

Preplanning Guidance for Comprehensive Conservation Plans: *A Handbook*



February 2006

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

National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57, October 9, 1997)

Preplanning Guidance for Comprehensive Conservation Plans

Table of Contents

This document reflects a cooperative effort by staff of the U.S. Geological Survey (USGS) and the U.S. Fish and Wildlife Service (FWS). Special thanks to Rick Schroeder of USGS, and Bob Adamcik, Liz Bellantoni, Helen Clough, and John Schomaker of the FWS for their lead roles in preparing this Handbook.

Thanks also to everyone who contributed ideas, content, and review.

Introduction	1
Section I: Planning Team	3
Section II: Identify Refuge Purpose(s), History, and Establishing Authority	5
Section III: Identify Planning and Compliance Requirements and Special Designations	9
Section IV: Purpose and Need for the Plan	10
Section V: Planning Area and Data Needs	13
Introduction	13
Sources of Information	15
Geographic Information Systems	16
Surrounding Ecosystems	17
Knowledge of the Surrounding Ecosystem (Items i, ii, iii, vii)	17
Species or Resources of Concern Within the Ecosystem	18
Plant Community Composition Within the Ecosystem	22
Past Land Use and History of Settlement Within the Ecosystem	24
Historic and Current Status of Important Ecological Processes Within the Ecosystem	24
Identification of Other Refuges or Important Fish and Wildlife Habitats Within the Ecosystem	26
Refuge Resources	26
Description of Flora, Fauna, Natural Communities, Water, and Other Natural Resources on the Refuge (Items iii, v, vi, vii, viii)	26
Example of Specific Information Needs – Grassland Habitat	28
Example of Specific Information Needs – Riparian Shrub Habitat	29
Example of Specific Information Needs – Freshwater Emergent Wetland Habitat	30

Significant Problems and the Actions Necessary to Correct or Mitigate Them (Items x, xi, xii, xiii)	31
Habitat Management Practices (Item xv)	34
Description of Land Acquisition or Habitat Protection Efforts (Item xiv)	35
Description of Archaeological and Other Cultural Resources (Item ix)	37
Visitor Services	39
Public Use Information and Associated Data (Items xvii, xviii, xix)	39
Identify Planning and Compliance Requirements	39
Describe the Refuge Environment	41
Describe the Visitor Services and Facilities on the Refuge	43
Describe the Visitor Services Planning Area	46
Describe Significant Problems and Possible Actions Necessary to Correct or Mitigate the Problems	49
Special Management Areas	50
Existing Special Management Areas or the Potential for Such Designations (Item xx)	50
Administrative Resources	51
Existing Administrative Resources, Including Staffing, Funding, and Facilities (Item xvi)	51
Section VI: Review All Available Information, Plans, Data, Maps, and Data Standards	54
Section VII: Vision and Goals	57
Vision Statement for Little Pend Oreille NWR	57
Section VIII: Internal Scoping	59
Section IX: Public Involvement and Outreach Planning	60
Section X: Work Plan and Planning Schedule	61
Section XI: Planning Record	62
Section XII: References Cited	64
Appendix A: Preplanning Checklist: Things to Do	65
Appendix B: Recommended CCP Outline	70
Appendix C: Planning Area and Data Needs for Congressionally Designated Wilderness, Wilderness Reviews, and Wild and Scenic River Studies	73
Appendix D: Planning Area and Data Needs for Class I Air Quality Areas	80



Bald Eagle at Kodiak NWR in Alaska. USFWS photo

Introduction

Background

Preplanning is an important step in developing a quality comprehensive conservation plan (CCP). Prior to formally initiating a CCP, a number of tasks should be completed in order to support planning activities. These tasks are discussed in significant detail in this handbook. Likewise, these tasks are summarized in section 3.4(1) of 602 FW3, of the National Wildlife Refuge System Planning policy.

The purpose of this handbook is to provide general guidance on what is needed to accomplish these tasks. The handbook is intended primarily for use by refuge staff and others involved in the development of CCPs. Although each aspect of preplanning is explained in detail, the handbook is organized so that users can focus on particular areas of interest. To help gauge one's progress during this stage of the planning process, a checklist of preplanning tasks and a recommended CCP outline are provided in Appendices A and B.

As the handbook demonstrates, much effort can be directed toward a CCP's development long before any formal process to undertake a CCP begins. Doing a thorough job during this stage of the planning process should reduce the time needed to prepare a CCP and improve its quality.

Early coordination with State fish and wildlife agencies will assist CCP development by including experts with statewide experience and management responsibility. Coordination at this stage will also provide the opportunity to integrate where possible the CCP with the recently completed State Wildlife Action Plans. Likewise, it may be feasible to collaborate with others (nearby refuges, other Federal or State agencies, research units, or nonprofit groups) in certain aspects of preplanning such as gathering information related to the ecosystem or wildlife habitats. It is also helpful for planning team members to view other CCPs to gain an understanding of the type, amount, and quality of information that has gone into prior efforts. Numerous draft and final CCPs, along with access to Regional planning Web sites, can be found at <http://library.fws.gov/ccps.htm>.

This handbook is one of several tools that provide guidance on implementing the refuge planning policy. Additional preplanning guidance is provided in the Refuge Comprehensive Conservation Planning course offered through the National Conservation Training Center, through workshops or other training offered within the Regions, and from refuge planning staff at Regional and national levels.

How to Use this Handbook

This handbook focuses on the preplanning stage of the CCP process and provides details for the following preplanning components, as identified in refuge planning policy (602 FW 3.4C(1)):

- (a) Planning Team
- (b) Identify Refuge Purpose(s), History, and Establishing Authority
- (c) Identify Planning and Compliance Requirements and Special Designations
- (d) Purpose and Need for the Plan
- (e) Planning Area and Data Needs
- (f) Review all Available Information, Plans, Data, Maps, and Data Standards
- (g) Vision and Goals
- (h) Internal Scoping
- (i) Public Involvement and Outreach Planning
- (j) Work Plan and Planning Schedule
- (k) Planning Record

These components are referred to at the beginning of each section of the handbook to allow users to determine at a glance where they are in the overall process. Preplanning, however, is not a linear, one-step-at-a-time process. Rather, many tasks may be underway simultaneously. Also, some tasks can be completed quickly, whereas others may take many months.

The 20 items listed in the refuge planning policy under section 3.4C(1)(e), Planning Area and Data Needs, have been consolidated into nine related themes. Much of the handbook focuses on providing detailed guidance on gathering the data needed for this aspect of preplanning. Item numbers referenced throughout this document refer to those 20 items.

The handbook is available on the Internet at <http://www.fws.gov/policy/hbindex.cfm>. It is also available in print or on compact disk (CD) from Refuge System Headquarters, Division of Conservation Planning and Policy, at 703/358-1744.

Many of the tasks in preplanning require gathering data and information. To assist you, the handbook breaks down each task according to the following headings, as appropriate:

- *What Type of Information is Needed?*
- *Where Can the Information be Obtained?*
- *How is the Information Used in the CCP Process?*
- *Things to Do*

Steps in the CCP Process

(from 602 FW 3)

1. Preplanning: Planning the Plan
2. Initiate Public Involvement and Scoping
3. Review Vision Statement and Goals and Determine Significant Issues
4. Develop and Analyze Alternatives, Including the Proposed Action
5. Prepare Draft Plan and NEPA Document
6. Prepare and Adopt Final Plan
7. Implement Plan, Monitor, and Evaluate
8. Review and Revise Plan



American Golden-plover at Alaska Maritime NWR. USFWS photo

*Sunkhaze
Meadow
National
Wildlife Refuge
in Maine.
Photo by John
and Karen
Hollingsworth*



Section I

Planning Team

Preplanning Elements

(from 602 FW 3.4C(1))

(a) Planning Team

- (b) Identify Refuge Purpose(s), History, and Establishing Authority
- (c) Identify Planning and Compliance Requirements and Special Designations
- (d) Purpose and Need for the Plan
- (e) Planning Area and Data Needs
- (f) Review All Available Information, Plans, Data, Maps, and Data Standards
- (g) Vision and Goals
- (h) Internal Scoping
- (i) Public Involvement and Outreach Planning
- (j) Work Plan and Planning Schedule
- (k) Planning Record

An early task in preplanning is establishing the planning team. Most teams will quickly develop schedules and work plans to identify key steps, responsibilities, and time frames for completing the CCP. In keeping with the order of preplanning elements as presented in the refuge planning policy, work planning is one of the last topics addressed in the handbook. However, because work planning occurs near the start of the CCP process, readers should also consult this section of the handbook for suggestions and guidance when creating the planning team.

As stated in The 2012 Plan, refuge managers are expected to assume a leadership role in the completion of a CCP for their field station. In performing this duty, the refuge manager must serve as the Service's spokesperson for any and all issues associated with the CCP. Likewise, the refuge manager must engage in and be aware of all issues associated with the CCP including the plan's goals, objectives, and strategies. The refuge manager must also make the timely completion of the CCP a high priority for his/her field station upon its initiation.

Working together, the refuge manager and the assigned refuge planner will determine the composition of the planning team. The planning team is typically an interdisciplinary team consisting of the refuge manager; key members of the refuge staff, a refuge planner, and Regional program specialists. The specific makeup of each planning team will depend on the biological and other resource issues to be addressed in the CCP.

The refuge planner generally manages the planning process and serves as the planning team leader to ensure compliance with applicable regulatory and policy requirements. In close coordination with the refuge manager, the planning team leader is also responsible for tracking and coordinating planning team assignments and meetings and for overseeing any needed contracting services. Types of contracting services that may be sought include facilitation, GIS and mapping services, environmental impact analysis, document writing and editing, information gathering and analysis (particularly biological, cultural resource, and socioeconomic data), and special studies. Specialized assistance in preparing statements of work and contracting documents can be obtained from Regional Contracting and General Services office. Examples of such documents can also be found in the CCP course reference notebook.

Refuge planning policy (602 FW 3) requires that representatives from State conservation agencies and affected tribes be given the opportunity to serve on planning teams. The refuge manager is responsible for making this offer in writing. Include all correspondence related to this matter in the administrative record. Examples of letters inviting State participation on planning teams can be found in the CCP course reference notebook.

Things to Do:

- Designate planning team leader
- Prepare letter requesting State and tribal involvement
- Identify and contact other planning team members
- Hold initial team meeting
- Develop work plan and planning schedule



A biology technician weighs a Scoter at Yukon Flats NWR in Alaska. USFWS photo.



Banks Lake NWR in Georgia. USFWS photo.

Preplanning Elements

(from 602 FW 3.4C(1))

- (a) Planning Team
- (b) Identify Refuge Purpose(s), History, and Establishing Authority**
- (c) Identify Planning and Compliance Requirements and Special Designations
- (d) Purpose and Need for the Plan
- (e) Planning Area and Data Needs
- (f) Review All Available Information, Plans, Data, Maps, and Data Standards
- (g) Vision and Goals
- (h) Internal Scoping
- (i) Public Involvement and Outreach Planning
- (j) Work Plan and Planning Schedule
- (k) Planning Record

Section II

Identify Refuge Purpose(s), History, and Establishing Authority

The planning policy identifies the importance of documenting the history of refuge establishment and management, refuge purpose(s), and authorizing authority. The language of the refuge purpose(s) may be fairly broad or very narrow in scope. Future management of a refuge will derive from an understanding of the refuge purpose(s) in combination with current refuge policies. These mandates include maintaining or restoring biological integrity, diversity, and environmental health and giving priority consideration to compatible wildlife-dependent recreational uses.

Listed below are examples of the most common purposes for refuge establishment:

Migratory Bird Conservation Act. “. . . for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.”

Executive Order. Commonly stated as follows:

“. . . as a preserve and breeding ground for native birds.”

“. . . as a refuge and breeding ground for migratory birds and other wildlife.”

Fish and Wildlife Act of 1956. “. . . for the development, advancement, management, conservation, and protection of fish and wildlife resources. . . .”

Refuge Recreation Act. “. . . suitable for (1) incidental fish- and wildlife-oriented recreational development, (2) the protection

of natural resources, (3) the conservation of endangered species or threatened species. . . .”

Endangered Species Act of 1973. “. . . to conserve (A) fish or wildlife which are listed as endangered species or threatened species . . . or (B) plants”

Emergency Wetlands Resources Act of 1986. “. . . the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions”

Alaska National Interest Lands Conservation Act (ANILCA) of 1980. Lists specific purposes for each Alaska refuge.

Note that the phrase “migratory bird” applies to all species covered under the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.) For a complete list of migratory bird species, see <http://migratorybirds.fws.gov/intrnltr/mbta/mbtandx.html>.

The meaning of the phrase “inviolate sanctuary” has been modified over the years. An inviolate sanctuary means that migratory game birds may not be hunted in more than 40 percent of the area acquired, reserved, or set apart as an inviolate sanctuary (National Wildlife Refuge System Administration Act of 1966, 16 U.S.C. 668d – 668j). Waterfowl production areas are exempt from the 40-percent rule (Migratory Bird Hunting and Conservation Stamp Act, 16 U.S.C. 718d).

Each refuge has a specific purpose, or purposes, derived from one or more legal sources. However, many of these statements are so general they are of limited value in guiding on-the-ground-management direction. A review of these common purpose statements makes it clear that, in most cases, the purpose of the refuge as written in the establishing legislation must be clarified to some degree. For example, how does a purpose “for use as an inviolate sanctuary, or for any other management purpose, for migratory birds,” or “. . . as a refuge and breeding ground for migratory birds and other wildlife,” help a refuge manager determine the specific management direction to follow? A wide variety of management actions could be undertaken and not violate the general meaning of these purpose statements.

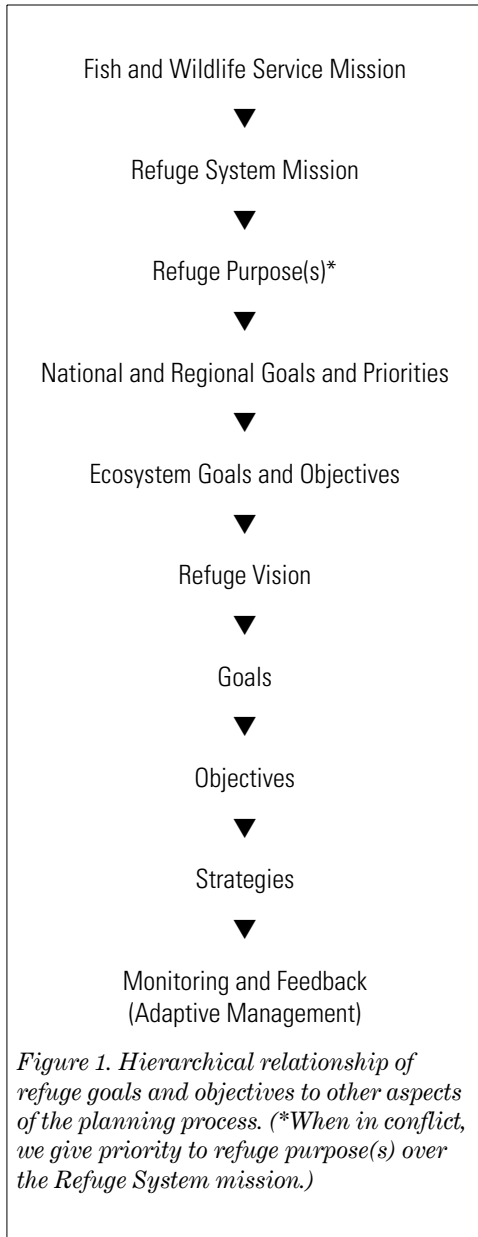
Refuge planning teams should come to an understanding of the refuge purpose(s) only after reviewing and understanding the handbook’s guidance on Planning Area and Data Needs, and developing a broad understanding of the ecology of the refuge and its surroundings. Discussions should consider how the refuge can meet the language and intent of the refuge purpose(s) consistent with the biological integrity policy and other pertinent Refuge System policies.

What Type of Information is Needed?

- Identify the purpose(s) for all refuge lands being considered in the CCP.



Canvasback hen. USFWS photo.



- Describe the history and background of refuge establishment.
- Identify establishing authorities for all refuge lands, including all legislation such as wilderness designation, Executive orders, Secretary’s orders, Public Land orders, Cooperative Agreements (overlays), donation documents, easements, leases, or administrative memoranda.

Where Can the Information be Obtained?

- Refuge Purpose(s)

The purpose(s) of all refuge lands generally can be found by reviewing the Division of Realty’s planning documents and reports that cite establishment or expansion of the refuge. It might also be necessary to examine original records at Refuge System Headquarters in Arlington, Virginia, to compile this information. In Alaska, this information can generally be found in the Alaska National Interest Lands Conservation Act (ANILCA). There is a listing of refuge purposes on the Refuge System Web server (<http://www.refugedata.fws.gov/databases/purposes.taf?function=form>). This listing is considered accurate, but information should be cross-checked with the sources listed above during preplanning to ensure that it is up-to-date.
- History, Background, and Establishing Authorities.

This information may often be found in Regional office or refuge files. It may also be found when searching for information on refuge purposes.

How is the Information Used in the CCP Process?

