Title 50, subchapter C of the Code of Federal Regulations. These regulations govern general administration of units of the Refuge System.

A. National Wildlife Refuge System Administration Act

Of all the laws governing activities on National Wildlife Refuges, the Refuge System Administration Act undoubtedly exerts the greatest influence. The National Wildlife Refuge System Improvement Act (Improvement Act) amended the Refuge System Administration Act in 1977, by including a unifying mission for all refuges to be managed as a system, identifying a new process for determining compatible uses on refuges, and requiring each refuge to be managed under a comprehensive conservation plan, developed in an open public process.

Figure 1. Hierarchy of Guidance within the National Wildlife Refuge System



As amended, the Refuge Administration Act states that the Secretary shall provide for the conservation of fish, wildlife and plants, and their habitats within the Refuge System as well as ensure that the biological integrity, diversity, and environmental health of the Refuge System are maintained. House Report 105–106 accompanying the Improvement Act states "…the fundamental mission of our System is wildlife conservation: wildlife and wildlife conservation must

come first." Biological integrity, diversity, and environmental health are critical components of wildlife conservation. As explained in section 1.5B of the Biological Integrity, Diversity and Environmental Health Policy, "the highest measure of biological integrity, diversity, and environmental health is viewed as those intact and self-sustaining habitats and wildlife populations that existed during historic conditions."

Under the Refuge Administration Act, each refuge must be managed to fulfill the Refuge System mission as well as the specific purposes for which it was established. The Act requires the Service to monitor the status and trends of fish, wildlife, and plants on each refuge.

"Big Six"

The six wildlife-dependent recreational uses identified under the Refuge System Improvement Act: hunting, fishing, wildlife observation and photography, environmental education and interpretation. These uses receive enhanced consideration over other uses in planning and management.

Additionally, the Act identifies six wildlife-dependent recreational uses (these are commonly referred to as the "Big Six"). These uses are hunting, fishing, wildlife observation and photography, environmental education and interpretation. Under the Act, the Service is to grant these six wildlife-dependent public uses special consideration in the planning for, management of, and establishment and expansion of units of the Refuge System. In addition, when determined compatible on a refuge-specific basis these six uses assume priority status over any other uses proposed or occurring on a refuge. The Service is to make extra efforts to facilitate priority wildlife-dependent public use opportunities.

When preparing a CCP, Refuge Managers must evaluate all general public, recreational, and economic uses (even those occurring to further refuge habitat management goals) proposed or occurring on a refuge for appropriateness and compatibility. No refuge use may be allowed or continued unless it is determined to be appropriate and compatible. Generally, an appropriate use is one that contributes to fulfilling the refuge purpose(s), the Refuge System mission, or goals or objectives described in a refuge management plan. A compatible use is a use that, in the sound professional judgment of the Director, will not materially interfere with or detract from the fulfillment of the mission of the Refuge System or the purposes of the refuge. The authority to make the determination is delegated to the Refuge Manager. Updated compatibility determinations for existing and proposed uses for McNary Refuge are in Appendix B of this CCP.

The Refuge Administration Act also requires that the CCP must be developed with the participation of the public. Issues and concerns articulated by the public play a role in guiding alternatives considered during the development of the CCP, and can play a role in selection of the preferred alternative.

B. Other Laws, Policies, and Orders

Many other laws govern the Service and management of Refuge System lands. A list and brief description of each can be found at http://laws.fws.gov. In addition, over the last few years, the Service has developed or revised numerous policies and Director's Orders to reflect the mandates and intent of the Improvement Act. Some of these key policies include the Biological Integrity, Diversity, and Environmental Health Policy (601 FW3); the Compatibility Policy; the Refuge

Planning Policy; Mission, Goals, and Purposes (601 FW 1); Appropriate Refuge Uses (603 FW 1); Wildlife-Dependent Public Uses (605 FW 1); and the Director's Order for Coordination and Cooperative Work with State Fish and Wildlife Agency Representatives on Management of the National Wildlife Refuge System. These and other policies can be found at: http://refuges.fws.gov/policymakers/ nwrpolicies.html. During CCP development, these broader laws and policies and Refuge System and ecosystem goals and visions must be considered.

C. U.S. Fish and Wildlife Service Mission

The mission of the Service is: "working with others, to conserve, protect and enhance fish and wildlife and their habitats for the continuing benefit of the American people."

National natural resources entrusted to the Service for conservation and protection include migratory birds, endangered and threatened species, inter-jurisdictional fish, wetlands, and certain marine mammals. The Service also manages national fish hatcheries, enforces federal wildlife laws and international treaties on importing and exporting wildlife, assists with state fish and wildlife programs, and helps other countries develop wildlife conservation programs.

D. National Wildlife Refuge System Mission and Goals

The mission of the National Wildlife Refuge System is:

"To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (National Wildlife Refuge System Improvement Act of 1997).

The goals of the National Wildlife Refuge System, as articulated in the Mission Goals and Purposes Policy (601 FW1), are:

- Conserve a diversity of fish, wildlife, and plants and their habitats, including species that are endangered or threatened with becoming endangered.
- Develop and maintain a network of habitats for migratory birds, anadromous and interjurisdictional fish, and marine mammal populations that is strategically distributed and carefully managed to meet important life history needs of these species across their ranges.
- Conserve those ecosystems, plant communities, wetlands of national or international significance and landscapes and seascapes that are unique, rare, declining, or underrepresented in existing protection efforts.
- Provide and enhance opportunities to participate in compatible wildlife-dependent recreation (hunting, fishing, wildlife observation and photography, and environmental education and interpretation).
- Foster understanding and instill appreciation of the diversity and interconnectedness of fish, wildlife, and plants and their habitats.

E. Legal Significance of the Refuge Purpose

The purpose(s) for which a refuge was established or acquired is of key importance in refuge planning. Purposes must form the foundation for management decisions. The purposes of a refuge are specified in or derived from the law, proclamation, executive order, agreement, public land order, donation document, or administrative memorandum establishing, authorizing, or expanding the refuge, refuge unit, or refuge subunit.

Unless the establishing law, order, or other document indicates otherwise, purposes dealing with the conservation, management, and restoration of fish, wildlife, and plants, and the habitats on which they depend take precedence over other purposes in the management and administration of any unit. Where a refuge has multiple purposes related to fish, wildlife, and plant conservation, the more specific purpose will take precedence in instances of conflict. When an additional unit is acquired under an authority different from the authority used to establish the original unit, the addition takes on the purpose(s) of the original unit, but the original unit does not take on the purpose(s) of the addition.

By law, refuges are to be managed to achieve their purposes. When a conflict exists between the Refuge System mission and the purpose of an individual refuge, the refuge purpose may supersede the Refuge System mission.

1.4 Establishment History and Purposes of McNary Refuge

A. Fish and Wildlife Coordination Act

McNary Refuge was originally established under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. §§ 661-667e, March 10, 1934, as amended 1946, 1958, 1978 and 1995). This Act requires consultation with the Service and the States' fish and wildlife agencies where the "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted . . . or otherwise controlled or modified" by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of "preventing loss of and damage to wildlife resources." In addition, the Fish and Wildlife Coordination Act authorizes land to be made available to the Secretary of the Interior for wildlife protection purposes.

Section 664 of the Act specifies that areas made available for the purposes of wildlife conservation and development as outlined in sections 661 to 666c, must be administered by the Secretary directly or in accordance with cooperative agreements, and "in accordance with rules and regulations adopted by the Secretary for the conservation, maintenance and management of wildlife resources thereof, and habitat thereon, under plans" approved jointly by the Secretary and the head of the agency exercising primary administration of the areas. General plans may also include the transfer of project lands to a state for management. Lands having value to the National Migratory Bird Management Program may be made available without cost directly to the state agency having control over wildlife resources.

Wildlife and wildlife resources are defined under section 666 as "birds, fish, mammals and all other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is

dependent." The Cooperative Agreement/General Plan associated with the McNary and Umatilla Refuges provides more detail about the Refuges resource values.

B. McNary Dam Authorization

Congress authorized the construction of McNary Dam at River Mile 292 in 1946, under Public Law 14, 79th Congress, 59 Statute 10, for the primary purposes of navigation, power development, and irrigation. The purpose "conservation of wildlife" was added to McNary's project purposes by Public Law 732, 79th Congress, 60 Stat. 1080, 16 USC 661 et seq.

The 1953 General Plan identified seven areas of land "for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon."

C. 1953 General Plan

The McNary Dam flooded about 39,000 acres of river bottomlands for 61 miles upstream of the dam. As part of the responsibilities identified in the Coordination Act, the Secretary of the Army, with the Secretary of the Interior and the Directors of the Fish and Game Departments for the States of Oregon and Washington, signed a General Plan in 1953 which set aside various wildlife lands as encouraged under the Coordination Act, including the original McNary Refuge, as well as other lands that became State wildlife areas (US DOA et al. 1953).

The 1953 General Plan identified seven areas of land "for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon." With the exception of the current Stateline and Juniper Canyon Units, all areas currently managed as part of the Refuge are referenced in this document. Specific language relative to wildlife management and public uses was included for each of the seven areas. With a few exceptions, the language is open-ended enough to be interpreted as recommended strategies to be pursued in perpetuity, but not mandated. The specific details follow.

Two of the seven areas were termed the Burbank National Wildlife Refuge and the Hanford National Wildlife Refuge. These two sites, now named the McNary Headquarters, Strawberry Island, and Hanford Islands Units, formed the original McNary National Wildlife Refuge. The plan noted that both areas "have particular value in carrying out the National Migratory Bird Management Program."

McNary Headquarters and Strawberry Island Units: Specific language from the General Plan includes the following statements:

- The slough will provide area for waterfowl nesting, resting and feeding.
- Extensive stands of aquatic vegetation will develop in the shallow areas.
- Food and cover crops can be grown on adjacent tillable lands.
- Inland sections can be isolated, providing water surface control for fish production and enhancing waterfowl habitat.
- Fishing may be permitted consistent with sound waterfowl management practices and in accordance with state laws and regulations.

The other five areas described in the General Plan were identified by the Secretary of the Army to be "made available for development, conservation and management of wildlife resources." These areas were particularly singled out for their "multiple use value relating to the conservation of

fishlife, waterfowl and upland game birds" and were initially placed under the State of Washington's management through a cooperative agreement. It is important to note the term "multiple use" was used at the time for describing different fish and wildlife values, not recreation or commodity use. Two of these five areas are now managed by the Service as part of McNary Refuge.

Wallula Unit: This unit, originally identified in the General Plan as Area Number 3—Walla Walla River Wildlife Area, was noted for having extensive shallow water areas well adapted for waterfowl habitat development. Specific statements from the General Plan follow:

- Some present river bottom agricultural lands will be infrequently flooded and are well suited for the production of cereal and cover crops. These will enhance the area for waterfowl production and stimulate production of upland game birds.
- Public shooting may be desirable on all or part of the area.
- A substantial fish population may be developed in the waters of the area, thus providing excellent angling opportunities. The area is also a migratory route for anadromous fish.
- Peculiar value as a wildlife demonstration and educational area.

Two Rivers, Peninsula, and Burbank Sloughs Units: These units were identified as Area Number 4—Columbia River Wildlife Area—in the General Plan. Specific language from the General Plan includes the following statements.

- Emergent aquatic vegetation may develop.
- There are several excellent locations for creation of sub-impounded or isolated water areas suitable for fish production.
- Water areas will be utilized by waterfowl and the shore areas will be used by upland birds.
- Production of food crops and establishment of other vegetative cover will further attract both waterfowl and upland game birds and stimulate an increase in their population.
- Public hunting for both will be highly desirable on all or part of this unit.
- Public hunting and fishing is permitted consistent with sound management practices.

1955 Cooperative Agreement: After the General Plan was finalized, a cooperative agreement among the same parties was signed in July of 1955. It transferred administrative control of 2,849 acres of land to the Service under the terms of the General Plan. Minor supplements and modifications were made to the cooperative agreement in August 1963 and May 1965. In 1969, the cooperative agreement was rewritten, replacing and superseding the previous version of the agreement (US DOA and US DOI, 1969a). An additional minor modification of the agreement was made in 1975. The cooperative agreement gave little further mandatory guidance for habitat or public use management.

D. McNary Master Plan

As mentioned above, the Stateline and Juniper Canyon Units were not included in the General Plan. These lands were withdrawn for dam project purposes, which are navigation, power development, irrigation, and conservation of wildlife, as detailed under the dam authorization section above. The only other details available for these lands are found in the U.S. Army Corps of Engineer's (Corps) Reservoir Master Plan for dam project areas. The Reservoir Master Plan was first published in July 1952, revised in 1964, with a comprehensive revision published in 1982. It is not an original establishing or authorizing document and cannot be interpreted as being at

the level of a "purpose" as defined under Refuge System policy; however, the 1982 plan did provide land use allocations which help provide insight into the intent for the various project lands. The Stateline, Juniper Canyon, and Wallula Unit lands west of Highway 12 were designated as "Moderate Wildlife Management," defined as "lands that are valued for fish and wildlife management, but will not sustain intensive management practices . . . Moderate management lands should be continuously available for low-density recreation activities such as hiking, primitive camping, hunting, fishing, nature study, nature photography, bird watching, and other related activities." (McNary Master Plan 1982)

E. 2000 Cooperative Agreement (as updated by 2007 Cooperative Agreement extension)

Two areas fronting the Columbia River south of the city of Burbank were originally set aside under the General Plan of 1953 and were known as the Walla Walla River Unit (now called the Wallula Unit) and Columbia River Unit (now known as the Two Rivers and Peninsula Units). These units were managed by the State of Washington until 1987, at which time the State relinquished its management control to the Corps, who managed the areas from 1987-2000. In 2000, a cooperative agreement was signed by the Service and the Corps which permitted the Service to assume management authority of these areas and additional Corps lands, including the areas known as Burbank Sloughs, Peninsula, Two Rivers, Wallula, Juniper Canyon, and Stateline Units (US DOA and US DOI, 2000).

Items of particular interest in the 2000 cooperative agreement, and relevant to lands managed as part of the McNary Refuge today, include the following clauses:

- "The Department hereby makes available to the Service the land and water areas…hereinafter referred to as the Premises, for the purpose of development, conservation and management of recreation and wildlife resources thereon in accordance with the General Plan and under the authority of the Refuge Administration Act of 1966 as amended."
- "The Service shall manage, operate, and maintain the Premises included in the Cooperative Agreement in accordance with its Comprehensive Conservation Plan…"

The cooperative agreement was intended to be temporary. Both agencies envisioned an eventual full transfer of these lands in fee title to the Service, as evident from the following clause in the agreement:

- "The Department and the Service intend to recommend to their higher headquarters that legislation be sought to authorize transfer of these Premises to the Service by fiscal year 2002, or as soon thereafter as reasonably possible. This interim agreement will terminate when primary ownership is transferred to the Service."

In 2007, this cooperative agreement was amended for a period of 15 years, to expire January 13, 2022. Amendment No 2 removed some of the areas from Service jurisdiction that had been included in the 2000 cooperative agreement, specifically, Madame Dorion Park; Crescent, Badger, and Foundation Islands; lands and waters in the area known as the Villard Ponds; the Wallula delta and nearby associated lands; the Cummins property including south shore access and the Columbia River up to an elevation of 340.5 feet above MSL. Negotiations and signing of Amendment No. 2 occurred subsequent to the completion of the final CCP/EA.

As described above in Section 1.2, the Congress then passed the WRDA. Section 3164 of WRDA included a directive for transfer of administrative jurisdiction for lands managed under the cooperative agreement DACW68-4-00-13 from the Secretary of the Army (Corps) to the Secretary of the Interior (Fish and Wildlife Service).

In addition, the WRDA included specific direction to the Service for two sites (Cummins property and Madame Dorion Park). These areas had been administratively removed from the McNary Refuge under Amendment 2, but the WRDA did not acknowledge this, instead it specified:

- Retention of credits under the Compensation Plan for the "Cummins property" shall be retained by the Secretary of the Army, and any future management change at that property shall require approval by the Washington Department of Fish and Wildlife.
- The Director (U.S. Fish and Wildlife Service) shall continue operation of the Madame Dorion Park for public use and boater access.

Other than these specifications, the WRDA bill did not include any other language pertinent to Refuge management direction. Hence all transferred lands with the exception of Madame Dorion Park are interpreted as assuming the original purpose of McNary Refuge as specified under the General Plan of 1967.

F. Other parcels

Small pieces of McNary Refuge were also added by purchase under the Migratory Bird Treaty Act. The Refuge also manages a small tract under a 10 year lease with the Washington Department of Natural Resources. And, according to Realty files, approximately 300 acres in four tracts were acquired under authority of the Land and Water Conservation Fund.

G. Unit Sizes

As depicted on Map 2, McNary Refuge includes seven separate units (not including the Hanford Islands Unit, which is evaluated under the Hanford Reach National Monument CCP). These units, their land status, and their acreages are shown in Table 1-1.

Table 1-1. McNary Refuge Units – Status and Acreage*

Unit Name	Management Authority	Unit Acres
McNary Headquarters	Fee title/Lease	2,960.40
Burbank Sloughs	Administrative Jurisdiction	430.63
Juniper Canyon/Stateline	Administrative Jurisdiction	1,692.38
Peninsula original (all land and water includes Badger, Foundation, and Crescent islands)	Administrative Jurisdiction	7,838.80
Strawberry Island	Administrative Jurisdiction	135.74
Two Rivers	Administrative Jurisdiction	344.01
Wallula	Administrative Jurisdiction	2,264.04
Total Acreage (excluding Hanford Islands Unit)		15,666.00

*Acreages calculated from GIS analysis of the mcn_bnd coverage, modified as necessary to divide units.

1.5 Future Refuge Plans

The CCP will be revised every 15 years or earlier if monitoring and evaluation determine that changes are needed to achieve the Refuge purposes, vision, goals, or objectives. The CCP provides guidance in the form of goals, objectives, and strategies for Refuge program areas but may lack some of the specifics needed for implementation. Step-down management plans will be developed for individual program areas, as needed, following completion of the CCP. Step-down plans require appropriate compliance with the National Environmental Policy Action of 1969 (NEPA). Several step-down plans (Habitat Management Plan, Public Use Management Plan, Inventory and Monitoring Plan, and Integrated Pest Management Plan) are appropriate to develop and/or update following completion of this CCP. The step-down plans should be founded on the management goals, objectives and strategies outlined in the CCP. The Integrated Pest Management Plan should address coordination with all other Federal, state, tribal, and local agencies, and neighboring private landowners, to effectively combat the spread of invasive species.

1.6 Issues, Concerns, and Opportunities

A. Issues Addressed in the CCP

The following issues were addressed in the planning process.

Habitat and Species Management: What habitat conditions should be targeted and restored on the Refuge's shrub-steppe, riparian, wetland, and cliff/talus habitats, many of which are highly degraded by invasive plants and animals? How can the Refuge best prevent wildfires, particularly those that arise regularly from trains that cross many miles of the Refuge numerous times each day? What are the best methods for maintaining productivity and diversity in wetlands, when natural hydrologic fluctuations no longer exist? What other actions should the Refuge take to sustain and restore priority species and habitats over the next 15 years?

Waterfowl Management: Where shall specific waterfowl management tools and techniques, including provision of cropping areas and sanctuary areas, be utilized at the Refuge? What role shall the Refuge play in providing wintering waterfowl habitat and hunting areas within the Mid-Columbia basin?

Shorebirds: How shall the Refuge best manage a thriving shorebird migration area? How shall the Refuge best manage habitat for long-billed curlews?

Salmonids and Other Declining Species: What actions should the Refuge undertake to protect and enhance habitat for the migratory and rearing needs of seven stocks of listed salmon and steelhead? Should backwater areas be restored? What actions can be taken to protect and restore habitat values for other declining species?

Islands: To what extent should islands located in the Columbia River be maintained free from human disturbance? Are diverse suites of waterbird colonies that currently nest on the islands significant sources of mortality to listed salmonids? If so, should populations or habitats be managed to prevent their increase?

Wildlife Dependent Uses: Which "Big Six" programs should be offered at the Refuge and what kinds of improvements to these programs can be provided to enhance public enjoyment and ensure a quality experiences for Refuge visitors?

Camping and other Non-wildlife Dependent Uses: Shall the Refuge continue to offer additional various non-wildlife dependent recreational opportunities, such as camping, dog trials, swimming and beach use, and horseback riding? What facilities and program support should be offered?

Cultural Resources: What steps should be taken to better protect and interpret cultural resources?

Effective Law Enforcement, Outreach, and Prevention of Illegal Uses: Between 2003 and 2006, the Refuge Complex managing McNary Refuge lost 75% of its law enforcement capacity. How can the Refuge better prevent a variety of illegal uses on Refuge lands, including dumping, ATVs, target shooting, and vandalism?

B. Issues outside the scope of the CCP

Hanford Islands: Many comments were received on the Hanford Islands, with public opinions regarding summer beach use on the islands varying greatly. The issues and management of the Hanford Islands Unit is addressed as part of the Hanford Reach National Monument CCP (2008).

Columbia River Hydropower Operations: Operations of the Columbia River hydropower system are not within the scope of this CCP. Minor changes in pool level may be recommended under some alternatives for limited periods of time, but analysis or proposals dealing with major modifications of operations at McNary Dam are outside the scope of this CCP. Ongoing litigation over management of anadromous fish may result in major changes to hydropower operations. If this occurs, many CCP actions may require review, analysis, and amendment.

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CHAPTER 2. Management Direction

Columbia River Sunset - © Lyn Topinka

2.1 Considerations in Refuge Planning

In drafting the Comprehensive Conservation Plan (CCP), the planning team reviewed and considered a variety of resource, social, economic, and organizational aspects important for managing the Refuge. These background conditions are described more fully in Chapters 3, 4, 5, and 6 of the final CCP/EA (US FWS 2007). As is appropriate for a National Wildlife Refuge, resource considerations were fundamental. House Report 105-106 accompanying the National Wildlife Refuge System Improvement Act of 1997 states "…the fundamental mission of our System is wildlife conservation: wildlife and wildlife conservation must come first." The team also reviewed scientific reports and studies, to better understand ecosystem trends and the latest scientific recommendations for species and habitats.

The Service met with staff from local, State, and Federal agencies, and elected officials to ascertain priorities and problems as perceived by others. Refuge staff met with Refuge users, nonprofit groups, and community organizations to ensure that their comments and ideas were considered during CCP development. Details of public involvement are located in Appendix A of the final CCP/EA (US FWS 2007). Appendix L of the final CCP/EA contains public comments on the Draft CCP/EA and the Service's responses (US FWS 2007).

Federal agencies have been working since the fall of 2005 to revise a 2004 Federal Columbia River Power System biological opinion that U.S. District Court Judge James Redden declared invalid. Part of the new proposed action under that effort may involve "summer spill" to promote fish passage. In 2005, a court injunction directed the Corps to spill water at several Columbia and Snake River dams "in excess of that required for station service" from June 20-August 31 at several Snake River dams and "all flow above 50,000 cubic feet per second" from July 1– August 31 at the McNary Dam. In practice, this meant that the reservoir level was reduced close to the minimum operating level of 335 feet above mean sea level (MSL) at McNary Dam, dramatically lowering flooded wetland acres on McNary Refuge. The final biological opinion may contain a provision to make summer spill an annual event. This could dramatically change summer habitats and recreational opportunities on McNary Refuge. However, management direction does not assume that summer spill will be an annual event, because it is unknown at this time if such a strategy will become part of normal dam and fish management along the Columbia River.

The planning team considered allowing hunting of wildlife species other than deer, waterfowl, migratory birds, and upland game birds; such as cottontail rabbit, cougar, bobcat, coyote, fox, raccoon, turkey, and crow, which is permitted by State law in other areas of Washington. These activities were not included in the CCP due to conflicts with year-round public safety, resource protection, inconsequential populations, and/or seasons outside of existing waterfowl seasons.

The planning team considered the appropriateness of providing opportunities for various nonwildlife dependent recreational activities during scoping, including field dog trials, geocaching, hang gliding, paragliding, rock climbing, motorized and nonmotorized off-road use, waterskiing, camping, beach use, and personal watercraft. Based on the Service's Appropriate Refuge Uses Policy 603 FW 1 (2006), these uses were determined not appropriate, and are documented on FWS Form 3-2319 in Appendix K of the final CCP/EA (US FWS 2007).

2.2 General Guidelines

A summary table is presented on page 2-4. This table summarizes the key elements of the CCP. Following the summary table, detailed descriptions of the goals, objectives, and strategies are presented. Map 3 displays the Habitat Management actions under the final CCP/EA. Map 4 displays the Public Use facilities under the final CCP, and Map 5 shows the overall Hunting and Sanctuary areas under the final CCP.

In addition to the specific actions listed in the objectives and strategies, the CCP will be implemented under the following general guidelines.

Implementation Subject to Funding Availability: Actions will be implemented over a period of 15 years as funding becomes available. Project priorities are in Appendix D of the final CCP/EA (US FWS 2007).

Actions will be implemented over a period of 15 years as funding becomes available.

Refuge Fire Management: Fire Management Plans (FMP), and accompanying NEPA documents and Endangered Species Act consultations, were finalized for the Refuge in 2001. Fire management actions will continue to be guided by the direction set forth in the FMPs.

Tribal Coordination: Regular communication with Native American Tribes who have an interest in the Refuge will continue. The Confederated Tribes of the Umatilla Indian Reservation (consisting of the Cayuse, Umatilla, and Walla Tribes) are the major local Tribes the Refuge will coordinate and consult with on a regular basis regarding issues of shared interest. However, other Tribes with special interests, especially relating to the traditionally shared resource corridors along the Columbia River and near the confluence of the Columbia and Snake Rivers, will also be included in consultations affecting those resources. These traditionally local Tribes include the Yakama, Nez Perce, Colville (Palouse), and the Wanapum. Currently, the Service seeks assistance from Tribes in both Native American Graves Protection and Repatriation Act (NAGPRA) and National Historic Preservation Act (NHPA) related issues.

State Coordination: Similarly, the Service will continue to maintain regular discussions with the Washington and Oregon Departments of Fish and Wildlife. Key topics for discussion will be the Columbia Basin Waterfowl Management Plan, colonial nesting birds, wildlife monitoring, big game management, hunting and fishing seasons and regulations, and endangered species management.

Volunteer Opportunities and Partnerships: Volunteer opportunities and partnerships will continue to be supported and are recognized as key components of the successful management of public lands and vital to implementation of Refuge programs, plans, and projects, especially in times of declining budgets.

Refuge Revenue Sharing Payment: Annual payments to Counties under the Refuge Revenue Sharing Program will continue according to the established formula and subject to payments authorized by Congress. Payments made to local counties in 2005 are listed in Appendix D of the final CCP/EA (US FWS 2007).

Maintenance and Updating of Existing Facilities: Periodic maintenance and updating of Refuge buildings and facilities will be necessary. Periodic updating of facilities is necessary for safety and accessibility and to support staff and management needs and is incorporated in the Service Asset Management System.

Management of Minor Recreational Uses: Minor recreational activities are occasionally pursued on the Refuge. Such recreational activities not specifically addressed in this CCP may be allowed on Refuge lands if the Refuge Manager finds the activity does not conflict with wildlife or habitat objectives.

Participation in Planning and Review of Regional Development Activities: The Service will actively participate in planning and studies for ongoing and future industrial and urban development, contamination, and other potential concerns that may adversely affect Refuge and wildlife resources, and habitats. The Service will cultivate working relationships with pertinent county, State, and Federal agencies to stay abreast of current and potential developments; and will utilize outreach and education as needed to raise awareness of Refuge resources and dependence on the local environment.

Maintain the Refuge's Waterfowl Sanctuary in Support of Mid-Columbia Basin Planning Efforts: Waterfowl sanctuary is an area that is closed to hunting and significant disturbance from other public uses to provide important resting and/or feeding areas for waterfowl during the hunting season. Security, indicated partly by the acres of sanctuary area provided during hunting season, was listed as a key ecological attribute supporting waterfowl. There is public support for maintaining "large concentrations" of waterfowl, as they have been important for hunting and viewing users. However, Refuge sanctuary must be considered within the wider scope of Pacific Flyway and/or Region-wide area closures and numbers of birds wintering in the Lower Columbia Basin. Defining the role and extent of such sanctuary areas is a major component of the Wintering Waterfowl Redistribution Plan for the Columbia Basin of Oregon and Washington (Lloyd 1983). It is presently being re-written and updated through a partnership that includes WDFW, ODFW, Yakama Indian Nation, the Corps, and the Service. McNary Refuge will continue to manage waterfowl sanctuary in accordance with open and closed areas identified in the 1983 Wintering Waterfowl Plan and existing Refuge open/closed zones, and will make adjustments if needed, in accordance with the waterfowl plan being developed.

Vegetation Inventory and Condition Ranking: A vegetation inventory was begun during the summer of 2005. Map 6 displays the preliminary results from the vegetation inventory. Ground-truthing from randomly-selected sites is still incomplete. When finished, it will be used to complete an inventory map to the Alliance level (as defined by the National Vegetation Classification System) for all vegetation polygons. In addition, the data can be used to rank habitat conditions according to criteria outlined in the objectives. Further refinement of the condition classes may occur.

Section 106 Compliance: All ground-disturbing projects will undergo a review under Section 106 of the National Historic Preservation Act.

2.3 Goals, Objectives, and Strategies

Goals and objectives are the unifying elements of successful refuge management. They identify and focus management priorities, resolve issues, and link to refuge purposes, Service policy, and the Refuge System Mission.

A CCP describes management actions that help bring a refuge closer to its vision. A vision broadly reflects a refuge's purposes, the Refuge System mission and goals, other statutory requirements, and larger-scale plans. Goals define general targets in support of the vision, followed by objectives that direct effort into incremental and measurable steps toward achieving the goals. Finally, strategies identify specific tools/actions to accomplish objectives (USDI 2002).

The goals, objectives, and strategies for McNary Refuge over the next 15 years under the CCP are described in detail below. The goal order does not imply priority; priorities are assigned in Appendix D of the final CCP/EA (US FWS 2007). Some objectives will help achieve multiple goals but are listed only once, for brevity's sake. Table 2-1 summarizes the main CCP actions by topic.

Table 2-1. Summary of CCP Actions

Key Themes/Issues	Summary of CCP Actions and Outcomes over next 15 Years
Waterfowl	
Croplands: Total Acreage Share to Refuge	 600 acres 25%
Grain Availability over Season and During Emergency Weather Conditions	120 acres scheduled for staged mid-winter (post-hunting season) knockdown, and 35 acres for late season knockdown. Emergency knockdown under severe weather conditions.
Moist Soil Management: Total Acreage Floodup for Early Migrants	 203 acres 10-20 acres flooded by 9/15
Shorebirds	
Foraging Area: Mudflats on Columbia River Alternate Foraging Sites	 20-acre increase for migration. Alternate sites at moist soil units.
Curlew Upland Habitats	Existing habitat maintained and suitable nesting and foraging habitat increased by 25% on inactive former croplands.
Threatened, Endangered, and Sensitive Species	
Salmon Rearing Habitats	Protect and where feasible enhance backwater and side-channel habitats.
Inventory Rare Species not Monitored by Other Agencies	Undertake inventory. Specific habitat or population management strategies determined in step down plan.
Wetland and Deepwater Habitats	
Shallow Marsh Management: Open Water Areas Created Emergent Invasives Cover	 43 acres/year <20%
Elimination of Carp	Eliminated at least 1 wetland
Riparian Habitats	
Nesting Habitats Improved	31 acres/year
Cottonwood Developed	5 acres/year
Islands and Cliffs	
Waterbird Populations and	Habitat maintained to support a diversity of island-nesting birds and

Coordination	colonies. Continue coordination with partners on monitoring, research, and management of Refuge colonies of salmonid- and smolt-eating birds.
Reduce Disturbance to Island Wildlife to Protect Nesting and Breeding Areas	Existing island closures to be enforced. No beach use on Refuge islands.
Protection of Rocky Habitats	No mining, collection or extractive activities are permitted on any natural rocky features. Conduct baseline plant and animal inventory. Protect raptor nesting sites and provide "Big Six" uses only.
Shrub-Steppe Habitats	
Improve Existing Habitats	59 acres/year
Restore Habitats	Restore up to 300 acres of shrub-steppe habitat currently occupied by unnecessary roads, mining sites, and inactive croplands.
Protection from Fire and Ground Disturbance	Active measures taken with partners, public, and contractors to reduce fire damage and soil disturbances.
Wildlife Observation, Photography, Interpretation, and Trails	
Improve Facilities	Trail/interpretive improvements at Headquarters and Wallula Units.
Hunting	
Provide Waterfowl Hunt Types	Reservation fee hunting, posts/free roam, and youth hunts.
Provide Waterfowl Hunt Areas	Up to 8,934 acres
Maintain Sanctuary Areas	Maintain existing sanctuary areas
Upland Bird Hunt Schedule	Hunt start time standardized to noon
Pheasant Releases (McNary)	Pheasant augmentation phased out by May 2009 (Service policy prohibits nonnative stocking).
Fishing	
Provide a Diversity of Fishing Opportunities	Maintain diverse opportunities, including State seasonal stocking of rainbow trout at Quarry Pond for youth and family fishing. Improve parking facilities and access.
Tournament Fishing	Work in partnership with States and others to develop standard tournament permit conditions. No tournament access within ½ mile of pelican nest colonies.
Fishing Outreach and Information	Develop fishing brochure or tear sheets. Install kiosks at one on-Refuge and one off-Refuge boat launches.
Environmental Education	
Number of Students Served	Serve 1,500–3,000 students
Teacher Led Program	At least 75% of the classes will be teacher-led.
Maintain EE Facilities	Continue EE program at McNary Environmental Education Center.
Non-Wildlife Dependent Uses	
Horseback Riding	Improve signing, outreach, and interpretive materials. Riders allowed on public roads and horseback designated trails.
Swimming and Beach Use	Island beaches closed to all use.
Law Enforcement	
Illegal Shooting and Dumping	Reduce dumping at Burbank Sloughs Unit by 80%. Eliminate target shooting.
Cultural Resources	
Monitoring and Protection	Increase with greater survey effort, law enforcement, training, and consultation with Tribes.
Interpretation Programs	Develop program in partnership with Tribes and historical societies.
Bank Stabilization	Seek funds to stabilize banks protecting buried resources.

GOAL 1: Manage high quality food and sanctuary to support large concentrations of migratory waterfowl.

Waterfowl / USFWS

Objective 1a: Provide Crops for Waterfowl

Maintain **600 acres at McNary** for crop production, with 120 acres at a minimum to 170 acres at maximum of 170 acres grown as grain (corn preferred), and left standing to benefit trust species of waterfowl (mainly mallard, northern pintail, Canada geese, and greater white-fronted geese). As part of this acreage, provide a minimum of 300 acres in green feed for waterfowl use during winter.

Strategies Applied to Achieve Objective

- Conduct cooperative farming in accordance with guidelines, best practices and acreages outlined in the existing McNary Cropland Management Plan.
- Consider force account farming to increase net food availability if and when appropriate. To do so, increase Refuge funding $30,000 annually for force account equipment, supplies and staffing and submit a request for $90,000 to develop new irrigation circles.
- Develop partnership programs to provide incentives and funding to private landowners to provide standing corn and other grains off-Refuge.
- Follow all stipulations in the Farming Compatibility Determination for McNary Refuge.

Rationale: Upland food availability, including the amount of land in corn and available as green feed, was identified as a key ecological attribute for waterfowl by the planning team. Approximately 600 acres of Refuge lands are currently farmed under cooperative agreements. Under the Cropland Management Plans for McNary Refuge (USDI, 1999), croplands are managed for the benefit of waterfowl, but many other species benefit (i.e. bald eagles which rely on Refuge waterfowl concentrations). Refuge crop shares are generally 25% of what is grown and are limited to cereal grains, preferably corn, to meet the high energy demands of migrating and wintering waterfowl; and green winter forage and cover crops which provide for Canada geese. In addition, harvested areas provide foods for waterfowl, including waste grains and green forage such as alfalfa and grasses. Opportunities to provide natural foods on the Refuge are limited, especially for the large concentrations of waterfowl (peaks of nearly 250,000 to 500,000 birds for both McNary and Umatilla Refuges combined). The 2003 Wildlife and Habitat Management Review of McNary and Umatilla Refuges recommended providing additional corn for wintering waterfowl. Increasing corn is limited by the cost of installing irrigation systems, the need to rotate crops, and the use of negotiated cooperative agreements with farming cooperators versus force account. Substantial increases in funding to both develop and maintain force account irrigation circles for corn would provide the best scenario for corn production. Partnerships and incentives to area farmers to grow grains is another possibility.

Objective 1b: Extend Time Period Grain is Made Available to Birds.

- Extend time period grain is made available to waterfowl and provide grains during emergency weather conditions. Provide for mid-season and late-season nutritional needs of migrating and wintering waterfowl, especially mallard, northern pintail and greater white-fronted geese, by scheduling both the cooperative farmer harvest and "knockdown" of 155 acres of refuge shares of agricultural grain crops.

Strategies Applied to Achieve Objective

- Expand knockdown of refuge crop shares both earlier and later in the post-hunting season.
  - Post-hunting season (approximately January 18 – March 1): 120 acres total, staged knockdown over this time period, if possible.
  - Late season (week of March 1): 35 acres
- Coordinate with cooperators and/or increase force account crop knockdowns to achieve the expanded knockdown schedule.
- Explore possibility of staging cooperator harvests to provide grains for waterfowl from September through December and work with farm cooperators to stage corn harvest dates throughout the fall/winter season
- Consider locating any new crop development in areas where grains could be made available throughout the fall/winter season
- Allow for emergency knockdown during the hunting season if severe weather causes a documented need. This action may require closure of hunting due to baiting regulations; therefore coordinate with law enforcement and the public. Severe weather is snow or ice covering of most local fields and or weather below zero degrees F for an extended time leading to generally inaccessible food on surrounding farms and agricultural fields.
- Follow all stipulations in the Farming Compatibility Determination for McNary Refuge.

Rationale: Providing grain crops in a staged way throughout the fall/winter season will help provide for fall and spring migrants as well as the wintering population of ducks and geese. Farm cooperators have traditionally harvested their grain shares as they became available, versus staging the harvest to increase waste grain availability throughout the fall/winter season. Traditionally the Refuge reserved the majority (85%) of its. share of standing grains to be knocked down immediately after the close of hunting season in late January to mid February. McNary staff members have noted that in years when the corn crop was knocked down late (February-March), more white-fronted geese (early spring migrants) were attracted. White-fronted geese have increased significantly in recent years, presumably in response to this late food availability. The Refuge has occasionally allowed the knockdown of Refuge shares during the hunting season when severe weather has threatened waterfowl populations. Refuge managers have documented extreme winter weather events covering area fields with ice and snow; in such times Refuge corn fields have been mowed to supply the nutritional need for a large percentage of Columbia Basin wintering waterfowl and have likely prevented die-off events.

Objective 1c: Increase Size and Availability of Moist Soil Areas

Add 5 acres to the existing 198 acres of managed moist soil units for the Refuge, and increase efforts to provide high production of natural foods favored by mallards and northern pintails, such as smartweed (Polygonum spp.), wild millet (Echinochloa spp.) and swamp timothy (Crypsis schoenoides). Provide early flood-up, by September 15, on 5 acres of existing moist soil units to support early migrants such as northern pintail.

Strategies Applied to Achieve Objective

- Flood units in fall and follow with a late spring drawdown, properly timed to maximize germination and growth of the desired species.
- Where water and precise water control is available, utilize summer irrigations to keep vegetation actively growing (timed to minimize standing water since mosquito larvae production period is 5-7 days).
- Develop 10-40 acres of new moist soil units potentially from the following units: McNary's Unit 3, Two Rivers, and Peninsula. Utilize irrigation water and manage piping/pumps as needed.
- Coordinate irrigations and new moist soil development with local mosquito control districts (see West Nile Virus Contingency Plans for the Refuge).
- Annually provide water for early flood up (by September 15) of 20-30 acres of moist soil from the McNary-Dudley wetlands, Wallula Unit wetlands; and any new sites to be developed (see above objective 4a).
- Coordinate timing and treatment of early fall flood-ups with local mosquito control districts to reduce risks of mosquito-borne diseases (see West Nile Virus Contingency Plan).

Rationale: Wetland food availability was identified as a key ecological attribute supporting waterfowl. Moist soil wetlands use annual water control regimes to promote production of annual plants preferred by waterfowl, such as wild millet, smartweeds, swamp timothy and goosefoot. Typically this includes a spring drawdown, one to two summer irrigations, and a fall/winter flood-up. These wetlands also provide a variety of water depths that support a wide variety of waterbird species including shorebirds and wading birds and serve as important feeding areas for young waterfowl broods.

Although not considered typical moist soil management units (due to a lack of direct water control), some Refuge areas are already being managed for moist soil plant production. These include several wetlands at Wallula Unit. New moist soil areas that could be developed and/or managed for moist soil include small wetlands associated with Dudley wetlands irrigation water.

The North American Waterfowl Management Plan (2004) lists the long-term trend for northern pintail populations as declining. The Refuge could distribute the benefits of moist soil management to a greater diversity of waterfowl, including northern pintail, by flooding units earlier in the fall. Pintail generally arrive earliest of the waterfowl, with peak concentrations sometimes occurring in September. The Refuge has limited ability to control flood-up timing at some of the moist soil units. Dudley and other irrigation-dependent wetlands generally have irrigation water through mid-October, and could provide smartweed beds to early migrants if managed and flooded early. In the past, mosquito breeding and the potential for mosquito-borne diseases have limited use of early flood ups. In close coordination and cooperation with local mosquito control districts, early flood-up could occur.

GOAL 2: Provide secure and productive foraging and nesting habitats for a diversity of shorebirds.

Long-Billed Curlew - Gary Kramer/ USFWS

Objective 2a: Increase Available Delta Mudflat

Increase the acres of mudflat available for migratory shorebird foraging by 20 acres during peak migration periods at McNary Refuge's Walla Walla Delta to benefit shorebird species such as black-necked stilt, American avocet, long-billed dowitcher, dunlin, and Wilson's phalarope.

Strategies Applied to Achieve Objective

- Coordinate with the Corps for McNary Reservoir draw downs between 336 and 337 feet above mean sea level (MSL) from mid-July to October, and from mid-March to late April migration peaks, to expose an additional 20 acres of mudflats for shorebirds at the Walla Walla Delta.
- Monitor and control expansion of invasive plant species and other upland plants onto mudflats by increasing chemical and mechanical treatments to maintain and/or increase mudflat habitat.
- Increase use of signing, education, and law enforcement to eliminate illegal trespass on the Delta.

