CHAPTER 1

INTRODUCTION

NEXT HOME

TABLE OF CONTENTS

List of Maps

List of Figures

CHAPTER 1
INTRODUCTION

1.1 PART ONE - PURPOSE AND NEED

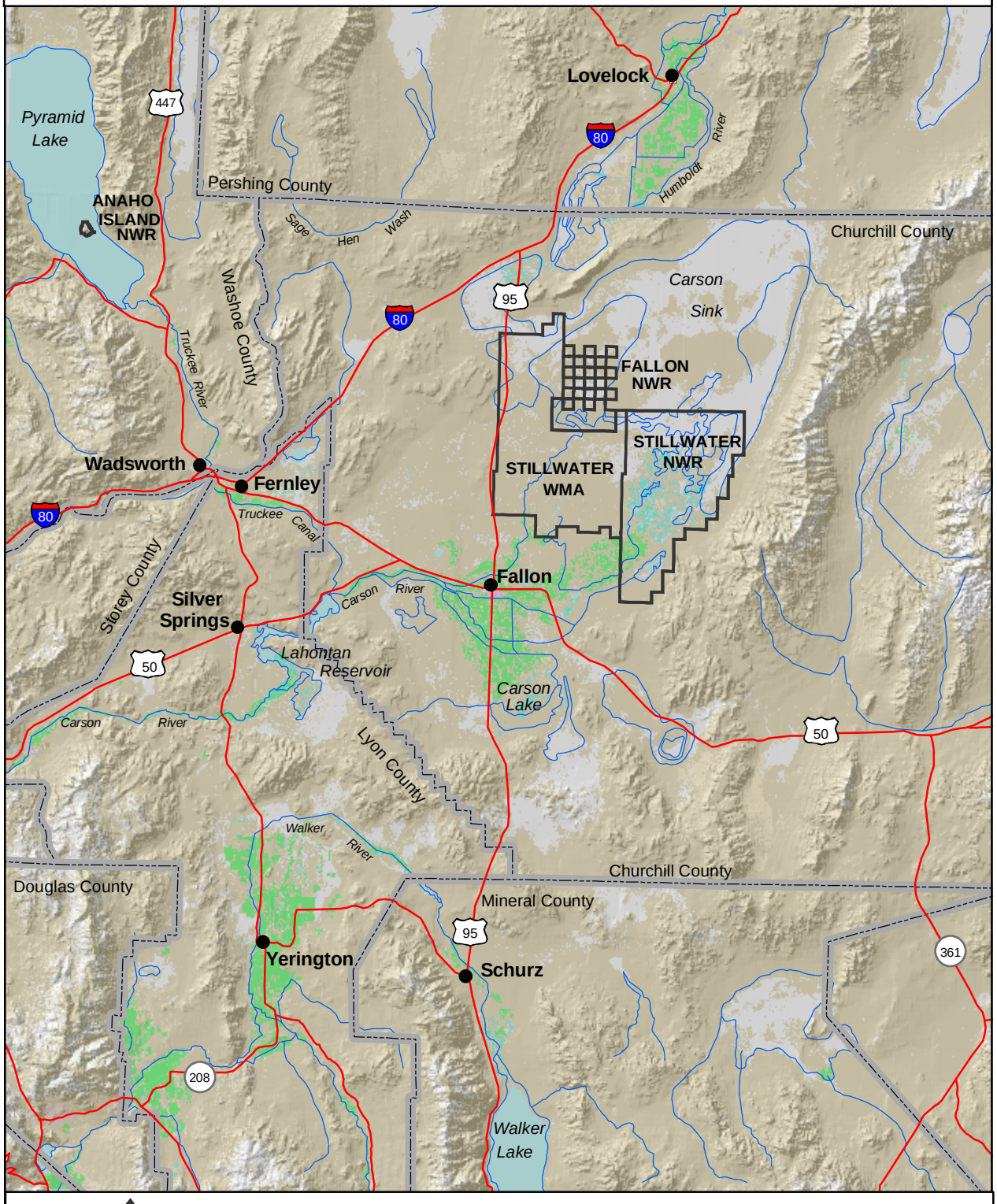
1.1.1 INTRODUCTION

The U.S. Fish and Wildlife Service (Service) began the process of developing a Comprehensive Conservation Plan (CCP) for the Stillwater National Wildlife Refuge (NWR) Complex in early 1997. This Final Environmental Impact Statement (EIS) identifies and provides an evaluation of five alternative approaches for managing the Stillwater NWR Complex for the next 15 years. Each alternative consists of two main parts: (1) a boundary revision for Stillwater NWR, and (2) the framework of a potential CCP, including refuge goals, objectives, and strategies for achieving the purposes for which each refuge was established and for contributing toward the mission of the National Wildlife Refuge System (Refuge System). The Stillwater NWR Complex currently includes Stillwater NWR, Stillwater Wildlife Management Area (WMA), Fallon NWR, and Anaho Island NWR, which are located in west-central Nevada (Maps 1.1 and 1.2).

Map 1.1 General Location

Together, these refuges and the wildlife management area contribute substantially to the conservation of wildlife and their habitat in the western Great Basin. They encompass a great diversity of habitat, from freshwater marshes and river habitat to brackish water marshes and alkali playas, and extensive salt desert shrublands and a 25 mile long sand dune complex to a small island in a desert lake. These habitat attract nearly 400 species of vertebrate wildlife (more than 260 bird species) and countless species of invertebrates. Waterfowl, shorebirds, and other waterbirds are abundant, especially during migration. This immense richness and abundance of wildlife and habitat in a desert environment provides a striking setting for hunting, observing, and learning about wildlife in the Great Basin. Waterfowl

MAP 1.2 GENERAL AREA



Prepared by Branch of GIS & Cartography
Region 1, Division of Refuge Planning
911 NE 11th Avenue
Portland, OR 97232-4181

March 2002

hunting has a long history at Stillwater Marsh and this tradition will continue. In recent years, birdwatching and environmental education have been growing in popularity. In addition to obtaining immense enjoyment from Stillwater NWR's wildlife and habitat, individuals partaking in these activities have been instrumental in ensuring the long-term viability of the wetlands on Stillwater NWR. If it were not for the efforts of several Nevada based conservation groups and the State of Nevada, it is likely that the Service would not be acquiring much needed water rights for the refuge's wetlands.

The human association with Stillwater Marsh goes back at least 12,000 years. The culture and traditions of the Cattail-eater Northern Paiutes, or *Toedokado*, is embodied in the area's cultural resources. Because Stillwater Marsh was such an ideal place for humans to live over the millennia, Stillwater NWR contains some of the richest cultural resources in the Great Basin.

The contiguous Stillwater NWR, Stillwater WMA, and Fallon NWR are located about 6 miles northeast of Fallon, Churchill County (Map 1.3). Stillwater NWR contains about 79,570 acres of Federal land, Stillwater WMA about 65,600 acres, and Fallon NWR about 17,850 acres, for a combined total of 163,020 acres of Federal land. Non-Federal inholdings within the existing boundaries of these areas encompass about 59,710 acres (Map 1.4).

Anaho Island NWR is a part of the Pyramid Lake Paiute Indian Reservation and is about 30 miles northeast of Reno, in Washoe County. The Paiute name for Anaho Island is "Pai-sa-ka-tu-du" which means roughly "... the dry island sitting out there all by itself..." The refuge encompasses the entire island, which has fluctuated in size from 220 to 745 acres in recent history due to the fluctuating water levels of Pyramid Lake. In the summer of 1997, the island was approximately 575 acres, and in the winter of 2001 it was down to 523 acres as the water level of Pyramid Lake continued to rise.

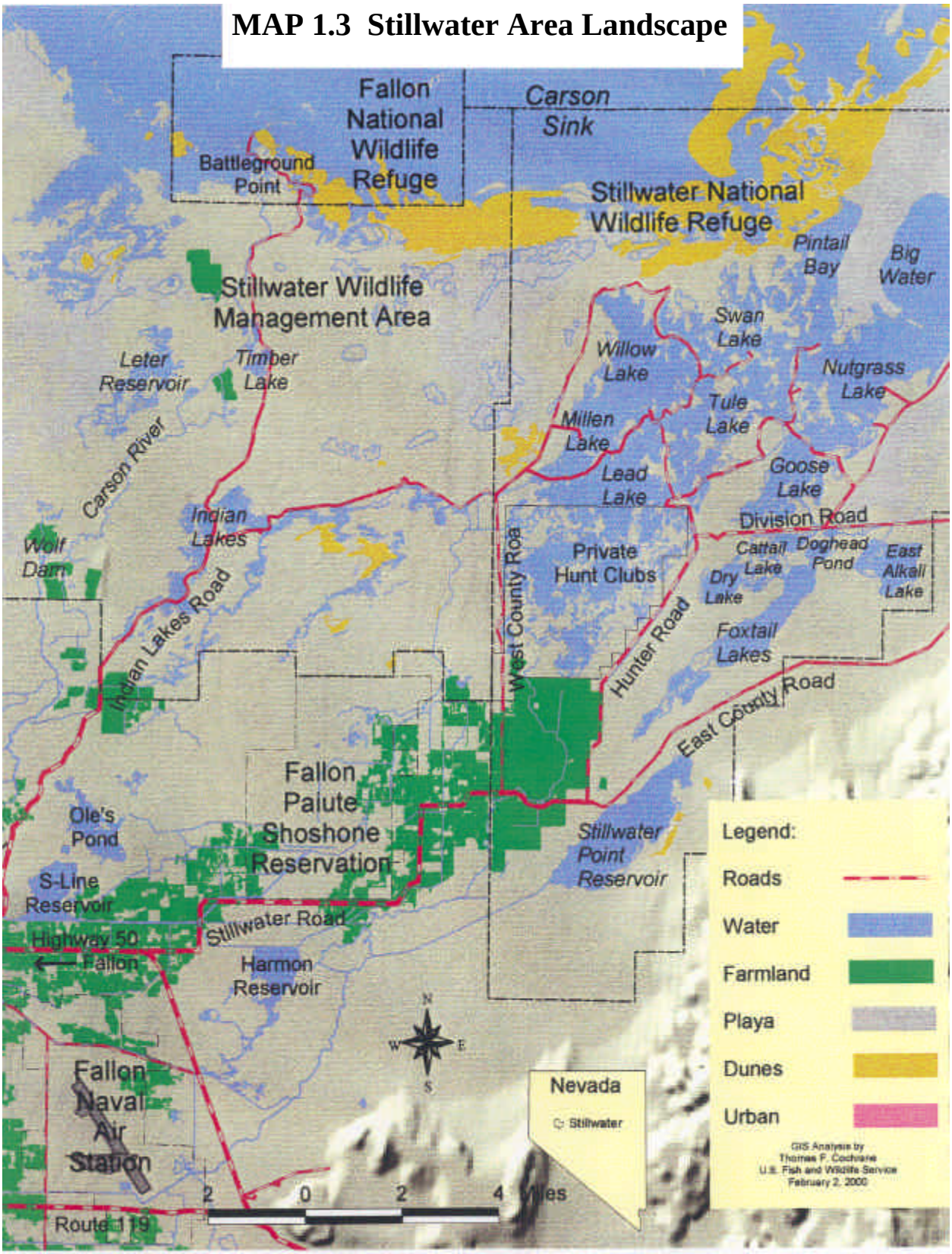
1.1.2 PROPOSED ACTION

The proposed action is to:

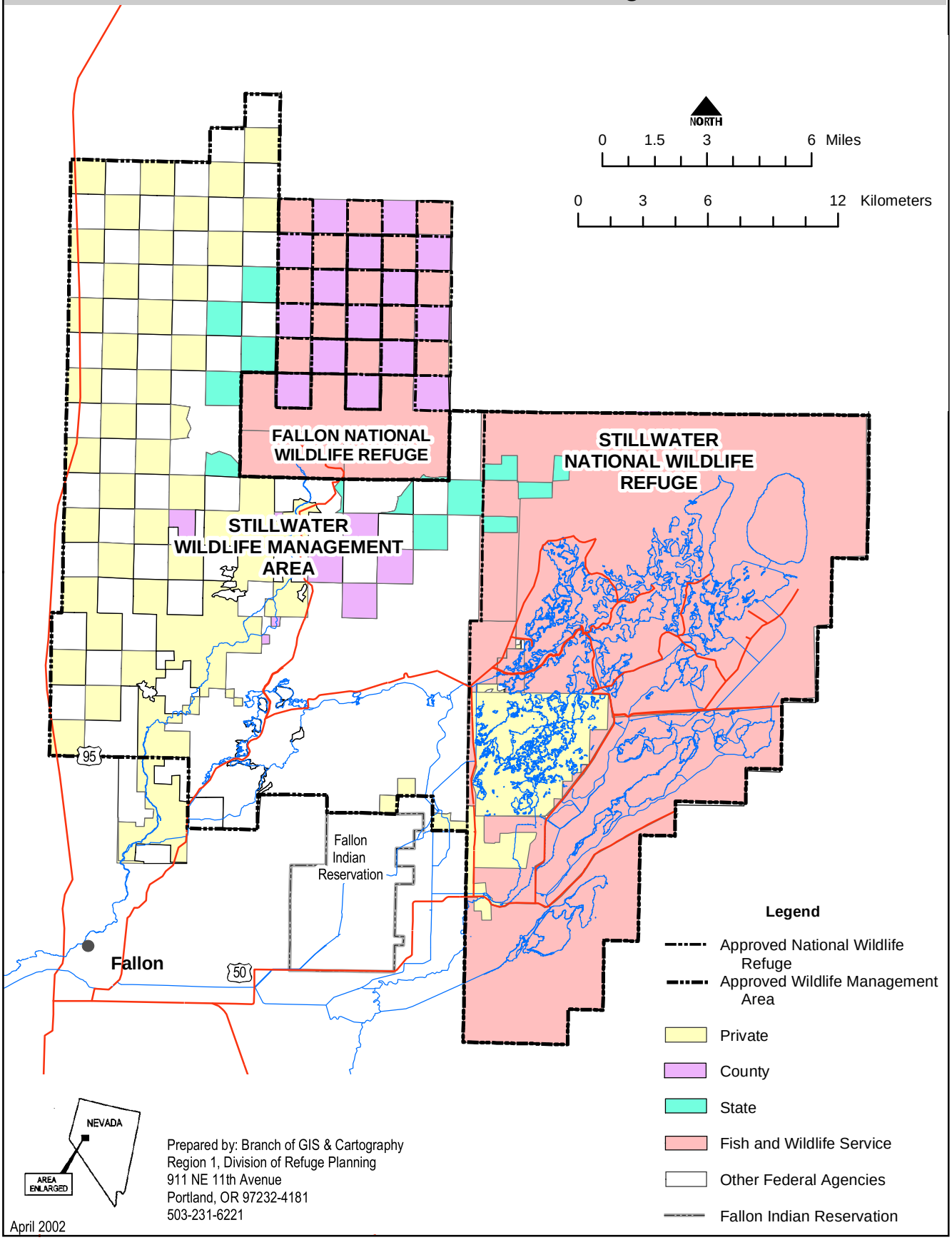
1. Modify the boundary configuration of Stillwater NWR that would best facilitate the achievement of the purposes for which the refuge was established, consistent with the Service's U.S. Congressional directive under Public Law 101-618 (P.L. 101-618).

2. Develop and implement a CCP for the Stillwater NWR Complex that best achieves the purposes of the individual refuges that make up the complex, contributes to the mission of the Refuge System, is consistent with the principles of sound fish and wildlife management, and that addresses relevant mandates and the major issues identified during scoping. Any expansion of the approved boundary of Stillwater NWR would allow the Service to negotiate with willing landowners within this boundary. Lands acquired by the Service would be managed as part of the Refuge System.

MAP 1.3 Stillwater Area Landscape



Map 1.4. Land Ownership within Stillwater National Wildlife Refuge, Stillwater Wildlife Management Area and Fallon National Wildlife Refuge.



Prepared by: Branch of GIS & Cartography
Region 1, Division of Refuge Planning
911 NE 11th Avenue
Portland, OR 97232-4181
503-231-6221

April 2002

1.1.3 PURPOSE OF AND NEED FOR ACTION

The purpose of developing a Comprehensive Conservation Plan for the Stillwater NWR Complex is to provide managers with a 15-year strategy for achieving refuge purposes and contributing toward the mission of the Refuge System, consistent with sound principles of fish and wildlife conservation and legal mandates. The reason for revising the boundary of Stillwater NWR is to help the Service achieve the purposes of the refuge.

A Comprehensive Conservation Plan, required by the National Wildlife Refuge System Administration Act of 1966, as amended (Refuge System Administration Act), is needed because (1) Stillwater NWR does not have a management plan that provides direction for managing wildlife, habitat, and public uses on the refuge under the management direction established by the Truckee-Carson-Pyramid Lake Water Settlement Act of 1990 (Title II of Public Law 101-618; P.L. 101-618) and the increased volume of water to be delivered to the refuge, as authorized by the P.L. 101-618; (2) Fallon NWR does not have a management plan for managing wildlife, habitat, and public uses on the refuge under the management direction established by Executive Order 5606 in 1931; and (3) Anaho Island NWR does not have a management plan that provides direction for managing wildlife, habitat, and public uses on the refuge under the management direction established by P.L. 101-618. Additionally, compatibility determinations have not been completed for any of the public uses occurring on Stillwater NWR and Fallon NWR. Thus, a CCP is needed to resolve several issues including wildlife and visitor services management, water management priorities, control of noxious weeds, livestock grazing, and managing wildlife-dependent recreational activities on the Stillwater NWR Complex.

1.1.4 DECISIONS TO BE MADE AND CRITERIA FOR DECISION MAKING

1.1.4.1 BOUNDARY REVISION

The Service's California/Nevada Operations Office Manager will decide which boundary revision alternative best meets the criteria described below. Any Legislative expansion of the approved boundary will be made in full recognition of the environmental effects of each alternative. Upon reaching a Record of Decision (ROD) on the Final CCP EIS, those sections pertaining to the selected boundary revision alternative will be extracted from the Final CCP EIS as the Stillwater National Wildlife Refuge Complex, Land Protection Plan. The Land Protection Plan then will be submitted by the Service's Director, on behalf of the Secretary of the Interior, to the U.S. Congress as the Service's recommended boundary revision.

Subsection 206(b)(5) of P.L. 101-618 specifies two criteria upon which to base any revisions of Stillwater NWR's boundary: (1) the extent to which a boundary revision would facilitate the Service's ability to carry out the purposes of Stillwater NWR, and (2) the extent to which a boundary revision would facilitate efforts to carry out provisions of subsection 206(a) of

P.L.101-618 (i.e., sustaining a long-term average of 25,000 acres of primary wetland habitat in the Lahontan Valley). These criteria are discussed in more detail in Chapter 2.

1.1.4.2 COMPREHENSIVE CONSERVATION PLAN

The decision to be made by the California/Nevada Operations Manager of the Service with respect to the CCP is the selection of an alternative to implement. This decision will be made with an understanding of the environmental consequences of all alternatives considered. The decisions will be designated in a Record of Decision (ROD) to be published no sooner than 30 days after a notice of availability (NOA) for the Final CCP EIS is published in the Federal Register. Implementation of the CCP will begin following publishing a summary of the ROD in the *Federal Register*.

The following criteria will be used in selecting the alternative for implementation. The Refuge System Administration Act established that the fundamental mission and top priority of all refuges is the conservation of fish, wildlife, and plants. Primary consideration will be given to the alternative that would best facilitate the conservation of fish, wildlife, plants, and their habitat according to refuge purposes, while contributing the most to restoring the biological integrity and the environmental health of the ecological system within refuge borders. Subsections 206(b)(2) and 210(b)(2) of P.L. 101-618, and Executive Orders 5606 and 1819 direct that Stillwater NWR, Fallon NWR, and Anaho Island NWR, respectively, be managed for specific purposes. Given the importance of Stillwater NWR to wetland-dependent wildlife, benefits to the natural diversity of wetland-dependent wildlife (especially migratory birds) will be an important criteria.

Another important criterion to identify the best alternative for implementation relates to visitor services management. Public Law 101-618 directs that Stillwater NWR be managed to "provide opportunities for scientific research, environmental education, and wildlife-oriented recreation," and the Refuge System Administration Act directs the Service to facilitate opportunities for wildlife-dependent recreational uses (hunting, fishing, wildlife observation and photography, and environmental education and interpretation) in the Refuge System, to the extent they are compatible with refuge purposes and the mission of the Refuge System. The Refuge System Administration Act also emphasizes providing opportunities for families to experience compatible wildlife-dependent recreation, particularly for parents and their children to safely engage in traditional outdoor activities such as hunting and fishing. Heavy consideration will be given to alternatives that balance opportunities for compatible wildlife-dependent recreation.

In summary, the alternative selected for implementation will best satisfy the following criteria, listed in priority order:

1. Conservation of:
    a. fish, wildlife, plants, and their habitat, with an emphasis on a natural diversity of these components within Stillwater NWR;
    b. wildlife breeding habitat and sanctuary within Fallon NWR; and
    c. colonial nesting species and other migratory birds within Anaho Island NWR.

2. Conservation of:
    a. wetland-dependent wildlife within Stillwater NWR; and
    b. a natural diversity of wildlife and plants within Fallon and Anaho Island NWRs.

3. Provide opportunities for wildlife-dependent recreational uses on Stillwater NWR that are compatible with refuge purposes.

4. Provide opportunities for other appropriate and compatible uses.

1.2 PART TWO - BACKGROUND

1.2.1 ESTABLISHMENT AND HISTORY OF THE STILLWATER NWR COMPLEX

Anaho Island NWR was established in 1913 by Executive Order 1819 as a " . . . preserve and breeding ground for native birds." P.L. 101-618 §210(b)(2) more narrowly defined the purpose of Anaho Island NWR, stating that it was to be managed and administered " . . . for the benefit and protection of colonial nesting species and other migratory birds." P.L. 101-618 also recognized that Anaho Island is part of the Pyramid Lake Indian Reservation, but it is to be managed and administered by the Service as a component of the Refuge System. A memorandum of understanding between the Service and the Pyramid Lake Paiute Tribe was signed in March 1992 that described the terms of the Service's management and administration of the island.

Fallon NWR was established in 1931 by Executive Order 5606 "as a refuge and breeding ground for birds and other wild animals." It has been managed as part of the Stillwater WMA.

Stillwater WMA was established through an agreement signed in 1948 by the Truckee-Carson Irrigation District (TCID), Nevada State Board of Commissioners (Nevada Wildlife Commission), and the Service (Tripartite Agreement). This agreement expired in November 1998, but the Service continues to cooperatively manage the Stillwater WMA under an agreement with the Bureau of Reclamation (BOR; U.S. Bureau of Reclamation 2000) which includes most provisions of the 1948 agreement. When Stillwater WMA was established, it encompassed about 200,000 acres of land, of which about 140,000 acres were public land that

was originally withdrawn by BOR for Newlands Irrigation Project purposes. Stillwater WMA was established for the purposes of conserving and managing wildlife and their habitat, as well as for public hunting. Livestock grazing and muskrat production were to be managed commensurate with wildlife conservation and management. Stillwater NWR was established in 1949 as a wildlife sanctuary (closed to all public access, including hunting) adjacent to the Stillwater WMA. It encompassed about 24,200 acres of public land, and consisted of the areas south of Division Road and east of Hunter Road (Map 1.3).

In 1990, the approved boundary of Stillwater NWR was expanded under subsection 206(b)(1) P.L. 101-618, to encompass Stillwater Marsh, most of which was previously in the Stillwater WMA. Map 1.4 identifies the existing boundary of Stillwater NWR. In addition to the boundary expansion, P.L. 101-618 §206(b)(2) also outlined four purposes for which the Service must manage Stillwater NWR: (1) maintaining and restoring natural biological diversity; (2) providing for the conservation and management of fish and wildlife and their habitat; (3) fulfilling international treaty obligations of the United States with respect to fish and wildlife; and (4) providing opportunities for scientific research, environmental education, and fish and wildlife-oriented recreation.

The **natural biological diversity** of the Stillwater area refers to the variety within and among biological communities that evolved in the area under geological, evolutionary, and other ecological processes.

Enactment of P.L. 101-618 shifted the legal authority for managing the lands now within Stillwater NWR from the 1948 Tripartite Agreement to the Refuge System Administration Act and the refuge purposes identified in P.L. 101-618. The Refuge System Administration Act directs that wildlife conservation be the single highest priority and that all wildlife-dependent public uses be given equal emphasis in planning and management. The priority public uses are to be given higher consideration than all other public uses, and all public uses must be shown to be compatible with refuge purposes before they can be allowed to occur on the refuge. Livestock grazing and muskrat trapping are only to be permitted to the extent they can help in achieving refuge purposes. Public Law 101-618 also mandated that the Service make recommendations to Congress on any boundary revisions that may be needed to help carry out refuge purposes and other provisions of the law.

