

POWELL MARSH WILDLIFE AREA  
 MASTER PLAN  
 CONCEPT ELEMENT

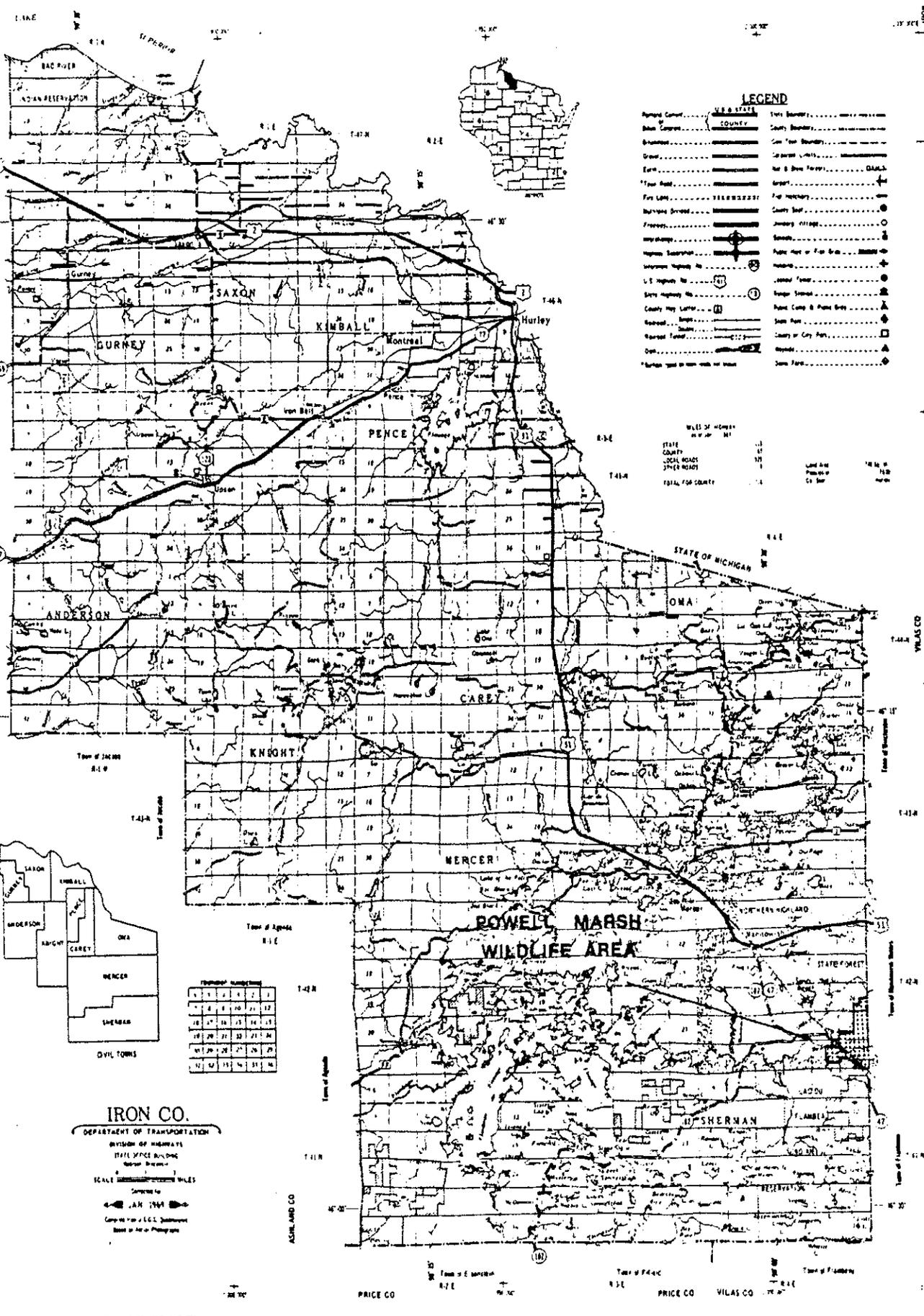


PROPERTY TASK FORCE:

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 LYLE HANNAHS, PARKS AND RECREATION  
 RALPH HEWETT, AL-NH FORESTER

SUBMITTED: OCT 1 1979

APPROVED BY NATURAL RESOURCES BOARD: AUG 21 1980

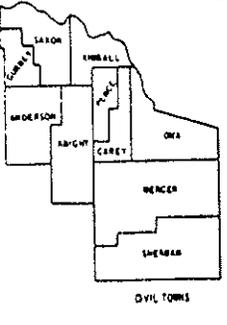


**LEGEND**

- |                      |                |                          |       |
|----------------------|----------------|--------------------------|-------|
| Adjoining County     | --- --- STATE  | Town Boundary            | ----- |
| State Boundary       | --- --- COUNTY | County Boundary          | ----- |
| Unimproved Road      | -----          | City/Town Boundary       | ----- |
| Gravel               | -----          | General Utility          | ----- |
| Earth                | -----          | Met & Sewer Force        | ----- |
| Year Road            | -----          | Water                    | ----- |
| Fire Lane            | -----          | Fire Hydrant             | ----- |
| Highway Street       | -----          | County Seat              | ----- |
| Traverse             | -----          | January Village          | ----- |
| Impassable           | -----          | School                   | ----- |
| Highway              | -----          | Public Well or Fire Well | ----- |
| Intersecting Highway | -----          | Highway                  | ----- |
| U.S. Highway No.     | -----          | County Seat              | ----- |
| State Highway No.    | -----          | Range Station            | ----- |
| County Map Letter    | -----          | Public Camp & Point      | ----- |
| Section              | -----          | State Park               | ----- |
| Range                | -----          | County or City Park      | ----- |
| Section Letter       | -----          | Reservoir                | ----- |
| Other                | -----          | State Park               | ----- |

WELLS OF HIGHWAY

STATE	11
COUNTY	11
LOCAL ROADS	11
STATE ROADS	11
TOTAL FOR COUNTY	11



Section Numbers

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40

**IRON CO.**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 TRAFFIC OFFICE BUILDING  
 Hurley, Wisconsin  
 SCALE: 1" = 1 MILE  
 Surveyed by  
 J. A. 1944  
 Corrected to U.S.C.S. Datum  
 Based on 1st of Photography



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## BACKGROUND INFORMATION

### History:

Powell Marsh is a broad, shallow basin enclosed by glacial moraine. Because of low gradients and poorly defined drainage lines, an open acid peat bog has developed.

The area has remained relatively unchanged through the years because of poor drainage and repeated wildfires. Historically, fires have been difficult to suppress on Powell Marsh because of the lack of roads on which fire fighting equipment could be hauled and the persistence of fire in the peat soils.

The last major wildfires occurred on August 9, 1934 and August 20, 1948, burning 3,000 and 3,600 acres respectively. The 1934 blaze lasted for 22 days and required 53,000 man-hours to extinguish. Over 43,000 man-hours of fire fighting effort were expended on the 1948 fire which was finally put out on October 21.

The effects of late summer and fall fires such as these were dramatic and large flocks of migrating geese, mainly blues and snows, descended upon the freshly burned area to graze upon the tender green shoots which sprung up through the blackened bog. Powell Marsh is within a major flight lane for both Canada and snow geese.

Sportsmen in the area, recognizing the unpredictability of goose-use as the result of uncontrolled wildfires, petitioned the Wisconsin Conservation Commission to establish a goose management project on the Powell Marsh. Thus in 1955, the wildlife area was officially created by the Conservation Commission.

Acquisition of the Powell Marsh Wildlife Area began in November of 1956 with 3,123.43 acres purchased from the Commissioners of Public Lands at an average cost of \$8.19 per acre. Mineral rights retained in this transaction have virtually no management or political implications as development is extremely unlikely and counter to Natural Resource Board Policy. To date, 5,573.00 acres are controlled by fee title with 230 acres remaining to be acquired within the present boundary (Fig. 1). In 1957 and 1960, three wildlife conservation lease contracts totaling 7,731.94 acres were negotiated with the Lac du Flambeau Band of Lake Superior Chippewa Indians which provided for management of the total wetland basin (Fig. 2).

The Powell Marsh Area was one of the first attempts in North America to manage an extensive northern sedge leatherleaf bog for geese. The primary aim was to develop a major blue and snow goose-use area which would provide additional harvest opportunity. The population of blue and snow geese that migrate through the Mississippi Flyway seldom stop anywhere between Ontario and Louisiana. However, they were commonly attracted to the vast sedge leatherleaf marshes in the northern part of the state, especially those that had experienced late summer burns. Natural foods, mainly succulent sprouts and roots of grasses and sedges, are utilized by the migrant geese.

Early management efforts attempted to duplicate the conditions that sporadically resulted from wildfires on a controlled basis. Goose browse production by means of fire and agriculture was the principal aim.

To facilitate this type of management, a system of ditches and low dikes was constructed to control water levels in the peat soils to aid in agricultural practices and burning. They were also to function as firebreaks, water carriers and provide access for equipment on the marsh.

Traditional frost and moisture problems associated with marshland have contributed to make agriculture and controlled burning programs very unpredictable. As a result, use by geese has varied quite substantially usually reflecting availability of feed and to some extent fall migration patterns.

As an aid in attracting migrant geese to the area, a decoy flock of 50-150 Canada geese was maintained on the area. This activity was started in 1957 using birds from Horicon Marsh (mostly "giants") and was initially successful (Table 1, Page 4). An additional 100 + recovered cripples of the smaller goose sub-species were added in 1958. Some goose broods were produced annually by the early 1960's. The decoy flock was discontinued in 1974.

An effort was made to establish a resident nesting flock of Canada geese. Two mid-summer releases of flightless young totaling 65 birds were made in 1967 and 1968. This stock was obtained from the flock of giant Canada geese (*Branta Canadensis maxima*) at the Bay Beach Sanctuary in Green Bay, Wisconsin. Some measure of success has resulted from this effort as 5-8 broods of young geese are now raised on the area each year. Duck production is average for the region averaging somewhat less than .5 ducks per acre of permanent water.

### Current Management Activities:

Today, a combination of flooding, burning and limited forage production is used to increase the area's attractiveness to resident and migratory wildlife.

Existing physical developments consist of over 15 miles of ditch and dike, 15 water controls, 4 miles of access road, and approximately 90 acres of upland have been cleared for food patches.

Five access gates and three parking areas have been developed. A signed, scenic overlook is maintained along the north boundary. Support facility buildings consist of one old cabin, which is used as a workshop, two storage buildings and a machine shed.

Flowage Management:

Many of the ditch and dike systems that were originally constructed for drainage are now utilized to create shallow seasonal flowages. At the present time, ten impoundments provide the capability to flow approximately 1,300 acres.