Rationale: Foraging habitat and security were both identified as key ecological attributes for shorebirds by the planning team. The Intermountain West Regional Shorebird Conservation Plan (Oring 2004) lists black-necked stilt, American avocet, dunlin, long-billed dowitcher, and Wilson's phalarope as "critically important" species. The Walla Walla Delta is a major shorebird migration feeding area for these and other shorebird species, with documented annual populations numbering up to 8,600, representing nearly 40 species (International Shorebird Surveys, Manomet Center for Conservation Sciences). Careful management of this area will help enhance and increase the habitat value of this site, supporting goals of the U.S. Shorebird Conservation Plan (Brown et al. 2001). Spring and fall drawdowns of the McNary pool will create more exposed mudflat during the shorebird migration. Vegetation, including purple loosestrife, phragmites, and false indigo, is encroaching onto Delta mudflats. Available biocontrols for purple loosestrife may be limited by reservoir fluctuations and wintertime inundation. Public use planning can help eliminate illegal uses and trespass.

Objective 2b: Provide Alternate Shorebird Foraging Areas

Annually provide 8 acres of alternative shorebird foraging areas within moist soil units at McNary (Wallula Unit) during the peak of the migration period (August/September) and/or when the Walla Walla Delta is unavailable to shorebirds due to high reservoir levels (e.g., during boat race week). Objective will benefit up to 40 species of shorebirds documented to use the Delta, including species identified as "critically important" such as black-necked stilt, American avocet, long-billed dowitcher, and Wilson's phalarope.

Strategies Applied to Achieve Objective

- Determine best time periods for providing alternative foraging sites based on the Corps' projected reservoir levels and peak migration periods. Annually select and prepare 8 acres of moist soil needing treatment (i.e., disking and invasive plant removal), and flood/drawdown these units just prior to projected periods of high reservoir levels. Potential sites at McNary include Wallula and Dudley ponds.
- After disking and where water control is available, flood to a maximum depth of one to three inches over the disked area for approximately one week, allowing water to drop naturally and provide habitat.

Rationale: Large numbers of migratory shorebirds often find themselves without adequate foraging habitat when the Corps suddenly increases and maintains reservoir levels for an extended period. Examples include boat race week and 2- to 4-day increases for special shipping/barging requests. Alternative foraging sites nearby could be valuable during such events. The availability of alternate sites was identified in a literature review as a key consideration for managing shorebird populations effectively (Prindle 2004). Properly timed draw downs, disking treatments, and/or irrigations of existing moist soil units will help provide more habitats for shorebirds on the Refuge if the Delta becomes unavailable. Potential locations include the Wallula moist soil units adjacent to Walla Walla Delta. These alternative mudflat shorebird foraging sites will have the side benefit of providing irrigation for the surrounding moist soil vegetation that remains untreated. Weedy areas and canary grass portions needing a treatment (disking) will be chosen, not good moist soil sections. Remaining moist soil plants will be allowed to continue to grow productively, and could produce larger seed heads irrigated. Many shorebird experts have recognized the importance of providing alternate sites, especially along river systems (EDAW 2004). The timing will have to be precise to provide habitat during the projected high water periods, requiring close coordination with the Corps. Irrigations will also have to be conducted with shallow water and short time periods to prevent mosquito breeding. Under current operations, the Delta should continue to expand, and if properly managed, may someday qualify as a Western Hemisphere Shorebird Reserve Network Regional Site (supporting greater than 20,000 shorebirds per year).

Objective 2c: Maintain or Increase Long-billed Curlew Habitat

Maintain long-billed curlew nesting and foraging habitat, and increase existing curlew nesting habitat by 25% on appropriate sites at McNary Refuge to benefit this species. Restored habitats should be characterized by shorter vegetation (<24 cm), preferably dominated by a mixture of downy brome and Sandberg's bluegrass, intermixed with bare ground and even forb height (Denchant et al. 2003; Pampush and Anthony 1993).

Strategies Applied to Achieve Objective

- Continue to identify and quantify existing curlew nesting and foraging areas to determine location and amount of habitat on the Refuge.
- After habitat has been quantified, increase existing acreage at the Refuge by 25% by restoring inactive, formerly cultivated lands, to curlew foraging and nesting habitat. Potential areas include: McNary Fields #9 and #4; and the Kohler Field.
- Focus management in curlew use areas toward maintaining and restoring native shortgrass habitats, using planting, burning, and mowing methods. In native shortgrass areas, management may include removing encroaching shrubs or weeds that are not contributing to curlew preferred habitat features.

- Monitor populations and/or nest success using transects or other standard techniques.
- When conducting restoration efforts under objectives 7a and 7c, avoid planting shrubs in curlew focal areas.
- Follow all stipulations in the Research Compatibility Determination for the Refuge.

Rationale: The U.S. Shorebird Conservation Plan's list of High Priority Shorebirds (US FWS 2004) lists the long-billed curlew as a "globally highly imperiled" species in need off protection measures. Long–billed curlews have been assigned the highest score (5 on a 1-5 scale) for conservation efforts under criteria established by the Intermountain West Regional Shorebird Plan (Oring et al. 2004). The Intermountain West Region is considered an area of critical importance (compared to other regions globally) for their conservation. The Umatilla Refuge and surrounding lands serve as a key breeding area for long-billed curlews. An accurate estimate of the curlew's current abundance on Umatilla Refuge is not available, but range-wide survey efforts completed in 2004 showed curlew numbers on Umatilla Refuge to be higher than all other sites surveyed that year. There is likely an opportunity to increase the number of breeding curlews. McNary has limited curlew habitat with small numbers at the following locations: Dudley Wetlands, Kohler Unit, and Wallula South Unit. Because curlews tend to avoid habitats with dense vegetation cover (both vertical height and horizontal density), the Refuge could manage for short vegetation during the curlew nesting season (mid-March to mid-May). Curlews favor areas with a mosaic of shortgrass and downy brome, typically within one mile of a water source (Pampush 1980; Pampush and Anthony 1993).

Objective 2d: Conduct Shorebird Studies

Conduct or facilitate research studies to better understand Refuge shorebird ecology and management to benefit high priority species including the American avocet, black-necked stilt, long-billed curlew, western sandpiper, short-billed dowitcher, Wilson's phalarope, and dunlin.

Strategies Applied to Achieve Objective

- Evaluate existing literature and consult with experts regarding macro invertebrate prey for shorebird species breeding and migrating at the Refuge. Conduct inventory of macroinvertebrates at the primary and alternate foraging sites to determine and compare species presence and densities.
- Correlate 1990-present reservoir levels (Corps) with shorebird abundance data (Manomet Center for Conservation Sciences), with a focus on the peak migration periods and presence of high priority species.
- Assess connectivity between known shorebird migration sites in the lower and mid-Columbia basins.
- Follow all stipulations in the Research Compatibility Determination for the Refuge.

Rationale: The U.S. Shorebird Conservation Plan's list of High Priority Shorebirds (US FWS 2004) lists the western sandpiper, short-billed dowitcher, Wilson's phalarope, and dunlin as a "high concern" species in need off protection measures. Further, long-billed Curlew, American avocet, and black-necked stilt nest on the McNary and Umatilla Refuges and are considered species of critical importance according to the Intermountain West Regional Shorebird Plan (Oring et al. 2004). All of these species use the Walla Walla Delta and other Refuge sites during migration. More data is needed to document forage base available to shorebirds using Refuge habitats, especially the Walla Walla Delta. A greater understanding of the area's shorebird ecology will help support goals in the Intermountain West Regional Shorebird Plan and will help the Refuge establish baseline information on shorebird use and ecology at these sites.

Salmon - © Washington Department of Fish and Wildlife

GOAL 3: Contribute to the recovery of endangered, threatened, and sensitive species by protecting, maintaining or increasing suitable habitats.

Objective 3a: Salmon Backwater Enhancements

Protect, and where feasible restore or enhance backwater sloughs, side channel connections, shallow water marshes, or embayments that support juvenile salmon, to benefit federally listed species/stocks, including Snake River Chinook, sockeye, and steelhead; Mid-Columbia steelhead; and Upper Columbia Chinook and steelhead.

Strategies Applied to Achieve Objective

- Assess the biological benefits (both waterfowl and fisheries) of restoring side-channel fish habitats at Burbank Sloughs, Casey Pond, and the Peninsula Unit at McNary Refuge, and coordinate with State/Federal/Tribal fishery biologists.
- If deemed likely to provide biological benefits to listed salmon, prepare technical feasibility report and funding requests for salmon backwater enhancement projects.
- Evaluate and develop strategies to maintain and/or enhance connectivity between Columbia River and backwater slough areas.
- Follow all stipulations in the Research Compatibility Determination for the Refuge.

Rationale: Seven federally-listed species/stocks of anadromous fish, including Snake River Chinook, sockeye, and steelhead; Mid Columbia steelhead; Bull trout; and Upper Columbia Chinook and steelhead, spend portions of their life history either in, or adjacent to, Refuge waters and shorelines on the Snake, Columbia, and Walla Walla Rivers. The Hanford Reach contains the last major mainstem spawning habitat in the Columbia River System for fall Chinook salmon, and up to 80% of the total run of adult fall Chinook salmon returning to the Columbia River to spawn in the Hanford Reach (Dauble and Watson 1990). The Casey Pond area and other shorelines and embayments on the Refuge, serve as nurseries for young developing fall Chinook (John Easterbrooks 1999, pers. comm.). Conserving and restoring salmon and steelhead populations is an important regional goal, because of their cultural, historical, and ecological values. Salmon are an important food source for numerous other wildlife species. Sixty-seven wildlife species of the Pacific Northwest, including many known to inhabit the Refuge, have been shown to have a "strong" or "recurrent" relationship with salmon (Cedarholm et al. 2000). Protection and/or restoration of these shallow habitats may also benefit waterfowl as embayments and backwater areas are now less common than historically. A previous project proposal to Bonneville Power Administration for a restoration project at Peninsula received high scores but went unfunded.

Objective 3b: Conduct Inventory and Establish Habitat/Population Management Strategies for Certain Rare Species

Identify potential habitat areas and conduct a targeted inventory (primarily focused on determining presence/absence and indication of breeding) for the following species or species groups. If species are present, document population information. After determining status, determine which, if any, habitat or population management strategies should be undertaken for the benefit of rare species. This determination may be made in a step-down plan.

- Washington ground squirrel (OR–Endangered. WA–candidate. Federal–Candidate).
- Burrowing owl (WA–Candidate. Federal–Species of Concern).
- Peregrine falcon (Federal–Species of Concern).
- Golden eagle (WA–Candidate. Federal–No Status).
- Swainson's hawk (OR–Sensitive. Federal–No Status)
- Ferruginous hawk (WA–Threatened. Federal–No Status).
- Native Amphibians and reptiles (Varied status).
- Bats (Varied status).

Strategies Applied to Achieve Objective

- Follow established and current protocols for surveys of rare species/species groups. When and where possible, participate in regional partnerships and conform to recommended timeframes.
- Alert heritage programs and key State biologists of any new or expanded locations as well as the results of any negative searches.
- Follow all stipulations in the Research Compatibility Determination for the Refuge.

Rationale: Rare species were selected for inventory primarily due to their sensitive status (threatened, endangered, etc), and because they may occur on either McNary or Umatilla Refuge, possibly providing opportunities for habitat restoration or enhancement that could help to further their recovery. Specific information is summarized below.

- *Washington ground squirrel.* McNary Refuge lies within the historic range of the Washington ground squirrel. The species is likely extirpated from the Refuge and its historical occurrence is unknown, however, the Refuge could possibly provide habitat for any proposed future re-introductions.
- *Burrowing owl.* This species has seen a dramatic loss of habitat in the local area due to agriculture or urban development. No Refuge nesting areas are currently known.
- *Peregrine falcon.* At least one pair is known to nest on or near McNary Refuge at the Stateline Unit. The Refuge provides foraging habitat.
- *Golden eagle.* Golden eagles are reported to have nested in the cliff habitat on the Stateline Unit of McNary Refuge.
- *Swainson's hawk.* This species nests in the local area and has historically nested at McNary Refuge, but current status on the Refuge is unknown.
- *Ferruginous hawk.* Nests locally, though status is unknown on the Refuge. Basalt cliffs on McNary's Stateline Unit may provide nesting habitat.
- *Native amphibians and reptiles.* Little information exists on the occurrence and abundance of native amphibians and reptiles both historically and following Refuge creation. Paralleling a global decline by at least a third of the world's amphibians (Stuart et al. 2004), many of the Refuge's native amphibian populations thought to be present at Refuge establishment appear to be dwindling or absent. The causes of declines at the Refuge (and elsewhere for other amphibians) are not fully known, but may be related to loss of habitat, changes in hydrology, habitat fragmentation, nonnative

predatory fish and bullfrog introduction into historic habitats, drought, mortalities on roads, environmental contaminants, disease, and other factors (McAllister et al. 1999). The Refuge needs to improve its knowledge of potential and occupied habitats for native amphibians and may be able to play a role in reestablishing of declining populations.

- *Bats.* Virtually no information exists on bats occurring on either Refuge. Further information will help Refuge staff understand species richness and diversity.

We did not include here other species such as the bald eagle, American white pelican, and salmonids, for the following reasons.

- The Corps already collects winter population information on bald eagles at McNary Refuge. The Refuge also tallies bald eagles observed during aerial waterfowl surveys and contributes data to the annual Oregon Winter Eagle Survey. American white pelican: Population numbers are "rough" but data is collected by researchers as part of their work on the piscivorous fish research.
- American white pelican counts are estimated by researchers from aquatic and aerial counts. Once additional information is available on each of these species or groups population status on the Refuge, the staff can better determine appropriate habitat or population management objectives and strategies. Such detail may best be developed in a step down Habitat Management Plan.
- Endangered salmon stocks and other Columbia River System salmon are regularly monitored and studied by the WDFW, Corps, Tribes, Service, and the National Oceanic and Atmospheric Administration's Fisheries program. Data is available for Refuge use.

Objective 3c: Conduct Baseline Inventory for Small Mammals

Conduct a one-week long baseline inventory in approximately three shrub-steppe priority areas to collect initial data on the presence, abundance, and diversity of small mammals.

Strategies Applied to Achieve Objective

- Map Quincy and Warden soil types, and an overlay with areas of less-disturbed vegetation cover likely to be suitable for the Washington ground squirrel, to prioritize, search areas for this species.
- Select other areas for survey based on State records and historic reports.
- Alert heritage programs and key State biologists of any new or expanded locations as well as the results of any negative searches.
- Follow all stipulations in the Research Compatibility Determination for the Refuge.

Rationale: Small mammals are an important food source for higher level predators, including several migratory birds, such as the golden eagle and Swainson's hawk. In addition, structures made by some small burrowing mammals are important nest sites for the burrowing owl. The Refuge needs data on the diversity of small mammal species inhabiting Refuge habitats, their relative abundances, and locations of highest habitat value. An abundance rating for certain small mammals was provided in the McNary Habitat Management Assessment baseline inventory (WADFG 1980). Some of the data presented in that report originated in the Columbia River System inventory. The Washington ground squirrel, listed as endangered by the State of Oregon, is currently thought to be restricted to three populations in Oregon and Washington. Suitable soil types may exist on the Refuge. Restoration of shrub-steppe and grassland habitats as described in shrub-steppe objectives should also aid in supporting native small mammals.

GOAL 4: Provide a diversity of high-quality wetland habitats for the benefit of migratory birds and other wetland plants and animals.

Heron at Burbank Slough – © Lyn Topinka

Objective 4a: Increase Amount of High Quality Shallow Marsh

Conduct needed management on 650 acres at McNary Refuge, resulting in an increase in high quality shallow marsh acreage available for use by waterfowl and other waterbirds. High quality marsh will consist of open shallow marsh habitat with less than a 50% cover of tall persistent emergent vegetation (bulrush, cattail) at full pool level, with persistent emergent vegetation patches smaller than 10 acres, and no unbroken shoreline patches longer than 300 yards. In addition, in managed areas, no more than 20% plant cover in the wetland emergent plant zone shall be comprised of the following non-native invasive wetland plants: purple loosestrife, phragmites, cocklebur, and false indigo. Conduct needed management at an average rate of about 43 acres per year over the life of the CCP.

Strategies Applied to Achieve Objective

- Mechanically re-open areas that have become vegetated with persistent emergent vegetation in order to set back succession and maintain open, shallow water areas.
- Mechanically remove longer term mineral and organic deposits that lead to filling and wetland loss.
- Utilize mowing, disking and burning to eliminate vegetation mats and organic material.
- Utilize surface excavation and shoreline recontouring where appropriate to open marshes.
- Develop and implement an Integrated Pest Management (IPM) Plan (use mechanical, cultural, biological, hydro management and chemical methods) to aggressively reduce the presence of the five nonnative plants in the wetland emergent plant zone.
- Inventory plant communities and annually monitor effectiveness of treatments. Control any reinvasion by nonnatives; and plant native emergents as needed.
- Partner with counties for education/weed control along Refuge borders and reduce sources.
- Increase annual funding by $60,000 to address costs of monitoring, biological controls, equipment and chemicals used under an Integrated Pest Management Plan.

Rationale: The Refuge was established to mitigate losses of habitat, including wetlands, caused by dam building in the Columbia River. Providing a diversity of wetlands is vital to the purposes of the Refuge. Yet because of the numerous dams along the length of the Columbia River, and the specific dam and lock operations encompassing river sections within the Refuge, the natural fluvial processes of a free-flowing riverine system have been eliminated. Refuge waters, which are now human-managed and relatively constant-elevation reservoirs, alternately support lacustrine and palustrine systems, but lack necessary disturbance mechanisms to provide and maintain the cyclical aging and renewal processes of wetlands over time. Non-persistent wetlands and mudflats, for example, are vital to a variety of migratory birds and other wetland animals.

Both habitat types are mostly nonexistent on the Refuge because of the absence of natural disturbance mechanisms. By increasing the number of acres of open shallow marsh through artificial means such as mechanical operations or prescribed fire, the Refuge will mimic natural processes and provide a diversity of successional stages that increase overall biodiversity and prevent wetland loss over time. Benefitting species could include shorebirds, wading birds, rails, waterfowl and muskrats.

Invasive plants (primarily purple loosestrife, phragmites, cocklebur, and false indigo) are widespread in the emergent plant zone of most Refuge wetlands, and may currently be as high as 30-50% of plant cover in certain areas. Altered plant and animal community composition was identified as a very high stress to wetland systems. Invasive plants limit native plant production and cause impacts to food, nesting, and cover for wildlife. Invasive plants in wetlands reduce waterfowl food availability during the migration and wintering periods. Limiting invasive species will help the Refuge to comply with county and state ordinances, as well as improve habitat values. However, the task is immense, thus a threshold value for invasive plant species was established as a reasonable objective over the next 15 years as opposed to a zero-tolerance level.

Objective 4b: Maintain and Improve Aquatic Bed Habitats.

Manage wetlands to increase submerged aquatic vegetation cover by eliminating rough fish (carp and bullhead). By the end of 15 years, maintain carp-free conditions in at least one of the Headquarter's Wetland Units—2, 3, or 4,—and determine the most effective control methods for reducing carp numbers from present level in areas open to the Columbia River (Casey Pond and Burbank Sloughs). This will benefit migratory waterfowl (mallard, pintail, lesser scaup, and tundra swan), waterbirds (pied-billed grebe), and other native aquatic species.

Strategies Applied to Achieve Objective

- Conduct initial inventory for submerged plants within two years after CCP is finalized; and monitor every five years after that.
- Obtain bathymetric data for Burbank Slough and Peninsula wetlands on the Refuge.
- Eradicate carp and bullhead at one or more of the following wetland locations: McNary Headquarters Wetland Units 2, 3, or 4 by the end of 15 years. Drawdown these wetland areas and if needed utilize rotenone to kill carp and bullhead populations. For effective use of rotenone, and facilitation of equipment needs, burn residual vegetation when appropriate. Coordinate with WDFW and ODFW on rotenone projects, funding initiatives, and partnerships.
- Experiment with water drawdowns in advance (schedule with the Corps) to determine how low water can get, and make any needed changes in water control structures to facilitate carp removal and growth of submergent vegetation used by waterfowl.
- Consider permitting commercial carp and bullhead fishing in areas open to the Columbia River (Casey Pond or Burbank Sloughs).
- Follow all stipulations in the Research Compatibility Determination for the Refuge.

Rationale: McNary Refuge has significant wetland resources that provide habitat for wildlife. However, outside of extensive use by waterfowl and other migratory birds, little is known about submerged vegetation and other aquatic species inhabiting Refuge wetlands. Carp, which are widespread in permanently flooded wetland habitats on the Refuge, are thought to represent a high threat to the functioning of the wetland system, due to their impacts on submergent vegetation and water quality. Carp uproot and eliminate submerged vegetation, increase turbidity (see stress source analysis), and decrease the overall abundance and diversity of the

invertebrate community (Miller 2006). Treatments using the natural plant chemical rotenone are expensive, but can be more effective if the amount of water to be treated is minimal and carp and bullhead are concentrated in a small area. Past rotenone treatments have generally been effective, but reintroduction and infestation have occurred at varying rates. This may have occurred because adequate water drawdowns did not occur, and/or, all connected pools/sloughs were not treated at the same time. Partnering with experienced State fishery program managers should increase success rates.

GOAL 5: Provide high quality riparian habitats for the benefit of nesting and migrating birds, fish, riparian plants, and other riparian wildlife.

Banding a Yellow-breasted Chat
Howard Browers/USFWS

Objective 5a: Improve Condition of Riparian Habitat for Nesting and Migrating Native Passerines

Conduct needed management on at least 30% (463 acres) of the total 1,497 acres of priority riparian habitat on the Refuge, over the next 15 years, to improve nesting success for native riparian passerines such as the Lazuli bunting, yellow warbler, yellow breasted chat, and other riparian species identified as Partners In Flight focal species. Needed management is defined as a combination of treatments and re-treatments that successfully improve the overall condition rating, resulting in a rise to the next highest condition class (poor, fair, good). Conduct needed management at an average rate of about 31 new acres per year over the life of the CCP. See condition definition ratings below.

Riparian Tree-Dominated Habitats: Condition Class Categories

Condition Class	Overstory Canopy Cover*	Overstory Trees Age Classes	Percent of Native Forb and Grass Cover Comprised of Natives	Native Understory Shrub Cover
Poor	<5 %	1	<25%	<10%
Fair	5-20 %	1-2	25-50%	11-20%
Good	21-30%	Several	51-75%	21-50%
Excellent	31-60%	Several	>75%	51-80%
Recommended Conditions for Various Target Species				
Bullock's Oriole (Altman and Holmes 2000)	30-60%	Protect large gallery cottonwoods		

* Native and nonnative cottonwood, peachleaf willow, pacific willow, white alder, etc.

Riparian Shrub-Dominated Habitats: Condition Class Categories

Condition Class	Percent of Native Forb and Grass Cover	Native Shrub Cover	Shrub Height	
Poor	<25%	<10%		
Fair	25-50%	11-20%		
Good	51-75%	21-50%		
Excellent	>75%	51-80		
Recommended Conditions for Various Target Species				**Other species-specific parameters**
Lazuli Bunting (Altman and Holmes 2000)	>25% and <70%	>25% and <70%		Interspersion of shrub patches and herbaceous openings
Willow Flycatcher (Altman and Holmes 2000)	Interspersed	40-80% (patches 10 square meters in size)	>3 feet high	Patches exceeding 5 acres, preferably 20 acres or more. Tree cover <30%.

Strategies Applied to Achieve Objective

Each year, improve native plant cover and distribution within one or more of the seven priority areas. While implementing strategies to move blocks into the next higher condition rating, consider specific habitat requirements of both tree-dominated and shrub-dominated species. The seven blocks follow:

Area	Acres	Condition	Area Description
McNary Head-quarters Unit	41	Poor	Area has some large cottonwoods and willow shrubs, but also quite a bit of Russian olive and even a few salt cedar shrubs.
Burbank Sloughs	279	Poor	Woody cover a mix of willow, cottonwood, Russian olive, and false indigo.
Foundation Island	19	Good	The island is small but large cottonwood trees are present and provide nesting habitat for cormorants and herons.
Peninsula Unit	125	Fair	Large cottonwoods are present and areas of good willow cover. False indigo encroaching on shoreline.
Two Rivers Unit	128	Fair	Good willow cover and a number of large cottonwoods.
Wallula Unit	870	Poor	Large cottonwoods and good willow coverage in some areas. Much of area (700 acres) burned in Port Kelly wildfire.
Crescent Island	8	Fair	
Juniper Canyon Unit	27	Good	Good willow cover, need more information on understory. Trespass cattle grazing could be a problem.
Total Acres	**1497**		

- Develop IPM Plan within one year of CCP completion and address control of invasive species in riparian understory (reed canarygrass, poison hemlock, false indigo, and Russian olive seedlings) and overstory (Russian olive). Existing stands of large Russian olive trees will not be targeted unless other multi-layered woody stands exist in close proximity.
- Enhance nesting opportunities within riparian areas by decreasing invasive species using weed control techniques (chemical, mechanical, biocontrols) on 5-31 acres of riparian habitat per year.
- Enhance shrub and tree layers within existing blocks of habitat by selective planting of native shrubs and cuttings on 5-31 acres per year.
- Monitor species richness, abundance, and productivity by expanding McNary's Monitoring Avian Productivity and Survival Station (MAPS) to include the Walla Walla Delta, and adding point counts and nest searches. Track changes in species richness, abundance, and productivity over time, aiming for a 10% increase in species richness and; 20% increase in passerine productivity from 2005 levels. Implement point counts or area searches before and after habitat restoration efforts to document changes in relative abundance. Implement migration monitoring in fall and spring in some riparian areas.
- Reduce browse damage to trees and shrubs using fencing, a hunt program, and tree guards.
- Construct one exclosure in each key riparian area and monitor effects on the herbivory.
- Follow all stipulations in the Research Compatibility Determination for the Refuge.

Rationale: Refuge riparian habitats are threatened and/or degraded by the presence and dominance of invasive weeds, lack of native shrub components, and altered hydrology. Restoration and enhancement efforts are needed to improve overall habitat conditions for migratory birds. Photographs dating from the early 1900s suggest that cottonwood dominated riparian was not common, and willow dominated riparian shrub communities were present along narrow corridors of the river. Ninety-seven native bird species are highly associated with riparian

habitat (Altman and Holmes 2000) and six of these are "focal species." Data from the MAPS station at Wallula show the Lazuli bunting, yellow warbler, and yellow breasted chat (three of the focal species) present, but as uncommon nesters on McNary Refuge. Small riparian acreages in the arid west provide food and shelter and thus are critical for thousands of birds needing to refuel during migration. Migration monitoring could be implemented to document this benefit to migrants passing through McNary Refuge.

Objective 5b: Enhanced Cottonwood Recruitment

Promote enhanced recruitment (at least 300 stems per acre) and development of cottonwood stands on five acres per year at McNary Refuge.

Strategies Applied to Achieve Objective

- Select sites and use managed pool and wetland water levels in concert with soil disturbance (disking) to promote more favorable conditions to induce germination of the available cottonwood seed source on exposed soils.
- Request that dam operations make short duration increases in pool levels during the summer to irrigate and enhance young cottonwood survival and recruitment at sites.
- Provide weed control in newly developing cottonwood riparian sites using techniques/treatments identified in the IPM Plan.
- Undertake supplemental plantings of cottonwoods in riparian areas to increase tree diversity and density.

Rationale: As the dominant native overstory tree species of mainstem and low elevation tributary riparian zones, cottonwood is recognized as a "keystone" species in riparian areas. These stands provide important nesting and migrating habitat for migratory birds. Reliable cottonwood recruitment is necessary for the perpetuation of cottonwood dominated riparian stands. The altered water regime of the Columbia River was identified by the planning team as a high source of stress, leading to low or altered recruitment of native plants and an altered plant community composition in most Refuge riparian zones. Major losses to riparian vegetation and ecological function have occurred in response to regulated flows in river systems (Jamieson and Braatne 2001). Cottonwood recruitment may be improved, however, by using managed pool/wetland levels which mimic natural timing of cottonwood seed dispersal and germination (Jamieson and Braatne 2001). Managers have noted extensive cottonwood regeneration after soil disturbance in managed moist soil units at the Wallula Unit. Recruitment density of about 300 stems per acre would achieve approximately 12' by 12' spacing at the mature stage, assuming no mortality. The cottonwood species that is currently regenerating most naturally in the system is the plains cottonwood (*Populus deltoides*). However, when constructing restoration and planting using cuttings/rootstock, the Refuge will try to use the native black cottonwood (*Populus balsamifera spp. tricarpa*).

GOAL 6: Protect the integrity of the biological resources of the river islands.

American pelicans – Art Shine/USFWS

Objective 6a: Maintain Waterbird Populations

Manage river island habitats at McNary Refuge to benefit a diversity of nesting birds (ducks, geese, songbirds and shorebirds) and waterbird colonies (gulls, terns, herons, and cormorants) at their current population levels.

Strategies Applied to Achieve Objective

- Increase law enforcement patrols, news releases, and signage to protect island nesting birds from disturbance.
- Manage island substrate and vegetation to ensure that a diversity of nesting habitats for colonial waterbirds is available.
- Monitor size of nesting and waterbird colonies, including Canada geese, mallard, American white pelican, Forster's tern, Caspian tern, and great blue herons; and identify potential threats to production.
- Increase coordination with various agencies, scientists, and others studying island resources, and assist their efforts by seeking funding, issuing special use permits, helping design study protocols, and monitoring research progress.
- In response to Endangered Species Act requirements for federally listed salmon stocks, consider a range of options to limit piscivorous waterbird depredation, if scientifically sound data demonstrates a critical need to limit depredation due to significant impacts on salmon survival. If controls are deemed appropriate, a written step-down plan and National Environmental Policy Act (NEPA) documentation shall be developed with evaluation of the effects to fish and waterbird populations. Actions shall be planned and implemented using a multi-agency approach and multiple funding sources.
- Continue to monitor, measure, and document rates of erosion on all islands.
- Follow all stipulations in the Research Compatibility Determination for the Refuge.

Rationale: Canada geese nest on all Refuge islands, as do lesser numbers of mallards and other migratory birds. The American white pelican colony (listed as endangered by the State of Washington) at McNary Refuge's Badger Island is the only successful breeding colony in the State. Foundation Island provides nesting habitat for great blue heron, double-crested cormorant, and black-crowned night heron colonies. Piscivorous colonial nesting birds, especially Caspian terns, have been identified as having negative effects on salmon smolt survival (US FWS 2005). Double-crested cormorants can consume relatively large numbers of salmonids at certain times of the year. Caspian terns nesting on McNary's Crescent Island number only about 500 pairs, however, as much as 70% of their diet consists of salmon or steelhead smolts (Antolos et al. 2005 and Collis et al. 2004). This colony inhabits only a small area of Crescent Island and will likely not grow larger as it is surrounded by a gull colony and vegetation. Nesting gull colonies, mainly ring-billed and California gulls have increased significantly in the last 20 years. Forster's

terns have declined as a nesting species, while great egrets have recently expanded into the area. As conditions continue to change in the larger Basin-wide area due to prey species, human recreation/disturbance, management of water/hydropower, and animal and human population changes, waterbird populations will continue to change and provide a good barometer of island integrity. Erosion of Refuge islands has been documented in the past; however, more recent changes in reservoir elevations and pool operations have likely reduced the rate. Any erosion that does occur means remaining island acreage becomes more important to wildlife. It is important to monitor measure and document changes in island erosion rates.

Objective 6b: Limit Island Disturbance

Limit disturbance to island habitats, wildlife, and other island resources by enforcing existing and new island closures as follows:

- Strawberry Islands: Existing total closure of Strawberry Islands to public use, including beach areas, will be enforced.
- McNary Islands: Existing total closures of Foundation and Badger islands will be enforced. However, Crescent Island will continue to be open to waterfowl hunting.

Strategies Applied to Achieve Objective

- Increase public education and outreach to notify and inform public about the sensitivity of biological resources on the islands and the need for closures to protect birds.
- Improve and increase island signs as needed.
- Prohibit fishing tournament access within a ½ mile of pelican nest colonies.
- Increase law enforcement patrols, enforce beach closures, and deter use in unauthorized areas.
- Follow all stipulations in the Boating and Fishing Compatibility Determinations as well as the Waterfowl Hunting Compatibility Determination for McNary Refuge.

Rationale: The river islands on McNary Refuge support breeding habitat for several groups of species, including colonial waterbirds, shorebirds, geese, ducks, swallows and deer. Wildlife species seek out the islands for breeding habitat because of the islands' relative isolation, security, and general lack of mammalian predators. Security was identified as a key ecological attribute supporting the islands' wildlife communities. The islands also have important cultural resources; especially Strawberry Island which contains a site in the National Register of Historic Places. Because of these unique traits, recreational disturbance and recreation-induced habitat modification such as accidental fire, has long been a concern. Human use causes direct impact on the beaches themselves, including direct displacement of geese, shorebirds, and bank nesting swallows from potential foraging and nesting habitat. Garbage and human waste present ongoing problems. Island closures are necessary to protect biological and cultural resources from adverse modification.

GOAL 7: Conserve and restore the plants, animals and shrub-steppe community representative of historic Columbia Basin habitats.

Sand dock – Howard Browers/USFWS

Objective 7a: Improve Shrub-Steppe Condition

Conduct needed management on approximately 881 acres (or 30% of the 2,694 acres) encompassed by seven priority shrub-steppe areas. Needed management is defined as that combination of treatments and re-treatments which successfully improve the overall condition rating resulting in a rise into the next highest condition class (poor, fair, and good) as outlined below. Conduct needed management at the rate of about 59 new acres per year over the life of the CCP. See the definitions and habitat condition class ratings below.

Shrub-Steppe Habitats: Condition Class Categories

Condition Class	Native Shrub Cover *	Understory vegetation cover percent native species	Open Ground Cover	
Poor	<5 %	<25% native species cover	0 or >75%	
Fair	5-10%	25-50 % native species cover	51-75%	
Good	11-20%	51-75% native species cover	21-50%	
Excellent	21-30%	>75% native species cover	10-20%	
Recommended Conditions for Various Target Species				**Other species-specific parameters**
Sage sparrow (Vander Haegen 2004)	10-25%	>10% native (exotic annual grasses <10%)	≥10 %	Shrub height generally >20 inches
Sage thrasher (Altman and Holmes 2000; Vander Haegen 2004a)	5-20% big sagebrush, clumped	5-20% (<10% cover exotic annual grasses)	≥10%	Sagebrush height >31 inches; <10% cover other shrubs; patches of 40 acres or greater

*Target composition for native shrub cover is sagebrush and/or bitterbrush predominant

Grassland Habitats: Condition Class Categories

Condition Class	Grass Cover	Percentage native species for all herbaceous plants (grasses and forbs)	Open Ground Cover
Poor	1-10%	<25% native species	0 or >80%
Fair	11-20%	25-50% native species	61-80%
Good	21-30%	51-75% native species	50-60%
Excellent	31-60%	>75% native species	10-40%

Based on the Following Recommended Conditions for Various Target Species				Other species-specific parameters
Burrowing owl (Altman and Holmes 2000)	Native grass cover <40% and <16 inches tall		>40% including bare and/or crypto-grammic crust	Burrow providers, 660 ft. buffer zone around nest burrows with no pesticide applications or disturbances allowed.
Grasshopper sparrow (Altman and Holmes 2000)	>15% (bunch-grasses)	Species composition >60% of grasses present are native bunchgrasses		Bunchgrass height >10"; native shrubs <10%; patches >100 acres or multiple patches >20 acres
Long-billed curlew (Denchant et al. 2003) See also Colorado PIF and Montana Bird Conservation Plan				Shrubs or areas of cheatgrass intermixed with patches of Sandberg's bluegrass. Shorter vegetation (<24 cm), nest density was positively correlated with percent cover of bare ground and with the evenness of forb height. Limit grasshopper or insecticide use

Strategies Applied to Achieve Objective

- Each year, improve native plant cover and distribution within one or more of the seven priority areas by active planting or seeding appropriate native species. Consider specific habitat requirements of both shrub-associated and grass-associated species. Seven blocks are as follows:

Seven priority areas for treatment

Area	Acres	Condition	Area Description
McNary Headquarters Unit 3	385	Poor	Little to no sagebrush or bitterbrush present. Native bunchgrass cover very patchy. Undesirable invasives predominant in understory.
McNary Headquarters Unit 2	214	Poor	Little to no sagebrush or bitterbrush present. Native bunch-grass cover patchy. Undesirable invasives predominant in understory.
Badger Island	39	Good	Island has good shrub cover. Data on understory lacking.
Wallula Unit North	510	Fair	Much of the sagebrush and bitterbrush on this area consumed in 2001 Port Kelly wildfire. An area of good sagebrush cover and some bitterbrush that was spared by the fire remains around Sanctuary Pond. Sagebrush and bitterbrush seedlings planted in fall 2001–sagebrush has good survival, bitterbrush did not. Understory vegetation primarily nonnative grasses and forbs. Some patchy areas of native bunchgrasses.
Wallula Unit South	604	Poor	Much of the sagebrush and bitterbrush consumed by 2001 Port Kelly wildfire. Some patchy areas of good native bunchgrass cover, otherwise nonnative plants predominant
Stateline Unit	743	Fair	Scattered tracts along east bank of Columbia River ranging. Undisturbed areas have good bunchgrass and/or sagebrush/ bitterbrush cover. Areas disturbed by fire and/or grazing have little shrub cover and predominantly invasives in the understory.
Juniper	199	Fair	Isolated tract around Juniper Canyon Creek and riparian area

Canyon Unit			similar to tract on Stateline Unit.
Total Acres	2,694		

- Conduct follow up weed treatments and/or additional plantings on managed blocks as needed.
- Conduct chemical weed control to reduce cheatgrass and other targeted weeds annually.
- Initiate integrated pest management by writing an IPM step-down plan by 2008.

Rationale: An estimated 10.4 million acres of shrub-steppe habitat occurred in the state of Washington during European settlement (Dobler et al. 1996). By the late 1980s only about 40% remained. Locally, Walla Walla County had 33% of the original shrub-steppe habitat remaining (Dobler et al. 1996). Most shrub-steppe areas on the Refuge are threatened and/or remain in a degraded condition due to invasive plants, wildfire, and poor native plant recruitment/recovery.

Seven of the larger blocks of shrub-steppe habitat totaling 6,809 acres were selected for the focus of shrub-steppe restoration and enhancement activities based on their size and connectivity on-and-off the Refuge. These areas were selected partly due to size and current condition, i.e. they were already in some form of shrub-steppe rather than in agriculture, roads, or gravel pits.

Because "shrub-steppe" encompasses a wide variety of different plant communities and structural conditions, and management to promote conditions for some of the inhabitants may conflict with conditions for other inhabitants, the shrub-steppe target has been subdivided into two sub-types: shrub-steppe and grasslands. Shrub-steppe is typified by a higher level of native shrub cover—areas chosen to be managed for this subtype should be able to achieve >10% mature sagebrush or bitterbrush component by the end of 15 years. Grasslands are typified by few or no sagebrush or bitterbrush shrubs. Approximately half of the priority shrub-steppe areas should be managed to improve conditions for shrub-steppe habitats. The other half should be managed to improve conditions for grassland habitats. Though these acreages are relatively small, restoration efforts may provide valuable habitat for some shrub-steppe dependent species.

The team chose to use a 4-tier condition class category system to facilitate the Service's ability to enumerate acres of habitat that might be in less than stellar condition. While achieving good or excellent habitat conditions, as described by various species experts, remains an important goal, realistically the Refuges will more likely be able to gradually improve habitats to move them closer to the type of condition favored by the target species. In addition, using management condition categories to track habitats over time will enable more fine-tuned monitoring of Refuge habitats and facilitate acreage reporting in the Refuge's Annual Performance Plan (RAPP).

The condition classes described were defined by the team after examining the habitat requirements of several selected species closely tied to shrub-steppe and riparian habitat types in this area. (Each table includes the selected species habitat requirements below the condition class categories). Because scientific reports often show slight differences in the habitat requirements of different species, the team chose to integrate the main structural habitat requirements of these selected species. Finer details, such as proximity to water or patch size, may be described in the specific habitat requirement for a selected species, but was not necessarily carried through to the broader condition class descriptions, because these often differ species by species.

Objective 7b: Protect and Restore Burrowing Owls

Pending the results of inventories listed above in 3b, protect and restore suitable habitats for the benefit of burrowing owls.

Strategies Applied to Achieve Objective

- Investigate the possibility of transplanting ground squirrels in appropriate areas on the Refuge.
- Experiment with the creation of artificial burrows adjacent to existing nesting areas.
- Identify historic sites that may have been occupied by colonies on the Refuge.
- Restrict public access to known and historic breeding sites.
- Prepare materials and messages for public outreach and education efforts to raise awareness of burrowing owls and the threats posed by urban development, including shooting/poisoning/control of burrowing mammals.
- Follow all stipulations in the Research Compatibility Determination for the Refuge.

Rationale: Burrowing owls are declining within the states of Oregon and Washington and may be at risk on the Refuge. Small numbers have historically nested on the Refuge, but there has not been an extensive inventory.

Objective 7c: Protect Shrub-Steppe Habitats

Over the life of the CCP, protect and/or maintain 2,796 acres at McNary Refuge encompassed by the seven priority shrub-steppe interest areas, by minimizing ground disturbance, reducing fire starts, and implementing emergency stabilization and rehabilitation of wildfire impacts.

Strategies Applied to Achieve Objective

- Incorporate standards and procedures for maintenance and management activities to minimize activities that disturb soil surfaces.
- Increase fire crew availability and readiness for initial attack by maintaining three fire engine crews at McNary.
- Reduce likelihood of fire ignitions from recreational activities in priority shrub-steppe areas through education, interpretation, and careful planning of recreational facilities.
- Increase coordination and cooperation with rural fire districts and expand mutual aid agreements. Provide education and assistance to rural fire district staffs.
- Coordinate with railroad companies to alter train operations, if possible, to reduce fire ignitions. Investigate and document fire starts and seek compensation from railroads for restoration needs where ignitions can be tied to train operations.
- Implement emergency stabilization and rehabilitation actions following wildfires; including soil stabilization, cultural resource protection, nonnative invasive species control, native grass/shrub seeding and planting, and effectiveness monitoring
- Continue to inventory and control nonnative invasive plant species (cheatgrass, starthistle, knapweed) based on IPM plans and procedures.

Rationale: Remaining shrub-steppe habitats are threatened and/or remain in a degraded condition due to an extensive history of wildfires, poor native plant recruitment/recovery following fires, and ground disturbance activities (roads, trails, heavy equipment). Limiting/eliminating ground disturbing activities and reducing fire starts and/or decreasing fire sizes through fire suppression and aggressive initial attacks, will benefit habitats. Fire regime is one of the key ecological attributes affecting the viability of the shrub-steppe system. A less

intense and less frequent fire regime was present historically. The current more intense and frequent fires create a cycle of habitat modification and degradation that needs to be reversed. In addition, better post-fire rehabilitation and stabilization project planning and on-the-ground success is needed.

