

## ***CHAPTER 1 - PURPOSE AND NEED FOR ACTION***

### ***I. PURPOSE***

The purpose of this Environmental Assessment (EA) is to publicly disclose the possible environmental consequences that implementation of the Union Slough Comprehensive Management Plan (CMP) could have on the quality of the physical, biological, and human environment, as required by the National Environmental Policy Act of 1969 (NEPA)(Appendix).

### ***II. NEED FOR ACTION***

The need for a CMP for the Refuge has been made clear by the declining status of numerous grassland and wetland dependent wildlife, an increased demand for wildlife-dependent public use, and a need to better define what the Refuge must be to satisfy the needs of citizens and agencies having a vital interest in what and how the Refuge performs (see CMP).

#### ***Grassland Bird Declines***

Breeding Bird Surveys for the Great Lakes-Big Rivers Region indicate that grassland-nesting game species such as the northern pintail, blue-winged teal, and ring-necked pheasant have declined since the mid-1960's. Non-game species such as the grasshopper sparrow (-5.5%), dickcissel (-3.6%), bobolink (-3.3%), henslow's sparrow (-7.6%), vesper sparrow (-1.7%), savannah sparrow (-1.1%), lark sparrow (-2.7%), field sparrow (-3.0%), eastern meadowlark (-2.9%) western meadowlark (-4.0%), and American bittern (-7.5%) have shown significant average annual declines. Several others, whose population status is of special management concern to the Service and that utilize the Refuge, include the least bittern, black tern, red-shouldered hawk, northern harrier, and short-eared owl.

#### ***Waterfowl Production Declines***

Waterfowl studies conducted at the Refuge in 1985-86 found breeding pair densities (63-108/km<sup>2</sup> of wetlands), nest densities (mean .49/ha of upland), and brood attrition similar to other mid-continent waterfowl production areas. However, hatch rates of dabbling duck nests (mean 11.9%) was lower than most reported areas, and recruitment rates, especially for mallards, was below what is needed to replace losses due to mortality. Fleskes and Klaas (1991) predicted annual changes in the mallard population at the Refuge without the influx of pioneering birds was -12.6 percent. These same authors noted that nest success rates of 15 percent must be achieved to produce a surplus of dabbling ducks.

#### ***Wildlife Habitat Declines***

Prior to European settlement, 85 percent of Iowa's landscape was native grasslands. Today, less than 1

percent remains. Northcentral Iowa contained 2-3 million acres of wetlands scattered among a tallgrass prairie/wetland complex of approximately 7.6 million acres. For nearly 50 years following the initial conversion of native Midwestern prairies, many prairie dependent wildlife remained relatively stable by their ability to colonize agricultural grasslands. However, since 1950, the acreage of agricultural grasslands has significantly declined, and in many parts of the region, is at its lowest level in more than 100 years (Herkert, 1994). Consequently, grassland birds have shown steeper, more consistent, and geographically more widespread declines than any other group of North American birds (Knopf 1992). When the Refuge was established in 1937, numerous agricultural grasslands (haylands/pasture) flanked its boundary. Today, few remain, causing the Refuge to become an island of nesting habitat surrounded by rowcrop fields. Statistics for Kossuth county indicate that 42,800 acres of haylands were present in 1937. By 1976 that figure had decreased to 13,400 acres, and by 1995, haylands had decreased to 6,400 acres countywide, an 86 percent reduction from 1937. Refuge birds must now concentrate their nesting effort in a narrow fringe or “edge” of habitat surrounding Refuge wetlands, where predators such as red fox, striped skunk, and raccoon easily forage. Large native predators (gray wolves, grizzly bear) which historically preyed on bison, deer, and livestock, have been eliminated from the area and naturally replaced by medium-sized predators (fox, skunk, raccoon) that prey extensively on Refuge birds, their eggs, and their young.

### ***Wildlife Habitat Alterations***

The combined effects of human settlement and development trends have resulted in significant alterations to the natural flora and fauna within the Refuge watershed. Elk, bison, grizzly bear, prairie chickens, and whooping cranes are just a few of the species that have disappeared from the area. Marsh plants such as white top and wild rice that were once abundant in the area have been replaced by narrow leaf cattail, hybrid cattail, and reed canary grass. Many insects and other prey that are dependent upon native grassland plants to survive, and which serve as the food base for many grassland birds, have also disappeared.