Normally, maximum water acreage is maintained in the spring to enhance waterfowl nesting. An annual summer drawdown is employed on 2/3 to 3/4 of the flowages on a rotational basis, thus enabling late summer burning and mowing. When surface runoff is available, impoundments are reflooded and maintained as near maximum for the fall migration.

Goose Pasture Management:

To provide fall goose browse, 90-100 acres of winter rye are planted and 150-200 acres of sod are mowed annually. Fire is used to control woody succession and provide fall goose browse on the lowland marsh complex. An annual fall prescribed burn acreage of 500-1000 acres is desirable. However, it has been accomplished only sporadically due to unfavorable weather patterns.

Upland Management:

Management of the upland type within the boundary has involved two separate designations: timber management and conversion to upland brush, grasslands or goose pasture. Timber management is conducted in accordance with accepted forestry practices and is coordinated by personnel from the American Legion-Northern Highland (AL-NH) Work Unit. Furthermore, the Powell Marsh lies within the boundary of the Northern Highland State Forest. Approximately 1,088 acres have been designated as timber management lands.

A total of 647 acres of wooded upland has been designated for conversion to upland brush, grasslands or forage production areas. To date, approximately 460 acres have received some measure of treatment.

No Hunting Area:

One waterfowl refuge of approximately 1,800 acres is currently in effect. It is authorized under Chapter 15.02 of the Wisconsin Administrative Code. This area is the focal point of migratory goose-use (Fig. 3).

Other Benefits of Management:

Wildlife observation accounts for a significant number of user days. Spring and fall migration periods are of greatest interest, especially when geese are on the area.

The vegetative disturbance caused by clearing and burning periodically provides excellent opportunities for raspberry and blueberry picking.

Flowages and ditches provide habitat for aquatic furbearers, beaver, otter, muskrat and mink. This environment provides excellent public trapping opportunities.

GOAL AND OBJECTIVES

Goal:

To provide a state owned property for wildlife diversity and abundance for public use through intensive management and protection of migratory and resident wildlife species.

Annual Objectives:

1. Maintain production of .5 ducks per acre of water and one gosling per 25 acres of water. With an anticipated permanent water area of 1,050 acres, full-scale waterfowl production would be 525 ducks and 42 geese.
2. Provide for a minimum of 30,000 goose-use days.
3. Maintain a remnant sharp-tailed grouse population of 50-100 birds.

Annual Additional Benefits:

1. Accommodate 4,000 participant days of quality hunting and trapping.
2. Contribute toward the habitat of endangered and threatened species including bald eagles, osprey and Cooper's hawk.
3. Accommodate 4,000 participant days of other recreational activities including fishing, photography, bird watching, nature study, berry picking and hiking.
4. Provide dog trial and training opportunities.

RESOURCE CAPABILITY

Soils, Geology and Hydrology:

The wildlife area is located at the western edge of the Wisconsin Valley Lobe of the Woodfordian (Cary) glacial ice advance that left Precambrian granite, quartzite and slate bedrock buried beneath about 200 feet of acid drift. Detailed soil maps for the property are not yet available. The upland soils are all sandy and would be classified in the Vilas and Plainfield Sand or Sandy Loam series.

The more extensive lowland soils are peat, generally of sedge and sphagnum origin. It has accumulated to an average depth of 3-6 feet and has charcoal layers stratified throughout due to periodic fire. The peat is underlain with sand which occasionally extends to the surface and is exposed in small ridges above the otherwise level muskeg. As one would expect, the peat soils are very acid with a pH as low as 3.7.

The total Powell Marsh complex was formed in an extensive but shallow lake bed on a sandy basin. It has a gross area of over 20 square miles or 12,800 acres. It encompasses all or part of six natural lakes ranging from six acres to 1,439 acres in size.

Drainage patterns are poorly defined with surface waters moving in northwesterly and southwesterly directions.

Climate:

The area receives an annual average rainfall at 31.3 inches, with a January average temperature of 9.50F and a July average of 66.10F. The region has an average growing season of 109 days. However, frost can occur any night of the growing season on the surface of the low level muskeg.

Vegetative Cover:

On the semi-wet or peat soils, major vegetation consists of sphagnum moss, sedge, cotton grass, tickle grass and blue joint grass. Scattered throughout are bog shrubs, leatherleaf, bog rosemary, bog birch, bog laurel and blueberry. In addition, scattered red and white pine, black spruce, tamarack and white birch are present in areas which have not recently been subjected to fire. In those areas that have been periodically burned, grasses and sedges are generally dominant in open meadows.

Upland vegetation is typical of the region, with major species being aspen, white birch, red maple, red and white pine. The understory components consist of hazel, raspberry, blackberry and bracken fern. Much of the upland type has been subject to conversion efforts by salvage cuttings of merchantable timber, mechanical clearing and prescribed burning.

No endangered or threatened plant species are known to exist on the property. Future surveys will be needed on all development sites.

Wildlife:

The area is presently occupied by those species of wildlife seasonally indigenous to disturbed forest land and a large northern bog complex. Both types are capable of management to improve wildlife habitat. However, it should be recognized that the entire area is relatively infertile and less productive than most wildlife areas. Management of the marsh and adjacent uplands is best suited for waterfowl and sharp-tailed grouse.

Waterfowl

Major species of breeding waterfowl are black duck, mallard, wood duck, green-winged teal, blue-winged teal and Canada geese.

Currently, ten shallow flowages, ranging in size from 12 to 290 acres, are maintained on the area (Fig. 4). Five of the impoundments, which total approximately 540 acres, are classified as temporary water areas. Normally, they would be drawdown during June through August.

The other five flowages, which total 775 acres, are semi-permanent water areas. Water levels are maintained during the summer period for brood production and rearing. It is estimated that production on the semi-permanent water areas is currently 1/2 duckling per acre and declining. The surrounding region appears to be following a similar trend. Two items are hypothesized: Lack of birds or food. Pairs of breeders may not be changing but nesting success and/or brood survival could be declining.

Canada goose production during the last several years has been approximately one gosling per 28 acres of semi-permanent water. In 1977, the local flock numbered 52 birds; this consisted of adults, non-breeders and 28-32 young.

Fall utilization by waterfowl has varied a great deal on the wildlife area. Records of peak duck and goose use from 1957 through 1979 are shown on the following table:

TABLE 1  
Peak Waterfowl Buildup - Powell Marsh Wildlife Area  
1957 - 1979

Year	Canada Geese	Snow & Blue Geese	Total Geese	Goose-Use Days	Total Ducks
1957*	200	2,300	2,500	-	475
1958	500	10,000	10,500	-	810
1959	5,000	7,000	12,000	-	6,000
1960	4,000	1,000	5,000	-	1,400
1961	5,000	1,000	6,000	-	4,000
1962	1,850	150	2,000	-	2,000
1963	1,400	1,200	2,600	-	2,500
1964	800	250	1,050	-	No Count
1965	1,000	200	1,200	-	600
1966	300	300	600	-	1,850
1967	700	1,100	1,800	-	4,000
1968	700	40	740	-	1,100
1969	2,800	800	3,600	-	1,950
1970	450	150	600	-	2,600
1971	1,000	500	1,500	-	1,200
1972	1,800	1,500	3,300	27,625	700
1973	700	1,000	1,700	16,100	1,000
1974**	800	250	1,050	7,480	750
1975	500	300	800	6,100	400
1976	350	200	550	9,800	400
1977	1,200	300	1,500	25,400	500
1978	150	50	200	6,300	500
1979	500	200	700	15,300	500

\*Decoy flock of Canada geese initiated

\*\*Decoy flock terminated

Fall goose-use has varied greatly from year to year with the reasons being unclear. Years with relatively good use have normally been followed by years with poor use. With comparable food and water conditions, it is expected that variations in migration patterns are responsible.

The most significant concern is a general long-term decline in duck use, mainly mallards, black ducks and wood ducks.

Since 1966, a baited banding site has been operated during the months of August and September. During the late 1960's 300-400+ birds were banded annually with 1500-4000 using the bait site. However, during the last 6-7 years duck use has steadily declined. In fact, during the last two years, use was so poor that banding attempts have been unsuccessful and have been deleted from annual work plans.

With some 12 years of comparable conditions on the wildlife area, it can be hypothesized that the decline is the result of fewer breeding ducks in the area. In addition to birds raised on the property, the bait banding site attracts ducks from the surrounding lake region.

#### Sharp-tailed Grouse

Powell Marsh and surrounding open bog complexes support one of the last remnant populations of sharp-tailed grouse in the region. During the winter of 1970, it was estimated that in excess of 100 birds were utilizing the wildlife area. However, a severe ice storm during the winter of 1973 was the apparent reason for a drastic decline in the population the following year. Only a very limited recovery in the population has been made since that time. Today, it is estimated that present overwinter population of sharp-tailed grouse is only 20-40 birds.

Other Wildlife

Other game species which benefit from management on the area are white-tailed deer, ruffed grouse, muskrat, mink, beaver, otter, snowshoe hare, fox, coyote and black bear. Numerous nongame species mainly songbirds, shorebirds and raptors are also present.

The disturbed forest edge, flowages and open sedge meadows provide habitat for many wildlife species, both permanently and seasonally. A complete listing of wildlife present on the wildlife area has not been compiled.

No endangered or threatened species are known to nest or permanently reside on the area. Eagle and osprey, are commonly hunting on the area. Two eagle nests are located near the wildlife area, one being along the west shore of Little Trout Lake and the other on an island in Ike Walton Lake.

Fisher tracks have been observed along the wooded edges of the marsh in winter.

Fish:

Flowages within the wildlife area are shallow and subject to periodic drawdown as well as winterkill. Thus, a sport fishery does not exist.

Minnows are known to be present consisting mainly of redbelly dace, golden shiners, brook stickleback and mud minnows. A limited amount of minnow harvest takes place for bait purposes.

The natural lakes within the property boundary support a warm water fishery. They are monitored as a normal part of the Woodruff Area fish management program.

No known endangered or threatened fish species are found on the area. As funding becomes available, inventories will be brought up-to-date.

Water Resources:

Powell Marsh contains all or part of six natural lakes. Ike Walton, Chewelah, and 2/3 of Little Trout Lake are within that portion leased from the Lac du Flambeau Band of Lake Superior Chippewa Indians.

Lakes within the Department-owned portion of the marsh are Sherman, Homestead and an unnamed 6-acre body of water in Section 29, T42N, R5E. The shorelines of Bolin and Little Trout Lakes are adjacent to the east property boundary.