- The refuge purpose provides overall direction for refuge management, and provides the basis for deriving the refuge vision, goals, and objectives (Figure 1).
- The National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. 668dd-668ee (Improvement Act) states that “each refuge shall be managed to fulfill the mission of the System, as well as the specific purposes for which that refuge was established; ... except that if a conflict exists between the purposes of a refuge and the mission of the System, the conflict shall be resolved in a manner that first protects the purposes of the refuge, and, to the extent practicable, that also achieves the mission of the System.”
- Service policy on National Wildlife Refuge System Mission and Goals, and Refuge Purposes (601 FW 1) states that the refuge purpose comes first, as stated in the Improvement Act. However, in order to achieve the Refuge System mission and goals, we may manage the refuge to achieve additional objectives and to fulfill needs that may have been unforeseen, unknown, or resulting from circumstances unanticipated at the time of refuge establishment in a manner that supports the purpose(s) of the refuge. These additional objectives are

additive and complementary to the achievement of refuge purpose(s). Figure 1 depicts the hierarchical relationship of various aspects of the planning process and should be used as a source of guidance.

- The Improvement Act requires that the biological integrity, diversity, and environmental health of refuges be maintained. This task deserves serious attention because it provides an important piece of the framework for the future management direction of a refuge. The Service's policy on biological integrity, diversity, and environmental health (601 FW 3.10) asserts that the measure of these parameters is those intact and self-sustaining habitats and wildlife populations that existed under historic conditions. Where doing so is not in conflict with refuge purpose(s) or the Refuge System mission, we should retain intact habitats and, as feasible, manage remaining habitats toward historical conditions. One necessary decision is that of scale: At what scale (e.g., local, flyway, or national) will a particular habitat type attempt to mimic historical conditions? Answering this question requires the refuge manager to identify the role of a refuge within its respective ecosystem. The CCP is the primary vehicle for this decisionmaking process. The decision is made by identifying the refuge purpose(s); determining how far removed the refuge is from historical conditions; clarifying the contribution that changes on the refuge can make in restoring biological integrity, diversity, and environmental health; and striking a balance among these diverse points consistent with the refuge purpose(s) and the Improvement Act's mandate to give compatible wildlife-dependent recreational uses priority consideration in refuge planning and management. To accomplish this inherently complex task, the policy calls for the use of sound professional judgment, which incorporates field experience, knowledge of refuge resources, refuge role within an ecosystem, applicable laws, and best available science, including consultation with others both inside and outside the Service.

Things to Do

- Obtain and review background information including refuge files, previous planning documents, and Headquarters and Regional Office Division of Realty files
- Identify refuge purpose(s)
- Review relevant Refuge System and Service policies



Banding birds at Tensas River NWR in Louisiana. USFWS photo.

Section III

Identify Planning and Compliance Requirements and Special Designations



Cabeza Prieta NWR in Arizona. USFWS photo.

Preplanning Elements

(from 602 FW 3.4C(1))

- (a) Planning Team
- (b) Identify Refuge Purpose(s), History, and Establishing Authority
- (c) Identify Planning and Compliance Requirements and Special Designations**
- (d) Purpose and Need for the Plan
- (e) Planning Area and Data Needs
- (f) Review All Available Information, Plans, Data, Maps, and Data Standards
- (g) Vision and Goals
- (h) Internal Scoping
- (i) Public Involvement and Outreach Planning
- (j) Work Plan and Planning Schedule
- (k) Planning Record

The planning team and refuge staff should review the Service and Refuge System mission statements, relevant policies, and existing legislation to help identify planning and compliance requirements. This review should include applicable laws, Executive orders, regulations, policies, and internal guidance such as the Refuge System's vision document, *Fulfilling the Promise: The National Wildlife Refuge System* (USFWS 1999). Exhibit 2 of the refuge planning policy (602 FW 3) provides a list of mandates to consider when preparing a CCP Note, however, that the list is not all-inclusive. Additional Executive orders or statutes may apply, and the planning team is responsible for understanding the compliance requirements for a specific refuge.

A centralized location for Servicewide policy and management guidance, with links to other statutory and regulatory policy guidance, can be found at: <http://www.fws.gov/policy>. This site provides access to resource laws, United States Code, Code of Federal Regulations, Federal Register notices for the Service, and directives, memorandums, and bulletins. Completed portions of the Service Manual are also accessible through the directives selection from this Web site. The Service Manual includes a chapter on Data Management and Standards at 270 FW 6.

The Department of the Interior's Manual chapter on data resource management and the data standardization procedures can be found at <https://intranet.fws.gov/region9/data>.

Existing special designation areas for each refuge should be reviewed (e.g., wilderness, research natural areas, wild and scenic rivers, important bird areas, Ramsar Wetlands of International Importance, and Western Hemisphere Reserve Network sites). The potential for any new special designations also should be addressed. Wilderness reviews are a required element of CCPs (except in Alaska, per the Service's solicitor), and guidance on such reviews can be found in the wilderness stewardship policy and Appendix C of this handbook.

Things to Do

- Obtain and review legal mandates, Service policy, and management guidance
- Review existing special designations and the potential for any new designations

Section IV

Purpose and Need for the Plan

The purpose of developing the CCP, as indicated in the refuge planning policy, is to provide refuge managers with a long-term management plan for the refuge that conserves fish, wildlife, and plant resources and their related habitats, while providing opportunities for compatible wildlife-dependent recreational uses.

It is important to note that the purpose of developing the CCP is not the same as the purpose and need statement in a National Environmental Policy Act (NEPA) document. In the latter, the statement of purpose and need identifies the underlying purpose and need to which the agency is responding in the proposed action and alternatives. It is important because it helps determine the range of alternatives to be evaluated in the NEPA document (either an Environmental Assessment [EA] or Environmental Impact Statement [EIS]).

With that in mind, the purpose statement in the EA or EIS should reflect the refuge purpose(s), as defined in the establishing authority (legislation, Executive order, etc.) and vision and goals for the refuge. The need for the CCP explains why the proposed action (i.e., developing the CCP) is required and is often at least partially derived from the issues identified during scoping.

If you are combining the CCP and the EA into one document, you may combine the purpose and need statements into a single statement that meets the criteria for both. If you are keeping the two documents separate, you will need two statements.

The following example was taken from the Waubay National Wildlife Refuge (NWR) Complex CCP.

Purpose of and Need for the Comprehensive Conservation Plan

Waubay National Wildlife Refuge Complex was established to provide “. . . a refuge and breeding ground for migratory birds and other wildlife.” The purpose of the CCP is to accomplish the goals established for the Complex (Complex), including the following:

- To preserve, restore and enhance the ecological diversity of grasslands, wetlands, and native woodlands of the Prairie Pothole Region of the Great Plains on Waubay NWR Complex

Preplanning Elements

(from 602 FW 3.4C(1))

- (a) Planning Team
- (b) Identify Refuge Purpose(s), History, and Establishing Authority
- (c) Identify Planning and Compliance Requirements and Special Designations
- (d) Purpose and Need for the Plan**
- (e) Planning Area and Data Needs
- (f) Review All Available Information, Plans, Data, Maps, and Data Standards
- (g) Vision and Goals
- (h) Internal Scoping
- (i) Public Involvement and Outreach Planning
- (j) Work Plan and Planning Schedule
- (k) Planning Record



*Prescribed burn at
Chesapeak Marshlands
NWR in Maine.*

- To promote a natural diversity and abundance of native flora and fauna of the Prairie Pothole Region of the Great Plains on Waubay NWR Complex
- To protect and interpret significant historic and prehistoric cultural resources associated with Waubay NWR Complex
- To foster an understanding and appreciation of the ecology and management of the fauna and flora and of the role of humans in the Prairie Pothole region of the Great Plains by providing Complex visitors of all abilities compatible wildlife-dependent recreational experiences

The CCP, with its clear management direction laid out in specific objectives and strategies, is needed for several reasons. Since the establishment of the refuge in 1935 and the Waterfowl Management District (WMD) in the 1960s, many changes have occurred to the landscape. Much habitat has been lost to agriculture, roads, towns, and other development. This loss of habitat has had a profound effect on wildlife populations that once depended on vast expanses of undisturbed grasslands and wetlands. Management of the Complex as outlined in the CCP will help to stem these losses and help to restore biodiversity to the landscape.

The CCP also addresses the need to provide opportunities for understanding and appreciating wildlife and of people's role in the environment. Providing more environmental programs and better interpretation will offer opportunities to increase the public's knowledge about the biological values that continue to be lost each day and the need to prevent further losses. The plan also calls for increased opportunities for wildlife-compatible recreation.

It is the responsibility of the Service to protect and provide habitat for migratory birds and other wildlife—this is our purpose and reason for being. We must do this in a vastly changed landscape, balancing the effects of saving wildlife with economic realities and

human needs. By preparing this CCP, documenting our goals and objectives, and involving our partners and the public in the process, we can all gain a better understanding of the issues—from all sides. It doesn't have to be wildlife versus people because all will benefit, economically and personally, from a healthy environment. This CCP will help explain how Waubay NWR Complex fits into the landscape and our role in protecting our natural resources for present and future generations.

Things to Do:

- Review refuge purpose(s), vision, and goals
- If needed, modify existing or draft new vision and goals
- Evaluate why proposed action is needed.



*Stocking fish at Piedmont NWR in Georgia.
USFWS photo.*

Section V

Planning Area and Data Needs



Armadillo at Sequoyah NWR in Oklahoma.. USFWS photo.

Introduction

The planning area is defined in the refuge planning policy (602 FW 1.60) as:

The area upon which the planning effort will focus. A planning area may include lands outside existing planning unit boundaries currently studied for inclusion in the Refuge System and/or partnership planning efforts. It also may include watersheds or ecosystems outside of our jurisdiction that affect the planning unit. At a minimum, the planning area includes all lands within the authorized boundary of the refuge.

A thorough knowledge and understanding of the ecology of the planning area and refuge and an understanding of public use and archaeological, cultural, and other resources is needed for the development of a CCP. Likewise, the best available science should be used to make informed decisions about future direction and management activities.

There is often a wealth of scientific and management information available concerning habitats, wildlife species, plants, water use/availability, contaminants, public use, and other topics of concern. Most of this can be found in existing literature. The CCP provides an opportunity to build upon what is already known about the refuge and surrounding areas, to gather and read relevant scientific studies, to seek input from outside experts, and to discuss the future of the refuge. It is imperative that adequate time and effort be given to this step of the CCP process. However, the lack of scientific information should not delay the initiation or completion of a CCP.

Much of the information required in this phase of preplanning is comparable to the information acquired during a wildlife habitat management review or a visitor services review. If your Region conducts such reviews prior to development of a CCP, acquisition of the data needed for a CCP can likely be expedited.

The refuge planning policy, section 3.4C(1)(e) suggests that the following 20 items be considered when assessing the planning area and data needs of the CCP:

- (i) Context of the planning unit in relation to the surrounding ecosystem.
- (ii) Structures, components, and functions of the ecosystem(s) of which the planning unit is a part.

Preplanning Elements

(from 602 FW 3.4C(1))

- (a) Planning Team
- (b) Identify Refuge Purpose(s), History, and Establishing Authority
- (c) Identify Planning and Compliance Requirements and Special Designations
- (d) Purpose and Need for the Plan
- (e) Planning Area and Data Needs**
- (f) Review All Available Information, Plans, Data, Maps, and Data Standards
- (g) Vision and Goals
- (h) Internal Scoping
- (i) Public Involvement and Outreach Planning
- (j) Work Plan and Planning Schedule
- (k) Planning Record

-
- (iii) Natural and historical role of fire and other natural occurrences affecting ecological processes.
 - (iv) Past land use and history of settlement, including a description of any changes in topography, hydrology, and other factors.
 - (v) Current and historic description of the flora and fauna and the diversity of habitats and natural communities.
 - (vi) Distribution, migration patterns, and abundance of fish, wildlife, and plant populations, including any threatened or endangered species, and related habitats.
 - (vii) Fish, wildlife, and plants and their habitats and communities that are rare and/or declining within the ecosystem.
 - (viii) Water resources, including quality and quantity.
 - (ix) Archaeological and other cultural resources.
 - (x) Significant problems that may adversely affect the ecological integrity or wilderness characteristics and the actions necessary to correct or mitigate the problems.
 - (xi) Identify opportunities to improve the health of habitats or the functioning of ecosystems.
 - (xii) Significant problems that may adversely affect the populations and habitats of fish, wildlife, and plants (including candidate, threatened, and endangered species) and the actions necessary to correct or mitigate the problems.
 - (xiii) Known or suspected sources of environmental contaminants and their potential impacts on the planning unit (refer to the Contaminant Assessment Program).
 - (xiv) Land acquisition or habitat protection efforts.
 - (xv) Habitat management practices.
 - (xvi) Existing administrative resources, including staffing, funding, and facilities.
 - (xvii) Existing transportation patterns and related visitor facilities.
 - (xviii) Potential need for administrative sites, transportation improvements, or visitor facilities and areas within the planning unit that are suitable for such sites.
 - (xix) Existing and potential opportunities for wildlife-dependent recreation.
 - (xx) Existing special management areas, or the potential for such designations (e.g., wilderness, research natural areas, and wild and scenic rivers)



Moving buffalo at Fort Niobrara NWR in Nebraska. USFWS photo.

Many of the above items overlap. For clarity and ease of presentation, we grouped them into nine more closely related headings. Each of these items is described in detail in the following sections:

*Birding at Ding Darling
NWR in Florida. USFWS
photo.*



1. Knowledge of the surrounding ecosystem (items i, ii, iii, vii).
2. Description of flora, fauna, natural communities, water and other natural resources of the refuge (items iii, v, vi, vii, viii).
3. Significant problems and the actions necessary to correct or mitigate them (items x, xi, xii, xiii).
4. Habitat management practices (item xv).
5. Description of land acquisition or habitat protection efforts (item xiv).
6. Description of archaeological and other cultural resources (item ix).
7. Public use information and associated data (items xvii, xviii, xix).
8. Existing special management areas or the potential for such designations (item xx).
9. Existing administrative resources, including staffing, funding, and facilities (item xvi).

Sources of Information

State fish and wildlife agencies collect a variety of fish and wildlife data useful in developing a CCP, but this information may not be published or otherwise readily available through a literature search service. Coordination with the State fish and wildlife agency is an important part of conducting a comprehensive assessment of existing information.

A general search of the Internet can also be used to locate information. Government reports, research studies, and other useful sources of information are available, and many sites provide access to entire reports.

government or their branches). If this will be the case, the Planning Team should consult with the Department of Interior's Paperwork Reduction Act Coordinator to obtain Office of Management and Budget approval prior to posing these questions and obtaining information.

How is the Information Used in the CCP Process?

From map-making to performing critical analysis, the whole process will move more smoothly with complete, accurate, and up-to-date data. Products include hardcopy and digital maps and reports and summary tables. The data produced and used during the CCP process is very important because it becomes the basis for monitoring goals and objectives developed in the CCP process. Data, and the assumptions made in applying data, form the basis for monitoring management performance and attainment of goals.



Brown Pelicans, Pelican Island NWR in Florida. USFWS photo.

Surrounding Ecosystems

Knowledge of the Surrounding Ecosystem (Items i, ii, iii, vii)

Each refuge exists within a larger context. Knowledge of the surrounding ecosystem is important to understanding the role and potential contribution of the refuge at various landscape scales. Understanding the relationship between the refuge and the surrounding landscape requires an assessment of the biological communities and ecosystem processes on and off the refuge. The primary concern is to develop an understanding of these issues both inside and outside the refuge. This will help you to determine refuge management direction and priorities and to understand limitations on what can be accomplished on the refuge.

Numerous ecoregional assessment efforts are under way by the Service and its partners. In an effort to step-down range-wide objectives for migratory species, the Service's Joint Venture program has developed priority lists as well as specific population and habitat objectives for many ecoregions around the U.S. Additionally, through its Fulfilling the Promise initiative, the NWRS has initiated eight pilot ecoregional efforts to prioritize species and identify population and habitat objectives. Contact your regional NWRS planning division or Joint Venture office to see if there is an available ecoregional assessment that applies to your refuge.

Developing a quality CCP requires a comprehensive assessment of the scientific, legal, and management literature. It is essential that planning team members acquire and study existing information to ensure that the CCP is built on a strong scientific foundation. The conservation library at the National Conservation Training Center provides a literature search service to access journal articles and other scientific literature that can aid in this effort. This service includes searches of several key sources, including Fish and Fisheries Worldwide and Wildlife Worldwide. The Cambridge

Scientific Abstracts (CSA) are also available. Information on how to use the service and obtain reprints is found at <http://library.fws.gov>

Additional Service policy related to this topic can be found in the following:

- Ecosystem Approach to Fish and Wildlife Conservation (052 FW 1) <http://policy.fws.gov/052fw1.html>
- Policy on Maintaining the Biological Integrity, Diversity, and Environmental Health of the National Wildlife Refuge System (601 FW 3) <http://policy.fws.gov/601fw3.html>

First, identify the boundaries of the ecosystems within which the refuge exists. Ecosystem boundaries should be based on biological or landscape features, and not on political boundaries. The Service has identified and defined boundaries for 53 ecosystem units by grouping U.S. Geological Survey-defined watersheds (<http://ecosystems.fws.gov/>). Other defined ecosystem boundaries that might be of interest include the following:

- Partners In Flight Physiographic Areas (<http://www.blm.gov/wildlife/pifplans.htm>)
- North American Bird Conservation Initiative, Bird Conservation Regions (<http://www.nabci-us.org/map.html>)
- Bailey's Ecoregions of the United States http://www.fs.fed.us/land/ecosysgmt/ecoreg1_home.html

A primary purpose of this effort is to gain an understanding of the role of the refuge in the larger ecosystem. It is a formidable task to acquire a thorough "knowledge of the surrounding ecosystem," but by focusing on a few key issues, the task of gaining knowledge of the surrounding ecosystem can be simplified. Following are important areas of concern, which will be considered in detail in subsequent subsections:

- Species or resources of concern within the ecosystem
- Plant community composition within the ecosystem
- Past land use and history of settlement
- Historic and current status of important ecological processes
- Identification of other refuges or important fish and wildlife habitats in the vicinity

Species or Resources of Concern Within the Ecosystem

What Type of Information is Needed?