1.2.2 RELATED ACTIONS UNDER PUBLIC LAW 101-618

Related actions under P.L. 101-618 are described in the *Final Environmental Impact Statement* for *Water Rights Acquisition for Lahontan Valley Wetlands* (Final WRAP EIS) (U.S. Fish and Wildlife Service 1996a, pages1-18 to 1-29), and include the following:

- Acquisition and use of land and water rights for the Fallon Tribe (sec. 103);
- Closure/modification of TJ Drain (sec. 106);

- Truckee River Operating Agreement (sec. 205);
- Lahontan Valley wetlands water rights acquisition program (subsec. 206(a));
- Naval Air Station-Fallon water conservation (subsec. 206(c));
- State of Nevada cost-sharing (subsec. 206(d));
- Transfer of Carson Lake (subsec. 206(e));
- Transfer of the Indian Lakes area (subsec. 206(g));
- Recovery actions for endangered and threatened Pyramid Lake fish (sec. 207); and
- Newlands Project Operating Criteria and Procedures (OCAP), Project Efficiency, and Recoupment (subsec. 209).

Subsection 206(a) of P.L. 101-618 directs the Secretary of the Interior, in conjunction with the State of Nevada and other parties, to acquire enough water and water rights to sustain a long-term average of 25,000 acres of primary wetland habitat in the Lahontan Valley. The Final WRAP EIS describes a water rights acquisition program that was implemented by the Service in November 1996, when its Record of Decision was signed. The Final WRAP EIS estimated that 125,000 acre-feet of water would be needed to sustain 25,000 acres of wetland habitat. Key elements of the selected alternative include the continued use of irrigation drainwater and periodic excess water released from Lahontan Reservoir, acquisition of 75,000 acre-feet of water rights in the Carson Division of the Newlands Irrigation Project, acquisition of water rights from the middle Carson River, leased water rights in the Carson Division, water conserved at the Naval Air Station-Fallon, and groundwater pumping. Together, these sources of water are anticipated to provide a long-term average of 125,000 acre-feet of water for the wetlands.

Of the 25,000 acre target, about 14,000 acres of wetland habitat would be sustained over the long-term on Stillwater NWR. Another 10,200 acres would be sustained on Carson Lake Wildlife Management Area, and the remaining 800 acres would be sustained on the Fallon Paiute-Shoshone Indian Reservation. This Final CCP EIS outlines alternative objectives and strategies for managing the 14,000 acres of wetland habitat on Stillwater NWR.

1.3 PART THREE ISSUES AND PUBLIC INVOLVEMENT

The Service began the development of a CCP for Stillwater NWR Complex and an evaluation of Stillwater NWR's boundary for possible revision in early 1997. In the process of developing alternatives for the plan and boundary revision, the Service involved the public, including other agencies, in a variety of ways. This part of Chapter 1 summarizes the public involvement activities and other consultation and coordination activities (1.3.1) and major issues identified through scoping (1.3.2), including significant problems adversely affecting fish, wildlife, and plant populations and their habitat.

1.3.1 SUMMARY OF PUBLIC INVOLVEMENT AND OTHER COORDINATION AND CONSULTATION PRIOR TO RELEASE OF DRAFT CCP EIS

1.3.1.1 GENERAL MEETINGS AND OUTREACH

1.3.1.1.1 Initial Scoping Meetings and Open-house Workshops Prior to Draft CCP EIS Release

Three public scoping meetings were conducted in early 1997 by the Department of the Interior for several potential Federal actions, including comprehensive conservation planning at the Stillwater NWR Complex. The meetings, conducted in Fallon (March 11), Fernley (March 12), and Reno (March 19), Nevada, addressed four Federal actions: (1) Stillwater NWR Complex comprehensive conservation planning, including a potential boundary revision, (2) potential modification to the Operating Criteria and Procedures for the Newlands Project, (3) water acquisitions for cui-ui recovery, and (4) the Truckee River Water Quality Settlement Agreement. Few comments were received on Stillwater NWR Complex issues during these meetings. A Notice of Intent to prepare an EIS was published in the *Federal Register* on March 14, 1997 (Volume 62, Number 50, pages 12245-12246) by the Department of the Interior.

The Service subsequently conducted open-house workshops in Fallon on March 24, April 30, and July 17, 1997 and in Reno on March 25, April 29, and July 16, 1997. These open-houses were conducted specifically to gather additional input on major issues, potential courses of action, possible impacts and mitigation for the Service to consider during the evaluation of the existing Stillwater NWR boundary and during the development of goals, objectives, and strategies for the CCP. Although the open-houses were lightly attended, there was considerable one-on-one discussion and many issues were identified. The planning process and meeting announcements were covered extensively by the local newspaper.

Prior to the open-house workshops, the Service sent letters to all individuals, organizations, and agencies that were on the mailing list developed for the WRAP EIS, to determine if they would like to be placed on the Stillwater NWR Complex's CCP/boundary revision mailing list. The Service also sent letters to the landowners within the boundaries of Stillwater NWR and Stillwater WMA, and adjacent areas, summarizing the boundary revision assessment, inviting them to the workshops, and encouraging input on issues and alternatives to consider.

A second Notice of Intent was published in the *Federal Register* on June 15, 1998 (Volume 63, Number 114, pages 32676-32677) "to inform the public that the Service was preparing an EIS for a CCP for Stillwater NWR Complex and an associated boundary revision for Stillwater NWR."

1.3.1.1.2 Planning Updates, and Newspaper and Newsletter Articles

Prior to the release of the Draft Comprehensive Conservation Plan Environmental Impact Statement (Draft CCP EIS) (U.S. Fish and Wildlife Service 2000), the Service sent five planning updates to more than 200 interested individuals, organizations, and agencies to keep them informed about the comprehensive conservation planning and boundary revision processes and to encourage public participation. The first planning update (April 1997) introduced the planning process, explained the importance of managing national wildlife refuges according to their purposes, informed readers how to provide input into the planning process, and announced the times and locations of upcoming open-house workshops. The second planning update (June 1997) summarized the issues that were identified during the first several months of the planning process; listed draft goals for Stillwater NWR, Fallon NWR, and Anaho Island NWR; summarized the basis of draft goals; told readers how to provide input; and announced the time and location of upcoming open-house workshops. In the third planning update (July 1997), five boundary alternatives were described and an upcoming open-house workshop was announced. Planning updates four and five (May 1998 and March 1999) introduced the National Wildlife Refuge System Improvement Act of 1997, changes in management priorities brought about by the expiration of the 1948 Tripartite Agreement and subsequent management according to P.L. 101-618 and other pertinent laws, and summarized public and Service issues concerning the public use program.

Announcements of the planning process were also provided in several regional, national, and international newsletters of conservation and professional organizations, including *Waterfowl 2000* (North American Waterfowl Management Plan), *Intermountain Quarterly* (Intermountain West Joint Venture), *Network News*, (Western Hemispheric Shorebird Reserve Network), *Nevada Waterfowl Association Newsletter*, and newsletters of the Biological Diversity working group and the Nevada Chapter of The Wildlife Society.

In 1997, the local newspaper, *Lahontan Valley News* and *Fallon Eagle Standard*, contained articles on the planning process and announced meeting dates in the March 7, April 1, April 22, May 1, May 2, July 1, July 2, and July 17 editions. The Reno Gazette-Journal contained an article on the planning process on March 1, 1999.

1.3.1.1.3 Public Law 101-618 Cooperator's Meetings

Staff of the Stillwater NWR Complex periodically attended quarterly P.L. 101-618 Cooperator's meetings, participants included representatives from several Department of the Interior agencies, Nevada State agencies, municipal governments, and Tribes. Short status updates were provided periodically and more detailed presentations were given on August 13, 1997, November 19, 1997, and February 26, 1998. In these presentations, the Service gave updates on the planning processes and requested comments and feedback. A planning update was distributed on March 3, 1999.

1.3.1.2 MEETINGS WITH AGENCIES, TRIBES, AND OTHER GROUPS

1.3.1.2.1 Federal Agencies

The Service met periodically from July 1997 to January 1999 with representatives of the BOR to discuss boundary revision, water management, and other issues. Bureau of Reclamation assisted the Service with computer modeling of potential effects of Stillwater NWR water management on Newlands Project operations..

The Service met with the Bureau of Land Management (BLM) on March 19, 1998 to discuss the boundary revision issue and potential effects of changes in refuge management on adjacent BLM lands.

After receiving a letter from the Naval Air Station-Fallon (August 26, 1997), the Service met with Naval Air Station-Fallon on three occasions (September 8, 1997; March 11, 1998, and February 22, 1999) to discuss their concern about the potential expansion of Stillwater NWR northward toward the Bravo-20 Bombing Range.

U.S. Geological Survey (USGS) reviewed a conceptual model of the natural functioning of the Lahontan Valley wetland ecosystem, and provided input on improving the model.

The U.S. Department of Agriculture's Wildlife Services Agency provided suggestions on animal damage control.

1.3.1.2.2. State of Nevada

Staff of the Stillwater NWR Complex and Western Region of the Nevada Wildlife Commission (NDOW) held monthly coordination meetings, which included periodic discussions of refuge planning issues. The Service met with NDOW on five occasions to specifically discuss comprehensive conservation planning and potential revisions to the Stillwater NWR boundary (September 1997, October 1997, November 1997, May 1998, November 1998, and December 1999). In these meetings, Stillwater NWR staff briefed NDOW on the status of the planning process and obtained input on the habitat and public use management options being developed. Major topics of discussion included sources of management direction; boundary revision options; natural hydrologic functioning; water management options; management of wildlife-dependent recreational uses; and hunting management, including different zoning options.

At a coordination meeting between the refuge managers and NDOW on July 18, 1997, several suggestions were made for the Service to consider for the CCP for the Stillwater NWR Complex. At a coordination meeting between the Service and NDOW on April 23, 1999, the Service provided a brief summary of the planning process and issues being addressed. The Service also

met with the Nevada State Board of Wildlife Commissioners in February 1999 to brief them on the planning process and to answer questions.

The State Historic Preservation Office attended a meeting on cultural resource issues on Stillwater NWR (see below).

1.3.1.2.3 Tribes

The Service periodically met with representatives of the Fallon Paiute-Shoshone Tribe to discuss the potential boundary revision and other issues being addressed in the CCP.

A status update was provided by the Service at the February 6, 1998, Pyramid Lake Paiute Tribe Coordination Meeting. The Service met with representatives of the Pyramid Lake Paiute Tribe on March 24, 1998 to discuss Anaho Island NWR issues and other issues related to the development of the Stillwater NWR Complex CCP and Stillwater NWR boundary assessment. On November 4, 1999, the Service discussed the status of the Anaho Island wilderness proposal with representatives for the Pyramid Lake Paiute Tribe at the Department of the Interior-Pyramid Lake Pauite Tribe Coordination Meeting.

1.3.1.2.4 Local Governments

The Service gave a presentation and answered questions at the October 15, 1997 Churchill County Commissioners meeting and at a November 19, 1997 Fallon City Council meeting. The presentation focused on the purposes and basis for planning and the scope of the plan and potential boundary revision, and provided an opportunity for representatives to present input to the Service. Prior to the Fallon City Council meeting, Stillwater NWR staff met with the City attorney and a contracting attorney to discuss the agenda of the City Council meeting. Written scoping comments on the planning process (letter dated May 21, 1997) were also received from the County.

The Service met with the Churchill County Mosquito Abatement District on November 12, 1998 to discuss concerns of the district that were identified in the Final WRAP EIS (U.S. Fish and Wildlife Service 1996a). This was followed by telephone conversations with other professionals referenced by the mosquito district.

1.3.1.2.5 Private Organizations

The Service was invited to several meetings of private organizations. The Service provided planning background and status updates at board meetings of the Nevada Waterfowl Association in June 1997 and September 1998, Canvasback Gun Club in July 1997, and Ducks Unlimited in June 1998. Presentations were made to the Reno Host Lions Club in May 1997, Fallon Host Lions Club in March 1998, the Lahontan Chapter of the Audubon Society in January 1999, and

Friends of Stillwater Coalition in January 1999. In each case, people attending the meetings were encouraged to provide input into the planning process.

The Service considered comments received in letters from various organizations on boundary revision alternatives and habitat and public use management options. These organizations included the Toiyabe Chapter of the Sierra Club, Lahontan Wetlands Coalition, Nevada Waterfowl Association, The Nature Conservancy, and the Outdoor Education/Physical Education Office, Washoe County School District, and Friends of Stillwater Coalition.

Additional meetings with private organizations are addressed in section 1.4.4.3.

1.3.1.3 TOPICAL MEETINGS AND TOURS

1.3.1.3.1 Livestock Grazing

Two livestock grazing tours were conducted in which the Service received input from a variety of interest groups and professionals. The first meeting, conducted on July 7 and 8, 1997, was a review of the habitat management program by staff of the Service's Pacific Region Office, Portland, Oregon. Several professionals from the Agricultural Research Service and the University of Nevada-Reno with expertise in rangeland and riparian systems were invited to provide technical input. A report was produced by the Service's Division of Operations Support, Pacific Region Office that described recommended changes to the habitat management program of the Stillwater NWR Complex in relation to livestock grazing.