TABLE 2

Lake Water Quality

Lake	Acres	Maximum Depth	Water Source	MPA*	pH	Cond.**	Transparency in feet
Bolin	63	35	Seepage	10	6.3	32	1.3
Chewelah	35	2	Drainage	-	-	-	-
Ike Walton	1439	63	Seepage	2.0	6.8	16	9.5
Sherman	132	19	Seepage	13.0	6.8	30	12.0
Little Trout	982	91	Seepage	16.0	7.0	43	7.5
Unnamed 29-10	6	13	Spr. Fed.	16.0	7.5	14.0	7.5
Homstead	22	17	Seepage	2.0	5.6	16.0	6.5

Impoundment Water Quality

Pool #1		3	Runoff	10.0	6.4	37	Dark Stained
Pool #3		2	Runoff	18.0	5.3	40	Dark Stained
Pool #5		4	Runoff	22.0	6.2	30	Lightly Stained
Sherman Pool		3	Runoff	22.0	6.8	65	Lightly Stained
Dead Pike Pond		4	Runoff	7.0	5.8	26	Stained

\*Amount of available carbonates, bicarbonates and hydroxides in water

\*\*Similar test

#### Historical and Archaeological Features:

There are no known significant historical or archaeological features unique to the Powell Marsh area. Close liaison will be established with the Historic Preservation Division of the State Historical Society to ensure that archaeological reconnaissance and evaluation is completed prior to development of any portion of the wildlife area.

Historically, the marsh has a tradition of fire and has always had some goose-use. This is evident by the name given to Chewelah Lake. A rough translation from the Chippewa language is that it is a "place to kill the wild goose".

#### Ownership:

The gross land area within the approved wildlife boundary is 5,803 ± acres. Of this total, 4,096.5 acres are fee title Wildlife Management lands. The Bureau of Forest Management holds title to 1,476.47 acres. Approximately 230 acres remain to be acquired within the present approved boundary (Fig. 1).

Immediately to the south and adjacent to the state-owned portion of the marsh, 7,731 acres are leased from the Lac du Flambeau Band of Lake Superior Chippewa Indians. This acreage is covered by three separate lease contracts that were negotiated between 1957 and 1960; all will terminate in 1982 (Fig. 2).

Recurrent problems with year-round and night hunting by Indians on these leased lands have greatly diminished management potential. Differences in ideologies will, most likely, make it very difficult to renegotiate the lease contracts when they expire in 1982.

#### Current Use:

The Powell Marsh Wildlife Area is used primarily by hunters and wildlife observers. It is estimated that 2,000 hunter participation days and 1,000 wildlife observation days of use are made of the area. Estimates of other user days are as follows: fishing - 2,000, furbearer and minnow trapping - 150, hiking - 100, and berry picking - 200 days.

#### Land Use Potential:

The majority of the wildlife area is proposed as a wildlife development area (RD2). Evidence of man's manipulation is considerable but offers opportunities for ecological research. Past activities have included burning, timber sales, clearing, limited farming, ditch, dike and firebreak construction. The continued application of measures which permit water level manipulation and controlled burning will maintain or improve the area's wildlife production capability. Without continued orderly management, its ability to produce and attract waterfowl and sharp-tailed grouse will likely decrease significantly.

The natural aesthetics of Sherman Lake's north and south shore area is proposed to be protected by Scenic Area (SA) designation. This area includes about 30 acres of lowland timber and will preserve the unique beauty offered by the lake shore zone.

Limited potential exists for winter activities such as cross-country skiing and snowshoeing because of the unsuitability of the terrain. Even though there is a need identified by the North Central Regional Planning Commission for the development of more recreational trail systems, especially for nonmechanical recreation use, liability concerns coupled with the inability of the Department to provide adequate trail supervision and maintenance prohibits the creation of trails designated for this type of use.

### RESOURCE MANAGEMENT PROBLEMS

#### Private Development Encroachments:

Presently, approximately 230 acres of land within the property boundary are privately owned. The remaining acres are significant to completion of planned development. Of major concern are six subdivision lots, ranging in size from .26 to 1.6 acres located in the northwest corner of the wildlife area.

Originally, 11 small lots were located within the subdivision site. Five have been acquired and negotiations with the remaining owners have been unsuccessful. Most contain poor quality seasonal cabins which detract from the aesthetics of the area. In addition, the land would be needed for the development of the proposed Dead Pike Flowage.

#### Goose Browse Production:

One of the most significant factors in limiting migratory goose-use days on the Powell Marsh may be the availability of sufficient quantities of feed. Due to the infertile soils and frost problems, it is not possible to grow high yield crops such as corn, buckwheat and legumes. Consequently, food patches are limited to green crops such as winter rye.

In addition, when moisture conditions permit, mowing and burning are used to provide additional green browse. Generally, this type of "goose browse" is of poorer quality and of limited quantity.

Past experience has shown that 90-100 acres of winter rye food patches are often depleted in less than ten days by as few as 1,000 geese.

#### Indian Lease Land Hunting:

Previously in this narrative, the 7,731+ acres which are leased from the Lac du Flambeau Band of Lake Superior Chippewa Indians was discussed. If another land use lease cannot be negotiated in 1982 on the 3,539-acre segment which is necessary to the present operation, substantial modification will need to be made.

Currently, the ditch and dike systems on leased tribal land serve as the major outlets of surface water drainage and are important fire control boundaries. For drainage and fire control, approximately 1 3/4 miles of drainage ditch and 2 1/2 miles of ditch-dike firebreak will need to be constructed. This would be necessary to continue normal operations of Powell wetland projects.

Drainage would need to be redirected by way of a ditch through the proposed Dead Pike Flowage and the ditch-dike firebreak would be along the boundary with tribal lands. The estimated cost would be \$15,000 for dragline rental.

Waterfowl hunting by members of the Lac du Flambeau Tribe during August and September and at night on the leased lands during the past 5-6 years has virtually eliminated the opportunity for non-Indian hunting use on the leased area. The impacts on other species are unknown. At this time, no resolution to conflicting ideologies and treaty rights is apparently possible.

The renegotiation of a land use agreement on approximately one half (3,539 acres) of the original lease area can only be justified for improved drainage and fire control needs on the state portion of the marsh. If the lease were continued, a potential 200 acre Scientific Area located one mile west of Chewelah Lake would need evaluation to insure adequate protection.

#### Water Supply

The entire area has an unpredictable water supply for recharging impoundments. The primary source of water is surface runoff. Normally spring runoff is adequate for recharge of flowages. During dry periods, especially late summer and fall, runoff is not adequate for flowage maintenance or reflooding.

During the early years of the wildlife area, a water control structure and discharge ditch was installed in Little Trout Lake. Its purpose was to provide water during late summer and fall to aid in control of fire during controlled burning operations. Little Trout Lake has 982 surface acres with an elevation which varies between 1608.5 and 1610.9, depending upon rainfall. The water control structure on Little Trout Lake has an elevation of 1606.4 at the top of the sill (bottom draw).

Withdrawal of water is limited due to competition with cranberry marsh operations which are also located on Little Trout Lake. Currently, eight separate ownerships, with approximately 500 acres of beds, rely on the lake water for flooding. By agreement with the Cranberry Growers Association, water can only be withdrawn for Powell when the lake elevation is 1609.30 or greater. During very dry periods, the lake level often falls below the 1609.30 elevation and is unavailable.

In an average year, approximately 490-acre feet is available for use. To maintain Little Trout Lake above the 1609.30 during dry years, another source of water would need to be utilized. The least costly would be to construct approximately 7,000 feet of gravity flow ditch between Little Trout and Ike Walton Lakes.

Ike Walton has 1,493 surface acres with an elevation approximately six feet higher than Little Trout. It is likely that, even during very dry years, 300-1000 acre feet of water could be diverted to Little Trout Lake. However, this project does not appear to be environmentally acceptable at this time.

A second alternative is to pump water to maintain Little Trout Lake and thus Powell flowages. The Little Trout Lake Cooperative Water Association (member cranberry growers) has a high capacity pump and ditch system which enables them to divert water out of the Manitowish Chain of Lakes to maintain Little Trout Lake. This unit is rated at 24,000 GPM; however, with its 10-foot lift, 18,000 GPM is more likely.

In the fall of 1970, when levels on Little Trout fell below 1609.30 and water was needed for fire control on Powell Marsh, the Department paid for the operation of the Association's pump. The rental rate was computed at \$4/hour, gas and oil plus 15%. With 156 hours of pumping, the Department was able to draw approximately 250-acre feet of water.

During very dry periods, this pumping program is likely to be the most effective alternative. Currently, the unit is powered by an old gas engine which is not very reliable. For dependability, its conversion to electricity or replacement by a newer, diesel engine would seem most practical.

## LONG-RANGE RESOURCES, RECREATIONAL NEEDS AND JUSTIFICATION

During the past ten years, the population of the region has increased over 23 percent as compared to the statewide average of 4.7 percent. Projections into the 1980's indicate that this trend will continue and may very likely accelerate although fuel shortages could alter these trends.

Hunting, wildlife observation, trapping, hiking and other resource use demands are expected to increase with the hunter population. In addition, the region is one of the most rapidly growing tourist-recreation centers in the state, which is contributing to increased user demand.

Goose hunting opportunity in this area of the state is very limited and most often harvest is incidental to other hunting activities. The local hunters consider the wild goose to be a very desirable trophy; many consider them to be comparable to the white-tailed deer. The demand for wild geese and all other waterfowl exceeds the available supply. Powell Marsh adds both hunting acreage as well as production acreage to help meet this demand.

One of the last remnant sharp-tailed grouse populations in the region exists on the wildlife area. Current management practices provide for the opportunity to maintain this population. While there is very little hunter interest in this small population, it should be maintained since there are few areas in this part of the state that will continue to support sharp-tails.

There appears to be an increasing user demand for a site for dog training and trials on the area. At this time, most interest appears to involve the retriever class. There are several suitable sites on the wildlife area.

## ANALYSIS OF ALTERNATIVES

The following alternatives apply only to that portion of the Powell Marsh which is within the state-owned boundary. Management options on the leased Tribal lands are dictated by provisions of the lease contracts.

### 1. No Action

As is, the area would not realize its full wildlife production capabilities or its maximum recreational use capabilities. No action would result in natural succession replacing the existing cover types with cover types that are far less productive for waterfowl and sharp-tailed grouse. Wildlife production and migratory waterfowl use would decline, thus recreational user potential and current hunting success would deteriorate.

### 2. Manage For Sharp-tailed Grouse

This course of action would require that large areas of upland adjacent to the open marsh would have to be substantially altered. This would involve conversion from timber to grass or upland brush. Emphasis on the semi-wet marsh and bog complex would need to be toward drainage. Existing flowages would be reduced or eliminated, thus waterfowl production and use would decline at an increased rate.

This type of management could not be justified from cost and user demand standpoint. Local demand for waterfowl far exceeds that of sharp-tailed grouse. In addition, it is doubtful that the sharp-tail population on the area can be increased much beyond the objective level.