Recent studies indicate that waters entering the Refuge from surrounding watersheds transport large amounts of silt, sediment, and nutrients, which over time, cause physical, chemical, and biological changes to Refuge wetlands. According to a 1995 U.S. Geological Survey study, the mean change in sediment thickness in Refuge pools since 1938 is 2.62 feet, which represents a mean sedimentation rate of approximately .5 inches per year, or the equivalent of dumping 2,230 dump truck loads of sediment into Refuge wetlands each year. Sedimentation reduces water depths which alters the biotic structure and function of wetlands. Sediment also increases turbidity which reduces photosynthetic efficiency, an essential component of wetland food chains. Eutrophication, or enrichment of a water body due to nutrients, is also adversely affecting Refuge wetlands by increasing the plant biomass in some wetlands above which can be supported by those systems. Lack of plant diversity, the predominance of monotypic stands of tolerant plant species (namely cattail and sago pondweed), and an overall decrease in water quality due to reduced oxygen capacity from excessive plant decomposition, are three indicators of an aquatic system suffering from cultural eutrophication.

When early explorers wrote of northern Iowa they often referred to it as a “sea of green” to convey the unbroken vastness of the grasslands they traversed. Present day observers would likely describe the landscape as a mosaic of croplands, roads, woodlots, homesites, and urban areas. The process by which habitats are broken up into smaller, isolated parcels dominated by human activity is called habitat fragmentation. Habitat fragmentation reduces an ecosystems biological diversity because small, isolated patches of habitat have fewer species than larger, less isolated patches (Hunter 1995). In fragmented landscapes, it is difficult for individuals of a given population to disperse to other suitable habitats, forcing species like the greater prairie chicken, sharp-tailed grouse, and numerous small mammals into isolated areas.

### ***Old and Deteriorating Facilities***

Many of the existing visitor facilities (Deer Meadow Picnic Area, Vanishing Prairie Trail, Refuge Headquarters) are old, in poor condition, or lack accessibility. There is a need to renovate existing facilities for safety and accessibility; to improve visitor information systems (signs and brochures); and to bring public facilities up to Service standards. The Service and interested publics have identified several new facilities which will expand opportunities and support the long-term goals of the Refuge, watershed, and the county. The public expressed interest in providing additional places to see wildlife, additional youth environmental education facilities, canoeing, bicycling, and fishing opportunities.

## ***III. PROPOSED ACTION***

The Service’s proposed action aims to (1) intensify and concentrate federal, state, local, and private habitat restoration and preservation mechanisms in the Union Slough Refuge and its watershed, (2) improve the quality of water entering the Refuge, and (3) provide the public with additional high quality wildlife-dependent environmental education and recreation opportunities at the Refuge.

## ***IV. PROJECT INCEPTION***

Several Federal, State, and local resource management plans provide the framework for the Service’s proposed action, including the North American Waterfowl Management Plan - U.S. Prairie Pothole Joint Venture and the Iowa Prairie Pothole Joint Venture Implementation Plan, the National Wetlands Priority Conservation Plan, the Service’s Regional Wetlands Concept Plan, the Service’s Ecosystem Plan for the Upper Mississippi River/Tallgrass Prairie ecosystem, and strategic planning efforts of Kossuth County, which identifies preservation and protection of land and water resources and enhancement of the county's tourism potential as important public needs.

In 1986, to address the declining status of North American waterfowl populations, the United States and Canada signed the *North American Waterfowl Management Plan (NAWMP)*. The purpose of the NAWMP is to restore a continental breeding population of 62 million ducks, including 8.7 million mallards, 6.3 million pintails, and a fall flight of 100 million ducks during years of average environmental conditions. Of late, the NAWMP has added objectives and activities for nongame birds. The NAWMP is designed to reach these objectives through key joint venture areas and state implementation plans within these joint venture areas.

Iowa is one of five states (Minnesota, South Dakota, North Dakota, Montana, and Iowa) located in the U.S. portion of the *Prairie Pothole Joint Venture (PPJV) Area* of the NAWMP (Figure 1). The objective of the PPJV is to produce 6.8 million breeding ducks and a fall flight of 13.6 million birds by the year 2,000. Iowa's commitment to the Prairie Pothole Joint Venture is to restore and preserve 2,000 acres of wetland and associated upland habitats (1:3 ratio) each year to produce an Iowa breeding population of 100,000 ducks and a fall flight of 200,000 birds by the year 2000.

In 1986, the US Congress authorized the Emergency Wetlands Resources Act to protect critical wetlands and promote wetland conservation. One of the requirements of the Act was the preparation of a national plan to identify high priority wetlands for protection. In 1989 the Department of the Interior developed the *National Wetlands Priority Conservation Plan*, as directed by the Act.

In 1990, the Service developed a *Regional Wetlands Concept Plan* for the Great Lakes-Big Rivers Region (Minnesota, Iowa, Missouri, Illinois, Indiana, Wisconsin, Michigan, and Ohio). The purpose of the plan was to identify wetlands that are valuable for protection in conformance with the Emergency Wetlands Resources Act of 1986. One of the recommendations in the Regional Wetland Concept Plan for the State of Iowa was restoration and protection of 12,540 acres of palustrine emergent wetland habitat as roundouts and additions to Union Slough National Wildlife Refuge.

