

REFUGE HUNTING PLAN

October 1989

Upper Mississippi River National
Wildlife and Fish Refuge
U.S. Fish and Wildlife Service
Winona, Minnesota

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Upper Mississippi River National
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TABLE OF CONTENTS

	<u>PAGE</u>
I. Introduction.....	1
II. Conformance with Statutory Authorities.....	2
III. Statement of Objectives.....	3
GOAL II - MIGRATORY BIRDS.....	3
Objectives: A-B-C-D-E-F.....	4
GOAL IV - OTHER WILDLIFE.....	4
Objectives: A-B.....	4
GOAL V - ENDANGERED SPECIES.....	4
Objectives: A-B.....	4
GOAL VII - INTERPRETATION AND RECREATION.....	4
Objectives: A.....	4
Objectives: B-C-D.....	5
IV. Assessment.....	6
A-B-C.....	6
V. Description of Hunting Program	
A. Waterfowl Hunting.....	6
B. Deer Hunting.....	7
C. Hunting of Resident Game.....	8
D. Control and Enforcement.....	8
E. Funding and Staffing Requirements for the Hunt.....	8
VI. Measures Taken to Avoid Conflicts With Other	
Management Objectives.....	8
A. Biological Conflicts.....	8
B. Public Use Conflicts.....	9
C. Administrative Conflicts.....	10
VII. Conduct of the Hunt	
A. Refuge-Specific Hunting Regulations.....	10
B. Anticipated Public Reaction to the Hunt.....	11
C. Hunter Application and Registration Procedures.....	11
D. Description of Hunter Selection Process.....	11
E. Media Selection for Announcing and Publicizing	
the Hunt.....	11
F. Description of Hunter Orientation, Including	
Pre-Hunt Scouting.....	11
G. Hunter Requirements.....	12

Refuge Hunting Plan

I. Introduction

This document replaces the interim hunting plan that was prepared in 1981 to serve until completion of the Upper Mississippi River National Wildlife and Fish Refuge (Refuge) Master Plan.

The Refuge was established to provide for the needs of fish, migratory birds, other forms of wildlife, and to conserve flowers and aquatic plants. The Refuge is located along 261 miles of the Mississippi River valley, extending from the confluence of the Chippewa River near Wabasha, Minnesota, to near Rock Island, Illinois. The 200,000 acres of Fish and Wildlife Service and U.S. Army Corps of Engineers lands that make up the refuge lie in four states -- Minnesota, Wisconsin, Iowa, and Illinois. Refuge headquarters is located in Winona, Minnesota, with District Offices located in Winona, Minnesota; La Crosse, Wisconsin; McGregor, Iowa; and Savanna, Illinois.

The Upper Mississippi River is divided into a series of step-like pools by dams and locks constructed by the Corps of Engineers for commercial navigation. Each pool is numbered corresponding to the dam creating the pool. Twelve pools, numbered from 4 through 14, are found in the Refuge. These impoundments abruptly change the river bottoms from an area of wide fluctuations in water levels to an area of semi-stabilized water. While spring floods still occur, the bottoms do not dry out in the summers to the extent they did under free-flowing river conditions. Each pool has three distinct zones. The upper end is in essentially normal river condition where the water levels were not raised to any extent. In this zone, marsh development is limited and the old condition of deep sloughs and wooded islands is found. In mid-pool, large areas of relatively shallow water developed and the old hay meadows became inundated. It is in this zone that the best marsh development occurred. Immediately above each dam the water was impounded to a depth which precluded marsh development. This zone is essentially deep open water with limited aquatic growth.

The refuge is largely confined to the floodplain and generally lies between the railroads that border the river. Bottomland encompassed within the Refuge ranges from two to five miles in width. Precipitous wooded hills varying from 200 to 600 feet high border the Refuge from the Chippewa River to Clinton, Iowa. Below Clinton, these hills give way to much more gradual slopes.

The natural vegetation of the river valley consists of bottomland deciduous forest, marsh and aquatic plants, and on a few scattered sand terraces, prairie-type species. The river lies roughly on the transition between hardwood forest and western prairie. The bottoms are for the most part wooded. Most of the original timber along the river was found on the islands and other sites protected from fire. The present expanses of forest are largely a product of fire control since settlement by whites.

The river bottom forest (roughly 45,000 acres) is comprised mainly of silver maple, willow, American and red elm, red maple, basswood, swamp white oak, cottonwood, green ash, hackberry and river birch. Dense stands of nettle and poison ivy are common on many of the river islands. Emergent vegetation in the marshes include such locally dominant species as river bulrush, the round-stemmed bulrushes, cattail, phragmites, arrowhead, and smartweed. Wild rice occurs intermittently in the upper part of the river but is absent south of pool 11. The most common aquatics on the area are pondweeds, coontail, elodea, wild celery, arrowhead, American lotus, and pond lilies. Floating vegetation includes primarily the duckweeds, abundant in most quiet water areas. Some meadows and sand prairies are present in various localities. The drier meadows are vegetated by such species as bluegrass and big and little bluestem. Species such as yucca and grama grass that are adapted to dry, sandy soils dominate on the arid sand prairies. On the marsh border, dikes, and damper meadows, cord grass, reed canary grass, rice cut grass, and sedges appear. About 540 species of vegetation are known on the refuge.

The Refuge provides migratory habitat for a large percentage of the migratory birds in the Mississippi Flyway. Significant proportions of the continental populations of tundra swans and canvasback ducks use the Refuge as a resting and feeding area for several weeks in the spring and fall.

Hunting has occurred in and around the Refuge since its establishment by an Act of Congress in 1924. In "The Legal and Administrative History of the Upper Mississippi River Wild Life and Fish Refuge," Michael Fairchild notes: "The Refuge had been established in part as a sanctuary for migratory birds and other wildlife. Congressmen had been given reassurances that never a shot was to be fired on the refuge. The Refuge conceded the public's right to hunt soon after the creation of the Refuge. Local and state pressures, along with increasing populations of game birds, led the Refuge by 1929 to permit public hunting in specified areas within the Refuge."

II. Conformance with Statutory Authorities

The Upper Mississippi River Wild Life and Fish Refuge Act (Public Law 68-268) contains the Refuge purposes to which compatibility standards are applied in considering hunting programs. Section 3 of the Act sets forth these purposes:

The refuge shall be established and maintained (a) as a refuge and breeding place for migratory birds included in the terms of the convention between the United States and Great Britain for the protection of migratory birds, concluded August 16, 1916, and (b) to such extent as the Secretary of Agriculture may by regulations prescribe, as a refuge and breeding place for other wild birds, game animals, fur-bearing animals, and for the conservation of wild flowers and aquatic plants, and (c) to such extent as the Secretary of Commerce may by regulations prescribe

as a refuge and breeding place for fish and other aquatic animal life.

The vast majority of hunting visits to the Refuge are for the purpose of waterfowl hunting. About 22 percent or 43,000 acres of the refuge is closed to waterfowl hunting, providing resting and feeding areas during the hunting season for up to 300,000 waterfowl per day.

The 152,000 acres of the refuge which remain open to hunting have received a range of 63,000 - 89,000 visits by waterfowl hunters per year, with hunters taking approximately one percent of the waterfowl migrating through the refuge during fall. Since waterfowl hunting regulations for the four states within which the Refuge lies are based upon Fish and Wildlife Service parameters established for the flyway according to factors such as waterfowl populations and anticipated hunting pressure, and since the harvest of waterfowl is relatively small, considering the approximately 20,000,000 waterfowl use days received by the Refuge, it is determined that the legal hunting of waterfowl is compatible with the purposes for which the refuge was established.

Upland game hunting and white-tailed deer hunting are relatively minor recreational activities on the refuge. Habitat for these game species is marginal or provides difficult access for the user when compared to the excellent habitat in the bluffs and valleys adjacent to the refuge. Deer hunting visits range from 3,000 - 5,000 per year with a success rate of 20 percent (Master Plan Technical Appendix). Waterfowl Closed Areas are closed to all types of hunting and trapping during the waterfowl season. This gives precedence in these areas to resting and feeding waterfowl over upland and big game hunting. These hunting activities are therefore compatible with refuge purposes.

Approximately \$40,000, or less than 4% of the Refuge's annual budget, is expended to administer refuge hunting programs that attract 100,000 hunting visits per year. As noted previously, the Refuge is 261 river miles long and is interspersed with private and public lands. Without the hunting programs, it is likely that an equivalent amount of law enforcement effort would be required to insure that hunting did not occur on refuge lands and to enforce waterfowl hunting regulations in the vicinity of the Refuge.

III.. Statement of Objectives

The Master Plan sets forth refuge objectives by stepping them down from eight goals related to the mission of the refuge. The goals and objectives that are interrelated with the hunting program are:

GOAL II - MIGRATORY BIRDS: Provide the life requirements of waterfowl and other migratory birds occurring naturally along the Upper Mississippi River for the enjoyment and use of this and future generations.

Objectives:

- A. Restore species that are in critical condition (such as canvasbacks) and achieve national population or distribution objectives.
- B. Maintain or improve habitat of migrating waterfowl using the Upper Mississippi River.
- C. Maintain or increase the current population and distribution of colonial nesting birds.
- D. Promote use by the maximum number of species of migratory birds at optimum population levels to provide a recreation resource.
- E. Increase production of historically nesting waterfowl.
- F. Contribute to achievement of national population and distribution objectives identified in the North American Waterfowl Management Plan and flyway management plans.

GOAL IV - OTHER WILDLIFE: Provide the life requirements of resident wildlife species for the enjoyment of this and future generations.

Objectives:

- A. Maintain or increase diversity and abundance.
- B. Maintain furbearer populations at levels compatible with fisheries and waterfowl management and other management objectives to provide a resource for recreation.

GOAL V - ENDANGERED SPECIES: Conserve, restore and enhance federally listed endangered and threatened species and the habitats upon which they depend for the enjoyment of this and future generations.

Objectives:

- A. Protect and enhance Upper Mississippi River habitat and maintain or increase its use by native species historically found in this area.
- B. Carry out the recommendations of Endangered Species Recovery Plans applicable to the refuge.

GOAL VII - INTERPRETATION AND RECREATION: Gain active public support for the preservation of the vulnerable floodplain ecosystem; to provide interpretation and education opportunities; to provide a wide range of opportunities for compatible wildlife/wildlands-oriented recreation; and to allow other compatible traditional recreation uses.

Objectives:

- A. Prepare people for informed participation in decision making which involves resource use and environmental values.