### 3. Change Boundary

The present boundaries include all but approximately 116 acres of the Powell Marsh-bog complex lying north of the Lac du Flambeau Indian Reservation. This remaining parcel consists of the E1/4 of Section 27, T42N, R5E (Fig. 5). Its addition to the wildlife area is not critical to meeting goals. However, fire control and construction of breaks would be less costly and much more effective if the marsh upland edge could be utilized at this location.

The wildlife area boundary along the north and west portions of the project should be reduced. This will not change management but will clarify responsibility (Fig. 5).

The Powell Marsh is actually a State wildlife area within a State forest. Currently, there is an overlap with the boundaries of the AL-NH State Forest. The lands to be deleted from Powell are all in state ownership, either Wildlife or Forest Management.

The lands are being managed in accordance with forest game habitat guidelines, thus administration should be by the AL-NH Forest Management unit. Lands remaining in the revised boundary will consist of lowland marsh and adjacent uplands designated for clearing and conversion to grass and upland brush. Land management practices on forest management lands lying within the wildlife boundary will continue without significant alteration.

4. Combined Management

Combined management means using a variety of techniques to produce recreational use of available resources with emphasis on waterfowl and sharp-tailed grouse related activities. Conduct a continued program which will provide for manipulation of vegetative communities by flooding, clearing, drainage, controlled burning and a limited amount of farming. In addition to ducks, geese and sharp-tailed grouse, management will benefit many other indigenous species. Opportunity for recreational use will increase due to increased wildlife base.

5. Reduce Property Size

Except as provided in Alternative #3, to reduce the property size would be contrary to the intent of the Department of Natural Resources when the wildlife area and its existing boundaries were approved. Reduction would result in restricting the ability to conduct management activities which are of an extensive nature. On a smaller area, it would be difficult to confine activities such as controlled burning, flooding, ditching, and draining. Less acreage with fewer management options would result in the inability to produce a larger variety and quantity of wildlife.

6. Enlarge Property Size

Except as provided in Alternative #3, expansion would include the upland type. Much of this acreage is presently within the Northern Highland State Forest and is managed in accordance with Forest-Game Habitat Guidelines. Addition of forested upland to the project will contribute little to achieving project goals and objectives.

7. Lease Deletion

Assuming deletion of the leased area in 1982, alternative development plans described earlier will enable adequate control of water for drainage and fire control. About 1 1/4 miles of drainage ditch would be constructed across Dead Pike Flowage and 2 1/2 miles along the boundary with tribal lands (Fig. 7). In this marsh, management can continue to be effective provided the ditch is installed.

RECOMMENDED MANAGEMENT PROGRAM

It is recommended that Alternatives 3 and 4 be implemented. This would provide a combined management program for recreational use of available resources with emphasis on waterfowl and to change the wildlife area boundary to clarify management responsibility.

The recommended revised boundary will encompass 4,745 acres. This will include an expansion of 116 acres along the east boundary and a deletion of 1,087 acres along the north and west sides of the wildlife area (Fig. 5). The lease of Indian lands would coincide with Figure 2.

All of the acreage to be deleted is Department owned, predominantly forested and should be managed for timber and forest-game as part of the adjacent Northern Highland State Forest work unit.

Ownership within the revised boundary will consist of 4,410 acres of lands and approximately 335 acres of private lands to be acquired. The present ownership within the revised boundary consists of 3,762 acres of essentially lowland peat soils and 548 acres of sand or sandy loam uplands.

Management of the upland will consist of a continuation of the current management activities, conversion to upland brush, grass and food patches. To date, approximately 460 acres of upland have been subjected to some degree of conversion effort, either timber salvage, burning or clearing. During the next 3-5 years, 150 acres out of the remaining 185 will be converted. Approximately 30 acres will remain in a "no cut buffer" adjacent to the Sherman Lake Scenic Area Zone (Fig. 6).

Presently, 100 acres of upland have been cleared to permit annual establishment of rye and clover for fall goose browse. Another 100 acres of upland food may be developed during the next 5-10 years. The remaining 456 acres of upland will be maintained in a grass upland brush type by prescribed fire and mechanical methods. These activities should also enhance sharp-tailed grouse and other waterfowl use.

On the 3,762 acres of lowland peat soils, management will consist of essentially the current management activities previously described. More specifically, the manipulation of surface and subsurface water levels is crucial to vegetation control and management. Depending upon the particular site and time of year, flooding and/or draining will be utilized. Dead Pike Lake flowage (Fig. 7) would not be constructed immediately.

Ditches provide for seasonal drainage of surface and subsurface waters permitting the application of controlled fire. In turn, repeated burning encourages the sedge grass community and discourages the more typical bog plants. Conversion from the leatherleaf-bog birch type to a northern sedge meadow is the desirable objective.

Regarding potential historical and archaeological sites, all areas of development will be thoroughly investigated for the presence or absence of sites and appropriate protective measures will be taken for significant sites. If any are found during development, construction will be suspended until the State Historical Preservation officer is consulted. The site(s) will be evaluated and, if significant, would be preserved.

All areas of development will also be examined for the presence or absence of endangered and threatened species and appropriate protective measures will be taken for significant sites. If any such sites are found during development, construction will be suspended until the Office of Endangered and Nongame Species (DNR) is consulted.

#### Future Potential Developments:

In addition to maintaining the existing ditch and dike systems, the following developments are possible in the future to achieve maximum wildlife production and recreational use of the wildlife area (Fig. 7):

1. Construct Dead Pike Flowage containing approximately 500 acres. This will require 1/2 mile of dike and 1 1/4 miles of drainage ditch to complete.
2. Construct 2 1/2 miles of fire control ditch along the Indian Reservation boundary. The ditch will be required if the land use agreement cannot be renegotiated with Lac du Flambeau Tribe in 1982.
3. Develop 1 1/2 miles of cleared upland firebreak located along the north boundary Pool #1 and Homestead to Sherman Lake.
4. Construct 1 3/4 miles of fire control ditch located along the east boundary of the Bolin Lake area.

Cost estimates for the above developments will be compiled during the Implementation Element of the Master Plan.

5. A significant limiting factor in duck and goose production on the semi-permanent water areas is the lack of secure nesting sites. Much of the current nesting takes place on ditch banks, thus predation is quite high.

To improve nesting success and production, nesting islands may be constructed in the basins of Pools #1, #5, and Dead Pike Flowage when it is completed if their use in Wisconsin proves feasible. Nesting island construction will be simple dragline pile-ups, rising 1-3 feet above pool elevation in the 1-2 foot water depth zone. Dimensions will be rectangular, averaging 300-400 square feet, with a density of one per ten acres of water. The island will be located over 200 feet from shore.

In light of recent research findings in Michigan, duck production may be improved using nesting platforms within the marsh. Experimentation will occur within budgetary constraints.

#### Continuing Programs

1. Vegetative manipulation will be continued with controlled burning being the major tool. An average annual goal of 500-1,000 acres on a rotational basis is desirable. Eight burning units have been established on the project ((A) thru (H), Figure 8). Normally, it is possible to burn on the peat soils only during late summer due to the excessive moisture at other periods of the year.

Although some wildlife production is sacrificed, spring burns are conducted on the uplands utilizing the wet marsh for control purposes. Likewise, the spring burned upland is devoid of fuel when the adjacent lowlands are burned, thus aiding in control. In addition to vegetative control, the greenup which occurs after late summer burns provides fall goose pasture.

2. Waterfowl refuge. The existing refuge designated under Wisconsin Administrative Code 15.02 will be maintained. Future boundary adjustments may be implemented as conditions warrant. (Fig. 3)
3. Attraction of migratory geese. As discussed previously, a factor in limiting migratory goose use is lack of quality feed on the project. Due to the short growing season and infertile soils, forage production is limited to 90-100 acres of winter rye, 180-200 acres of mowed sod and a variable amount of greens resulting from fall burning.

Past management activities and the proposed program are efforts to provide for recreational use on an extensive, infertile northern bog complex. It must be recognized that the Powell Marsh is not as productive as other wildlife areas in the state. However, it must also be recognized that without management, recreational use of the Powell Marsh would be markedly reduced.