To understand the role of the refuge in the surrounding ecosystem, it is important to identify the biological and physical resources that are of concern within the ecosystem and to carefully consider if the refuge can and should make a contribution toward conservation of those resources. Resources of concern might include species of animals or plants or communities that are rare, declining, or



American alligator at Cape Romain NWR in South Carolina. USFWS photo.

otherwise of conservation interest. The type of information needed includes presence or absence, relative abundance, rates of decline, distribution, and quality and continuity of habitat.

Where Can the Information be Obtained

The refuge planning policy (section 3.4C(1)(e)) states that the following sources should be consulted to determine species or resources of concern:

- Federal threatened and endangered species lists
- Migratory Nongame Birds of Management Concern in the United States
- Partners in Flight Watch List
- State lists of rare, threatened, endangered, or species of concern
- National Audubon Society State watch lists
- The Nature Conservancy’s heritage program and ranking system
- State heritage databases and conservation data centers

As a component of the NWRS Fulfilling the Promise recommendations WH 1,2,3, the Service is in the process of compiling ecoregional and State lists of priority ‘trust’ species. These lists of priority species are derived from the Endangered Species, Migratory Bird, and Fisheries programs. Furthermore, a searchable database of conservation plans is under development which will link these priority species with all available applicable

*San Francisco Bay
NWR, California.
USFWS photo.*



plans. Please contact your regional NWRS planning division for support in gaining access to both the list of priority species as well as the conservation plans database. Additional sources of species information can be found below.

In 2002, the Service published the document *Birds of Conservation Concern*, which lists birds of concern for various regions across the United States (<http://migratorybirds.fws.gov/reports/BCC2002.pdf>). In addition, other lists of species or resources of concern may exist for a particular geographic area (e.g., ecosystem plans, Region 3 list of Resource Conservation Priorities).

A particularly important source of information is the North American Bird Conservation Initiative (NABCI), whose goal is to facilitate bird conservation through regionally based, biologically driven, landscape-oriented partnerships (<http://www.nabci-us.org>). The NABCI Web site refers to four key bird conservation plans:

- North American Waterfowl Management Plan (a major partnership effort to restore waterfowl populations to historic levels): <http://www.fws.gov/birdhabitat/NAWMP/files/ImplementationFramework.pdf>
- Partners In Flight (provides many bird-related resources and plans): <http://www.partnersinflight.org>
 - PIF database and species assessment scores: <http://www.rmbo.org/pif/pifdb.html>
 - PIF Physiographic Area Plans: <http://www.blm.gov/wildlife/pifplans.htm>
- United States Shorebird Conservation Plan (provides prioritization scores for shorebird species): <http://shorebirdplan.fws.gov/>
- North American Waterbird Conservation Plan (conservation management of seabirds, wading birds, terns, gulls, and marsh birds): <http://www.waterbirdconservation.org/nawcp.html>

Additional sources of information to identify species or resources of concern include:

- Federal list of endangered and threatened wildlife and plants: <http://endangered.fws.gov/wildlife.html#Species>
- State lists: Each State has a Web site of rare or otherwise designated species that should be consulted. The following Web site has many State species-of-concern lists, but some are for fish only: <http://www.nanfa.org/AgencyLinks.shtm>
- State Comprehensive Wildlife Conservation Strategies (CWCS): Each State and Territory has completed a conservation strategy with a focus on species in greatest need of conservation. The following Web site has links to the State strategies: <http://www.wildlifeactionplans.org>



Conducting a health exam on a Florida panther at Florida Panther NWR. USFWS photo.

-
- National Audubon Society WatchLists: WatchList species are those faced with population decline, limited geographic range, and/or threats such as habitat loss on their breeding and wintering grounds: <http://www.audubon.org/bird/watchlist/index.html>
 - State natural heritage programs: Provide information on the locations and conditions of rare and threatened species and ecological communities within their State or jurisdiction: <http://www.natureserve.org/aboutUs/network.jsp>
 - Breeding Bird Survey Data: Provides data on rates of population change for breeding birds of North America: <http://www.mbr-pwrc.usgs.gov/bbs/bbs.html>
 - Endangered Ecosystems of the United States: Reports estimates of declines of natural ecosystems in the United States; provides rationale for ecosystem-level conservation; discusses decline and threats as criteria for conservation; and relates ecosystem losses to endangerment at species and population levels: <http://biology.usgs.gov/pubs/ecosys.htm>
 - FWS Environmental Conservation Online System (ECOS). ECOS includes information and data on Threatened and Endangered Species (TESS), environmental quality (EDCMS), fish passage (FPDSS), and habitat (HabITS), and provides mapping and database report/query capabilities: https://ecos.fws.gov/josso/signon/login.do?josso_back_to=https://ecos/josso_security_check

How is the Information Used in the CCP Process?

Knowledge of the species or resources of concern in the ecosystem surrounding a refuge should help ensure that these issues are considered in the CCP process. Managing the refuge could involve providing habitat for a particular species or resources of concern from an ecosystem perspective. The biological integrity policy requires the refuge to consider its contribution to wildlife conservation on larger landscape scales when consistent with the refuge purpose(s).

Exercise care in using species lists and ecosystem concerns to determine management direction for a refuge. For example, if declining grassland birds are a resource of concern within the ecosystem, the refuge should consider its potential contribution to improve habitat for these birds. Base this consideration on a careful evaluation of the historic conditions on the refuge.

If grasslands were historically present on the refuge, it would probably be appropriate to manage for the declining grassland birds. However, consider any other management constraints that may exist. If grasslands were not historically present on the refuge, conduct a more critical analysis prior to making a decision to manage for grassland birds. The following are important questions to consider:

- (a) Which areas would you manage for grassland birds and what are the implications of eliminating existing habitats or

precluding a return to historic habitat? One implication of precluding a return to historic habitat is the loss of value for the plants and animals that occupied the historic habitat. Another concern is the potential difficulty in creating and maintaining a grassland habitat in an area where it did not naturally occur. If the natural, historic habitat were a shrub or forest type, significant effort would be required to keep it in a grassland stage. Furthermore, it may be difficult to mimic diversity of native grass and forb species and to recreate the desired habitat structure. One implication of eliminating existing habitats is the loss of areas important to fulfilling the purpose of the refuge (e.g., habitat for migratory waterfowl) that may also result in a loss of wildlife-dependent recreational uses.

- (b) Are there any management constraints – such as the inability to burn areas or to maintain native grazers – that would preclude viable grassland habitat management? Consider management constraints prior to making final decisions on desired habitats and on managing for resources of concern that were not historically found on the refuge.
- (c) Are there biological considerations – such as minimum grassland patch size – that cannot be achieved? If the grassland birds of management concern require large, contiguous patches, can the refuge provide them? Are there other biological requirements that may limit the value of managing for grassland birds?

Over the last decade, bird conservation has evolved from a largely site-based endeavor to a more regional, landscape-oriented approach. Several migratory bird initiatives have emerged to help guide this effort. The Service bears a trust responsibility for most of the 800+ bird species that breed in North America. Therefore, it is appropriate that the Refuge System continue to focus considerable effort on the conservation of bird populations and habitats. It is also imperative that the Service work with partners when implementing recommendations from the various bird conservation plans on refuges.

All of the preceding factors deserve serious consideration during the preplanning phase of the CCP. Together with refuge purpose(s), the biological integrity policy, wildlife-dependent recreational uses policy and other pertinent policies, these decisions help provide the framework for future management of the refuge.



Dogwood blooms, Carolina Sandhill NWR, South Carolina. USFWS photo.

Plant Community Composition Within the Ecosystem

What Type of Information is Needed?

The biological integrity policy notes that “at the community level, the most reliable indicator of biological diversity is plant community composition.” Ideally, information on plant community composition for both present and historic conditions will be available. Tables and maps provide a useful format for displaying

Table 1: Changes in Vegetative Structure Within the Colville Sub-basin, Circa 1900 to Present

Vegetation Community	Current Acres	Current % of Sub-basin	Historic Acres	Historic % of Sub-basin	Percent Change (Current % - Historic %)	Ratio of Current to Historic Acres
Old Multi-strata Forest	15,283	2	135,868	21	19	1:9



Ozark cavefish research at Logan Cave NWR, Arkansas. USFWS photo.

this type of information. For example, the CCP for Little Pend Oreille NWR (see <http://pacific.fws.gov/planning/LPOccp/v1.pdf>) contains a table (shown below with abbreviated headings and a sample of data) and an accompanying map that describes current and historic conditions in the watershed basin.

Where Can the Information be Obtained?

Current vegetation composition maps are available for many States from a number of sources including the Gap Analysis Program (<http://www.gap.uidaho.edu/>). In addition, historic information often exists at some level of detail. Regional perspectives of changes in plant communities can be found in the report on Endangered Ecosystems of the United States (<http://biology.usgs.gov/pubs/ecosys.htm>). Information from a State through development of the CWCS or at the local level may also exist. Several examples are provided below:

- Minnesota Presettlement Vegetation: <http://deli.dnr.state.mn.us/metadata.html?id=L250000140201>
- Early Vegetation of Wisconsin: <http://www.uwex.edu/wgnhs/earlyv.htm>
- Iowa 1832-1859 Vegetation: <http://www.public.iastate.edu/~fridolph/dnrglo.html>
- Presettlement and Contemporary Vegetation Patterns Along Two Navigation Reaches of the Upper Mississippi River: <http://biology.usgs.gov/luhna/chap7.html>

How is the Information Used in the CCP Process?

Data on vegetation composition in the surrounding ecosystem indicate which vegetation communities have increased, which have decreased, and to what degree. This information provides an important framework for determining refuge management direction. If a particular vegetation community has shown a drastic decline within the ecosystem, it might warrant consideration as a high priority for management on refuge lands. However, the cautions listed in the previous section also apply here and should be reviewed.

Past Land Use and History of Settlement Within the Ecosystem

What Type of Information is Needed?

This section requires information on past land uses and how land use has changed over time. The history of uses such as farming, logging, grazing, and urbanization helps us to understand how the landscape has evolved into its present form. Information on the history of settlement and the rate of land-use change is also needed.

Where Can the Information be Obtained?

The land-use history of a particular ecosystem may be available through various State and local agencies or found through searches on the Internet. A good source of information for several specific areas can be found at the Land Use History of North America project Web site (<http://biology.usgs.gov/luhna/>). Local residents, academic institutions, and historical societies may also be good sources of land-use history.

Note: The Paperwork Reduction Act of 1995 may apply if identical questions will be posed -- either orally or in writing -- to ten or more persons (including associations; corporations; organized groups of individuals; State, territorial, tribal or local governments or their branches; and political subdivisions of a State, tribe, or local government or their branches). If this will be the case, the Planning Team should consult with the Department of Interior's Paperwork Reduction Act Coordinator to obtain Office of Management and Budget approval prior to posing these questions and obtaining information.

How is the Information Used in the CCP Process?

Information on past land use provides valuable background as well as a perspective on the magnitude and direction of changes that have occurred. This information may be helpful in predicting future changes and in helping to see possible landscape contexts of the future. Because the history of land use may affect how people feel about refuge management, there is also a human-dimensions aspect to understanding land-use changes. For example, if refuge lands were historically grazed or cropped, changes from these traditional uses may be viewed in a negative manner.

Historic and Current Status of Important Ecological Processes Within the Ecosystem

What Type of Information is Needed?

Ecological processes -- such as fire, floods, droughts, storms, predation, disease, or herbivory -- play an important role in regulating the structure and function of ecosystems. It is important to understand the major ecological driving forces within the ecosystem, both historically and under current conditions. Information is needed that describes the timing, rates, duration,



Horned Atlantic Puffin, Alaska Maritime NWR. USFWS photo.

frequency, and intensity of major processes and the effects of these processes on fish and wildlife and their habitats.

Where Can the Information be Obtained?

- Fire effects information: <http://www.fs.fed.us/database/feis/index.html>

Provides descriptions of almost 900 plant species, about 100 animal species, and 16 Kuchler plant communities found on the North American continent. The emphasis of each synopsis is fire and how it affects each species. Background information on taxonomy, distribution, basic biology, and ecology of each species is also included. Synopses are thoroughly documented, and each contains a complete bibliography.

- Hydrologic data: <http://water.usgs.gov/nwis/>

Provides access to water-resources data collected at approximately 1.5 million sites in all 50 States.

- Soil information: http://soils.usda.gov/survey/printed_surveys/

Provides U.S. Department of Agriculture soil surveys by State.

- Climate: <http://www.noaa.gov/climate.html>

Provides access to over 100 years of archived weather data.

How is the Information Used in the CCP Process?

The biological integrity policy calls for maintaining or restoring historic processes where feasible and when not in conflict with refuge purposes. Knowledge of ecological processes is critical to understanding how the communities in the ecosystem were historically regulated and what, if any, significant changes have occurred over time. This information, in combination with knowledge of past and present plant and animal populations, provides the framework to more fully comprehend the ecosystem. It is difficult to provide general statements about how this information is used; the following examples offer some insights.

Grassland Processes

In many grasslands, key historical ecological drivers included drought, fire, and large mammal herbivory. Assume that, on a particular refuge with grasslands, there is currently no fire or large mammal herbivory. The refuge should consider if it can feasibly restore these processes to mimic historic conditions.

River/Riparian Processes

High annual flood flows are key historical ecological drivers on many river systems. Assume that, on a particular refuge, upstream dams regulate flows and hold back flood waters. This places a constraint on the refuge's ability to restore this historic process and likely impacts the ability to restore historic vegetation communities.

Identification of Other Refuges or Important Fish and Wildlife Habitats Within the Ecosystem

What Type of Information is Needed?

The contribution that a refuge can make to fish and wildlife resources depends partly on the abundance and distribution of other protected lands within the ecosystem. These nearby lands may affect the value of refuge habitat for wide-ranging animals. In addition, the success of management efforts on migratory birds may be affected by the presence of other protected areas. During preplanning, it is important to gather information on the various areas within the ecosystem that provide value to wildlife, including data on major habitats, acreage, distance from the refuge, and any barriers to movement.

Where Can the Information be Obtained?

Generally, the location of other protected areas is fairly common knowledge and readily obtained by contacting other Federal, State, or local agencies or nongovernmental organizations such as The Nature Conservancy. A required element of each State CWCS is a description of locations and relative condition of key habitats and community types essential to the conservation of species indicative of the diversity and health of the State's wildlife. Information on location, distance, and barriers might also be available in various Geographic Information System (GIS) data sets.

How is the Information Used in the CCP Process?

Information on other protected areas may affect management direction in several ways. The refuge might increase or decrease emphasis on managing for a specific resource of concern depending on the level of protection afforded outside the refuge. In addition, the refuge might tailor its management efforts to complement efforts beyond its boundary to maximize the benefit to species of concern. For example, a refuge might work to develop corridors connecting its habitats to those outside the refuge. Decisions about shorebird or other migratory bird management efforts might consider management on lands outside the refuge and thus provide appropriate habitats at the correct time for migrating birds.

Refuge Resources

Description of Flora, Fauna, Natural Communities, Water, and Other Natural Resources on the Refuge (Items iii, v, vi, vii, viii)

The previous section considered knowledge of the surrounding ecosystem. This section addresses knowledge of the refuge itself and is one of the most important components of preplanning. Development of a high-quality CCP is built on a foundation of



Biologist coring timber to promote Red-cockaded Woodpecker habitat. USFWS photo.

knowledge of the natural and other resources of the refuge, both current and historic.

The refuge planning policy calls for several specific types of information:

- Natural processes such as fire and hydrology
- Description of current and historic flora and fauna and the diversity of habitats and natural communities
- Distribution, migration patterns, and abundance of fish, wildlife, plant populations, (including threatened and endangered species), and related habitats
- Water resources, including quality and quantity
- Wildlife habitat and species relationships
- Vegetation types

It is necessary to have an overall understanding of the habitats and natural communities on the refuge. During preplanning, develop a description of the habitat types or vegetation communities. This description should include information on the following for both historic and current conditions:

- Vegetation composition and structure
- Successional patterns
- The magnitude and timing of natural processes such as fire or flooding
- A comprehensive list of wildlife and plant species, including which habitat or community type they occur in and their relative abundance.

The specific type, sources, and use of information vary to some degree by the habitat or vegetation community of interest. Individual refuges and habitats will likely have unique information needs related to particular features of the landscape, past history, or species of concern.