In the second meeting on July 19, 1997, other professionals as well as people representing livestock grazing interests and environmental interests were invited to attend the meeting. Participants included representatives from the Natural Resource Conservation Service, the Nevada Chapter of the Society for Range Management, Nevada Chapter of The Wildlife Society, Nevada Wildlife Federation, Great Basin Chapter of the Sierra Club, and a private citizen. Several areas on Stillwater WMA, Fallon NWR, and Stillwater NWR were visited during the tour, and participants were asked to provide input on the livestock grazing issue. Many of the participants submitted letters further detailing their thoughts.

Prior to issuance of the 1997 and 1999 livestock grazing permits, Stillwater NWR staff informed livestock grazing permittees of the planning process, the general scope of the plan, and encouraged the permittees to provide input. One permittee visited the Stillwater NWR Complex office to discuss several issues with respect to the potential use of livestock grazing in managing wildlife on the Stillwater NWR Complex.

1.3.1.3.2 Contaminants

The Contaminants Division of the Service's Nevada Fish and Wildlife Office organized a meeting to address the contaminant issues affecting the Stillwater NWR Complex relative to the

CCP. There were 12 participants including representatives from several Service offices, USGS, EPA, and the University of Nevada-Reno. Introductory presentations provided background on the planning process, environmental setting, and biological and contaminant concerns. Following this introduction, management and research options were discussed.

1.3.1.3.3 Other Habitat Management Issues

Stillwater NWR staff met with other professionals individually and in small groups to discuss various habitat conditions and habitat management techniques. Anticipating the development of a CCP for Stillwater NWR Complex, refuge staff toured various upland habitat with range ecologists from the Agricultural Research Service and the University of Nevada-Reno on May 19, 1994. Topics of discussion included range ecology in arid basins and the relationships between Indian ricegrass and kangaroo rats.

Stillwater NWR staff toured portions of Stillwater WMA with a fire ecologist on October 30, 1997 to gain a better understanding of the role that fire played in shaping Lahontan Valley habitat under natural and pre-Euro-American settlement times.

Stillwater NWR staff also met with representatives of the University of Nevada-Reno's Biological Resources Research Center and Biology Department, and contracted several inventories (Charlet, et al. 1998, Rust 1998, Rahn 1998), and the preparation of a vegetation map for Stillwater NWR, Stillwater WMA, and Fallon NWR (Map 2.2, Charlet et al. 1998). Management implications and recommendations were included in reports.

As part of a contract with Ducks Unlimited, the Service obtained technical input on potential water management strategies.

1.3.1.3.4 Visitor Services Management

An outdoor recreation planner from Region 6 of the Service spent the week of May 19, 1997 touring Stillwater NWR and Stillwater WMA with refuge staff, discussing visitor services issues and providing recommendations. This was followed by a similar working session attended by staff from the Service's Pacific Region Division of Education, Publications, Interpretation, and Communications during the week of October 20, 1997. In each case, extensive recommendations were provided, and these were considered in the development of public use alternatives.

A focus group was formed by the Lahontan Wetlands Coalition in December 1997 to develop visitor services management options for the Service to consider. The Service was invited to this meeting as a technical advisor. The meeting resulted in a letter that outlined visitor services management recommendations from the Lahontan Wetlands Coalition.

Later, the Service was invited to a coalition of hunting organizations to address questions on potential changes to Stillwater NWR's hunting program and other aspects of visitor services management. This meeting ultimately led to a letter (February 15, 1999) signed by 15 hunting,

environmental, and other conservation organizations, and educators. The letter summarized recommendations on visitor services management.

1.3.1.3.5 Cultural Resources

On January 13, 1997, Stillwater NWR staff met with the Service's Pacific Region Archaeologist, the State Historic Preservation Officer, and the Naval Air Station-Fallon Archaeologist (who had formerly worked as an Archaeologist on Stillwater NWR) to discuss cultural resource management issues and to draft initial cultural resource objectives and strategies. Discussions with regional staff have continued and the Region Archaeologist is a contributing planning team member.

1.3.1.4 COMMENTS ON THE DRAFT WATER RIGHTS ACQUISITION PROGRAM EIS

Comments received that were determined to be within the scope of the *Draft Environmental Impact Statement for Water Rights Acquisition for Lahontan Valley Wetlands* (U.S. Fish and Wildlife Service 1995a) were also considered in this planning process. Issue topics included wetland water requirements, seasonal water-delivery schedule, use of acquired water, ways to reduce water quality problems, removal of dikes to restore Stillwater Marsh to pre-development conditions, desired mix of wetland habitat types, mosquito control, adverse impacts of beavers on riparian restoration, and a desire for a formal process that allows interest groups familiar with Stillwater Marsh to provide input on a regular basis.

1.3.1.5 OTHER OUTREACH

In June 1996, the Nevada Chapter of The Wildlife Society held their annual summer meeting at Stillwater NWR. This provided the Service an opportunity to present an overview of refuge management and the upcoming planning process, as well as receive initial input on wildlife related issues. The annual midwinter meeting of the Nevada Chapter of The Wildlife Society was held in Fallon, Nevada on January 10, 1998 and the theme of the first several presentations was the restoration and the management of Lahontan Valley wetlands, from the perspectives of the Service, NDOW, and the Lahontan Wetland Coalition. Other presentations addressed studies of contaminants and bats in the Lahontan Valley, including Stillwater NWR. In a session on comprehensive conservation planning on refuges at the 1999 Western Section of The Wildlife Society conference in Monterey, California, results of modeling and inventories conducted at Stillwater NWR, and management recommendations were presented by the University of Nevada-Reno and a private consultant.

1.3.1.6 FISH AND WILDLIFE SERVICE

The core planning team met approximately 45 times to discuss planning and management issues, discuss natural habitat conditions, develop alternative sets of objectives, alternative sets of

strategies, formulate alternatives, and to identify potential consequences of each alternative. All or most of the core planning team members (see List of Preparers, Chapter 5) attended these meetings, and there were numerous meetings and discussions among members in smaller groups. The planning team included the Service's Pacific Region Archaeologist and the Service's Nevada Fish and Wildlife Office's Contaminant Specialist. The planning team worked closely with the Service's Nevada Fish and Wildlife Office, Ecological Services staff in evaluating potential effects on threatened and endangered species. Four working sessions were held with Service's Pacific Region Office (Region Office) staff to discuss planning and management issues, alternative objectives and strategies, and potential impacts. The Region Office also sponsored the habitat management review discussed in section 1.4.4.1.

1.3.2 SUMMARY OF PUBLIC INVOLVEMENT AND OTHER COORDINATION AND CONSULTATION FOLLOWING DRAFT CCP EIS RELEASE

1.3.2.1 GENERAL MEETINGS AND OUTREACH

1.3.2.1.1 Notice of Availability and Open-house Workshops

Prior to release of the Draft CCP EIS, a notice of availability was published in the *Federal Register* (April 14, 2000; Volume 65, Number 73, pages 20192-20194). An initial public comment period of 60 days was allowed for review. Several reviewers requested additional time to submit comments on the document, so an additional 60-day public review period was published in the *Federal Register* (June 23, 2000; Volume 65, Number 122, page 39173). The 120-day public comment period extended from April 14 to August 12, 2000.

Following release of the Draft CCP EIS, the Service held two open house workshops in Fallon (April 26, 2000, Fallon Convention Center) and Reno (April 27, 2000, Department of the Interior Building). The Service provided an overview of the Alternatives studied in detail, met one-on-one with interested individuals, and committed to meet with any interested organization requesting Service attendance at their meetings.

1.3.2.1.2 Planning Updates, and Newspaper and Newsletter Articles

Planning Update #6 was released with the Draft CCP EIS and included information on the alternatives, announced the two open house workshops, and means to acquire copies of the Draft CCP EIS. This update was distributed to all individuals requesting copies of the Draft CCP EIS, and was also posted on the Service's web site to notify all interested parties that the document was available. Planning Update #7 was distributed in July 2001 and included information on how the Service intended to incorporate the comments received on the Draft CCP EIS in formulating this Final CCP EIS.

Prior to and following release of the Draft CCP EIS, additional articles in the Lahontan Valley News and Fallon Eagle Standard announced availability of the Draft CCP EIS (April 15, 2000) and the open house workshops to discuss Draft CCP EIS content (April 25, 2000, April 28, 2000).

1.3.2.2 MEETINGS WITH AGENCIES, TRIBES, AND OTHER GROUPS

1.3.2.2.1 Federal Agencies

1.3.2.2.1.1. Bureau of Indian Affairs

Several meetings and/or correspondences occurred between the Bureau of Indian Affairs (BIA) and the Service regarding preparation of a technical analysis to examine the Stillwater NWR Draft CCP EIS's potential effects to species listed under the Endangered Species Act of 1973, as amended. Meetings occurred on April 20, 2000 and June 12, 2001. Bureau of Indian Affairs representatives also attended several Pyramid Lake Paiute Tribe Consultation meetings and a meeting to discuss modeling parameters used to analyze Final CCP EIS effects (July 23, 2001). A letter dated September 12, 2001, from the BIA Superintendent of the Western Nevada Agency requested that BIA be included as a cooperating agency for finalization of the CCP EIS. The refuge accepted the request on October 5, 2001, and their selected representative has been included as a core planning team member.

1.3.2.2.1.2. Bureau of Reclamation

Several comments to the Draft CCP EIS questioned how Stillwater NWR water management strategies outlined in the Draft CCP EIS might impact provisions of the 1988 Newlands Project Operating Criteria and Procedures, as amended in 1997 (OCAP; U.S. Bureau of Reclamation 1997). To address these comments and other OCAP related concerns, the Service met with the BOR on March 20 and 21, June 14, 16, and 23; July 7, and August 16, 2001.

1.3.2.2.2. State of Nevada

Many management and visitor services options suggested by NDOW during initial planning stages were inserted as part of preferred Alternative C (Option 2) in the Draft CCP EIS. On February 10, 2000, NDOW informed the refuge by telephone that they were discontinuing consultation until after the Draft CCP EIS was released, stating that the Service would see their concerns in the form of written comments. The preferred Alternative presented in the Draft CCP EIS included options NDOW had contributed, as constrained by policy mandates and the purposes of Stillwater NWR presented in P.L. 101-618 §206(b).

Following receipt of over 250 written comments submitted by the State (July 10, 2000) and the wide spread public dissent towards the Draft CCP EIS as verified by attendance at the April 26 and 27, 2000 open house workshops, the June 14, 2000 meeting of the Churchill County Advisory Board to Manage Wildlife and the June 17, 2000 meeting of the Nevada Board of Game Commissioners, the State proposed to establish a working group, whereby the State, Service, and representatives from a variety of public use interest groups could discuss components of the Draft CCP EIS.

1.3.2.2.3. Nevada Division of Wildlife Sponsored Working Group

The Service and NDOW met on August 24, 2000 to develop the framework for establishment of a Working Group to discuss concerns expressed during the public comment period. Among other issues, the primary concern of the working group was that proposals provided in the Draft CCP EIS to structure visitor services (public use) options were too restrictive. NDOW provided the list of topics that would be covered and invited representatives from a number of organizations to attend a series of structured discussions. The Service agreed to provide materials to facilitate discussion and to respond to comments or clarify segments of the Draft CCP EIS as distributed. Rich Heap from NDOW, moderated all Working Group sessions and ensured that the meetings remained productive.

Attendance included representatives from the Service, NDOW, Churchill County, the Friends of Stillwater Coalition, Nevada Waterfowl Association, Lahontan Wetlands Coalition, Toiyabe Chapter of the Sierra Club, Lahontan Audubon Society, the Nevada Board of Wildlife Commissioners, the Canvasback Gun Club, and the National Wildlife Refuge Association. Topics discussed included the boundary of Stillwater NWR, water management (seasonal delivery and distribution between the sanctuary and hunt areas), non-consumptive public uses (wildlife observation and photography, environmental education and interpretation), hunting (waterfowl, other species, and access options), fishing, trapping (muskrat and beaver), and predator control. The group met ten times between August 24, 2000 and February 26, 2001, with comments received through the Working Group process included in Planning Update #7 (July 2001; also available on the Service's Pacific Region Web Site). The Service has agreed to incorporate all comments included in Planning Update #7, into preferred Alternative E of this Final CCP EIS. Issues identified during the NDOW Working Group process are outlined in Section 1.3.2.2, Further Analysis of Issues, later in this chapter.