Objective 7d. Restore Shrub-Steppe Habitats by Decreasing Roads and Development

Restore native shrub-steppe habitats on suitable lands such as those occupied by unnecessary roads, waste sites, gravel pits and cropland no longer suitable or needed for crop production. Restore up to 300 acres on the Refuge during the life of the CCP.

Strategies Applied to Achieve Objective

- Close all remaining unnecessary and unauthorized roads or trails in the Burbank Sloughs and Peninsula Units, as well as other Refuge sites as needed. Restore up to 25 acres of shrub-steppe on these areas.
- Restore to native shrub-steppe habitat 75 acres of former mining and gravel sites adjacent to Humorist Road, and other minor sites as needed. Remove large rock piles, level all areas, and restore native shrub-steppe habitat by controlling nonnative plants (i.e. cheatgrass and kochia) prior to seeding areas with site-appropriate native grass seed or planting native shrubs.
- Restore native shrub-steppe plant communities on approximately 200 acres of fallow croplands which are not needed or are unsuitable for crop production as identified on Map 3.
- Use chemical weed control treatments and fall native grass seed drilling when possible.
- Use site monitoring, multiyear follow-up treatments, and selective planting of shrubs and forbs in all restoration treatments.
- Consider needs of high priority wildlife species including: burrowing owl, long-billed curlew, and ground squirrels in site plans.

Rationale: Shrub-steppe habitats can be restored on many areas, including areas occupied by unnecessary and unauthorized roads, especially in the Burbank Sloughs and Peninsula Units. The existing spider-like web of trails is the result of illegal and/or unfettered public access over many years of management with little enforcement presence. Public use of these illegal roads and trails increases the potential for wildfire, garbage dumping, and further fragmentation of shrub-steppe habitat. Once access is restricted to designated roads, all unnecessary roads can be restored to shrub-steppe habitat. It is estimated that 25 acres of roads, trails, and waste sites could be closed and restored. In addition, there are approximately 200 acres of abandoned former agricultural lands in weedy conditions absent of native grasses or shrubs. These lands can also be restored using chemical weed control, fall native grass drilling, and selective plantings of shrubs and forbs. Former gravel and rock operations off of Hansen Loop Road at McNary account for another 75 acres of land for potential shrub-steppe restoration. Because much of the restoration will occur on smaller habitat fragments, it is important to carefully consider the needs of high priority wildlife species including: burrowing owl, long-billed curlew, and ground squirrels in all site plans prior to initiating restoration projects.

Cliffs – © Lyn Topinka

GOAL 8: Protect and maintain the ecological integrity of talus, outcropping, and cliff habitats for natural levels of species diversity.

Objective 8a: Maintain Intact Rock Structures

Protect and maintain all cliffs, talus slopes, and outcroppings in intact structural condition to benefit cliff nesting birds (peregrine falcon, prairie falcon, and white-throated swift) and other unique species (common night snake, and rattlesnake hibernacula).

Strategies Applied to Achieve Objective

- Prevent illegal mining or extractive activities on the Refuge's natural rocky features and basalt columns, including collection for home landscaping, through proper signing and education. Photograph/document significant areas most threatened by illegal activities.
- Provide adequate sanctuary for raptor nesting sites, and limit public uses to the Big Six uses only, in areas without significant nesting bird populations.

Rationale: Maintaining the size and composition of rocky habitats was identified as a key ecological attribute of the cliff/rimrock/talus and outcroppings target as indicated by cliff dominance (high cliffs), the variety of rock features, and the amount of talus with larger rocks and deeper masses. The Refuge has received requests for rip-rap and basalt columns, increasingly being used in home landscaping, and at least one incidence of theft/vandalism occurred at a neighboring Refuge. Signing, law enforcement, and education may help prevent illegal activities and theft. The rock outcroppings represent a small portion of Refuge lands, but they provide habitat for cliff nesting birds (peregrine and prairie falcons, white-throated swift, and golden eagle) and other unique species (common night snake, rattlesnake hibernacula, big-horned sheep, and mule deer).

Objective 8b: Conduct Baseline Inventory of Rocky Habitats

Conduct baseline inventory of plant and wildlife resources inhabiting rocky habitats, with particular emphasis on the Stateline and Juniper Canyon Units. Inventories should focus on determining the presence and abundance of birds, bats, reptiles, amphibians, rare plants, and any key functional areas such as nest sites or hibernacula.

Strategies Applied to Achieve Objective

- Pursue cooperative funding and partner contributions for the inventory.
- Survey and mark the boundary of the Stateline and Juniper Canyon Units and fence cattle out of protected areas.

Rationale: The wildlife and plant resources utilizing the Refuge's rocky habitats have not been systematically inventoried. Experts present during the wildlife and habitat management review

stated that the Juniper Canyon/Stateline cliffs and talus areas are known to provide habitat for big herds of mule deer, prairie falcons, white-throated swift, common night snake, big-horned sheep, black-tailed jackrabbit, and golden eagle. In addition, there is a known peregrine falcon eyrie on McNary Refuge and there may be a hibernaculum at Wallula. There is the potential for several species of bats and various reptile, and amphibian species to be present as well. An inventory is needed. It is also important to mark the boundary since the zigzag ownership pattern makes it difficult to discern property lines, and to fence cattle out of protected resource areas.

GOAL 9: Visitors and local residents enjoy, value, learn about, and support the Refuge.

Refuge Birders - © Brenda Shine

Objective 9a: Expand and Enhance Viewing and Trail Opportunities at Headquarters Unit

Enhance and improve wildlife viewing, interpretive, and trail opportunities and facilities at McNary Refuge's Headquarters Unit.

Strategies Applied to Achieve Objective

- Developing a safe pathway or boardwalk parallel to Lake Road, or develop a new loop trail allowing visitors to begin and end their walk at the Education Center.
- Provide a spur off the north side of the Wetland 4 leading to a new overlook/ interpretive point and continuing on to connect to the Walla Walla District Library.
- Develop a new kiosk/overlook on the north side of the Headquarters overlooking Wetland 4.
- Evaluate connection to Hood Park hiking trail via a proposed underpass at SR 124 if WDOT constructs a new cloverleaf access from State Highway 12
- Expand bird list to include all wildlife species, and make it available at the Education Center.
- Enhance viewing opportunities along the south, west and northwest shorelines of Unit 4 by opening vegetation (i.e. reduce the density of emergent vegetation).
- Follow all stipulations in the Wildlife Observation and Photography Compatibility Determination and Environmental Education and Interpretation Compatibility Determination.

Rationale: The Headquarters Unit is the most heavily used unit for wildlife viewing, photography, and interpretation, and is the centerpoint of the Refuge's Environmental Education program. The current wildlife viewing trail serves all these uses, providing a relatively flat two-mile nature walk through native shrub-steppe habitat, along the shores of two wetlands, and near the edge of Refuge agricultural fields. However, the trail could be much improved with certain modifications. Most pressing is the completion of a loop offering a safe return along Lake Road (currently users who wish to loop back to the headquarters must share the narrow Lake Road crossing with cars and trucks). A boardwalk could be constructed parallel to the roadway or through the east side of the slough. Users have also requested enhancement of viewing areas along the south side of the slough, which can be provided by opening the dense vegetation along the shoreline area. There is an intriguing potential to connect the McNary Headquarters trail directly to the Corps Hood Park nature trail and possibly to a regional bike trail system through the creation of a SR-124 underpass, as part of a Washington Dept. of Transportation Highway 12 improvement project. Doing so could conceivably attract new Refuge visitors; however, impacts need to be evaluated. Local connectivity of the Refuge with the town will be enhanced by connecting the north end of the trail to the library via a new spur.

Objective 9b: Promote Bird Watching at the Wallula Unit

Provide new bird watching opportunities and facilities at the Wallula Unit of McNary Refuge with a focus on expanding visitors' awareness of riparian passerine birds and their habitats.

Strategies Applied to Achieve Objective

- Sign and develop the Wallula South Wetland 3 trail for bird watching use. Improve and expand trail from existing parking area using the old road bed and new dike; add foot-bridge. The old roadbed has holes and other obstacles, making it user "unfriendly."
- Develop interpretive signs for the area focusing on passerine birds and riparian habitat.
- Sign the Horse Trail on north side of Wallula Unit for use by birdwatchers.
- Develop a brochure for a new "birding-canoe" trail along the Walla Walla River, describing the birds that can be observed along the route. Partner for an off-Refuge canoe trail connection to either Pierce Campground or upstream to Nine Mile Ranch for canoe put-in, and to the existing boat launch at Madame Dorion Park for take-out.
- Follow all stipulations in the Wildlife Observation and Photography Compatibility Determination and Environmental Education and Interpretation Compatibility Determination for the Refuge.

Rationale: The Wallula Unit is currently open for public use but is not promoted by the Refuge for one of its prime assets–riparian bird habitat. Encouraging existing Refuge wildlife viewers (who primarily utilize Headquarters Unit) to use the trails in the Wallula Unit for birding will expand Refuge visitor awareness of migratory passerine birds and their habitats and diversify visitor experiences. Similarly, defining and advertising a canoe trail along the lower Walla Walla River will expand visitor awareness of safe boating opportunities and enhance users' ability to sight and enjoy riparian and aquatic birds and other wildlife.

Objective 9c: Maintain Certain Areas available to Horseback Riding and Improve Horseback Riders' Awareness of Refuge Riding Areas and Policies

Maintain two trails as designated for horseback riding and allow horseback riding on open Refuge roads. Prohibit cross-country riding. Ensure that horseback riders are provided with information to know and understand the reasoning behind horseback riding rules at the Refuge.

Strategies Applied to Achieve Objective

- Continue to allow riding on the Wallula Unit Horse Trail and Peninsula Trail. Assess usage of trails by horseback riders.
- Develop new signs and/or improve existing signs, brochures, or kiosks to inform users that horseback riding on the Refuge is limited to public roads and horseback riding trails and to explain the reasons for restricting riding to these areas (non-Big Six use, nonnative seeds are spread by hoof and through manure).
- Work with local horseback riding clubs to improve relationships, develop partnerships, and promote the "Adopt a Trail" program.
- Increase patrols and continue using law enforcement to educate and/or cite offenders.
- Use Friends Newsletters to get the message out to the riding public (Friends Group members have a large positive impact in spreading the Refuge message).
- Follow all stipulations in the Refuge's Horseback Riding Compatibility Determination.

Rationale: Horseback riding is popular with local and surrounding riding clubs and horse owners. Currently, horseback riding is allowed on existing roads and two designated trails at McNary Refuge. Use is seasonal, mostly during the fall and spring. This contingency has historically been very supportive of the Refuge and has advocated an "Adopt a Trail" program.

Objective 9d: Manage Madame Dorion Park as a Day-use Only Site.

Limit public uses at McNary Refuge's Madame Dorion Park to day use only with an emphasis on the Big Six uses and eliminate public camping.

Strategies Applied to Achieve Objective

- After publication of this CCP and in coordination with and review by the Corps, Walla Walla County, and owners of the campsite and park at the Pierce Happy Valley Campsite, close the campsite at Madame Dorion Park and provide public access as a day use area only.

Rationale: The Water Resources Development Act of 2007 (P.L. 110-114) specified that the Director (U.S. Fish and Wildlife Service) shall continue operation of the Madame Dorion Park for public use and boater access. The campground historically present at the site has created conflicts with other Refuge goals and objectives. In compliance with Service policies, camping at the site was determined to be Not Appropriate during the CCP appropriateness review, and Not Compatible in the Compatibility Determination required during the CCP process. During the CCP review, the team focused on the presence of an alternative, the privately-owned campground (Pierce Happy Valley) located just 4 miles upstream from the Refuge. This well maintained fee camping site provides enhanced services over the government-operated campground. The public will be better served by converting Madame Dorion Park to a day use only site, reducing law enforcement issues associated with camping, and allowing the Refuge to promote wildlife viewing and photography at the Park. The existing boat launch will remain open 24 hours a day, and rest area facilities will be maintained.

Objective 9e: Eliminate Illegal Shooting

Eliminate illegal target shooting in gravel pits at the Juniper Canyon and Peninsula Units.

Strategies Applied to Achieve Objective

- Install entrance signs on each Refuge unit and clearly sign illegal target shooting areas with "No Target Shooting" signs.
- Clean up debris in target shooting areas, especially at Juniper Canyon.
- Increase patrols and use law enforcement to educate and deter illegal usage.
- Coordinate with the Friends Group, the Richland Rod and Gun Club, and other news outlets to get the message out to the public.

Rationale: As an illegal activity that causes disturbance, trash issues, and safety concerns, illegal shooting needs to be eliminated.

Objective 9f: Drastically Reduce Dumping at the Burbank Sloughs and Peninsula Units and Involve the Community and Other Refuge Users in Maintaining a Clean Environment

Reduce the tonnage of dumped material at the Burbank Sloughs and Peninsula Units to <1 ton per year, within five years, to increase value of habitat and reduce pollutants.

Strategies Applied to Achieve Objective

- Increase present efforts to involve and inform the Burbank community and other Refuge users about to reducing dumping. Begin outreach during initial cleanup project so the that area is less likely to revert to its former condition, and consider workshops, posters, direct letters, contests, school and youth involvement.
- Research title history to accurately establish boundary at the Burbank Sloughs and Peninsula Units. Survey and post the boundary.
- Define and mark access points and routes, closing and restoring other unauthorized routes and access points. Develop one or two main entrance points and sign them appropriately as entrances of a National Wildlife Refuge unit. (Also see Objective 7d)
- Increase law enforcement, signing, and education, to cut down on illegal activity, especially dumping.
- Increase both law enforcement patrols and regular (scheduled) presence on the site by all Refuge staff and/or volunteer representatives.

Rationale: With its complex shoreline fronting the Columbia River behind the small community of Burbank, the Burbank Sloughs and Peninsula Units possess a great deal of wildlife habitat potential and represent the Refuge's finest potential bank fishing areas. Currently, the area is severely degraded and resources have not been available to improve the site. With its varied topography and dense riparian habitat, it has traditionally attracted a variety of illegal uses, including dumping, methamphetamine labs, illegal road cutting, off road vehicle usage, etc. Because of these illegal uses, many Refuge visitors and staff do not feel safe using these units. Eliminating illegal uses, defining access routes, restoring habitat, and creating a sense of community pride in the Refuge will all be necessary for this unit to serve as high quality habitat for wildlife, for the public to feel safe using the site, and for priority public uses to be the dominant uses on the site.

Objective 9g: Increase law enforcement patrols.

Increase law enforcement patrols to provide increased resource protection and public safety.

Strategies Applied to Achieve Objective

- Add one new law enforcement officer to provide expanded law enforcement patrols throughout the year on the Refuge.
- Use increased patrols, brochures, leaflets, signing, and news releases to educate refuge users and deter illegal public uses.
- Increase patrols during the hunt season to increase hunter compliance with resource and special refuge regulations.

Rationale: Limited law enforcement capacity during the hunt season was identified by the public as a concern. The loss of collateral duty officers in recent years has significantly reduced field patrols and officer presence on the Refuge. Hiring a new officer and increasing efforts to notify the public of resource and special refuge regulations will help increase resource protection and public safety.

Hunter - © Bill Cleghorn

GOAL 10: Hunters appreciate and experience a variety of quality hunting opportunities.

Objective 10a: Provide a Variety of Waterfowl Hunting Opportunities

Provide a wide variety of waterfowl hunting opportunities at McNary Refuge.

Strategies Applied to Achieve Objective

- Maintain current fee reservation hunting at the McNary Headquarters Fee Area and evaluate the need for additional areas.
- Establish a combination of designated hunting sites (posts) and parking on the north side of the Wallula Unit at McNary.
- Coordinate with law enforcement and the public through news releases and signing if an emergency knockdown of cornfields (see objective 1b) is needed during the hunting season due to severe weather. Knockdown may require closure of hunting due to baiting regulations. Severe weather is snow or ice covering most local fields, and/or weather below zero degrees F for an extended time, leading to an inaccessible food supply on surrounding farms and agricultural fields. See Objective 1b.
- Maintain pit blinds on the Peninsula Unit and manage surrounding uplands to promote goose use, using mowing and burning. As warranted, address weeds to ensure a more palatable browse.
- Follow all stipulations in the Waterfowl Hunting, Upland Gamebird Hunting, and Other Migratory Bird Hunting Compatibility Determination for the Refuge.

Rationale: The variety of waterfowl hunting opportunities that are currently offered at the Refuge are quite popular and allow people of all abilities to enjoy hunting that suits their needs. Fee hunting is very popular at the Refuge (the Refuge has more hunters using fee units than any of the other units); however, many hunters prefer less regulated opportunities. Fee hunts allow hunters to be guaranteed a spot in advance which provides hunters traveling from a long distance some security. Fee hunting can also reduce law enforcement needs. However, the administrative costs of fee hunts are relatively high, and despite the fee, fee hunts generally don't pay for themselves. There's also a certain loss of freedom for the user–there is a higher likelihood of encountering regulation, law enforcement etc. Fee hunts were considered but not adopted for the Peninsula area. At some point in the future, if competition for hunting increases, other areas may need to be managed as fee hunt units. However, fee hunting is neither necessary nor desirable for all units, currently, or in the future. Other methods to reduce competition include designated blind sites, which will be available at the Peninsula Unit and at the Wallula Unit. Requiring hunters to park at designated posts corresponding to hunting posts will reduce conflict over hunt sites, which has been a problem at Wallula Unit. Free roam hunts are popular with many hunters and will be maintained at part of Peninsula, Two Rivers, and Burbank Sloughs Units.

Objective 10b: Improve Access for Disabled Hunters

At the McNary fee hunt area, improve existing access programs for disabled waterfowl hunters at designated blinds.

Strategies Applied to Achieve Objective

- Bring blind sites #2 and #8 at the McNary Headquarters fee hunt area, and blind site #11 on the Peninsula Unit up to current Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities (ADAAG) standards for accessibility.
- Add 1 additional ADAAG compliant blind sites at Wallula.
- Follow all stipulations in the Waterfowl Hunting, Upland Gamebird Hunting, and Other Migratory Bird Hunting Compatibility Determination for the Refuge.

Rationale: The number of blinds designated for disabled hunters is reasonable and meets the current needs. At least one more accessible site may be needed at each unit over the next 15 years to meet the needs of a growing and aging population. However, the current designated blinds and access routes are not up to ADAAG standards. Implementing this objective will improve the Refuge's compliance with ADA and will provide better opportunities for hunters with disabilities.

Objective 10c: Enhance Upland Game Bird Hunt

Enhance the quality of upland game bird hunts for the Refuge; promote consistency in hunting regulations among all Refuge units and increase hunt opportunities.

Strategies Applied to Achieve Objective

- Within two years of CCP completion phase out current program that allows WDFW to augment pheasant populations for take by hunters at traditional sites, during the upland bird hunting season at McNary Refuge.
- Standardize hunt times and hunt days; change to noon starting times on all units.
- Follow all stipulations in the Waterfowl Hunting, Upland Gamebird Hunting, and Other Migratory Bird Hunting Compatibility Determination for the Refuge.

Rationale: There is inconsistency between the management of upland hunts on the former Corps lands and other McNary Units. Regulations (entry times, permits, fees, days open, etc.) should be consistent between units unless special conditions exist. Current inconsistencies make it difficult for hunters to abide by the regulations. In addition, upland bird hunts can conflict with waterfowl hunts partly through space issues (hunters competing for similar areas to shoot) and partly through creating disturbance for each other. Changing the start time to noon on all units except fee areas (after most of the best waterfowl hunting is usually over) will help hunters understand and remember the regulations and will also reduce bird disturbance and conflicts between the different hunting programs.

Because stocking a nonnative species such as ring-necked pheasant is a violation of NWRS policy (601 FW 3.14 F), operation of a put-and-take hunting program will be phased out.

Objective 10d: Provide Quality Deer Hunting Opportunities

Provide quality deer hunting opportunities at McNary Refuge.

Strategies Applied to Achieve Objective

- Annually monitor deer population dynamics and their impacts to vegetation; conduct a post-hunting season November survey; adjust the number of hunt permits for upcoming seasons, considering vegetation conditions and other relevant factors.
- Follow all stipulations in the Deer Hunting Compatibility Determination for the Refuge.

Rationale: Better estimates of deer populations are needed, as are more regular assessments of vegetation.

GOAL 11: Anglers experience abundant opportunities to catch fish while appreciating the Refuge.

Fishing on the Walla Walla River - © Lyn Topinka

Objective 11a: Provide for Diverse Fishing Opportunities

Maintain diverse fishing opportunities on the Refuge and improve fishing facilities and access.

Strategies Applied to Achieve Objective

- Continue to allow WDFW to operate youth and family fishing augmentation/stocking at McNary Refuge's Quarry Pond (a small isolated pond) each spring; however, limit stocking to rainbow trout populations.
- Maintain accessible sites for disabled fishing at Quarry Pond and on the Walla Walla River at McNary Refuge's Wallula Unit.
- Improve parking facilities and access to river shoreline fishing sites: upgrade fishing access at the Two Rivers, Burbank Sloughs, and Wallula Units.
- Follow all stipulations in the Fishing Compatibility Determination for the Refuge.

Rationale: The Refuge has lengthy shorelines, abundant reservoir space, and diverse river, slough, and wetland habitats which provide opportunities for anglers to fish for everything from large Chinook salmon to small perch and trout. Warmwater fish are abundant and anglers can take home smallmouth bass, walleye, and other fish. At Umatilla, warm water fishing is the most popular kind of fishing and has won regional and national acclaim. Fishing for sturgeon is popular, as is fishing for salmon, steelhead, shad, and catfish. Similarly, there are abundant bank fishing opportunities as well as river fishing from boats. This diversity of fishing opportunities is a plus for the Refuge. The Refuge can provide a satisfying recreational experience to many people each year from a great diversity of backgrounds. There is an opportunity to upgrade fishing facilities. Although stocking of a nonnative species is a violation of NWRS policy (601 FW 3.14 F.), the current State funded and operated program at Quarry Pond is allowable because it only includes seasonal stocking of rainbow trout, a species that is part of the historic fish assemblage of local streams.

Objective 11b: Promote Fishing Awareness

Improve public knowledge and awareness of quality fishing locations on the Refuge and disseminate public knowledge about the Refuge System at fishing and boating areas.

Strategies Applied to Achieve Objective

- Continue to define and map fishing locations. Develop a fishing brochure or set of tear sheets for the public, including information such as parking, roads, boat launches, and accessibility for people with disabilities. Seek partnerships with State and private groups for funding and publication.

- Improve Refuge fishing and related information by installing kiosks at Casey Pond, and Wallula Unit boat launch. Include information about the Refuge, good fishing practices, fish identification and other interpretive information. Seek partnerships with State and private groups for funding and construction projects.
- Conduct surveys to determine needs of the fishing public; and provide a Spanish language informational brochure.
- Follow all stipulations in the Fishing Compatibility Determination for the Refuge.

Rationale: Fishing on the Refuge is dispersed and managing fishing has been more low-key than other Refuge recreational programs. Yet more visits are made to the Refuge for fishing than for any other use. The Refuge's fishing public is more culturally diverse than any other Refuge user group and includes recent immigrants from a variety of countries and tourists from other parts of the State. Still, many who come to fish are probably unaware that they are on a Refuge. There is an opportunity for enhancing communications with the fishing population, to provide greater information to these users about the Refuge and Refuge System, and to create greater awareness of good fishing practices. Results from surveys will help the Refuge deliver the Service's message. To more effectively reach the immigrant population, it is desirable to provide some brochures and information panels in Spanish and other languages as appropriate.

GOAL 12: Students and teachers understand and value the Refuge System, and the ecology and management of McNary National Wildlife Refuge.

Class Learning about Fire Management
Art Shine/USFWS

Objective 12a: Provide Environmental Education for Students

Provide environmental education (EE) for 1,500-3,000 students at McNary and 100-500 students at Umatilla annually. Ensure that the program helps fulfill Washington Assessment of Student Learning (WASL) curriculum requirements.

Strategies Applied to Achieve Objective

- Maintain total students served, but concentrate on programs for 4th graders.
- Develop more "teach the teacher" programs and Refuge specific instructor training
- Meet annually with Educational Service District 123 to ensure programs are helping the school meet State requirements.
- Make use of existing high quality programs, such as the Shorebirds Sister Schools Program, that have been developed and tested throughout the northwest.
- Follow all stipulations in the Environmental Education and Interpretation Compatibility Determination for the Refuge.

Rationale: Currently, the Refuges provide EE to 1,500-3,000 students, the majority at the 4th grade level. About 15% of the EE classes hosted are off-Refuge (a staff member or volunteer visits the school). The rest of the classes are held at the McNary Environmental Education Center. By using high quality and time tested programs, such as the Shorebird Sister Schools Program, the Refuge can deliver high quality "teach the teacher" programs with a minimum commitment of resources.

Objective 12b: Provide Environmental Education Support

Foster long-term support for the Environmental Education program by ensuring that McNary Refuge always has a minimum of 25 committed teachers and 30 committed volunteers available for the program.

Strategies Applied to Achieve Objective

- Continue to support the Friends partnership at McNary Refuge with supplies and facility space.
- Explore opportunities to gain additional teacher volunteers through the Washington State University teaching program.
- Provide leadership and resources to manage and train volunteers.

Rationale: The Friends group has played a critical role in supporting the McNary Environmental Education program, with an estimated 10,000 hours per year of volunteer

support. This is equivalent to about five full-time equivalent employees (FTEs). Supporting the Friends with needed office space, supplies, and an available staff partnership is vital to allow the Friends to continue to provide this critical service. In addition, the Friends group is comprised mainly of retired citizens in their 60s, 70s, and 80s, therefore, for the long-term health of the EE program it is essential to recruit and maintain additional volunteers.

Objective 12c: Promote Teacher-led Classes

By the end of 15 years, ensure that at least 75% of the environmental education classes visiting the McNary Refuge are teacher-led.

Strategies Applied to Achieve Objective

- Offer teacher training workshops and establish a program to encourage and select trained teachers to use the Refuge's facilities and programs for teacher led EE.
- Conduct outreach to build the base of knowledgeable and enthusiastic teachers.
- Develop lesson plans and supply education module boxes for use by teachers and volunteers
- Develop curricula for the EE program and provide support and resources for the Friends group and volunteers.
- Follow all stipulations in the Environmental Education and Interpretation Compatibility Determination for McNary Refuge.

Rationale: An EE program that focuses on teaching the teacher has the potential to both expand the number of potential students participating in EE and to broaden the base of knowledgeable EE instructors in the community. Indirectly, this will have the effect of broadening support for the Refuge within the communities. Currently, the Outdoor Recreation Planner and Refuge Manager spend approximately 200 hours per year total supporting the EE program. The support needs of the program will be better served by an EE Specialist and/or Volunteer Coordinator.

Objective 12d: Maintain and Improve Environmental Education Facilities

Continue to focus McNary Refuge's environmental education efforts in and around Burbank Slough and the McNary Environmental Education Center (MEEC).

Strategies Applied to Achieve Objective

- Provide support and resources to support EE facilities and programs, and to maintain enthusiastic EE volunteers at McNary Refuge.
- Follow all stipulations in the Environmental Education and Interpretation Compatibility Determination for McNary Refuge.

Rationale: The EE program at the McNary Refuge has developed a large volunteer program to support activities. This program benefits the Refuge, community, schools, and children.

GOAL 13: Manage cultural resources for their educational, scientific, and cultural values for the benefit of present and future generations of Refuge users and communities.

Making Tule Mats – © Jim Mock

Objective 13a: Protect Cultural Resources

Increase monitoring and protection of all cultural resources and historical sites on the Refuge while increasing public and staff support and appreciation.

Strategies Applied to Achieve Objective

- Using guidance and assistance from the Regional Cultural Resources Team and Tribal programs assemble Regional/National/Tribal databases, reports, and site information to provide Refuge managers with specific access-protected data, site information and guidance.
- Comply with Section 106 of the National Historic Preservation Act (NHPA) when conducting ground disturbing activities or modifying historic structures.
- Complete a comprehensive cultural survey of the Refuge as called for in Section 110 of the NHPA, and pull together all previous site surveys, work requests and reports for easy access by managers
- Develop a Refuge GIS layer for cultural resource sites and resources that contains barriers to protect sensitive information.
- All Refuge law enforcement officers will receive training in the Archaeological Resources Protection Act (ARPA), Native American Graves Protection and Repatriation Act (NAGPRA), and other State and Federal cultural resource regulations no later than March 2008.
- Develop law enforcement monitoring protocols and schedules for patrolling cultural sites as part of a Law Enforcement Management Plan, to be completed no later than 2008. Hire one additional Law Enforcement Officer.
- Identify and protect archaeological and cultural resources associated with rocky features; coordinate with the Umatilla Tribe's Cultural Resources Program to identify significant sites; and plan for the protection at rocky sites, especially on the Stateline, Juniper Canyon, and Columbia River Island areas.
- Follow all stipulations in the Research Compatibility Determination for the Refuge.

Rationale: The key to protecting cultural resources is promoting knowledge of and appreciation for the resources. Currently, information on known cultural sites is fragmented and not easily accessible to the Refuge Managers responsible for the Refuge's management and operations. There are several major surveys and project-specific survey work and reports that include portions of the Refuge; however, a comprehensive access-protected GIS-based database is needed. Law enforcement officers have received training in cultural resource law, but continuing education and coordination, with Tribal and State officers, is needed. Rocky sites are specified because Refuge managers do not know enough about the cultural resources of these sites.

Objective 13b: Increase Awareness and Appreciation for Cultural Resources

Increase awareness of and appreciation for historic, archaeological, and cultural resources among Refuge staff and the public.

Strategies Applied to Achieve Objective

- Bi-annually, provide all Refuge staff with 2-4 hours of training on managing historic, archaeological, and cultural resources.
- Consult with Tribes, historical societies, and other preservation partners to identify types of cultural resource information appropriate for public interpretation.
- Partner with the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) and other interested groups to tell the history of the Stateline-Wallula area, and prepare media (pamphlets, signs, exhibits) that portray the American Indians' and early settlers' cultural resources and history on the Refuge, with emphasis on the fish and wildlife resources and their uses during these periods.
- Partner with Tribes, historical societies, interested groups, and government agencies, to develop an overlook site at Wallula to interpret the rich history and importance of the area to Tribes and early Washington settlement.

Rationale: Little interpretation of cultural resources has occurred to date on the Refuge. The rich history and cultural sites within the Refuge needs to be told. The Refuge, however, needs assistance and could achieve a higher level of interpretation by partnering with tribes and groups interested in history.

Objective 13c: Coordination on Cultural Resources

Increase coordination and consultation with Tribes.

Strategies Applied to Achieve Objective

- In partnership with Tribes and the Regional Cultural Resources Team, establish "protocol for consultation" to help managers meet NHPA and ARPA requirements including consultation, identification, inventory and evaluation of projects and sites.
- Establish NAGPRA protocol and procedures for handling inadvertent discoveries of human remains, burial objects, sacred objects, and objects of cultural patrimony.
- Meet at least semiannually to discuss programs and projects with staffs of each of the following: Tribal Cultural Resources Programs; Confederated Tribes and Bands of the Yakama Indian Nation; the Nez Perce Tribe; the Confederated Tribes of the Umatilla Indian Reservation; the Confederated Tribes of the Colville Indian Reservation; and the Wanapum Band of Indians.

Rationale: Research conducted for this CCP has confirmed the historical presence of the following tribes within the lands encompassed by Refuge lands: Palouse, Cayuse, Yakama, Walla Walla, Umatilla, Nez Perce and Wanapum Tribes and affiliated bands. Although the Refuge has had consultations and meetings in the past, it is important that communication and consultation become more regular and systematic. Since the 2004 ruling by the 9th Circuit Court of Appeals on the Kennewick Man case, it has become incumbent on agencies to ensure that special and significant genetic or cultural relationship to a presently existing indigenous Tribe has been demonstrated, before any objects and remains can be repatriated. How the Refuge can accomplish this, in order to comply with NAGPRA, needs to be addressed.

Objective 13d: Shoreline Bank Stabilization

Explore the potential for shoreline bank stabilization, and bio-engineering, at eroding areas on Strawberry Island's shoreline to protect cultural resources listed on and eligible to the National Register of Historic Places (NRHP).

Strategies Applied to Achieve Objective

- Apply for Corps and BPA funding for protection of shorelines threatened with erosion as a result of dam/reservoir operations.

Rationale: Some bank restoration was completed by the Corps at Strawberry Island. Erosion from operation of the reservoirs may threaten cultural resources at Strawberry Island, and should be considered effects under the Corps/BPA Systems Operation program.

Objective 13e: Increase Management Efforts for Archaeological Features at Two Sites on the National Register of Historic Places

Identify and protect archaeological and cultural resources associated with the Miller Site, listed on the National Register of Historic Places.

Strategies Applied to Achieve Objective

- Adopt and accomplish recommendations from the 1983 Strawberry Island Excavation Report (Schalk 1983), including removing sage and basin wildrye and replacing it with bluebunch wheatgrass and other forbs better representing historic conditions.
- Increase law enforcement efforts to protect cultural resources at this site.
- Conduct annual site visits and maintain written records and photo documentation.

Rationale: The final report by archeologists conducting the 1978-1979 Strawberry Island excavation (Schalk 1983), recommended five management actions to improve protection of the Miller Site, which is on the Register of National Historic Places. One of the recommendations was to maintain vegetation at an early stage of succession. Researchers were worried that both big sagebrush and basin wildrye, which were just beginning to colonize the previously bluebunch wheatgrass dominated site in the 1970s, could damage buried sites because of their extensive root systems. Since then, both species have come to dominate the surface of the archeological site.

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APPENDIX B.
Compatibility Determinations

Please note:

Appendix B is reprinted in this CCP without change from the final CCP/EA signed in May 2007. All appendices, A through N, are available in the final CCP/EIS.

APPENDIX B. COMPATIBILITY DETERMINATIONS – McNARY NATIONAL WILDLIFE REFUGE

Introduction

The compatibility determinations (CDs) developed during the CCP planning process evaluate uses as projected to occur under Alternative 2, the Preferred Alternative in the CCP/EA for the McNary and Umatilla Refuges CCP (CCP/EA). The evaluation of funds needed for management and implementation of each use also assumes implementation as described under Alternative 2. Chapter 7 of the CCP/EA also contains analysis of the impacts of public uses to wildlife and habitats. That portion of the document is intended to be incorporated through reference into this set of CDs. Uses that occur on the Hanford Island Unit of McNary Refuge are not evaluated in these CDs. The Hanford Islands Unit is being planned under the Hanford Reach National Monument CCP.

A. Uses evaluated at this time

The following section includes full CDs for all Refuge uses that are required to be evaluated at this time. According to Service policy, compatibility determinations will be completed for all uses proposed under a CCP. Existing wildlife-dependent recreational uses must also be reevaluated and new CDs prepared during development of a CCP. According to the Service's compatibility policy, uses other than wildlife-dependent recreational uses are not explicitly required to be reevaluated in concert with preparation of a CCP, unless conditions of the use have changed or unless significant new information relative to the use and its effects have become available or the existing CDs are more than 10 years old. However, the Service planning policy recommends preparing CDs for all individual uses, specific use programs, or groups of related uses associated with the proposed action. Accordingly, the following CDs are included in this document for public review.

Refuge Use	Page	Compatible	Year Due for Re-evaluation
Wildlife Observation and Photography	B-4	yes	2022
Waterfowl Hunting, Upland game bird hunting, Other migratory bird hunting	B-12	yes	2022
Deer Hunting	B-20	yes	2022
Fishing	B-26	yes	2022
Environmental Education and Interpretation	B-34	yes	2022
Boating	B-40	yes	2017
Camping	B-49	no	n/a
Horseback Riding	B-58	yes	2017
Swimming and Beach Use	B-65	no	n/a
Farming	B-71	yes	2017
Research	B-77	yes	2017
Dog Training, including Field Trials	B-85	no	n/a

B. Compatibility - Legal and Historical Context

Compatibility is a tool Refuge managers use to ensure that recreational and other uses do not interfere with wildlife conservation, the primary focus of Refuges. Compatibility is not new to the Refuge System and dates back to 1918, as a concept. As policy, it has been used since 1962. The Refuge Recreation Act of 1962 directed the Secretary of the Interior to allow only those public uses of Refuge lands that were "compatible with the primary purposes for which the area was established."

Legally, Refuges are closed to all public uses until officially opened through a compatibility determination. Regulations require that adequate funds be available for administration and protection of Refuges before opening them to any public uses. However, wildlife-dependent recreational uses (hunting, fishing, wildlife observation and photography, and environmental education and interpretation) are to receive enhanced consideration and cannot be rejected simply for lack of funding resources unless the Refuge has made a concerted effort to seek out funds from all potential partners. Once found compatible, wildlife-dependent recreational uses are deemed the priority public uses at the Refuge. If a proposed use is found not compatible, the Refuge manager is legally precluded from approving it. Economic uses that are conducted by or authorized by the Refuge also require compatibility determinations.

Under compatibility policy, uses are defined as recreational, economic/commercial, or management use of a refuge by the public or a non-Refuge System entity. Uses generally providing an economic return (even if conducted for the purposes of habitat management) are also subject to compatibility determinations. The Service does not prepare compatibility determinations for uses when the Service does not have jurisdiction. For example, the Service may have limited jurisdiction over refuge areas where property rights are vested by others; where legally binding agreements exist; or where there are treaty rights held by tribes. In addition, aircraft overflights, emergency actions, some activities on navigable waters, and activities by other Federal agencies on "overlay Refuges" are exempt from the compatibility review process.

New compatibility regulations, required by the National Wildlife Refuge System Improvement Act of 1997 (Improvement Act), were adopted by the Service in October, 2000 (http://Refuges.fws.gov/policymakers/nwrpolicies.html). The regulations require that a use must be compatible with both the mission of the System and the purposes of the individual Refuge. This standard helps to ensure consistency in application across the Refuge System. The Act also requires that compatibility determinations be in writing and that the public have an opportunity to comment on most use evaluations.

The Refuge System mission emphasizes that the needs of fish, wildlife, and plants must be of primary consideration. The Improvement Act defined a compatible use as one that ". . . in the sound professional judgment of the Director, will not materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the Refuge." Sound professional judgment is defined under the Improvement Act as ". . . a finding, determination, or decision, that is consistent with principles of sound fish and wildlife management and administration, available science and resources . . ." Compatibility for priority wildlife-dependent uses may depend on the level or extent of a use.

Court interpretations of the compatibility standard have found that compatibility is a biological standard and cannot be used to balance or weigh economic, political, or recreational interests against the primary purpose of the Refuge (Defenders of Wildlife v. Andrus [Ruby Lake Refuge]).

The Service recognizes that compatibility determinations are complex. For this reason, refuge managers are required to consider "principles of sound fish and wildlife management" and "best available science" in making these determinations (House of Representatives Report 105-106). Evaluations of the existing uses on McNary and Umatilla Refuges are based on the professional judgment of Refuge and planning personnel including observations of Refuge uses and reviews of appropriate scientific literature.

In July 2006, the Service published its Appropriate Refuge Uses Policy (603 FW1). Under this policy, most proposed uses must also undergo a review prior to compatibility. This review is appended at the end of this appendix. Uses excepted from the policy include Big Six uses and uses under reserved rights – see policy for more detail. Appropriate uses reviews are included here for boating, camping, horseback riding, swimming and beach use, farming, research, and dog training. Compatibility determinations are included for camping, swimming/beach use, and dog training, explaining why these uses should no longer be allowed.

References

Defenders of Wildlife v. Andrus (Ruby Lake Refuge I). 11 Envtl. Rptr. Case 2098 (D.D.C. 1978), p. 873.

House of Representatives Report 105-106 (on NWRSIA) - http://refuges.fws.gov/policyMakers/mandates/HR1420/part1.html

Compatibility regulations, adopted by the Service in October, 2000: (http://refuges.fws.gov/policymakers/nwrpolicies.html)

Wildlife Observation and Photography Compatibility Determination

RMIS Database Uses: Wildlife Observation; Photography (wildlife)

Refuge Name(s): McNary National Wildlife Refuge

Establishing and Acquisition Authorities:

McNary NWR was established in 1955 by cooperative agreement with the U.S. Army Corps of Engineers, which transferred administrative control of the original 2849 acre parcel to the U.S. Fish and Wildlife Service (Federal Register of May 1956; Document No. 56-3499; and Cooperative Agreement between U.S. Army Corps of Engineers and the Service in September 1963 and as amended September 1969). Additional lands were purchased in subsequent years under the Migratory Bird Conservation Act (16 USC 715d). A small parcel was donated to the Service in 1969, under the Refuge Recreation Act (16 USC 460k-1, k-2). In 1972 another parcel was transferred to the Service from the Bureau of Reclamation under the Fish and Wildlife Coordination Act (16 USC 664). In 1999 the original Refuge was transferred from the Corps to the Service through the Water Resources Development Act (WRDA) 1999 bill (P.L. 106-53; 16 USC 668dd). Additional lands were added in 2000 (Cooperative Agreement No. DACW68-4-00-13), dated January 2000 and as amended June 2000).

Purposes:

- for the conservation, maintenance, and management of wildlife, resources thereof, resources thereof, and habitat thereon, under plans... (All units, 16 U.S.C. §§ 664, Fish and Wildlife Coordination Act).
- "for development, conservation and management of wildlife resources.." (All units, General Plan, 1953).
- "particular value in carrying out the National Migratory Bird Management Program" (Original Burbank Unit, and Hanford Islands Unit, General Plan, 1953).
- "multiple use value relating to the conservation of fish life, waterfowl and upland game birds" (Peninsula, Two Rivers, and Wallula Units, General Plan, 1953)
- Snake River Mitigation Compensation Plan (Cummins Property only, Cooperative Agreement between USACE and USFWS, 2000)
- "Dam Project Purposes" [primary purposes of navigation, power development, and irrigation - Public Law Number 14, 79th Congress, First Session, approved 2 March 1945]. (Cooperative Agreement between USACE and USFWS, 2000, Stateline units only).
- Other parcels: Small pieces of the Refuge were also added later by purchase under the Migratory Bird Treaty Act. The Refuge also manages a small tract of land under a 10-year lease with the Washington Department of Natural Resources; and, according to Realty files, approximately 20 small tracts were acquired under authority of the Refuge Recreation Act PL 87-714, 1962.

Additional detail on the purposes of this Refuge may be found in Chapter 1 of the CCP/EA.

National Wildlife Refuge System Mission: "To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (National Wildlife Refuge System Administration Act of 1966, as amended (16 U.S.C. 668dd et seq.).