- B. Encourage considerate use of the refuge natural and cultural resources by visitors.
- C. Provide outdoor recreation opportunities oriented toward wildlife, fish, and wildlands (e.g., fishing, hunting, trapping, wildlife observation).
- D. Allow compatible levels of non-wildlife/wildlands-oriented recreation including traditional forms (e.g., boating, picnicking, swimming, camping).

Objectives II A and D are tied to national goals and objectives for migratory waterfowl populations and harvests. Signs notifying waterfowl hunters that the season for canvasbacks is closed are posted at refuge and non-refuge boat landings. Law enforcement by refuge officers, Service special agents, and state conservation officers insure adequate compliance with state and federal regulations. With adequate law enforcement, the refuge program does not adversely affect these refuge objectives. The remaining migratory bird objectives are not directly impacted by the hunting programs.

The hunting program does not adversely affect the diversity and abundance of resident wildlife species on the Refuge (Objective IV A). Those game species that are abundant (i.e. white-tailed deer and eastern cottontail) are adequately protected by state hunting regulations and those that are less abundant (i.e. ruffed grouse) have little hunting pressure. There is no evidence to indicate that shooting of non-game species during the hunting season is a problem.

The Refuge's endangered species goal (IV) involves two species, the peregrine falcon and the American bald eagle, that must be considered in relation to the hunting program. State non-game wildlife programs in both Minnesota and Wisconsin are attempting to reestablish peregrine falcons along bluff areas which border the Refuge. Refuge hunting programs are isolated in time and place from nesting falcons. During the fall hunting seasons, falcons could be subject to indiscriminate shooting by hunters, but the probability of refuge waterfowl hunters doing this is considered very slight.

The bald eagle commonly occurs on the refuge. Approximately 20 pairs nested on the Refuge in 1988. Nesting begins after the refuge hunting seasons end on most of the Refuge. The southernmost Refuge District (Savanna) has recorded nesting behavior in January. Where there is potential for conflict between refuge-controlled activities and nesting eagles, the refuge-controlled activities are excluded from the immediate area of the nest. Large numbers of bald eagles migrate through the refuge in the fall. Indiscriminate shooting by a hunter is a possibility, but there is no record of an occurrence of this type by a refuge waterfowl hunter, and the potential for a shooting casualty would exist whether or not hunting were allowed. An Endangered Species Act Section 7 consultation conducted for the Refuge therefore determined

that the peregrine falcon and bald eagle are not significantly affected by the Refuge hunting program.

The objective of refuge hunting programs (Master Plan Objective VII C) is to provide wildlife-oriented recreational experiences to the public. With approximately 60,000 waterfowl hunting visits and 6,000 deer hunting visits annually, the Refuge supplies ample hunting opportunity to the public and is within the approved objective limits as described in the Refuge Master Plan.

In the future an effort will be made to better define the waterfowl resource requirements which should be provided by the refuge. Upon this determination changes may be necessary in the management of the Closed Areas. If and when this occurs this plan will be amended accordingly.

IV. Assessment

Waterfowl hunting is, by far, the predominant type of hunting occurring on the refuge, with mallard, wood duck, and blue-winged teal being the most common birds in the hunter's bag. In fact, the vast majority of waterfowl hunting opportunity available in the 19 counties in which the refuge lies is on refuge lands and waters. Upland game and deer hunting occur on the refuge, but at a level which can be considered negligible.

Following is an assessment of the hunting program on Upper Mississippi River National Wildlife and Fish Refuge.

- A. Wildlife populations are present in numbers sufficient to sustain optimum population levels for priority refuge objectives other than hunting.
- B. There is no evidence to suggest that significant competition for habitat exists between target species and other wildlife under current conditions. In addition, significant improvements in habitat conditions for both target and non-target species are being made through on-going implementation of the Environmental Management Program.
- C. With the exception of the raccoon and its impacts upon nesting waterfowl and other marsh birds, none of the target species are considered to be providing unacceptable levels of predation on other wildlife.

V. Description of Hunting Program

- A. Waterfowl Hunting: The Mississippi River provides a migration corridor for one of the four major waterfowl flyways on the North American Continent. Approximately 20 percent of all the continent's ducks travel this corridor as they migrate each spring and fall. Waterfowl hunting is a popular activity on the Upper Mississippi because of these vast numbers of migrating birds and the abundant opportunities to hunt waterfowl on public lands. Waterfowl hunting

visits to the refuge range from 63,000 to 89,000 annually. Approximately 78% or 152,000 acres of the refuge is open to hunting, with 22% or 43,000 acres contained in 13 "Closed Areas" which are closed to all hunting and trapping during the waterfowl hunting season (see enclosed maps).

The refuge provides opportunities for several different styles of waterfowl hunting which vary along the length of the refuge because of local tradition and differences in hunting regulations between the four states. Most hunters use small boats with outboard motors to provide access to emergent vegetation adjacent to open marshes. Here, they construct a simple blind or hunt from a boat blind. Some hunters "pass shoot" by standing in open marsh areas or along the border of Closed Areas. Those desiring a more secluded experience hunt the thousands of acres of wooded bottomlands, small sloughs, and islands with their isolated ponds. In the deep, open-water areas at the southern end of the refuge (pools 12, 13, and 14), large, permanent blinds and scull boat hunting are traditional. The refuge administers one controlled hunt at Potter's Marsh in Pool 13, because of the high demand for hunting opportunity in this marsh. Here, hunters enter their names in a drawing for permit to build a blind at one of 50 pre-determined blind sites. Potter's Marsh is the only area of the refuge requiring a permit.

The areas of the refuge that support populations of waterfowl are as follows: 84,100 acres of water, principally used by lesser scaup, ring-neck, and canvasback; 65,600 acres of marsh, principally used by mallard, widgeon, blue-winged teal, wood duck, and pintail; and 44,300 acres of upland (bottomland hardwoods, islands, and small prairie areas), principally used by mallard, widgeon, blue-winged teal, and wood duck.

- B. Deer Hunting: Deer hunting by bow or gun has never been a major recreation activity on the refuge. Because it is necessary to use a boat to get to most hunting sites, the refuge is relatively difficult to hunt, requiring more planning and equipment compared with adjacent upland habitat. This is reflected in the rate of success (less than 20 % vs. 30 to 50 %) in adjacent counties. Because refuge hunts nearly always require boat access, they are affected by water levels and weather conditions. Low water levels prohibit access through many shallow marshes and sloughs, while high water floods areas that are normally huntable. Storms, high winds, and ice can make this type of hunting especially hazardous.

Deer hunting visits usually range from 3,000 to 5,000 per year, composed of 60% gun hunters and 40% bow hunters. Huntable refuge deer habitat varies from 70,000 to 90,000 acres, depending on water levels. It is fairly evenly spread throughout the length of the refuge. Bottomland hardwood islands, island complexes, tributary deltas, and floodplain meadows are the primary deer habitat.

- C. Hunting of Resident Game: Squirrel, rabbit, raccoon, fox, pheasant, ruffed grouse, Hungarian partridge, and quail are present in limited numbers. Hunting pressure on these species is light to virtually non-existent. Upland game hunting is not considered a significant recreation pursuit on the Refuge.
- D. Control and Enforcement: There is almost unlimited access to the refuge by boat, so control of entry into the refuge is not possible. Of the approximately 300 access points along the refuge, the Fish and Wildlife Service maintains only 26, many in remote locations. For enforcement of hunting regulations, the refuge, at present, has 13 Refuge Officers, 11 at District Offices and 2 at Headquarters. Refuge Officers make periodic patrols of the refuge during hunting seasons to check for compliance with state and federal regulations. However, law enforcement responsibilities must compete with other responsibilities of these personnel. There are currently no full-time law enforcement personnel assigned to the refuge. Coordination with the four states regarding regulations usually occurs through the Wildlife Technical Section of the Upper Mississippi River Conservation Committee or on a case-by-case basis with the Departments of Natural Resources of individual states.
- E. Funding and Staffing Requirements for the Hunt: Funding and staffing are the minimum needed to administer the hunting program on the Refuge. During waterfowl hunting season, Refuge Officers typically spend a majority of their time on law enforcement activities, to insure hunter compliance with hunting laws and regulations.

The level of enforcement activity for deer and small game is considered minor, when compared with that which occurs during the waterfowl season. Hunters are few, widely dispersed, and difficult to find, and there is little indication of game law violations from state conservation agents and Refuge Officers who patrol the refuge during these hunting seasons.

The Potter's Marsh hunt has cost approximately \$1,200 to administer in recent years, excluding law enforcement activities. In 1988, the first year of permit fees for the hunt, administrative costs were recovered from fees taken in.

Approximately \$40,000 is currently spent refuge-wide to administer the hunting program. Law enforcement activities are performed by 13 Refuge Officers. Service Special Agents also conduct law enforcement activities on the refuge, particularly during the waterfowl hunting season.

VI. Measures Taken to Avoid Conflicts With Other Management Objectives

- A. Biological Conflicts: No evidence exists to indicate that American bald eagles, which occur in great numbers on the refuge during hunting seasons, or peregrine falcons, which occur occasionally on

the refuge during hunting seasons, are directly affected by the hunting program. An endangered species consultation conducted in 1978 determined that although there is a remote chance of shooting casualties among these species, no records exist of this occurring on Upper Mississippi Refuge and that the potential exists for this type of incident whether or not the refuge allows hunting.

Bald eagles have been found on the refuge with lead shot in tissues or intestine which were weak or dead, suggesting they had eaten waterfowl containing lead shot. The ban on lead shot should make this type of incident unlikely in the future.

Double crested cormorants are occasionally shot when mistaken by hunters for geese. Cormorants are listed by both Iowa and Illinois as State endangered species. They are not listed as endangered or threatened for Minnesota or Wisconsin. Populations of cormorants are increasing dramatically on the refuge and there is no indication that the occasional mortality associated with the hunting program is negatively impacting populations of these birds.

A high percentage of the continental canvasback population stages on the river each fall. Some canvasbacks are shot by hunters when the birds are mistaken for other legal species. Signs posted at boat landings warn hunters that it is not legal to hunt canvasbacks. Law enforcement efforts are directed at areas where the potential exists for the illegal taking of canvasbacks. Tips from other hunters often help direct refuge officers to problem areas. At present, the problem is minor and a very small number of the birds using the refuge is affected.

No other significant conflicts exist between the hunting program and other management objectives.

- B. Public Use Conflicts: Since the refuge has questionable statutory authority to control water surface use, the refuge "Closed Areas" are not inviolate sanctuaries. All activities are allowed, with the exception of hunting and trapping and camping until the close of the duck season. Some conflicts have occurred when fishing or pleasure boats have traversed Closed Areas and moved the ducks out toward the guns of waiting hunters. In recent years, "Voluntary Avoidance Areas" have been established and, through the use of signs, interpretive materials, buoys, and media releases, have become understood and supported by boaters and minimal conflicts exist at this time.