1.3.2.2.4 Tribes

Service attempts to discuss the content of the Draft CCP EIS with the Fallon Paiute-Shoshone Tribal Council on four separate occasions (April 19, May 4 and 23, and June 8, 2000) were unsuccessful. The Fallon Tribe did not submit comments on the Draft CCP EIS.

The Pyramid Lake Paiute Tribe submitted several comments on the Draft CCP EIS through the Tribal attorney (August 14, 2001 and appended August 16, 2001) and Stetson Engineers

(received August 11, 2000). Most of the Pyramid Lake Paiute Tribe concerns were related to water management strategies and associated affects to Truckee River resources as well as Tribal trust responsibilities.

In response to the Pyramid Lake Paiute Tribe's water management concerns, the Service initiated consultation with the BOR to more thoroughly examine the relationship between proposed refuge water management strategies and the 1997 OCAP (U.S. Bureau of Reclamation 1997). A technical analysis was prepared by the Service and presented to the Pyramid Lake Paiute Tribe for comment prior to a consultation on August 23, 2001. The comments received during this consultation were incorporated into the Final Technical Analysis which was submitted to Stetson Engineers for the Tribe on September 9, 2001. A condensed version of analysis components has been included in Appendix G and Chapter 4 of this Final CCP EIS.

In response to tribal trust concerns, the Service convened 11 consultation meetings between June 6, 2000 and August 23, 2001. While the CCP was included as a topic for discussion in these consultations as well as quarterly Tribal Coordination meetings, seven meetings with the Tribe were specifically convened to discuss the Draft CCP EIS. These consultations occurred on March 1 and 9, April 6, May 3 and 24, July 23, and August 23, 2001 and covered the specific topics of relationships with the 1997 OCAP and associated impacts to Truckee River fish species listed under the Endangered Species Act of 1973, as amended. Following these consultations, the Service distributed the draft responses to the combined Tribal comments on the Draft CCP EIS for review prior to release of this Final CCP EIS.

1.3.2.2.5 Local Governments

Churchill County Advisory Board to Manage Wildlife

At the request of the Churchill County Advisory Board to Manage Wildlife, the Service attended the June 14, 2000 group meeting. Several concerns were expressed by advisory group members and the public at large, primarily related to proposed boating regulations and other access options during the waterfowl hunting season, and the use of materials included in Appendix L of the Draft CCP EIS. Advisory group comments to the Draft CCP EIS were similar to those submitted by NDOW and most of these concerns were addressed in the NDOW working group discussions as included in Service preferred Alternative E of this Final CCP EIS.

Board of Churchill County Commissioners

Following release of the Draft CCP EIS, the Service met with the Board of Churchill County Commissioners (BCCC) and presented components of preferred Alternative C. Board of Churchill County Commissioners submitted 237 comments on the Draft CCP EIS and the Service conducted a follow up meeting on September 28, 2000 to discuss concerns expressed in their written comments. Many of these comments were related to alternative specific boundary expansion proposals, effects to the local economy, carry over issues related to implementation of

the 1996 WRAP EIS and ROD, and public use elements submitted by NDOW. Representatives from Churchill County were included in the NDOW Working Group discussions and many of these comments were addressed during these sessions.

Truckee-Carson Irrigation District

Although TCID did not submit comments to the Draft CCP EIS, the Service has been working closely with TCID regarding water delivery to the refuge and management of Stillwater Point Reservoir located at the southern end of the existing sanctuary. In response to water delivery requirements proposed in the Draft CCP EIS, the BOR contracted the Irrigation Training and Research Center, California Polytechnic University (ITRC) to develop a proposal in cooperation with the Service, BOR, and TCID to facilitate up to 400 cubic feet per second flows to Stillwater NWR during spring (Draft CCP EIS Alternative C and Service preferred Alternative E in this Final CCP EIS). The Service met with representatives from BOR, TCID, and ITRC on April 14, July 17, and September 2, 2000, July 17, and November 21, 2001. The Service received a draft proposal from ITRC at the July 17, 2001 meeting and submitted written comments to the proposal on August 24, 2001. Discussions regarding comments submitted by BOR, TCID, and the Service were discussed at the November 21, 2001 meeting. The final report was delivered January 17, 2002. No proposal has been developed to implement any of the recommended improvements; therefore, no proposed action was available for analysis at the time this Final CCP EIS was prepared.

City of Fallon

The City of Fallon submitted comments on August 11, 2000 expressing their concerns related to implementation of the 1996 Final WRAP EIS and ROD and the need for a programmatic EIS covering a variety of independent Federal actions. In these comments, the City of Fallon referenced the comments submitted by the BCCC on the Draft CCP EIS and expressed their agreement with these comments. Attempts were made to meet with City officials in phone calls made on April 4 and 12, 2000; however, a meeting date could not be set. The City was invited to the May 22, 2000 meeting with the BCCC, but was unable to attend.

1.3.2.2.6 Private Organizations

The Service met with or offered to meet with any individual or organization expressing interest in the management of Stillwater NWR as proposed in the Draft CCP EIS (Planning Updates #6 and #7, April 26 and 27, 2000 Open Houses). Refuge staff met with many of the 54 comment contributors (Volume III of this Final CCP EIS). The NDOW Working Group sessions included representatives from a cross section of public use interest groups (Section 1.3.1.2.3) and many concerns submitted during and outside of the public comment period were addressed in these sessions. The Friends of Stillwater Coalition, included in the working group discussions, also represented the Lahontan Audubon Society, Nevada Waterfowl Association, Greenhead Club, Ormsby Sportsmens Association, Nevada Bighorns Unlimited, Nevada Trapper's Association,

Dutch Bill Gun Club, the Washoe County School District, the Canvasback Gun Club, Nevada Ducks Unlimited, The Nature Conservancy, National Wild Turkey Federation, Board of Director's of the Mule Deer Foundation, and the Northern Nevada Safari Club International (by signature in comments submitted on August 8, 2000). The Service was also scheduled to meet specifically with the Friends of Stillwater Coalition on August 26, 2000; however, this meeting was cancelled at their request.

The Service responded to several phone calls requesting clarification on elements included in the Draft CCP EIS and submitted written responses to letters from three private individuals and the Nevada Trappers Association.

1.3.2.3 FISH AND WILDLIFE SERVICE

Pursuant to Section 7 of the Endangered Species Act as amended (1973), refuge staff requested a current list of species which may be affected by the Stillwater NWR boundary revision and CCP from the Service's Nevada Fish and Wildlife Office. Draft biological assessments were distributed for Service internal review on January 5 and February 24, 2000. The initial intra-Service Section 7 consultation process was postponed in February 2000 when it was determined that the consultation could not be completed prior to release of the Draft CCP EIS.

The process was reinitiated in October 2000. Internal consultation meetings were held on November 7 and 9, 2000; February 20, June 14, July 23, October 1, November 13, December 6 and 19, 2001. The refuge submitted a third Biological Assessment to the Nevada Fish and Wildlife Office on August 8, 2001, and requested their concurrence that the Draft CCP EIS was not likely to affect bald eagle, cui-ui, or Lahontan cutthroat trout. The refuge received a letter of non-concurrence on August 16, 2001. The project was elevated to a formal consultation and assigned File Number 1-5-01-FW-252. Refuge staff submitted two amendments to the Biological Assessment on September 7 and 19, 2001. Through consultation, the Service reassessed the findings of the Biological Assessment and concurred with the assessment in a letter dated April 10, 2002.

1.3.3 MAJOR ISSUES IDENTIFIED PRIOR TO DRAFT CCP EIS RELEASE

1.3.3.1 ISSUE STATEMENTS

Six major issues were identified during the public and internal scoping process. Each of the major issues described below identify potential effects that a revised boundary and CCP could have on a particular resource. The following issues, which are discussed in more detail in a Scoping Report (Appendix Q), were considered during the development of alternatives and evaluation of environmental impacts:

1. *Potential Effects on Populations of Fish, Wildlife, and Plants.* Wildlife management at Stillwater NWR, Stillwater WMA, and Fallon NWR has traditionally focused on game species, especially waterfowl. Thus, concern was raised that any changes to this traditional focus, such as any changes in water management strategies, controlling or not controlling certain nest predators, and fisheries management, may affect waterfowl. In recent years, other migratory birds such as shorebirds and colonial nesting species have been receiving more management attention. Given the directive to manage Stillwater NWR to conserve the natural biological diversity within the refuge, which includes all native species of fish, wildlife, and plants, there is interest in the effects that future management may have on these other groups of organisms. (Section 1.3.2.2.1 provides additional detail on a related issue.) Long-term protection of colony nesting birds at Anaho Island is the main issue with respect to Anaho Island NWR.

   Boundary revision for Stillwater NWR can also affect populations of animals and plants, primarily through increased protection and restoration of sensitive habitat such as riparian and dune habitat.

   Another issue of concern, given the high importance of providing wildlife-dependent recreational uses on Stillwater NWR, is the potential adverse impacts to wildlife resulting from people walking, driving, boating, hunting, and approaching wildlife in wildlife habitat. This is further discussed in Section 1.3.2.2.2.

2. *Potential Effects on Habitat and Ecosystem Functioning*. Methods of managing water and vegetation can have major positive and negative effects on animal and plant populations. Therefore, the effects of the CCP on habitat management, including the selection of management methods and intensity of use, is of concern to many people. Most public comments on habitat management addressed the management of water and livestock and their effects on habitat quality. Another important habitat issue on the Stillwater NWR Complex is the effect that different management strategies have on the distribution and abundance of several nonnative invasive plant species, such as saltcedar, perennial pepperweed, and cheatgrass. Several water-borne contaminants are also of concern. There is much interest in the effects that managing newly acquired water rights will have on wetland habitat within Stillwater NWR. The major habitat areas that could be affected by a boundary revision are the Carson River corridor, the sand dune complex, a vast expanse of salt desert shrub habitat, and the southwestern portion of the Carson Sink.

3. *Potential Effects on Recreational, Educational, and Interpretive Opportunities*. Many people, including Service personnel, recognize the great potential that the Stillwater NWR Complex has for providing high quality opportunities for wildlife-dependent recreational uses. The Service has clear direction to facilitate compatible wildlife-dependent recreational uses on Stillwater NWR. Two main issues surfaced during scoping: (1) members of the hunting public and others have asked that the waterfowl hunt

program remain much as it is today, including no change in the boundary of the hunt zone; and (2) people representing a variety of interests have asked that the Service provide better facilities and information for birdwatchers, environmental educators, wildlife photographers, and other people interested in learning about the refuge's wildlife, habitat, and cultural resources. Although many issues were brought to the attention of the Service, these appear to be the central issues. Interest was expressed in raising the 10 horsepower limit on motorboats during the hunting season. Section 1.3.2.2.2 provides additional detail on this issue.

Other issues include the potential effects on opportunities for horseback riding, camping, access to desert areas, and hunting in upland habitat. For example, in contrast to some people envisioning additional opportunities created by expansion of Stillwater NWR's boundary (e.g., for birdwatching along the Carson River), others expressed concern that it would diminish opportunities by restricting road access and disallowing certain activities (e.g., coyote and jackrabbit hunting, and off-road vehicles).

4. *Potential Effects on Cultural Resources*. Habitat management activities, facilities maintenance, and public use on the refuge, and a variety of environmental factors have the potential to affect cultural resources on the refuge. Cultural resources on Stillwater NWR and WMA are essential elements of individual and group identity for members of the Fallon Paiute-Shoshone Tribe. The cultural resources on Stillwater NWR and WMA are some of the most important cultural resources in Nevada. The entire Stillwater Marsh has been placed on the National Register of Historic Places. Although cultural resources, especially archeological sites, pervade Stillwater Marsh, they are fragile, easily disturbed and destroyed, and are nonrenewable. Cultural resources are small and subtle compared to the surrounding landscape and contemporary features like roads, ditches, and visitor facilities.

The most critical issue with respect to the CCP and potential boundary revision revolves around cultural resources protection and interpretation in concert with management of wildlife habitat and visitor services on Stillwater NWR. Specific issues that need to be addressed include (a) providing adequate protection of cultural resources from inadvertent disturbance by the public, while still allowing the public to enjoy a wildlife and cultural experience on the refuge; (b) reducing illegal artifact collecting and looting, while still allowing hunters and other recreationists to access the most archaeologically sensitive areas of the marsh; (c) implementing an environmental education program that incorporates accurate archaeological and cultural information including appropriate consultation with the Fallon Paiute Shoshone Tribe; and (d) the effects of manipulating water levels, and the replacement and construction of necessary infrastructure on cultural resources, and the potential mitigation of these activities.

