

## Chapter 4: Management Direction and Implementation

In this chapter:

### Objectives and Strategies

This chapter presents the goals, objectives, and strategies that will guide management and administration of the refuge over the next 15 years. This management direction represents the plan for the refuge and mirrors Alternative C in the Environmental Assessment and Draft Comprehensive Conservation Plan that was prepared as a part of the planning process.

The refuge has three goals:

#### **Goal 1: Habitat**

Restore and maintain native habitat and natural processes sufficient to support species native to the Missouri River floodplain.

#### **Goal 2: Wildlife**

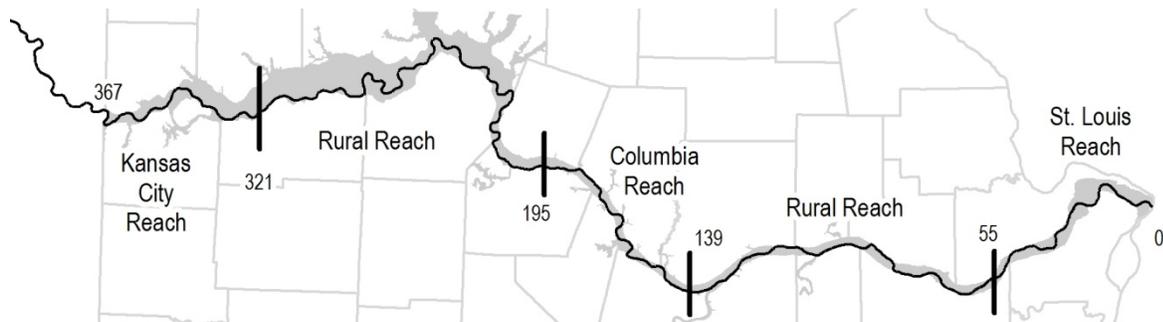
Promote biodiverse and abundant populations of endemic fish and wildlife within the Missouri River floodplain.

#### **Goal 3: People**

Refuge visitors enjoy wildlife-oriented recreation and understand refuge resources and efforts to maintain natural habitats and processes in the Missouri River floodplain.

Goals, objectives, and strategies comprise the proposed future management direction. Goals are descriptive broad statements of desired future conditions that convey a purpose. Goals are followed by objectives, which are specific statements describing management intent. Objectives provide detail and are supported by rationale statements that describe background, history, assumptions, and technical details to help clarify how the objectives were formulated. Each objective applies to one or more of three urban and two rural river reaches delineated by river miles (figure 4-1). Finally, beneath each objective there is a list of potential strategies, specific actions designed to fulfill the objective. The strategies may be refined or amended as specific tasks are completed or new research and information come to light.

**Figure 4-1: Big Muddy NFWR Planning Area River Reaches Delineated by River Miles**



## Objectives and Strategies

### Objective 1-1: All River Reaches Standard Land and Water Management

Over the life of the plan, on Big Muddy National Fish and Wildlife Refuge (NFWR, refuge) units across all five river reaches, restore the hydrology of the Missouri River and its tributaries (where applicable), reconnect the Missouri River and major tributaries to their floodplains, maintain or return natural cover types, and manage invasive species.



### Rationale

This objective addresses the planning issues associated with land and water management (see chapter 2). It applies to all river reaches, because it helps meet the purposes of the refuge as well as other legal and policy obligations. The purposes of the refuge, drawn from the Fish and Wildlife Act of 1956 and Emergency Wetlands Act of 1986, are to conserve fish and wildlife and their habitats, particularly migratory birds and wetlands. Further, Service policy calls for maintaining or restoring refuge habitats to historic conditions if doing so is feasible and does not conflict with refuge purposes (FWS 2001). In addition to habitat, this includes restoring environmental structure, function, and composition of abiotic components such as hydrology. Finally, the decisions to establish and expand the refuge (FWS 1994, 1995a, 1996b, and 1999c) call for restoring refuge lands to a natural floodplain condition, and improving and restoring wetland values.