At Potter's Marsh, there is some evidence of a conflict between waterfowl hunters and trappers using airboats to check their traps and, in the process, disturbing the ducks each day. Time zoning is being implemented in the marsh to allow trappers to check their traps during a time of the day when there is little waterfowl use.

No other significant conflicts exist at this time between hunting and other public use activities. If conflicts occur in the future, they will be dealt with on a case-by-case basis.

- C. Administrative Conflicts: Deficiencies in funding and manpower, well documented in the recently completed and approved Refuge Master Plan, result in some conflicts between administration of the hunting program and administration of other refuge programs. With funding and staffing at current levels, the refuge is capable of administering the hunting program by foregoing some other management activities during the hunting season. Funding and staffing levels provided for in the Master Plan would eliminate these conflicts.

VII. Conduct of the Hunt

- A. Refuge-Specific Hunting Regulations: Following are hunting regulations specific to Upper Mississippi River National Wildlife and Fish Refuge:
1. Migratory Game Bird Hunting (50 CFR sec. 32.12). Hunting of migratory game birds is permitted on designated areas of the refuge subject to the following condition:
 - a. Permits are required for Potter's Marsh in Pool 13 except during the early teal season.
 2. Resident Game Hunting (50 CFR sec. 32.22). Hunting of upland game is permitted on designated areas of the refuge subject to the following conditions:
 - a. Hunting is not permitted between March 1 and the opening of the State fall hunting season except that hunting of wild turkey is permitted during the State spring turkey season.
 - b. Hunting is not permitted on the Goose Island Closed Area in Pool 8.
 - c. Hunting is permitted on other areas that are closed during the waterfowl hunting season and are designated by signs as "Area Closed" beginning the day after the close of the applicable State duck hunting season.
 3. Big Game Hunting (50 CFR sec. 32.32). Hunting of white-tailed deer is permitted on designated areas of the refuge subject to the following conditions:
 - a. Hunting is not permitted on the Goose Island Closed Area in Pool 8.
 - b. Hunting of deer is permitted on other areas that are closed during the waterfowl hunting season and are designated by

signs as "Area Closed" beginning the day after the close of the applicable State duck hunting season.

- c. Construction or use of permanent blinds, platforms or ladders is not permitted.
 - d. All stands must be removed from the refuge at the end of each day's hunt.
- B. Anticipated Public Reaction to the Hunt: Upper Mississippi Refuge has had a long-standing tradition of hunting. Hunting has occurred on the refuge for over 60 years. There have been no indications that hunting on the refuge has other than broad public acceptance.
- C. Hunter Application and Registration Procedures: The only refuge hunting requiring an application is the controlled hunt held at Potter's Marsh, near Thomson, Illinois. Hunters wishing a blind-building permit for one of 50 blind sites apply in person at the refuge's Savanna District Office.
- D. Description of Hunter Selection Process: Potter's Marsh blind permit winners are selected by a computer drawing held at the Regional Office. Winners are notified by mail, send their \$25.00 permit fee to the Savanna District Office, and are issued a blind-building permit by mail. They build blinds at numbered sites, designate three partners, and have priority hunting rights for that blind for the entire season.
- In Illinois, Pools 12, 13, and 14, blind sites are selected on a first come, first serve basis, and blinds built during a specified time period (usually six weeks). Blind builders have priority hunting from these blinds. However, blinds unoccupied one half hour before shooting time each day are available to anyone.
- At other areas on the refuge open to public hunting, selection of hunting sites is open to the general public on a first come, first serve basis.
- E. Media Selection for Announcing and Publicizing the Hunt: All television and radio stations and newspapers within approximately 100 miles of the refuge are sent public service announcements and news releases regarding the hunt. Since many hunters travel longer distances, the media of major population centers beyond 100 miles distance from the refuge, such as Chicago, the Twin Cities, and Des Moines, are also notified of conditions affecting hunting on Upper Mississippi Refuge.
- F. Description of Hunter Orientation, Including Pre-Hunt Scouting: Potter's Marsh hunters are provided with maps of the marsh which include blind locations. Those wishing to hunt other areas of the river bottoms within the refuge may request detailed pool maps from

refuge headquarters or one of the four district offices. Pre-hunt scouting is permitted.

- G. Hunter Requirements: The refuge lies within the boundaries of four states. In general, hunting regulations established by the states, which are in compliance with Federal waterfowl hunting regulations, govern the conduct and equipment of hunters on the refuge. An exception is the Potter's Marsh hunt (described below), which has special application/selection procedures for blind building permits, as well as some special permit conditions.
1. Potter's Marsh Hunt -- In order to hunt at Potter's Marsh, near Thomson, Illinois, interested individuals must apply in person at the refuge District Office, located in Savanna, Illinois. Applications are entered into a computer drawing for a permit, which allows the permittee and 3 partners of his choice to build a blind and boat hide at a pre-numbered blind site and to hunt from the blind for one season. A permit fee of \$25.00 is charged successful applicants to recover costs of administering the hunt.
 2. Allowable Equipment -- The use of dogs for hunting and retrieving of waterfowl and upland game birds is encouraged. Motorized land vehicles including snowmobiles are prohibited on refuge lands except on designated public roads and routes of travel and on ice over navigable waters. Hunters may cut willow for hunting blinds.
 3. Use of Open Fires -- Campfires are permitted on the refuge, using only dead and down wood or imported material such as charcoal. Burying live fires is prohibited.
 4. Licenses and Permits -- Hunters must meet all State and Federal license requirements. In addition, those wishing to build a blind in Potter's Marsh near Thomson, Illinois must obtain a refuge permit. Illinois applicants for the Potter's Marsh hunt are required to have in their possession an Illinois Firearm Owner's Identification Card.
 5. Reporting Harvest -- Currently, there are no requirements for the reporting of harvest beyond reports required by state law. Random bag checks are made during waterfowl hunting season.
 6. Hunter Training and Safety -- Regulations vary between the four states in which the refuge lies regarding hunter training and safety. Refuge staff have occasionally, but not routinely, participated in hunter training, because of the small staff available for this large refuge.

PUBLIC HUNTING AND FISHING PLAN

UPPER MISSISSIPPI RIVER WILDLIFE AND FISH REFUGE

A. GENERAL PROCEDURES

1. PRIMARY WILDLIFE MANAGEMENT OBJECTIVES

a. Migratory Waterfowl

- (1) Provide series of steppingstone, resting and feeding sanctuaries for both puddle ducks and divers, throughout the 284-mile-long stretch of the Mississippi River Flyway which makes up the Upper Mississippi Refuge, thus providing protection to a portion of the flyway population. Has 30 to 35 million days use by waterfowl per year.
- (2) Provide sustained and equalized hunting opportunities for an equitable, fair-share harvest of the surplus over this length of the river.
- (3) Preserve and improve wood duck nesting habitat, the only important nesting duck on this refuge.

b. Migratory Birds other than Waterfowl

- (1) Provide protection and habitat incidental to waterfowl management, including nesting grounds for colonial birds such as egrets and herons and serving as an important wintering area for bald eagles.
- * (2) Coots, rails, gallinules, snipe, mourning doves and woodcock are provided feeding and resting grounds in the "closed" areas where hunting of these species is prohibited.

Prior to 1968, hunting on the "open" areas was limited to the period beginning with the opening day of the first duck or goose season and running through March 1. Discharge of firearms on the open areas from March 1 through to the first day of the duck or goose season was prohibited.

Beginning in 1968 hunting of all game birds and animals on the "open" areas will be in accordance with applicable state seasons and regulations regardless of whether the duck or goose season has opened. This conformance to state seasons will be compatible with management objectives.

Hunting of non-waterfowl species before the opening of the waterfowl season will not materially reduce the attractiveness of the "open" areas to ducks and geese. It is prudent in this case to comply with state regulations, thus creating better relations with the states and generally simplifying the administration of public hunting on the refuge.

c. Big Game

- (1) Provide protection and habitat incidental to waterfowl management.

d. *Upland Game Birds and Small Game Animals*

- (1) Extremely limited population purely incidental to waterfowl management.

e. Furbearers

- (1) Provide sustained harvest of this economically important resource, with primary consideration given to relationship of furbearer populations to development of waterfowl habitat improvement program.

2. ROLE OF REFUGE IN MANAGEMENT OF MIGRATORY BIRDS ON FLYWAY BASIS

a. Species Principally Benefited

- (1) Mallard: Makes up 26 to 38% of total fall use of refuge and ranks first or second in importance on refuge. Flyway population has been losing ground, on this, our most important table duck. A large segment of the flyway population utilizes this refuge with 4 to 5 million days use.
- (2) Widgeon: Makes up 17 to 28% of total use of refuge and ranks close to mallards in importance. General status in the flyway is excellent.
- (3) Lesser scaup: Makes up 9 to 16% of fall use and is third most important duck. All divers suffered materially during the past breeding season and over a million days use each fall on this refuge is extremely important to the preservation of this species in the flyway.
- (4) Blue-winged teal: Makes 8 to 10% of total fall use and ranks fourth in importance on this refuge. Flyway wise, its status is not in danger unless continued drought on the breeding grounds occurs.
- (5) Ring-neck - wood duck - pintail - canvasback: These four make up two to eight per cent each of the total fall use of the refuge. The wood duck has been under special protection for the past several years and this flyway and the segment of the population utilizing the refuge for both breeding and resting is of primary importance for this species. Ring-necks and canvasback are in the endangered species category. Although canvasbacks received special regulative protection last year throughout the flyway and nation, they still lost ground.
- (6) Redheads - ruddy: Redheads are not a principal species of the Upper Mississippi Refuge as kill and use usually amount to about 1% of the population and bag. The ruddy use and kill are negligible. In that these are also endangered species, and the fact that the same habitat and management apply as to the canvasback, these two species are mentioned.

3. ACREAGE, DEGREE OF DEVELOPMENT, & TOTAL POTENTIAL WATERFOWL HABITAT

- a. Acreage: 41,000 in 13 closed area units
 153,000 in public hunting grounds
 194,000 acres total

b. Degree of Development

After acquisition was initiated for this refuge, the Corps of Engineers entered into the picture in connection with the development of the 9-foot channel for navigation. This resulted in the construction of a series of huge locks and dams and converted this stretch of the river and refuge into twelve pools containing thousands of acres of waterfowl habitat. As a result the major development of the refuge came about through the Corps. Remaining development is limited to "refined" development of small portions of waterfowl habitat in the various pools through secondary low level dikes, small controls, establishment of moist soil plantings, and reclamation of former agricultural areas for food crops which have reverted to brush.

c. Percentage of Marsh and Water Developed as Related to Potential Planned

When consideration is given to development accomplished for us by the Corps, combined with development already completed or underway by the Service, it is estimated that 75% of the planned and possible potential has been accomplished.