Ownership

FIGURE 1

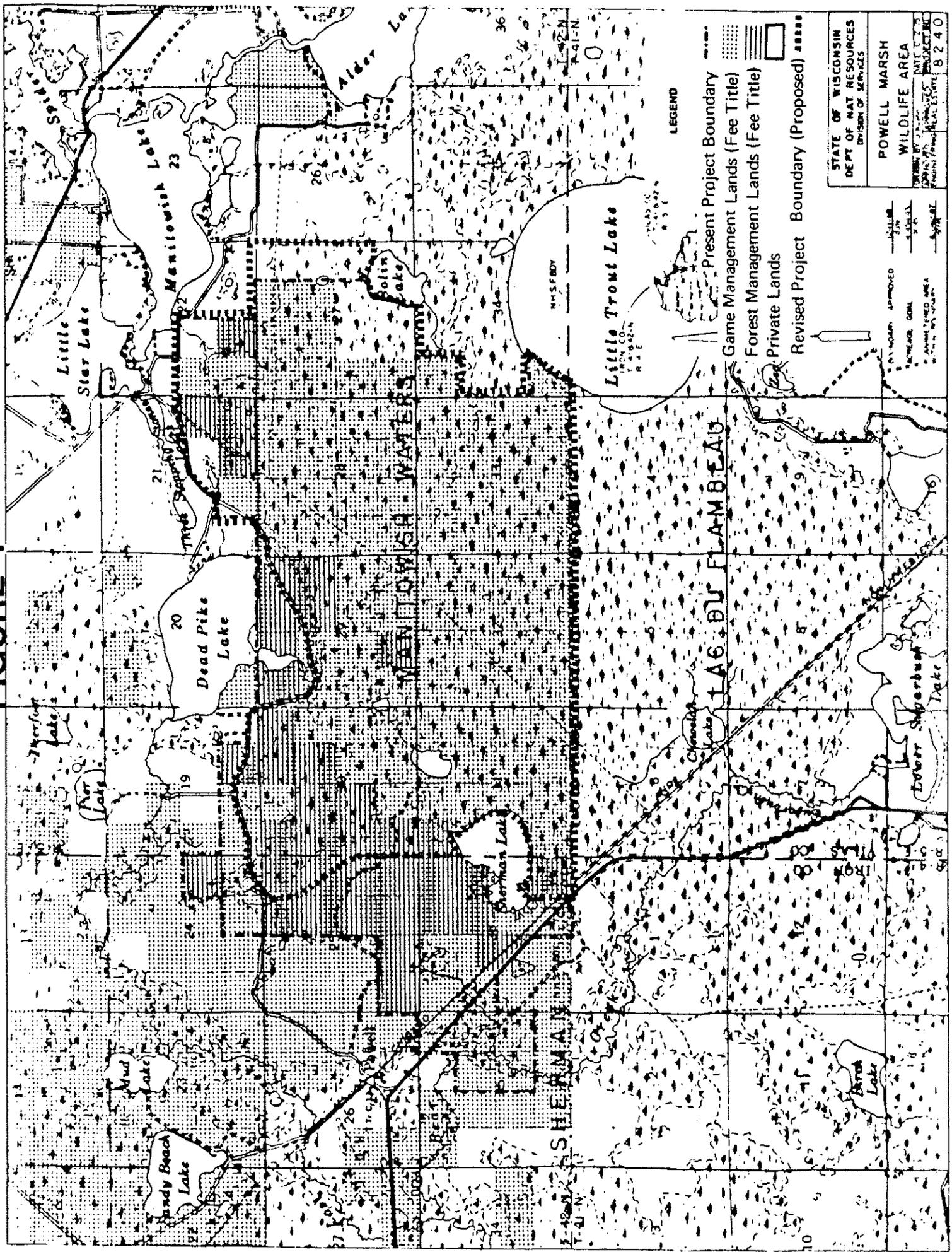
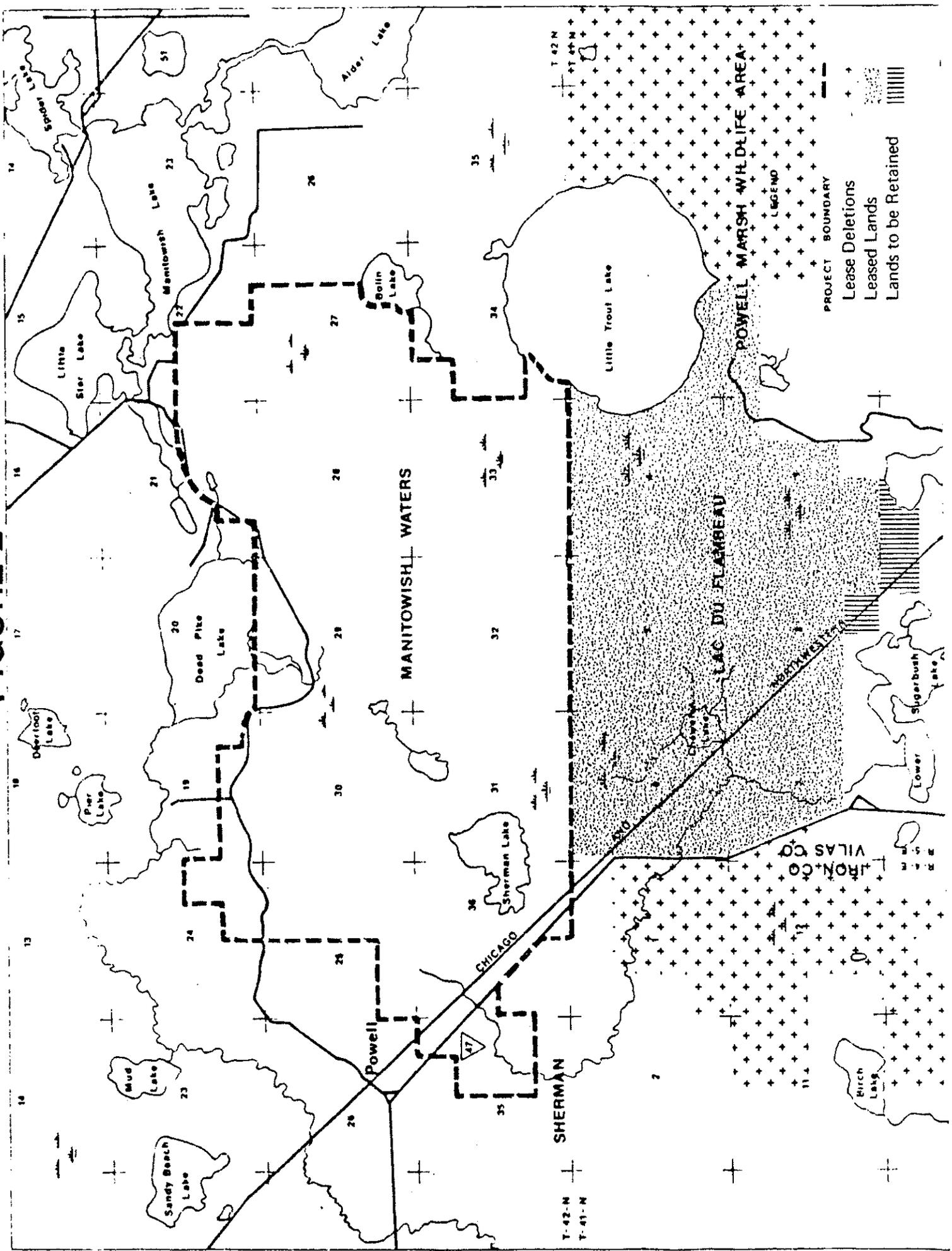


FIGURE 2  
Lease Area



# FIGURE 3

Refuge

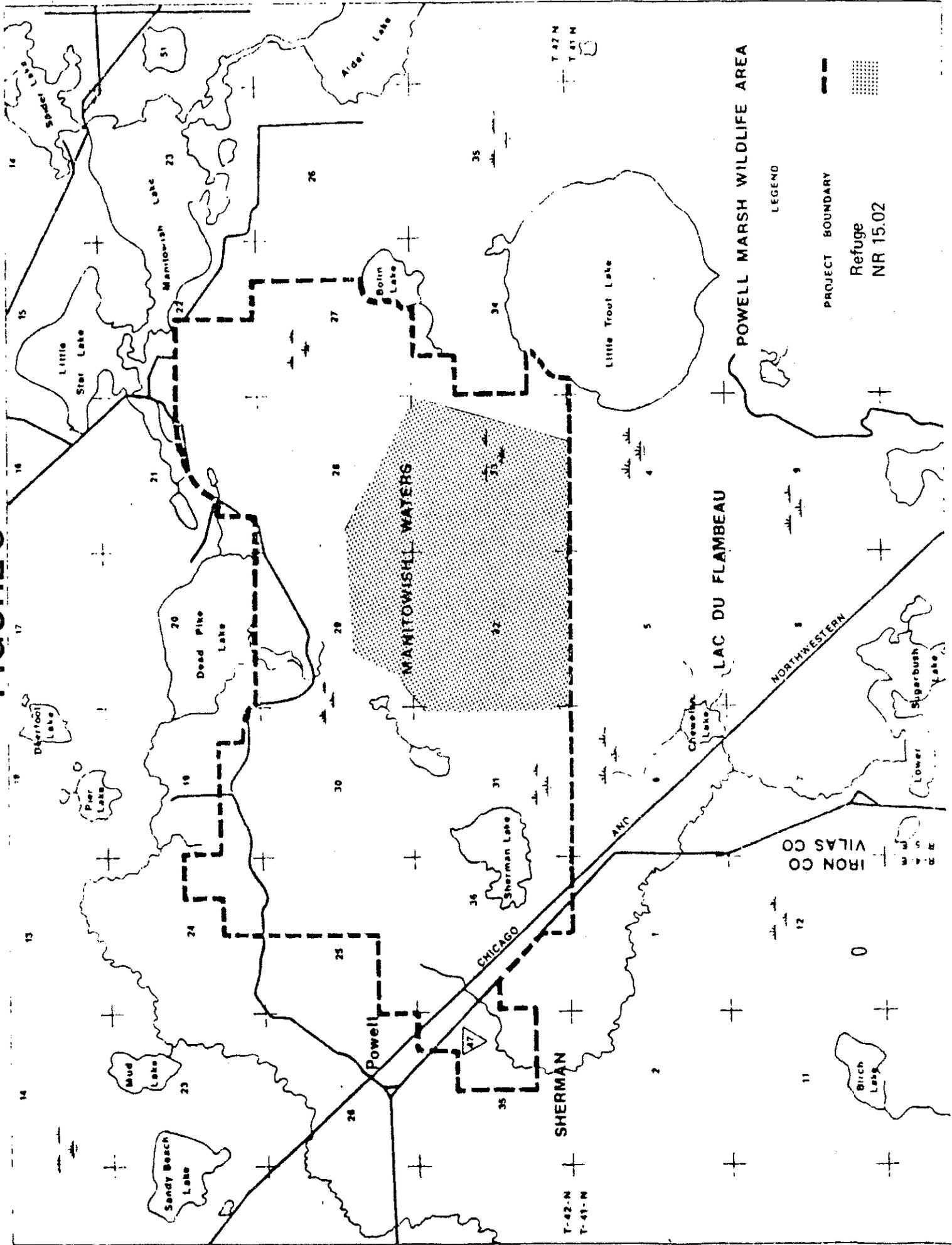
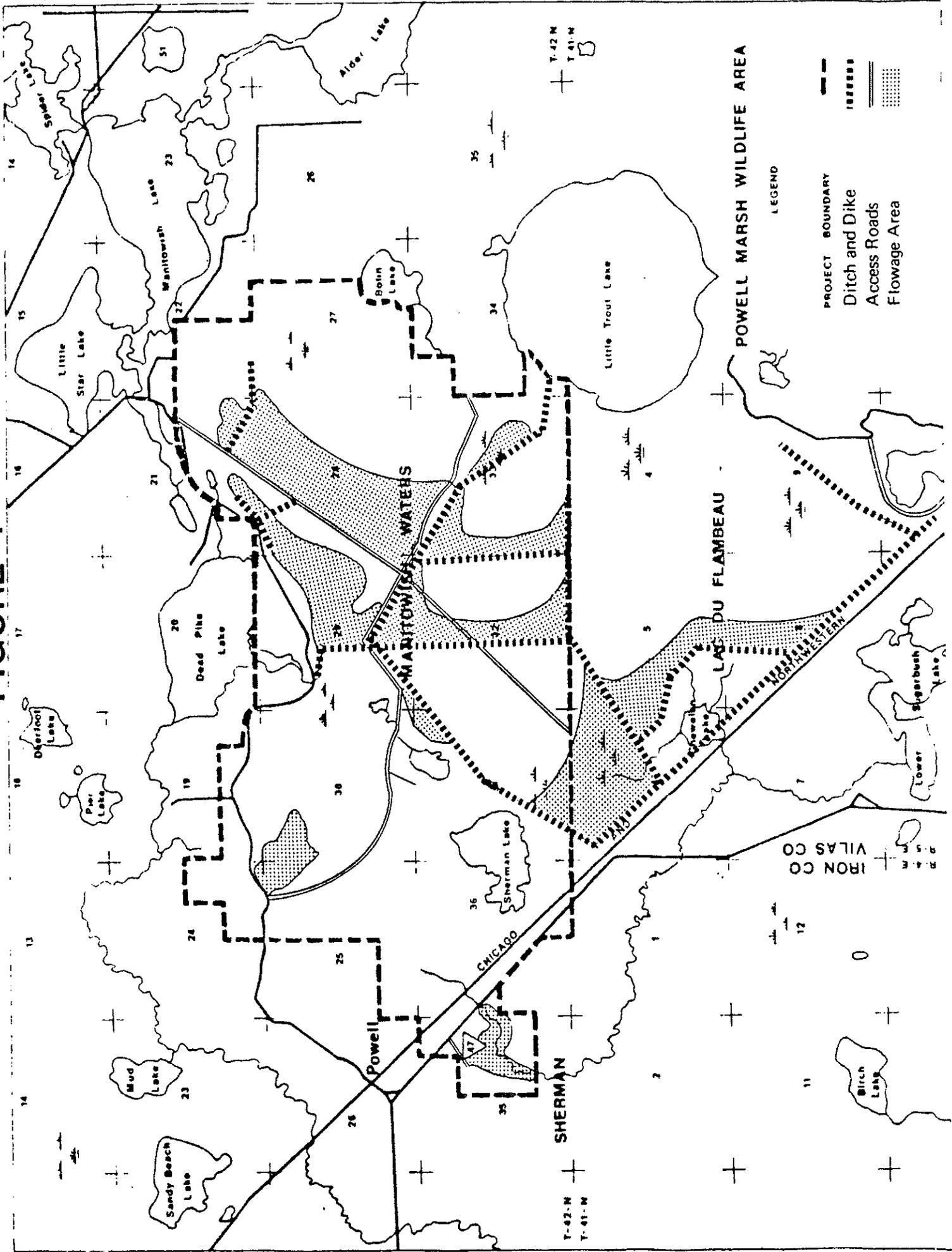