In 1994, the Service developed an *Ecosystem Plan* for the Upper Mississippi River/Tallgrass Prairie ecosystem. The overall goal of that plan is to form creative and productive partnerships to restore some of the natural processes and a measure of the former biological diversity

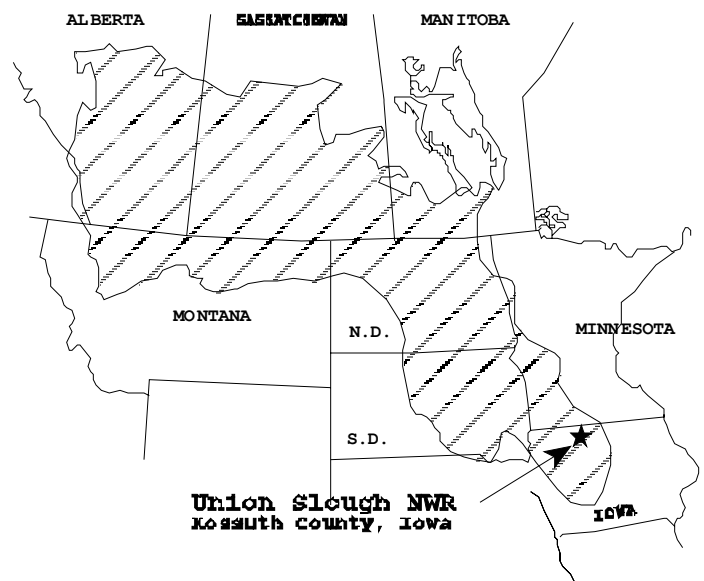


Figure 1 - Union Slough NWR and the Prairie Pothole Joint Venture Area

that once characterized this ecosystem.

Henceforth, in 1994 the Service initiated detailed management planning on Union Slough Refuge. An interdisciplinary planning team was assembled to reaffirm the purpose and significance of the Refuge, determine the scope of the planning effort, and define a protocol for carrying out the project. The protocol has included an information gathering phase, an information analysis phase, an information transfer phase, and a planning and implementation phase (current phase). A geographic information system (GIS) was developed to aid in the analysis and transfer of information.

## ***V. SCOPING AND PUBLIC INVOLVEMENT***

Scoping is the process of identifying opportunities and issues related to a proposed action. The Service publicly announced it was preparing a Plan for the Refuge in November 1994. Over the next two years, information about the proposed project was provided through news-releases, presentations, interviews, informational letters, and one-on-one briefings. Numerous Federal, State, local, and private entities were involved in the scoping process. These include Iowa's Congressional Delegation, the U.S. Department of Agriculture, U.S. Department of Interior, Iowa's Legislative members representing Kossuth County, Iowa Department of Natural Resources, representatives from County, Township, and other local governments, representatives of national, state, and local conservation organizations, Farm Bureau, and landowners. Six public scoping meetings were held prior to the release of the draft CMP. Over one hundred copies of the draft CMP were distributed for review and comment beginning November 6, 1996, and ending December 13, 1996. A formal public meeting was held November 20, 1996, and nine verbal comments were recorded. Several additional meetings occurred between the Service and interested publics after the draft CMP was released to encourage further involvement.

From questions raised in conversations and correspondence with numerous individuals and organizations, the Service was able to identify 10 opportunities and issues currently facing the Refuge. These opportunities and issues, which were addressed in formulating and evaluating future management direction at the Refuge, include: long-term watershed-based coordination and guidance, water quality in Refuge wetlands, biodiversity, production of nesting waterfowl and other birds, wildlife disturbance by people, wildlife crop depredation, public awareness of Refuge opportunities, old and deteriorating facilities, wildlife habitat declines, and natural resource inventories and monitoring systems (see CMP).

## ***VI. AUTHORITY AND LEGAL COMPLIANCE***

Service resource management and land acquisition is done in accordance with authority delegated by Congress and interpreted by regulations and guidelines established in accordance with such delegations (Appendix).

## ***VII. DECISION FRAMEWORK***

In compliance with the National Environmental Policy Act of 1969, the Regional Director for the Great Lakes-Big Rivers Region of the Service will use this Environmental Assessment to select one of two alternatives (Chapter 2) and determine whether the alternative selected will have a significant impact on the quality of the human environment. Specifically, analysis and findings described in this EA will help the Regional Director decide whether to continue with current management at the Refuge (status quo) or whether to adopt Refuge management direction pursuant to the goals, objectives, and strategies in the CMP (see CMP).