### Strategy

Develop a Habitat Management Plan to address specific aspects of land and water management on individual refuge units.

### **Objective 1-2: Columbia Reach and St. Louis Reach Study and Learning**

Over the life of the plan, within each refuge unit along the Columbia and St. Louis Reaches, emphasize and encourage biological inventory, monitoring, and research.



#### **Rationale**

This objective addresses the land and water management issue regarding learning about refuge ecosystems and management (see chapter 2). Conserving a diversity of fish, wildlife, and plants and their habitats, including species that are endangered or threatened with becoming endangered, is one of the goals of the National Wildlife Refuge System (NWRS, Refuge System). To evaluate whether management actions are having the predicted consequences, we need to inventory existing biological resources and monitor actual outcomes, most often using a representative sample of sites to ensure that, on average, the effects of a particular type of treatment match expectations. Information gained through monitoring that is clearly linked to our management actions helps us learn and adapt, increasing our effectiveness in meeting conservation objectives. This objective applies to the Columbia and St. Louis Reaches because of proximity of refuge staff or proximity to potential partnership opportunities. Monitoring, inventory, and research typically require routine visits for data collection or maintenance of equipment. The proximity of data collectors to data collection sites is an important factor in developing a sound program for inventory, monitoring, and research.

#### **Strategy**

Develop an Inventory and Monitoring Plan based on a Habitat Management Plan that identifies specific actions for individual refuge units.

### **Objective 2-1: All River Reaches Standard Visitor Services and Facilities**

Over the life of the plan, on each refuge unit across all five river reaches, create or maintain a recreational and management setting that includes all of the following: reasonable car access, reasonable boat access, information kiosks, and parking (in areas with vehicle access).



## Rationale

This objective addresses planning issues associated with visitor services and refuge administration (see chapter 2). It applies to each refuge unit within all river reaches, because providing reasonable access and information facilitates wildlife-dependent recreation and helps fulfill legal and policy obligations. The National Wildlife Refuge System Improvement Act of 1997 recognizes wildlife-dependent recreation as a legitimate and appropriate general public use of the Refuge System. Also, Service policy on wildlife-dependent recreation has the overarching goal of enhancing wildlife-dependent recreation opportunities and access to quality visitor experiences on refuges while managing refuges to conserve fish, wildlife, plants, and their habitats (FWS 2006b).

Finally, the decisions to establish and expand the refuge (FWS 1994, 1995a, 1996b, and 1999c) call for providing wildlife-dependent recreation. Reasonable car access typically includes at least one maintained road that abuts or enters a refuge unit and developed parking for at least six vehicles. Examples of reasonable car access occur on all refuge units with the exception of Cambridge Bend and St. Aubert Island Units. Refuge staff is exploring possibilities to provide car access to Cambridge Bend and St. Aubert Units in the future. Legal and logistical hurdles remain as of this writing. All refuge units are accessible by boat, with a couple of locations featuring modest, developed boat accesses. Developed boat accesses are difficult to maintain as river conditions can and do vary widely depending on flow. MDC and some municipalities provide boat ramp access to the Missouri River, but these may be located up to 15 river miles from the nearest refuge unit. While limited access such as described is inconvenient, it does offer the advantage of increasing the opportunity to experience solitude and a truly wild character on some remote refuge units. This is becoming a rarer and often sought after recreation experience in modern society.

## Strategy

Develop a Visitor Services Plan to address specific aspects of visitor services on individual refuge units.

### **Objective 2-2: Columbia Reach and St. Louis Reach Supplemental Visitor Services and Facilities**

Over the life of the plan, within each refuge unit along the Columbia Reach and St. Louis Reach, create or maintain a recreational and management setting characterized by the presence of one or more of the following: interpretive displays and other self-guided interpretation, restrooms, trails, overlooks, wildlife observation facilities, maintenance center, and environmental education site.