Description of Use: Wildlife observation and photography are allowed in the open areas of McNary Refuge. Designated areas are closed permanently or seasonally to public access and are appropriately signed. See Section 5.2 of the CCP/EA for more information on closed areas. The majority of wildlife observation and photography takes place informally. The only area on McNary Refuge designed specifically for wildlife observation and photography is the wildlife viewing/ photography blind on the McNary Headquarters Unit. The blind was created specifically for bird watchers and photographers and includes interior black screening and special openings for photography equipment. Otherwise, public access roads, roadway pull-outs, interpretive overlooks and kiosks, interpretive trails, horse trails, and waterways enable visitors to access to the Refuge, and, therefore, allow wildlife observation and photography opportunities.

Prime areas for wildlife observation include the following:

McNary Refuge - McNary Headquarters Unit
- Wildlife Viewing/photography blind
- Nature Trail
- Environmental Education Center deck with permanent wildlife viewing scopes
- Wallula Unit
- North Shore Road Millet Pond pull-out
- Sanctuary Pond Overlook/Kiosk
- Walla Walla Delta (prime shorebird habitat)

When determined compatible, wildlife observation and photography are priority public uses on Refuge System lands as identified in the Refuge Improvement Act of 1997. Entry on all or portions of individual areas may be temporarily suspended by posting, upon occasions of unusual or critical conditions affecting land, water, vegetation, wildlife populations, or public safety. See Section 5.7 of the CCP/EA for more information on the existing wildlife viewing and photography programs. See Chapter 2, Goal 9, for more details on the programs under the Preferred Alternative 2.

Availability of Resources: Wildlife observation and photography require minimal resources. Maintenance for existing facilities runs $2,500 annually excluding road maintenance costs. Estimated costs for operating the wildlife viewing and photography program as envisioned under Preferred Alternative 2 are displayed in the following tables.

McNary Refuge: Wildlife observation and photography costs under Alternative 2.

Proposed Activity or Project	One Time Expense ($)	Recurring Expenses ($/year)
New Trail Development	35,000	2,000

Photography Blind Construction/maintenance	10,000	750
Totals	45,000	2,750

Anticipated Impacts of the Use:

Disturbance from People: Numerous studies have confirmed that people on foot can cause a variety of disturbance reactions in wildlife, including flushing or displacement (Erwin 1989; Fraser et al 1985; Freddy 1986), heart rate increases (MacArthur et al 1982), altered foraging patterns (Burger and Gochfeld, 1991), and even, in some cases, diminished reproductive success (Boyle and Samson 1985). These studies and others have shown that the severity of the effects depends upon the distance to the disturbance and its duration, frequency, predictability, and visibility to wildlife (Knight and Cole 1991). Wildlife photographers tend to have larger disturbance impacts than those viewing wildlife since they tend to approach animals more closely (Klein 1993, Morton 1995, Dobb 1998). At McNary Refuge, people using the nature trail are generally in groups of one to three people during the off peak education season (July–March) and in groups of 10-15 during the peak education season (April–June). Disturbance to wildlife, such as flushing a nesting bird, is inherent to these activities; however, the disturbance is temporary and generally not malicious. Any unreasonable harassment would be grounds to close the area to these uses or restrict the uses to minimize harm.

The most likely impact to the Refuges' soil and vegetative resources from viewing and photography would be during spring and early summer in areas open to cross country hiking. Most cross country travel is limited to the area adjacent to the McNary Environmental Education Center (approximately a two-acre site). Beyond the center, most visitors stay on the nature trail because of the vegetation (abundant thistles, thick tule beds, etc.) and hidden reptiles (rattlesnakes, bull snakes). Limited impacts to nesting birds and flowering/growing native vegetation are expected, but should be minor because few visitors engage in cross-country hiking outside of the immediate education area. Seasonal closures may be implemented to protect sensitive areas/species. Fall and winter activities pose little impact to vegetation.

Access by motorized vehicles and bicycles is limited to established trails, public roads, and parking lots. Parking lots and access trails have minimal impacts because they are relatively small in size and also allow for the safe use of these public lands.

Wildlife observation and photography may impact threatened and endangered species, including the bald eagle. Disturbance impacts to the bald eagle would be expected to increase, but could be reduced to a certain extent through the design of public use facilities.

Effect of disturbance intensity: Some researchers have attempted to correlate disturbance events in wildlife to the intensity, proximity, or loudness of human disturbance. While studying shorebirds on an eastern coastal Refuge, Burger (1986) found that the level of disturbance in the shorebirds increased (fewer remained, more flew) as the total number of disturbances and the number of children, joggers, people walking, dogs, aircraft, and boats increased, and the duration of the disturbance and distance from the disturbance decreased.

Effect of human proximity: Other researchers have looked at the question of proximity. At what

distance do humans on foot elicit a disturbance response? From an examination of the available studies, it appears that the distance varies dramatically from species to species. Burger and Gochfeld (1991) found that sanderlings foraged less during the day and more during the night as the number of people within 100m increased. Elk in Yellowstone National Park were disturbed when people were at average distances of 573m (Cassirer 1990). These elk temporarily left the drainage and their home range core areas and moved to higher elevations, steeper slopes, and closer to forested areas. Average return time to the drainage was two days. Erwin (1989) studied colonial wading and seabirds in Virginia and North Carolina. Mixed colonies of common terns-black skimmers responded at the greatest distances, with respective means of 142m and 130m; mixed wading bird species were more reluctant to flush (30-50m average). There were few statistically significant relationships between flushing distance and colony size. Similarly, there were few differences between responses during incubation compared to post-hatching periods.

An analysis of over 4,000 human activity events near bald eagle nests in Central Arizona (Grubb and King 1991) found distance to disturbance to be the most important classifier of bald eagle response, followed in decreasing order of discriminatory value by duration of disturbance, visibility, number of units per event, position relative to affected eagle, and sound.

Breeding bald eagles in north-central Minnesota (Fraser et al. 1985) flushed at an average distance of 476m at the approach of a pedestrian. A multiple regression model including number of previous disturbances, date, and time of day, explained 82% of the variability in flush distance and predicted a maximum flush distance at the first disturbance of 503m (SE=131). Skagen (1980), also studying bald eagles in northwest Washington, found a statistically significant decrease in the proportion of eagles feeding when human activity was present within 200m of the feeding area in the previous 30 minutes. A statistically significant between-season variation occurred in the use of feeding areas relative to human presence, which correlated with food availability. Eagles appeared more tolerant of human activity in the season of low food availability.

In a review of several studies of the reaction of waterfowl and other wetland birds to people on foot, distances greater than 100m in general did not result in a behavioral response (DeLong 2002).

Effects on migrant birds versus resident birds: Klein (1989) studied the effect of visitation on migrant and resident waterbirds at Ding Darling National Wildlife Refuge, finding that resident birds were less sensitive to human disturbance than migrants. Migrant ducks were particularly sensitive when they first arrived on site in the fall. They usually remained more than 80m from [a visitor footpath on a dike], even at very low visitor-levels. Herons, egrets, brown pelicans, and anhingas were most likely to habituate to humans, thus exposing them to direct disturbance as they fed on or near the dike. Shorebirds showed intermediate sensitivity. Strauss (1990) observed piping plover chicks spent less time feeding (50% versus 91%) and spent more time running (33% versus 2%), fighting with other chicks (4% versus 0.1%), and standing alert (9% versus 0.1%) when pedestrians or moving vehicles were closer than 100m than when they were undisturbed. In addition, plover chicks spent less time out on the feeding flats (8% versus 97%) and more time up in the grass (66% versus 0.1%) during periods of human disturbance.

Disturbance from Dogs: Dogs also elicit a greater response from wildlife than pedestrians alone (MacArthur et al. 1982; Hoopes 1993). In the case of birds, the presence of dogs may flush

incubating birds from nests (Yalden and Yalden 1990), disrupt breeding displays (Baydack 1986), disrupt foraging activity in shorebirds (Hoopes 1993), and disturb roosting activity in ducks (Keller 1991). Many of these authors indicated that dogs with people, dogs on-leash, or loose dogs provoked the most pronounced disturbance reactions from their study animals. Despite thousands of years of domestication, dogs still maintain instincts to hunt and chase. Given the appropriate stimulus, those instincts can be triggered. Dogs that are unleashed or not under the control of their owners may disturb or potentially threaten the lives of some wildlife. In effect, off-leash, dogs increase the radius of human recreational influence or disturbance beyond what it would be in the absence of a dog. Dog-walkers will be required to maintain control of their animal while on the Refuge, thereby reducing the potential and severity of these impacts to wildlife.

The role of dogs in wildlife diseases is poorly understood. However, dogs host endo- and ectoparasites and can contract diseases from, or transmit diseases to, wild animals. In addition, dog waste is known to transmit diseases that may threaten the health of some wildlife and other domesticated animals. Domestic dogs can potentially introduce various diseases and transport parasites into wildlife habitats (Sime 1999). The Refuges can limit dog disturbance by enforcing current Refuge regulation (50CFR 26.21(b) "…no unconfined domestic animals, including but not limited to dogs…shall be permitted to roam at large….."

Wildlife photography: Wildlife photography is likely more disturbing, per instance, than wildlife observation. Klein (1993) observed at Ding Darling that of all the nonconsumptive uses, photographers were the most likely to attempt close contact with birds. He also concluded that even slow approach by photographers was disruptive to waterbirds.

Predictability of Disturbance (Habituation): Dwyer and Tanner (1992) noted that wildlife habituate best to disturbance that is somewhat predictable or "background." Investigating 111 nests of sandhill cranes in Florida, Dwyer and Tanner found that nesting cranes seemed to habituate to certain forms of human disturbance and nested within 400m of highways, railroads, and mines; cranes also were tolerant of helicopter flyovers. Visits to nests and development-induced alterations of surface water drainage were implicated in 24% of the nest failures.

Refuge Specific Impacts: Both Refuge visitation and the number of facilities devoted to wildlife observation and photography are projected to increase under the Preferred Alternative 2 (vehicle pull-offs, overlooks, observation blinds, trail miles). Given this, future disturbance effects are likely to be somewhat higher than present. Most studies cited above have demonstrated immediate, rather than long term responses to disturbance. Long term responses are inherently more difficult and expensive to determine. Given that wildlife observation is not typically a loud or intense kind of activity, the area of habitat within a known distance of human activity centers (public use area, trails, EE sites, overlooks) is considered a reasonable indicator to evaluate the disturbance effects of public uses on Refuge wildlife.

Impacts from wildlife observation/photography, and the modes of transport used by visitors engaged in these activities, can be contained most effectively, mitigating the overall effect on Refuge wildlife by encouraging visitors to remain on trails, automobile tour routes, and within the areas designated for public use.

Public education that informs photographers of ethical and least intrusive methods could reduce some impacts. Several new wildlife observation/photography areas are proposed under Preferred Alternative 2. The purpose of these areas is to provide a site where photographers can get close-up photographs without disturbing wildlife. Placement of these additional areas would likely reduce disturbance from wildlife photographers, because photographers would gain access to high quality photo shooting sites without disturbing new areas.

Although disturbance to wildlife from these activities will be higher than at present, the overall effect to Refuge wildlife will still be minimal.

Public Review and Comment: Open houses were held and written comments were solicited from the public during the writing of the McNary and Umatilla Refuges CCP/EA. Appendix A of the CCP/EA further details public involvement undertaken during development of the CCP/EA.

Determination (check one below

_____ Use is Not Compatible

__x__ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility:

- Certain modes of access, such as motorized vehicle, horses and bicycles, will be limited to designated trails, public roads, and parking lots.
- Harassment of wildlife or excessive damage to vegetation is prohibited.
- Pets must be kept under control (leashed) at all times.
- Native trees and shrubs will be planted where feasible to create screening along trails and at observation points to reduce disturbance.
- Elevated overlooks, trails, and boardwalks will be designed to help reduce negative visitor impacts to soils, vegetation, and hydrology.
- Regulations will be available to the public through a Refuge brochure.
- Directional, informational, and interpretive signs will be posted and maintained to educate the public on minimizing wildlife and habitat disturbance.
- Human activity will be monitored and impacts evaluated on increased human uses of the Refuge.

Justification:

This use has been determined compatible because wildlife viewing and photography will not

materially interfere with or detract from the purposes for which the Refuge was established. The associated disturbance to wildlife is limited and minor. Wildlife observation and photography are priority public uses and provide visitors with the joys of experiencing abundant wildlife and wild lands. These uses also help fulfill the mission of the National Wildlife Refuge System.

Mandatory 10- or 15-year Re-evaluation Date: (provide month and year for "allowed uses)

12/2022 Mandatory 15-year re-evaluation date (for wildlife-dependent public uses)
_____ Mandatory 10-year reevaluation date (for all uses other than wildlife-dependent public uses)

NEPA Compliance for Refuge Use Decision: (check one below)

___ Categorical Exclusion without Environmental Action Statement
___ Categorical Exclusion and Environmental Action Statement
_X_ Environmental Assessment and Finding of No Significant Impact
___ Environmental Impact Statement and Record of Decision

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Signatures:

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Concurrence:

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Waterfowl Hunting, Upland Game Bird Hunting, and Other Migratory Bird Hunting Compatibility Determination

RMIS Database Uses: Hunting (waterfowl); Hunting (upland game); Hunting (other migratory birds)

Refuge Name: McNary National Wildlife Refuge

County and State: Walla Walla, Franklin, and Benton Counties, Washington. Umatilla County, Oregon.

Establishing and Acquisition Authorities:

McNary Refuge was established in 1955 by cooperative agreement with the Corps which transferred administrative control of the original 2,849-acre parcel to the Service (Federal Register of May 1956; Document No. 56-3499; and Cooperative Agreement between the Corps and Service in September 1963, and as amended September 1969). Additional lands were purchased in subsequent years under the Migratory Bird Conservation Act (16 USC 715d). A small parcel was donated to the Service in 1969, under the Refuge Recreation Act (16 USC 460k-1, k-2). In 1972, another parcel was transferred to the Service from the Bureau of Reclamation under the Fish and Wildlife Coordination Act (16 USC 664). In 1999, the original Refuge was transferred from the Corps to the Service through the Water Resources Development Act (WRDA) 1999 bill (P.L. 106-53; 16 USC 668dd). Additional lands were added in 2000 (Cooperative Agreement No. DACW68-4-00-13), dated January 2000 and as amended June 2000.

Refuge Purpose(s):

- for the conservation, maintenance, and management of wildlife, resources thereof, and habitat thereon, under plans... (All units, 16 U.S.C. §§ 664, Fish and Wildlife Coordination Act).
- "for development, conservation and management of wildlife resources..." (All units, General Plan, 1953).
- "particular value in carrying out the National Migratory Bird Management Program" (Original Burbank Unit, and Hanford Islands Unit, General Plan, 1953).
- "multiple use value relating to the conservation of fish life, waterfowl and upland game birds" (Peninsula, Two Rivers, and Wallula Units, General Plan, 1953).
- Snake River Mitigation Compensation Plan (Cummins Property only, Cooperative Agreement between Service and Service, 2000).
- "Dam Project Purposes" [primary purposes of navigation, power development, irrigation, and conservation of wildlife - Public Law Number 14, 79th Congress, First Session, approved March 2, 1945]. (Cooperative Agreement between the Corps and Service, 2000, Stateline and Juniper Canyon units only).
- Other parcels: Small pieces of the Refuge were also added later by purchase under the Migratory Bird Conservation Act. The Refuge also manages a small tract of land under a 10-year lease with the Washington Department of Natural Resources; and, approximately 20 small tracts were acquired under authority of the Refuge Recreation Act of 1962 (PL 87-714).

Additional detail on the purposes of this Refuge may be found in Chapter 1 of the CCP/EA.

National Wildlife Refuge System Mission:

"The mission of the [National Wildlife Refuge] System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee]).

Description of Uses:

Sport hunting for waterfowl (ducks and geese), upland game birds, upland game, and other migratory birds is currently allowed on all units, or portions of units within the McNary National Wildlife Refuge. Refuge hunt regulations are published annually by state in the Code of Federal Regulations at 50 CFR Ch. 1. For Oregon, the CFR lists only "migratory birds" and "upland game birds" as allowable to hunt. The Washington CFRs list goose, duck, coot, dove, and common snipe as the migratory game birds allowable to hunt; the Washington CFR additionally allows dove hunting on the Washington refuge units. For both states, the CFRs allow "upland game birds" (50 CFR 32.56 and 32.67, Oct 1, 2006). Of the seven units open to hunting, four (Peninsula, Two Rivers, Burbank Sloughs, and Wallula) are open daily during the respective state seasons. The Peninsula Unit has additional special regulations that require waterfowl hunters to hunt from established sites on the east shoreline and a noon starting time for upland bird hunters on Wednesdays, Saturdays, and Sundays. A portion of the McNary Division (McNary Headquarters Unit - Units 1 and 2) is opened to waterfowl and upland bird hunting three days a week under a highly regulated specialized hunt. Waterfowl hunters on this division must pay a fee and hunt from selected sites through a reservation system. Upland hunters may only hunt this division on waterfowl hunt days and not before noon. The remainder of the McNary Division (McNary Headquarters Unit-Units 3 and 4) is closed to hunting. The Strawberry Islands are closed to hunting. Foundation and Badger Islands are closed. Crescent Island is open daily to waterfowl hunting during the State season.

Under Preferred Alternative 2, the hunts would continue as described above, with modifications as included in Chapter 2 of the CCP/EA. Specifically,

- A combination of designated posts and designated parking areas will be implemented on the north side of Wallula.
- Some hunt blinds accessible to hunters with disabilities would be improved. One additional accessible blind would be added.
- The current program of pheasant population augmentation practiced by the State would be phased out within two years of CCP completion.
- Upland game bird hunt times and hunt days would be standardized to noon start on all units.
- The Service would continue to work in partnership with the States, Tribes and Corps to rewrite the Columbia Basin Waterfowl Management Plan (in progess), which deals with wintering waterfowl habitats and sanctuary areas in the middle Columbia Basin. Any additional modifications to Refuge hunting programs would be consistent with this plan.

Of the 16,067 acres that comprises McNary Refuge (not including the Hanford Islands), 11,834 acres (76%) are open to waterfowl, upland game, or migratory bird hunting. However, approximately 3,000 acres, consists of upland shrub-steppe habitat. Another 8,656 acres are lacustrine or open water habitat on the Columbia River. Many of these areas provide little or very marginal waterfowl hunting opportunities. Actual huntable prime waterfowl habitat that is open to hunting is closer to 3,731 acres, or 47% of Refuge lands. Available upland game habitat amounts to 6,331 acres, or 38% of total Refuge lands.

Total Refuge sanctuary (lands completely closed to hunting) amounts to 4,233 acres, or 24% of Refuge lands.

Although there is the potential that waterfowl, upland bird, and migratory bird hunting could pose conflicts to other Big Six uses, most of the other Big Six uses are separated spatially and temporally from hunt areas. Current and future wildlife observation and environmental education uses will be concentrated on McNary Headquarters Unit 4, where no hunting is allowed. The adjacent area on the Headquarters Unit (Unit 3), which is managed as year round sanctuary, buffers the hunt area from the viewing area and helps enhance viewing by providing adjacent safe haven. Fishing areas overlap waterfowl hunting areas to some degree but are mostly separated seasonally from the hunt use (fishing occurs mainly in spring, summer, and fall). Interpretation is focused near parking areas, at kiosks, and along pulloffs or trails. The most likely potential for conflict or safety issues would occur along the trail at Wallula Unit. The Refuge will mitigate possibilities for user conflicts or safety issues by making hunt area boundaries and seasons information available to all Refuge users via various venues (interpretive kiosks, website, Refuge offices).

No significant effects to roads, trails, or other infrastructure from the hunting program are foreseen. Normal road, trail, and facility upkeep and maintenance will continue to be necessary. Additional facility construction or upgrade, if needed, is addressed in the Availability of Resources section.

Availability of Resources:

Costs below reflect mailing, publications, administration, staff time, preparation, and seasonal employees.

Category and Itemization	One-time ($)	Annual ($/yr)
Administration and management:	$0	$68,000
Maintenance:	$0	$4,500
Monitoring:	$0	$
Special equipment, facilities, or improvements:	$0	$4,500
Totals	**$0**	**$77,000**
Offsetting revenues:	$0	$16,500

The Refuge employs a seasonal biotechnical position to run the Refuge check station from October through January. This position is required to collect fees, assign blinds, post information, and run daily operations for the reservation hunt program on the McNary hunt unit. Additional costs include

the annual printing of Refuge information and the replacement and installation of signs. Staff time is required from the manager, the Complex outdoor recreation planner, a full time law enforcement officer, and maintenance crew. The costs are reflected in the table above. Revenue collected from hunter application and daily hunt fees are used to offset the costs of providing this use. The Refuge is currently increasing both application and hunt fees to further offset the costs of this program.

Anticipated Impacts of the Uses:

Some effects are discussed in more detail in Chapter 7 of the CCP/EA.

Direct impacts to hunted wildlife - Sport hunting involves the direct take of Refuge wildlife designated as huntable game species by Refuge regulation. In addition to loss of individual target species, hunting causes disturbances to feeding and resting nontarget species because of the noise (shotgun), movement, and general disturbance necessary for this activity. In addition, nontarget species are killed by hunters by accident or intent and waterfowl are often crippled or killed and not retrieved. Waterfowl are wary, seeking Refuge from all forms of disturbance, particularly those associated with loud noise and rapid movement (Korschgen and Dahlgren 1992). Studies indicate that hunting does cause disturbance to hunted species as well as to nonhunted species. These disturbances are manifested by alertness, fright (obvious or unapparent), flight, swimming, disablement, or death (Korschgen and Dahlgren 1992). Numerous studies have shown that hunting disturbance causes increased flight time in waterfowl species. Use of specific areas and daily flight activity by brants (*Branta bernicla*) were influenced by tidal level, food availability, time of day, and particularly by disturbance from hunters (Henry 1980). Flight requires considerably more energy than any other activity except egg lying. Human disturbance compels waterfowl to change food habits, feed only at night, lose weight, or desert feeding areas (Korschgen and Dahlgren 1992).

Though, as mentioned above, there are obvious impacts on waterfowl populations related to hunting (most notably disturbance and direct take), the proportion of waterfowl populations subject to hunting on Refuges is very low. Thus, hunting on Refuges as a whole, or on McNary Refuge specifically, is not likely to have an adverse impact on the status of any recognized waterfowl population in North America. Several points support this contention: 1) the proportion of the national waterfowl harvest that occurs on Refuges is small, 2) there are no waterfowl populations that exist wholly and exclusively on national wildlife refuges, 3) annual hunting regulations within the United States are established at levels consistent with the current population status, 4) Refuges cannot permit more liberal seasons than provided for in the Federal frameworks, and 5) Refuges purchased with funds derived from the Federal Duck Stamp Program must limit hunting to 40% of the available area.

Impacts to Non-hunted Wildlife: (See also Chapter 7, section 7.2) Non-hunted wildlife would include non-hunted migratory birds such as songbirds, wading birds, raptors, and woodpeckers; small mammals such as voles, moles, mice, shrews, and bats; medium sized mammals such as skunks and coyotes; reptiles and amphibians such as snakes, skinks, turtles, lizards, salamanders, frogs and toads; and invertebrates such as butterflies, moths, other insects and spiders.

Except for a competitive effect, which is estimated to be small, the potential effect to non-hunted wildlife is largely in the realm of disturbance. The cumulative effects of disturbance to non-hunted

migratory birds under the proposed action are expected to be negligible for the following reasons. Hunting seasons do not coincide with the nesting season. Long-term future impacts that could occur if reproduction was reduced by hunting are not relevant for this reason. Disturbance to the daily wintering activities, such as feeding and resting, of wintering non-hunted birds might occur. Because both Refuges maintain sanctuary areas where no hunting is permitted, this effect is likely a minor negative effect.

However, disturbance would be unlikely for the following reasons. Small mammals, including bats, are inactive during winter when hunting season occurs. These species are also nocturnal. Both of these qualities make hunter interactions with small mammals very rare. Hibernation or torpor by cold-blood reptiles and amphibians also limits their activity during the hunting season when temperatures are low. Hunters would rarely encounter reptiles and amphibians during most of the hunting season. Encounters with reptiles and amphibians in the early fall are few and should not have cumulative negative effects on reptile and amphibian populations. Invertebrates are also not active during cold weather and would have few interactions with hunters during the hunting season. Refuge regulations further mitigate possible disturbance by hunters to non-hunted wildlife. Vehicles are restricted to roads and the harassment or taking of any wildlife other than the game species legal for the season is not permitted.

Although ingestion of lead-shot by non-hunted wildlife could be a cumulative impact, it is not relevant to McNary Refuge because the use of lead shot would not be permitted on the Refuge for any type of hunting.

Some species of bats, butterflies and moths are migratory. Cumulative effects to these species at the "flyway" level should be negligible. These species are in torpor or have completely passed through the area by peak hunting season in Nov-Jan. Some hunting occurs during September and October when these species are migrating; however, hunter interaction would be commensurate with that of non-consumptive users.

Other Effects - There are also some indirect beneficial impacts of Refuge hunting. Refuge hunting can contribute to the well being of wildlife by providing financial, educational, and sociological benefits. The hunting community in general remains the largest support base at a national level for funding wildlife management programs. Refuges provide an opportunity for a high quality waterfowl hunting experience to all citizens regardless of economic standing. Many individual Refuges have developed extensive public information and education programs bringing hunters into contact with Refuge activities and facilitating awareness of wildlife issues beyond hunting.

Public Review and Comment:

Open houses were held and written comments were solicited from the public during drafting of the CCP/EA for the McNary and Umatilla Refuges. Appendix A of the CCP/EA further details public involvement during development of the CCP.

Determination: (check one below)

___ Use is Not Compatible

__X__ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

- The hunt program will be conducted as outlined in Chapter 2 of the CCP/EA. The Refuge hunting plan, hunt leaflets, and section 32 of 50 CFR will be updated as necessary. All hunters shall comply with State hunting regulations.
- Hunting will be subject to Refuge specific hunt regulations in effect establishing set days, areas, times, points of entry, and permit requirements under which to hunt.
- The McNary Units 1 and 2 fee area will be opened to hunting Wednesdays, Saturdays, and Sundays only, during the State waterfowl season.
- Adequate sanctuary will be established, monitored, and evaluated.
- Adequate wintering waterfowl food supplies will be provided in closed areas of the Refuge.
- Law enforcement patrols will be conducted on a regular basis to assure compliance with State, Federal, and Refuge regulations.
- Over the 15-year life of the CCP, future increases in fees may be necessary to sustain this program.
- The Refuge will ensure safety and minimize conflict with other priority uses by providing information about hunting boundaries and seasons to the general public and those utilizing other Refuge programs. Information will be provided at interpretive kiosks, on the Refuge website, and in Refuge offices.
- Camping, overnight use, and fires will be prohibited.

Justification:

Waterfowl, upland game, and other migratory bird hunting is a traditional wildlife-oriented recreation and is listed as a priority public use under the Refuge Wildlife Improvement Act as amended, 1997. Despite the direct and indirect impacts associated with sport hunting waterfowl, upland game, and other migratory birds' flyway populations are not likely to be affected significantly by the hunting program on the Refuge. Waterfowl population objectives and allowable harvest is determined on a flyway basis. Changes in regional land uses (i.e., agriculture/crops) are more likely to influence population trends than localized hunting programs (Paveglio, pers. comm.) The Refuge has no control over changes in land use practices. Limited hunt days (i.e. some areas open only three days/week), no hunt zones, and established sanctuary in Refuge wetlands and fields, ensure that wintering and migrating waterfowl, upland game birds, and other migratory birds, as well as non-target species can find food and rest areas on the Refuges even in the midst of the hunting season. Hunt regulations and sanctuary should be continually monitored and evaluated to ascertain their value in balancing the disturbance caused by allowing hunting on the Refuge. Under the stipulations outlined above, this activity does not materially detract from meeting Refuge purposes or the Refuge System mission. Refuge specific regulations are designed to minimize impacts, and will be evaluated for their effectiveness annually.

Mandatory 10- or 15-Year Re-evaluation Date: (provide month and year for "allowed" uses only)

___X_ Mandatory 15-year reevaluation date (for wildlife-dependent public uses)
_____ Mandatory 10-year reevaluation date (for all uses other than wildlife-dependent public uses)

NEPA Compliance for Refuge Use Decision: (check one below)

____ Categorical Exclusion without Environmental Action Statement
____ Categorical Exclusion and Environmental Action Statement
__X__ Environmental Assessment and Finding of No Significant Impact
____ Environmental Impact Statement and Record of Decision

References Cited:

Henry, W.G. 1980. Populations and behavior of black brant at Humboldt Bay, California. M.S. thesis, Humboldt State University, Arcata, CA. 111 pp.

Korschgen, C.E. and Dahlgren, R.B. 1992. Human disturbances of waterfowl: Causes, effects, and management. Fish and Wildlife Leaflet 13.2.15. 8 pp.

Signatures:

Prepared by: _____ 4/22/07
(Signature) (Date)

Refuge Manager/
Project Leader
Approval: _____ 4/25/07
(Signature) (Date)

Concurrence:

Refuge Supervisor _____ 4/30/07
(Signature) (Date)

Regional Chief,
National Wildlife
Refuge System
(for HI, ID, OR,
PI, and WA): _____ 5/7/07
(Signature) (Date)

Deer Hunting Compatibility Determination

RMIS Database Use: Hunting (big game)

Refuge Name: McNary National Wildlife Refuge.

County and State: Walla Walla, Franklin, and Benton Counties, Washington. Umatilla County, Oregon.

McNary Refuge was established in 1955 by cooperative agreement with the Corps which transferred administrative control of the original 2,849-acre parcel to the Service (Federal Register of May 1956; Document No. 56-3499; and Cooperative Agreement between the Corps and Service in September 1963, and as amended September 1969). Additional lands were purchased in subsequent years under the Migratory Bird Conservation Act (16 USC 715d). A small parcel was donated to the Service in 1969, under the Refuge Recreation Act (16 USC 460k-1, k-2). In 1972, another parcel was transferred to the Service from the Bureau of Reclamation under the Fish and Wildlife Coordination Act (16 USC 664). In 1999, the original Refuge was transferred from the Corps to the Service through the Water Resources Development Act (WRDA) 1999 bill (P.L. 106-53; 16 USC 668dd). Additional lands were added in 2000 (Cooperative Agreement No. DACW68-4-00-13), dated January 2000 and as amended June 2000.

Refuge Purpose(s):

- for the conservation, maintenance, and management of wildlife, resources thereof, and habitat thereon, under plans... (All units, 16 U.S.C. §§ 664, Fish and Wildlife Coordination Act).
- "for development, conservation and management of wildlife resources..." (All units, General Plan, 1953).
- "particular value in carrying out the National Migratory Bird Management Program" (Original Burbank Unit, and Hanford Islands Unit, General Plan, 1953).
- "multiple use value relating to the conservation of fish life, waterfowl and upland game birds" (Peninsula, Two Rivers, and Wallula Units, General Plan, 1953).
- Snake River Mitigation Compensation Plan (Cummins Property only, Cooperative Agreement between Service and Service, 2000).
- "Dam Project Purposes" [primary purposes of navigation, power development, irrigation, and conservation of wildlife - Public Law Number 14, 79th Congress, First Session, approved March 2,1945]. (Cooperative Agreement between the Corps and Service, 2000, Stateline and Juniper Canyon units only).
- Other parcels: Small pieces of the Refuge were also added later by purchase under the Migratory Bird Conservation Act. The Refuge also manages a small tract of land under a 10-year lease with the Washington Department of Natural Resources; and, approximately 20 small tracts were acquired under authority of the Refuge Recreation Act of 1962 (PL 87-714).

Additional detail on the purposes of this Refuge may be found in Chapter 1 of the CCP/EA.

National Wildlife Refuge System Mission: "To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (National Wildlife Refuge System Administration Act of 1966, as amended (16 U.S.C. 668dd et seq.).

Description of Use:

Refuge hunt regulations are published annually by state in the Code of Federal Regulations at 50 CFR Ch. 1. Deer hunting under both the provisions of applicable State regulations and Refuge special use regulations, is allowed on portions of the Refuge that fall under GMU 149 in Washington, and GMU 44 in Oregon. These portions include the Wallula Unit in Washington, and the State Line and Juniper Canyon Units in both Washington and Oregon. These three units are owned by the Corps and managed by the Service under a cooperative agreement. The remainder of Refuge land, including fee title land, is closed to all big game hunting.

Hunting on the Wallula Unit is managed under Refuge special use regulations that permit the pursuit of game with archery and shotgun only. Seasons and species limits are set by State regulation. Hunting is permitted on the Stateline and Juniper Canyon Units under seasons and provisions set by the State.

Big game hunting would continue unchanged under the Preferred Alternative 2 of the CCP/EA.

Availability of Resources:

The big game hunting program on McNary does not require any additional staff time over other uses that are occurring during the same time period. As Refuge deer hunting is only allowed during a one week period on Wallula, this use is not likely to detract staff resources away from the waterfowl program occurring at the same time. Furthermore, the Juniper Canyon and State Line Units fall under a highly regulated State permit program which restricts the amount of hunters and days these units can be hunted. It is unlikely that significant additional Refuge law enforcement presence would be required to manage this activity on these units. Base funding would cover the costs for administering this program.

Category and Itemization	One-time ($)	Annual ($/yr)
Administration and management:	$0	$3,000
Maintenance:	$0	$0
Monitoring:	$0	$1,000
Special equipment, facilities, or improvements:	$0	$0
Totals	**$0**	**$4,000**
Offsetting revenues:	$0	$0

Anticipated Impacts of the Use:

Some effects are discussed in more detail in Chapter 7 of the CCP/EA.

Direct Effects to Hunted Wildlife: Many of the disturbance impacts associated with big game hunting opportunities are similar to those considered for other public uses (e.g., waterfowl hunting, wildlife observation and photography – see those Compatibility Determinations). Like these uses, big game hunting also can cause disturbance as well as direct mortality, and short-term changes in game species distribution and abundance.

Hunting intensity can influence habitat use for a variety of wildlife species. Highly mobile species such as mule deer can move away from areas of heavy disturbance and/or hunting pressure while less mobile species (e.g., California quail) or species tied to specific habitats, such as wetlands, retain smaller home ranges and are more subject to long-term exposure. For example, the largest mule deer herds on the Mid-Columbia River Refuge Complex are located on Umatilla Refuge adjacent to agriculture lands in closed nonhunted portions of the Refuge. Smaller herds have been observed along riparian units of the McNary Refuge where hunting and other public uses are more common. Portions of the Refuge open to deer hunting would include wetlands. Most waterfowl use, however, occurs earlier in the year for breeding and nesting activities, or later in the year during fall and winter migrations. Thus minimal disturbance impact to waterfowl would be expected.

Currently, big game hunting pressure on the Wallula Unit is relatively low, with archery being the most commonly used method of pursuit. Archery season lasts the month of September when temperatures are still warm and deer are less likely to be moving during large portions of the day. Firearm season lasts only a week during October, and is relatively unpopular due to antler restrictions and the shotgun only requirement. Because of this, it's unlikely that deer hunting on this Unit significantly impacts local deer populations. Furthermore, vegetation surveys show a noticeable level of deer browse on riparian shrub species. This could indicate a localized population spike or an increased use as sanctuary as deer move from the surrounding highway traffic and farming operations. Increased browsing could degrade the limited riparian habitat available to migrating/nesting song birds and other riparian obligate species.

The Stateline and Juniper Canyon Units are primarily in Oregon, and exist as broken up, fragmented parcels surrounded and interspersed by private land. They fall under GMU 44, which is managed by the ODFW as a controlled hunt area. Only a specified amount of tags can be drawn to hunt this area during a three week period. Hunting pressure on these units is likely lower than on the surrounding private lands where deer use could be encouraged for hunting opportunity.

Impacts to Non-hunted Wildlife: (See also Chapter 7, section 7.2) Non-hunted wildlife would include non-hunted migratory birds such as songbirds, wading birds, raptors, and woodpeckers; small mammals such as voles, moles, mice, shrews, and bats; medium sized mammals such as skunks and coyotes; reptiles and amphibians such as snakes, skinks, turtles, lizards, salamanders, frogs and toads; and invertebrates such as butterflies, moths, other insects and spiders.

Deer hunting removes a small amount of prey from the prey base for predators. Due to the low number of deer harvested on the Refuge and the low population of predators, this effect is estimated to be minor.

The other potential effect to non-hunted wildlife is largely in the realm of disturbance. The cumulative effects of disturbance to non-hunted migratory birds under the proposed action are expected to be negligible for the following reasons. Hunting seasons do not coincide with the nesting season. Long-term future impacts that could occur if reproduction was reduced by hunting are not relevant for this reason. Disturbance to the daily wintering activities, such as feeding and resting, of wintering non-hunted birds might occur. Because both Refuges maintain sanctuary areas where no hunting is permitted, this effect is likely a minor negative effect.

However, disturbance would be unlikely for the following reasons. Small mammals, including bats, are inactive during winter when hunting season occurs. These species are also nocturnal. Both of these qualities make hunter interactions with small mammals very rare. Hibernation or torpor by cold-blood reptiles and amphibians also limits their activity during the hunting season when temperatures are low. Hunters would rarely encounter reptiles and amphibians during most of the hunting season. Encounters with reptiles and amphibians in the early fall are few and should not have cumulative negative effects on reptile and amphibian populations. Invertebrates are also not active during cold weather and would have few interactions with hunters during the hunting season. Refuge regulations further mitigate possible disturbance by hunters to non-hunted wildlife. Vehicles are restricted to roads and the harassment or taking of any wildlife other than the game species legal for the season is not permitted.

Although ingestion of lead-shot by non-hunted wildlife could be a cumulative impact, it is not relevant to McNary Refuge because the use of lead shot would not be permitted on the Refuge for any type of hunting.

Some species of bats, butterflies and moths are migratory. Cumulative effects to these species at the "flyway" level should be negligible. These species are in torpor or have completely passed through the area by peak hunting season in Nov-Jan. Some hunting occurs during September and October when these species are migrating; however, hunter interaction would be commensurate with that of non-consumptive users.

Other Effects - Unrestricted travel through the hunted area(s) can have some impact on soils and vegetation.

User conflict and safety issues do provide some areas of concern on these units. Hikers, horseback riders, and anglers use these areas during big game seasons. However, with the exception of fishing, levels of use are relatively low and peak seasons generally do not overlap. Most of the fishing activity is concentrated on the river banks where established parking areas are close by. These fishing areas are likely not preferred by deer hunters. The restrictions to archery and shotgun limit trajectory and lower the risk of potential third party injury.

No significant effects to roads, trails, or other infrastructure from the hunting program are foreseen. Normal road, trail, and facility upkeep and maintenance will continue to be necessary. Additional facility construction or upgrade, if needed, is addressed in the Availability of Resources section.

Public Review and Comment:

Open houses were held and written comments were solicited from the public during drafting of the CCP/EA for the McNary and Umatilla Refuges. Appendix A of the CCP/EA further details public involvement undertaken during development of the CCP.

Determination (check one below):

_____ Use is Not Compatible

__X__ Use is Compatible with the following stipulations

Stipulations Necessary to Ensure Compatibility:

The following stipulations ensure that deer hunting on the Wallula, Stateline, and Juniper Canyon Units of the Refuge, is compatible:

- Only shotgun and archery are permitted on the Wallula Unit.
- Weapons used for hunting on the Stateline and Juniper Canyon Units will be restricted to the provisions listed under the applicable State regulations.
- Specific area closures may be implemented to improve safety and reduce user conflict in areas having other public uses.
- Specific area closure may be implemented to protect Refuge buildings and personnel.
- Camping, overnight use, and fires will be prohibited.
- Over the life of the CCP, Refuge staff will monitor vegetation on Wallula and consider increasing the hunt if warranted based on impacts to vegetation.

Justification:

Big game hunting is included as a Big Six priority use. Deer hunting can be managed without materially detracting from meeting Refuge wildlife objectives. Therefore, the hunt supports Refuge purposes, goals and objectives, and the NWRS mission.

Mandatory 10- or 15-Year Reevaluation Date: (provide month and year for "allowed" uses only)

__X__Mandatory 15-year reevaluation date (for wildlife-dependent public uses)
_____Mandatory 10-year reevaluation date (for all uses other than wildlife-dependent public uses)

NEPA Compliance for Refuge Use Decision: (check one below)

_____Categorical Exclusion without Environmental Action Statement
_____Categorical Exclusion and Environmental Action Statement
__X__Environmental Assessment and Finding of No Significant Impact
_____Environmental Impact Statement and Record of Decision

Signatures:

Prepared by: _____ 4/22/07
(Signature) (Date)

Refuge Manager/
Project Leader
Approval: _____ 4/25/07
(Signature) (Date)

Concurrence:

Refuge Supervisor: _____ 4/30/07
(Signature) (Date)

Regional Chief,
National Wildlife
Refuge System
(for HI, ID, OR,
PI, and WA): _____ 5/7/07
(Signature) (Date)

Fishing Compatibility Determination

RMIS Database Use: Fishing (general); Fishing (tournament); Fishing (special events)

Refuge Names: McNary National Wildlife Refuge and Umatilla National Wildlife Refuge

County and State: Walla Walla, Franklin, and Benton Counties, Washington, Umatilla County, Oregon.

Establishing and Acquisition Authorities:

McNary Refuge was established in 1955 by cooperative agreement with the Corps which transferred administrative control of the original 2,849-acre parcel to the Service (Federal Register of May 1956; Document No. 56-3499; and Cooperative Agreement between the Corps and Service in September 1963, and as amended September 1969). Additional lands were purchased in subsequent years under the Migratory Bird Conservation Act (16 USC 715d). A small parcel was donated to the Service in 1969, under the Refuge Recreation Act (16 USC 460k-1, k-2). In 1972, another parcel was transferred to the Service from the Bureau of Reclamation under the Fish and Wildlife Coordination Act (16 USC 664). In 1999, the original Refuge was transferred from the Corps to the Service through the Water Resources Development Act (WRDA) 1999 bill (P.L. 106-53; 16 USC 668dd). Additional lands were added in 2000 (Cooperative Agreement No. DACW68-4-00-13), dated January 2000 and as amended June 2000.