4. ACREAGE UTILIZED BY WATERFOWL

a. Habitat Units (All acreage used by waterfowl)

(1) Water: 84,132 acres principally used by: lesser scaup
ring-neck
canvasback

(2) Marsh: 65,538 acres principally used by: mallard
widgeon
blue-winged teal
wood duck
pintail

(3) Upland: 44,280 acres principally used by: mallard
widgeon
blue-winged teal
wood duck
pintail

(4) Crops: 369 acres principally used by: mallard

5. EXTENT AND SCOPE OF PUBLIC REACTION TO CHANGES

Any change in closed area boundaries provokes loud and widespread discussion, and always includes an "opposition" group which usually resorts to contacting their Congressmen in an effort to block

interference with their hunting and hunting locations. Certain "opposition" groups are still working to eliminate or revise closed areas installed in 1957. There are instances where additional or more suitable closed areas could be established to improve waterfowl use and provide increased hunting opportunities, which could not be set up at the time of the 1957 revision. In these cases, hunters have or will realize the need for improved management practices and it is believed the opposition will be light in due time or that the hunters themselves will request the changes we desire to make.

B. WATERFOWL HUNTING

1. JUSTIFICATION FOR OPENING, CLOSING, OR CHANGING STATUS OF WATERFOWL HUNTING ON REFUGE

Primary function of this refuge is to provide resting habitat and food for a large segment of the birds of the Mississippi Flyway while they are within the 284 mile long stretch of the refuge. Secondary function is to provide free equalized hunting opportunity, in so far as possible, throughout the open hunting areas of the refuge, and permit a fair-share harvest of the surplus in this segment of the flyway. Justification for any changes must therefore be based on the above two factors.

Hunting opportunities on private, commercial, or other public lands within fifty miles of the refuge, are extremely limited, and provide for only a small fraction of the hunters utilizing the Mississippi River valley. Hunting pressure is extremely high on waterfowl and comes from a good portion of the states of Minnesota, Wisconsin, Iowa, and northern Illinois. Minneapolis, St. Paul, Milwaukee, and Chicago contribute their share of hunter pressure.

2. MANAGEMENT BENEFITS AND CONFLICTS FROM PROPOSED HUNTING STATUS

The closed area program of 20% closed and 80% open is designed to provide the necessary maximum protection of the waterfowl while in this portion of the flyway and allow an equitable harvest of the surplus while providing as wide a distribution of hunters as possible. The principal management benefit in the hunting status proposed is adequate protection providing resting and feeding areas. The principal conflict of the present status is the desire of hunters for a larger kill, more open and less closed area, or reduction in size of individual closed areas. In the face of the present decline in waterfowl populations, it may conceivably be necessary to close more of the hunting areas to provide increased protection to the waterfowl population, conversely cutting down the kill, which has averaged 1.22 ducks per hunter per day over the past 14 years. This kill has provided

a total take of birds running from 86,000 in 1959 up to a high of 208,000 birds per year over the past 6 years.

Maps showing the closed area system in effect from 1958 thru 1967 are to be found at the end of this plan marked Exhibits A thru L.

Establishment of additional closed areas will provide added protection to the resource, but will at the same time increase hunting opportunities around the outside of the area and increase the take in that area.

3. DAYS USE OF AREA

- a. Waterfowl days use September through January for last 5 years
See following tables.
- b. Similar data for important waterfowl species
See following tables.
- c. Waterfowl use by weekly periods during preceding season
See following tables.

WATERFCWL USE DAYS - September through January

September, 1955, through January, 1960

Species	1955-56	1956-57	1957-58	1958-59	1959-60	5-year Average
Mallard	3,747,513	6,197,023	4,990,790	4,856,684	2,253,377	4,409,077
Black	245,861	163,261	259,966	188,580	90,937	189,775
Gadwall	84,392	95,270	127,855	138,635	188,489	126,928
Baldpate	873,180	582,799	2,404,731	2,529,702	2,352,581	1,748,598
Pintail	615,748	387,275	859,705	836,829	332,836	606,478
G.w.teal	153,790	225,715	229,292	270,795	101,444	196,207
B.w.teal	814,688	1,066,380	1,372,455	1,081,927	796,558	1,026,401
Shoveller	13,811	29,260	35,420	44,716	13,664	27,374
Wood duck	459,648	361,011	286,461	331,450	402,612	368,236
Redhead	131,740	101,745	131,775	91,105	33,292	97,931
Ring-neck	1,204,161	933,870	1,194,732	638,960	241,682	842,681
Canvas-back	149,835	234,080	492,590	473,382	204,218	310,821
Scaup	1,881,985	880,705	1,600,312	1,197,868	1,344,028	1,380,979
Golden-eye	130,711	207,196	293,085	137,284	101,136	173,882
Bufflehead	27,965	14,546	8,155	9,639	21,756	16,412
Ruddy	23,975	18,760	31,185	13,125	18,683	21,145
Mergansers	79,548	77,854	129,759	61,761	93,093	88,403
Old squaw	-	-	-	-	210	42
W.wing scoter	-	-	-	-	112	22
TOTAL DUCKS	10,638,551	11,576,750	14,448,268	12,902,442	8,590,708	11,631,394
Coot	6,330,660	6,441,736	7,149,639	7,118,195	4,769,214	6,361,888
Canada geese	73,997	100,541	58,625	50,365	74,816	71,668
Snow geese	24,325	46,410	33,166	22,281	9,583	27,153
Blue geese	26,145	61,558	30,898	16,219	9,037	28,971
Swans	2,870	2,891	14,609	1,225	8,015	5,922
TOTAL						
WATERFOWL	17,096,548	18,229,886	21,735,205	20,111,385	13,461,373	18,126,996

Weekly Days Use - 1959 Hunting Season

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	9/19	9/26	10/3	10/10	10/17	10/24	10/31	11/7	11/14	11/21	11/28	12/5	12/12	12/19	12/26
Mallard	86,450	95,900	81,900	181,643	255,556	314,125	316,652	275,450	171,640	75,187	87,864	59,325	51,121	43,491	21,056
Black	4,060	4,480	4,410	11,466	14,196	13,545	11,424	7,665	6,650	805	910	2,310	1,631	595	371
Gadwall	7	140	6,531	12,054	78,974	28,350	35,112	21,070	6,195	49	7	-	-	-	-
Baldpate	114,450	156,100	251,650	288,141	507,430	288,750	373,415	252,070	96,460	-	-	-	-	-	-
Pintail	25,550	33,950	24,640	52,227	68,159	67,340	23,814	19,565	5,831	-	-	-	-	-	-
G.w. teal	2,520	5,950	3,675	15,764	22,134	18,725	20,538	9,590	868	-	-	-	-	-	-
B.w. teal	193,550	165,900	57,050	40,880	15,960	6,545	1,176	147	-	-	-	-	-	-	-
Shoveller	7	-	175	4,235	3,640	3,185	700	1,372	350	-	-	-	-	-	-
Wood duck	68,495	78,680	53,480	35,707	23,450	9,135	5,614	2,443	224	7	7	-	-	-	-
Redhead	-	-	-	3,290	10,500	7,314	4,088	4,515	3,164	420	-	-	-	-	-
Ring-neck	56	84	1,225	8,638	48,580	51,800	38,724	42,455	47,915	1,414	7	7	-	-	-
Canvas-back	-	-	-	490	51,100	42,357	55,937	36,267	17,094	791	175	7	-	-	-
Scaup	350	350	721	20,132	112,210	181,300	531,573	345,975	142,450	5,915	791	1,113	21	49	28
Golden-eye	7	7	14	378	1,750	2,317	2,779	5,292	15,995	4,165	5,075	6,993	7,980	6,524	17,745
Bufflehead	-	-	-	-	2,114	1,477	903	875	14,497	1,400	490	-	-	-	-
Ruddy	28	175	175	560	4,921	2,870	3,213	3,507	2,492	700	-	-	-	-	-
Merganser	945	945	420	560	1,120	3,780	2,037	4,354	14,875	4,060	5,810	4,795	4,795	6,125	9,905
Other	-	-	-	-	-	-	-	-	140	-	-	-	-	-	-
TOTAL	496,475	542,661	486,066	676,165	1,221,794	1,042,321	1,427,699	1,032,612	546,840	95,060	101,066	74,130	65,548	56,784	49,105

4. RECOMMENDATIONS FOR CHANGES IN WATERFOWL HUNTING STATUS

a. Bagley Bottoms Closed Area - Pool 10

The present closed area in Pool 10 is not the desired or recommended closed area, but a poor substitute as a result of pressure and compromise to place our general closed area program in effect. Adequate resting and feeding grounds are not closed in Pool 10 to permit holding its proportionate share of migrating fowl. As a result, hunters are not able to harvest a fair-share of birds in this pool as compared to other pools.

The following maps show the present and proposed closed areas for Pool 10. Five hundred forty-three acres are now closed in contrast to 1,800 proposed, or a possible compromise to 1,200 acres.