FIGURE 4 Existing Flowages



LEGEND

- PROJECT BOUNDARY
- Ditch and Dike
- Access Roads
- Flowage Area

R-4E  
IRON CO  
R-5E  
VILAS CO

T-42-N  
T-41-N

T-42-N  
T-41-N

SHERMAN

LAC DU FLAMBEAU

MANITOWISH WATERS

CHICAGO

POWELL

POWELL MARSH WILDLIFE AREA

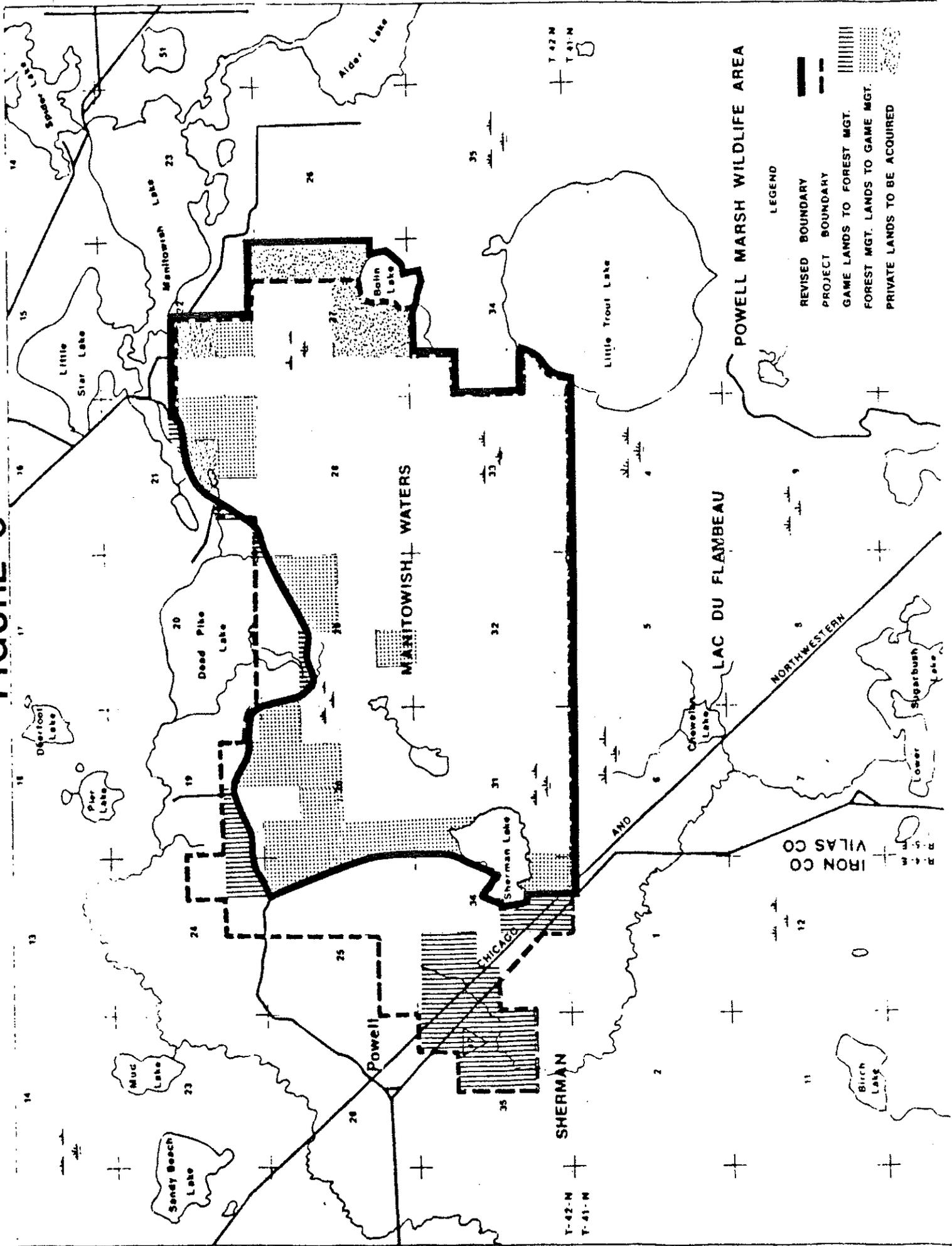
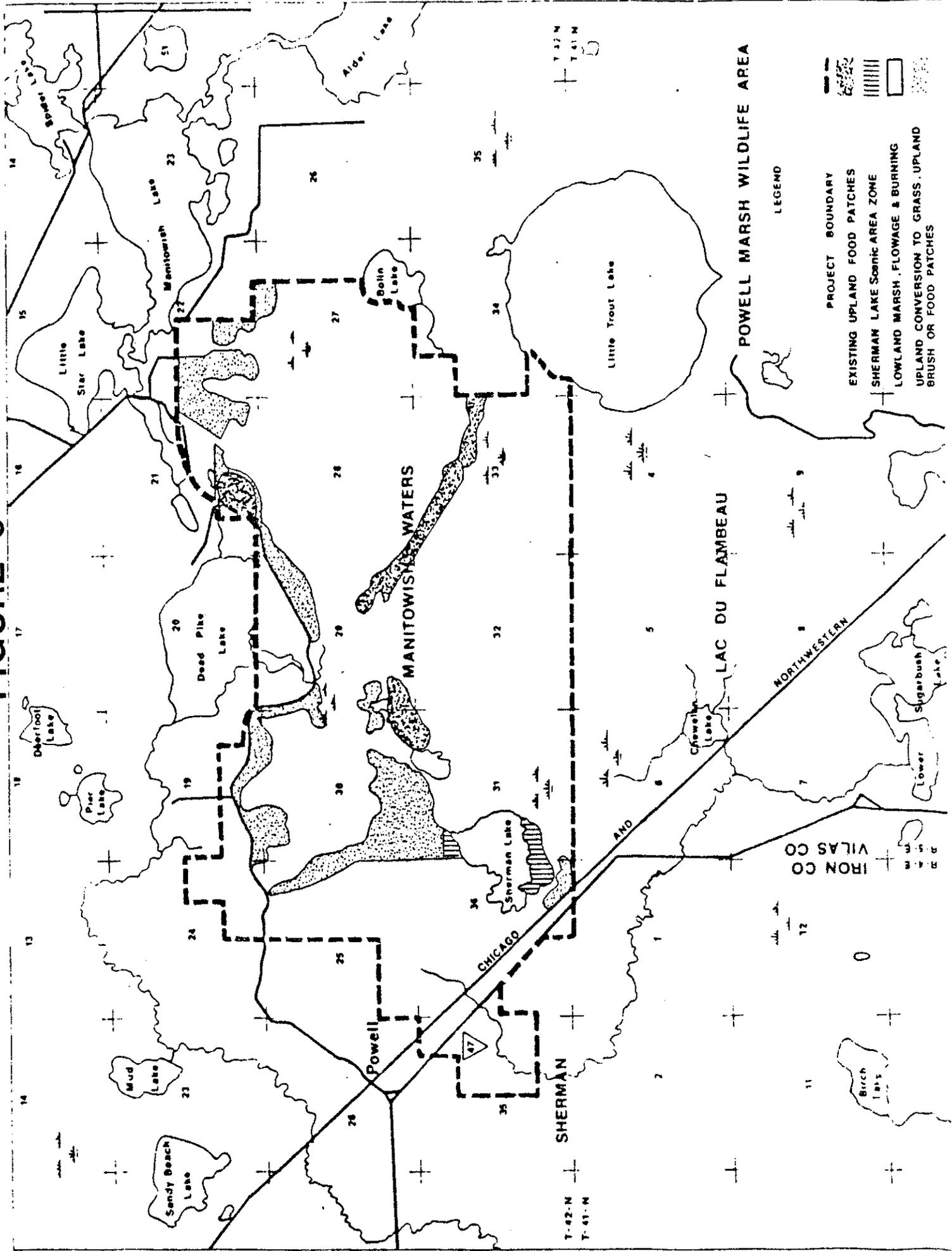
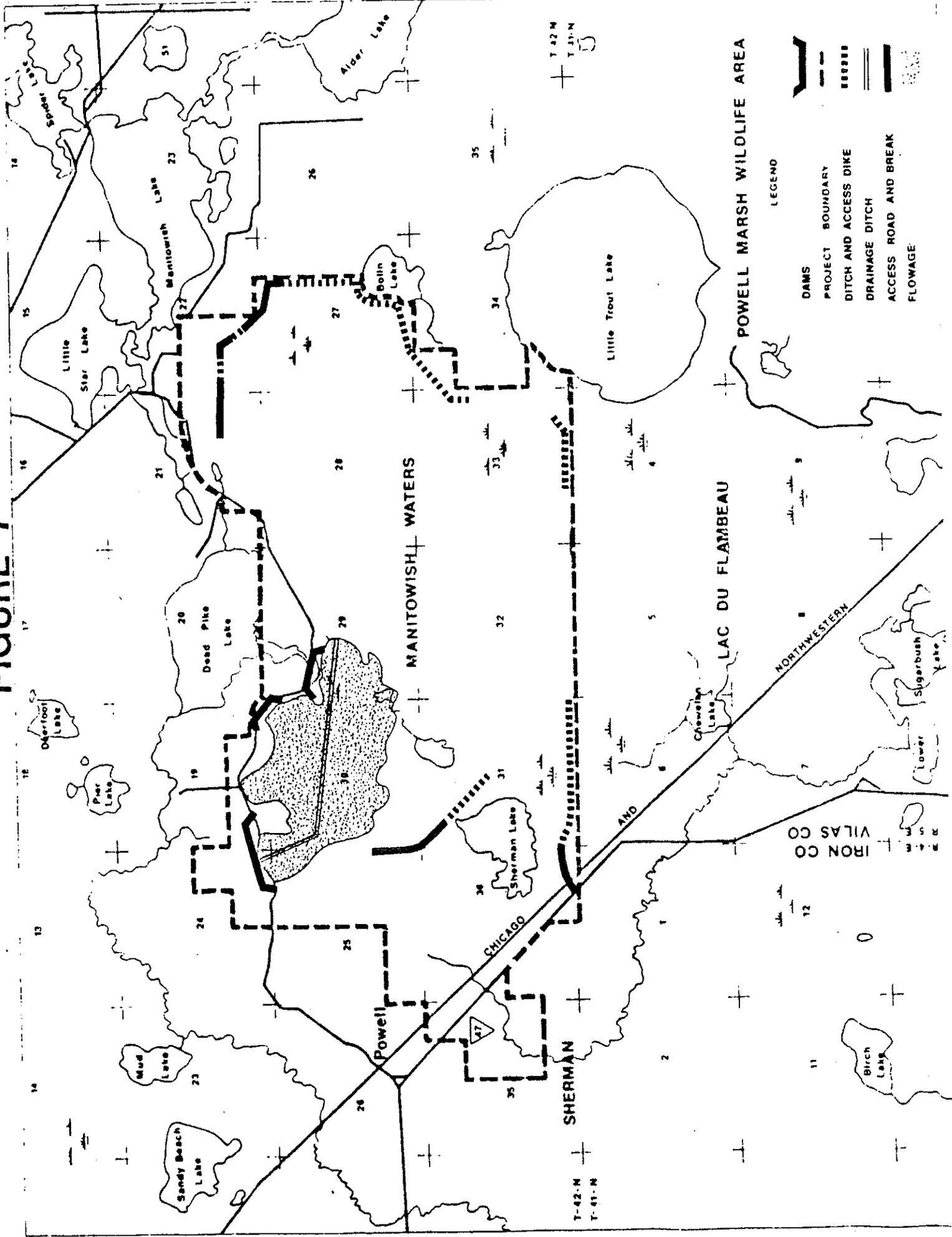