### Rationale

This objective addresses planning issues associated with visitor services and refuge administration (see chapter 2). The legal and policy basis of this objective is the same as that described for Objective 2-1. This objective applies to the Columbia Reach, because the reach encompasses an urban area with many potential visitors, includes other conservation lands that offer complementary opportunities, includes existing well-developed partnerships, is centrally located within the refuge acquisition boundary, and encompasses the existing refuge headquarters. It applies to the St. Louis Reach, because the reach encompasses a large urban area with many potential visitors, includes existing refuge units, and includes other public and private conservation lands and associated partnership opportunities.

### Strategy

Develop a Visitor Services Plan to address specific aspects of visitor services on individual refuge units.

### Objective 2-3: Columbia Reach Administrative Center (Refuge Office)

Over the life of the plan, within the Columbia Reach, allow for the option of a structure located on refuge holdings to serve as the primary administrative center of the refuge. It would include offices and may also include a visitor contact station, an area of the structure dedicated to visitor services.



### Rationale

This objective addresses planning issues associated with visitor services and refuge administration (see chapter 2). The legal and policy basis of this objective is the same as that

described for Objective 2-1. This objective applies to the Columbia Reach because the reach encompasses an urban area with many potential visitors, includes other conservation lands that offer complementary opportunities, includes existing well-developed partnerships, is centrally located within the refuge acquisition boundary, and encompasses the existing refuge headquarters.

### **Strategy**

Construct a refuge office at the location specified in appendix L.

### **Objective 2-4: Columbia Reach and St. Louis Reach Outreach and Collaboration**

Over the life of the plan, within the Columbia Reach and St. Louis Reach, emphasize collaboration (building relationships for conservation delivery) as well as outreach (building public understanding and support for conservation).



### **Rationale**

This objective addresses planning issues associated with visitor services and refuge administration (see chapter 2). The legal and policy basis of this objective is the same as that described for Objective 2-1. This objective applies to the Columbia Reach, because the reach encompasses an urban area with many potential visitors, includes other conservation lands that offer complementary opportunities, includes existing well-developed partnerships, is centrally located within the refuge acquisition boundary, and encompasses the existing refuge headquarters. It applies to the St. Louis Reach, because the reach encompasses a large urban area with many potential visitors, includes existing refuge units, and includes other public and private conservation lands and associated partnership opportunities.

### **Objective 2-5: Columbia Reach Programming**

Over the life of the plan, within the Columbia Reach, allow for staff-led or volunteer-led programming associated with environmental education and interpretation.



## Rationale

This objective addresses planning issues associated with visitor services and refuge administration (see chapter 2). The legal and policy basis of this objective is the same as that described for Objective 2-1. This objective applies to the Columbia Reach, because the reach encompasses an urban area with many potential visitors, includes other conservation lands that offer complementary opportunities, includes existing well-developed partnerships, is centrally located within the refuge acquisition boundary, and encompasses the existing refuge headquarters.

### Objective 3-1: All Reaches Conservation Footprint

Over the life of the plan, across all five river reaches, continue to pursue conservation of up to 30 individual refuge units evaluating tracts available from willing sellers based on the following criteria. Note that the listed criteria are not presented in priority order.

- Proximity to existing refuge units
- Connectivity to existing public lands
- Potential for river feature restoration
- Quality of existing habitat
- Amount of river frontage
- Proximity to populations centers
- Land value and cost
- Size and spatial connectedness or contiguity



## Rationale

The refuge includes less than the 60,000 acres authorized to meet the purpose and need of the expansion approved in a 1999 Record of Decision and documented in the *Big Muddy National Fish and Wildlife Refuge Final Environmental Impact Statement* (1999b). Land acquisition is not emphasized by river reach, but is instead guided by the availability of willing sellers and the evaluation of individual tracts based on criteria that reflect Service priorities.