For major habitat types (e.g., grassland, emergent wetland, upland forest), it is possible to create a list of key habitat features that provide a good starting point for the development of habitat-based objectives. Determine these key habitat features by assessing the general literature for a major habitat and by assessing the specific habitat needs of a range of wildlife species that use the habitat.

This handbook cannot provide detailed information for every habitat, but it offers several examples to illustrate the type of information needed. Following are lists of key habitat features for grasslands, riparian shrub, and emergent wetland habitats. These examples are not intended to be all-inclusive lists of necessary information; instead they provide an indication of the depth and quality of information required.



Lake Andes NWR, South Dakota. USFWS photo.

In all habitats, at least three basic types of information should be obtained: (a) information on wildlife, including habitat requirements, chronology of use, etc.; (b) information on plants, including their germination and other requirements; and (c) information on ecological processes such as fire, herbivory, etc. Some of the information collected will be more general; some information will be very specific to the individual refuge. For most habitats and species, a great deal of information exists. An important outcome of gathering and synthesizing this information is identifying and documenting data gaps, both to acknowledge limitations in what is known and to provide an impetus for future research.

Example of Specific Information Needs – Grassland Habitat

- Information related to wildlife habitat requirements during the time periods the grassland habitat is used (for each feature, compile information on the range of conditions used by birds and other key wildlife).
 - *Structural habitat features:* Canopy height, canopy cover, litter depth, density of shrubs or trees, amount of bare soil.
 - *Plant species composition:* Floristic composition and quality, ratio of grass to forbs, presence and abundance of exotics.
 - *Spatial features:* Size of contiguous grassland, shape of grassland, type of habitat along edges, surrounding landscape context.

-
- Information on grassland plants, including germination and other requirements for key plant species.
 - Germination requirements
 - Water requirements
 - Soil requirements
 - Fire effects
 - Slope and aspect
 - Effects of herbivory
 - Information on ecological processes in the grassland habitat.

Natural processes and the effects of various rates, duration, intensities, timing, or lack of:

- Fire
- Herbivory
- Water, climate, drought
- Native people and their effects

Example of Specific Information Needs – Riparian Shrub Habitat

- Information related to wildlife habitat requirements during the time periods the riparian shrub habitat is used (for each feature, compile information on the range of conditions used by birds and other key wildlife).
 - *Structural habitat features:* Canopy height of shrub and herbaceous layer, canopy cover of shrub and herbaceous layer.
 - *Plant species composition:* Floristic composition and quality, ratio of grass to forbs, presence and abundance of exotics.
 - *Spatial features:* Size of contiguous riparian habitat, width of riparian corridor, type of habitat along edges, surrounding landscape context.
- Information on plants in the riparian shrub habitat, including germination and other requirements.
 - Germination requirements
 - Water requirements (amount, timing, quality)
 - Soil requirements
 - Effects of herbivory
- Information on ecological processes in the riparian shrub habitat.

-
- Natural processes and the effects of various rates, intensities, timing, or lack of:
 - Hydrology (stream discharge, flooding regime)
 - Herbivory
 - Fire

Example of Specific Information Needs – Freshwater Emergent Wetland Habitat

- Information related to wildlife habitat requirements during the time periods the wetland habitat is used (for each feature, compile information on the range of conditions used by birds and other key wildlife).
 - *Structural habitat features:* Canopy height of wetland vegetation, canopy cover of vegetation, water depth
 - *Plant species composition:* Floristic composition and quality, presence and abundance of exotics
 - *Spatial features:* Size of contiguous wetland habitat, interspersions of open water and vegetation
- Information on plants in the wetland habitat, including germination and other requirements.
 - Germination requirements
 - Water requirements (amount, timing, quality)
 - Soil requirements
- Information on ecological processes in the wetland habitat.
 - Natural processes and the effects of various rates, intensities, timing, or lack of:
 - Hydrology
 - Herbivory
 - Fire



Lotus, Wichita Mountains NWR. USFWS photo.

Where Can the Information be Obtained?

Information concerning overall community characteristics, wildlife habitat requirements, plant species requirements, and ecological processes is found primarily in the scientific literature. It is imperative that refuge staff and planners conduct thorough literature searches, search the Internet, and seek information from universities or research centers. Literature reviews and compilation of scientific data may be contracted with local universities or others. In addition, refer to the “Sources of Information” at the beginning of the “Planning Area and Data Needs” section and to other information sources provided throughout this handbook.

Note: The Paperwork Reduction Act of 1995 may apply if identical questions will be posed – either orally or in writing – to ten or more persons (including associations; corporations; organized groups of individuals; State, territorial, tribal or local governments or their branches; and political subdivisions of a State, tribe, or local government or their branches). If this will be the case, the Planning Team should consult with the Department of Interior’s Paperwork Reduction Act Coordinator to obtain Office of Management and Budget approval prior to posing these questions and obtaining information.

How is the Information Used in the CCP Process?

Information and data on the biological resources of the refuge provide the foundation upon which the entire CCP is developed. The quality of a CCP is directly related to the breadth and depth of understanding of the ecology of the system, the plants and animals, and abiotic factors. Specifically, this information is used in the following areas: (a) description of the refuge environment; (b) development of biological goals and objectives; (c) development of strategies to create, restore, or modify habitats; and (d) environmental consequences of each alternative.

Significant Problems and the Actions Necessary to Correct or Mitigate Them (Items x, xi, xii, xiii)

What Type of Information is Needed?

An important aspect of planning is to develop an understanding of any problems or constraints that hinder the Service’s ability to achieve refuge purposes and to contribute to the Refuge System mission. There are a wide range and large number of problems that can have adverse impacts on biological resources, ecological processes, and overall environmental health of the refuge. There are insufficient resources to address and correct each of these problems. In addition, efforts to directly address many refuge problems may be futile. Thus, to be more efficient and to avoid a piecemeal approach to management, the identification and resolution of significant problems may involve the identification and resolution of core problems and their root causes.

Basic information that is needed to determine the core problem and its underlying causes includes the following:

1. Problems that directly affect or have the potential to directly affect fish, wildlife, and plant populations that inhabit the refuge. Examples include:
 - (a) higher-than-natural mortality of white pelicans
 - (b) lower-than-natural diversity of neotropical migrants
 - (c) poor survival of native fish
 - (d) low production of sage grouse
 - (e) high levels of nestling mortality in a heron rookery
2. Suspected causes of these impacts and potential impacts. Examples include:



Law enforcement officer checks a hunting license at Great Swamp NWR in New Jersey. USFWS photo.

-
- (a) contamination of off-refuge water appears to cause high mortality in white pelicans
 - (b) loss of riparian habitat appears to contribute to the lower-than-natural diversity of neotropical migrants
 - (c) excessive daily maximum in-stream water temperature may contribute to poor survival of native fish
 - (d) high levels of nest depredation by ravens may contribute to low production levels
 - (e) excessive levels of human disturbance are suspected of contributing to nestling mortality
3. Other problems that adversely affect or have the potential to adversely affect habitats, ecological integrity, and wilderness characteristics of a refuge. Examples include:
 - (a) impaired wilderness character (caused by proliferation of invasive weeds), impaired ecosystem functioning (caused in large part by an upstream hydroelectric dam)
 - (b) ongoing residential development at the edge of a refuge
 4. Cause-and-effect relationships among factors identified in 1–3, above.
 5. Core problems that ultimately cause or contribute to the problems identified in 1 and 2 above and the root causes of the core problems. Even on refuges with a large number of highly complex resource problems, the number of core problems needing attention typically does not exceed two or three. Sometimes there are additional core problems, but they are usually of lesser concern. It is also helpful to understand the root causes of the core problems that many times have a major socio-economic component.

Cause-and-effect relationships among the many diverse problems on a refuge can be very complex. There are many tools available to help identify cause-and-effect relationships and to determine underlying core problems and their root causes. These tools include informal to highly structured approaches that can be used in a meeting setting or individually, as well as computer software applications for analyzing problems. Although resource problems, core problems, and their root causes can sometimes be identified rather quickly, it is helpful to do a preliminary listing and analysis to guide further data gathering to answer questions about problems and their effects, causes of problems, and other mechanisms of particular cause-and-effect relationships. This can facilitate a more thorough analysis of problems. Although the understanding of core problems and their root causes can help any refuge's wildlife and habitat management program, this information is especially useful for larger, more intact refuges, for refuges where the restoration of natural ecosystem functions is being attempted, or where a smaller refuge is part of a larger system that is being restored cooperatively.



*Mississippi Sandhill Crane NWR,
Mississippi. USFWS photo.*

Beyond gathering information on the problems themselves, there is also a need to gather information on potential solutions to correct or mitigate the problems.

Where Can the Information be Obtained?

Knowledge of the problems and their root causes may already exist. Much of the information on problems comes from personal experience on the refuge. However, the interrelationships among problems and the cause-and-effect relationships can be very complex. An accurate and objective identification of the core problem and root causes may require a structured problem-analysis process. A variety of textbooks, technical papers, and computer software applications are available. Information to gain a better understanding of the problems and to support a problem analysis should be sought from refuge monitoring study results, outside experts, other refuges, and scientific studies.

Information on contaminants and water quality can be obtained from the EPA impaired waters 303d list: <http://cfpub.epa.gov/surf/locate/index.cfm>.

Note: The Paperwork Reduction Act of 1995 may apply if identical questions will be posed – either orally or in writing – to ten or more persons (including associations; corporations; organized groups of individuals; State, territorial, tribal or local governments or their branches; and political subdivisions of a State, tribe, or local government or their branches). If this will be the case, the Planning Team should consult with the Department of Interior's Paperwork Reduction Act Coordinator to obtain Office of Management and Budget approval prior to posing these questions and obtaining information.

How is the Information Used in the CCP Process?

Information on problems, core problems, and their root causes can be used to help determine which habitat or other ecosystem component should be emphasized in objectives. Such information can also be used in the process of determining and designing management actions and partnering opportunities to resolve core problems, their root causes, or other problems. The information gained through this process can also be used to determine the extent to which problems can be corrected. The CCP process is an ideal time to reevaluate management assumptions.

Conclusions about the extent to which significant problems or their causes can or cannot be resolved should only be made after thorough evaluation of all possible means of correction or mitigation. Certain problems may act as sideboards to the planning effort in terms of what can actually be accomplished. But caution needs to be exercised in deciding whether the resolution of a particular problem is insurmountable (and should act as a sideboard) or whether its resolution is not of interest to a particular management approach. The information also may provide impetus for future research.

*Black-tailed prairie dog,
CM Russell NWR in
Montana. USFWS
photo.*



Habitat Management Practices (Item xv)

What Type of Information is Needed?

Current habitat management practices and their trends for the planning unit and planning area should be identified and described. Habitat management practices (strategies) are the management tools used to create desired conditions. They may include burning, mowing, planting, drawdowns, etc. Gather information not only on which strategies are being used, but also on the rates, intensities, and timing of their application. In addition, it is useful to have information on management strategies that are not currently being applied, but might be used in the future.

Where Can the Information be Obtained?

Information on current habitat management strategies may be obtained from discussions with the refuge staff and from various reports such as annual refuge narratives. Information on possible management strategies that might be applied in the future may be obtained from discussions with other refuges, State fish and wildlife agencies, the scientific literature, or other land managers in the area.

Note: The Paperwork Reduction Act of 1995 may apply if identical questions will be posed – either orally or in writing – to ten or more persons (including associations; corporations; organized groups of individuals; State, territorial, tribal or local governments or their branches; and political subdivisions of a State, tribe, or local government or their branches). If this will be the case, the Planning Team should consult with the Department of Interior’s Paperwork Reduction Act Coordinator to obtain Office of Management and Budget approval prior to posing these questions and obtaining information.

How is the Information Used in the CCP Process?

An understanding of habitat management strategies is essential to the successful achievement of desired habitat conditions on a refuge.

Description of Land Acquisition or Habitat Protection Efforts (Item xiv)

What Type of Information is Needed?

As noted previously, it is important during preplanning to gather information on the various areas within the ecosystem that provide value to wildlife resources, including data on major habitats, acreage, distance from the refuge, and any barriers to movement. Just as the information on other protected areas may affect management direction, so may management direction be affected by the acquisition status of the refuge land base and the protection status of habitats outside of the refuge boundary.

Land conservation options should be considered throughout the process of defining the planning area and identifying data needs. A need for additional land conservation may be indicated by any number of factors, including the context of the planning unit and relation to its ecosystem(s) and watershed(s); relationships between the planning unit and any other refuges or other important fish and wildlife habitats in the vicinity; and distribution and migration patterns of fish, wildlife, and plant populations, including any threatened or endangered or declining species, and related habitats. Land conservation may serve as a strategy to mitigate adverse effects on the ecological integrity or wilderness characteristics of the refuge or it may provide opportunities to improve the health of species, habitats or ecosystems. Lands in addition to conservation lands may be needed to facilitate wildlife-dependent recreational uses, for administrative sites, transportation improvements, or visitor facilities and areas within the planning unit.



Moosehorn NWR in Maine. USFWS photo.

Water needs and resources should be addressed in the same manner as land conservation options. Like land, water is a limited quantity resource that can be obtained and managed.

Ideally, ecosystem teams will identify – within each Service ecoregion, sub-basin, or focus area – important fish and wildlife habitats that need to be protected. Ecosystem teams should, in cooperation with partners, explore priorities for habitat protection and restoration; identify roles and responsibilities among agencies and organizations; and coordinate with Refuge System managers, planners, and realty specialists regarding the appropriateness and feasibility of bringing lands into the Refuge System or other protected status.

During the preplanning process, we should assess whether the refuge purpose(s) can be achieved on the existing land base and to what extent additional lands, if any, within the authorized acquisition boundary would need to be acquired to achieve refuge purpose(s). If refuge purpose(s) cannot be achieved on either the

existing land base or on the land base that includes lands within the authorized acquisition boundary that could reasonably be expected to be acquired over the life of the CCP, the refuge should assess the extent to which the refuge boundary will need to be expanded.

Prior to proposing that land or habitat be acquired by the Service, all potential land protection options should be evaluated. Determine whether the land or habitat in question is or could be adequately protected under a Federal, State, or local permit, license, or regulatory program such as the following:

- Endangered Species Act (ESA), section 10 or 7 take authorization
- Clean Water Act, section 10 or 404 permit
- Federal Energy Regulatory Commission license
- Federal use permit (from Natural Resource Conservation Service, USDA Forest Service, Bureau of Land Management, Bureau of Reclamation, Department of Energy, Department of Defense, Environmental Protection Agency, etc.)
- State or local regulatory use or zoning permit

Also determine whether the land or habitat in question is or could be adequately protected under a nonregulatory Federal, State, or local agency protection program such as the following:

- Fish and Wildlife Service private lands or coastal grant program
- ESA, section 6 grant program
- Federal Aid grant
- Fisheries Assistance grant
- State or local protection program
- Nongovernmental organization easement or acquisition

Service policy (341 FW 2) is to adopt habitat protection measures and strategies that involve acquiring the minimum possible interest or rights in lands and waters. The objective is to leave as large a proportion of these rights as possible in private ownership and still meet the defined resource objectives.

If achieving refuge purpose(s) only seems feasible by bringing additional lands into the Refuge System, the refuge should consider expanding the refuge land base, taking into consideration such factors as the degree of threat to resources, the types of acquisition needed (e.g., fee title, easement, agreement) to achieve refuge purpose(s), land costs, operational costs, habitat restoration costs, potential sources of funding, the presence or absence of willing sellers, public attitude and involvement, public use opportunities, contaminants, water rights, and other locally pertinent issues.



Yellow Warbler, Yukon Flats NWR in Alaska. USFWS photo.

Where Can the Information be Obtained?

Information on approved refuge boundaries, planning and land acquisition processes and procedures, land acquisition history, inholdings, and potential sources for funding can be readily obtained from Regional office refuge planning and realty staff. Refer to the Service Manual for additional guidance on expanding a refuge boundary or establishing a new refuge.

How is the Information Used in the CCP Process?

Consideration of the factors described previously may lead to a land protection strategy to be pursued as part of the CCP. For instance, circumstances may lead the refuge to propose a formal discreet boundary expansion as part of CCP approval and implementation. Another land protection option that could be pursued would be to identify a conservation or stewardship zone in which the refuge proposes to protect a certain amount of acreage within the identified area in partnership with other entities. Yet another option would be to discuss the need for additional land protection conceptually in the CCP and defer formal refuge boundary expansion planning and approval to a subsequent planning process.



DeSoto NWR's Steamboat Bertrand collection in Nebraska. USFWS photo.

Description of Archaeological and Other Cultural Resources (Item ix)

Cultural resources include archaeological resources, historic properties, objects of antiquity, cultural items, and Native American sacred sites. Refer to 614 FW 1-5 (<http://www.fws.gov/policy/ser600.html>) and the Service's cultural resources handbook for information about Service responsibilities for cultural resources on refuges. It is important to identify what we know about refuge cultural resources early in the planning process and to determine what, if any, additional information we need to collect as part of the CCP. Generally, a cultural resource overview should be prepared if one does not already exist. The overview provides a summary of what is known and the context for evaluating the significance of the refuge's cultural resources.