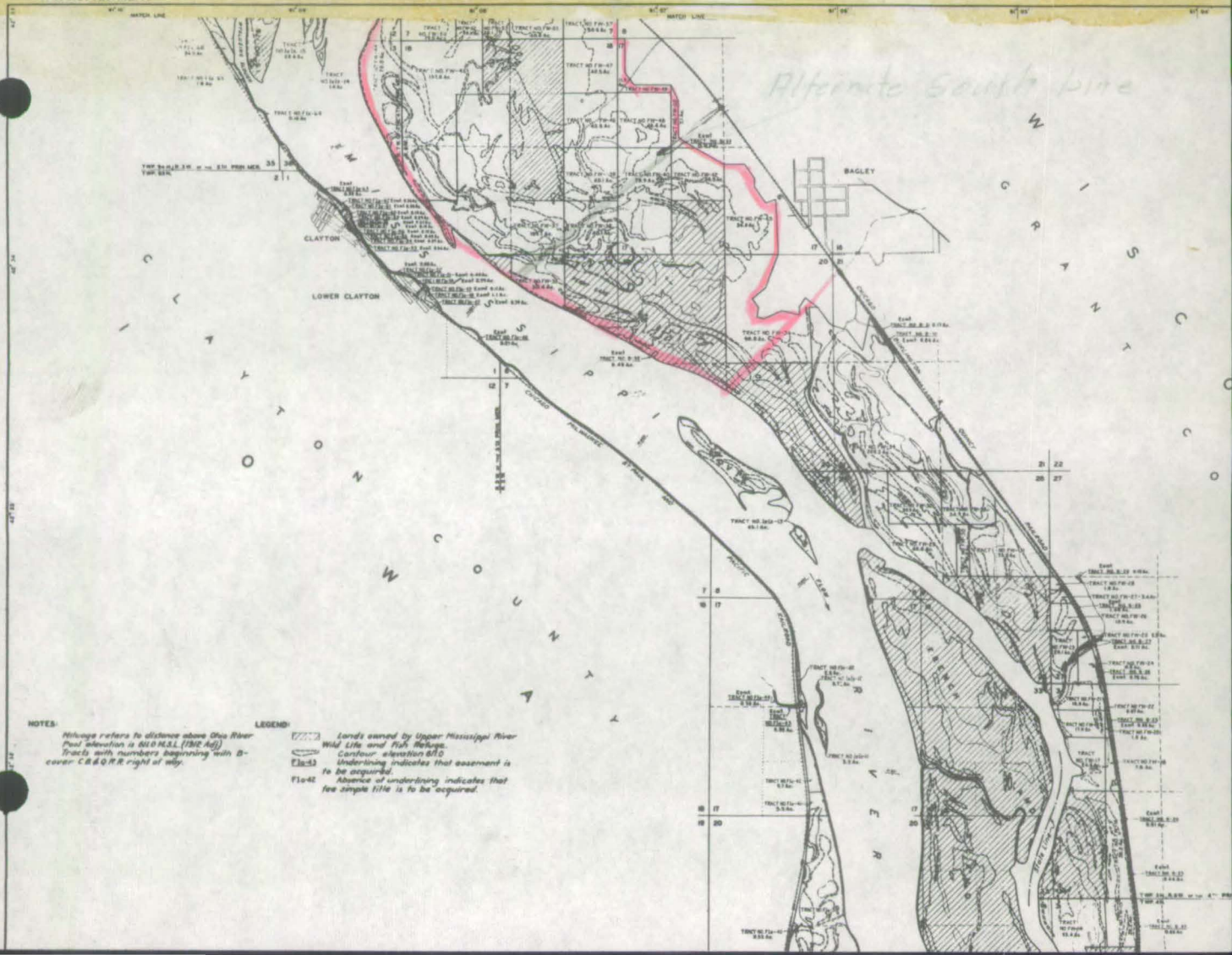
b. Target Lake Closed Area - Pool 8

There is considerable pressure from the hunters in Minnesota to close an area in Pool 8 in Minnesota to hold birds and improve shooting in Minnesota. Present closed areas in Pool 8 are of primary benefit to Wisconsin hunters. A map of the proposed 1,000 acre closed area follows. This proposal will tend to increase kill in Minnesota by holding more birds in the Minnesota portion of the pool. It is possible that this distribution of birds and kill will be somewhat offset by a reduction in kill on the Wisconsin side. Such a closed area would provide more equitable distribution of hunting opportunities while providing additional sanctuary area for the birds.

c. Wisconsin Side Pool 9 Closed Area

There is considerable pressure by Wisconsin and Iowa residents for a closed area similar to the old Winnesheik to provide more equitable hunting on the Wisconsin side of Pool 9. We are not ready at present to make recommendations on this proposal as the interference by navigation in this pool presents a major problem.

WAR DEPARTMENT

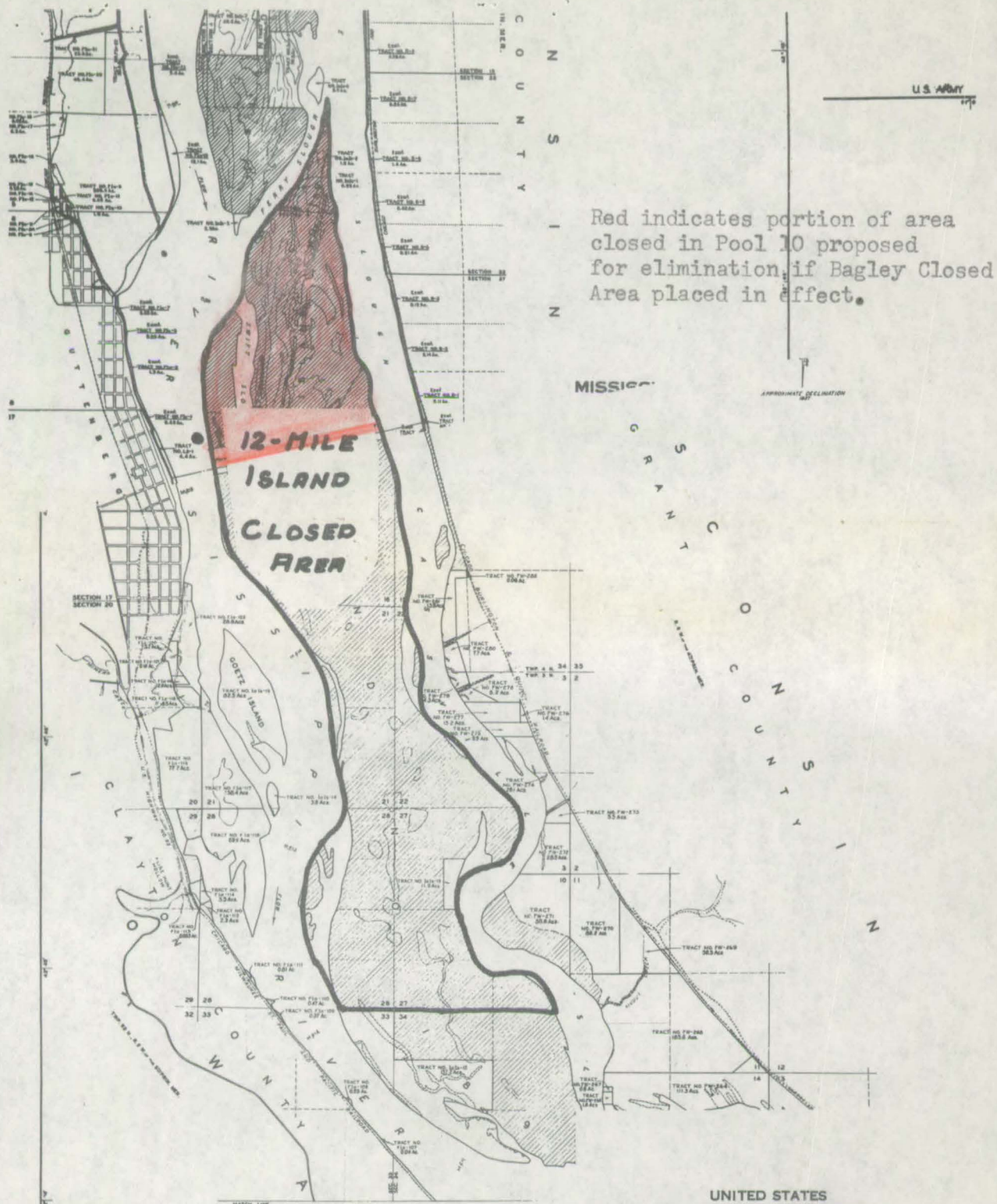


NOTES:

Mileage refers to distance above Ohio River
Pool elevation is 610 M.S.L. (T.M. Adj.)
Tracts with numbers beginning with B-
cover C.B.G.R.R. right of way.

LEGEND:

- Lands owned by Upper Mississippi River
Wild Life and Fish Refuge.
- Contour elevation 610
- Underlying indicates that easement is
to be acquired.
- Absence of underlying indicates that
fee simple title is to be acquired.

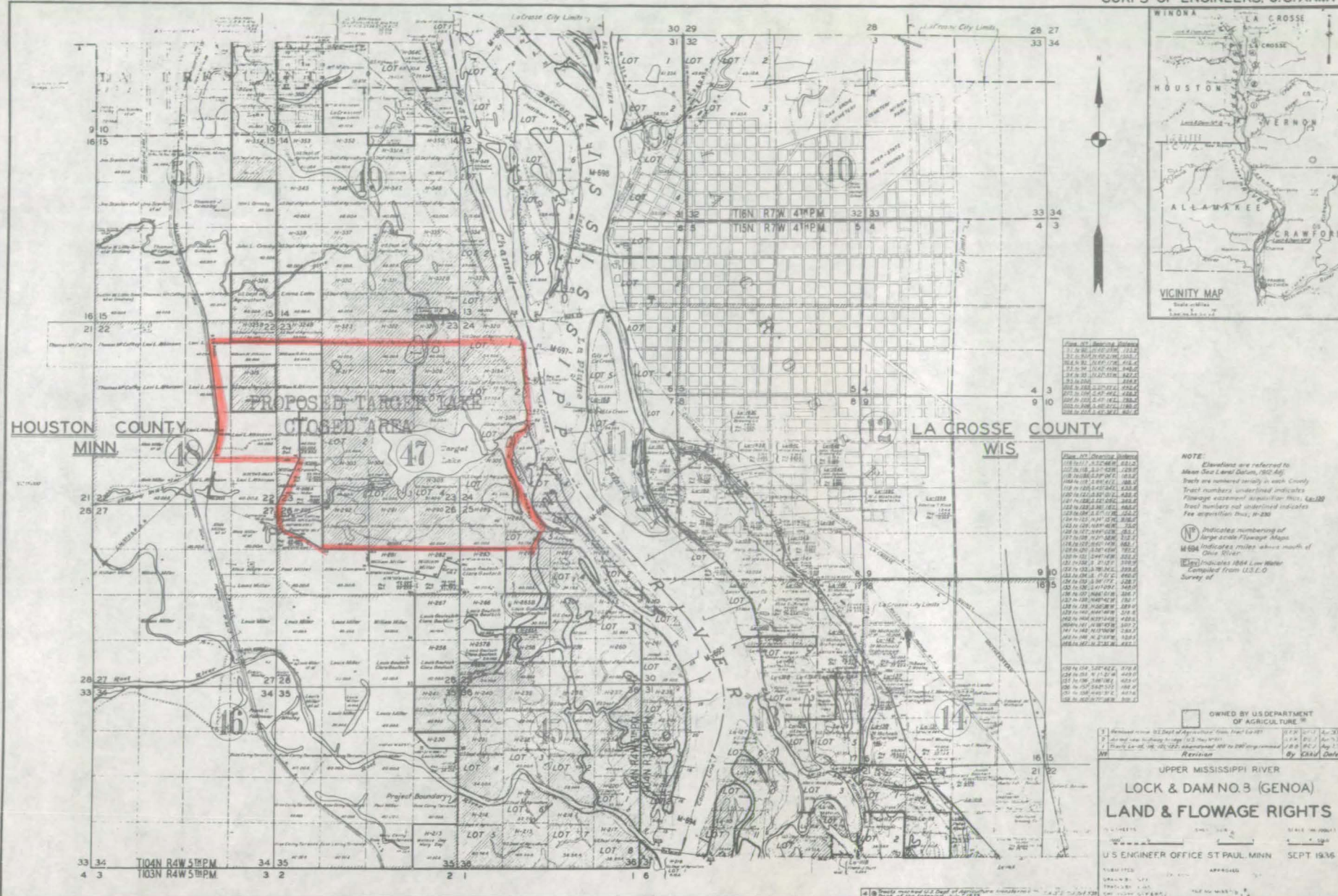


UNITED STATES
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FISH AND WILDLIFE SERVICE
UPPER MISSISSIPPI RIVER WILDLIFE AND FISH REFUGE

POOLS 10 & 11 - MISSISSIPPI RIVER

NOTES:
Mileage refers to distance above Ohio River
Pool elevation is 603.0 feet M.S.L. (192 Ad.)