5. *Potential Effects on the Local Agriculture and Socio-Economy, and the Newlands Irrigation Project*. The Service was encouraged to evaluate the use of spill water from Lahontan Reservoir and to reassess the volume and water quality of drainwater and groundwater reaching Stillwater NWR. Another suggestion was to reevaluate water rights acquisitions based on recent adjustments to the 1988 OCAP for the Newlands Irrigation Project. Because the Service will have a considerable portion of water rights in the Carson Division, changes in the seasonal water delivery pattern has the potential to affect Newlands Project operations and Truckee River resources. Any changes to livestock grazing management on Stillwater NWR and Fallon NWR, in combination with any revisions to the boundary of Stillwater NWR could potentially affect the local economy. The most direct economic effects of changes would be on livestock grazing permittees. Changes in recreational opportunities could also affect the local economy.

6. *Potential Effects on Naval Air Station-Fallon Operations.* The U.S. Navy expressed concern that a boundary revision of Stillwater NWR could potentially affect their tactical training at the Bravo-20 Bombing Range. Aircraft are not permitted to fly lower than 3,000 feet over Stillwater NWR, Fallon NWR, and Stillwater WMA. The 3,000-foot ceiling would not apply to any northward extension of Stillwater NWR. The Navy maintains a Tactical Air Combat Training System relay tower within Stillwater WMA.

1.3.3.1.1. Issues Confirmed or Raised During the Draft CCP EIS Public Comment Period

The Draft CCP EIS was made available for public comment on April14, 2000 (*Federal Register*, Volume 65, Number 73, Pages 20192-20194). The 120-day comment period resulted in 54 contributors providing 1,004 comments addressing several different issues within several broad categories. Over 60 percent of the comments referred to management issues ranging from water delivery strategies to implementation of habitat management tools; 15 percent were related to visitor services activities, including the priority wildlife-dependent recreational activities identified in the Refuge System Administration Act; 7 percent provided editorial comments or corrections to the Draft CCP EIS; 6 percent related the Draft CCP EIS to relevant policies and legal mandates; 5 percent covered the Draft CCP EIS development process and coordination between the various stakeholders; 5 percent were related to the National Environmental Policy Act (NEPA) process; and less than 1 percent identified law enforcement issues. Within each of these categories, several different issues were discussed which will be itemized in the following sections.

Management

Comments related to management of the Stillwater NWR Complex covered 65 sub-categories with water management accounting for approximately 33 percent of the total comments. These comments, in decreasing order, covered proposed water delivery strategies, relationships of proposed delivery strategies with the 1997 OCAP (U.S. Bureau of Reclamation 1997), the

quality and quantity of available sources of water, the availability and impacts to the local community from acquiring water rights, the availability and quality of groundwater, use of models to project anticipated impacts, potential changes to the amount of water required to maintain 14,000 acres of primary wetland habitat on Stillwater NWR, the flow pathways used for seasonal delivery strategies, and the availability of other water sources identified in the 1996 Final WRAP EIS and ROD. Impacts to wildlife populations were of most concern with several commentors suggesting that a spring delivery strategy as proposed under draft Alternative C could increase nest flooding of early spring initiated waterfowl nests, increase the potential for botulism outbreaks based on summer drawdown strategies, and decrease the availability of water to hydrate wetlands in the fall for migratory waterfowl. Others were concerned that the delivery strategies might impact the C2 coefficients used to calculate Truckee River diversion amounts under the 1997 OCAP. These comments noted that as the refuge acquires more water rights, there would be more influence on monthly delivery from Lahontan Reservoir during the spring cui-ui spawning period, which may require more water from the Truckee during the critical May and June spawning period.

Other management concerns referred to the proposed boundaries offered under the Draft CCP EIS Alternatives. Some commentors requested the maximum expansion as proposed under Draft Alternative D, the minimum expansion proposed under Alternative B, and others requesting no change from Alternative A with Fallon NWR, Stillwater NWR, and the existing Stillwater WMA remaining intact. Others inquired about access to private inholdings and whether uses that had been occurring on these private lands would be allowed to continue, while others wondered who retained management authority over the Carson River if the proposed boundary expansion included the Carson River corridor. A few comments inquired about the contribution of non-wetland habitat toward meeting the purposes of Stillwater NWR.

The following issues regarding livestock grazing were raised by several commentors: the process for phasing out livestock grazing; the economic impacts to the local community; and livestock grazing on private inholdings. Other commentors suggested that livestock grazing could be used as a habitat management tool if used during the appropriate seasons and intensity. Others did not want livestock grazing on a National Wildlife Refuge.

Less frequently raised issues included predator control (primarily in favor), invasive species control, biological monitoring, impacts to secondary wetlands, road closures or openings, habitat management tool implementation (e.g. farming, fire, and revegetation), waterbird disease management (botulism, cholera, and encephalitis), air quality, cultural resources management, fisheries management, relationships with NAS Fallon and associated policies, and wilderness review.

All comments and their responses are included in Volume III of this Final CCP EIS.

Visitor Services

Approximately 15 percent of the comments were related to visitor activities such as providing priority wildlife-dependent recreational uses identified in the Refuge System Administration Act, but also, related to historic uses under the 1948 Tripartite Agreement proposed to be discontinued under Draft CCP EIS Alternatives. Hunting and boating access to facilitate waterfowl hunting accounted for approximately 50 percent of public use comments with most commentors desiring no change from the 1948 Tripartite Agreement. Others suggested that we would be providing too much habitat for public use and not enough for wildlife under Draft CCP EIS preferred Alternative C (Option 2). Many did not want to see airboats eliminated on the refuge while others thought they would be too disturbing to wildlife. Most boating comments were related to proposed engine size and speed restrictions while others were both in support and against providing designated no boating units on the refuge. The majority of these comments, however, proposed that the Service allow hunting, essentially as it has occurred in the past.

Ten comments were related to the fishing closure proposed under all action Alternatives. The remaining comments pertained to wildlife observation and photography, environmental education, visitor impacts, cultural resources, secondary uses, camping, trails, vehicle access, horseback riding, and dog training.

Policy Compliance

About 7 percent of the comments were specifically related to compliance with the various public laws, decrees, Tribal trust obligations, and other decided Federal actions within both the Truckee and Carson River systems. Nearly half referenced the 1996 WRAP EIS and ROD and revisited comments related to implementation of this action. Several comments were specifically related to a variety of Secretarial Orders, Executive Orders, Department of the Interior Policy, and previous actions related to meeting Trust Obligations of Native American Indian Tribes. The remaining comments referred to compliance with P.L. 101-618, The Refuge System Administration Act, the Truckee River Operating Agreement (TROA), the Alpine Decree, the 1997 OCAP, recoupment of over diverted Truckee River water proceedings, and one comment referenced applicable State laws.

Several comments questioned the adequacy of the Draft CCP EIS from a NEPA perspective and whether the refuge had adequately analyzed some of the issues. Many of these were related to ongoing litigation regarding implementation of the 1996 Final WRAP EIS and ROD and most of the comments were similar to those submitted and responded to in the 1996 Final WRAP EIS (U.S. Fish and Wildlife Service 1996a). Others questioned whether we had adequately analyzed a full range of alternatives, had legally incorporated information by reference, or had adequately considered other related Federal actions within the Draft CCP EIS.

Other Issues Identified in Public Comment

Several comments referred to the CCP EIS development process, primarily referencing public scoping and coordination with State, County, and other local entities. Others wondered why comments they had submitted during the public scoping process were not incorporated into the preferred Alternative. Several comments were related to the Service's Realty program. Most inquired about the water rights acquisition program, but also about the Service's land disposal program and acquisition of inholdings within the proposed Alternative boundaries. Two comments were related to Law Enforcement issues.

1.3.3.1.2. Issues Raised During Tribal Consultation and NDOW Working Group Discussions

Through consultation with the Pyramid Lake Paiute Tribe, three primary issues were identified. The Pyramid Lake Paiute Tribe expressed that the refuge had not fulfilled its responsibilities regarding Tribal trust obligations, questioned whether the information provided in the Draft CCP EIS was adequate to analyze impacts to Truckee River operations and Tribal trust resources (cui-ui and Lahontan cutthroat trout) in the lower Truckee River and Pyramid Lake, and questioned how the proposed water management strategies presented in the Draft CCP EIS might impact components of and operation of the Newlands Project. This final issue revolved around the Lahontan Reservoir storage equation (specifically the C2 coefficients used to determine monthly Truckee River diversion amounts) and whether increased project efficiencies associated with water delivery to the refuge are adequately accounted for in the Newlands Project OCAP. These issues were addressed in subsequent consultations with the BOR and the Service's Nevada Fish and Wildlife Office. The results of these consultations were presented to the Pyramid Lake Paiute Tribe (Bundy 2001) and have been incorporated into this Final CCP EIS.

The NDOW sponsored Working Group reflected issues discussed in comments submitted to the Draft CCP EIS during the public comment period. These sessions were intended to more thoroughly examine contentious issues identified in public comment and to allow both the public and the Service the opportunity to constructively discuss the issues. Over 10 sessions, the Working Group discussed the proposed boundary; water and habitat management strategies; opportunities for hunting; opportunities for wildlife observation, wildlife photography, environmental education, and environmental interpretation; preferable access options for facilitating wildlife-dependent recreational uses; fishing, trapping, predator management; and management of the Lahontan Valley wetlands as a wetlands complex. The results of this process were presented in Planning Update #7 (July 2000) and the information presented in this update was included in this Final CCP EIS.

1.3.3.2 FURTHER ANALYSIS OF ISSUES

The National Environmental Policy Act of 1969 requires that all major issues identified during scoping (Section 1.3.2.1, above) be identified and described, but it does not specify which

particular issues should be addressed in any given situation. The Refuge System Administration Act, however, does specify two issues that are to be addressed in the comprehensive conservation planning process:

1. Identification and description of significant problems that may adversely affect populations and habitat of fish, wildlife, and plants within the planning unit, and the actions necessary to correct or mitigate such problems.

2. Identification, description, and facilitation of opportunities for wildlife-dependent recreation and a determination that ensures that allowed levels and distribution of these uses will be compatible with refuge purposes. Of the issues identified during scoping, these two issues provided the primary guidance in developing objectives and strategies to achieve refuge goals and purposes, and are therefore described in more detail on the following pages. The compatibility determination process was incorporated into the comprehensive conservation planning effort and compatibility determinations for all visitor services and relevant management activities are included in this Final CCP EIS (Appendix O).

1.3.3.2.1 Significant Problems Adversely Affecting Fish, Wildlife, and Plants

To ascertain significant problems within the Stillwater NWR Complex, existing conditions were compared with desired, future conditions as reflected by refuge purposes and provisions of the Refuge System Administration Act (such as the directive to ensure the maintenance of biological integrity and environmental health). For the purposes of this Final CCP EIS, significant problems were defined as the underlying factors impeding the achievement of wildlife and habitat related purposes of Stillwater NWR and Fallon NWR. The underlying factors hindering achievement of these purposes are:

1. Reduced volume and altered timing of inflows, and flow restrictions in Stillwater Marsh, and along the lower Carson River and its delta, as compared to natural conditions.

2. Prevalence and spread of nonnative plant and animal species in wetlands, riparian areas, and uplands.

3. Altered chemistry of wetland inflows.

The first two are the major habitat issues that must be resolved or otherwise addressed to meet statutory requirements. Because several contaminants have been found to exceed thresholds associated with adverse effects to wildlife, contaminants are also of concern. These three problems are summarized below and described in more detail in Appendix N. In addition to management implications, they also have implications to the potential boundary revision.

Several other factors have the potential to limit the Service's ability to achieve wildlife related purposes. One factor is the effect of human activity on wildlife and their habitat. This is discussed in more detail in Section 1.3.2.2.2. Other problems that will continue to have adverse effects on wildlife on the refuges are land use practices and human activities that occur outside the refuges and throughout North, Central, and South America. Included are alterations to Carson River flow caused by agricultural, municipal, and industrial activities and Lahontan Reservoir, and habitat destruction, pollution, and pesticide use throughout the Western Hemisphere. These off-refuge problems cannot be addressed through refuge management, but need to be recognized when setting wildlife and habitat objectives. Even though they cannot be addressed on-refuge, the effects that these off-refuge problems have on-refuge resources highlights the need for the Service to continue its involvement in water allocation and management issues in the Truckee-Carson River basins, development and implementation of international bird conservation initiatives, and other large scale efforts.