A cultural resource overview may survey all or part of the refuge as part of the planning process. In addition to meeting legal requirements for identification of cultural resources, early knowledge of the location and significance of refuge cultural resources will be beneficial in evaluating the effects of other management actions and in siting facilities and other ground-disturbing activities. The CCP course reference notebook contains a section on cultural resources, including sample statements of work for cultural resource overview, inventory, and evaluation work performed by contractors.

What Type of Information is Needed?

- Information, including maps, on the presence, location, and abundance of cultural resources on the refuge

-
- Information on the context of cultural resources on the refuge to be used to evaluate the significance of the resources (often provided in a cultural resource overview for the refuge or refuge complex)
 - Information on Native American sacred sites
 - Elimination of data gaps in existing information, including the need to inventory and evaluate the significance of refuge cultural resources
 - Opportunities for environmental education and interpretation of cultural resources
 - Problems and threats affecting cultural resources

Where Can the Information be Obtained?

- The Regional Historic Preservation Officer (Regional Archaeologist) should be the central point of contact for cultural resource issues (a contact list is contained in the CCP course reference notebook). They should be able to provide the following, as needed:
 - Pertinent data from refuge files and Regional office files
 - Consultation requests with the State Historic Preservation Officer; other Federal, State, and local land managing agencies; local colleges and universities; local historical societies; local tribes; and Native American organizations
 - Published reports and literature
 - The cultural resources section of the CCP course reference notebook

How is the Information Used in the CCP Process?

- To prepare the cultural resources section of the affected environment and refuge resources chapter of the CCP or NEPA document that will minimally include the following:
 - A description of the cultural resources, including their condition and significance, if known
 - An assessment of threats to archaeological and other cultural resources sites and other cultural resources issues, if any
 - A summary of previous research on the refuge
- To establish a cultural resources goal, if appropriate
- To establish cultural resources objectives and strategies, including objectives involving environmental education and interpretation of cultural resources, as appropriate
- To ensure compliance with cultural resources legislation, Executive orders, regulations, and other direction
- To prepare the environmental consequences section of the NEPA document
- To determine if a cultural resources step-down management plan will be necessary



Mexican wolf at Sevilleta NWR in New Mexico. USFWS photo.

Visitor Services

Public Use Information and Associated Data (Items xvii, xviii, xix)



An interpretive walk at Edwin B. Forsythe NWR in New Jersey. USFWS photo.

Identify Planning and Compliance Requirements

The Service provides visitor services within a hierarchy of guidance. The base level of guidance is legislation – the Improvement Act, for example. Other legislation that may apply to a refuge includes refuge-specific authorizing legislation, the Wilderness Act, and other laws related to special designations. In addition to legislation, we are guided by policies found in the Service Manual, Director’s orders, Executive orders, and Secretarial directives. The codified and formal guidance may be supplemented from time to time with Service or Departmental initiatives that might emphasize a particular use on refuges; e.g., fishing. To satisfy the requirements placed on us by laws, policy, and initiatives, we need to identify what the requirements are and how they apply to the refuge. Some guidance will apply to all refuges; other guidance will apply only to a particular refuge.

What Type of Information is Needed?

- Legislation applicable to the refuge:
 - National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Improvement Act)
 - Refuge Recreation Act of 1962
 - Specific legislation related to the refuge such as establishing and expansion legislation
- Other establishing or acquisition documents:
 - Executive orders
 - Secretary’s orders
 - Public Land orders, Cooperative Agreements (overlays)
 - Donation documents
 - Easements
 - Leases
- Appropriate sections from the Service Manual
- Other Service guidance, including the following:
 - Director’s orders
 - Handbooks
 - Accessibility standards
 - Service publication standards



Hawaiian Geese at Kilauea Point NWR in Hawaii. USFWS photo.

- Service sign guidelines
- Visitor Services minimum requirements
- Applicable ESA recovery plans
- Applicable local and State ordinances, including State hunting and fishing regulations and water use codes
- Memorandums of understanding or agreement
- Refuge purposes database (<http://refugedata.fws.gov/databases/purposes.taf?function=form>).

Where Can the Information be Obtained?

Legislation specific to a refuge can usually be found in the refuge or Regional office realty files. If there is refuge-specific legislation, you should acquire any committee reports that accompanied the legislation so you can better understand the intent. Other legislation can usually be found through the Library of Congress or Government Printing Office Web sites. Service guidance can be located in manuals at the refuge or on the Service's Web site: <http://www.fws.gov/policy/direct.html>. Regional Office Division of Visitor Services staff can help locate specific guidance. State and local regulations can be identified by contacting the appropriate level of government.

How is the Information Used in the CCP Process?

The preceding information provides the guidance that we should use and the standards that we should meet as we evaluate the current refuge program and consider alternatives for future management. For example, the guidance reminds us that we should be facilitating the six wildlife-dependent recreation uses when they are compatible with refuge establishing purpose(s). The

guidance also reminds us that facilities and opportunities should be accessible to people of different abilities.

Describe the Refuge Environment

During planning, we are expected to evaluate the potential opportunities for wildlife-dependent recreation; the need for administrative sites, transportation improvements, and visitor facilities; and areas that are suitable for such activities and sites. We are expected to map the desired future facilities and wildlife-dependent recreation sites. During the planning process, we will evaluate the compatibility of uses and possibly expand or limit the amount and distribution of use. The CCP process is an excellent time to consider these topics with a broad view. In the past, projects or programs have often been proposed in isolation and background data have been gathered only on a site-specific basis. If we are to consider the multiple factors that we should be considering, we need a wide-range of information.

- What Type of Information is Needed?
- Aerial photos
- Maps of the following:
 - Topography
 - Soils
 - Vegetation
 - Geology
 - Surface water features and floodplains
 - Private and public easements on the refuge
 - Inholdings and easements
 - Utility corridors, including buried and overhead utilities
 - Areas with special designations (e.g., Wilderness, Wild and Scenic River, Historic District, Research Natural Area)
 - Off-refuge easements owned by the refuge (e.g., for access)
 - Cultural resources that may affect planning and proposed locations of visitor services facilities
 - Cultural resources that are significant to the public, independent of official study findings and listings (e.g., not qualified for the National Register)
 - Opportunities to connect refuge trails to regional trails
 - Physical development currently planned, including management facilities as they may affect the public
 - Visual resources suitable for improvement and/or conservation



*Rock formations at Ouray NWR in Utah.
USFWS photo.*

-
- Areas restricted because of management, contaminant, or biological considerations
 - Areas where wildlife-dependent recreational uses occur on and around the refuge
 - Undesirable intrusive sounds, odors, light pollution, and visual blight (on or off the refuge) that may affect the recreation or education experience
 - Appropriateness and suitability of architecture or other features of the built and planted environment
 - Unity of visual themes (colors, materials, forms, fonts, etc.) in refuge architecture, interpretive signs, publications, etc.
 - Precipitation, temperature, and other weather patterns as they relate to visitors (including frequency and effects of hazardous weather)

Where Can the Information be Obtained?

Topographic maps, soils maps, geologic profiles, and floodplain data can be obtained from the U.S. Geological Survey (www.usgs.gov), Natural Resources Conservation Service (soils.usda.gov), and Federal Emergency Management Agency (www.fema.gov), respectively. Locations of easements, boundaries, and rights-of-way can be found in refuge or Regional office realty files. Cultural resource locations may be identified in a refuge-specific study or data may exist in the office of the State Historic Preservation Office. The location of regional trails may be obtained from local authorities – city, county, or State. Visual resources can be evaluated by on-site visits, and viewsheds can be depicted using ArcScene in ArcGIS or other software. Intrusive factors, appearance of facilities, and the general impression that the refuge presents to the public can be gained in a visitor services station review. Weather history and climate can be obtained from the National Weather Service (www.nws.noaa.gov).

Note: The Paperwork Reduction Act of 1995 may apply if identical questions will be posed – either orally or in writing – to ten or more persons (including associations; corporations; organized groups of individuals; State, territorial, tribal or local governments or their branches; and political subdivisions of a State, tribe, or local government or their branches). If this will be the case, the Planning Team should consult with the Department of Interior’s Paperwork Reduction Act Coordinator to obtain Office of Management and Budget approval prior to posing these questions and obtaining information.

How is the Information Used in the CCP Process?

This information is used to identify and evaluate potential sites for administrative and visitor services facilities. As potential sites for facilities are evaluated, the mapped data will help identify sites that are unsuitable because of erodible soils, unacceptable slopes, or wet conditions. The data will also help planners identify potential conflicts with rights-of-way or areas with special



Environmental education program at Minnesota Valley NWR in Minnesota. USFWS photo.

designations. Information is used to identify places to avoid, but it also helps planners identify areas with a high potential to provide quality experiences for visitors, such as a great view of a marsh without seeing a neighboring developed landscape or smelling a nearby feedlot. Depending on the nature of the resource, it may be desirable to direct people away from or toward special designated areas and cultural resources.

Soils maps help us avoid wet or erodible soils. The topographic maps can help with laying out a trail that meets accessibility standards. A map of water features and floodplains can help with the design of a trail for environmental education or interpretation. Information about visual resources will help identify the long views of scenery and the best places to see rare wildlife or wildlife concentrations. Inventorying visual resources can help planners identify problems that need to be corrected or opportunities that can be captured in trail or auto-tour layouts. By looking outside the refuge boundaries, we may be able to connect refuge trails to regional trails and bring more visitors to the refuge without their motorized vehicles.

By examining the general impression that the refuge makes on visitors, we are able to consider any need for improvement that might be included in the 15-year planning horizon of the CCP.



*Class tour at San Luis NWR in California.
USFWS photo.*

Describe the Visitor Services and Facilities on the Refuge

By gathering the information described in this section, we can better understand the current situation and identify current weaknesses and strengths. The goal is to document trends in current visitation, visitor services management, and visitor characteristics. We also want to evaluate health and safety topics, outreach, and partnerships.

What Type of Information is Needed?

- Past and current participation in recreation, as follows:
 - Total annual refuge visitation
 - Distribution of refuge use by activity, season, and area or location on the refuge
 - Special-use permits commonly issued for recreation or access
 - Visitors' assessments of refuge conditions and the nature of their experiences
- Characteristics of participants, as follows:
 - Expectations and desires of visitors and reasons for visiting
 - Place of residence of refuge visitors (trip origin, at least to zip code)
 - Population groups that are underusing the refuge (based upon percentage in geographic area served by the refuge)

-
- Percentages of repeat visitors and first-time visitors
 - Number and condition of facilities that support visitor services
 - Additional real property needed to accommodate new facilities and to improve the use of existing facilities and programs (e.g., access, buffers, trail segments)
 - Visitor services management practices
 - Recreation and education, as follows:
 - Current concessionaires
 - Current permit or reservation systems and requirements
 - Collection of entrance and user fees (when, how much, for what?)
 - The amount and types of fish stocked for recreational fishing, plus fisheries management activities for recreational purposes
 - Cooperation with States in implementing hunting and fishing programs
 - Internships for college students, including housing opportunities
 - Staff time and resources needed for nonwildlife-dependent recreation
 - Types of education and interpretation programs offered on- and off-site
 - Accessibility of facilities and programs
 - Staffing for recreation and education
 - Visitor safety, security, and law enforcement, including the following:
 - Issues of security (vandalism, theft, trespass, terrorism)
 - Pedestrian, hiker, skier safety, especially with regard to coincidental use by others (particularly hunters and nonhunting recreationists in the same area at the same time)
 - Visitor safety on water (boating) or ice (fishing)
 - Compliance of public roads with traffic engineering standards for safety (roadway design, signage, hazards, maintenance, etc.)
 - Safety issues and warning systems for unforeseen danger (e.g., dangerous wildlife, unstable terrain, wildfires, thin ice, storms, avalanche danger, rapids, unexploded ordnance, polluted water, poisonous plants)
 - Illegal activities



Environmental education program at Rocky Mountain Arsenal NWR in Colorado.

-
- Responsibility for emergency response: How is this coordinated? Is the response system tested? What emergencies are covered?
 - Regular checking of public facilities for safety (e.g., bridges, decks, trails, exhibits)
 - Source, quality, and test records of potable water
 - Law-enforcement staffing
 - Communication and coordination with other law enforcement authorities
 - Compliance with the Refuge Sign Manual
 - Outreach and communication, such as the following:
 - Address of refuge World Wide Web site and information that is available there
 - Current outreach efforts to attract tourists, education groups, and recreationists, including portable exhibits, radio and television appearances, fairs, parades, news releases, way finding, orientation
 - Contacts with State and Federal congressional representatives, including frequency
 - System for responding to requests for information, including e-mail, postal mail, and telephone
 - Staffing for outreach and communication
 - Publications and distribution
 - Number and types of special outreach events
 - Communication and coordination with State fish and wildlife agency
 - Partners/Special interest groups/Volunteers/Friends groups, including the following:
 - Partners for visitor services and the nature of the partnership
 - Groups that are particularly interested in the refuge for certain activities/resources
 - Roles and activities of partners
 - Potential partners
 - Volunteer program: number of volunteers, number of volunteer hours, staffing, volunteer activities
 - Friends group
 - State fish and wildlife agency (particularly with respect to the state Comprehensive Wildlife Conservation Plan)



Waterfowl hunting, Horicon NWR in Wisconsin. USFWS photo.

Where Can the Information be Obtained?

Refuge records are the primary source for information about visitors and visitor management. Past annual narratives are useful in gathering trend data and in documenting the development and rationale for visitor services programs. If a refuge has a visitor services plan, the plan will contain much useful information. The Refuge Annual Performance Plan (RAPP) contains annual data regarding total visitation, number of visitors by activity, number of volunteers, and number of volunteer hours. The Refuge Operational Needs System (RONS) lists refuge operations and staffing needs. The Service Asset Maintenance Management System (SAMMS) contains information on construction of new refuge assets and repair or replacement of refuge facilities.

To adequately understand visitor characteristics and identify seasonal variations among visitors, a survey of a random sample of visitors should be carried out throughout a year. To conduct the survey and analyze the results before planning begins, the survey will need to commence approximately 2 years earlier. The survey will need Office of Management and Budget (OMB) approval and should be designed, conducted, and interpreted with the help of experts. Examples of previous surveys may be found in the CCP course reference notebook.

A visitor services station evaluation is another process for obtaining and organizing information about these topics. Refuge files and reports from current staff, along with RAPP, are probably the best sources for information about law enforcement, volunteers, outreach, and partnerships.

How is the Information Used in the CCP Process?

This information serves as a baseline for visitor services planning. We can compare current visitor use and visitor attitudes with an estimated capacity for the refuge. The comparison can help us determine whether we should encourage or discourage more use and how well we are meeting the needs of our current visitors. Knowing the origin and characteristics of visitors will guide us in planning outreach strategies and developing new programs to meet the needs of visitors. With an understanding of visitor demographics, we can make reasonable predictions about possible changes in use over the next 15 years. The volunteer and partnership programs can be compared to programs at other refuges and used as a basis for whether management and recruitment efforts for these programs should be improved. An evaluation of the law enforcement program will also help planners identify any needs that should be addressed in the long term. Immediate health and safety needs should be resolved quickly and outside the framework of the CCP.

Describe the Visitor Services Planning Area

Just as a refuge exists within an ecosystem characterized by landform, climate, and vegetation, a refuge exists within a social context characterized by historical, demographic, and economic



“Touch Wildlife” at the Patuxent Research Refuge Visitor Center in Maryland. USFWS photo.

dimensions. To understand how the refuge can contribute to the lives of people within a social context, we need to define and describe the area that the refuge serves.

What Type of Information is Needed?

- Boundaries of the area defined by transportation patterns and social context
- Human history of the area
- Current and projected demographic, social, and economic characteristics of the population within the area, such as the following:
 - Demographic composition of the population served by the refuge
 - Current and future demand for recreational programs and facilities (including visitor contact facility, road conditions and capacity, off-refuge programs, wildlife-dependent and nonwildlife-dependent recreation, and new forms of recreation not currently offered should there be a demand)
 - Current and projected demand for environmental education, including the potential number of students that might be served by the refuge
- Nonrecreational use of refuge resources (e.g., farming, firewood harvest, film-making) allowed by special permit or contract
- Current and future public demand for administrative services, including hours of operation, seasons of use, and nonrecreational facilities (e.g., restrooms, public phones, meeting rooms)
- Opportunities that are uniquely provided on the refuge and not offered elsewhere
- Identification of other outdoor recreation opportunities within the planning area
- Evaluation of public lands acreages, miles of hiking trails, hunting areas, fishing areas, and environmental education sites elsewhere in the region



Observing wildlife at Bosque del Apache NWR in New Mexico. USFWS photo.

Where Can the Information be Obtained?

We need some sense of the existing and the potential geographic areas where refuge visitors reside. The existing geographic area can be determined from the residences of current visitors, which can be determined from surveys or visitor registers. The environmental education geographic area can be determined, in part, by the locations of the schools that send groups to the refuge. Looking at the existing area will suggest whether or not there exists a larger, potential geographic area that should be considered such as a population center that might provide visitors if a greater outreach effort were made in the area.

Population characteristics and projections within the geographic area relevant to the refuge can be described with data from the U.S. Census Bureau (www.census.gov). The Census Bureau also has data on economics. State governments often have departments that produce detailed statistics. Some States have their own version of a census bureau, and most have a department of economics or commerce. Data from these departments are often available on the Internet.