LEGEND:
Contour Elevation 603.0
Lands owned by Upper Mississippi River Wild
Life and Fish Refuge over which permission
to use for and subsurface granted by letter
from Acting Secretary of Agriculture to
Secretary of War dated 6 Oct. 1931
(for enclosures see sheet 1 of 6)



d. Winona Pool Closed Area

There is agitation for revision of the boundaries of this closed area to improve hunting opportunities in this pool. The present boundaries do not lend themselves to as high a kill in this pool as in many of the other pools of the refuge. Compromise proposals of hunters have not met with approval of this office and we are not prepared at this time to make a concrete proposal.

e. Navigation Rights Versus Closed Areas

It is strongly recommended that some regulation or authority be obtained wherein navigation (except on the main channel of the Mississippi) within our closed areas can be controlled or eliminated during the fall waterfowl hunting season. This would also eliminate fishing in the closed areas during the fall. Free unhampered navigation as now occurs is a decided detriment in connection with waterfowl. As boats and motors get larger, faster, and of more efficient weedless types, this problem will increase to where it becomes untenable. We should not wait until the horse is stolen, but shut the door before it becomes impossible to shut. This very problem made it necessary to revise many of our closed areas in the past, and continues to be a problem in trying to establish areas free from navigation. Increasing use of airboats also will become a problem in time.

f. Outboard Motors on Public Hunting Grounds

The greatly increasing use of outboards, their larger size and ability to navigate through weeds is becoming another major problem on public hunting grounds. They keep a state of continual disturbance in some areas and ruin opportunities for shooting by the continual movement of same. The motors tear up great amounts of aquatic vegetation as well as cause considerable destruction to emergents. Navigation rights are reserved to the public by the refuge Enabling Acts. Definite steps should be taken to provide for authority to either prohibit the use, or limit size and horsepower of outboards on refuge public hunting grounds as deemed necessary on the Upper Mississippi Refuge.

5. ESTIMATED KILL FROM NEW OPENINGS

- a. The only new opening would be the upper end of 12-Mile Island closed area in Pool 10 in exchange for the Bagley closed area.

6. MANAGEMENT OF PUBLIC HUNTING

- a. Public hunting on the Upper Mississippi Refuge has and should continue to be free public hunting in accordance with state and federal regulations. Regulated public hunting such as occurs in Illinois under state laws will be permitted.
- b. *In the management of the "closed" areas of the refuge, the 1959 goose season presented a problem. Prior to that time, all hunting had been prohibited on the closed areas during the migratory "waterfowl" seasons. Extension of the goose season beyond the duck season eliminated deer hunting in Iowa and some archery deer hunting in Illinois and Wisconsin. The policy of hunting upland game animals and birds on the "closed" areas was revised in 1960 to permit such hunting during state seasons after the close of the "duck" season rather than the "waterfowl" season. There are so few geese remaining in such a situation that no conflict would develop from this change in policy.*

C. HUNTING OF RESIDENT GAME SPECIES

1. SPECIES RECOMMENDED FOR HARVEST

- a. White tail deer number about 1,000 to 1,500 depending on season of year. Population is more or less static.
- b. Squirrels, rabbits, raccoon, fox, pheasant, ruffed grouse, and quail are present in limited numbers. Usage is dependent on water levels of the Mississippi River. Hunting pressure is generally light and mostly incidental to waterfowl and deer hunting.

2. NEED FOR REMOVAL

- a. Control of predators in case of raccoon and fox.
- b. Harvest surplus in case of deer and other game species.

3. STATUS OF STATE SUPPORT OF PROGRAM

- a. States of Wisconsin, Minnesota, Iowa, and Illinois support our program of permitting hunting in accordance with state established seasons, with the exception that all closed areas are closed to hunting of any kind until the end of the waterfowl season. There is some conflict with keeping the closed areas closed to deer hunting and trapping after freeze-up even though the waterfowl season may still be open. We recommend such hunting and trapping be permitted after freeze-up.

4. OPEN HUNTING AREAS

- a. The entire refuge, excluding the closed areas, is open to hunting of resident game species. The closed areas are open after the close of waterfowl season, and until March 1 each year.

D. FISHING

1. FISHERIES MANAGEMENT PROGRAM

- a. *The entire refuge is open to the taking of fish, frogs, clams, and turtles at all times in accordance with state regulations.*
- b. It is recommended that authority be obtained to prohibit navigation and both sport and commercial fishing in the closed areas during the waterfowl season to prevent disturbance to waterfowl and prevent destruction of aquatic vegetation in hauling of nets and seines.

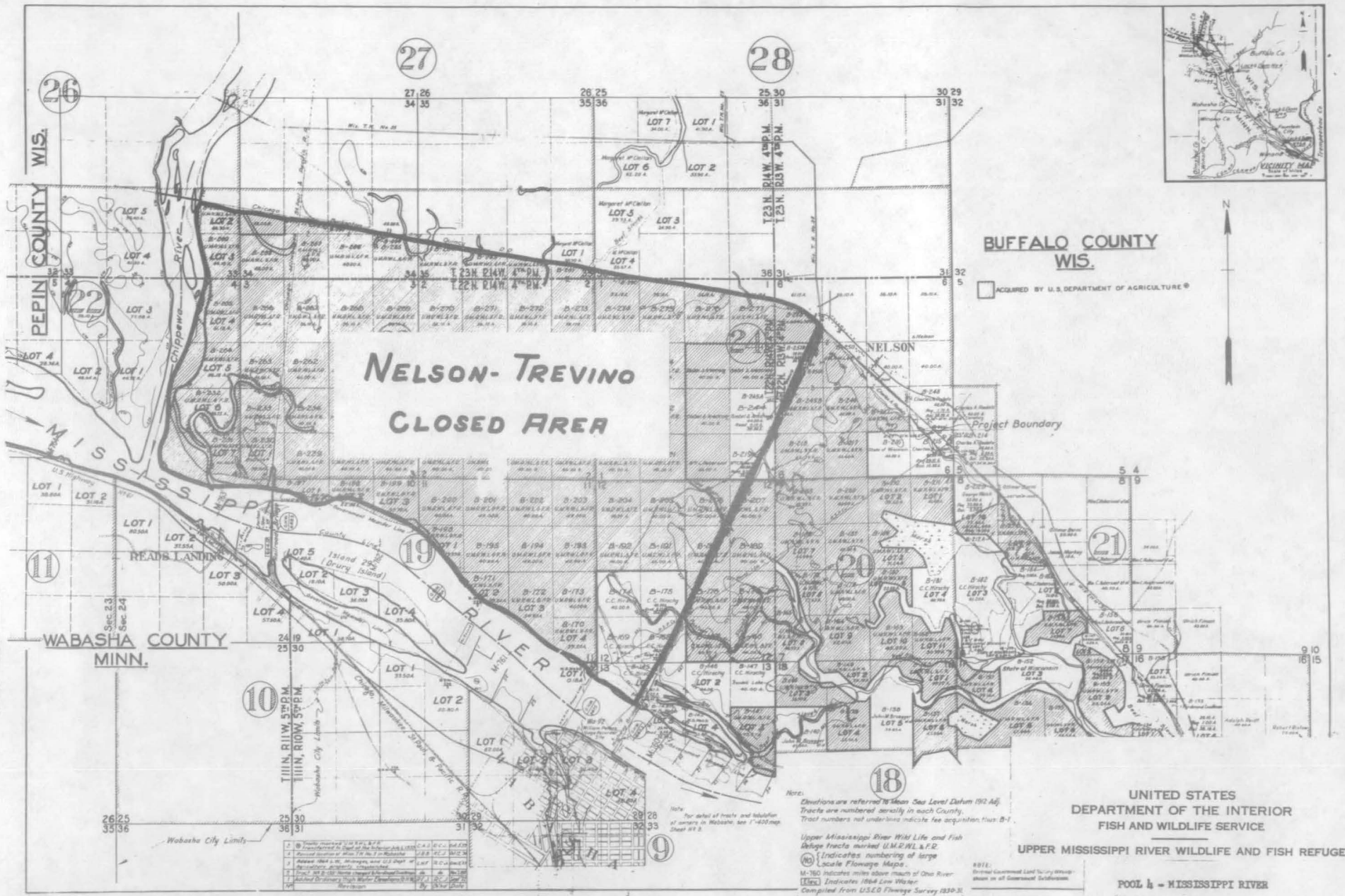
2. JUSTIFICATION FOR OPEN FISHING

- a. Tremendous public recreational use and very little fishing opportunity outside of the refuge.
- b. Right of navigation reserved to public and fishing cannot be prohibited under present regulations.

*E. MINOR ADMINISTRATIVE ADJUSTMENTS IN CLOSED AREA BOUNDARIES

1. After establishment of the present Spring Lake Closed Area (Exhibit "L") and through the cooperation of the Corps of Engineers, cropland adjacent to the east side of the closed area has been included under Bureau management. This, coupled with our new cross levee and pumping station in the northern portion of the closed area, make a minor adjustment desirable in the closed area boundary to most effectively manage this area. Authority is therefore requested to expand the closed area boundaries of the Spring Lake Closed Area to include the land shown in red on Exhibit "L". Mr. William T. Lodge, Director, Department of Conservation, Illinois, approved of this proposal on February 13, 1968 by letter to the Refuge Manager.
2. A small tract in the middle of the Dago Slough Closed Area (Exhibit "J") has now become available from the Corps of Engineers for inclusion in the closed area. Authority is requested to expand the closed area boundary of the Dago Slough Closed Area to include the land shown in red on Exhibit "J". L. P. Voigt, Secretary of the Department of Natural Resources, State of Wisconsin, approved of this proposal on July 10, 1968 by letter to the Refuge Manager.