Refuge Purpose(s):

- for the conservation, maintenance, and management of wildlife, resources thereof, and habitat thereon, under plans... (All units, 16 U.S.C. §§ 664, Fish and Wildlife Coordination Act).
- "for development, conservation and management of wildlife resources..." (All units, General Plan, 1953).
- "particular value in carrying out the National Migratory Bird Management Program" (Original Burbank Unit, and Hanford Islands Unit, General Plan, 1953).
- "multiple use value relating to the conservation of fish life, waterfowl and upland game birds" (Peninsula, Two Rivers, and Wallula Units, General Plan, 1953).
- Snake River Mitigation Compensation Plan (Cummins Property only, Cooperative Agreement between Service and Service, 2000).
- "Dam Project Purposes" [primary purposes of navigation, power development, irrigation, and conservation of wildlife - Public Law Number 14, 79th Congress, First Session, approved March 2, 1945]. (Cooperative Agreement between the Corps and Service, 2000, Stateline and Juniper Canyon units only).
- Other parcels: Small pieces of the Refuge were also added later by purchase under the Migratory Bird Conservation Act. The Refuge also manages a small tract of land under a 10-year lease with

the Washington Department of Natural Resources; and, approximately 20 small tracts were acquired under authority of the Refuge Recreation Act of 1962 (PL 87-714).

Additional detail on the purposes of this Refuge may be found in Chapter 1 of the CCP/EA.

National Wildlife Refuge System Mission:

"To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd et seq.].

Description of Use:

McNary: The Refuge receives over thousands of fishing visits annually (RMIS FY2004). The vast majority of fishing occurs from March 1 through the end of October. Early season fishing is focused on walleye and trout with fishing occurring primarily in the Columbia River within the boundaries of the Peninsula, Two Rivers, Burbank Sloughs, and Wallula Units. Fishing in the late spring and summer primarily focuses on bass fishing in the Columbia River, and in the ponds that make up the Burbank Sloughs. Fishing for catfish in the Walla Walla River on the Wallula Unit, is also popular. Late summer and fall is primarily salmon fishing in the Columbia River within the boundaries of the Two Rivers, Peninsula, Burbank Sloughs, and Wallula Units and in the Walla Walla River in the Wallula Unit. Quarry Pond receives very heavy use (300-500 anglers in a weekend) during the month of March and then tapers off dramatically in early April as the pond is fished out. McNary Headquarters pond IV receives a few fishermen, mostly children and long time local residents, fishing the bass beds during spawning in April or May, but the area is rarely fished the rest of the year.

Fishing occurs at McNary Refuge in the locations listed below.

- On the McNary Headquarters Unit, fishing occurs only in pond IV. Fishing use to occur in pond III but a walking trail to the pond is no longer maintained and fishing has practically ceased. Trail maintenance stopped because of its disturbances to wildlife and nesting birds. Fishing is not allowed in ponds I and II. Boats are not allowed for fishing in any of the unit's ponds. A small but active group of people including many local children fish primarily for bass in the pond.

- On the Burbank Sloughs Unit, fishing is allowed in all ponds and sloughs and in the Columbia River and along its banks. Boats are allowed but are only used in the Columbia River because of the small size of the unit's ponds. A few anglers walk (.25 to 1.5 miles) into the Unit's small ponds, but a majority use a variety of boats to fish in the Columbia River. Boat anglers gain access to the River from boat launches at Corps facilities at Hood Park or Cargill Pond.

- On the Peninsula Unit, fishing is allowed in and along the banks of Casey Pond, and in and along the banks of the Columbia River. Motorized and nonmotorized boats are allowed in Casey Pond. Fishing is also allowed in several other ponds on the Unit. These ponds are relatively small and shallow and anglers bank fish them. Access to the small ponds is from the unit's main entrance

off Hanson Loop Road. A new (2004), good quality boat launch and large parking area are provided to anglers on the unit. Access to Casey Pond and the new boat launch is gained from a dirt road about one mile from the unit's main entrance. Boaters launching from the Casey Pond launch can gain access to the Columbia River through a large opening in the dike.

- On the Two Rivers Unit, fishing occurs in the Columbia River and along its banks and on the banks of Quarry Pond. Quarry Pond is the most popular spot on the unit to fish. It is especially popular with new immigrants and with families who have small children. Currently, the Washington Department of Fish and Wildlife stocks the pond with rainbow trout three times a year between March and May. The pond has no outlet to the river and is quickly fished out by the large numbers of anglers. Two dirt parking areas, seasonal port-a-lets, and an accessible fishing pier are available at the pond. Trash and litter are a significant problem. In the past five years the Refuge has closed a road along the pond to vehicle traffic and has also closed off several smaller parking areas that were too close to the water's edge. The Refuge has worked with local hunting and fishing organizations and other volunteers to clean up the popular site. The clean-up days along with litter patrols by the Refuge's seasonal Youth Conservation Corps have helped to lessen the amount of debris in the area.

- Boat anglers access the Columbia River adjacent to the Two Rivers Unit from the same launches they use when fishing the Peninsula Unit. In addition, there is a small unimproved boat launch on the unit. The main (and only) vehicle entrance is off State Highway 12.

- On the Wallula Unit, fishing occurs in several places including in the Walla Walla River and along its banks; in the Columbia River and along its banks; in White Tail Bay and along its banks; and in small ponds on the south side of the Wallula Unit. Fishing is not allowed in Sanctuary Pond. Boats access the Walla Walla River from a boat launch near at Madam Dorian Campground. A dirt parking area is provided along with a small accessible fishing pier. Port-a-lets are installed in the parking area during busy summer months when funding permits. Year-round vault toilets and/or port-a-lets are located a quarter of a mile away at Madam Dorian Campground. There are several parking areas for anglers on the Unit, on both the north and south side of the Walla Walla River.

- The most popular types of fishing in the Columbia and Snake Rivers include salmon, steelhead, and walleye fishing. Bass fishing is also very popular in the areas around the Burbank Slough Unit (McNary Headquarters), Burbank Sloughs Unit (behind downtown Burbank), and the Peninsula Unit. There is some sturgeon fishing in the Columbia River near McNary Refuge. A few anglers fish for shad and carp. Catching northern pike minnow has become somewhat popular with the introduction of a cash reward from the States of Oregon and Washington for catching these fish.

- The most popular fishing occurring in the Walla Walla River is for catfish followed by steelhead. Many anglers come to the Wallula Unit specifically for catfish. Ponds on Refuge units are mostly fished for bass.

Under Preferred Alternative 2 of the CCP/EA, the fishing program will continue as described above

with the following changes:

1. Installation of a fishing/Refuge/safety information kiosk at the Wallula (Madam Dorian) boat launch and at the Casey Pond boat launch.
2. Build a fishing pier at McNary Headquarters pond IV. Install a fishing/Refuge/safety information kiosk.
3. Stocking at Quarry Pond would be limited to rainbow trout.
4. Improvement of parking facilities and access to river shoreline fishing sites (Two Rivers, Burbank Sloughs, and Wallula units).
5. Hire seasonal park rangers to keep information up-to-date in kiosks and provide improved law enforcement coverage.

Availability of Resources:

McNary Refuge is open for hunting, environmental education, interpretation, wildlife photography, and wildlife observation as well as fishing. Access trails, parking lots, signage and other facilities are often used for multiple purposes. Even though fishing is the most popular visitor activity, only a very limited number of facilities have been developed specifically for fishing. With increased funding, improvements could be made to the programs. Limited funding and staff resources negatively effects maintenance and law enforcement of current facilities. Most of the costs associated with carrying out the improvements described in Preferred Alternative 2 are one-time expenses. The Service will explore all available options to obtain funding to implement these projects, including partnership efforts.

Costs to Administer and Manage Fishing Programs at McNary Refuge under Preferred Alternative 2.

Activity or Project	One Time Expense ($)	Recurring Expense ($/year)
Placement and Maintenance of Kiosks and Signs	46,000	3,000
Development/ Maintenance of Accessible fishing Pier	55,500	3,000
Law Enforcement	20,000	10,000
Monitoring (primarily of bird colonies)		10,000
Totals	$121,500	$26,000

Anticipated Impacts of the Use:

Fishing, when practiced as a solitary and stationary activity, tends to be less disturbing to wildlife than hunting or motorized boating (Tuite et al. 1983). Direct habitat impacts include a certain amount of litter and general garbage left at fishing sites. Motorized boats create noise and potentially leave oil and gas residue. Installation and use of parking areas and access trails will decrease impacts to vegetation and soil adjacent to fishing areas, by concentrating visitors on hardened surfaces.

Fishing would cause disturbance to birds and other wildlife using open waters and backwaters of the Refuges. Fishing activities may influence the composition of bird communities, as well as distribution, abundance and productivity of waterbirds (Tydeman 1977; Bouffard 1982; Bell and Austin 1985; Bordignon 1985; Edwards and Bell 1985; and Cooke 1987). Anglers often fish in shallow, sheltered bays and creeks that birds prefer, negatively impacting distribution and abundance of waterfowl,

grebes, and coots (Cooke 1987). Increases in anglers and associated shoreline activity discouraged waterfowl from using otherwise suitable habitat (Jahn and Hunt 1964). In Britain, anglers displaced waterfowl from their preferred feeding and roosting areas and caused widgeon, green-winged teal, pochard, and mallard to depart from a reservoir prematurely (Jahn and Hunt 1964). Anglers influenced the numbers, behavior, and diurnal distribution of avian scavengers present at sites in Washington, when compared to nonfishing days (Knight et al. 1991). Shoreline activities, such as human noise, would cause some birds to flush and go elsewhere. In addition, vegetation trampling, and deposition of sewage or other chemicals are expected to commonly occur (Liddle and Scorgie 1980). Disturbance and destruction of riparian vegetation, and impacts to bank stability and water quality, may result from high levels of bank fishing activities.

Boating associated with fishing can alter bird distribution, reduce use of particular habitats or entire areas by waterfowl and other waterbirds, alter feeding behavior and nutritional status, and cause premature departure from areas (Knight and Cole 1995). Impacts of motorized boating can occur even at low densities, given their noise, speed, and ability to cover extensive areas in a short amount of time.

Colonial nesting birds on river islands may be among the most sensitive of the wildlife species subjected to potential disturbance from fishing and fishing-associated boating. Washington State provided management recommendations for State priority habitats and species (WDFW 2001). In this document, WDFW provided management recommendations for limiting disturbance to American white pelican (state listed as endangered) and great blue heron. These are summarized below.

Management Recommendations from WDFW Priority Habitats and Species

Species	Management Recommendation
American white pelican	• Establish a buffer zone of 400-800m (0.25-0.5 miles) and up to 1,600m (1.0 miles) from the nesting island which is closed to human activity such as boating (especially power boating), fishing, water skiing, discharge of fire arms, wildlife observation, etc. (Doran et al. 2004) • Close nest islands to trespass during the breeding season from 15 March through 31 August
Great blue heron	• Establish a protective buffer limiting human activity 820-985 feet from the outer edge of active colonies between February 15–July 31.

Refuge staff will have to develop test sites to monitor the effects of the increase in angler to wildlife and in particular nesting birds.

Public Review and Comment:

Open houses were held and written comments were solicited from the public during development of the CCP/EA for the McNary and Umatilla Refuges. Appendix A of the CCP/EA further details public involvement during development of the CCP.

Determination (check one below):

_____ Use is Not Compatible

__x__ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

- Camping, overnight use, and fires are prohibited.
- Littering is prohibited.
- The Service shall maintain portable toilet facilities at Service boat launches and heavily used fishing areas to minimize human waste problems on shorelines and island trespass.
- All persons fishing shall be required to have a valid State license and follow applicable State regulations.
- Special use permits (SUPs) for fishing tournaments shall include no-access buffers within Refuge waters one-half a mile from Refuge islands known to be supporting nesting colonies of American white pelicans between March 15 and August 31. In addition, a no-access buffer of 900 feet within Refuge waters from all other Refuge islands from February 15-July 31, shall be included in tournament SUPs to prevent disturbance to nesting colonial birds.
- The Refuge Complex shall work in partnership with the States, recreational fishing organizations, and other conservation partners to develop permit conditions to include as "boilerplate" for tournament SUPs. Consideration shall be given to addressing issues of zoning, numbers of participants in any one tournament, and speed limits.
- The fishing program will be conducted as outlined in Chapter 2 of the CCP/EA. The Refuge fishing plan, leaflets, and section 32 of 50 CFR will be updated as necessary.
- Fishing will be subject to Refuge specific fishing regulations in effect establishing set days, areas, times, points of entry, and permit requirements under which to fish.
- Law enforcement patrols will be conducted on a regular basis to assure compliance with State and Refuge regulations.

Justification:

Fishing is a "Big 6" wildlife dependent recreational activity. It brings visitors to the Refuge and often enhances the visitors' appreciation of natural resources. Parts of McNary Refuge are closed to all public use and these areas provide important undisturbed habitat for fish and wildlife. In other areas only nonmotorized boats are allowed. This lessens the disturbances to colonial water birds and other wildlife. Other areas require long walks by anglers and thus receive minimal angler use and minimal disturbance to wildlife. Some areas receive high use and in these areas the wildlife is disturbed or displaced during high visitor usage. The combination of closed areas, seasonal use areas, minimally used areas, and seasonal high use areas, allows recreational fishing and high quality fish and wildlife habitat to co-exist on the Refuge. Fishing at anticipated levels will not materially interfere with the purposes of the Refuge. Stipulations will help reduce or eliminate any unwanted impacts of the use. State regulations and monitoring help ensure that harvest levels of fish do not harm long-term populations.

Mandatory 10- or 15-year Reevaluation Date: (provide month and year for "allowed uses)

12/2022 Mandatory 15-year re-evaluation date (for wildlife-dependent public uses)
_____ Mandatory 10-year reevaluation date (for all uses other than wildlife-dependent public uses)

NEPA Compliance for Refuge Use Decision: (check one below)

___ Categorical Exclusion without Environmental Action Statement
___ Categorical Exclusion and Environmental Action Statement
_X_ Environmental Assessment and Finding of No Significant Impact
___ Environmental Impact Statement and Record of Decision

References:

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Signatures:

Prepared by: _____ 4/22/07
(Signature) (Date)

Refuge Manager/
Project Leader
Approval: _____ 4/25/07
(Signature) (Date)

Concurrence:

Refuge Supervisor: _____ 4/30/07
(Signature) (Date)

Regional Chief,
National Wildlife
Refuge System
(for HI, ID, OR,
PI, and WA): _____ 5/7/07
(Signature) (Date)

Environmental Education and Interpretation Compatibility Determination

RMIS Database Use: Environmental education (teaching teachers or group leaders); Environmental education (teaching students); and Interpretation

Refuge Name: McNary National Wildlife Refuge

County and State: Walla Walla, and Franklin Counties, Washington, Umatilla County, Oregon.

Establishing and Acquisition Authorities:

McNary Refuge was established in 1955 by cooperative agreement with the Corps which transferred administrative control of the original 2,849-acre parcel to the Service (Federal Register of May 1956; Document No. 56-3499; and Cooperative Agreement between the Corps and Service in September 1963, and as amended September 1969). Additional lands were purchased in subsequent years under the Migratory Bird Conservation Act (16 USC 715d). A small parcel was donated to the Service in 1969, under the Refuge Recreation Act (16 USC 460k-1, k-2). In 1972, another parcel was transferred to the Service from the Bureau of Reclamation under the Fish and Wildlife Coordination Act (16 USC 664). In 1999, the original Refuge was transferred from the Corps to the Service through the Water Resources Development Act (WRDA) 1999 bill (P.L. 106-53; 16 USC 668dd). Additional lands were added in 2000 (Cooperative Agreement No. DACW68-4-00-13), dated January 2000 and as amended June 2000.

Refuge Purpose(s):

- for the conservation, maintenance, and management of wildlife, resources thereof, and habitat thereon, under plans... (All units, 16 U.S.C. §§ 664, Fish and Wildlife Coordination Act).
- "for development, conservation and management of wildlife resources..." (All units, General Plan, 1953).
- "particular value in carrying out the National Migratory Bird Management Program" (Original Burbank Unit, and Hanford Islands Unit, General Plan, 1953).
- "multiple use value relating to the conservation of fish life, waterfowl and upland game birds" (Peninsula, Two Rivers, and Wallula Units, General Plan, 1953).
- Snake River Mitigation Compensation Plan (Cummins Property only, Cooperative Agreement between Service and Service, 2000).
- "Dam Project Purposes" [primary purposes of navigation, power development, irrigation, and conservation of wildlife - Public Law Number 14, 79th Congress, First Session, approved March 2,1945]. (Cooperative Agreement between the Corps and Service, 2000, Stateline and Juniper Canyon units only).
- Other parcels: Small pieces of the Refuge were also added later by purchase under the Migratory Bird Conservation Act. The Refuge also manages a small tract of land under a 10-year lease with the Washington Department of Natural Resources; and, approximately 20 small tracts were

acquired under authority of the Refuge Recreation Act of 1962 (PL 87-714).

Additional detail on the purposes of this Refuge may be found in Chapter 1 of the CCP/EA.

National Wildlife Refuge System Mission: "to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." (National Wildlife Refuge System Administration Act of 1966, as amended (16 U.S.C. 668dd et seq.)).

Description of Use: Environmental education (EE) and interpretation are both defined as wildlife-dependent recreational uses under the Improvement Act. Environmental Education consists of educational activities conducted by Refuge staff, volunteers, partners, and teachers. The EE themes pertain to the Refuge, the National Wildlife Refuge System, wildlife and their habitats and the human environment. The goal of the EE program is to have students and teachers understand and value the Refuge System and the ecology and management of McNary Refuge.

Under the Preferred Alternative 2 of the Comprehensive Conservation Plan, 1,500 – 3,000 students will be served annually through McNary Refuge's EE program.

Interpretation occurs in less formal activities (i.e. infrequently scheduled tours or casual talks) conducted by Refuge staff or volunteers. Interpretive materials are also available to visitors through exhibits (mostly found in the McNary EE Center), interpretive panels, and brochures.

At McNary Refuge, EE occurs primarily around the EE Center, Pond IV, the wildlife viewing/ photography blind and the two-mile nature trail. Seventy percent of EE use occurs during the spring (mid April-mid June) although programs exist throughout the rest of the year. The least active months are from December through February.

Interpretive materials are available on the Refuges. A McNary Nature Trail brochure map is available at the trailhead along with six interpretive panels along the trail. A Refuge bird list that includes bird watching tips is available at the EE Center. On the North Shore Road of the Wallula Unit, an interpretive kiosk overlooks Sanctuary Pond.

Refuge general brochures and hunting information sheets are available at the entrances to most Refuge units.

Additional information on current EE and interpretive programs and facilities can be found in sections 5.8 and 5.9 of the CCP/EA. Proposed program and facility changes or improvements can be found in Chapter 2 of the CCP/EA, Goal 12.

Under Preferred Alternative 2 of the CCP/EA, the environmental education and interpretive programs will continue as described above with the following improvements:

- Develop more "teach-the-teacher" programs and Refuge specific instructor training.

- Meet annually with Educational Services District 123 to ensure that Refuge programs are helping the school districts meet their state educational requirements.
- Use high quality established programs, such as the Shorebirds Sister Schools program and develop education "module" boxes to assist new volunteers and teachers.
- Explore opportunities to gain additional teacher volunteers through the Washington State University teachers program.
- Hire a volunteer coordinator and or park ranger to manage and train volunteers and support the EE program.

Availability of Resources: The following is the estimated construction costs and annual costs for new EE and interpretive programs developed under Preferred Alternative 2:

Costs to administer and manage environmental education and interpretive programs for McNary Refuge under Preferred Alternative 2 of the CCP/EA.

Activity or Project	One Time Expense ($)	Recurring Expense ($/year)
Develop and produce interpretive panels	15,000	1,000
Educational Materials	8,000	1,000
Volunteer Specialist or Park Ranger (position shared with Umatilla)	40,000	25,000
Totals	$63,000	$27,000

Anticipated Impacts of the Uses: Impacts from EE activities at McNary Refuge occur mostly in the area around the EE Center and south side of Pond IV, where school groups concentrate to take part in hands-on science activities. Impacts observed in this area of under two acres include: vegetation trampling, disturbance to nesting birds, and disturbance to feeding or resting birds or other wildlife in the proximate vicinity.

An unpublished study (Jose, 1997) examined the effect of EE site activities at Blackhorse Lake on the Turnbull Refuge. The study was designed to compare waterfowl presence and behavior patterns between the times when EE activities were occurring and when EE classes were not on-site. The study results indicated that fewer waterfowl were present in the study area when EE classes were on site as compared to the control times. The study also found more short flights undertaken by birds when EE classes were on site. Redheads displayed the highest number of flight responses, followed by mallards. Ruddy ducks almost never flew but had the highest increase in directional swimming away from the EE classes. The study author recommended that sites heavily used by smaller bodied birds, such as ruddy ducks, buffleheads, and teals, not be used as environmental education sites.

Participation in environmental education programs is growing throughout Oregon and Washington. The McNary program is limited by the number of qualified volunteers and teachers, and Refuge staff that can lead environmental education classes. With the growth of participation in EE programs and the emphasis of these programs by the Service, future effects can be expected to be higher than present. The EE program has a certain detrimental impact on Refuge habitats and wildlife but most EE activities are contained within a relatively small public use area. McNary Refuge is over 16,000 acres and the heavily impacted area around the EE Center is less than two acres. During the primary season (April and May) for EE, the McNary Headquarters waterfowl fee hunt areas (ponds I and II) are

closed to the public, and therefore, provide additional sanctuary for breeding wildlife.

Public Review and Comment:

Open houses were held and written comments were solicited from the public during development of the CCP/EA for the McNary and Umatilla Refuges. Appendix A of the CCP/EA further details public involvement undertaken during development of the CCP.

Determination:

_____ Use is Not Compatible

__X__ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility:

User Stipulations:

- Require advance reservations for larger groups (over 20) participating in environmental education activities.
- Instruct all groups in trail etiquette and ways to reduce wildlife and habitat disturbance during a "welcome" session.
- Encourage students and teachers to participate in stewardship activities including habitat restoration or monitoring.
- Limit EE at McNary Refuge to designated sites on pond IV.
- Encourage groups at McNary Refuge to put all their own garbage in the Service provided dumpsters.

Administrative stipulations:

- During "teach the teachers" workshops, instructors will review trail etiquette and how to minimize wildlife disturbances.
- An effort will be made to limit group size to no more than 60 participants per day, reducing disturbance to wildlife and overcrowding of Refuge facilities during times of peak demand.
- The EE Center will be accessible to all visiting public. Special efforts will be made to accommodate disabled visitors.
- Signs, pamphlets, and verbal instructions from Refuge staff and volunteers will promote appropriate use of trails, boardwalks, and platforms to minimize wildlife and habitat disturbance.
- Periodic monitoring and evaluation of sites and programs will be conducted to assess if objectives are being met and the resource is not being unacceptably degraded.
- Where feasible, native trees and shrubs will be planted to create screening along trails and at observation points to reduce disturbance.
- If funding permits, EE sites will be hardened and piers constructed to facilitate aquatic studies and to help reduce negative visitor impacts to soils, vegetation and hydrology.
- Regulations will be available to the public through a Refuge brochure.
- Directional, informational, and interpretive signs will be posted and maintained to help keep visitors on trails and help educate the public on minimizing wildlife and habitat disturbance.

Justification: Environmental education and interpretation contribute to the mission of the National Wildlife Refuge System by providing wildlife-oriented educational and recreational benefits to Americans. Environmental Education and interpretation are two of the six wildlife-dependent recreational uses of the National Wildlife Refuge System as stated in the National Wildlife Refuge System Improvement Act of 1997. By limiting the size of groups and providing closed areas for sanctuary from human disturbance in other areas of the Refuge, these programs will limit disturbances to wildlife. Environmental Education and interpretation are important parts of McNary Refuge's vision and goals.

Mandatory 10- or 15-year Reevaluation Date: (provide month and year for "allowed uses)

12/2022 Mandatory 15-year reevaluation date (for wildlife-dependent public uses)
_____ Mandatory 10-year reevaluation date (for all uses other than wildlife-dependent public uses)

NEPA Compliance for Refuge Use Decision: (check one below)

___ Categorical Exclusion without Environmental Action Statement
___ Categorical Exclusion and Environmental Action Statement
__X__ Environmental Assessment and Finding of No Significant Impact
_____ Environmental Impact Statement and Record of Decision

References:

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Signatures:

Prepared by: _____ 4/22/07
(Signature) (Date)

Refuge Manager/
Project Leader
Approval: _____ 4/25/07
(Signature) (Date)

Concurrence:

Refuge Supervisor: _____ 4/30/07
(Signature) (Date)

Regional Chief,
National Wildlife
Refuge System
(for HI, ID, OR,
PI, and WA): _____ 5/7/07
(Signature) (Date)

Boating Compatibility Determination

RMIS Database Use: Boating

Refuge Names: McNary National Wildlife Refuge

County and State: Walla Walla and Franklin Counties, Washington, Umatilla County, Oregon.

Establishing and Acquisition Authorities:

McNary Refuge was established in 1955 by cooperative agreement with the Corps which transferred administrative control of the original 2,849-acre parcel to the Service (Federal Register of May 1956; Document No. 56-3499; and Cooperative Agreement between the Corps and Service in September 1963, and as amended September 1969). Additional lands were purchased in subsequent years under the Migratory Bird Conservation Act (16 USC 715d). A small parcel was donated to the Service in 1969, under the Refuge Recreation Act (16 USC 460k-1, k-2). In 1972, another parcel was transferred to the Service from the Bureau of Reclamation under the Fish and Wildlife Coordination Act (16 USC 664). In 1999, the original Refuge was transferred from the Corps to the Service through the Water Resources Development Act (WRDA). 1999 bill (P.L. 106-53; 16 USC 668dd). Additional lands were added in 2000 (Cooperative Agreement No. DACW68-4-00-13), dated January 2000 and as amended June 2000.

Refuge Purpose(s):

- for the conservation, maintenance, and management of wildlife, resources thereof, and habitat thereon, under plans... (All units, 16 U.S.C. §§ 664, Fish and Wildlife Coordination Act).
- "for development, conservation and management of wildlife resources..." (All units, General Plan, 1953).
- "particular value in carrying out the National Migratory Bird Management Program" (Original Burbank Unit, and Hanford Islands Unit, General Plan, 1953).
- "multiple use value relating to the conservation of fish life, waterfowl and upland game birds" (Peninsula, Two Rivers, and Wallula Units, General Plan, 1953).
- Snake River Mitigation Compensation Plan (Cummins Property only, Cooperative Agreement between Service and Service, 2000).
- "Dam Project Purposes" [primary purposes of navigation, power development, irrigation, and conservation of wildlife - Public Law Number 14, 79th Congress, First Session, approved March 2, 1945]. (Cooperative Agreement between the Corps and Service, 2000, Stateline and Juniper Canyon units only).
- Other parcels: Small pieces of the Refuge were also added later by purchase under the Migratory Bird Conservation Act. The Refuge also manages a small tract of land under a 10-year lease with the Washington Department of Natural Resources; and, approximately 20 small tracts were acquired under authority of the Refuge Recreation Act of 1962 (PL 87-714).

Additional detail on the purposes of this Refuge may be found in Chapter 1 of the CCP/EA.

National Wildlife Refuge System Mission: "To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." (National Wildlife Refuge System Administration Act of 1966, as amended (16 U.S.C. 668dd et seq.).

Description of Use:

This CD covers "recreational" boating use on the Refuges, that is, boating that is not directly supporting hunting, fishing, wildlife observation, photography, interpretation, or environmental education. The types of recreational boating addressed in this compatibility determination includes: motorboats and nonmotorized boats, including kayaks and canoes, in all Refuge waters.

Boating occurs throughout the year, but the primary recreational boating months are June through September.

At McNary Refuge, boating takes place primarily in the Columbia River and is evenly divided on the Burbank Sloughs, Peninsula, Two Rivers, and Wallula Units. There is some recreational boating (figures unknown) in the Walla Walla River in the Wallula Unit but most boating on the Walla Walla is related to fishing and waterfowl hunting. Some recreational canoeing and kayaking occurs in the Walla Walla River but user surveys have not occurred. As of spring 2006, personal watercrafts were not being used in McNary Refuge waters. It is estimated that McNary Refuge receives over 8,000 recreational boating visits annually with the majority (7,000) of these visits by motorboats.

Preferred Alternative 2 of the Comprehensive Conservation Plan (CCP/EA) would continue to provide recreational boating opportunities with an emphasis on use supporting priority public uses, including wildlife observation/photography, interpretation, environmental education, waterfowl hunting, and fishing.

Currently, boating occurs in the following areas:

McNary Refuge: On the McNary Headquarters Unit, pond III and the area around the pond are closed year-round, therefore, no boating occurs. Pond IV is near the Refuge headquarters office and environmental education center. The area around this pond receives year-round pubic visitation but the pond is not open to boating. The irrigation canal receives some angling, but because its size, shape, steep banks, and lack of launch facilities, it is not practical for boating.

The Burbank Sloughs Unit does not have any boating because the ponds are small and vehicle access is limited to maintenance and emergency vehicles. The Columbia River portion of the Burbank Sloughs receives both recreational motor boating and nonmotorized craft. It is an especially popular area for nonmotorized crafts because the unit has many back sloughs and coves to explore and has shallow waters that favor very small crafts.

On the Two Rivers and Peninsula Units, recreational boating occurs on Casey Pond. The pond has a good quality boat launch and large parking area that has ample space for boat trailers. The other ponds on the units are small and/or shallow and are not used for boating. Boating is popular on the

Columbia River portion of these units.

On the Wallula Unit, the Walla Walla River, including White Tail Bay, is open to all boating. Sanctuary Pond is currently open to boating when water levels permit. Sanctuary Pond is primarily used by a few canoes and kayakers. Boating on the Columbia River portion of the unit is not as popular as on other units because high winds often occur at the sharp bend in the Columbia River making water conditions hazardous.

Availability of Resources: Refuge funds are not spent directly on recreational boating but recreational boating benefits indirectly from investments made in facilities (boat launches, parking areas, access roads) that support Big Six activities such as fishing, hunting, wildlife observation and photography, where boats are used.

See fishing compatibility determination about facility improvements that would benefit both recreational boaters and anglers that use boats to pursue fish.

The main expenditures of Refuge funds to support this use will be in law enforcement (to ensure boaters are complying with area closures and any applicable speed limits or other restrictions) and in monitoring of wildlife populations.

Cost to Administer and Manage Boating Programs at McNary Refuge under Preferred Alternative 2 of the CCP/EA

Activity or Project	One Time Expense ($)	Recurring Expense ($/year)
Law Enforcement	$0	10,000
Monitoring	$0	10,000
Totals	$0	$20,000

Anticipated Impacts of Use:

McNary Refuge provide crucial foraging and resting habitat for wintering and migratory birds, including waterfowl, shorebirds, and other waterbirds. Recreational boating can affect their use in Refuge waters. Boating is not allowed in all Refuge waters; McNary Refuge has areas that are closed to all public use and these areas provide important undisturbed habitat for fish and wildlife. In other areas of the Refuges only nonmotorized boats are allowed. Some smaller water bodies within the Refuges are unsuitable and not practicable for boating. Some areas receive high use; therefore, the wildlife is disturbed or displaced during high visitor usage.

Boating activity, both motorized and nonmotorized, can alter distribution, reduce use of particular habitats or entire areas by waterfowl and other birds, alter feeding behavior and nutritional status, and cause premature departure from areas (Knight and Cole 1995). More sensitive species may find it difficult to secure adequate food or loafing sites as their preferred habitat becomes fragmented and recreation-related disturbances increase (Skagen et al. 1991; Pfister et al. 1992). Motorized boats generally have more impact on wildlife than nonmotorized boats because motorboats produce a combination of movement and noise (Tuite et al. 1983, Knight and Cole 1995). Motorized boats can also cover a larger area in a relatively short time, in comparison to nonmotorized boats.

Canoes and kayaks can cause significant disturbance effects based on their ability to penetrate into shallower marsh areas (Speight 1973, Knight and Cole 1995). In the Ozark National Scenic Riverway, green-backed heron activity declined on survey routes when canoes and boat use increased on the main river channel (Kaiser and Fritzell 1984). Canoes or slow moving boats have also been observed to disturb nesting great blue herons (Vos et al. 1985). Huffman (1999) found that non-motorized boats within 30 meters of the shoreline in south San Diego Bay caused all wintering waterfowl to flush between the craft and shore. However, compared to motorboats, canoes and kayaks appear to have less disturbance effects on most wildlife species (Jahn and Hunt 1964; Huffman 1999; DeLong 2002).

In Denmark, fast-moving boats were observed to have the greatest impact on red-breasted merganser broods (Kahlert 1994). The presence of fast-moving boats also caused the most significant modifications to the amount of time animals spent feeding and resting. In England, an increased rate of disturbance from boats partly caused a decline in roosting numbers of shorebird species (Burton et al. 1996). In addition, boaters have been observed to cause massive flights of diving ducks on the Mississippi River (Thornburg 1973). Motorized boats within 100 meters of shore caused all wintering waterfowl and shorebirds to flush between the craft and shore in south San Diego Bay, regardless of speed (Huffman 1999). However, disturbance to birds in general was reduced when boats traveled at or below the five mph speed limit. Impacts of boating can occur even at low densities, given their noise, speed, and ability to cover extensive areas in a short amount of time. The total number of boats and people can be an inappropriate measure of recreational intensity because the presence of a single boat might be just as disturbing as that of many (Tuite et al. 1983, Knight and Knight 1984). Even a low level of boating activity affects the duration and pattern of use by wildlife (Bratton 1990).

Motorized boats introduce noise and pollution, in the form of gas and oil in water, and particulates in the air, in estuarine and riverine habitats at the Refuge. An EPA report indicates that two-stroke engines, found on many motorized boats, discharge as much as 25% of unspent oil and gas directly into the water. Increased speeds of two-stroke engines can result in greater discharge of unspent oil and gas. Hydrocarbons in gas and oil released from two-stroke engines float on the surface and settle within shallow estuarine habitats. Hydrocarbon pollution has been found to bioaccumulate within the complex food web, posing a serious threat to the marine environment (Tjarnlund et al. 1993). Hydrocarbons can also be transferred to eggs from the plumage of incubating birds. Extremely small amounts of petroleum hydrocarbons can be toxic to eggs and birds that may ingest these contaminants (Hoffman 1989).

Of the wildlife likely most vulnerable to disturbance from boating, this CD focuses on three groups: wintering or nesting waterfowl, nesting colonial waterbirds, and roosting bald eagles. Typically, large concentrations of waterfowl are found in Sanctuary Pond during the fall and winter months. During the spring, waterfowl and shorebirds use the pond in lesser numbers.

A variety of species of nesting colonial birds are found on the McNary Refuge islands. Great blue herons were one of the most sensitive of 23 waterbird species, when measuring flush distances from motorized watercraft (Rodgers and Schwikert 2002). Bald eagles are a common to uncommon winter visitor and up to 32 birds regularly use a winter roost site (Denny, pers. comm.) located at the southern end of the Peninsula Unit.

According to the WDFW priority species recommendations for bald eagle (Watson and Rodrick 2004), boating can negatively affect bald eagle behavior. Foraging eagles on the Columbia River estuary maintained an average distance of 400m (1,300 ft) from stationary boats, and they responded to boat presence by reducing feeding time and the number of foraging attempts (McGarigal et al. 1991). Stalmaster and Newman (1979) found that 50% of wintering eagles in open areas flushed at 150m (500 ft) but 98% would tolerate human activities at 300m (1,000 ft). Activities that disturb eagles while feeding, especially during winter, can cause them to expend more energy, which increases their susceptibility to disease and poor health (Stalmaster 1987). A significant decrease in the proportion of bald eagles feeding at a site was observed when motorized boating activity occurred within 200m of that area in the preceding 30 minutes (Skagen 1980).

Recommendations from WDFW's Priority Habitats and Species reports (Larsen et al. 2004) to reduce human disturbance to priority species follow.

Management Recommendations from WDFW's Priority Habitats and Species

Species	Management Recommendation
American white pelican	• Establish a buffer zone of 400-800m (0.25-0.5 miles) and up to 1,600 m (1.0 mi) from the nesting island, closed to human activity such as boating (especially power boating), fishing, water skiing, discharge of fire arms, wildlife observation, etc. (Doran et al. 2004) • Close nest islands to trespass during the breeding season from March 15 through August 31
Great blue heron	• Establish protective buffer limiting human activity within 820-985 feet from the outer edge of active colonies between February 15 through July 31.
Bald eagle	• Protect core communal roost stands and staging stands with a buffer of approximately 120 m (400 ft) around core stands. The forest structure of buffer stands should include large trees and follow prescriptions to prevent deterioration from the effects of wind throw. • Activities that produce noise or visual effects within 120 m (400 ft) of the edges of communal roost trees or staging trees should be conducted outside of the critical roosting period (November 15 - March 15). • Leave 250-ft wide strips of perch trees and protective buffers along shorelines within eagle nesting territories and winter feeding areas. • Consider timing restrictions to avoid activities that may disturb eagles during critical periods. The following periods and distances may be less in urbanizing areas where eagles show more tolerance to human activities: Wintering: November 15 through March 15 within 400-ft of roost stands

On McNary Refuge islands (Foundation, Badger Island, and Crescent) some population monitoring of tern, cormorant, and gull colonies has been underway for several years. Additional monitoring of pelican and blue heron colonies is needed.

Public Review and Comment:

Open houses were held and written comments were solicited from the public during the drafting of the Comprehensive Conservation Plan and Environmental Assessment. Appendix A of the CCP/EA further details public involvement undertaken during development of the CCP.

Determination (check one below):

_____ Use is Not Compatible

__x__ Use is Compatible with Following Stipulations

Stipulations necessary to ensure compatibility: The following stipulations are required to ensure that motorized and nonmotorized boating is compatible:

- Continue to maintain areas closed year-round to boating, and areas seasonally closed, and waters open year-round.
- Permit no boating that is not associated with waterfowl hunting on Ponds I and II.
- To minimize disturbance to waterfowl on a sanctuary area, prohibit recreational boating on Sanctuary Pond November 1-February 15.
- No air-thrust or inboard water-thrust watercraft or waterskiing will be allowed in Refuge waters.
- Continue periodic law enforcement to help ensure compliance with regulations and area closures.
- Regulations will be described in brochures and posted at Refuge boat ramps. Outreach and education to boating groups will occur periodically.
- Monitor boating activities by periodically assessing and estimating the level of boating activity in various Refuge locations. Maintain survey efforts to assess population numbers for the wintering bald eagle roost on the Peninsula Unit, and Refuge populations of wintering waterfowl and colonial nesting waterbirds. Monitoring data will be used by the Refuge Manager in the periodic re-evaluation of this Compatibility Determination.

Justification:

Recreational boating itself is not considered wildlife-dependent recreation. Although recreational boating has a potential to impact wetland wildlife, implementing the prescribed measures listed in the Stipulations section should reduce many of these impacts. Effects to wintering species from purely recreational boating is expected to be minimal except on sheltered Refuge backwaters that are occasionally used by kayak and nonmotorized boats, however, the listed stipulation preventing boating on Sanctuary pond should reduce this. Summertime use may cause disturbance to nesting colonial waterbirds, but with island integrity being an area of emphasis in the CCP, law enforcement efforts will be stepped up to prevent unauthorized access to closed portions of islands. With this effort, it is anticipated that fewer boaters will closely approach islands, and recreational boating disturbance to colonial waterbirds will decline. Overall, the combination of closed areas, seasonal use areas, minimally used areas, and seasonal high use areas will result in an adequate amount of habitat available to the majority of disturbance-sensitive wildlife. In addition, high-speed boating disturbance near island shorelines would be reduced.

It is anticipated that birds will find sufficient food resources and resting places such that their abundance and use of the Refuges will not be measurably lessened, the physiological condition and production of waterfowl and other waterbirds will not be impaired, their behavior and normal activity patterns will not be altered dramatically, and their overall status will not be impaired.

Improved outreach and educational information for Refuge visitors involved in activities associated with boating would also help to reduce the impacts associated with boating activities. Recreational boating is not a Big Six wildlife dependent recreational activity but it can bring visitors to the Refuge and often enhances the visitors' appreciation of natural resources.

Mandatory 10- or 15-year Reevaluation Date: (Provide month and year for allowed uses.)

_____ Mandatory 15-year re-evaluation date (for wildlife-dependent public uses)
2017 Mandatory 10-year reevaluation date (for all uses other than wildlife-dependent public uses)

NEPA Compliance for Refuge Use Decision: (check one below)

___ Categorical Exclusion without Environmental Action Statement
___ Categorical Exclusion and Environmental Action Statement
_X_ Environmental Assessment and Finding of No Significant Impact
___ Environmental Impact Statement and Record of Decision

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Signatures:

Prepared by: _____ 4/22/07
(Signature) (Date)

Refuge Manager/
Project Leader
Approval: _____ 4/25/07
(Signature) (Date)

Concurrence:

Refuge Supervisor: _____ 4/30/07
(Signature) (Date)

Regional Chief,
National Wildlife
Refuge System
(for HI, ID, OR,
PI, and WA): _____ 5/7/07
(Signature) (Date)

Camping Compatibility Determination

Compatibility Determination

RMIS Database Use: Camping

Refuge Name(s): McNary National Wildlife Refuge

County and State: Walla Walla and Franklin Counties, Washington, Umatilla County, Oregon.

Establishing and Acquisition Authorities:

McNary Refuge was established in 1955 by cooperative agreement with the Corps which transferred administrative control of the original 2,849-acre parcel to the Service (Federal Register of May 1956; Document No. 56-3499; and Cooperative Agreement between the Corps and Service in September 1963, and as amended September 1969). Additional lands were purchased in subsequent years under the Migratory Bird Conservation Act (16 USC 715d). A small parcel was donated to the Service in 1969, under the Refuge Recreation Act (16 USC 460k-1, k-2). In 1972, another parcel was transferred to the Service from the Bureau of Reclamation under the Fish and Wildlife Coordination Act (16 USC 664). In 1999, the original Refuge was transferred from the Corps to the Service through the Water Resources Development Act (WRDA) 1999 bill (P.L. 106-53; 16 USC 668dd). Additional lands were added in 2000 (Cooperative Agreement No. DACW68-4-00-13), dated January 2000 and as amended June 2000.

Refuge Purpose(s):

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- "for development, conservation and management of wildlife resources..." (All units, General Plan, 1953).
- "particular value in carrying out the National Migratory Bird Management Program" (Original Burbank Unit, and Hanford Islands Unit, General Plan, 1953).
- "multiple use value relating to the conservation of fish life, waterfowl and upland game birds" (Peninsula, Two Rivers, and Wallula Units, General Plan, 1953).
- Snake River Mitigation Compensation Plan (Cummins Property only, Cooperative Agreement between Service and Service, 2000).
- "Dam Project Purposes" [primary purposes of navigation, power development, irrigation, and conservation of wildlife-Public Law Number 14, 79th Congress, First Session, approved March 2, 1945] (Corps/Service Cooperative Agreement 2000, Stateline and Juniper Canyon units only).
- Other parcels: Small pieces of the Refuge were also added later by purchase under the Migratory Bird Conservation Act. The Refuge also manages a small tract of land under a 10-year lease with the Washington Department of Natural Resources; and, approximately 20 small tracts were acquired under authority of the Refuge Recreation Act of 1962 (PL 87-714).