National and regional outdoor recreation trends are analyzed by the USDA Forest Service Recreation, Wilderness, Urban Forest, and Demographic Trends Research Group in Athens, Georgia. That group's Web site (<http://www.srs.fs.usda.gov/trends/>) is a good source of information. Some of their publications deal specifically with wildlife and wildlife use. The National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, which is conducted about every 5 years, is a source for national and State trend data. The reports can be found through the Division of Federal Aid homepage within the Service Web site.

A State in the process of developing a State comprehensive outdoor recreation plan (SCORP) may have already conducted a detailed survey of recreationists. The SCORP may be summarized on the Internet, but the State may need to be contacted for the technical details and results. There are many commercial sources of data on consumer demographics, spending, and attitude profiles that may be useful in describing the market area of a refuge. A university's business library is a good gateway to this consumer literature. State and regional tourism departments and chambers of commerce may also have data useful for understanding the recreation market area of the refuge. A search of the Internet will often reveal additional sources of specialized data.

Data about schools and alternative environmental education sites may best be gathered through contacts with local counties, school districts, and nature centers. Projections for numbers of school-age children can be found at Federal and State demographic Web sites. The Web site of the National Center for Education Statistics (<http://nces.ed.gov>) is a gateway to useful information. The potential for additional educational opportunities should also consider preschools, colleges, and Elderhostel programs. Other recreation areas and facilities in the market area can be identified and mapped by contacting Federal, State, and local governments. Data on facilities may have already been compiled by the State as part of its SCORP process.

How is the Information Used in the CCP Process?

The purpose of describing the planning area is to understand the refuge's role in providing public use opportunities. The description helps planners identify the demands and needs of visitor services. We can evaluate if the existing refuge programs are crucial, or tangential, to providing meaningful opportunities within the area. We can also identify if there are existing or projected needs that the refuge can meet. The needs are estimated by looking at the difference between current supply and current and projected



Walrus viewing at Togiak NWR in Alaska. USFWS photo.

demand. The ability of a refuge to fulfill needs can be evaluated by comparing the need to the capacity of refuge resources and facilities. The capacity of the refuge can be evaluated within the concepts of the visitor experience and resource protection (VERP) framework (<http://planning.nps.gov/document/verphandbook.pdf>) or the limits of acceptable change (LAC) model (<http://leopold.wilderness.net/confwork/limits.htm>).

Describe Significant Problems and Possible Actions Necessary to Correct or Mitigate the Problems



Viewing platform at Sacramento NWR in California. USFWS photo.

Although additional problems and challenges are likely to be identified during scoping, we should document known problems related to visitor services during preplanning. By investigating problems early, we can explore possible alternative solutions and be better informed when we go to the public during scoping. The basic procedure is to recognize what unacceptable impacts exist, specify the problem in terms of impacts and their root causes, and identify potential strategies to address the problem (Anderson et al. 1998).

Problems generally can be categorized into resource and visitor experience impacts. Impacts to resources can include trail deterioration, litter, trampling of vegetation, and wildlife and fishery impacts. Impacts to visitor experiences can include crowding, visitor conflicts, and threats to visitor safety (Anderson et al. 1998).

What Type of Information is Needed?

- Summary of relevant history of public input on visitor issues
- Information about problems with traffic congestion, oversize vehicles, staff and visitor parking, storage of refuge vehicles, substandard or inadequate surfacing, emergency access
- Information regarding significant problems caused by visitor activities that may adversely affect the populations and habitats of fish, wildlife, and plants within the planning unit
- Summary of citations issued on the refuge in recent years
- Information about the potential need for administrative sites, transportation improvements, or visitor facilities and areas within the planning unit that are suitable for such sites
- Information about conflicts among user groups (e.g., incompatible coincident uses, conflict of resource values)
- Information regarding potential opportunities for compatible wildlife-dependent recreational uses, including expansion of areas, change of hours, larger facilities, better access
- Visitor safety, security, and law enforcement – deficiencies and needs
- Outreach and communication – deficiencies and needs

-
- Partners, special interest groups, volunteers, friends groups for public use – deficiencies and needs

Where Can the Information be Obtained?

Information about problems comes from visitors, staff observations, and visitor services reviews. If visitors have offered their opinions during past planning processes, their comments can serve as a baseline to see if their concerns have been addressed. Visitors' written and oral negative comments made to the staff or in the media can also be used as indicators of problems. Staff observations, both casual and formal, can indicate topics to examine more closely. A visitor services review will compare existing refuge programs against Service standards. If a deficiency is identified, it may be desirable to address this deficiency and its possible solutions through the CCP process. Not all deficiencies will be addressed in a CCP. If a deficiency is minor or needs immediate attention, it is probably desirable to address it with an immediate change in refuge operations.

How is the Information Used in the CCP Process?

By describing problems and possible solutions during preplanning, the Service can tell the public during scoping about some of the problems that it intends to address in the CCP. By presenting the problems and possible solutions during scoping, we will be able to solicit additional solutions and gauge public reaction to particular solutions. This input will help the Service in formulating alternatives during the CCP process.



*Fishing at Eufaula NWR in Alabama.
USFWS photo.*

Special Management Areas

Existing Special Management Areas or the Potential for Such Designations (Item xx)

Special management areas are areas that possess outstanding or unique resources, research opportunities, or other factors of special interest. The objective of designating and managing such areas is to protect their identified values and, where appropriate, to foster public use and enjoyment of these areas. Special management areas include wilderness, wild and scenic rivers, research natural areas, important bird areas, Ramsar Wetlands of International Importance, and Western Hemisphere Shorebird Reserve Network (WHSRN) sites. Some special management areas, such as wilderness and wild and scenic rivers, are legislatively designated. Others, like research natural areas, are administratively designated, modified, or abrogated by the Director.

What Type of Information is Needed?

Review, identify, and describe any existing special designation areas within the planning unit: wilderness, research natural areas, wild and scenic rivers, important bird areas, Ramsar Wetlands of International Importance, and WHSRN sites. Address the potential for any new special designations. This discussion includes

the type of special designation, its location and size, history, purpose for designation, area management, potential additions to existing designations, and potential for new areas receiving special designation. In addition, complete the inventory phase of the wilderness review during preplanning. Planning area and data needs for congressionally designated wilderness, wilderness reviews, and wild and scenic river studies are addressed in Appendix C. Class I air quality areas are addressed in Appendix D.

Where Can the Information be Obtained?

Information on special management areas can often be found in files at the refuge, Regional office, or Headquarters. Other potential sources include:

- Important Bird Areas: <http://www.audubon.org/bird/iba> and <http://www.abcbirds.org>
- Ramsar List of Wetlands of International Importance: <http://www.ramsar.org>
- Western Hemisphere Shorebird Reserve Network sites: <http://www.manomet.org/WHSRN/>

How is the Information Used in the CCP Process?

Management and use of special management areas may be subject to special mandates and constraints specified in legislation and guidance in Service policies, Director's orders, Executive orders, and Secretarial directives. Consequently, existing and potential special management areas may require specific management direction in the CCP and may affect the range of reasonable alternatives considered.



Polar bear and cubs photographed along the Beaufort Sea coastline in Alaska. USFWS photo.

Administrative Resources

Existing Administrative Resources, Including Staffing, Funding, and Facilities (Item xvi)

During preplanning, it is important to assess existing administrative resources when describing the refuge environment. This information will help you better understand the current situation and identify existing weaknesses and strengths. It will also serve as a baseline when evaluating current programs and needs, as well as when considering possible management alternatives.

What Type of Information is Needed?

- Description of current administrative resources, including staffing, funding, and facilities

Where Can the Information be Obtained?

- Regional office staff and files
- Refuge staff and files (e.g., organizational chart, annual narrative, station evaluation)

-
- Refuge Operational Needs System (RONS)
 - Service Asset Maintenance Management System (SAMMS)

How is the Information Used in the CCP Process?

A thorough understanding of current administrative resources, including the deficiencies and challenges faced, will help you identify issues to address in the CCP. By identifying problems and potential solutions during scoping, we provide the public an opportunity to express their opinion and offer additional ideas. This input can then be used to help develop alternatives during the CCP process.

Things to Do

The following list covers all aspects of “Planning Area and Data Needs”.

Geographic Information Systems

- Conduct needs assessment to identify any data gaps
- Consider how data might be used for monitoring once the CCP is completed
- Identify roles and responsibilities for data collection and analysis
- Ensure metadata is well documented and fully compliant with the Service’s adopted standards for Geospatial and Biological Metadata
- Check Service GIS and Spatial Data home page for potential data sources
- Contact Regional Refuge System GIS Coordinator or Regional GIS Coordinator for assistance, if needed

Surrounding Ecosystems

- Obtain and review information about area ecology
- Obtain and review information about species or resources of concern in area
- Obtain and review information about plant composition in area
- Obtain and review past land use and historic settlement in area
- Obtain information and review historic and current ecological processes in area
- Obtain and review information about national, regional and State fish and wildlife conservation plans

Refuge Resources

- Review information about refuge flora and fauna and associated research
- Review land acquisition and habitat protection plan and activities



A biologist tracks a Louisiana black bear at Tenas River NWR in Louisiana. USFWS photo.

- Review existing habitat or population management plans and activities
- Review current population or habitat monitoring plan and activities
- Identify significant problems that affect fish, wildlife, and plant populations and possible corrective actions
- Obtain and review information on geography, topography, geology, and climate
- Review current off-refuge habitat restoration and protection activities
- Obtain and review information on refuge's archaeological and other cultural resources
- Review Fulfilling the Promise Action Team final reports and recommendations (e.g., WH123, WH8.1, WH9.1, etc.)
- Review FWS Biological Monitoring Strategic Plan (Draft)

Visitor Services

- Obtain and review information on visitor services planning area (i.e., refuge community)
- Review existing visitor services management plan and activities
- Review historic and current visitor use data
- Review existing law enforcement plan and activities
- Identify gaps in visitor services information and initiate appropriate surveys
- Identify significant problems that affect visitor services programs and possible corrective actions

Special Management Areas

- Review, identify, and describe existing special designation areas
- Address the potential for new special designations
- If appropriate, initiate the inventory phase of the wilderness review

Existing Administrative Resources

- Evaluate existing administrative resources including staff, funding, and facilities
- Review refuge and Regional office files
- Review RONS and SAMMS databases
- Review Corporate Master Table (CMT) database
- Review Service data standards



FWS biologist releases a pallid sturgeon into the Yellowstone River in North Dakota after sampling. USFWS photo.

Section VI

Review All Available Information, Plans, Data, Maps, and Data Standards

A lack of data should not delay the completion of a CCP. It is imperative, however, that all relevant, available information be gathered and put to the best use. All of the information and data described in the section on Planning Area and Data Needs should be thoroughly reviewed to identify any significant gaps and to determine if there is a need for additional information for specific aspects of preplanning. Where significant information gaps are identified, additional effort should be made to determine if all relevant information was found and acquired during preplanning. Such efforts might include seeking the advice and assistance of appropriate resource experts or conducting more extensive literature or data searches.

The refuge planning policy notes that all Federal agencies are required to comply with data standards established by the Federal Geographic Data Committee (see: <http://www.fgdc.gov>) and the Service (<http://www.fws.gov/stand>). The policy also notes the particular relevance of two standards to refuge planning:

- National Vegetation Classification Standard (FGDC-STD-005)
- Classification of Wetlands and Deep Water Habitats (FGDC-STD-004)

The National Vegetation Classification Standard (NVCS) has nine levels. The seven upper levels of the classification are based on physiognomic features such as life form, percentage cover, leaf type, and ecological groupings. The two lowest (most detailed) levels of the classification are based on floristics such as diagnostic species. As noted in the NVCS data standard, the classification system should be employed using the most appropriate level(s) in the hierarchy. An example of these levels for a grassland vegetation type commonly known as sandhills wet-mesic prairie (big bluestem-switchgrass) is presented in the following box.

For most practical applications on a refuge, vegetation should be classified, at a minimum, to the formation level and, if possible, down to the alliance or association level. Classification at the alliance or association level may require the use of aerial photographs or field inspection, rather than satellite imagery. If vegetation has already been classified and mapped according to a different classification system, a table should be provided that “cross-walks” the existing system to the NVCS equivalent.



King Rail at Clarence Cannon NWR in Missouri.

Preplanning Elements

(from 602 FW 3.4C(1))

- (a) Planning Team
- (b) Identify Refuge Purpose(s), History, and Establishing Authority
- (c) Identify Planning and Compliance Requirements and Special Designations
- (d) Purpose and Need for the Plan
- (e) Planning Area and Data Needs
- (f) Review All Available Information, Plans, Data, Maps, and Data Standards**
- (g) Vision and Goals
- (h) Internal Scoping
- (i) Public Involvement and Outreach Planning
- (j) Work Plan and Planning Schedule
- (k) Planning Record

Table 2: National Vegetation Classification Standard for Sandhills Wet-Mesic Prairie

Division	Vegetated
Order	Herbaceous/Non-vascular dominated
Physiognomic Class	Herbaceous
Physiognomic Sub-class	Perennial graminoid
Physiognomic Group	Temperate or subpolar
Subgroup	Natural/Semi-natural
Formation	Temperate tall dense sod grassland
Alliances	Andropogon gerardii-Panicum virgatum
Association	Andropogon gerardii-Panicum virgatum-(Spartina patens)

The standard for Classification of Wetlands and Deep Water Habitats (FGDC-STD-004) follows the system developed by Cowardin et al. (1979). The structure of this classification is hierarchical, progressing from systems and subsystems, at the most general levels, to classes, subclasses, and dominance types. To fully describe wetlands and deepwater habitats, one must apply certain modifiers at the class level and at lower levels in the classification hierarchy. An example for a vegetation type commonly known as an impounded cattail marsh is presented in the following box.



Black-eyed Susan. USFWS photo.

For most practical applications on a refuge, wetland vegetation should be classified, at a minimum, to the subclass level. The modifiers often have important management implications (impounded, drained, fresh, saline, etc.), and should be noted.

Things to Do

- Obtain aerial photos of refuge and nearby area
- Obtain GIS coverage of topography, floodplain, wetlands, soils, vegetation and other natural features
- Obtain GIS coverage of refuge ownership including easements, special designation areas, and inholdings
- Obtain GIS coverage of developments including roads, trails, facilities, utility corridors, etc.
- Ensure GIS data and vegetative classification system are consistent with appropriate standards
- Identify gaps in aerial photo and GIS coverage and quality and initiate action to obtain or correct

**Table 3: Wetlands and Deep Water Habitats
Classification Standard for Cattail Marsh**

System	Palustrine
Subsystem	(None)
Class	Emergent wetland
Subclass	Persistent
Dominance Type	Typha latifolia (Broadleaf Cattail.)
Water Regime	Permanently Flooded
Water Chemistry	Fresh
Special Modifier	Impounded



*Cypress Creek NWR
in Illinois. USFWS
photo.*

Section VII

Vision and Goals



*Blood starfish, Kodiak NWR in Alaska.
USFWS photo.*

During preplanning, either a new vision statement and goals are drafted for the planning unit, or the existing vision statement and goals are reviewed and, if necessary, revised. The vision and goals should reflect the earlier discussions about the intent and clarification of the refuge purpose(s). It is through the vision and goals that future management direction of the refuge becomes more focused to help achieve the refuge purpose(s) and legislative and policy mandates.

Generally, the vision statement is a descriptive picture of how the refuge will look in the future. While it must be written before the goals, it should be crafted to permit the identification of general management direction that can be developed into goal statements.

There is an iterative nature to the task of developing the refuge vision and goals. At this phase of preplanning, the task is to develop a draft vision statement and goals based on a thorough understanding of the biology of the system and species and the surrounding ecosystem. As the CCP progresses, revisions may be made to each based on additional biological insights or perspectives provided from public involvement.

The vision statement should be future-oriented, concise, clear, and compelling and give a sense of purpose to our efforts. It should be based on System mission, refuge purposes, and other relevant mandates and should define the essence of what the refuge is trying to do and why. It should also address the context of the refuge within the surrounding ecosystem and community, management direction for key wildlife and habitats, and wildlife-dependent public uses. In addition, it should provide a sense of working with others and present the overall benefits to present and future generations. The following example was taken from the CCP for Little Pend Oreille NWR.

Vision Statement for Little Pend Oreille NWR

Forest habitat management is vital to the future of wildlife conservation in northeastern Washington. Little Pend Oreille is unique in its representation of five distinct forest zones. Also, as the only mixed-conifer montane forest in the National Wildlife Refuge System, Little Pend Oreille National Wildlife Refuge has an important role to play in forest habitat management. The Refuge's 40,260 acres of forests, streams, and wetlands are used seasonally by bald eagles and numerous nesting and foraging migratory birds. It provides critical winter range for deer and habitat for several species of interest.

Preplanning Elements

(from 602 FW 3.4C(1))

- (a) Planning Team
- (b) Identify Refuge Purpose(s), History, and Establishing Authority
- (c) Identify Planning and Compliance Requirements and Special Designations
- (d) Purpose and Need for the Plan
- (e) Planning Area and Data Needs
- (f) Review All Available Information, Plans, Data, Maps, and Data Standards
- (g) Vision and Goals**
- (h) Internal Scoping
- (i) Public Involvement and Outreach Planning
- (j) Work Plan and Planning Schedule
- (k) Planning Record

The refuge envisions using its comprehensive conservation plan to build on native wildlife habitat diversity as a theme, with emphasis on developing late successional forest and restoring riparian habitat—habitats that are increasingly rare in the region. In the next 15 years, refuge staff will focus management efforts in overstocked stands of dry forest, using thinning and prescribed fire techniques that mimic natural ecological processes such as wildfire. Degraded streams will be restored to enhance and maintain the natural diversity of the refuge.