Reduced Volume and Altered Timing of Inflows, and Flow Restrictions

The major factor that has affected and continues to affect wetland wildlife and other components of natural biological diversity within the alternative boundaries of Stillwater NWR is altered hydrology. This includes significantly reduced volume and rate of water flowing into and through the lower Carson River and marshes, altered timing of water flowing through these habitat, and pattern of flow through the marshes. Of these, water volume is the most critical. Water volume has a major influence on fish and wildlife communities because of its effects on wetland habitat acreage, water depth, and water chemistry. Even upon completion of the water rights acquisition program (long-term average of 70,000 acre-feet per year), the volume of water entering Stillwater NWR will be far below the amount that historically flowed into Stillwater Marsh, an estimated average of 270,000 acre-feet per year (Kerley et al. 1993). Also, the amount of water to enter Stillwater Marsh would be an estimated 5 acre-feet per acre, per year (U.S. Fish and Wildlife Service 1996a), compared to an estimated average of 15-25 acre-feet per acre, per year under natural conditions (assuming 25,000 acres of wetland habitat).
After construction of Lahontan Reservoir and further regulation of the lower Carson River, inflow of fresh water directly from the Carson River into the Lahontan Valley wetlands was significantly reduced and drainage from agricultural areas became an increasingly larger component of the wetland water supply. Until the late 1960s, the wetlands received substantial amounts of water during the winter as a byproduct of winter hydropower generation. The limit on irrigation deliveries mandated under OCAP in the 1970s curtailed winter hydropower generation and further reduced the inflow of fresh water. This increased dependence on drainwater resulted in a shift in water delivery patterns to wetlands, with inflows to wetlands corresponding to the release of irrigation water from Lahontan Reservoir over the agricultural growing season. Reduced inflow of water and diking disrupted the flow-through character of Stillwater Marsh and increased the amount of time that water remained in some wetland areas. Such changes reduced the frequency and efficiency of dissolved solids flushing through the wetlands. The high rate of evaporative water loss in this hydrologically isolated basin has contributed to accumulation and concentration of dissolved solids in wetlands (Seiler 1995).

Concentrations of dissolved solids, including a variety of major and trace elements, was further elevated by receiving agricultural drainage water, including surface runoff from fields and subsurface drainage.

Some of the components of natural biological diversity that were adversely impacted by these changes include the number and abundance of migratory bird species breeding in Stillwater Marsh and along the Carson River, production of migratory birds and other wildlife, number of migratory birds using the area as a stopover, presence and abundance of certain species of invertebrates, overall extent of marsh vegetation, prominence of particular plant communities, and successional pathways. As compared with historic accounts, plant dominance has shifted to more saline-tolerant species and assemblages. In some cases, historically described saline intolerant plant associations, such as coontail (*Ceratophyllum demersum*), no longer occur in Lahontan Valley (Bundy et al. 1996). Currently, dominant invertebrate species are moderately to highly tolerant of salinity and altered water chemistry (Plafkin et al. 1989), contrasted with historic wetland conditions which included extensive areas of freshwater. Species sensitive to salinity and alkalinity are absent and overall number of invertebrate species is low.

Although the significant reduction in wetland habitat acreage is likely the major factor affecting these components of wildlife and habitat diversity, the significant reduction in flow rates of fresh water into and through the marsh and lower river corridor has likely led to marked changes in marsh and riparian ecology and the diversity of species that are seen today. Loss of deeper water channels running through the marsh has likely impacted native fish and other wildlife by reducing the number of areas that could retain small acreages of water during droughts (e.g., low surface area and thus low evaporation), although this impact is likely outweighed by the overall reduction in wetland inflows and introduction of nonnative fish. A more detailed description of estimated natural hydrologic conditions and associated wildlife and plant communities is provided in Chapter 2.

Prevalence and Spread of Nonnative Plant and Animal Species

Another major factor impacting native wildlife and plant communities within the Stillwater NWR Complex is the introduction, continued influx, prevalence, and spread of certain introduced plant species (e.g., saltcedar in riparian and marsh habitat; and cheatgrass in uplands) and animal species (e.g., bullfrogs, European carp, and other fish in marshes; and cattle and European starlings in riparian areas). Saltcedar, for example, has had a significant impact on some plant communities within the Stillwater NWR Complex. Vast areas of meadow habitat once dominated by grasses, rushes, and sedges has converted to saltcedar dominated communities with scant undergrowth. Monotypic stands of saltcedar are replacing mixed deciduous shrub/tree communities in riparian areas and emergent vegetation in marshes. Some plant communities have changed so much due to invasion of nonnative plants that they no longer resemble the original community. Seventy-two of the 192 wetland plant species now inhabiting the Lahontan Valley wetlands (38 percent) are nonnative species; most of which are annual forbs

and grasses (Bundy et al. 1996). Introduced species are a major component of the area's biological diversity.

Altered structure of native plant communities due to cattle grazing has adversely impacted native wildlife and plant communities on the Stillwater NWR Complex (Appendix M). The long history of cattle grazing has contributed to the alteration of the natural structural diversity of vegetation, reduced the height and stature of native grasses, rushes, and forbs in meadow and riparian communities, which has been shown to affect native bird and small mammal communities in other areas (as summarized in Appendix M). This was also addressed in Charlet et al. (1998). Significantly reduced volumes and altered timing of Carson River flows is another factor that has contributed to deteriorated riparian conditions.

Cheatgrass is having a considerable impact on native plant communities in some upland areas of the refuge. Cheatgrass produces extensive ground cover in areas previously characterized by large proportions of open ground, which may affect species requiring spacing between plants (e.g., native lizards and kangaroo rats). Another attribute of cheatgrass dominated communities is their propensity for frequent burning. This would have devastating impacts to native salt desert shrub communities that evolved with very infrequent fires. Cheatgrass thrives under frequent burning.

European carp, mosquito fish, and other nonnative fish dominate the fish communities in the Stillwater NWR Complex. A total of 15 introduced fish species occur in the Lahontan Valley. Only one of the two fish species native to the valley remains today. The altered composition of the fish community has significant impacts on other biological communities. European carp can adversely impact water turbidity and plant communities, and thus, wildlife communities, in marsh ecosystems. Several species of introduced game fish inhabiting Stillwater NWR Complex have been shown to significantly affect populations of native invertebrates and amphibians in other areas. Largemouth bass can adversely impact waterfowl broods. Bullfrogs have been shown to significantly alter amphibian diversity in studied areas, and this may be a contributing factor to the marked decline in leopard frog populations in the Lahontan Valley. It may also be one reason Western toads have not been recorded on the refuge. Bullfrogs could also be impacting the existing population of spade-foot toads. European starlings have had significant adverse impacts on native, cavity nesting birds throughout North America. They are aggressive competitors and likely have marked impacts on the ability of native, cavity nesting birds (e.g., wood ducks, American kestrels, northern flickers) to find suitable nesting sites along the lower Carson River.

Altered Chemistry of Wetland Inflows

A variety of environmental contaminant concerns have been identified on the Stillwater NWR. Contaminant concerns are primarily related to the historic release of mercury into the Carson River and its tributaries and the hydrologic modification of the lower Carson River basin. The historic release of mercury to the Carson River continues to affect the quality of water conveyed

to Stillwater NWR, particularly during large upriver flood events. Other concerns involve potentially toxic trace elements. Previous investigations, prior to water rights being acquired for the wetlands, identified concerns with un-ionized ammonia, and 12 trace elements in water, sediment, and biological samples from Stillwater NWR. The trace elements aluminum, arsenic, boron, and mercury were identified as contaminants of primary concern. The environmental contaminant concerns in Stillwater NWR wetlands are largely attributed to human modification of natural hydrologic characteristics and processes of wetlands, and wetland water supplies. Contaminants at concentrations identified in water, sediment, and biological samples from Stillwater NWR have the potential to produce a range of direct and indirect adverse effects to fish, wildlife, and habitat quality in Stillwater NWR. As proportionally more wetland inflow consists of irrigation quality water and the proportional amount of drainwater inflows decreases, these contaminants would be of lesser concern.

Prior to the onset of the water rights acquisition program, Hoffman et al. (1990) found that, water in Stillwater NWR contained concentrations of arsenic, boron, dissolved solids, sodium, and un-ionized ammonia in excess of baseline conditions or Federal and State criteria for the protection of aquatic life or the propagation of wildlife. This has primarily been a consequence of receiving drainwater from agricultural areas, including surface runoff from fields and subsurface drainage, which commonly contains elevated concentrations of dissolved solids, including a variety of major and trace elements mobilized from soils or local groundwater. Concentrations of arsenic, boron, copper, mercury, selenium, and zinc in biological tissues collected from some affected wetlands exceeded levels associated with adverse biological effects in other studies. Organochlorine compounds were detected in sediments collected from Stillwater NWR wetlands. Of greatest concern was lindane in normalized concentrations which exceeded the EPA sediment quality criteria in three samples. This study concluded that arsenic, boron, mercury, and selenium were of primary concern to human health and fish and wildlife in and near the Stillwater NWR. Subsequent studies have generally supported these findings (Lico 1992, Hallock and Hallock 1993, Tuttle et al. 1996, Tuttle et al. 2001). Although the completion of the water rights acquisition program would resolve these problems to a great extent, use of groundwater as outlined in the water rights acquisition program could offset many of these gains (U.S. Fish and Wildlife Service 1996a).

Under most conditions, environmental contaminants do not appear to threaten aquatic bird recruitment. For example, Hallock et al. (1993) found that concentrations of arsenic, boron, mercury, and selenium in eggs from collection sites were below levels associated with embryotoxicity or reduced hatchibility. Consistent with these findings, hatching success of duck eggs collected from Lahontan Valley (90 percent) was within the range expected of healthy duck populations. However, Tuttle et al. (2001) found that boron in a majority of the sampled aquatic bird eggs exceeded a concentration associated with sublethal effects to hatchlings. Mercury in a third of the eggs exceeded concentrations associated with sublethal effects, while a limited number exceeded potentially embryotoxic levels. The magnitude of the contaminant problem in the Stillwater Marsh area remains unclear.

1.3.3.2.2 Providing Opportunities for Compatible Wildlife-Dependent Recreation

The Refuge System Administration Act requires the Service to (1) facilitate high quality and safe opportunities for wildlife-dependent recreation and (2) ensure that this is done in a way that is compatible with refuge purposes and the Refuge System mission.
These two requirements may at first seem to oppose each other because one involves facilitation of uses and the other involves constraints on uses, one viewed as positive and the other viewed as negative. However, a closer examination reveals that they complement each other. One of the dominant principles of refuge management is that, taken together, high quality wildlife-dependent recreational experiences depend on a rich diversity and abundance of wildlife and habitat. Without this combination, traditional uses of refuges could not be sustained. Additionally, continued use of refuges for wildlife-dependent recreation provides people with a better understanding and deeper appreciation of wildlife and the importance of conserving their habitat, which ultimately contributes to the conservation mission of the Refuge System through increased public support.

> "...We will make refuges welcoming, safe, and accessible, with a variety of opportunities for visitors to enjoy and appreciate America's fish, wildlife, and plants..."
>
> *U.S. Fish and Wildlife Service (1999)*

Conversely, high levels of human activity on refuges can diminish the benefits the refuge can potentially provide to wildlife, and is the reason compatibility determinations are such an important part of refuge management. A quote from the 1943 Refuge Manual (as cited in U.S. Fish and Wildlife Service 1999) shows that examining and attempting to resolve potential conflicts between wildlife and public uses is not a new issue for national wildlife refuges: "Public use of refuge areas will in varying degrees result in disturbances to wildlife populations, but this adverse effect will be offset on many refuges by the public relations value of limited public use." To make sure that the fundamental mission of the Refuge System is not materially impaired, some constraints need to be imposed on uses.

With these factors in mind, the ultimate aim of this planning process for visitor services management is to create a plan that truly facilitates and promotes an array of wildlife-dependent recreational opportunities, the combined effects of which the Service can confidently demonstrate are compatible and consistent with refuge purposes. This has proven to be a challenge given the limited amount of relevant site specific biological data and the controversy that has resulted from exploring this issue. What is known from the available information is that hunting is generally compatible with refuge purposes and that boating has the greatest potential to hinder achievement of refuge purposes. Boating is not a priority public use of the Refuge System and tends to be more restrictive on refuges. An estimated 20-25 percent of hunters used boats during the 1998-2000 waterfowl hunting seasons. The main impacts caused by boating

stem from their noise, speed, and easy access to all open habitat. The following sections address the facilitation and compatibility issues further.

Facilitating Wildlife-dependent Recreational Uses

The direction provided in the Refuge System Administration Act and Stillwater NWR purposes (P.L. 101-618) is very clear. Opportunities for scientific research, environmental education, and other wildlife-dependent recreational uses are to be facilitated on Stillwater NWR. "The term 'facilitate' was deliberately chosen [for the Refuge System Administration Act] to represent a strong sense of encouragement, but not a requirement, that ways be sought to permit wildlife-dependent uses to occur if they are compatible" (House Report 105-106).