Additional detail on the purposes of this Refuge may be found in Chapter 1 of the CCP/EA.

National Wildlife Refuge System Mission: "The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee]).

Description of Use:

McNary Refuge manages the Madam Dorion Campground located on the Wallula Habitat Management Unit as stipulated under an agreement between the Service and the Corps (Cooperative Agreement No. DACW68-4-00-13). The campground is currently in nonfee status and provides vault toilets, an RV dump station (March-Sept), and potable water (March-Sept). There are five tent sites with picnic tables and fire grates. Recreational Vehicle (RV) campers are provided a large gravel area in which to park. There are no developed sites or hook-ups for RV campers. Currently, 25 camping parties can be accommodated. This campground is considered largely primitive due to its lack of development and facilities. Potable water is provided through a domestic well with a chlorine pump. Irrigation water is provided through a pump house located on the Walla Walla River. Both systems are antiquated and require regular maintenance

The campground is used primarily from spring through summer, but is open year round. Current regulations allow for a maximum stay of 14 days within 30 days. Many of the users are seasonal agricultural workers employed throughout the area and other transients who use the campground as temporary housing. The remainder of visitors will camp temporarily en route to other destinations or stay overnight to fish on the Walla Walla River.

Availability of Resources:

Operating the campground in its present state requires the regular staff time of two Wage Grade 8s, one full time and two dual function law enforcement officers (LEOs), and a summer time Youth Conservation Corps crew member, a total staffing investment each year of $40,000.00. The vault toilets are serviced both under contract and by Refuge staff. Annual maintenance of the domestic water and irrigation systems requires $7,000.00 in equipment, in addition to the staff time costs above. Operating the campground as a fee unit would require a full time position for fee collection and operations; at minimum one full day a week of staff time for collection and counting of money; and increased law enforcement presence.

Listed below are the current costs for administering the Madam Dorion Campground.

Category and Itemization	One-time Expense ($)	Recurring Costs ($/yr)
Administration and management:	$0	$40,000
Maintenance:	$0	$7000
Monitoring:	$0	$0
Special equipment, facilities, or improvements:	$20,000	$0
Total	$20,000	$47,000

Offsetting revenues:	$0	$0

Current staffing is not adequate to meet the needs of operating this campground in a compatible manner. Resources are not available to regularly clean facilities, pick up garbage, handle the disposal of garbage, or control weeds and maintain grounds. The antiquated water systems and the RV dump station have cost the Service $10,000.00 in repairs in 2006 alone. Even with these repairs, the systems still fail State certification levels, and will require additional funding to bring them up to standards.

Anticipated Impacts of the Use:

Anticipated impacts of this single camping site include habitat degradation; wildlife disturbance; site disturbance; soil and stream bank erosion; soil compaction; litter, and human waste disposal.

Habitat degradation: The campsite has space for 25 family units or a maximum population of 75-100 people, but seldom exceeds 30. The most likely impact to the Refuges' soil and vegetative resources from camping would start during spring and early summer in the campsite area, adjacent upland, and wetland and riparian areas accessed by campers in daily activities. Fall and winter activities pose less impact to vegetation, except for wood and small twig gathering used for campfires. The campsite is adjacent to riparian woodland and small wetlands which are particularly valuable for nesting passerine birds along the Walla Walla River. The large gravel area used by RV campers is devoid of tree and shrub habitat that would normally be present in this transition zone between riparian and upland vegetation. Both nesting birds and migrant neo-tropical birds that use woodland and understory vegetation are impacted by the loss of this habitat. In addition, birds and other animals that are disturbed by the activities associated with camping will be excluded from these areas. A small grassland field is kept in a mowed condition to allow occasional group camping. According to Sun and Walsh (1998), if not well-managed, camping can adversely affect the values of natural and semi-natural resources. Recreation can degrade land, water, and wildlife, by simplifying plant communities, increasing animal mortality, displacing and disturbing wildlife, and distributing refuse (Boyle and Samson 1985). It may also affect wildlife through trampling of habitat (Liddle 1975) and animal disturbance (Ward et al. 1973). One night of camping was sufficient to cause evident impact in four vegetation types (Cole 1995). Camping-induced soil disturbance may provide conditions that favor weed infestations and serve as a source of new infestations as campers bring in weed seed from other locations.

Wildlife disturbance: The peak periods of use of the campsites are late spring, summer, and fall which coincide with peak use of the Walla Walla River riparian corridor by nesting and migrating birds. Wildlife disturbance results from the presence of campers and their pets throughout the day and night, especially during the breeding season for nesting migratory birds. The Walla Walla River riparian corridor is especially important to nesting and migrating birds. In their study comparing bird use of campground and noncampground riparian sites, Blakesley and Reese (1988) found that differences in avian community composition appeared related to nesting substrate, cover, and foraging substrate. Bird species missing from campgrounds were ground or shrub nesting species and ground foraging species likely as a result of a sparsely vegetated understory. Forest bird species sensitive to human disturbance may avoid campgrounds while more common and widespread species favor them

(Garton et al. 1977). In her study of land use effects on breeding birds on the Snake River, Saab (1996) found that overall bird abundance was significantly reduced in recreation areas while species richness and composition were similar among land use types. In Arizona, Aitchison (1977) found that breeding bird densities were similar between a campground (when closed to campers) and a relatively natural area; however, bird species composition differed between sites, the campground having relatively heavier bodied bird species. Once the campground was opened for human use, the breeding bird population decreased in density and diversity, while on the natural site, the bird population remained the same. Pets accompanying campers have the potential to chase and kill wildlife. Food from campsites may increase small mammal densities (Clevenger and Workman 1977 and Foin et al. 1977) and increase mammalian predators.

In Yosemite National Park, California, Garton et al. (1977) reported that the campground forest had less litter, grass and forb cover, log cover, and fewer trees under 25-feet than noncampground forest. The reduced vegetation was due primarily to campground visitors trampling vegetation, littering, and cutting up logs and trees for firewood. The campground forest became more like a meadow-forest margin favoring Brewer's blackbirds, brownheaded cowbirds, and American robins-edge species that take advantage of human food sources. At Madame Dorion Campground, the presence of brown-headed cowbirds and nonnative house sparrows and starlings associated with campsites, would be detrimental to achieving Refuge goals to increase woodland nesting birds, such as yellow warbler and willow flycatcher, because of nest parasitism and/or competition. In the long term, the effects of continuous campground use will mean the area will support a much-reduced bird community in terms of species richness, diversity, and density. Only the most strongly human-attracted species, such as European house sparrows and starlings, and brown-headed cowbirds would likely benefit from the campsite (Garton et al. 1977).

Site disturbance: Small fires have occurred as a result of camp fires set outside the permitted boundaries of the campground fire grates, and unattended fires have been found in grates during non-burn days. Irresponsible use of fire and damage to standing live or dead trees is most frequent near campsites. In addition, partially fire-consumed logs are occasionally found on the site in- and-out of fire grates provided to campers. There have been several instances of wooden fence posts being torn down to be used in fire grates; and regular evidence of illegal burning of plastics, rubber, and cans, and other items of improperly disposed items at the campsite.

The majority of Refuge campers seek a peaceful outdoor experience. However, there are campers who use camping as an opportunity to party. Loud motors, music, and uncontrolled dogs associated with some Refuge camping, disturb wildlife and detract from a peaceful outdoor experience for other Refuge users. Night time activities, including barking dogs, sounds, and lights likely disturb wildlife in adjacent habitats.

Dogs associated with campers also elicit a greater response from wildlife than pedestrians alone would (MacArthur et al. 1982; Hoopes 1993). In the case of birds, the presence of dogs may flush incubating birds from nests (Yalden and Yalden 1990), disrupt breeding displays (Baydack 1986), disrupt foraging activity in shorebirds (Hoopes 1993), and disturb roosting activity in ducks (Keller 1991). Many of these authors indicated that dogs with people, dogs on-leash, or loose dogs provoked the most pronounced disturbance reactions from their study animals. Despite thousands of years of domestication, dogs still maintain instincts to hunt and chase. Given the appropriate

stimulus, those instincts can be triggered. Dogs in the campground that become unleashed or not under the control of their owners may disturb or potentially threaten the lives of some wildlife. In effect, off-leash dogs increase the radius of human recreational influence or disturbance beyond what it would be in the absence of dogs. The role of dogs in wildlife diseases is poorly understood. However, dogs host endo- and ectoparasites and can contract diseases from, or transmit diseases to, wild animals. In addition, dog waste is known to transmit diseases that may threaten the health of some wildlife and other domesticated animals. Domestic dogs can potentially introduce various diseases and transport parasites into wildlife habitats (Sime 1999). The Refuges can limit dog disturbance which can be mitigated by enforcing current Refuge regulation (50CFR 26.21(b) "...no unconfined domestic animals, including but not limited to dogs…shall be permitted to roam at large…"). However, camping increases the likelihood of unleashed dogs and their impacts.

Soil and stream bank erosion: Camping in riparian areas may also result in increased runoff into streams due in part to exposed soil and reductions in vegetation (Green 1998). In the case of Madame Dorion camping, a large graveled RV site increases the risk of runoff into the Walla Walla River. Significant streambank erosion and vegetation trampling have and continue to occur along the shoreline of the Walla Walla River as a result of camper activities at Madame Dorion Campground. Even low levels of hiking or camping activity have been shown by research to cause substantial degradation to vegetation and soils (Cole in Farrell and Marion, 2002). Foot trails leading from the campground to shoreline fishing areas erode the streambank and impact shoreline vegetation, causing further erosion from seasonal high water levels.

Soil compaction: Soil compaction occurs in areas used for camping, resulting in reduced vegetative reproduction and pioneering of invasive weed species (Liddle 1975). Use of a campsite as infrequently as one night per year is sufficient to cause measurable impacts in many vegetation types, but usually results in height reduction rather than cover loss (Cole 1995). The amount of impact generally increases with an increase of use, but not proportionally. Four times the amount of use did not result in four times the amount of cover and height reduction (Cole 1995).

Litter and human waste disposal: In one study, water quality in streams, measured by total coliform bacteria counts adjacent to camps, was negatively affected by weekend campsite use that revealed higher coliform counts (Christensen et al. 1978). In this western Washington study, bacteria were rapidly transmitted to the river water, even in dry periods. The presence of the single pit-vault toilet at the Madame Dorion campsite reduces, but does not eliminate the risks of coliform entering the Walla Walla River. Campers regularly discard baitcups, trash, and other litter items at the campsite or along the adjacent shorelines while fishing and recreating. Use of detergent, soap, and toothpaste in streams and lakes harms fish and other aquatic life. Campers often leave other undesirable items (straw, couches, mattresses, chairs, etc.). Illegal removal of natural objects (plants, antlers, live animals, etc.) and cultural objects may result from camper visits. Creation of "improvements" (lean-tos, tables, chairs, game poles, etc.) and alteration of the site (trenching) are also byproducts of camping. Refuge law enforcement officers and managers report that Madam Dorion is frequently used as a transient stopover for people, and as a temporary residence. In many cases, these campers are merely using it as a free place to stay until they find somewhere else to go. Many of them will homestead, using the campground as a free place to live until informed by Refuge staff of the 14-day limit. These campers tend to leave more litter and trash, and accommodate their sites for extended

stays by using local materials (wood, vegetation, government property like posts and split-rails) to erect lean-tos, tables, etc.

Public Review and Comment:

Open houses were held and written comments were solicited from the public during the development of the CCP/EA for the McNary and Umatilla Refuges. Appendix A of the CCP/EA further details public involvement undertaken during development of the CCP.

Determination: (check one below)

__X__ Use is Not Compatible

___ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

N/A

Justification:

Camping is not listed as one of the Big Six wildlife dependent recreational uses under the National Wildlife Refuge Improvement Act of 1997, as amended. Furthermore, it has been determined that Madame Dorion campground is not necessary for the safe, practical, and effective conduct of existing Refuge wildlife dependant recreational uses. While a certain portion of campers do participate in fishing activities, it's questionable whether Madam Dorion is needed to facilitate this single activity. Furthermore, present evidence indicates that Madam Dorion is used primarily as a transient stopover for people on their way to other places. The majority of these campers don't stay to partake in other Refuge related activities. In many cases, campers are merely using it as a free place to stay until they find somewhere else to go. Many of them will homestead, using the campground as a free place to live until informed by Refuge staff of the 14-day limit. Many RV users simply stop to use the RV dumping station and move on. This type of common use indicates that many users of Madam Dorion Campground are not employing camping to facilitate other wildlife-dependent uses.

Currently, funding for the infrastructure and staff needed to develop and maintain Madam Dorion is not available. The weekly, monthly, and annual maintenance of this campground continues to pull Refuge resources and staff time away from projects designed to reach and achieve Refuge goals and objectives. Madam Dorion is currently a no-fee campground. Developing a fee collection program would require a substantial initial investment, perhaps as much as $1million to build the infrastructure capable of sustaining and controlling the impacts of use. It is not certain if the revenue collected would offset the initial costs or the annual costs of operations. Currently there is no funding available to develop this campsite, nor is any expected in the near or distant future.

Camping is considered appropriate only when no reasonable (based on time, distance and expense) lodging opportunities are available off-refuge and when staff resources needed to manage camping do not detract from the quality of another priority wildlife-dependent recreational use (U.S. Fish and

Wildlife Service 2001a). There are other private and public campgrounds nearby that accommodate both RV and tent campers with a better level of service. During the CCP review, the team focused on the presence of an alternative, privately-owned campground (Pierce's Happy Valley) directly adjacent to the Refuge. This well maintained fee camping site provides enhanced services over the government-operated campground. The team believes the public is better served by converting the Madame Dorion site to a day use only site, reducing law enforcement issues associated with camping, and allowing the Refuge to promote Big Six uses such as wildlife viewing and photography at the Madame Dorion site. Existing boat launch and rest area facilities would be maintained.
Based on the preceding analysis, camping has a negative impact on Refuge habitat; displaces and disturbs wildlife; is not necessary for the safe, practical, and effective conduct of existing Refuge wildlife dependant recreational uses; and detracts staff and operational resources away from programs that contribute to the conservation and management of wildlife. It materially interferes with the Refuge achieving its purposes, and therefore, is determined not a compatible use.

Mandatory 10- or 15-Year Reevaluation Date: (provide month and year for "allowed" uses only)

n/a

NEPA Compliance for Refuge Use Decision: (check one below)

___ Categorical Exclusion without Environmental Action Statement
___ Categorical Exclusion and Environmental Action Statement
_X_ Environmental Assessment and Finding of No Significant Impact
___ Environmental Impact Statement and Record of Decision

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Signatures:

Prepared by: _____ 4/22/07
(Signature) (Date)

Refuge Manager/
Project Leader
Approval: _____ 4/25/07
(Signature) (Date)

Concurrence:

Refuge Supervisor: _____ 4/30/07
(Signature) (Date)

Regional Chief,
National Wildlife
Refuge System
(for HI, ID, OR,
PI, and WA): _____ 5/7/07
(Signature) (Date)

Horseback Riding Compatibility Determination

RMIS Database Use: Horseback riding

Refuge Name(s): McNary National Wildlife Refuge

County and State: Walla Walla and Franklin Counties, Washington, Umatilla County, Oregon.

Establishing and Acquisition Authorities:

McNary Refuge was established in 1955 by cooperative agreement with the Corps which transferred administrative control of the original 2,849-acre parcel to the Service (Federal Register of May 1956; Document No. 56-3499; and Cooperative Agreement between the Corps and Service in September 1963, and as amended September 1969). Additional lands were purchased in subsequent years under the Migratory Bird Conservation Act (16 USC 715d). A small parcel was donated to the Service in 1969, under the Refuge Recreation Act (16 USC 460k-1, k-2). In 1972, another parcel was transferred to the Service from the Bureau of Reclamation under the Fish and Wildlife Coordination Act (16 USC 664). In 1999, the original Refuge was transferred from the Corps to the Service through the Water Resources Development Act (WRDA) 1999 bill (P.L. 106-53; 16 USC 668dd). Additional lands were added in 2000 (Cooperative Agreement No. DACW68-4-00-13), dated January 2000 and as amended June 2000.

Refuge Purpose(s):

- for the conservation, maintenance, and management of wildlife, resources thereof, and habitat thereon, under plans... (All units, 16 U.S.C. §§ 664, Fish and Wildlife Coordination Act).
- "for development, conservation and management of wildlife resources..." (All units, General Plan, 1953).
- "particular value in carrying out the National Migratory Bird Management Program" (Original Burbank Unit, and Hanford Islands Unit, General Plan, 1953).
- "multiple use value relating to the conservation of fish life, waterfowl and upland game birds" (Peninsula, Two Rivers, and Wallula Units, General Plan, 1953).
- Snake River Mitigation Compensation Plan (Cummins Property only, Cooperative Agreement between Service and Service, 2000).
- "Dam Project Purposes" [primary purposes of navigation, power development, irrigation, and conservation of wildlife - Public Law Number 14, 79th Congress, First Session, approved March 2,1945]. (Cooperative Agreement between the Corps and Service, 2000, Stateline and Juniper Canyon units only).
- Other parcels: Small pieces of the Refuge were also added later by purchase under the Migratory Bird Conservation Act. The Refuge also manages a small tract of land under a 10-year lease with

the Washington Department of Natural Resources; and, approximately 20 small tracts were acquired under authority of the Refuge Recreation Act of 1962 (PL 87-714).

Additional detail on the purposes of this Refuge may be found in Chapter 1 of the CCP/EA.

National Wildlife Refuge System Mission: "The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee]).

Description of Use:

Horseback riding is currently permitted on McNary Refuge on gravel roads that are only open to vehicular travel, and on two designated horse trails as stipulated under a cooperative agreement with the Corps (CA# DACW68-4-00-13). As proposed, horseback riding would be allowed only on roads open to vehicular travel, and on the two previously designated horse trails on the Peninsula and Wallula Units of the Refuge. Both trails are approximately four miles long and traverse both upland and shoreline habitat in their respective units. The trails are primarily used by local riding clubs in groups ranging from two to eight riders at any given time. Most use occurs in the spring and fall months. Some groups have taken an ownership approach to the trails and have adopted trail etiquette rules such as single file riding and staying on the established trail, though evidence of alternate trail use has been documented on the Wallula Unit. Currently, the Refuge has no hard numbers, but annual observations from staff indicate that these trails are receiving infrequent and seasonal use.

Availability of Resources:

The initial costs to administer the designated trail portion of the horseback riding program could cost anywhere from $2,000 to $10,000 for signing, required maintenance and rehabilitation, and parking lot improvements. Annual costs should be minimal after this. The direct costs for road maintenance would be minimal, with road maintenance and monitoring for other public use activities covering all costs. The annual cost to administer and monitor this use through law enforcement personnel is listed below. Base funding is available to cover staff costs.

McNary Costs:

Category and Itemization	One-time ($)	Annual ($/yr)
Administration and management:	$0	$5,000
Maintenance:	$0	$1,000
Special equipment, facilities, or improvements:	$7,000	$200
Total	**$7,000**	**$6,200**
Offsetting revenues:	$0	$0

Anticipated Impacts of the Use(s):

Possible biological impacts of horseback riding include disturbance to wildlife and habitat modification. Wildlife can be affected by the sight and sound of recreationists (Boyle and Sampson 1985). Habitat can be affected through vegetation trampling, soil compaction, and erosion (Cole 1983, 1990).

Some of the effects of disturbance to wildlife from recreational activities include: affecting foraging behavior; reducing productivity; causing abandonment or altering of breeding territories; altering distribution; altering flight behavior; causing energy depletion; and disrupt nest and brood rearing attentiveness (Klein 1989, Knight and Skagen 1988).

Public use activities can also have adverse impacts on vegetation and soil conditions. Impacts from vegetation trampling can lower species richness, decrease ground cover and plant species density, increase weedy annuals, and induce changes in species composition (Gragherr 1983, Bright 1986, Bonanno 1992).

Impacts related to horseback riding include exotic plant seed dispersal (Beck 1993, Hammitt and Cole 1987), soil compaction and erosion (Bainbridge 1974, Hendee et al. 1990, Hammitt and Cole 1987), stream sedimentation (Seney and Wilson 1991), trail widening (Whitaker 1978), vegetation trampling (Nagy and Scotter 1974, Weaver and Dale 1978, Whitaker 1978), aesthetic concerns relative to horse manure (Lee 1975), direct wildlife disturbance (Owen 1973), and direct and indirect conflicts with other recreationists. Exotic plants can be spread to new sites through forage (e.g., hay brought in to feed horses, which contains seeds of exotic plants) and manure (Beck 1993).

Exotic plant establishment is further facilitated by increased trail disturbance as many exotic plants gain a competitive advantage in highly disturbed sites. This soil disturbance is often created through soil compaction with as much as 1,500 p.s.i. exerted on the soil surface with each step (Hendee et al.1990). Additionally, hoof action tends to dig up and puncture the soil surface (McQuaid-Cook 1978) which causes greater sediment loss than any other form of recreational trail use (Seney and Wilson 1991), and increases the potential for disturbance tolerant vegetation (e.g., exotic plant) to establish. Trail widening is also a consideration, as horses tend to walk on the down slope sides of trails (Whitson 1974). Anticipated results include a wider trail, a much wider area of disturbance, and ongoing trail maintenance problems. Vegetation impacts can be much more pronounced considering that hikers tend to flatten vegetation while horses tend to churn up soil, thus, cutting plants off at the rootstalk (Whitaker 1978). This can increase spread of previously established exotics by providing loose disturbed soil for germination and spreading reproductive plant structures. This impact initially increases exotic plant encroachment with light to moderate trail use and eventually lowers species richness values to near zero with heavy impacts (Hendee et al. 1990).

Wildlife disturbance relative to horseback riding has been poorly studied, with most references using other activities such as hiking and cross-country skiing to infer horseback riding impacts. One study identified disturbance tolerance of waterfowl to horseback riders and found that horseback riders could approach geese up to a distance of 46 m. This is compared to suggested hiking trail distances of 75 m (Miller et al. 1998) and boat buffers ranging from 77 to 273 m (depending on the type of boat, whether or not the boat is motorized, and species impacted; Burger et al. 1999). The 46 m

approach distance offered by Owen (1973) is consistent with observations, suggesting that horseback wildlife observers can approach wildlife at closer distances than through other forms of travel. Many wildlife species appear to be habituated to livestock, thus, are less likely to flee when approached through this method. Using the 46 m buffer as an example, this would translate into 144 acres of habitat potentially being impacted directly by horse use, though the two established trails are located along areas where disturbance to waterfowl is not likely. Any form of approach is expected to cause some disturbance, which will vary according to the species affected and the type, level, frequency, and duration of disturbance, as well as the time of day or year that it occurs.

Public Review and Comment:

Open houses were held and written comments were solicited from the public development of the CCP/EA for the McNary and Umatilla Refuges. Appendix A of the CCP/EA further details public involvement undertaken during development of the CCP.

Determination: (check one below)

___ Use is Not Compatible

_X_ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

At present, horseback riding on McNary Refuge does not seem to be impacting wildlife and associated habitat any more than other permitted public use activities (i.e. fishing, hiking, and vehicle access). This is likely due to the relatively low level of use, most of which occurs during cooler months when wildlife is not as active. However, as stated in the anticipated impacts described in the previous section, any increased or unrestricted horseback riding could lead to significant impact on wildlife resources through exotic seed encroachment, vegetative trampling, erosion, and wildlife disturbance. These impacts would be cumulative with associated impacts from other public use opportunities. Therefore, in order to ensure the compatibility of this use, the following stipulations shall be applied.

- Horseback riding must be restricted to those areas already designated for riding (i.e. roads open to vehicular travel, and previously designated trails).
- Open roads and designated trails would be subject to seasonal closures based on presence of sensitive wildlife populations.
- Horse trailers would be restricted to designated parking areas listed in the Refuge brochure and posted on site.
- Horseback riding would be a day use only activity.
- Designated horse trails would be signed at both ends and at regular intervals throughout the length of the trail. Riders would be required to ride single-file on these trails. Riders would be restricted to the designated trail.
- A maximum number of riders per party, day, or season may be established.
- Monitor vegetation damage and impact along roadsides, designated parking areas, and trails.
- Monitor funds required to enforce regulations and administer use. Monitor level of use.

- Activity could be closed upon finding of significant negative impacts to Refuge facilities or wildlife resources.
- Require the use of certified weed-free hay and the washing of horses before and after rides to minimize weed spread.
- All educational and interpretive materials for riders will emphasize principles of the Leave-No-Trace backcountry horse use (www.lnt.org).

Justification:

While not one of the six priority wildlife dependent public uses listed or identified in the National Wildlife Refuge System Administration Act as amended (1997), horseback riding is believed to be a compatible public use under the stipulations outlined in this compatibility determination. Primary reasons for this determination include:
1. Wildlife observation can be an element of horseback riding.
2. Horseback riding allows the Refuges to reach a target audience not reached through other opportunities; horseback riders are potential partners and a potential source of support for the Refuges.
3. Impacts associated with horseback riding would be minimized through implementation of the stipulations noted above.
4. Trail use and impacts will be monitored and the use modified if necessary.

Horseback riding, if practiced as described in the Description of Use section above, would not interfere with the Refuge's achieving their purposes or contributing to the System mission.

Mandatory 10- or 15-Year Reevaluation Date: (provide month and year for "allowed" uses only)

_____ Mandatory 15-year reevaluation date (for wildlife dependent public uses)
12/2017 Mandatory 10-year reevaluation date (for all uses other than wildlife dependent public uses)

NEPA Compliance for Refuge Use Decision: (check one below)

___ Categorical Exclusion without Environmental Action Statement
___ Categorical Exclusion and Environmental Action Statement
_X_ Environmental Assessment and Finding of No Significant Impact
___ Environmental Impact Statement and Record of Decision

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Signatures:

Prepared by: _____ 4/22/07
(Signature) (Date)

Refuge Manager/
Project Leader
Approval: _____ 4/25/07
(Signature) (Date)

Concurrence:

Refuge Supervisor: _____ 4/30/07
(Signature) (Date)

Regional Chief,
National Wildlife
Refuge System
(for HI, ID, OR,
PI, and WA): _____ 5/7/07
(Signature) (Date)

Swimming and Beach Use Compatibility Determination

Use: Swimming and Beach Use

Refuge Name: McNary National Wildlife Refuge

County and State: Walla Walla and Franklin Counties, Washington, and Umatilla County, Oregon.

Establishing and Acquisition Authorities:

McNary Refuge was established in 1955 by cooperative agreement with the Corps which transferred administrative control of the original 2,849-acre parcel to the Service (Federal Register of May 1956; Document No. 56-3499; and Cooperative Agreement between the Corps and Service in September 1963, and as amended September 1969). Additional lands were purchased in subsequent years under the Migratory Bird Conservation Act (16 USC 715d). A small parcel was donated to the Service in 1969, under the Refuge Recreation Act (16 USC 460k-1, k-2). In 1972, another parcel was transferred to the Service from the Bureau of Reclamation under the Fish and Wildlife Coordination Act (16 USC 664). In 1999, the original Refuge was transferred from the Corps to the Service through the Water Resources Development Act (WRDA) 1999 bill (P.L. 106-53; 16 USC 668dd). Additional lands were added in 2000 (Cooperative Agreement No. DACW68-4-00-13), dated January 2000 and as amended June 2000.

Refuge Purpose(s):

- for the conservation, maintenance, and management of wildlife, resources thereof, and habitat thereon, under plans... (All units, 16 U.S.C. §§ 664, Fish and Wildlife Coordination Act).
- "for development, conservation and management of wildlife resources..." (All units, General Plan, 1953).
- "particular value in carrying out the National Migratory Bird Management Program" (Original Burbank Unit, and Hanford Islands Unit, General Plan, 1953).
- "multiple use value relating to the conservation of fish life, waterfowl and upland game birds" (Peninsula, Two Rivers, and Wallula Units, General Plan, 1953).
- Snake River Mitigation Compensation Plan (Cummins Property only, Cooperative Agreement between Service and Service, 2000).
- "Dam Project Purposes" [primary purposes of navigation, power development, irrigation, and conservation of wildlife - Public Law Number 14, 79th Congress, First Session, approved March 2,1945]. (Cooperative Agreement between the Corps and Service, 2000, Stateline and Juniper Canyon units only).
- Other parcels: Small pieces of the Refuge were also added later by purchase under the Migratory Bird Conservation Act. The Refuge also manages a small tract of land under a 10-year lease with

the Washington Department of Natural Resources; and, approximately 20 small tracts were acquired under authority of the Refuge Recreation Act of 1962 (PL 87-714).

Additional detail on the purposes of this Refuge may be found in Chapter 1 of the CCP/EA.

National Wildlife Refuge System Mission: "The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee]).

Description of Use:

Under Preferred Alternatives 2 of the CCP/EA, current seasonal beach use and associated other uses such as swimming would be discontinued on all beaches and islands of the Refuge. Summertime beach use is officially not allowed currently but occurs due to lack of law enforcement. The majority of summertime beach use occurs at Strawberry Islands; a minor amount of use occurs at Foundation, Badger and Crescent Islands.

The uses that occur on these sites and that are analyzed in this CD include non-Big Six uses such as picnicking, sun bathing, walking on the beaches, and swimming from the beaches. Waterskiing takes place in the deep waters outside of Refuge jurisdiction. Waterskiing will not be allowed on Refuge waters and has been determined to be not appropriate as a Refuge use.

Observational information by staff to date, suggests substantial increase in the number of beach users in recent years. This trend is expected to continue into the future, especially in light of developments in local communities. Illegal trespass onto the closed islands, as well as overnight camping on opened beaches, is now occasionally encountered.

Availability of Resources:

Currently, staffing levels for law enforcement are inadequate for implementation of this or other alternate management options for allowing swimming and beach use. Current law enforcement staffing consists of only one full time LE Officer (LEO) covering eight refuges spread out nearly 250 miles within the Mid-Columbia Basin. Boat patrols require a minimum of two LEOs. Availability of dedicated funding would provide possible opportunity to expand such agreements for improved enforcement. Current staffing levels of law enforcement are totally inadequate for conducting this public use.

	One-time Costs ($)	Recurring Costs ($/year)
Law Enforcement		18,000
Sign maintenance	1,500	800
Program monitoring/education	1,000	1,200
Administration		1,500
TOTAL	$2,500	$21,500

Anticipated Impacts of the Use:

Impacts on Wildlife:

Breeding Birds—We anticipate negative impacts to colonial nesting birds from direct beach use at the designated sites. In addition, nesting birds cannot use beach areas for foraging sites while feeding young; and young fledged birds cannot use beach areas being used by humans. Although the timing of most beach use occurs in late summer (July 1-September 30), which is generally after the nesting season, young birds and foraging adults would still use the beach areas well into July and early August, if they were available. Beach use is supported by boating, and there is a considerable body of evidence suggesting negative consequences for birds from boating (USDOI, 1996 - For a wealth of information on disturbance caused by boating and beach use see pp. 37-40; for nesting occurrences see p. 34, Table 5.) Also see Boating and Fishing CDs in the CCP.

Preferred nesting habitat that is abundant on most islands for use by Canada geese is sage-steppe areas that provide large shrubs for concealment and protection, but also allow sufficient open space for seeing and escaping approaching threats. Other areas are also used for nesting by geese such as riparian trees and shrubs, and tall grasses that provide good concealment. The timing of the heaviest use by humans occurs in the summer, which is a time of year that is well after nesting activity. However, the sandy beach sites are preferred for loafing by geese. The presence of human activity on beaches precludes that use by the birds. Human-induced fire resulting from beach users is a threat to the sagebrush habitat used by nesting geese. Such a fire could totally eliminate the sagebrush supporting nesting geese.

Other breeding bird use on the islands includes bank swallows, various passerines, American avocets, California quail, ring-necked pheasant, and possibly long-billed curlews and burrowing owls. Designated and seasonal beach use would likely cause minor negative impacts for all said species. Human use directly on the islands would occur generally outside of the main breeding season; however, some of the species such as bank swallows and avocets could still be using beach sites for nesting during July. Fledged young of the year are known to use beach areas and associated vegetation zones for resting and feeding. Another concern is loss of beach areas for use by migrating shorebirds and other waterbirds including American white pelicans. Beach users displace shorebirds causing additional stress during the migration period. In addition, any boating activity during the breeding season could cause serious harm, especially to terns, avocets, and ducks.

Habitat—With use restricted to designated beaches, there would be only minimal disturbance to habitat. The designated beaches are frequently washed over and are very dynamic. However, illegal activities stemming from the designated beaches pose the most serious threats to habitats on the island. Paper/plastic litter and human waste are expected problems, as well as some trespass onto the closed island areas. Wildfire resulting from beach users is the most significant threat, with fire ignitions potentially resulting from camp fires, fireworks or other sources. Campfires and use of fireworks are common violations on the beaches and pose a significant threat to habitat and wildlife resources.

Cultural Resources—The islands have a rich cultural resource history and use by early Americans. The

potential for loss or damage to important sites is increased by the presence of beach use and associated public uses, including the potential for fire, disturbance, and inadvertent discoveries and/or exposures.

Public Review and Comment:

Open houses were held and written comments were solicited from the public during development of the CCP/EA for the McNary and Umatilla Refuges. Appendix A of the CCP/EA further details public involvement undertaken during development of the CCP.

Determination (check one below):

__X__ Use is Not Compatible

_____ Use is Compatible with the following stipulations

Stipulations Necessary to Ensure Compatibility:

n/a

Justification:

Swimming and beach use is not listed as one of the Big Six wildlife dependent recreational uses under the National Wildlife Refuge Improvement Act of 1997, as amended. Swimming and beach use on the three designated island sites on Umatilla Refuge are not necessary for the safe, practical, and effective conduct of existing Refuge wildlife-dependant recreational uses. While a certain portion of beach users do participate in fishing activities, beach access is not needed to facilitate this single activity. Furthermore, campfires and use of fireworks are common violations on the beaches and pose a significant threat to habitat and wildlife resources, especially trees used by colonial nesting birds and sagebrush used by nesting geese. Beach users displace wildlife including migrating shorebirds, fledged young of the year birds who use the beach vegetation zone, and adult colonial nesting birds foraging to feed young of the year in nests.

Swimming and beach use does not contribute to the public's understanding and appreciation of the Refuge's natural and cultural resources, nor is the use beneficial to the Refuge's natural or cultural resources. Beach use increases the potential for damage or degradation of important cultural resources on the islands.

Currently, the availability of resources for administration and adequate law enforcement patrols to implement swimming and beach use is not sufficient. Given the growing limitations of staffing and budget, resources are insufficient to meet the requirements for needed protection to wildlife resources and the public safety of Refuge visitors.

Based on the analysis above, swimming and beach use has a negative impact on Refuge habitat, displaces wildlife, and pulls staff and operational resources away from programs that contribute to the conservation and management of wildlife, therefore, materially interferes with the Refuge achieving its

purposes, and is determined not a compatible use.

Mandatory 10- or 15-Year Reevaluation Date: (provide month and year for "allowed" uses only)

N/A

NEPA Compliance for Refuge Use Decision: (check one below)

___ Categorical Exclusion without Environmental Action Statement
___ Categorical Exclusion and Environmental Action Statement
_X_ Environmental Assessment and Finding of No Significant Impact
___ Environmental Impact Statement and Record of Decision

References:

U.S. Department of the Interior. 1995. Environmental Assessment of Public Use on Umatilla National Wildlfe Refuge, Morrow County, Oregon, Benton County, Washington.

Signatures:

Prepared by: _____ 4/22/07
(Signature) (Date)

Refuge Manager/
Project Leader
Approval: _____ 4/25/07
(Signature) (Date)

Concurrence:

Refuge Supervisor: _____ 4/30/07
(Signature) (Date)

Regional Chief,
National Wildlife
Refuge System
(for HI, ID, OR,
PI, and WA): _____ 5/7/07
(Signature) (Date)

Farming Compatibility Determination

RMIS Database Use: Farming

Refuge Name(s): McNary National Wildlife Refuge

County and State: Walla Walla and Franklin Counties, Washington; Umatilla County, Oregon.

Establishing and Acquisition Authorities:

McNary Refuge was established in 1955 by cooperative agreement with the Corps which transferred administrative control of the original 2,849-acre parcel to the Service (Federal Register of May 1956; Document No. 56-3499; and Cooperative Agreement between the Corps and Service in September 1963, and as amended September 1969). Additional lands were purchased in subsequent years under the Migratory Bird Conservation Act (16 USC 715d). A small parcel was donated to the Service in 1969, under the Refuge Recreation Act (16 USC 460k-1, k-2). In 1972, another parcel was transferred to the Service from the Bureau of Reclamation under the Fish and Wildlife Coordination Act (16 USC 664). In 1999, the original Refuge was transferred from the Corps to the Service through the Water Resources Development Act (WRDA) 1999 bill (P.L. 106-53; 16 USC 668dd). Additional lands were added in 2000 (Cooperative Agreement No. DACW68-4-00-13), dated January 2000 and as amended June 2000.

Refuge Purpose(s):

- for the conservation, maintenance, and management of wildlife, resources thereof, and habitat thereon, under plans... (All units, 16 U.S.C. §§ 664, Fish and Wildlife Coordination Act).
- "for development, conservation and management of wildlife resources..." (All units, General Plan, 1953).
- "particular value in carrying out the National Migratory Bird Management Program" (Original Burbank Unit, and Hanford Islands Unit, General Plan, 1953).
- "multiple use value relating to the conservation of fish life, waterfowl and upland game birds" (Peninsula, Two Rivers, and Wallula Units, General Plan, 1953).
- Snake River Mitigation Compensation Plan (Cummins Property only, Cooperative Agreement between Service and Service, 2000).
- "Dam Project Purposes" [primary purposes of navigation, power development, irrigation, and conservation of wildlife - Public Law Number 14, 79th Congress, First Session, approved March 2, 1945]. (Cooperative Agreement between the Corps and Service, 2000, Stateline and Juniper Canyon units only).
- Other parcels: Small pieces of the Refuge were also added later by purchase under the Migratory Bird Conservation Act. The Refuge also manages a small tract of land under a 10-year lease with the Washington Department of Natural Resources; and, approximately 20 small tracts were acquired under authority of the Refuge Recreation Act of 1962 (PL 87-714).

Additional detail on the purposes of this Refuge may be found in Chapter 1 of the CCP/EA.

National Wildlife Refuge System Mission: "The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee]).

Description of Use:

Current cropland farming practices include organic and biological farming (Cropland Management Plan, 1996). Under organic farming practices the use of chemical fertilizer and pesticides are eliminated. The use of organic fertilizers (such as manure) and crop rotation (including nitrogen fixing crops) are used to improve soil fertility and tilth. Control of weeds and plant pests are accomplished by crop rotation, mechanical techniques, and biological controls such as predatory insects. Crop variety is limited as some crops are unable to be successfully cultivated under organic practices in this area. Under biological farming practices, crops grown are selected primarily for their wildlife value. Use of organic fertilizer and crop rotations are used to improve soil fertility, but chemical fertilization is used if soil tests determine particular deficiencies, or if manure or crop rotations are found impractical for a particular crop. Plant pests and weeds are controlled by crop rotations, mechanical techniques, and bio-controls where practical, but approved low toxicity chemical agents are used as needed on a case by case basis.

Production methods include cooperative agreement farming, which involves a negotiated agreement between the Refuge and private farmer to produce crops for both parties. The cooperator is responsible for all the costs of production except for maintenance of underground irrigations systems and pumps. In return for producing a specified amount of crops for the Refuge, the cooperator is allowed to harvest and sell the remaining crops. All crop selections are agreed to by the Refuge, and special conditions are documented in the cooperative agreement (Cropland Management Plan, 1996).

On McNary Refuge, a total of 632 acres are in cooperative farming programs, with the Refuge obtaining 25% of the crop share for wildlife and the cooperator harvesting the remainder (75%) for their share. The 75%/25% (cooperator/Refuge) share ratio was deemed appropriate for this area by the Oregon State University Agricultural Extension office (Cropland Management Plan, 1996). Any field which is double cropped during the growing season is assessed the 75%/25% cooperator/Refuge split for each crop (Cropland Management Plan, 1996).

Crops grown include cereal grains and green forage for migratory and wintering waterfowl use. Grain crops grown to meet the high energy demands of migratory and wintering waterfowl include corn, wheat and occasionally buckwheat. Green forage crops which provide for the fall, winter and spring Canada goose population include alfalfa, winter wheat, and occasionally grass (Cropland Management Plan, 1996). The Refuge shares are obtained by 1) taking a share of a crop which is also being harvested by the farmer or 2) having the farmer grow specific crops just for the Refuge by splitting a field or devoting an entire field to Refuge shares. Exceptions include involving the cooperator in establishing native upland grasses in former farm fields, as well as developing native grasses in shelterbelts on the perimeter of current farming circles for improved weed and erosion

control and wildlife uses.

The Comprehensive Conservation Plan (CCP) would continue this program; see Objective Ia.

Availability of Resources:

The following funding/annual costs would be required to administer and manage cooperative agreement farming, as described above.

	One-time Costs	Recurring Costs
Underground irrigation system and pumps		$10,000
Road maintenance		$1,000
Program monitoring		
Administration		$4,000
TOTAL	0	$15,000

Anticipated Impacts of the Use:

The Columbia Basin and the lands of the Umatilla Refuge were once dominated by shrub-steppe habitat. This greater area, at present, is dominated by cropland farming. Combined with other development in the area, this once vast expanse of shrub-steppe habitat has been significantly degraded as a result of conversion, fragmentation, small patch size, lack of connectivity, introduction and spread of nonnative invasive weeds, livestock grazing, and fires. With a parallel history, the biological integrity of the relatively small area (10,255 acres) of shrub-steppe habitat on the Refuge is in an overall degraded to highly degraded state. Croplands represent approximately 9.5 percent of the total upland area on the Refuge. Other direct impacts of cropland management include exposure of soils to wind erosion, the use and introduction into the environment of chemical agents from pesticide usage, and continuance of the introduction and spread of weeds through use of manures and field to field movement of cultivating and harvesting equipment.

About 100 bird species can occur in sagebrush habitats (Braun et al. 1976). Some of these species are sagebrush-obligates, almost entirely dependent on sagebrush habitats year-round or during the breeding season. These species include sage grouse, Brewer's sparrow, sage sparrow, and sage thrasher. These sagebrush obligate birds have been reduced or most likely extirpated as breeders on Umatilla Refuge. Some of the songbirds may occur as migrants. When considering the conversion of Refuge croplands to shrub-steppe habitat the potential benefit would be negligible on a landscape scale for improving functional attributes of this system in support of dependent species (in particular, obligate nesting species).