A healthy refuge environment will provide opportunities for visitors to enjoy wildlife viewing, hunting, and fishing in a natural setting. Interpreting wildlife and the refuge's unique heritage and improving facilities will enhance the visitors' experience while protecting the cultural integrity of the area. To meet these challenges, the U.S. Fish & Wildlife Service will seek partnerships with other agencies, interest groups, landowners, and local communities. Refuge staff will work with adjacent forest managers to protect local watersheds and wildlife corridors. These efforts will result in greater protection of wildlife and fish resources throughout northeastern Washington.

Draft goals are also prepared at this stage of preplanning. At a minimum, goals should be developed for wildlife species and their habitats; compatible, wildlife-dependent recreation; fulfilling other mandates (such as refuge-specific legislation, Executive orders, special area designations, etc.); and fish, wildlife, and plant populations. Detailed guidance on how to develop goals can be found in *Writing Refuge Management Goals and Objectives: A Handbook* (USFWS 2004).

It is useful to think of the refuge vision and goals as targets for future refuge conditions. What is needed is management that sets the refuge on the proper trajectory to move toward these targets.

Things to Do

- Review existing refuge vision and goals
- If needed, modify existing or draft new vision and goals



Checking the browse line at Minnesota Valley NWR in Minnesota. USFWS photo.

Section VIII

Internal Scoping



Izembek NWR in Alaska. USFWS photo.

Preplanning Elements

(from 602 FW 3.4C(1))

- (a) Planning Team
- (b) Identify Refuge Purpose(s), History, and Establishing Authority
- (c) Identify Planning and Compliance Requirements and Special Designations
- (d) Purpose and Need for the Plan
- (e) Planning Area and Data Needs
- (f) Review All Available Information, Plans, Data, Maps, and Data Standards
- (g) Vision and Goals
- (h) Internal Scoping**
- (i) Public Involvement and Outreach Planning
- (j) Work Plan and Planning Schedule
- (k) Planning Record

The purpose of agency (internal) scoping is to identify issues and opportunities within the planning unit. Drawing on the background and experience of agency personnel inside and outside of the core planning team, identify a preliminary list of issues and opportunities and alternative ways to address them. You may also draw upon any wildlife and habitat management reviews and public use reviews.

The planning team also documents current management activities and alternative management practices, issues, and opportunities resulting from team meetings. In particular, the planning team reviews the background, rationale, and the success or failure of any controversial management actions and, where appropriate, identifies any additional information and data needs.

Internal scoping takes advantage of all of the data and information described in the section, Planning Area and Data Needs. Discussions of significant management issues and opportunities are therefore based on a thorough understanding of the biology of the refuge and surrounding ecosystem and on public use.

Things to Do

- Analyze resource trends and conditions as related to the refuge
- Identify existing conditions of resources, operations, and facilities
- Develop maps that illustrate status and trends of biological resources and land uses
- Develop a list of significant resource management and public use issues and opportunities

Section IX

Public Involvement and Outreach Planning

A public involvement and outreach plan indicates how and when we will invite the public to participate in a CCP's development. The plan not only outlines how the planning team will interact and deal with the public and their concerns throughout the planning process, but it also identifies appropriate techniques and materials to be used to involve the public. In addition, the plan identifies potentially contentious issues and opportunities to engage elected officials, organizations, and individuals likely to be part of the planning effort. It should also highlight items such as the projected planning schedule, public meetings, media releases used to gather public input, and establishing a mailing list. It may be beneficial to develop a public involvement and outreach plan summary that quickly identifies the issues, basic facts, communication goals, interested parties, key dates, and an outreach strategy. An example of a public involvement and outreach plan can be found in the CCP course reference notebook.

Things to Do

- Identify appropriate techniques and materials to use in public involvement
- Identify potentially contentious issues
- Identify opportunities to involve elected officials, organizations, and the public
- Develop a mailing list
- Review examples of existing public involvement and outreach plans
- Draft an outreach plan for the CCP

Preplanning Elements

(from 602 FW 3.4C(1))

- (a) Planning Team
- (b) Identify Refuge Purpose(s), History, and Establishing Authority
- (c) Identify Planning and Compliance Requirements and Special Designations
- (d) Purpose and Need for the Plan
- (e) Planning Area and Data Needs
- (f) Review All Available Information, Plans, Data, Maps, and Data Standards
- (g) Vision and Goals
- (h) Internal Scoping
- (i) Public Involvement and Outreach Planning**
- (j) Work Plan and Planning Schedule
- (k) Planning Record



Duck hunter at Swanquarter NWR in North Carolina. USFWS photo.



*Spider lilies at Mingo NWR in Missouri.
USFWS photo.*

Section X

Work Plan and Planning Schedule

The work plan is a contract signed by the planning team leader, refuge supervisor, refuge manager, and/or other responsible individuals that identifies responsibilities and deadlines for completing key tasks in a CCP's development. The format and signatories to the work plan may vary between regions and refuges. In addition to laying out the overall CCP schedule, the work plan also specifies time frames for each task and may include cost estimates. It should also consider NEPA compliance and public involvement activities associated with the planning process.

Once the work plan is completed, determine the expertise needed on the planning team to accomplish the identified tasks and any additional technical expertise required to prepare the CCP. After the areas of expertise are determined, identify the planning team members and technical experts who will be responsible for completing specific tasks. The refuge manager should seek preliminary commitments from team members and technical experts prior to assigning tasks. Examples of CCP work plans can be found in the CCP course reference notebook.

Preplanning Elements

(from 602 FW 3.4C(1))

- (a) Planning Team
- (b) Identify Refuge Purpose(s), History, and Establishing Authority
- (c) Identify Planning and Compliance Requirements and Special Designations
- (d) Purpose and Need for the Plan
- (e) Planning Area and Data Needs
- (f) Review All Available Information, Plans, Data, Maps, and Data Standards
- (g) Vision and Goals
- (h) Internal Scoping
- (i) Public Involvement and Outreach Planning
- (j) Work Plan and Planning Schedule**
- (k) Planning Record

Things to Do

- Identify key CCP tasks
- Determine time and duration for each task
- Identify expertise needed for each task
- Identify personnel responsible for completing tasks
- Identify additional experts
- Prepare itemized costs for budget

Section XI

Planning Record

Development of the CCP planning record begins during preplanning. A comprehensive planning record is essential because it not only documents the decisionmaking process, but will be closely scrutinized if the CCP is later subjected to a judicial review. Providing a thorough and accurate planning record will show that all relevant factors were considered in the decisionmaking process. It also helps demonstrate compliance with existing laws, provides important background and historical material, and serves as a valuable reference for the entire CCP process.

Because the planning record serves as the official administrative record of the CCP, it is crucial that complete and accurate records be kept. The record should be kept current and well-organized for easy retrieval of information. Original documents should be kept clean, and all documents should include the author's name and date, and clearly marked "draft," where appropriate. Items that should be placed in the planning record include the following:

- Public notices (including those published in the Federal Register)
- Formal recommendations or directives
- Records of consultations
- Public participation announcements and activities
- Draft documents
- Memos and letters used in decisionmaking
- All decision documents
- Media releases and articles
- Mailing lists for each mailing
- Published draft and final NEPA documents
- All reference documents, or citations for where to find them
- Reports or studies used
- Electronic data used in analyses
- Planning team membership
- Formal meeting minutes
- Records of external coordination
- Copies of interagency agreements



Environmental education program at Two Ponds NWR in Colorado. USFWS photo.

Preplanning Elements

(from 602 FW 3.4C(1))

- (a) Planning Team
- (b) Identify Refuge Purpose(s), History, and Establishing Authority
- (c) Identify Planning and Compliance Requirements and Special Designations
- (d) Purpose and Need for the Plan
- (e) Planning Area and Data Needs
- (f) Review All Available Information, Plans, Data, Maps, and Data Standards
- (g) Vision and Goals
- (h) Internal Scoping
- (i) Public Involvement and Outreach Planning
- (j) Work Plan and Planning Schedule
- (k) Planning Record**

Items that do not need to go into the planning record include the following:

- Working and draft documents (unless used formally for review or decisionmaking)
- Informal deliberation and meeting notes
- Notes not used in final analysis or decisionmaking
- Preliminary computer runs
- Personnel or similar records

A more detailed discussion of the planning record and its contents can be found in the CCP course reference notebook and in Director's Order No. 158, "Compiling an Administrative Record."

Things to Do

- Review guidance in CCP course reference notebook and Director's Order No. 158 on compiling an administrative record
- Review guidance in CCP course reference notebook on the Freedom of Information Act
- Begin compiling administrative record for the CCP

Endangered plant research at Valentine NWR in Nebraska. USFWS photo.



Section XII

References Cited

Anderson, Dorothy H., David W. Lime, Theresa L. Wang. 1998. *Maintaining the Quality of Park Resources and Visitor Experiences: A Handbook for Managers*. TC-777. St. Paul, Minnesota: Minnesota Extension Service.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish & Wildlife Service, Washington, D.C. FWS/OBS-79/31. 103 pp.

House of Representatives Committee on Resources, Report 105-106, May 21, 1997.

National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. 668dd-668ee.

U.S. Department of the Interior and Department of Agriculture. 1982. *Department of the Interior and Agriculture Interagency Guidelines for Eligibility, Classification, and Management of River Areas*. Federal Register (Vol. 47, No. 173; September 7, 1982, pp. 39454-39461).

U.S. Fish & Wildlife Service. 2004. *Writing Refuge Management Goals and Objectives: A Handbook*.

U.S. Fish & Wildlife Service. 1999. *Fulfilling the Promise: The National Wildlife Refuge System*. 94 pp.

601 FW 1, National Wildlife Refuge System Mission and Goals, and Refuge Purposes.

601 FW 3, Biological Diversity, Integrity, and Environmental Health.

602 FW 1, Refuge Planning Overview.

602 FW 3, Comprehensive Conservation Planning Process.

NOTE: Policies 601 FW 1, 601 FW 3, 602 FW 1, and 602 FW 3 are contained in the Service Manual, which is accessible through this Web site <http://www.fws.gov/policy>. This Web site also provides access to resource laws, United States Code, Code of Federal Regulations, Federal Register notices for the Service, and directives, memorandums, and bulletins.



*Brown bear at Kodiak NWR in Alaska.
USFWS photo.*

Appendix A

Preplanning Checklist: Things to Do

Task	Date Scheduled	Date Completed	Comments
Planning Team			
Designate planning team leader			
Prepare letter requesting State and tribal involvement			
Identify and contact other planning team members			
Hold initial team meeting			
Develop work plan and planning schedule			
Identify Refuge Purpose(s), History, and Establishing Authority			
Obtain and review background information including refuge files, previous planning documents, and Headquarters and Regional Office Division of Realty files			
Identify refuge purpose(s)			
c. Review relevant Refuge System and Service policies			
Identify Planning and Compliance Requirements and Special Designations			
Obtain and review legal mandates, Service policy, and management guidance			
Review existing special designations and the potential for any new designations			
4. Purpose and Need for the Plan			
Review refuge purpose(s), vision, and goals			

Task	Date Scheduled	Date Completed	Comments
If needed, modify existing or draft new vision and goals			
Evaluate why proposed action is needed			
5. Planning Area and Data Needs			
Geographic Information Systems			
a. Conduct needs assessment to identify any data gaps			
b. Consider how data might be used for monitoring once the CCP is completed			
c. Identify roles and responsibilities for data collection and analysis			
d. Ensure metadata is well documented			
e. Check Service home page for potential data sources			
f. Contact Regional Refuge System GIS Coordinator or Regional GIS Coordinator for assistance, if needed			
Surrounding Ecosystems			
Obtain and review information about area ecology			
Obtain and review information about species or resources of concern in area			
Obtain and review information about plant composition in area			
Obtain and review past land use and historic settlement in area			
Obtain information and review historic and current ecological processes in area			
Obtain and review information about national, regional and State fish and wildlife conservation plans			
Refuge Resources			
Review information about refuge flora and fauna and associated research			
b. Review land acquisition and habitat protection plan and activities			
c. Review existing habitat or population management plans and activities			
d. Review current population or habitat monitoring plan and activities			

Task	Date Scheduled	Date Completed	Comments
e. Identify significant problems that affect fish, wildlife, and plant populations and possible corrective actions			
f. Obtain and review information on geography, topography, geology, and climate			
Review current off-refuge habitat restoration and protection activities			
Obtain and review information on refuge's archaeological and other cultural resources			
Visitor Services			
Obtain and review information on visitor services planning area (i.e., refuge community)			
b. Review existing visitor services management plan and activities			
c. Review historic and current visitor use data			
d. Review existing law enforcement plan and activities			
e. Identify gaps in visitor services information and initiate appropriate survey(s)			
f. Identify significant problems that affect visitor services programs and possible corrective actions			
Special Management Areas			
a. Review, identify, and describe existing special designation areas			
b. Address the potential for new special designations			
c. If appropriate, initiate the inventory phase of the wilderness review			
Administrative Resources			
a. Evaluate existing administrative resources including staff, funding, and facilities			
b. Review refuge and Regional office files			
c. Review RONS and SAMMS databases			
6. Review All Available Information, Plans, Data, Maps, And Data Standards			
a. Obtain aerial photos of refuge and nearby area			

Task	Date Scheduled	Date Completed	Comments
b. Obtain GIS coverage of topography, floodplain, wetlands, soils, vegetation and other natural features			
c. Obtain GIS coverage of refuge ownership including easements, special designation areas, and inholdings			
d. Obtain GIS coverage of developments including roads, trails, facilities, utility corridors, etc.			
e. Ensure GIS data and vegetative classification system are consistent with appropriate standards			
f. Identify gaps in aerial photo and GIS coverage and quality and initiate action to obtain or correct			
7. Vision and Goals			
a. Review existing refuge vision and goals			
b. If needed, modify existing or draft new vision and goals			
8. Internal Scoping			
a. Analyze resource trends and conditions as related to the refuge			
b. Identify existing conditions of resources, operations, and facilities			
Develop maps that illustrate status and trends of biological resources and land uses			
Develop a list of significant resource management and public use issues and opportunities			
9. Public Involvement and Outreach Planning			
a. Identify appropriate techniques and materials to use in public involvement			
b. Identify potentially contentious issues			
c. Identify opportunities to involve elected officials, organizations, and the public			
d. Develop a mailing list			
e. Review examples of existing public involvement and outreach plans			
f. Draft an outreach plan for the CCP			

Task	Date Scheduled	Date Completed	Comments
10. Work Plan and Planning Schedule			
a. Identify key CCP tasks			
b. Determine time and duration for each task			
c. Identify expertise needed for each task			
d. Identify personnel responsible for completing tasks			
e. Identify additional experts			
f. Prepare itemized costs for budget			
11. Planning Record			
a. Review guidance in CCP course reference notebook and Director's Order No. 158 on compiling an administrative record			
b. Review guidance in CCP course reference notebook on the Freedom of Information Act			
c. Begin compiling administrative record for the CCP			

Appendix B

Recommended CCP Outline

(from 602 FW 3, Exhibit 4)

Task	Date Complete	Comments
Chapter 1- Introduction and Background		All sections of Chapter 1 can be drafted during preplanning.
Refuge Overview: History of Refuge Establishment, Acquisition, and Management		
Purpose of and Need for Plan		
NWRS Mission, Goals, and Guiding Principles		
Refuge Purpose(s)		
Refuge Vision Statement		
Legal and Policy Guidance		
Existing Partnerships		
Chapter 2 – Planning Process		Work on Chapter 2 can begin during preplanning; complete following internal and public scoping.
Description of Planning Process		
Planning Issues		
Chapter 3 – Refuge Environment		All sections of Chapter 3 can be drafted during preplanning.

Task	Date Complete	Comments
Geographic/Ecosystem Setting		
Refuge Resources, Cultural Resources, and Public Uses		
Special Management Areas		
Chapter 4 – Management Direction		Second half of Chapter 4 can be drafted during preplanning.
Refuge Management Direction: Goals, Objectives, and Strategies		
Refuge Management Policies and Guidelines		
Chapter 5 – Implementation and Monitoring		Complete Chapter 5 after objectives and strategies have been determined.
Funding and Personnel		
Step-Down Management Plans		
Partnership Opportunities		
Monitoring and Evaluation		
Plan Amendment and Revision		
Appendices		Appendices may be drafted as information becomes available.
Glossary		
Bibliography		
RONs List (Refuge Operations and Staffing Needs)		
SAMMS List (Refuge Facility Maintenance and New Construction Needs)		
Compatibility Determinations		
Habitat/Land Protection Plan(s)		
Compliance Requirements		

Task	Date Complete	Comments
NEPA Documentation		
Summary of Public Involvement/Comments and Consultation/Coordination		
Mailing List		
List of Preparers		
Others, as appropriate		

Appendix C



Kootenai NWR in Idaho. USFWS photo.