3. A small tract in the middle of the Pleasant Creek Closed Area (Exhibit "K") has now also become available from the Corps of Engineers for inclusion in the closed area. Authority is therefore requested to expand the closed area boundaries of the Pleasant Creek Closed Area to include the land shown in red on Exhibit "K". Mr. E. T. Rose, Chief, Division of Fish and Game, Iowa State Conservation Commission, approved of this proposal on January 23, 1968 by letter to the Refuge Manager.*



WAR DEPARTMENT

CORPS OF ENGINEERS, U.S. ARMY

Map of Whitman - Lost Island Closed Area
 as indicated by 1958 Low Water
 Compiled from U.S.C.O. Floodage Survey, 1958

ACQUIRED BY U.S. DEPARTMENT OF THE INTERIOR

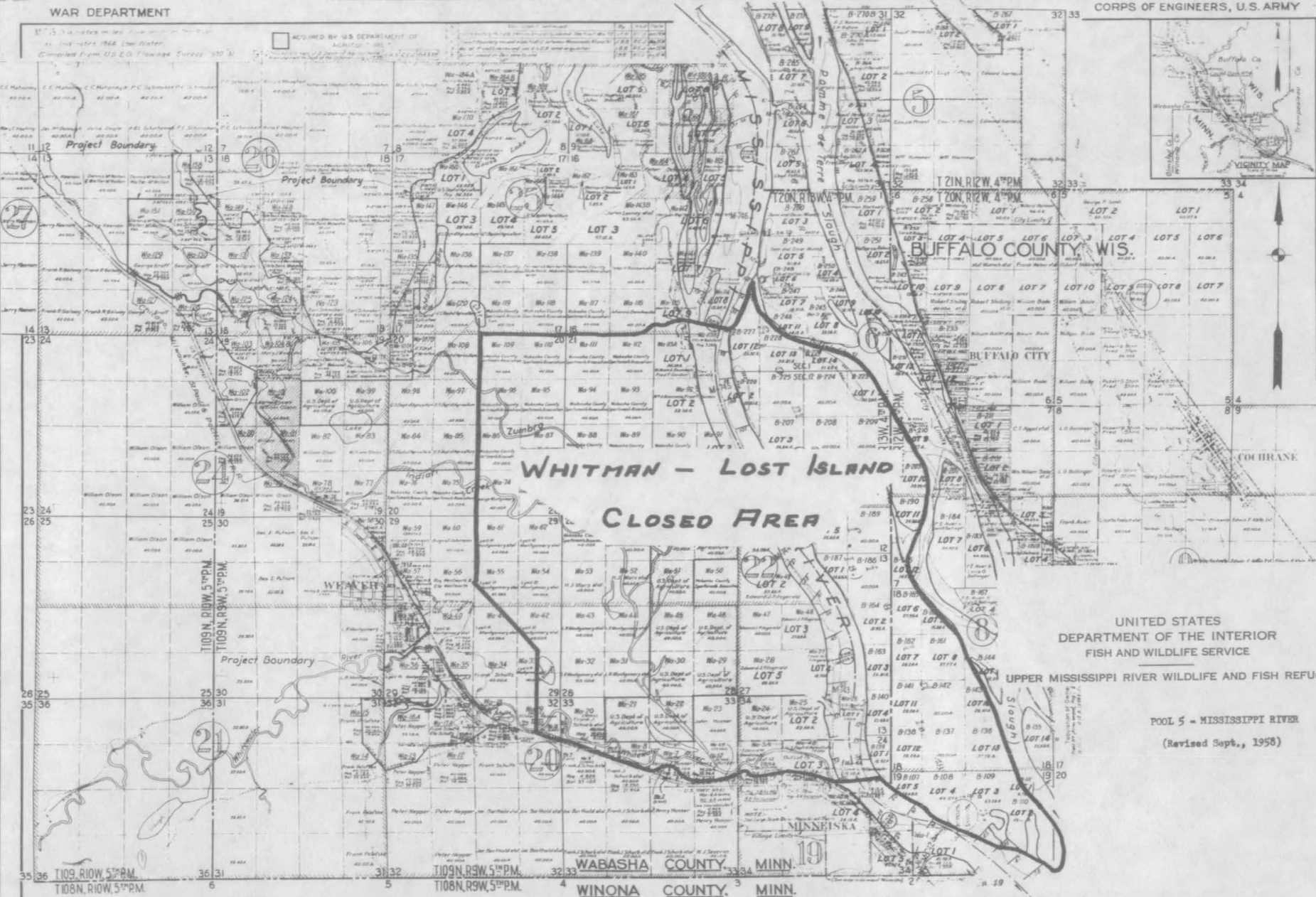
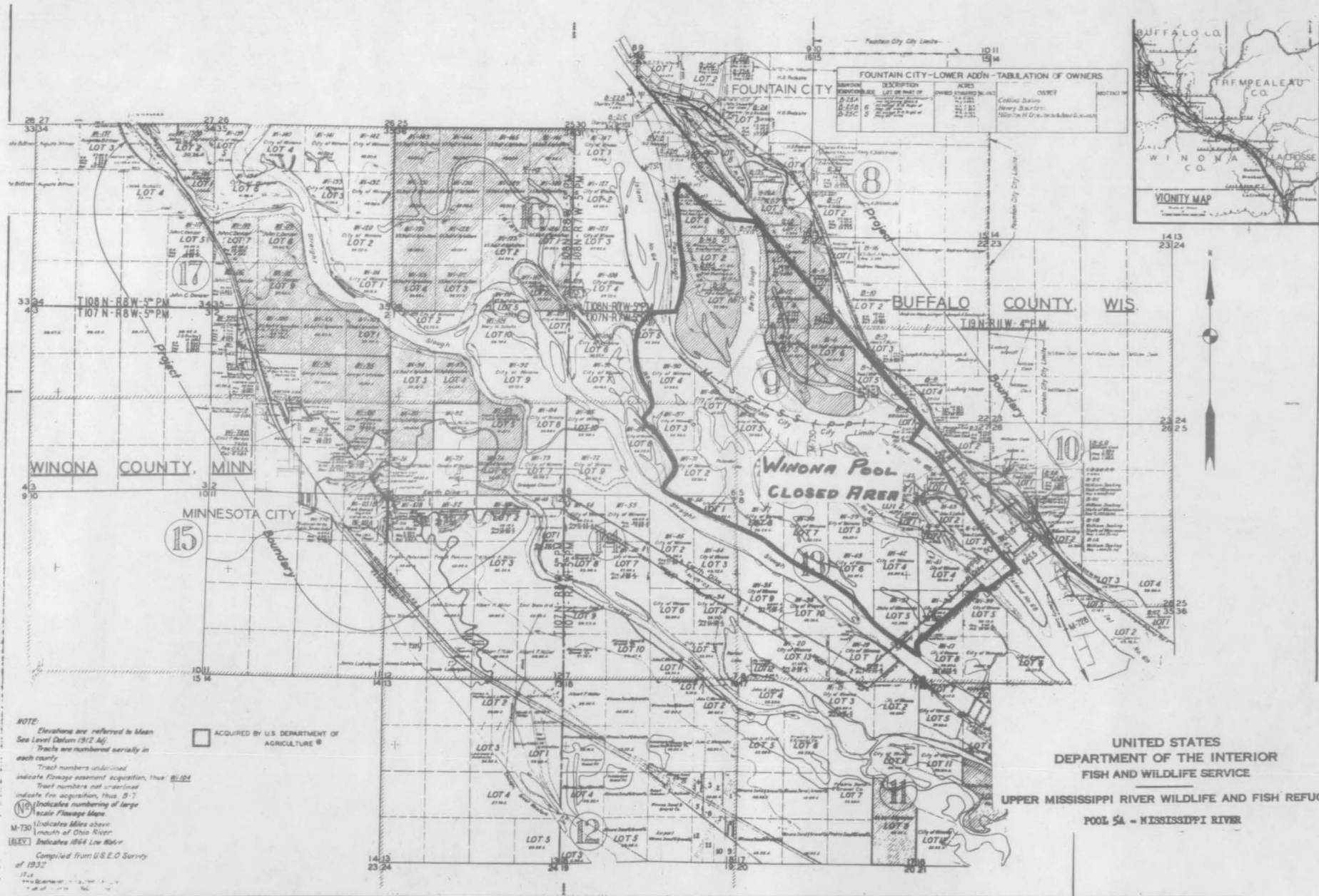


EXHIBIT "C"

EXHIBIT "D"