FIGURE 6

Developments

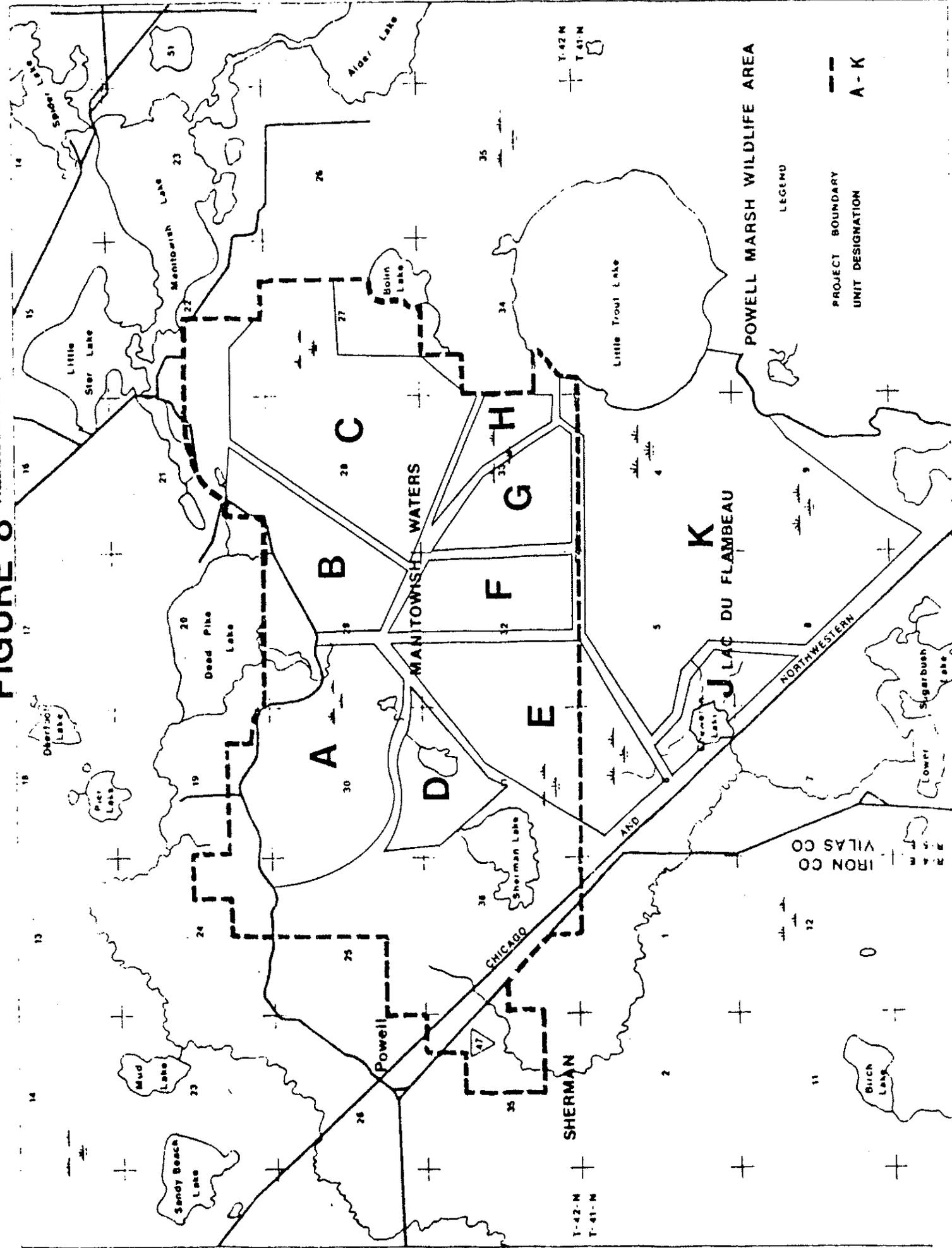


**FIGURE 7** Proposed Developments



Prescribed Burn Compartments

FIGURE 8



IRON CO  
VILAS CO

LEGEND  
--- PROJECT BOUNDARY  
A - K UNIT DESIGNATION

POWELL MARSH WILDLIFE AREA

MANITOWISH WATERS

JAC DU FLAMBEAU

CHICAGO

SHERMAN

NORTHWESTERN

T-42-N  
T-41-N

T-42-W  
T-41-W

14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

APPENDIX B

Master Plan Comments  
By: Forest Stearns  
Representing: Scientific Areas Preservation Council  
Date: March 19, 1980

We have reviewed the Powell Marsh Wildlife Area Master Plan concept element and find that proposed developments will have minimal impact on the objectives of the scientific area program. As stated on page 6, "evidence of man's manipulation (on the project area) is considerable".

Though the bog's species composition has been altered through disturbance of vegetation and soils, it has considerable value for ecological research. The records of fire and land use should be continued to preserve this value.

A small portion of the open bog on Indian land resembles "patterned" bog more typical of northern Minnesota. Since the lease of Indian lands beyond 1982 is not expected, this site would not appear to be included in any development proposals. If the lease is continued, the approximately 200 acre site centered one mile west of Chewelah Lake should be left undisturbed until evaluation of its scientific value is complete.

DNR RESPONSE: Concur; comments incorporated within text pages 6 and 7.

Master Plan Comments  
By: Henry W. Kolka  
Representing: Wild Resources Advisory Council  
Date: March 14, 1980

The Powell Marsh Wildlife Area Master Plan Concept Element is well presented. Its ups and downs since its conception in 1956, its hopes and dreams and finally its projected use for the immediate future are well documented. The Task Force is to be congratulated for its realistic recommended management program and for the overall thoroughness in analysis of the project area.

General Review

The chairperson for the Wild Resources Advisory Council visited the Powell Marsh Wildlife Area during the experimental "decoy flock" period. The natural elements curtailed this venture and eventually forced abandonment of the project. In a way I am sorry it didn't work out as anticipated but at the time it looked feasible. In the meantime in this gross area of over 20 square miles of dominantly natural wetlands the Task Force's recommended revised boundary encompassing 4,745 acres has a potential of providing greater diversity and certain degree of compatible unity, of management, than exists in the remainder of the Powell Marsh Basin. It will provide additional excitement, even if it is at low level, for visitors from the immediate area where the dominating recreational patterns are associated with lakes and forests.

Comments and Recommendations

1. Goal and Objectives and Additional Benefits:

The Task Force has performed brilliantly. Their assessment of capability of the project area and proposed uses are well exemplified by the statements under the listed headings. Very well done.

2. Recommended Management Program:

- a. The WRAC is in total agreement with Task Force's recommended revised boundary encompassing a total 4,745 acres. Considering all of the circumstances listed in the Concept Element document this recommended block possesses unity and compatibility that will allow the revised project area to attain its goal and objectives.
- b. The elaboration of Alternatives 3 and 4 under the heading of "Recommended Management Program" is very sound and ranks high in treatment--professionally. The WRAC applauds its content.

3. Maps:

The maps affixed to the Master Plan document are very excellent. I found no trouble in using them to interpret the text.

Master Plan Comments  
By: Thomas J. Evans  
Representing: Mineral Resources/Mining Information  
Date: March 11, 1980

Thank you for the opportunity to comment on the Powell Marsh Wildlife Area Master Plan. After reviewing the Soils, Geology and Hydrology section, we have no substantive comments beyond adding the following sentence to first paragraph under Soils, Geology and Hydrology. . .

"The Powell Marsh Wildlife Area is located at the western edge of the Wisconsin Valley Lobe of the Woodfordian (Cary) glacial ice advance, that left Precambrian granite, quartzite, and slate bedrock buried beneath about 200 feet of acid drift."

DNR RESPONSE: Concur; incorporated in text.

#### APPENDIX B

Master Plan Comments  
By: Ken Anderson  
Representing: UW-Extension Resource Agent  
Vilas County

Overall view:

Needs comments on winter recreation use or potential, and comments concerning severed mineral rights.

DNR RESPONSE: Concur; text modified.

Major comments:

The history, page 1, land purchased from the Board of Commissioners of Public Lands have had the mineral rights reserved. Any future management or political implications?

DNR RESPONSE: No implications; text modified page 1.

Editorial comments:

I support the recommendation of a combination of alternatives 3 and 4, with emphasis on management capabilities to insure the survival of the remnant sharp-tail grouse population.