Planning Area and Data Needs for Congressionally Designated Wilderness, Wilderness Reviews, and Wild and Scenic River Studies

Congressionally Designated Wilderness

The National Wilderness Preservation System (NWPS) is a network of federally owned areas designated by Congress as wilderness and managed by one of four Federal agencies: the Service, BLM, National Park Service, or the Forest Service. A total of more than 70 designated wilderness areas, totaling 20.7 million acres, is currently found on 63 refuges. This represents approximately 22 percent of the NWPS.

The Service administers wilderness areas within the Refuge System consistent with refuge purposes and in accordance with the Wilderness Act (16 U.S.C. 1131-1136) and the specific legislation designating a particular wilderness area. The purposes of the Wilderness Act are to secure an enduring resource of wilderness, to protect and preserve the wilderness character of areas within the NWPS, and to administer the NWPS for the use and enjoyment of the American people in a way that will leave these areas unimpaired for future use and enjoyment as wilderness. Wilderness purposes are “within and supplemental” to refuge establishing purposes. They become additional purposes of the area within the refuge designated as wilderness.

Preserving wilderness character is a primary criterion for judging the appropriateness of proposed refuge management activities and refuge uses, including public use and enjoyment in wilderness. Preserving wilderness character requires that we maintain both the tangible and intangible aspects of wilderness.

Section 4(c) of the Wilderness Act prohibits commercial enterprises and permanent roads within wilderness. Commercial services, such as outfitter and guide services, are permitted only when they are “necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.” We may allow commercial services where they are necessary to accomplish the purposes of the refuge, including Wilderness Act purposes.

Section 4(c) of the Wilderness Act also lists a number of “generally prohibited uses” in wilderness: temporary roads, use of motor vehicles, use of motorized equipment or motorboats, landing of aircraft, other forms of mechanical transport, and structures or installations. We do not authorize generally prohibited uses in refuge wilderness except when the use is: allowed under the terms of the area-specific wilderness legislation and the Wilderness Act; the minimum requirement for administering the area as wilderness and necessary to accomplish the purposes of the refuge, including Wilderness Act purposes; or an emergency involving the health and safety of persons within the area.

We conduct and document a "minimum requirement analysis" (MRA) for all proposed refuge management activities whether or not the activity involves a generally prohibited use. The MRA clarifies the need for and impacts of a proposed action. We authorize an activity only if we demonstrate that it is necessary to meet the minimum requirement for administering the area as wilderness and necessary to accomplish the purposes of the refuge, including Wilderness Act purposes. The management alternative that has the least impact upon all of the area’s wilderness values and character, including intangible aspects of wilderness character, and accomplishes refuge purposes, including wilderness purposes, constitutes the minimum requirement. We do not use cost or convenience as the main factor in determining the minimum requirement or minimum tool. Furthermore, we use primitive tools when possible.

What Type of Information is Needed?

- Maps and legal description of designated wilderness areas within the planning area
- Legislation that applies to the wilderness area including the Wilderness Act and the specific legislation establishing the wilderness area, including congressional committee reports
- Service wilderness stewardship policy and regulations
- Copies of existing wilderness management or wilderness stewardship plans, minimum tool evaluations, and minimum requirement analyses
- Descriptions of existing and proposed refuge management practices within the designated wilderness area
- Descriptions of existing refuge uses within the designated wilderness area
- Problems and threats affecting the wilderness character and wilderness values

Where Can the Information be Obtained?

- Existing data from refuge files; Regional office files
- Regional and National Wilderness Coordinators
- Wilderness Information Network (<http://www.wilderness.net>)



Biologist holding a copperbelly water snake at Muscatatuck NWR in Indiana.

How is the Information Used in the CCP Process?

The preceding information is used to evaluate the current refuge and wilderness stewardship programs and to formulate management alternatives considered in the development of the CCP. Specifically, the information is used:

- To prepare the wilderness resources section of the affected environment and to describe the potential for new designations in the CCP/NEPA document
- To establish wilderness stewardship goals, objectives, and strategies for the wilderness area within the context of the refuge CCP
- To ensure compliance with the Wilderness Act, the specific legislation establishing the wilderness area, and Service wilderness policy and regulations
- To prepare the environmental consequences section of the NEPA document
- To determine if a wilderness stewardship step-down management plan (wilderness stewardship plan (WSP)) or WSP revision will be necessary. Where the majority of a refuge is designated wilderness, it may be appropriate to prepare a detailed CCP that incorporates the required elements of a WSP rather than preparing a separate WSP.
- To prepare minimum requirement analyses for existing and proposed refuge management activities and commercial services within the wilderness area

Wilderness Reviews

All lands and waters of the Refuge System outside of Alaska and not currently designated wilderness are subject to a wilderness review. Wilderness reviews will be conducted concurrent with a CCP, with a summary of the review incorporated into the plan. The purpose of the wilderness review is to identify and recommend for congressional designation Refuge System lands and waters that merit inclusion in the NWPS.

The wilderness review process is conducted in three phases: inventory, study, and recommendation. The inventory phase is a broad look at the planning area to identify lands and waters that meet the minimum criteria for wilderness and warrant further study for wilderness designation. The evaluation criteria are size, naturalness, opportunities for solitude or primitive recreation, and supplemental values. Roadless areas or wilderness inventory units that meet these criteria are identified as wilderness study areas (WSAs).

In the study phase, each WSA is evaluated, through careful analysis of alternative management options, to determine its suitability for wilderness designation. The analysis considers all values (e.g., ecological, recreational, cultural, economic, symbolic),

resources (e.g., wildlife, water, vegetation, minerals, soils), refuge uses, and refuge management activities within the WSA and includes an evaluation of whether the WSA can be effectively managed to preserve its wilderness character.

The findings of the study determine whether a WSA, or portion of a WSA, will be recommended for designation as wilderness in the final CCP. Wilderness recommendations are forwarded or reported from the Director through the Secretary and the President to Congress in a wilderness study report.

The wilderness review is an iterative process integrated with the CCP process. Ideally, the majority of the data collection and analysis required for the inventory phase of the wilderness review should be completed in preplanning so that a preliminary list of WSAs can be presented to the public during scoping. Additional WSAs may be identified or boundaries modified based on additional analysis or input from the public.

What Type of Information is Needed?

The following information and evaluations are required to identify roadless areas or wilderness inventory units within the refuge planning area that may qualify as WSAs:

- Service administrative and jurisdictional boundaries
- Land status (surface and subsurface)
- Reserved rights such as rights-of-way, easements, and leases
- Valid existing mineral rights
- Existing transportation system and patterns, both public and administrative
- Existing land uses and cultural features
- Designated wilderness areas within and adjacent to the planning area regardless of administering agency
- Proposed and recommended wilderness within and adjacent to the planning area regardless of administering agency
- All areas under wilderness review by the Service or another Federal agency adjacent to the CCP planning area
- Calculation of acreages within each roadless area or wilderness inventory unit

In addition to the information listed above, the following is required in evaluating an identified WSA's manageability and suitability for designation as wilderness:

- Descriptions of existing and proposed refuge management practices within the WSA
- Descriptions of existing and proposed refuge uses within the WSA



Lee Metcalf NWR in Montana. USFWS photo.

-
- Problems and threats affecting the wilderness character and wilderness values within an identified WSA

Where Can the Information be Obtained?

All of the types of information described above are information that is typically required and compiled in development of the CCP.

How is the Information Used in the CCP Process?

The information and evaluations described above are used:

- To identify lands and waters within the planning area that clearly do not meet the minimum criteria for a WSA and eliminate them from further wilderness review in the CCP;
 - To identify WSAs and determine their suitability for designation as wilderness; and
 - To document the findings of the wilderness review in the planning record and fulfill the requirement for a wilderness review.
- The information is also used:
- To formulate management alternatives considered in the development of the CCP
 - To prepare the wilderness resources section of the affected environment and to describe the potential for new designations in the CCP/NEPA document
 - To establish goals, objectives, and strategies to maintain the wilderness character of suitable WSAs pending congressional designation
 - To ensure compliance with Service wilderness policy and regulations
 - To prepare the environmental consequences section of the NEPA document
 - To prepare minimum requirement analyses for existing and proposed refuge management activities and commercial services within WSAs determined to be suitable and recommended for wilderness designation.



Wapack NWR in New Hampshire. USFWS photo.

Wild and Scenic Rivers Studies

Congress established the National Wild and Scenic Rivers System in the Wild and Scenic Rivers Act of 1968 to preserve and protect selected rivers or river segments in their free flowing condition for the benefit and enjoyment of present and future generations. Section 5(d)(1) of the Act requires Federal agencies to identify and evaluate potential additions to the National Wild and Scenic Rivers System through their land and resource management planning processes. Refuge Planning Policy (602 FW 3.4.C. (1)(c)) requires that we review any existing WSR designations and evaluate the potential for any new designations as part of the CCP process.

A section 5(d)(1) study is a three-step process evaluating candidate rivers' eligibility, classification, and suitability. Eligibility and classification represent an inventory of existing conditions. The final procedural step, suitability, provides the basis for determining whether or not to recommend congressional designation. The recommendation is made through the record of decision for the CCP/EIS. The suitability assessment of rivers found eligible in a land use plan (i.e., decision to recommend or not recommend designation) may be deferred. This approach requires a separate NEPA analysis at a later date focusing on the suitability determination.

Current guidance includes the National Wild and Scenic Rivers Act of 1968, National Wild and Scenic Rivers System; Final Revised Guidelines for Eligibility, Classification and Management of River Areas issued jointly by the Department of the Interior and the Department of Agriculture (FR-9/7/82) and the technical papers developed by the Interagency Wild and Scenic Rivers Coordinating Council (IWSRCC) for the WSR Reference Guide. The Reference Guide is available online at <http://www.nps.gov/rivers/>.

What Type of Information is Needed?

Eligibility is an evaluation of whether a river is "free flowing" and possesses one or more "outstandingly remarkable values (ORVs)." The Act defines free flowing in section 16 (b):

“As applied to any river or section of a river, means existing or flowing in natural condition without impoundment, diversion, straightening, riprapping, or other modification of the waterway. The existence however, of low dams, diversion works, and other minor structures at the time any river is proposed for inclusion in the national wild and scenic rivers shall not automatically bar its consideration for such inclusion . . .”

ORVs are river-related values that contribute substantially to the functioning of the river ecosystem or owe their location or existence to the presence of the river. ORVs may include scenery, recreation, geology, wildlife, fish, cultural and historic resources, botany and ecology, hydrology and water quality, or other river-related values that are unique, rare, or exemplary at a regional or national scale.

If found eligible, a candidate river or river segment is analyzed based on its current level of development and assigned a preliminary classification (wild, scenic, or recreational). Classification is based upon the level of development. Wild river areas are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. Scenic river areas are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads. Recreational river areas are readily accessible by road or railroad, may have some development along their shorelines, and may have undergone some impoundment or diversion in the past.



A sleigh full of visitors at National Elk Refuge in Wyoming. USFWS photo.



Blue-winged Teal brood at J. Clark Salyer NWR in North Dakota. USFWS photo.

Where Can the Information be Obtained?

The information required to evaluate the "free flowing" criteria and ORVs is information that is typically required and compiled in development of a CCP

The following additional sources should be consulted to identify rivers or river segments that may qualify for designation under the Wild and Scenic Rivers Act:

- Nationwide Rivers Inventory (NRI) – The National Park Service maintains and updates the NRI, a list of rivers and river segments that appear to meet minimum Act eligibility requirements based on their free-flowing status and resource values (<http://www.nps.gov/ncrc/programs/rtca/nri/>).
- Outstanding Rivers List by American Rivers
- Friends of the River lists
- River segments identified in Statewide Comprehensive Plans
- River segments identified by the public

Note: The Paperwork Reduction Act of 1995 may apply if identical questions will be posed – either orally or in writing – to ten or more persons (including associations; corporations; organized groups of individuals; State, territorial, tribal or local governments or their branches; and political subdivisions of a State, tribe, or local government or their branches). If this will be the case, the Planning Team should consult with the Department of Interior's Paperwork Reduction Act Coordinator to obtain Office of Management and Budget approval prior to posing these questions and obtaining information.

How is the Information Used in the CCP Process?

The preceding information is used to identify rivers or river segments within the refuge planning area that are eligible for designation under the Wild and Scenic Rivers Act based on existing conditions of free-flowing character and ORVs.

Appendix D

Planning Area and Data Needs for Class I Air Quality Areas

The Service is directed to “provide for the conservation of fish, wildlife, and plants, and their habitats within the System . . . [and] ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of Americans” (National Wildlife Refuge System Improvement Act of 1997). Clean air is essential for ecosystem health and the biological integrity of all refuges. Air quality affects a variety of resources, including vegetation, water quality, soils, fish and wildlife, and visibility. Air pollutants can affect resources and ecosystems by acidifying or fertilizing water and soils, causing direct or indirect toxicity, disrupting nutrient cycling, affecting species composition and distribution, and impairing visibility.

The Clean Air Act Amendments of 1977 designated 21 Service wilderness areas as Class I air quality areas, receiving the highest protection under the Act. All other Service lands are designated Class II and also receive protection under the Act. The Improvement Act does not distinguish between Class I and Class II areas, directing the Service to ensure ecosystem health throughout the System. Protection and restoration, where necessary, of clean air resources should be a management goal stated in all CCPs.

Class I designation carries certain specific responsibilities with it for the Service. The Clean Air Act directed that:

The Federal Land Manager and the Federal official [refuge manager] with direct responsibility for management of such lands [Class I areas] shall have an affirmative responsibility to protect the air quality related values (including visibility) of any such lands within a class I area . . .

Air quality related values include any resource, as identified by the Federal Land Manager (FLM), that may be adversely affected by a change in air quality. The resource may include visibility or a specific scenic, cultural, physical, biological, ecological, or recreational resource identified by the FLM for a particular area.

CCPs for all areas, Class I or Class II, should identify air quality and air quality related values as resources to be protected and, where appropriate, restored. CCPs for Class I areas, in particular,



Whooping Cranes at Aransas NWR in Texas. USFWS photo.

should state the need to identify area-specific air quality related values, assess and periodically monitor their condition, and monitor air quality.

What Type of Information is Needed?

Information is needed on current air quality, trends in air quality, and air pollution sensitive resources and their condition. Information on air quality threats is also needed.

Information on ambient concentrations of gaseous pollutants, particularly ozone, is useful, as ozone injury to vegetation has been documented at a number of refuges and is likely occurring at others. Information on ozone concentrations and the presence or absence of ozone-sensitive plant species will help identify refuges where vegetation surveys should be performed.

In addition, some refuges have resources (e.g., lakes, streams, soils) that are sensitive to acidification by sulfur or nitrogen compounds; others, particularly coastal areas, are sensitive to fertilization or eutrophication by nitrogen compounds. Many refuges are already affected by atmospheric deposition of mercury. Information on deposition of pollutants from the atmosphere, such as nitrogen and sulfur compounds, mercury, and other toxics, is important and may help identify areas where monitoring and evaluation are needed.

Information on visibility is also valuable. Pollutants in the air affect not only how far we can see, but also how well we can see (e.g., the color and clarity of landscape features). It affects wildlife viewing and photography at refuges. Visibility in most areas of the country is impaired at times by air pollution, a condition already documented at many Service Class I areas.

Where Can the Information be Obtained?

Some key sources of information are identified below. In addition, information has been developed for Class I air quality areas by the Air Quality Branch within the Division of Natural Resources at Refuge System Headquarters. The Air Quality Branch can also assist in identifying additional data sources.

Many refuges will have State-run ozone monitors nearby that can be used to characterize refuge conditions. Air quality data can also be located at <http://www.epa.gov/airnow/index.html>.

Information on current and historical loadings of atmospheric pollutants, particularly sulfur and nitrogen compounds, and mercury, can be obtained from the National Atmospheric Deposition Network (<http://nadp.sws.uiuc.edu/nadpdata/>) and the Mercury Deposition Network (<http://nadp.sws.uiuc.edu/mdn/>) for sites in or near refuges.

Information on visibility can be obtained from the Interagency Monitoring of Protected Visual Environments (IMPROVE) Program (<http://vista.cira.colostate.edu/improve/>).



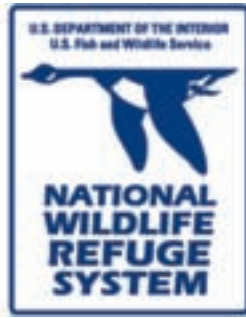
Ice fishing at Waubay NWR in South Dakota. USFWS photo.

Information on air pollution sensitive resources should also be developed, including water quality and sensitive vegetation species.

Information on air quality threats can be obtained from an inventory of air pollution sources in the vicinity of the refuge. Such inventories can be obtained from States and the Environmental Protection Agency (<http://www.epa.gov/oar/oaqps/emissns.html>).

How is the Information Used in the CCP Process?

The information will help the refuge determine whether air quality and air quality related values are being affected, or have the potential to be affected by pollution. The refuge might initiate, or continue if already in place, monitoring of air quality, visibility, and other resources. The refuge may consider air quality when considering visitor use (e.g., density and location of on-road and off-road vehicles) and fire management policies (e.g., incorporate smoke management into planning to minimize air quality impacts).



U.S. Fish and Wildlife Service

<http://www.fws.gov>

National Wildlife Refuge System

<http://www.fws.gov/refuges>