The size and number of refuge units are addressed in the 1999 Record of Decision (ROD) and Final Environmental Impact Statement (FEIS) for Big Muddy NFWR. It expanded the total area authorized for acquisition from 16,628 acres to 60,000 acres, indicating between 20 and 30 individual units of 800 acres or more, although smaller units are possible for biologically important sites or those that meet other resource needs. The FEIS includes a set of criteria to help evaluate individual tracts of land. Using the criteria along with input from participants of the CCP alternatives workshop, a computer model was built to help assess the relative value of available tracts. The model is more fully described in appendix K. The model and its output will change as the model evolves to accommodate additional inputs, revised data, and Service priorities.

The 1999 FEIS does not specify location or distribution of refuge units. This is because many more than 20 to 30 locations within the acquisition area are suitable, and because the refuge acquires land only from willing sellers. For the same reasons, this planning process does not identify the location and distribution of future refuge units. Nevertheless, there is one indicator of potential refuge units—USACE mitigation sites. USACE acquires lands along the Missouri River as mitigation for loss of fish and wildlife habitat from past channelization efforts. In many cases, after completing mitigation work, USACE turns over management of mitigation lands to other agencies, including the Service. A number of existing refuge units originated or expanded when the Service assumed management of mitigation sites through lease agreements with USACE. The Service often adds to these units with additional acquisitions from willing sellers. Although existing USACE mitigation lands (figure 4-2) are an indicator of future refuge units, not all mitigation lands within the refuge acquisition boundary will become refuge units. The refuge may also establish units unrelated to USACE-acquired mitigation lands. Because the refuge manages lands acquired by USACE in addition to lands acquired as part of the Big Muddy NFWR, the total acres managed by the refuge could eventually exceed the total acres authorized for the refuge (60,000 acres).

**Figure 4-2: USACE Mitigation Sites within Big Muddy NFWR Acquisition Boundary**



### **USACE and Big Muddy NFWR**

The 1999 ROD for the Big Muddy NFWR FEIS expanded the total area authorized for acquisition from 16,628 acres to 60,000 acres. This complemented similar land acquisition efforts by USACE and MDC with the collective goal of restoring as much as 20 percent of the 820,000-acre Missouri River floodplain between Kansas City and St. Louis, MO. In addition to the 60,000 acres for the Refuge, the USACE was to acquire 14,600 acres and MDC 20,000 acres. The MDC acreage goal remains at 20,000 acres, but the USACE acreage goal has changed.

The USACE land acquisition goal is part of a larger mitigation goal authorized by Congress for loss of fish and wildlife habitat from past channelization of the Missouri River. In 1986, Congress authorized the original mitigation goal at 48,100 acres apportioning it between existing public lands (18,200 acres) and lands USACE was to acquire (29,900 acres) within Missouri, Kansas, Iowa, and Nebraska. In a 1987 ROD accompanying the Missouri River Bank Stabilization and Navigation Feasibility Report and FEIS for the Fish and Wildlife Mitigation Plan USACE further allocated the land acquisition goal across the four states. Originally, the Missouri portion of the 29,900-acre land acquisition goal was 14,600 acres but later changed to 13,200 acres (USACE 1981; USACE 2002).

In 1999, Congress increased the total amount of mitigation required of USACE from 48,100 acres to 166,750 acres, which prompted a supplement to the original Environmental Impact Statement. The ROD for the supplemental Environmental Impact Statement allocates the additional 118,650 acres among the four states, but foregoes specifying separate targets for land acquisition and work on existing public lands, instead allowing accomplishment of the supplemental acres through any combination of the two methods (USACE 2003). The Missouri portion of the supplemental mitigation is 75,791 acres. Lands acquired and restored by USACE within Missouri may later be managed by the Refuge through an agreement with USACE.

### **Strategies**

- Use the adaptive decision support model (see appendix K) to assist in evaluating available tracts.
- Continue to use all available conservation options including land acquisition, easements, cooperative agreements, and partnerships.
- Continue to work with the U.S. Army Corps of Engineers (USACE) to assume management of USACE Missouri River mitigation sites within the refuge acquisition boundary.