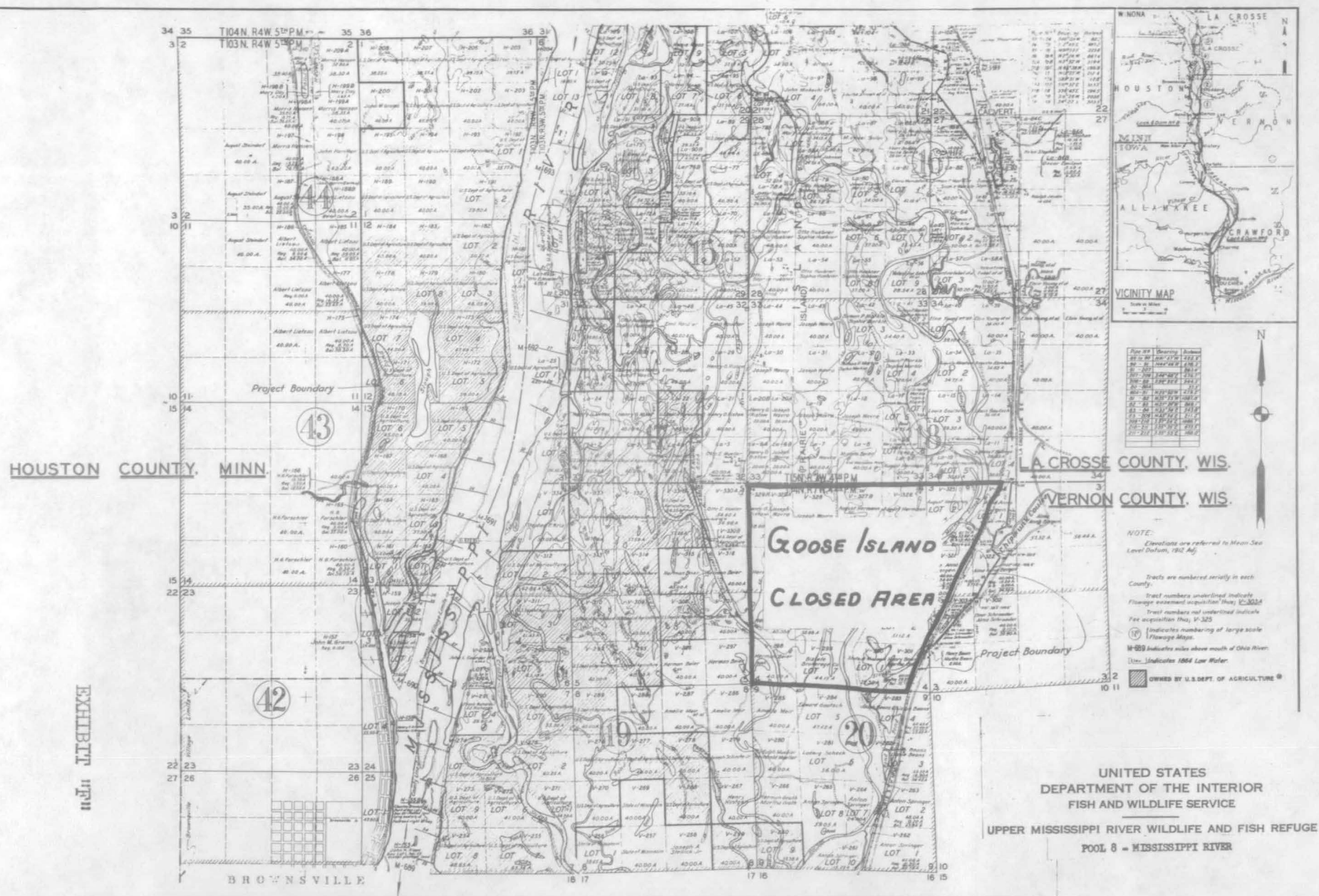


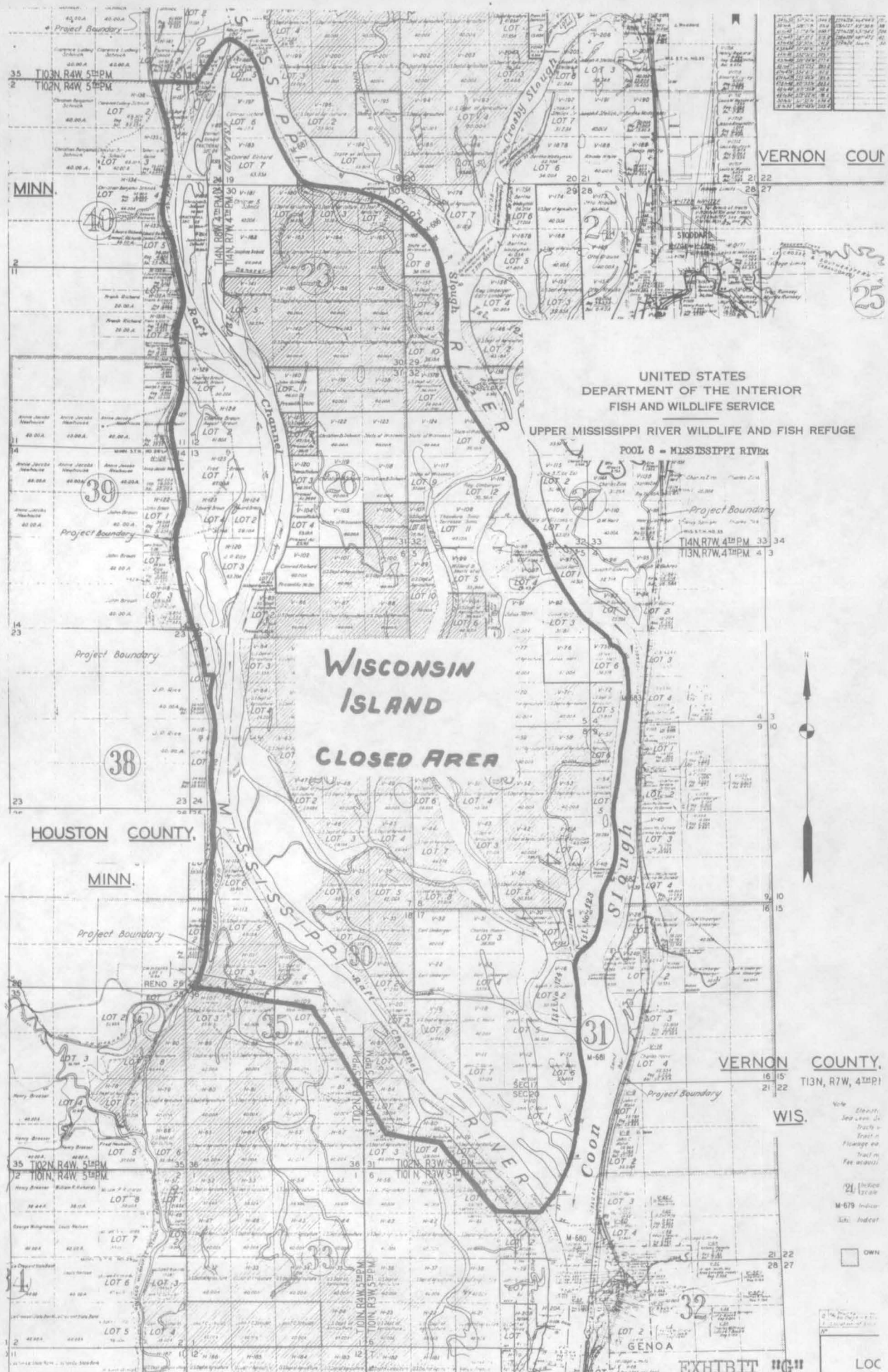
POOL 7 - MISSISSIPPI RIVER

LA CROSSE COUNTY, WIS

LA CROSSE
CLOSED AREA

EXHIBIT "E"





VERNON COUNTY

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

UPPER MISSISSIPPI RIVER WILDLIFE AND FISH REFUGE

POOL 6 - MISSISSIPPI RIVER

WISCONSIN
ISLAND
CLOSED AREA

HOUSTON COUNTY

MINN.

VERNON COUNTY

WIS.

EXHIBIT 11

LOC

ALLAMAKEE COUNTY,
IOWA.

HARPERS SLOUGH CLOSED AREA

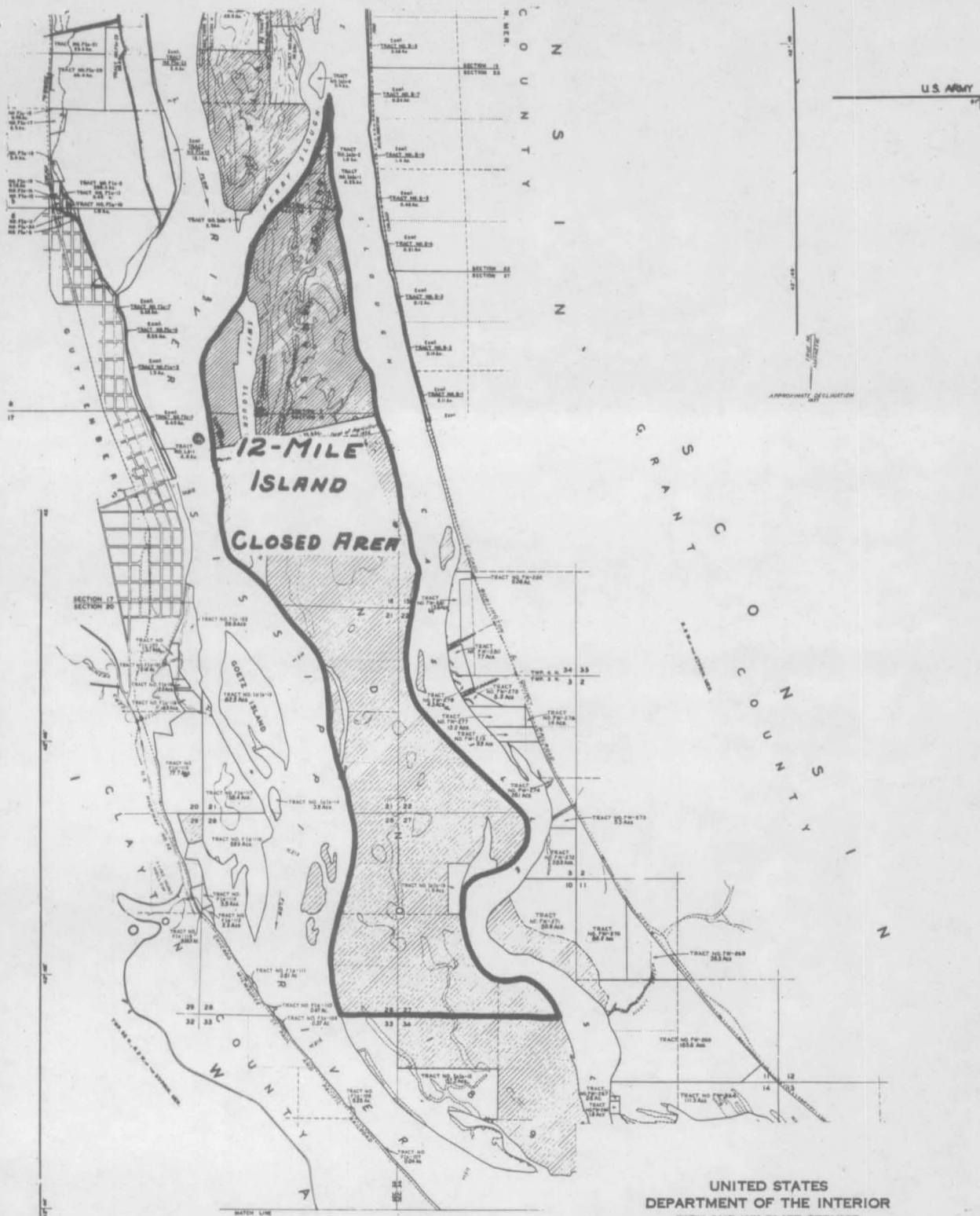
CRAWFORD COUNTY, WIS.

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

UPPER MISSISSIPPI RIVER WILDLIFE AND FISH REFUGE

POOL 9 - MISSISSIPPI RIVER

EXHIBIT "H"



NOTES:
Mileage refers to distance above Ohio River.
Pool elevation = 603.0 feet M.S.L. (1912 Ag.)

LEGEND:
Contour Elevation 603.0
Lands owned by Upper Mississippi River Wild
Life and Fish Refuge over which permission
to over flow and submerge granted by letter
from Acting Secretary of Agriculture to
Secretary of War dated 4 Oct. 1931.
(for acreages see sheet 1 of 6)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
UPPER MISSISSIPPI RIVER WILDLIFE AND FISH REFUGE
POOLS 10 & 11 - MISSISSIPPI RIVER

EXHIBIT "I"