Many other species occur in shrub-steppe habitat but are not as dependent on sagebrush. Examples of these species are burrowing owl, lark sparrow, vesper sparrow, horned lark, loggerhead shrike,

long-billed curlew, and western meadowlark.

Primary invasive plants are described in Chapter 4 of the CCP/EA and in the 1996 and 1999 Cropland Management Plans.

Public Review and Comment:

Open houses were held and written comments were solicited from the public during development of the CCP/EA for the McNary and Umatilla Refuges. Appendix A of the CCP/EA further details public involvement undertaken during development of the CCP.

Determination (check one below):

_____ Use is Not Compatible

__X__ Use is Compatible with the following stipulations

Stipulations Necessary to Ensure Compatibility:

The following stipulations ensure that Cropland Farming Management is compatible:

- Cropland farming will be done under an approved Cropland Management Plan per agency policy.
- Annual cooperative farming agreements will be established with the cooperator per agency policy.
- Pest plants and weeds will be controlled by crop rotations, mechanical treatments and biological controls where practical; approved pesticides will be used only on a case by case basis.
- Pesticide use must be in compliance with the Service policy requirements for completing an approved Pesticide Use Proposal, and it must meet other State and Federal requirements.
- Cooperators will provide a record of herbicides used including chemical name, amount used, date, location, and how applied.
- Pesticide applicators must meet all State, Federal and agency requirements.
- Diligence shall be exercised in the control of county-listed invasive weeds.
- Monitoring of the cropland farming program will be performed by qualified Refuge staff.

Justification:

Although not a Big-Six use, cropland farming management is a critical Refuge operation in meeting purposes of the Refuge (e.g., "particular value in carrying out the National Migratory Bird program"),

as well as goals and objectives established in the CCP/EA (e.g., Goal 1: Manage high quality food and sanctuary to support large concentrations of migratory waterfowl; Objective 1A: Provide Crops for Waterfowl). Options for providing a more natural means to secure food supplies for area waterfowl are limited (Cropland Management Plan 1996). Area wetlands do not produce adequate natural waterfowl foods, because of their rarity and the lack of availability of high quality, productive wetlands. Consequently, waterfowl have relied heavily on waste grain in area corn fields (Cropland Management Plan, 1996).

The Refuge share of cropland farming, which is managed primarily for the benefit of waterfowl, includes cereal grains and green forage. Grain crops grown to meet the high energy needs of migratory/wintering waterfowl include corn, wheat, and buckwheat. Green forage crops, which primarily provide for the fall, winter, and spring goose populations, include alfalfa, winter wheat, and occasionally grass. Because of restrictions on crops grown, areas farmed by the cooperator for their share provide additional benefit (not included in Refuge share) to waterfowl by providing waste grains and/or green forage in harvested fields.

Mandatory 10- or 15-Year Reevaluation Date: (provide month and year for "allowed" uses only)

_____ Mandatory 15-year reevaluation date (for wildlife-dependent public uses)
12/2017 Mandatory 10-year reevaluation date (for all uses other than wildlife-dependent public uses)

NEPA Compliance for Refuge Use Decision: (check one below)

____ Categorical Exclusion without Environmental Action Statement
____ Categorical Exclusion and Environmental Action Statement
__X__ Environmental Assessment and Finding of No Significant Impact
____ Environmental Impact Statement and Record of Decision

References

U.S. Fish and Wildlife Service. 1999. Cropland Management Plan. Mid Columbia Refuge Complex.
U.S. Fish and Wildlife Service. 1996. Cropland Management Plan. Mid Columbia Refuge Complex.

Signatures:

Prepared by: _____ 4/22/07
(Signature) (Date)

Refuge Manager/
Project Leader
Approval: _____ 4/25/07
(Signature) (Date)

Concurrence:

Refuge Supervisor: _____ 4/30/07
(Signature) (Date)

Regional Chief,
National Wildlife
Refuge System
(for HI, ID, OR,
PI, and WA): _____ 5/7/07
(Signature) (Date)

Research Compatibility Determination

RMIS Database Use: Research; Scientific Collecting; Surveys

Refuge Name(s): McNary National Wildlife Refuge

County and State: Walla Walla and Franklin Counties, Washington; Umatilla County, Oregon.

Establishing and Acquisition Authorities:

McNary Refuge was established in 1955 by cooperative agreement with the Corps which transferred administrative control of the original 2,849-acre parcel to the Service (Federal Register of May 1956; Document No. 56-3499; and Cooperative Agreement between the Corps and Service in September 1963, and as amended September 1969). Additional lands were purchased in subsequent years under the Migratory Bird Conservation Act (16 USC 715d). A small parcel was donated to the Service in 1969, under the Refuge Recreation Act (16 USC 460k-1, k-2). In 1972, another parcel was transferred to the Service from the Bureau of Reclamation under the Fish and Wildlife Coordination Act (16 USC 664). In 1999, the original Refuge was transferred from the Corps to the Service through the Water Resources Development Act (WRDA) 1999 bill (P.L. 106-53; 16 USC 668dd). Additional lands were added in 2000 (Cooperative Agreement No. DACW68-4-00-13), dated January 2000 and as amended June 2000.

Refuge Purpose(s):

- for the conservation, maintenance, and management of wildlife, resources thereof, and habitat thereon, under plans... (All units, 16 U.S.C. §§ 664, Fish and Wildlife Coordination Act).
- "for development, conservation and management of wildlife resources..." (All units, General Plan, 1953).
- "particular value in carrying out the National Migratory Bird Management Program" (Original Burbank Unit, and Hanford Islands Unit, General Plan, 1953).
- "multiple use value relating to the conservation of fish life, waterfowl and upland game birds" (Peninsula, Two Rivers, and Wallula Units, General Plan, 1953).
- Snake River Mitigation Compensation Plan (Cummins Property, Corps/Service Cooperative Agreement, 2000).
- "Dam Project Purposes" [primary purposes of navigation, power development, irrigation, and conservation of wildlife - Public Law Number 14, 79th Congress, First Session, approved March 2, 1945]. (Corps/Service Cooperative Agreement 2000, Stateline and Juniper Canyon units only).
- Other parcels: Small pieces of the Refuge were also added later by purchase under the Migratory Bird Conservation Act. The Refuge also manages a small tract of land under a 10-year lease with the Washington Department of Natural Resources; and, approximately 20 small tracts were acquired under authority of the Refuge Recreation Act of 1962 (PL 87-714).

Additional detail on the purposes of this Refuge may be found in Chapter 1 of the CCP/EA.

National Wildlife Refuge System Mission: "The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee]).

Description of Use: Fish, wildlife, and habitat research is an existing use and is conducted on Refuge lands and waters by independent researchers, partnering agencies, educational groups, and Refuge staff. Some research is used to address basic wildlife conservation questions such as survival of federally listed endangered and threatened juvenile salmon stocks in the Columbia River. Other research is more specific to Refuge management and resources and is used in an adaptive way to measure the effectiveness of Refuge habitat and wildlife management programs.

Umatilla and McNary Refuges together receive three to seven requests per year on average to conduct scientific research on the Refuges. Most have involved Columbia River System salmon and steelhead research and include studies of: piscivorous waterbirds; Caspian tern foraging; salmon/ steelhead PIT tag recovery; smolt radio telemetry and migration patterns; habitat use of burrowing owls; and wetland/groundwater hydrology. Between the years 2000 and 2005 there were between four and seven active special use permits issued for research and monitoring studies including those summarized in the following table. Under the CCP, special use permits would only be issued for monitoring and investigations which contribute to the enhancement, protection, preservation, and management of native plant and wildlife populations and their habitats, especially as they relate to Refuge lands and management activities.

Summary of research activities at McNary Refuge 2000-2005.

Organization	Research Topic and Description	Location of Research and Habitats	Timing of Research	Equipment and Facilities Used
OSU and Real Time Research (contract with NOAA Fisheries Service); Dr. Daniel Roby	Avian predation of salmonids; mainly Caspian terns diet preferences and impacts to salmon and steelhead smolts	Colonial nesting waterbird colonies primarily on Crescent, Badger, and Foundation Islands in Columbia River	Nesting season from April through June; research started in 1998	Seasonal field spy blind set up; access by boats; low-altitude fly-over some years
Oregon State University (contract with NOAA Fisheries Service); Dr. Daniel Roby	Caspian tern feeding behavior and selective foraging; net-pen study on Refuge wetland	Unit II wetland at McNary Refuge's Burbank Slough	May through June	Access to shoreline/ wetland by vehicle on established roads/trails; net-pens in Wetland II
NOAA Fisheries Service; Northwest Fisheries Science Center; Brad Ryan	Salmon/steelhead PIT tag recovery; nesting colonies are searched for tags deposited on the island as a result of predation	Nesting islands are searched for PIT tags; both hand-held and jeep mounted detection antenna are used; primarily on Crescent, Badger, and Foundation Islands in Columbia River	Fall and early winter; annual and ongoing research effort	Access to island by boat; at Crescent Is. a jeep is used to mount radio tag receiver and magnetic collector otherwise hand-held wands are used

Organization	Research Topic and Description	Location of Research and Habitats	Timing of Research	Equipment and Facilities Used
NOAA Fisheries Service: Northwest Fisheries Science Center; Brad Ryan	Smolt radio telemetry; use of fixed-site radio telemetry to track smolt migration in Columbia and Snake Rivers	Radio telemetry antennas and receivers placed on Refuge at Strawberry Island in the Snake River and Peninsula Unit and Crescent Island in the Columbia River	Antennas are placed during the smolt migration period from April through August	Access to islands by boat; 8-12 foot antenna secured by guy wires
USGS-BRD and Arizona Coop Fish and Wildlife Unit	Habitat use and requirements of burrowing owls	Refuge uplands and shrub steppe areas; off-Refuge sites; nest searches conducted and habitat evaluated	Breeding season from February through July	Access by vehicle on established roads

Research proposals are reviewed by the Refuge and conservation partners, as appropriate. If a proposal is approved, special use permits are issued and administered by the Refuge Manager. Evaluation criteria for approving studies will include, but not be limited to, the following:

- research contributing to specific Refuge management issues will be given higher priority over other research requests
- research that will conflict with other ongoing research, monitoring, or management programs will not be granted
- research projects that can be accomplished off-Refuge are less likely to be approved
- level and type of disturbance will be carefully evaluated when considering a request
- Refuge evaluation will determine if any effort has been made to minimize disturbance through study design, including considering adjusting location, timing, scope, number of permittees, study methods, number of study sites, etc.
- Approvals are subject to sufficient staffing for the Refuge to monitor researcher activity in a sensitive area
- the length of the project will be considered and agreed upon before approval
- projects will be reviewed annually
- These criteria will also apply to any properties acquired in the future within the approved boundary of the Refuge

Availability of Resources: Under the Preferred Alternative 2, the following annual funding costs (based on FY 2005 costs) would be required to administer and manage research activities as described above. Refuge operational funds are currently available through the Service budget process to administer this program as envisioned under Alternative 2. However, grants may be sought with the assistance of the Friends of Mid-Columbia River Refuges group to assist for smaller projects.

Category and Itemization	One-time ($)	Annual ($/yr)
Administration and management (Refuge biologist and managers): Evaluation of applications and permit management	$0	$1,500
Maintenance:	$0	$0

Monitoring of ongoing research projects and their effects: (Refuge biologist and managers)	$0	$2,500
Special equipment, facilities, or improvements:	$0	$0
Offsetting revenues:	$0	$0
Total	$0	$4,000

Anticipated Impacts of Use:

Short term impacts - Use of the Refuge to conduct research will generally benefit Refuge fish, wildlife, plant populations, and their habitat, and contribute to recovery of listed threatened and endangered species. Monitoring and research investigations are also an important component of adaptive management. Research investigations would be used to evaluate salmon and steelhead recovery efforts and assist managers in managing Refuge habitats to aid in recovery efforts. Specific restoration and habitat management questions would be addressed in research investigations, such as the burrowing owl studies, to improve habitat and benefit wildlife populations.

Standardized monitoring would be used to insure data compatibility for comparisons from across the landscape. An expected short-term effect of monitoring and research investigations is that Refuge management activities would be modified to improve habitat and wildlife populations, as a result of new information.

Some effects would occur through disturbance which is expected with some research activities, especially where researchers are entering sanctuaries or sensitive islands with colonial nesting birds. Researcher disturbance could include altering wildlife behavior, going off designated trails, collecting soil and plant samples or trapping and handling wildlife. Death of animals due to the use of lethal collection methods as well as accidental death and injury from trapping and handling and other invasive procedures (Pit-tagging, force feeding, and blood collection) can occur. American white pelican colonies are known to be sensitive to human disturbance and will abandon nests. The public's perception of lethal methods, such as the taking of cormorants to determine stomach contents, might be negative.

Disturbance to breeding, resting and feeding wildlife and their habitats may occur through frequent contact with researchers performing data collection and monitoring activities. Results of disturbance could include the abandonment of nest and young resulting from frequent visitation to nest or breeding sites. In addition, trapping and marking of wildlife for habitat and population studies may result in injury and mortality; study of food habits, parasitism or disease may require the taking of animals; and measurement of habitat characteristics or experimental manipulation of habitats may result in the alteration or destruction of wildlife habitat.

Damage or alteration to the habitat from researchers would be minor; however, some increase in invasive plants is possible from ground disturbance and/or transportation of source seed on research equipment and personnel. The blinds used by tern researchers at Crescent Island are small, on the surface, temporary, and are removed at the end of each season. The radio antenna used for PIT tag monitoring is moored to the ground with stakes and wires; but they too are removed after each season of use and have no lasting impact. The use of vehicles on Crescent Island to collect Pit-tags

could damage young vegetation. However, the nesting colonies are found in the cobble-stone substrate of the island, which is generally devoid of vegetation and/or limited by the bird colonies themselves.

Most effects would be minor because only a minimum number of samples (e.g., water, soils, vegetative litter, plants, and macroinvertebrates) and required for identification and/or experimentation and statistical analysis would be permitted and captured, and marked wildlife would be released. Refuge evaluation of research proposals would insure that only proposals with adequate safeguards to minimize impacts would be accepted. Potential impacts associated with research activities would be minimized because sufficient restrictions would be included as part of the study design, and researcher activities would be monitored by Refuge staff. Refuge staff would ensure research projects contribute to the enhancement, protection, preservation, and management of native Refuge wildlife populations and their habitats, thereby, helping the Refuges fulfill the purposes for which they were established, the mission of the National Wildlife Refuge System, and the need to maintain ecological integrity.

Additionally, special use permit conditions would include restrictions to further ensure impacts to wildlife and habitats are avoided and minimized.

Long-term impacts Expected long-term and cumulative effects include: a growing body of science-based data and knowledge as new/continued monitoring and new/continued research complements and expands upon previous investigations; resulting in an expanded science-based body of data and information from which to draw upon to implement the best Refuge management possible. Natural resources inventory, monitoring and research are not only provisions of the Improvement Act, but they are necessary tools to maintain biological integrity and diversity and environmental health, which are also key provisions of the Act. Inventory, monitoring and research are intended to improve habitat and wildlife populations. This in turn could improve wildlife-dependent recreation by increasing encounters with wild things.

Public Review and Comment: Open houses were held and written comments were solicited from the public during development of the CCP/EA for the McNary and Umatilla Refuges. Appendix A of the CCP/EA further details public involvement undertaken during development of the CCP.

Determination (check one below):

_____ Use is Not Compatible
__x__ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

The criteria for evaluating a research proposal, outlined in the description of use section above, will be used when determining whether a proposed study will be approved on the Refuge. If proposed research methods are evaluated and determined to have potential adverse impacts on Refuge wildlife or habitat, then the Refuge will determine the utility and need of such research to conservation on management of the Refuge's wildlife and habitat. If the need is demonstrated by the research

permittee and accepted by the Refuge, then measures to minimize potential impacts (e.g., reduce the numbers of researchers entering an area, restrict research in specified areas) will be developed and included as part of the study design and included on the special use permit.

Special use permits will contain specific terms and conditions that the researcher(s) must follow relative to activity, location, duration, seasonality, etc. to ensure continued compatibility. All Refuge rules and regulations (CFR 50) must be followed unless otherwise accepted in writing by Refuge management. Stipulations necessary to ensure compatibility include:

- Extremely sensitive wildlife habitat areas will be avoided unless sufficient protection from research activities (i.e., disturbance, collection, capture and handling) is implemented to limit the area and/or wildlife potentially impacted by the proposed research.
- When and where needed, some areas may be temporarily/seasonally closed to research; research can be permitted to resume when impacts to wildlife and habitat are no longer a concern.

- Research activities will be modified to avoid harm to sensitive wildlife and habitat when unforeseen impacts arise, such as a wildfire altering landscape conditions or large declines in a population.

- At any time, Refuge staff may accompany the researchers to determine potential impacts.

- Refuge staff will monitor researcher activities for compliance with conditions outlined on the Special Use Permit. A Refuge manager and/or Project Leader may determine that previously approved research and special use permits be terminated due to observed impacts.

- The Refuge manager and/or Project Leader will also have the ability to unilaterally cancel a Special Use Permit if the researcher is out of compliance with permit conditions and/or to ensure wildlife or habitat protection and/or visitor and public safety.

- All researchers will be required to submit a detailed research proposal for review and recommendation by the Refuge biologist and approval by the Refuge Manager. The biologist will provide the required proposal format to researchers.

- Agencies and entities operating stationary monitoring stations requiring utilities (air quality, weather) will cover maintenance and operating costs including utilities for their station.

- All samples and specimens collected from the Refuge are Refuge property. Once research is complete or terminated, researchers shall check with the Refuge to ascertain whether samples and specimens are to be turned over to Refuge offices. Service personnel shall be provided access to the samples and specimens at any time at no cost (unless arrangements are made to the contrary).

- The Refuge Biologist will review all research proposals and identify any conditions of the research permits that eliminate or minimize negative impacts to any one area, species, or habitat of the Refuge. The Refuge Biologist will make a recommendation to the Refuge Manager on whether the research should occur, based on weighing of benefits and impacts.

- Research requiring the collection of animals will only be authorized after careful consideration by the Refuge Biologist and Refuge Manager as to the importance of Refuge populations to the conservation of the species, the possible adverse impacts to the Refuge populations, and the humaneness of the collection methodology. State and Federal collection permits are required.

- Consultation will be conducted for any research activities that may possibly have an impact on threatened or endangered species.

- The Refuge Manger will issue no more than six special use permits annually for Refuge research. Additional permits may be considered depending on staff workload and cumulative impacts of existing research projects on wildlife and habitats. The permit holder will list each person assisting on the research project and provide description and license number of vehicles that will be used.
- Refuge staff will monitor research projects to ensure that on-going research is not causing long-term habitat damage or impacting any animal populations.

- Additional site specific and research specific terms and conditions will be included in all SUP's.

Justification: Two provisions of the National Wildlife Refuge Improvement Act are to "maintain biological integrity, diversity and environmental health" and to conduct "inventory and monitoring." Refuge plans and actions based on research and monitoring provide an informed approach to habitat and wildlife programs. Refuge monitoring and research will directly benefit and support Refuge goals, objectives and management plans and activities and can contribute to recovery of endangered/ threatened species. Management of fish, wildlife, plants and their habitat will improve through the application of knowledge gained from monitoring and research. Biological integrity, diversity and environmental health will benefit from scientific research conducted on natural resources at the Refuge. The Refuge manager and biologist will ensure that proposed monitoring and research investigations will contribute to the enhancement, protection, conservation, and management of native wildlife populations and their habitats on the Refuge, thereby helping the Refuges fulfill the purposes for which they were established, as well contributing to the mission of the Refuge System.

Mandatory 10- or 15-Year Reevaluation Date: (provide month and year for "allowed" uses only)

_____ Mandatory 15-year reevaluation date (for wildlife-dependent public uses)
__2017__ Mandatory 10-year reevaluation date (for all uses other than wildlife-dependent public uses)

NEPA Compliance for Refuge Use Decision: (check one below)

____ Categorical Exclusion without Environmental Action Statement
____ Categorical Exclusion and Environmental Action Statement
__X__ Environmental Assessment and Finding of No Significant Impact
____ Environmental Impact Statement and Record of Decision

Signatures:

Prepared by: _____ 4/22/07
(Signature) (Date)

Refuge Manager/
Project Leader
Approval: _____ 4/25/07
(Signature) (Date)

Concurrence:

Refuge Supervisor: _____ 4/30/07
(Signature) (Date)

Regional Chief,
National Wildlife
Refuge System
(for HI, ID, OR,
PI, and WA): _____ 5/7/07
(Signature) (Date)

Dog Training (including Field Trials) Compatibility Determination

RMIS Database Use: Dog Training, including Field Trials

Refuge Name: McNary National Wildlife Refuge.

County and State: Walla Walla and Franklin Counties, Washington; and Umatilla County, Oregon.

McNary Refuge was established in 1955 by cooperative agreement with the Corps which transferred administrative control of the original 2,849-acre parcel to the Service (Federal Register of May 1956; Document No. 56-3499; and Cooperative Agreement between the Corps and Service in September 1963, and as amended September 1969). Additional lands were purchased in subsequent years under the Migratory Bird Conservation Act (16 USC 715d). A small parcel was donated to the Service in 1969, under the Refuge Recreation Act (16 USC 460k-1, k-2). In 1972, another parcel was transferred to the Service from the Bureau of Reclamation under the Fish and Wildlife Coordination Act (16 USC 664). In 1999, the original Refuge was transferred from the Corps to the Service through the Water Resources Development Act (WRDA) 1999 bill (P.L. 106-53; 16 USC 668dd). Additional lands were added in 2000 (Cooperative Agreement No. DACW68-4-00-13), dated January 2000 and as amended June 2000.

Refuge Purpose(s):

- for the conservation, maintenance, and management of wildlife resources thereof, and habitat thereon, under plans... (All units, 16 U.S.C. §§ 664, Fish and Wildlife Coordination Act).
- "for development, conservation and management of wildlife resources..." (All units, General Plan, 1953).
- "particular value in carrying out the National Migratory Bird Management Program" (Original Burbank Unit, and Hanford Islands Unit, General Plan, 1953).
- "multiple use value relating to the conservation of fish life, waterfowl and upland game birds" (Peninsula, Two Rivers, and Wallula Units, General Plan, 1953).
- Snake River Mitigation Compensation Plan (Cummins Property only, Cooperative Agreement between Service and Service, 2000).
- "Dam Project Purposes" [primary purposes of navigation, power development, irrigation, and conservation of wildlife - Public Law Number 14, 79th Congress, First Session, approved March 2,1945]. (Cooperative Agreement between the Corps and Service, 2000, Stateline and Juniper Canyon units only).
- Other parcels: Small pieces of the Refuge were also added later by purchase under the Migratory Bird Conservation Act. The Refuge also manages a small tract of land under a 10-year lease with the Washington Department of Natural Resources; and, approximately 20 small tracts were acquired under authority of the Refuge Recreation Act of 1962 (PL 87-714).

Additional detail on the purposes of this Refuge may be found in Chapter 1 of the CCP/EA.

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Description of Use:

Field dog trials formally test dogs' scenting, marking, and retrieving ability. At McNary Refuge, these events typically last one day, and use dead frozen or dummy birds. The use is confined to a small field area on the Two Rivers Unit, is usually attended by 20 to 25 people and 10 to 15 dogs, and takes place on the second weekend in March. This is in compliance with the State dog training season which runs from August through March. No horses are affiliated, or allowed for this use.

Currently, this activity is administered through issuance of a special use permit with strict stipulations that must be followed.

Historically, the Two Rivers Unit was listed as an official State dog trial area, and larger, more competitive trials, involving horses, trailers, and overnight camping, were held annually. However, no trials of that magnitude have been conducted within the last seven years, and future requests for such trials are not anticipated.

This event is not a wildlife-dependent recreational use. The use was determined not appropriate under the Appropriate Uses review (Appendix K).

Availability of Resources:

Costs to administer the use are detailed below.

Activity or Project	One Time Expense ($)	Recurring Expense ($/year)
Site Designation and Prep	$0	2,000
Maintenance (Annual Noxious Weed Control)	$0	1,000
Enforcement and Oversight	$0	2,000
Totals	$0	5,000

Anticipated Impacts of the Use:

This event usually takes place in the spring and may contribute to short-term disturbances of ground nesting birds and other wildlife. Numerous studies have confirmed that people on foot can cause a variety of disturbance reactions in wildlife, including flushing or displacement (Erwin 1989; Fraser et al. 1985; Freddy 1986), heart rate increases (MacArthur et al 1982), altered foraging patterns (Burger and Gochfeld, 1991), and even, in some cases, diminished reproductive success (Boyle and Samson 1985). Based on this information, it is likely that field dog trials would have similar impacts.

These studies and others have shown that the severity of the effects depends upon the distance to the disturbance and its duration, frequency, predictability, and visibility to wildlife (Knight and Cole 1991).

The most likely impact to the Refuge resources would be during spring and early summer. Limited impacts to nesting birds could occur as described below, but would be relatively minor because the dog training would be limited to a confined area and would occur on only one or two days per season.

The presence of dogs may flush incubating birds from nests (Yalden and Yalden 1990), disrupt breeding displays (Baydack 1986), disrupt foraging activity in shorebirds (Hoopes 1993), and disturb roosting activity in ducks (Keller 1991). Despite thousands of years of domestication, dogs still maintain instincts to hunt and chase. Given the appropriate stimulus, those instincts can be triggered. Dogs that are unleashed or not under the control of their owners may disturb or potentially threaten the lives of some wildlife. In effect, off-leash dogs increase the radius of human recreational influence or disturbance beyond what it would be in the absence of a dog.

Impacts to native vegetation could occur from movement of dogs and people over the landscape. Noxious weeds could be spread further into shrub-steppe habitat through the additional traffic. The short duration, infrequency, and restricted area of these events could result in minor impacts to resident wildlife but may have long-term impacts such as noxious weed spread and infestation.

The role of dogs in wildlife diseases is poorly understood. However, dogs host endo- and ectoparasites and can contract diseases from, or transmit diseases to wild animals. In addition, dog waste is known to transmit diseases that may threaten the health of some wildlife and other domesticated animals. Domestic dogs can potentially introduce various diseases and transport parasites into wildlife habitats (Sime 1999).

Current Refuge regulation (50CFR 26.21(b) states "…no unconfined domestic animals, including but not limited to dogs…shall be permitted to roam at large…").

Public Review and Comment:

Open houses were held and written comments were solicited from the public during development of the CCP/EA for the McNary and Umatilla Refuges. Appendix A of the CCP/EA further details public involvement undertaken during development of the CCP.

Determination (check one below):

__X___ Use is Not Compatible

____ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility: n/a

Justification:

Dog training is not listed as one of the six wildlife dependent recreational uses under the National Wildlife Refuge Improvement Act of 1997, as amended. Dog training on the Refuges is not necessary for the safe, practical, and effective conduct of existing Refuge wildlife-dependent recreational uses. While most waterfowl and upland game hunters do employ dogs, training areas can be found elsewhere. The effects of dog training pose a minor threat to habitat and wildlife resources, and temporarily displace wildlife.

Dog training does not appreciably contribute to the public's understanding and appreciation of the Refuge's natural and cultural resources, nor is the use beneficial to the Refuge's natural or cultural resources.

Though the additional resources needed to administer the use are small, all resources on the Refuges for administering uses are stretched very thin. Given the growing limitations of staffing and budget, resources are insufficient to meet the requirements for needed protection to wildlife resources and the public safety of Refuge visitors.

Based on the analysis above, dog training has a negative impact on Refuge habitat, displaces wildlife, and detracts staff and operational resources away from programs that contribute to the conservation and management of wildlife, therefore, it materially interferes with the Refuge achieving its purposes and is determined not a compatible use.

Mandatory 10- or 15-Year Reevaluation Date: (provide month and year for "allowed" uses only)

None

NEPA Compliance for Refuge Use Decision: (check one below)

___ Categorical Exclusion without Environmental Action Statement
___ Categorical Exclusion and Environmental Action Statement
__X__ Environmental Assessment and Finding of No Significant Impact
___ Environmental Impact Statement and Record of Decision

References:

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Signatures:

Prepared by: _____ 4/22/07
(Signature) (Date)

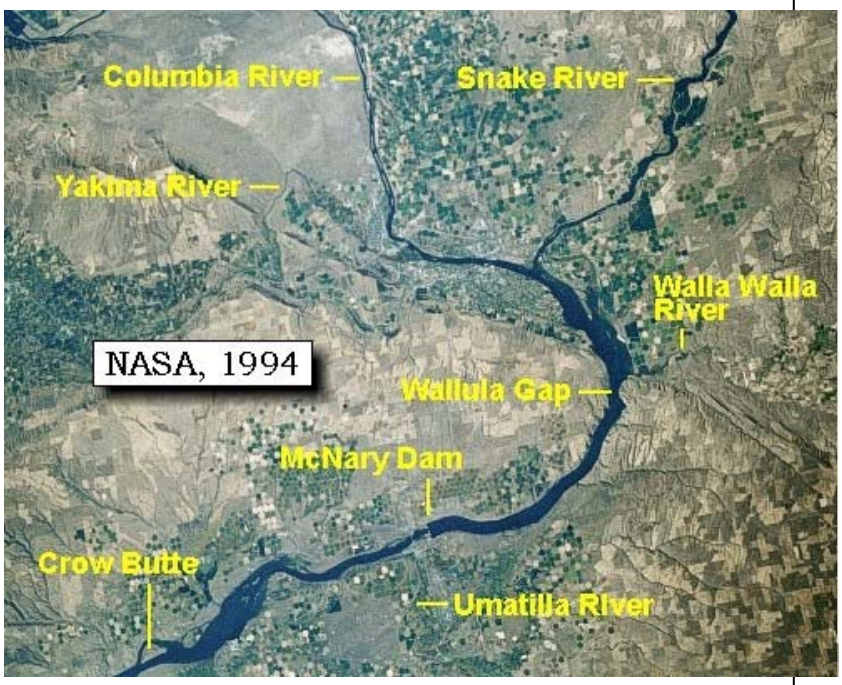
Refuge Manager/
Project Leader
Approval: _____ 4/25/07
(Signature) (Date)

Concurrence:

Refuge Supervisor: _____ 4/30/07
(Signature) (Date)

Regional Chief,
National Wildlife
Refuge System
(for HI, ID, OR,
PI, and WA): _____ 5/7/07
(Signature) (Date)

MAPS



Aerial view of Mid-Columbia River area and Refuges (1994) – NASA

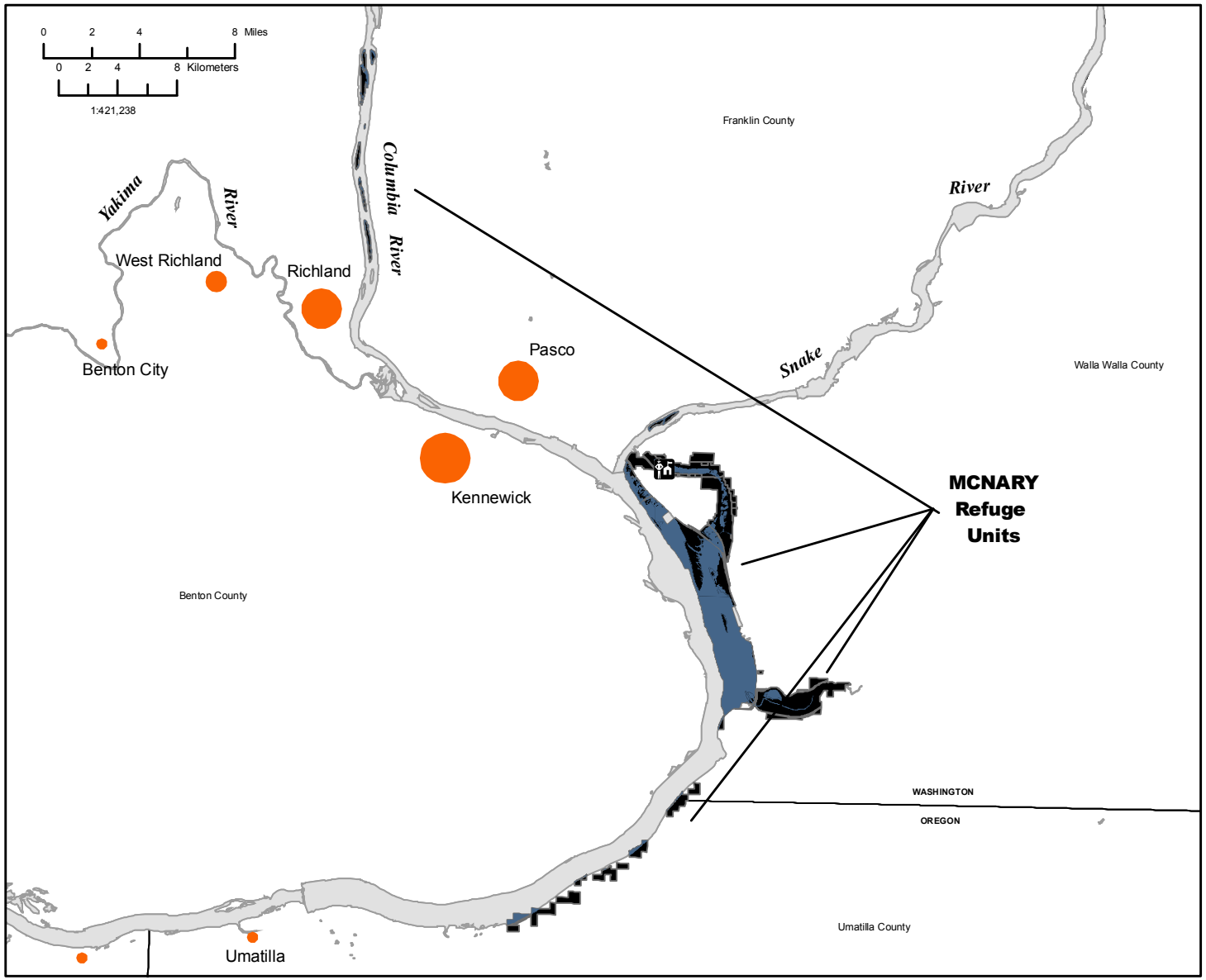
U.S. Fish & Wildlife Service

McNary National Wildlife Refuge

Benton, Franklin and Walla Walla Counties, Washington
Umatilla County, Oregon

Comprehensive Conservation Plan
Vicinity Map

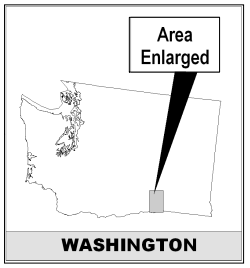
Map 1



Legend

- Upland portions of Refuges
- Aquatic portions of Refuges (includes some islands)
- Columbia River (non-Refuge)
- County boundaries
- Refuge Headquarters

The Columbia River Island units east and north of Richland were planned as part of the Hanford Reach National Monument CCP.



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Comprehensive Conservation Planning Branch
Portland Oregon
File: 08-143-1.mxd 07/30/2008

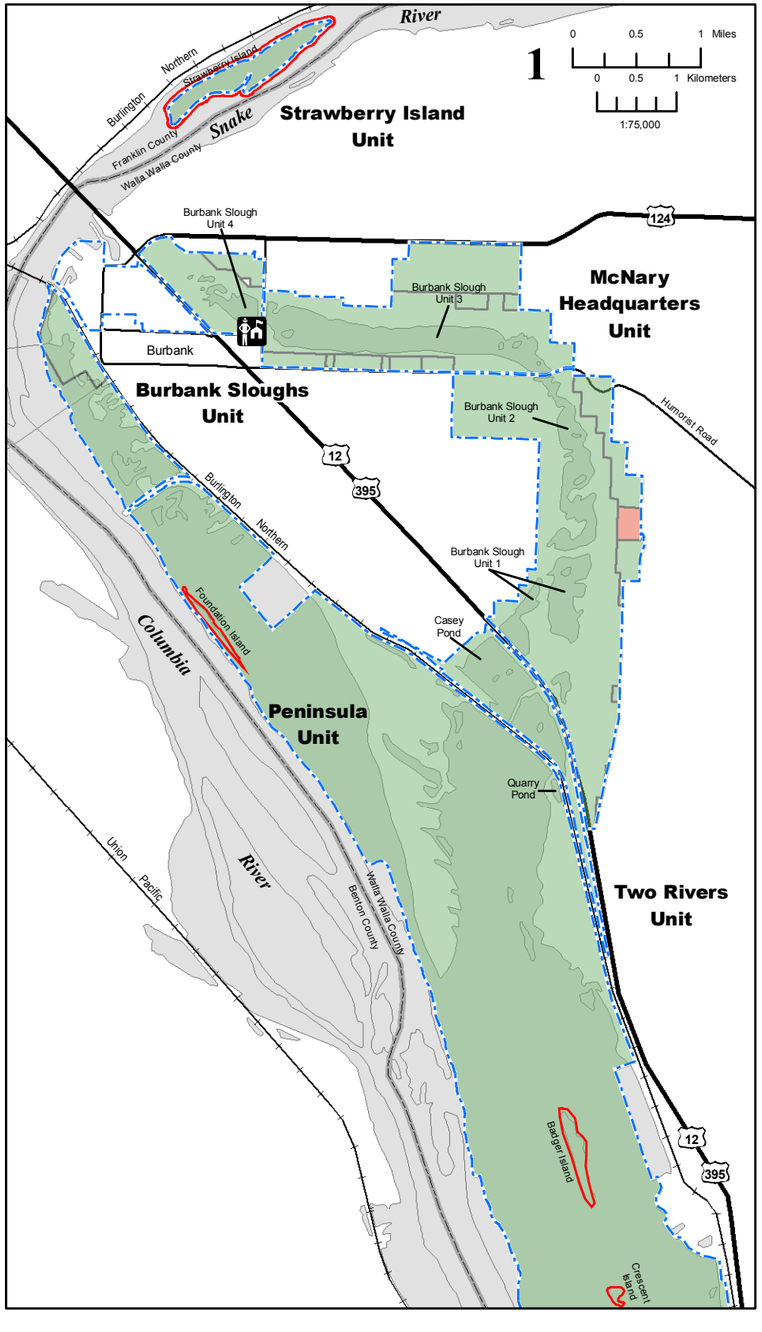
Map 2

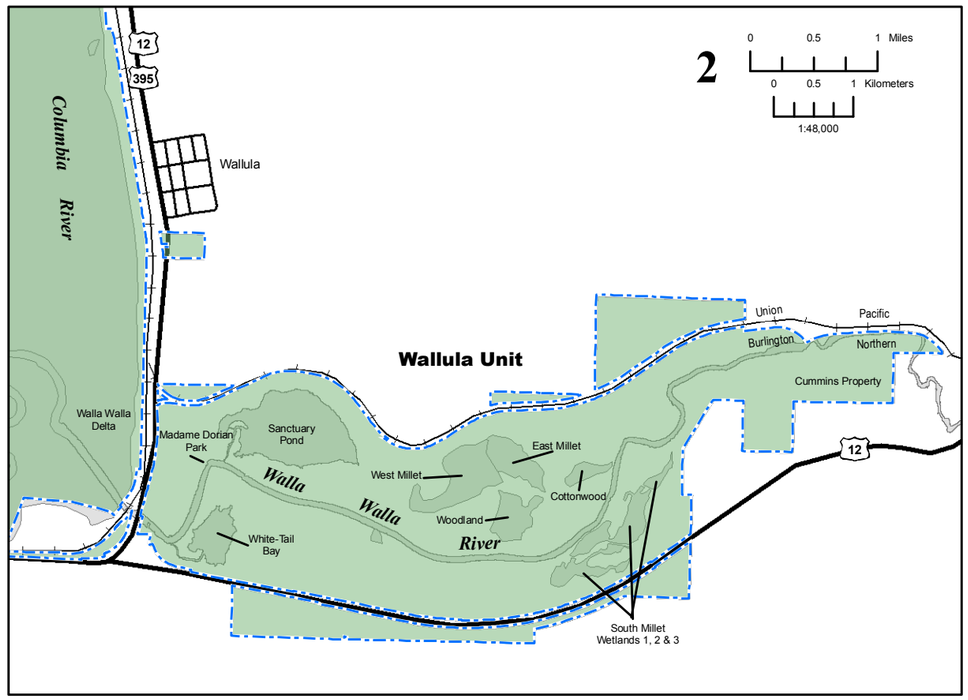
U.S. Fish & Wildlife Service

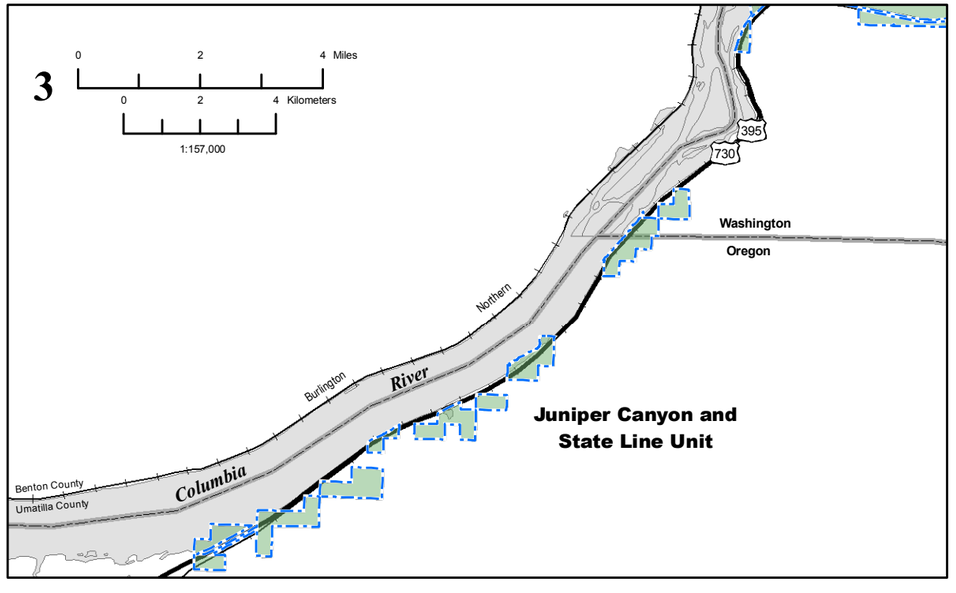
McNary National Wildlife Refuge

Benton, Franklin and Walla Walla Counties, Washington and Umatilla County, Oregon