Furthermore, the Refuge System Administration Act specifically requires that the priority general public uses of the Refuge System (hunting, fishing, wildlife observation and photography, and environmental education and interpretation) receive enhanced consideration over other general public uses in refuge planning and management. A related issue is the requirement in comprehensive conservation planning to identify and describe areas in the planning unit that are suitable for use as visitor facilities or administrative sites.

The requirements of P.L. 101-618 and the Refuge System Administration Act represent a shift in the management authorities governing the management of the Stillwater NWR Complex. Until the CCP is approved and implementation begins, Stillwater NWR and Fallon NWR will continue to be managed under provisions of the 1948 Tripartite Agreement. Under this agreement, hunting has been the priority public use and it has had coequal status with wildlife conservation. Many other recreational activities have been allowed on Stillwater NWR, Stillwater WMA, and Fallon NWR, including fishing, wildlife observation and photography, camping, boating, and horseback riding.

The conversion from operation under the 1948 Tripartite Agreement to operation under the Refuge System Administration Act and refuge purposes under P.L. 101-618 has the potential to affect the availability and quality of recreational opportunities. Emphasis given to wildlife viewing and environmental education has been increasing during the last 10 years or so, but much more can be done to facilitate these uses on Stillwater NWR. Hunting will continue to be a cornerstone of the recreation program, and will likely be the most popular recreational activity for many years to come. Other uses not defined as wildlife-dependent, such as camping, horseback riding, boating, and bicycle riding, can only be permitted if they are determined to be both appropriate uses of a refuge and compatible with refuge purposes and the Refuge System mission. Uses not dependent on wildlife (those not identified as priority public uses of the Refuge System) are being de-emphasized.

Ensuring Compatibility

Just as the Refuge System Administration Act clearly calls for refuge managers to facilitate opportunities for wildlife-dependent

> "To ensure that the Refuge System's fish, wildlife, and plant resources endure, the law of the land now clearly states that their needs must come first."
>
> *U.S. Fish and Wildlife Service (1999)*

recreation, it also clearly requires managers to make sure that these and other such uses are compatible with refuge purposes before they are permitted. The Act notes that hunting, fishing, wildlife observation and photography, and environmental education and interpretation have generally been found to be compatible uses of the Refuge System. The Act recognizes, however, that not all of these uses will be found compatible on all refuges. This is illustrated by the example provided of Blackwater NWR, Maryland, in which hunting is not permitted (House Report 105-106). Some refuges, including Anaho Island NWR, do not provide any public access.

The Act also recognizes that, although a use may be identified as generally compatible on a given refuge, whether it is actually compatible depends on how the program for the use is designed and operated. The design of the existing public use program reflects the philosophy of the 1948 Tripartite Agreement. The current planning process has involved evaluating and designing a visitor services program according to the standards set by P.L. 101-618 and the Refuge System Administration Act. Further examination of the visitor services program in light of these new standards led to the development of the following problem statement.

Under the existing visitor services program, there are insufficient provisions to:

1. Ensure that the refuges ability to provide for the needs of wildlife is not being impaired.

2. Provide suitable opportunities for environmental education and wildlife viewing outside the hunt area during October-December.

Many factors are involved, including the change in management authorities governing the management of the area, biological and scientific information, professional judgement, and other input received during scoping. The first item in the problem statement involves three main interrelated factors: (1) boating and road access, (2) hunter density and distribution, and (3) amount and quality of sanctuary. During the past several years, hunter densities on Stillwater NWR have been relatively low, and it is generally recognized that a low density of hunters affects waterfowl and other wildlife less than a high density of hunters. Sanctuary is not as high of a concern if hunter density is low enough to allow waterfowl to find high quality habitat in relatively undisturbed areas outside the sanctuary. However, even a few airboats and other motorized boats can counteract low hunter density, meaning that more sanctuary would be needed to ensure that birds can readily access high quality habitat in a relatively undisturbed area. Extensive published scientific information summarized in Appendix L suggests that the effects of liberal boating in Stillwater Marsh during the hunting season may have as much or more to do with altered waterfowl distribution than the effects of hunting by itself. Road access is another factor influencing hunter distribution and density.

Figure 1.1 is included to help explain the relationship between these three parts of the issue. It generally illustrates that the need for sanctuary is somewhat lower for an area comprised of large wetland units with relatively low hunter density as compared to an area comprised of many small

wetland units and many hunters, although the allowance of airboats and other motorboats would tend to equalize the effects.

In addition to increased access, two other key factors that can affect waterbirds are the speed and noise produced by boats. The adverse effects of boating speeds and noise, which is well documented in the scientific literature (Appendix L), compounds the effects of increased access afforded by boats. At present, there are few regulations being enforced to control these three major sources of impacts from boats. Therefore, under anticipated average water conditions (or better) and assuming relatively low hunter densities, the issue in many ways comes down to a relationship between the level of boating restrictions and amount of sanctuary (Figure 1.1). The more liberal the boating regulations are, the more sanctuary is needed. Conversely, the more that boating access, speed, and noise are minimized, the lower the needs are for sanctuary.

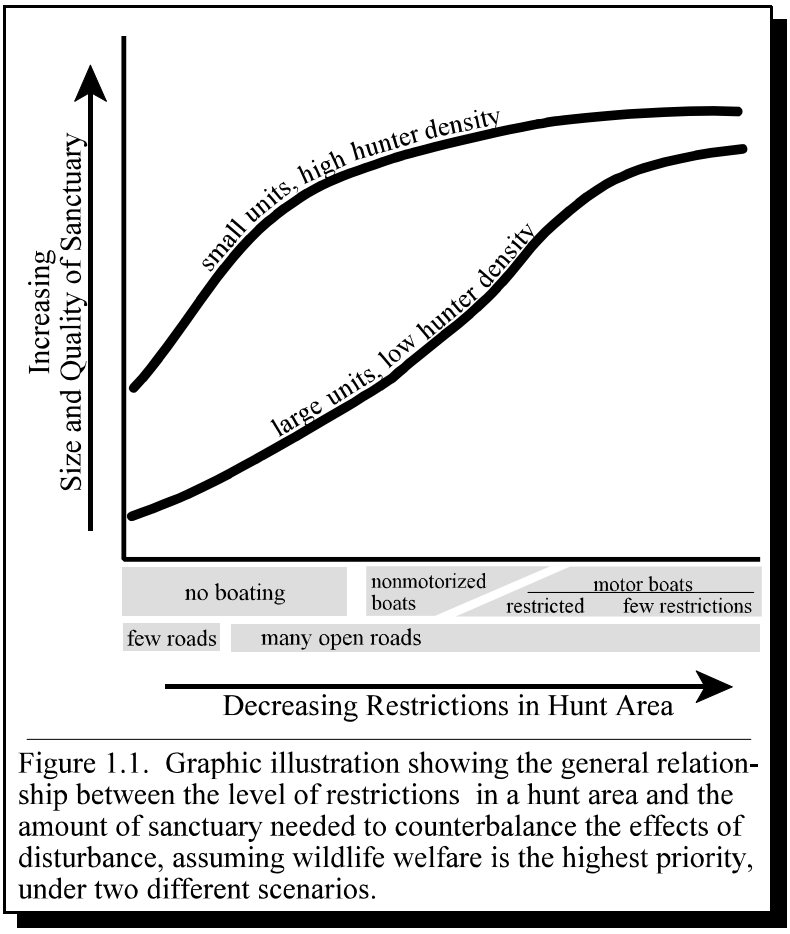


Figure 1.1. Graphic illustration showing the general relationship between the level of restrictions in a hunt area and the amount of sanctuary needed to counterbalance the effects of disturbance, assuming wildlife welfare is the highest priority, under two different scenarios.

There are several concerns related specifically to the adequacy of the existing sanctuary. Although several units in the existing sanctuary are rated among the top producers of submergent aquatic vegetation on the refuge, the sanctuary does not currently provide the full range of habitat conditions to meet the day-to-day needs of waterfowl throughout the hunting season.

For example, some preferred foods of dabbling ducks (the majority of ducks using Stillwater NWR) are only sparsely provided in the sanctuary under existing management. Due to the different configurations of the wetland units, escape and thermal cover is more plentiful in wetlands outside of the sanctuary. For example, wetland units in the sanctuary have simple shorelines compared to the highly complex shorelines in other wetland units. Another limitation to providing high quality habitat in the sanctuary for feeding, resting, and thermal protection is

that Stillwater Point Reservoir, comprising 33 to 45 percent of the sanctuary during October-December, is the refuge's main regulating reservoir, and in the past (1970 to 1998) it only accommodated an estimated 10 to 17 percent of the ducks using the sanctuary (Appendix E). Thus, up to 90 percent of the birds in the sanctuary made use of half to two-thirds of the remaining sanctuary. Although the refuge now controls the operation of Stillwater Point Reservoir rather than TCID, operating the reservoir to accommodate water deliveries to other refuge units and Stillwater Farms can impair its ability to provide suitable habitat for many waterbird species. The refuge is working with TCID to develop an operating agreement for Stillwater Point Reservoir. Future management and monitoring should ensure that Stillwater Point Reservoir is providing high quality waterfowl habitat. Several people suggested other changes to management that would enhance habitat quality within the existing sanctuary.

The second part of the underlying problem addresses environmental education and wildlife observation. Service policy requires that environmental education sites be provided outside the hunt areas. Environmental education is especially relevant to Stillwater NWR because environmental education is the only priority public use specifically identified in refuge purposes. At present, there is no place outside the hunt area for people to view birds or for the Service to take school groups and other groups during the hunting season, except one small parking area next to the maintenance facility. Although several individuals and groups have commented that this is not a problem because combined use of the same area tends to maintain unity and cohesion among the different user groups, other people have expressed that they would like opportunities to be provided outside the hunt area during the hunting season.

What is a Sanctuary? Why is it Needed?
A sanctuary is a place where wildlife can find high quality habitat for breeding, feeding, resting, and seeking cover from weather and predators without being disturbed by the activities of people. Studies have consistently demonstrated that disturbance by people, even at low levels, can result in energetic costs to birds. Without adequate sanctuary in hunted areas, energetic costs can exceed replenishment, ultimately impacting bird production and even survival.

Achieving Stillwater NWR purposes requires that sanctuary be provided for wildlife.

When is Sanctuary Critical?

Sanctuary is critical during the breeding season, when human disturbance has the potential to cause elevated nest depredation, nest abandonment, and mortality of nestlings and fledglings (generally March 1-July 15 at Stillwater).

Sanctuary is also critical during fall and winter, when migratory birds are acquiring carbohydrates for migration and winter maintenance (generally late September - early January at Stillwater).

Where Should Sanctuary be Located?

Given the fundamental mission of the Refuge System, the sanctuary (i.e., the area dedicated to wildlife) should encompass the highest quality habitat where birds can forage undisturbed and find protection from inclement weather.

How Much Sanctuary is Needed?

The amount of sanctuary needed depends on a great many factors, some of which are illustrated in Figure 1.1. A general rule depicted in the figure is that, as intensity of use by people goes up in the area open to public use, the more sanctuary must be provided.

1.4 PART FOUR - ALTERNATIVE E

Based on public scoping prior to release of the Draft CCP EIS, comments received, and meetings and consultation following the public comment period, the Service has decided that a fifth Alternative E will be analyzed in this Final CCP EIS. Alternative E is a composite of the range of Alternative options analyzed in the Draft CCP EIS, but will be structured following preferred Alternative C (Option 2) as proposed in the Draft CCP EIS. The Service could have chosen to modify Alternative C based on public scoping and comment; however, enough changes to Draft Alternative C were considered from public comment to justify the development of a new Alternative. Part of the rationale for keeping both Alternative's C and E in this Final CCP EIS is to allow the public to easily review what was presented and how their comments were incorporated.

The range of values provided for options within Draft Alternative C were modified in some cases, and options considered in Draft Alternatives A, B, C, and D were incorporated into Alternative E; however, the format, elements, and analyses are identical to the analyses presented in the Draft CCP EIS. The preparation of Alternative E was intended, quite simply, to allow for an easy comparison of the two Alternatives (C and E).

The format in Chapter 3 of this Final CCP EIS is identical to that presented in the Draft CCP EIS, except that editorial corrections from public comment were made in Alternatives A through D and supplemental information was provided where information gaps were identified. The structure of Alternative E is identical to Draft Alternative C and only modified sections were expanded in this environmental impact analysis. Where this Alternative remains the same as Draft Alternative C, this was so noted.

Similarly, Chapter 4, Environmental Consequences, is identical to factors analyzed in the Draft CCP EIS except that additional or expanded analyses were provided where appropriate. This primarily occurred relative to water management affects to the Carson Division of the Newlands Project, effects to the 1997 OCAP, Truckee River Operations, and affects to species listed under the Endangered Species Act as amended (1973). Additionally, Alternative E was added to the analysis under each category presented in Chapter 4.