Comprehensive Conservation Plan
Refuge Boundary and Land Status

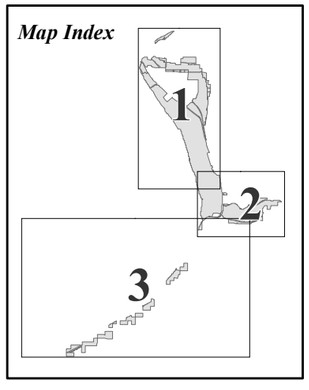


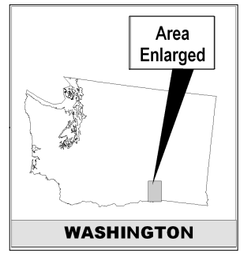




Legend

- Refuge Headquarters
- FWS Approved Acquisition Boundary
- McNary NWR Islands
- FWS Managed Lands & Water
- FWS Land & Water Under Easement/Lease





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Produced by the Division of Realty and Refuge Information
Kendra Maty, GIS Specialist
Refuge Information Branch
Portland, Oregon
File: 08-143-2.mxd

07/09/2008

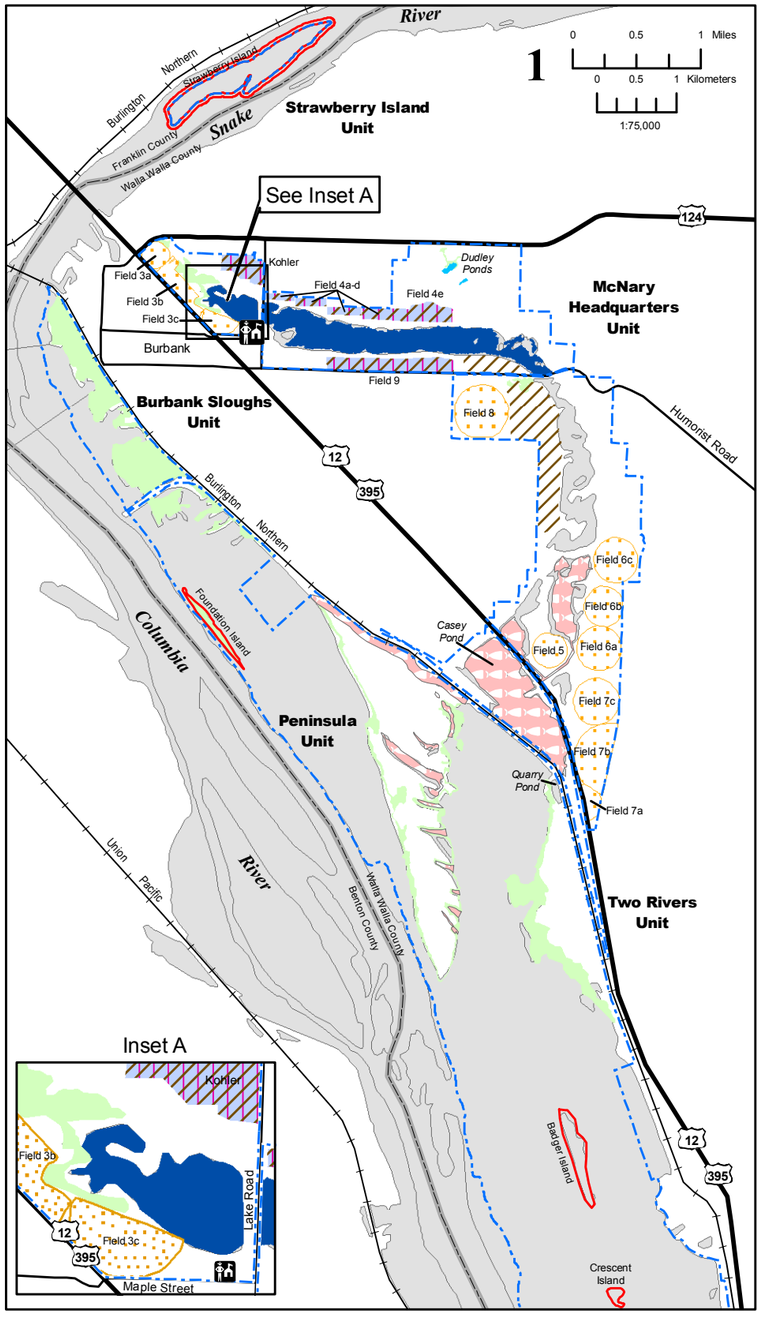
U.S. Fish & Wildlife Service

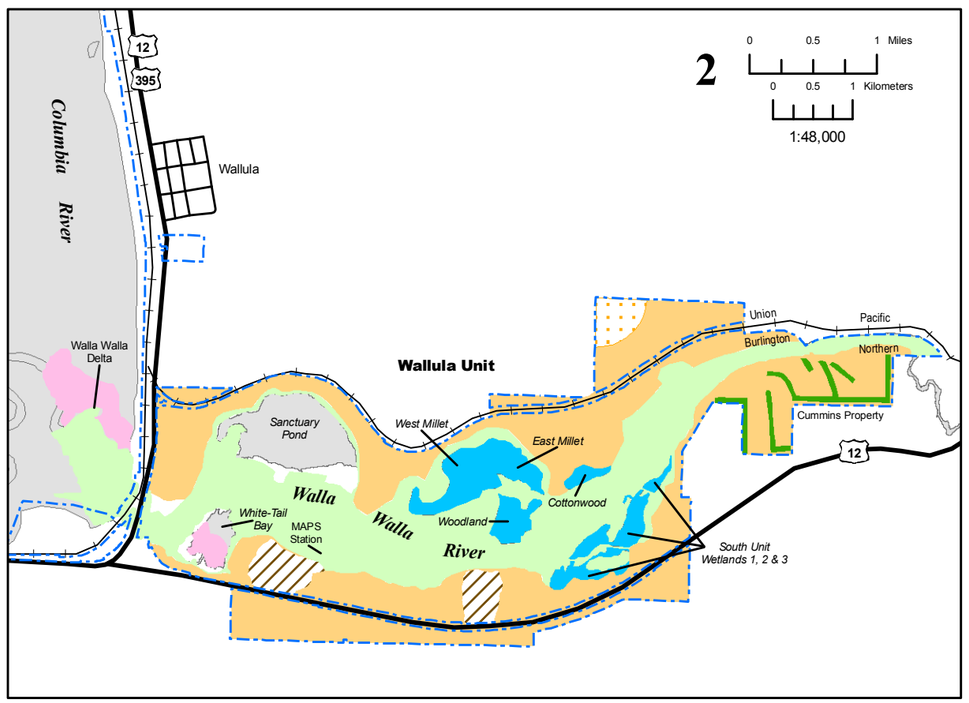
McNary National Wildlife Refuge

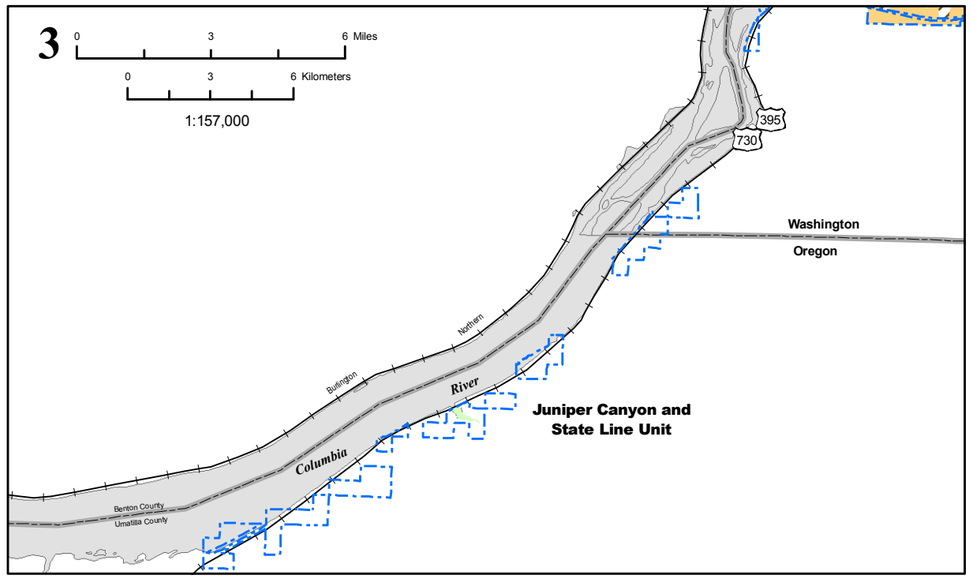
Benton, Franklin and Walla Walla Counties, Washington and Umatilla County, Oregon

Comprehensive Conservation Plan
Habitat Management Actions under Final CCP

Map 3

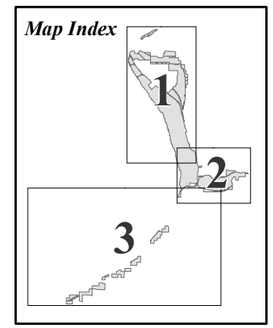


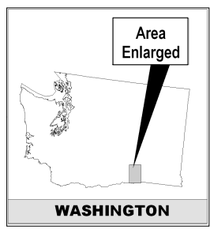




Legend

- Shrub Steppe: improve condition in key areas
- Shrub Steppe: restore additional areas from roads and croplands (may not represent actual location or acreage)
- Riparian: improve condition in key areas (may not represent actual location or acreage)
- Riparian: Snake River mitigation area Cummins Property
- Wetlands: improve submergent habitat and decrease invasives
- Existing wetland moist soil areas
- Existing active cropland to provide winter feed for waterfowl
- Potential cropland (may not represent actual location or acreage)
- Shorebirds: maintain and improve value of mudflat areas
- Curlews: restore suitable habitat (may not represent actual location or acreage)
- Salmonids: study feasibility of providing enhanced backwater areas for rearing
- Refuge managed lands
- McNary NWR islands





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NAD 83

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Kendra Maty, GIS Specialist
Refuge Information Branch
Portland, Oregon
File: 08-143-3.mxd 07/22/2008

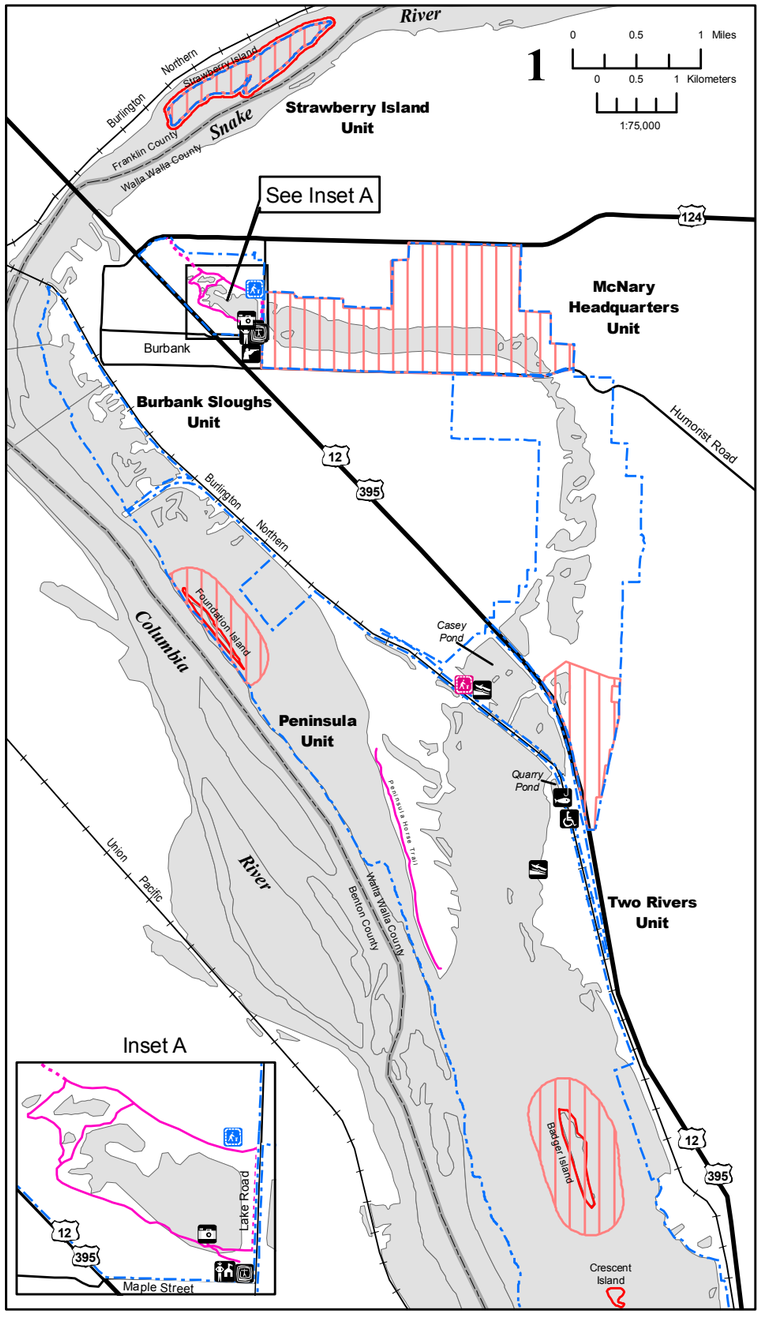
U.S. Fish & Wildlife Service

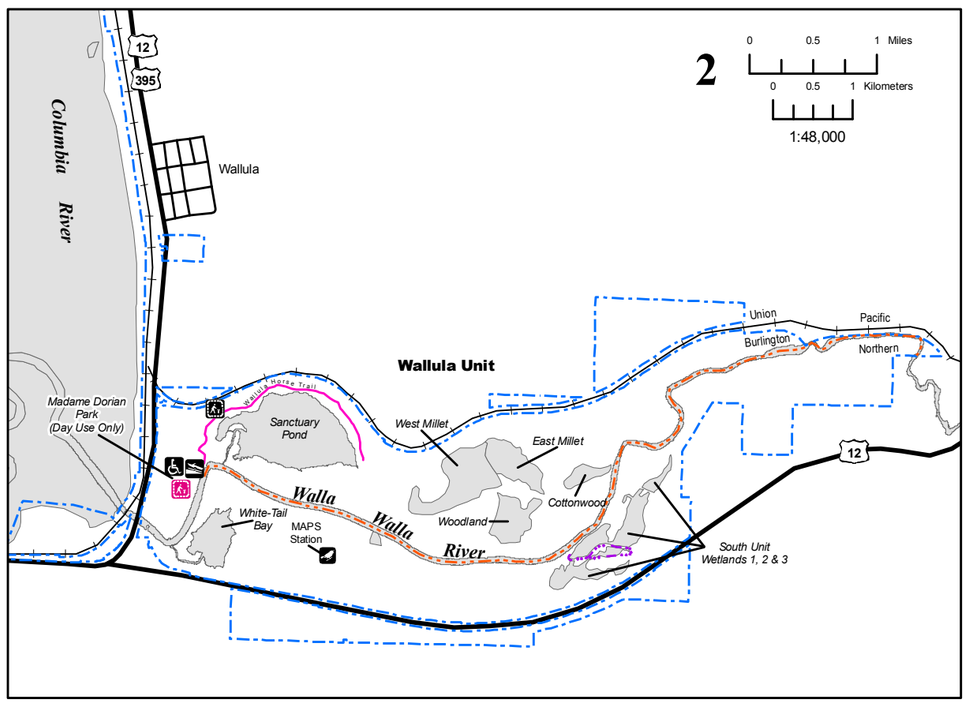
McNary National Wildlife Refuge

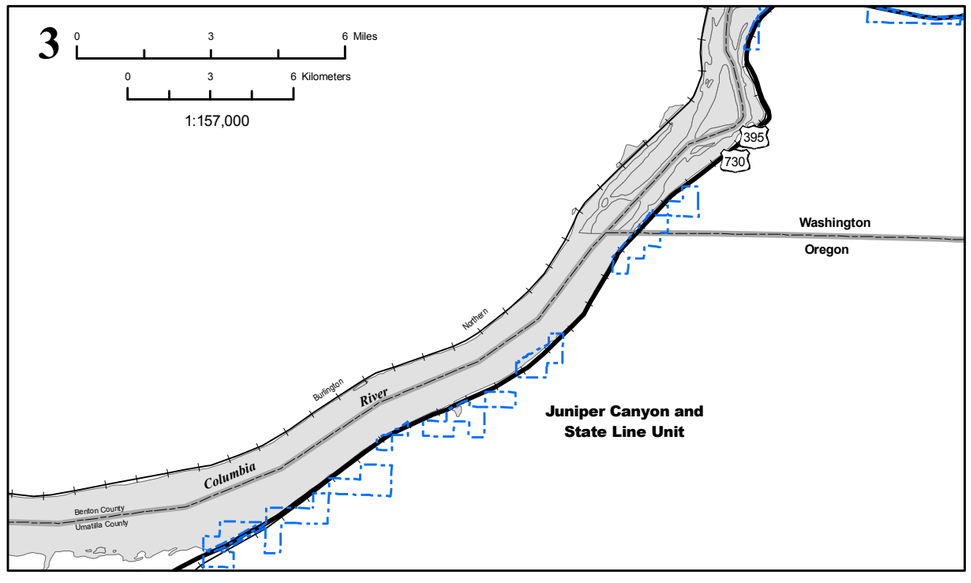
Benton, Franklin and Walla Walla Counties, Washington and Umatilla County, Oregon

Comprehensive Conservation Plan
Public Use Facilities under Final CCP

Map 4







Legend

Fishing:
- Existing boat ramps
- Existing stocked family fishing pond
- Disabled access fishing pier
- New fishing information kiosks to be constructed

Observation and Photography:
- Exisiting photo blind

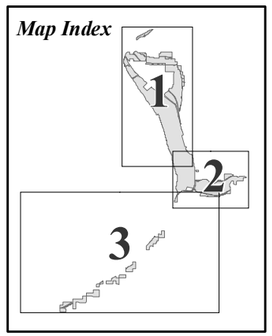
Interpretation:
- Existing kiosk
- New kiosks to be constructed

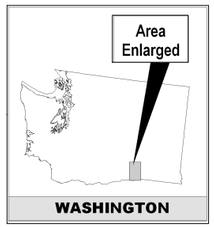
Environmental Education:
- Exisiting McNary Environmental Education Center facility
- Monitoring Avian Productivity & Survivorship Station

Trails:
- Existing trails
- New foot trail to be evaluated
- New canoe trail to be constructed
- New birding trail to be constructed

Refuge Headquarters and Information:
- Existing refuge headquarters
- Areas closed to the public at all times
- Refuge managed lands
- McNary NWR islands

Note:
Hunt areas and facilities found on Map 5





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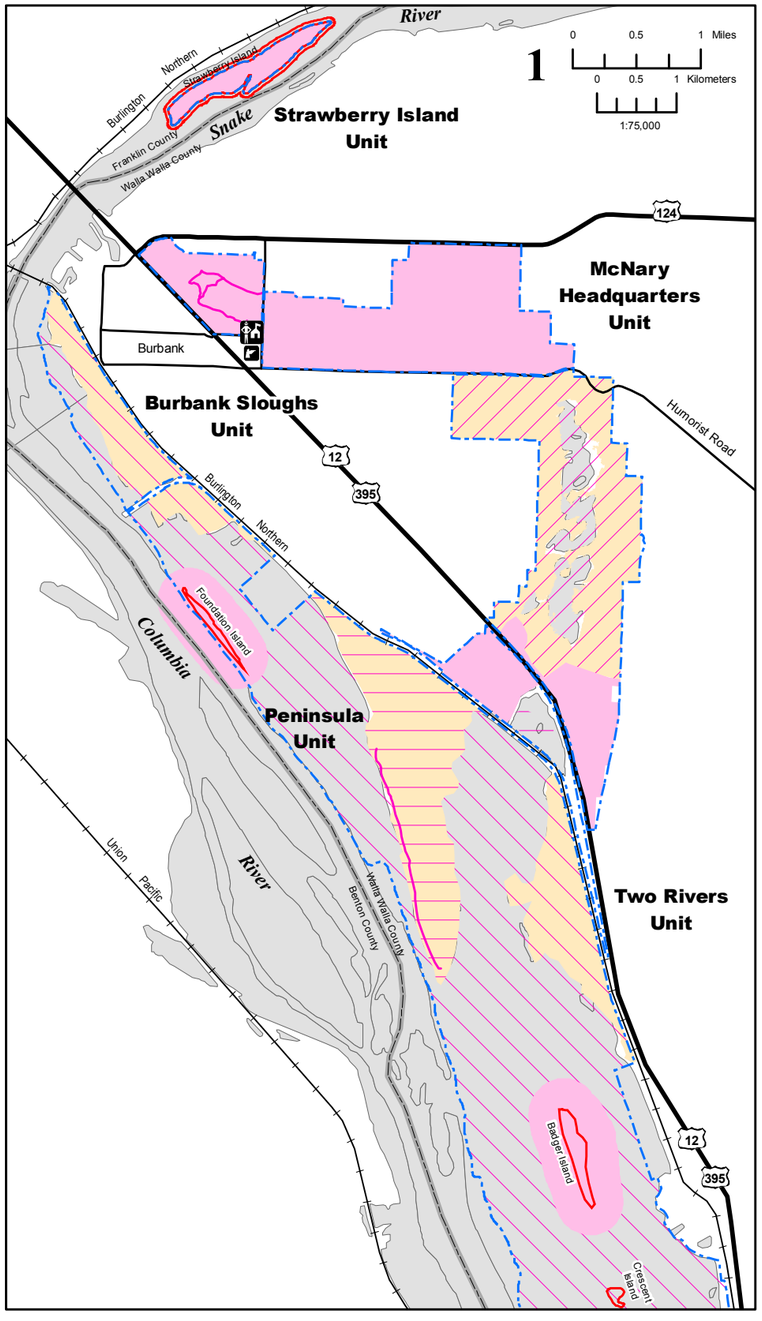
Kendra Maty, GIS Specialist
Refuge Information Branch
Portland, Oregon
File: 08-143-4.mxd 07/22/2008

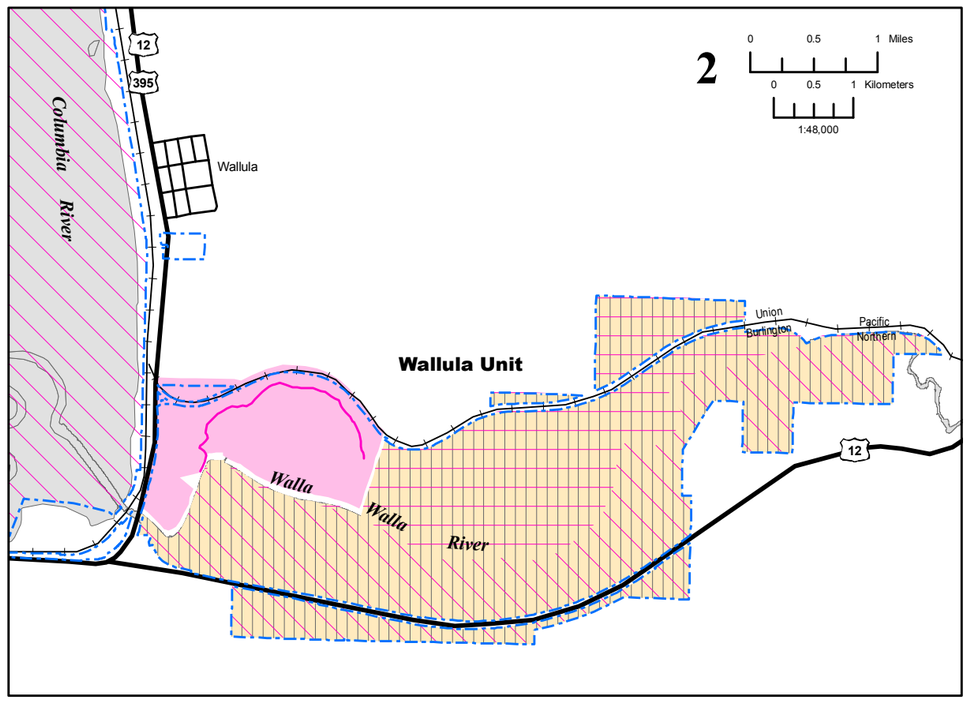
U.S. Fish & Wildlife Service

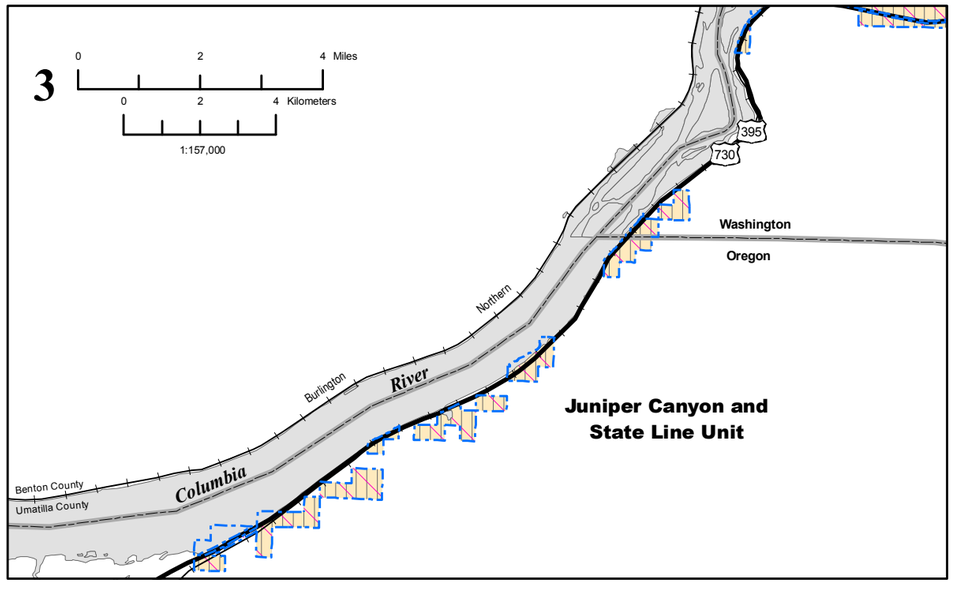
McNary National Wildlife Refuge

Benton, Franklin and Walla Walla Counties, Washington and Umatilla County, Oregon

Comprehensive Conservation Plan
Overall Hunt Area Map







Legend

- Waterfowl sanctuary areas
- Upland game bird hunt areas
- Big game hunt areas

Waterfowl hunt areas:

- Free roam with blinds
- Free roam without blinds
- Reservation / Fee hunt

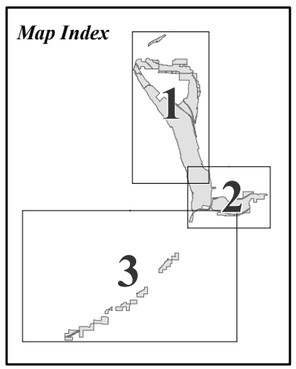
Trails:

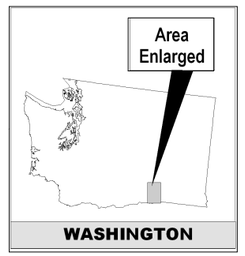
- Existing trails

Refuge Headquarters and Information:

- Existing refuge headquarters
- Hunter check station
- Refuge managed lands
- McNary NWR islands

Map Index





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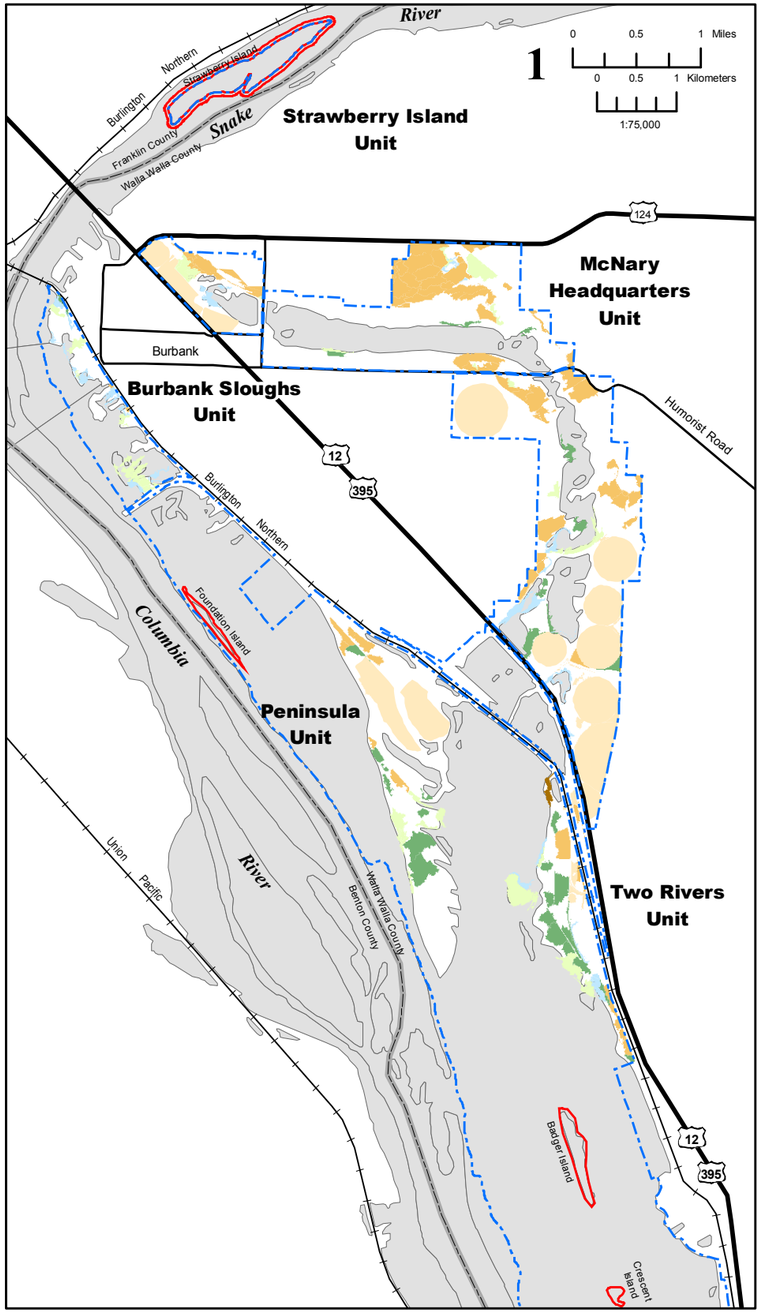
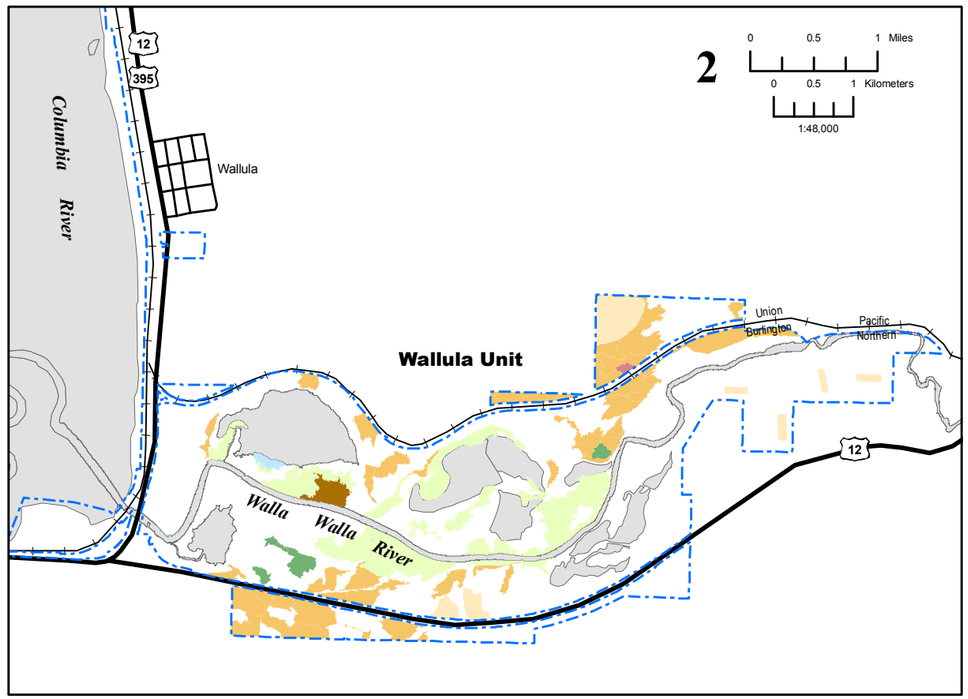
U.S. Fish & Wildlife Service

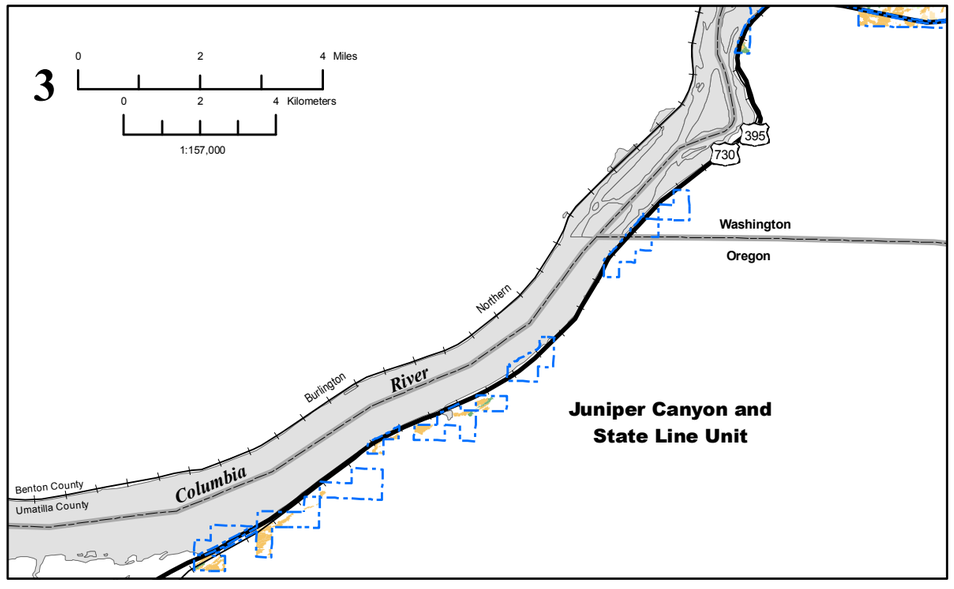
McNary National Wildlife Refuge

Benton, Franklin and Walla Walla Counties, Washington and Umatilla County, Oregon

Comprehensive Conservation Plan
McNary Main Habitats and Ecotypes







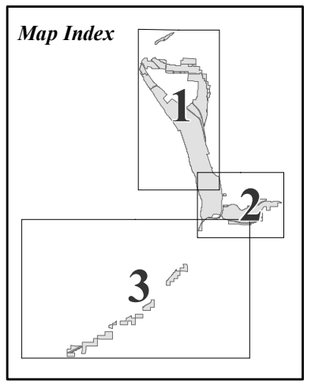
Legend

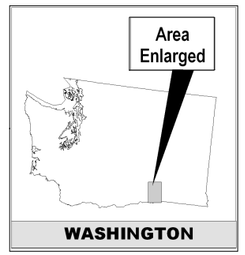
- Emergent / Submergent wetland* and playas
- Grasslands / Scablands*
- Riparian*
- Shrub steppe*
- Cliff and steppe talus*
- Woodlands / Canyon shrublands*
- Agriculture fields*

Refuge Information

- Refuge managed lands
- McNary NWR islands

*This map represents areas ground-truthed to the habitats listed above. The mapping/ ground-truthing effort is incomplete. Data is current as of 02/22/06.





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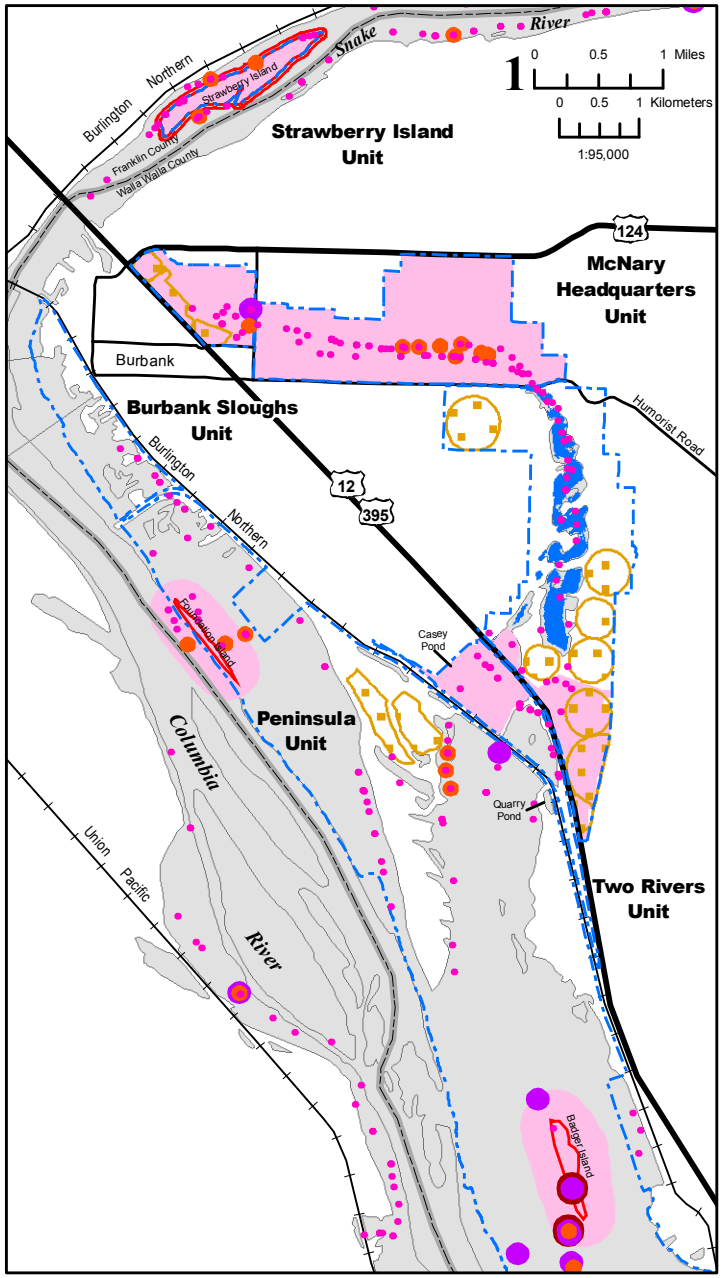
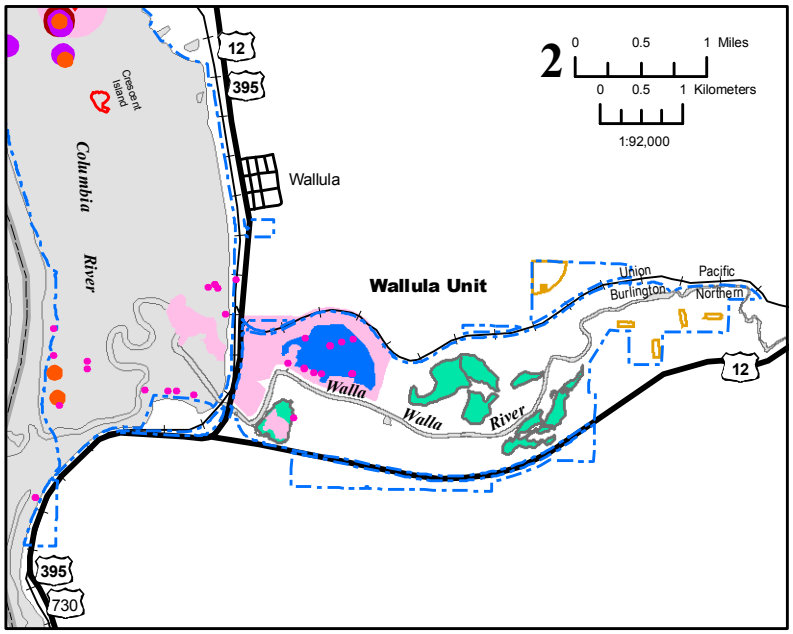
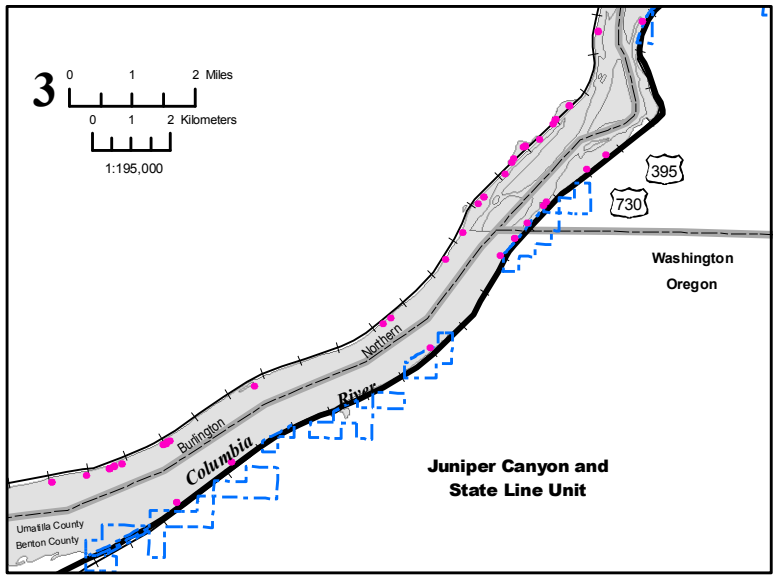
McNary National Wildlife Refuge

Benton, Franklin and Walla Walla Counties, Washington and Umatilla County, Oregon

Comprehensive Conservation Plan
Key Waterfowl Use Areas







Legend

Waterfowl locations January 5, 2006

- 1 - 300
- 301 - 1600
- 1601 - 5000
- 5001 - 12000

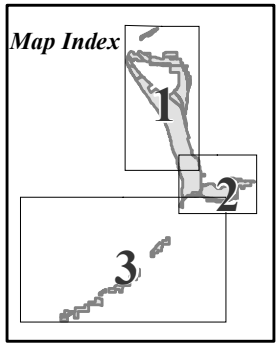
Disclaimer: Overlapping dots on map are not an indication of a double count, rather a cartographic discrepancy.

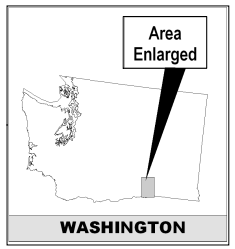
Waterfowl Habitat

- Existing agriculture areas
- Moist soil emergent wetlands habitat
- Submergent wetlands habitat
- Sanctuary areas

Refuge Information

- Refuge managed lands
- McNary NWR islands
- Waterbody boundaries





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07/22/2008

Mid-Columbia National Wildlife Refuge Complex
64 Maple Street
Burbank, WA 99323
Phone 509/546 8300

Refuge Information
1 800/344 WILD

December 2008

The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.