Additional comments:

Since the Department does not own most of the mineral rights under the prescribed management area, and since it behooves all citizens of Wisconsin not to preclude exploration and mining, this area should not be excluded from exploration and possible mining simply because a different state agency owns the surface.

DNR RESPONSE: Do not agree; text entry page 1 adequate.

#### APPENDIX B

Master Plan Comments  
By: Gene C. Ahlborn  
Representing: Conservation Congress

#### MAJOR COMMENTS

##### Goose Pasture Management

Planting winter rye, mowing, and controlled burning are positive factors in the goose management program of Powell Marsh. However, there is not enough of this being done in some areas.

Granted, weather conditions are a factor here. It appears that controlled burning is heavily-affected by the seasonal weather, as compared to the planting and raising of pasture crops.

Since burning is so highly unpredictable from year-to-year, this part of the plan should be de-emphasized. To do this, would create a greater reliance on pasture crops. More of these crops would have to be planted and the burning part of the program would be considered an additional factor in those years it could be done without danger.

DNR RESPONSE: Significant positive cost/benefit ratios obtained in management through prescribed burning warrants continued emphasis of this technique.

#### Goose Browse Production

The first sentence in this section of the report hits the nail on the head. Use of the marsh by migrating geese is limited by the lack of an adequate amount of food. It makes little difference how much the water-flow is manipulated; how many geese have been artificially-established; or how many other management techniques are used in Powell Marsh as long as there is not a substantial amount of food present.

This marsh needs more food, if it is to be maintained as a viable part of the State's over-all goose-management program. This food must be more than winter rye, supplemented by the re-growth of burned-over areas. This is not enough.

The weather and soil conditions make it difficult to raise crops with goose appeal in and around the marsh. However, there are various grain/grass type crops that can survive and produce during the average Powell Marsh growing season. The State of Wisconsin and the U.S. Federal Government have well-developed administrative units devoted to agriculture. It would seem that one or more of these agencies would be able to recommend the types of crops that will produce food in or near the marsh.

Historically, wild rice has grown in Chewelah Lake. However, according to the Master Plan of Powell Marsh, wild rice has never been attempted in the marsh.

The State of Wisconsin is currently leasing about 7,000 acres from the Lac du Flambeau Chippewas. A suggestion was made by these people that this leased land could be established as a wild rice area. This may bring the federal government into the picture. With cooperation between the State and Federal government, such a wild rice area could be created. As I understand it, the Lac du Flambeau Tribal Council indicated interest in sharing in the costs of such a wild rice development.

The establishment of the wild rice area could bring two positive results. It would provide a source of food for the waterfowl and it would help the Lac du Flambeau people economically.

DNR RESPONSE: While in agreement regarding the importance of fall food crops to attract migrating geese, other department program priorities precludes expansion of this effort. In the past, the Bureau of Indian Affairs investigated area reservation lands thoroughly for their potential for wild rice production. The area was found unacceptable because of soil which was too acid.

#### Indian Lease Land Hunting

The Master Plan for Powell Marsh states that pre-season and night hunting of geese on the leased lands is creating a problem in goose-management. These hunting rights were, long ago, established in a treaty signed between the Chippewa Indians and the United States Government. It may be that the Lac du Flambeau Tribal Council would consider an agreement to follow State and Federal hunting laws on the portion of the reservation that is leased. The tribal council should be approached on this.

If this hunting is a significant factor to goose-management on the marsh, the hunting agreement on the leased lands may be a heavy factor. It should be seriously considered and resolved, one way or the other, before actual implementation of the wild rice area is started. The waterfowl attracted to the wild rice area should create a large spill-over into the non-leased portion of the reservation, allowing these people pre-season hunting.

DNR RESPONSE: The Department Native American Coordinator has been advised of the problem. Contact has been established with the Tribal Council on the matter.

Dike Construction

There should be consideration made before constructing the proposed dike, which is to follow a significant portion of the boundary between the State-owned part of the marsh and the portion leased. There is some concern by the Lac du Flambeau Tribal Council that this dike may have an adverse affect on the southwestern flow of the water. According to the master plan, the water of the marsh flows to the northwest and the southwest. This indicates that the concern of the Lac du Flambeau Tribal Council may be valid. It should certainly be taken under consideration.

DNR RESPONSE: Because the affected water is surface drainage there should be no negative impact on the leased lands. However, the appropriate engineering assistance will be obtained.

ADDITIONAL COMMENTS

#1

The Lac du Flambeau Tribal Council expressed concern about the fact that it did not receive a copy of the Master Plan for Powell Marsh. The tribal council should have received a copy of this plan, since many items directly affect the Lac du Flambeau Reservation.

DNR RESPONSE: The oversight was corrected.

#2

Of course, an ideal area such as Powell Marsh may well include the following:

- A. A large refuge area in the center with ample food supplies out of the refuge and around the edges, with hunting permitted.
- B. Mr. Botwinski, our area wildlife manager, appears to be doing what he can with available funds. This project needs more money to create what is necessary, otherwise, the best may be to forget it: Tens of thousands of waterfowl migrate over our area annually.
- C. Powell Marsh is the only such area of this type in Vilas County.

EDITORIAL COMMENTS

The Powell Marsh Plan was sent to me by Chairperson Murphy of the Wisconsin Conservation Congress. Since the marsh lies about 30 miles from my home, I did not feel I was familiar enough with it to make a valid appraisal.

Since the Wisconsin Conservation Congress represents the sportsmen of our great state, I informed the Manitowish Waters Sportsmen's Club that an informal meeting should be held. The purpose of the meeting would be to gather input on Powell Marsh. The club responded positively and helped advertise the meeting, which was held March 6, 7:30 p.m., at the Manitowish Waters Town Hall. Some newspaper reporters were on hand at the meeting.

DNR RESPONSE: A summary of comments with DNR replies are presented as follows:

1. Many comments were made regarding the illegal hunting activities occurring on the Lac du Flambeau Reservation.

DNR RESPONSE: The matter has been referred to the DNR Native American Coordinator.

2. Some felt that development projects on Powell have not been effective.

DNR RESPONSE: While the Department agrees completely that Powell has a limited ability to contribute significantly to statewide waterfowl objectives, it has provided significant, local wildlife based recreation sorely needed in the region.

3. Cancel all land leases.

DNR RESPONSE: Agree that not all leased lands are important and have modified plans.

4. More food needed for waterfowl.

ONR RESPONSE: While in agreement, poor cost/benefit ratios and limited budgets precludes significant expansion of this activity.

5. All law enforcement should be beefed up on the area.

DNR RESPONSE: Noted; Department Conservation Wardens have responded on State lands.

6. The amount of waterfowl use on Powell Marsh has declined over the past several years.

ONR RESPONSE: This statement cannot be answered completely. Part of the reason is that migrational patterns, especially for snow and blue geese (same species), have shifted westward. The limited food sources combined with natural succession of woody vegetation within the marsh reduces the attractiveness of the area for waterfowl. Water quality is probably not as good as the birds would like it. Management is simply doing the best it can with what is there within program constraints.

IMPLEMENTATION ELEMENT

POWELL MARSH WILDLIFE AREA

Approved by: \_\_\_\_\_  
Division Administrator

Date: \_\_\_\_\_

Chester A. Botwinski, Woodruff Area Wildlife Manager  
Property Task Force Leader

A. ACQUISITION (listed on a priority basis)

Tract #1 (Figure #1) - Private Land

Consists of five remaining subdivision lots - small, low value.

Acquisition required for flowage construction and controlled burning program.

1A Lot 100' x 350' with small cabin; poor condition

1B Lot 280' x 150' with cabin; fair condition

1C Lot 100' x 350'; no improvements

1D Lot 200' x 360' with cabin; fair to poor condition

1E Lot 200' x 350' with trailer, cabin add on; poor condition

1F Lot 33' x 300'; owned by Vilas County as a result of tax deed

• Tract #2 (Figure #1) - Private Land

Acquisition of 42 acres in fee is recommended. This parcel contains aspen-northern hardwood and frontage on Powell Road. Needed for blocking and firebreak.

Tract #3 (Figure #1) - Private Land

Acquisition of 248+ acres in fee is recommended. This parcel contains semi-open marsh and has non-buildable frontage on Bolin Lake. It is required for firebreak and project boundary blocking.

Tract #4 (Figure #1) - Private Land

Acquisition of 40 acres in fee is recommended. This parcel contains approximately 20 acres aspen-northern hardwood. The remainder is open marsh with a beaver flowage. It is required for project boundary blocking.

B. DEVELOPMENT

1. Flowage Construction (Objective #1) (Figure #2) - Install one water control structure approximately 2,440 feet of dike and 6,600 feet of drainage ditch to create 500 acres of brood water.
2. Fire Break Construction (Objectives #2 and #3) (Figure #2) - Dragline 2.5 miles of ditch along south project boundary (reservation line) and utilize spoil bank for raised equipment access road. Will provide firebreak for Burn Units E and G.
3. Food Patch Development (Objectives #2 and #3) (Figure #2) - Develop additional 100 acres of food patches during the next five to ten years.
4. Firebreak Construction (Objectives #2 and #3) (Figure #2) - Clear 1.5 miles upland firebreak along north boundary pool #1 and Homestead to Sherman Lakes. Will provide control measure to apply fire on Burn Units D and C.
5. Firebreak Construction (Objectives #2 and #3) (Figure #2) - Dragline 1.75 miles of ditch along east project boundary (Bolin Lake area) and utilize spoil bank for raised equipment access road. Will provide firebreak for Burn Unit C.

6. Nesting Island Construction (Objective #1) (Figure #2) - Increase duck and Canada goose nesting densities by providing simple dragline pileups, averaging 300 to 400 square feet in size, not to exceed one per ten acres in basins of pools #1 and #5 and Dead Pike Flowage, when completed.

C. OPERATIONS AND MAINTENANCE

1. Waterfowl and Sharp-tailed Grouse Habitat Maintenance - 500-1,000 acres annually by use of fire and mechanical means on a rotational basis.
2. Food Patches - Establish 90-100 acres of winter rye and small grains annually for goose pasture.
3. Mowing - Mow 100-200 acres of sod for goose pasture annually.
4. Posting - Replace signs and posts on refuge boundary annually, approximately 5.6 miles.
5. Flowages - Manipulate water levels, repair rat holes and erosion problems, and remove woody vegetation on six flowages and nine miles of ditch and dike annually.
6. Roads, Parking Lots, Gates, and Signs - Maintain four parking lots and five miles of road, repair gates, grade fill washouts, and replace signs.

7. Surveys - Monitor waterfowl, sharp-tailed grouse populations, and user activities.
8. Buildings and Grounds - Maintain storage buildings and support facilities annually.

D. VEGETATIVE MANAGEMENT (Figure #3)

There are 648 acres of upland on the project. To date, approximately 460 acres have been subject to some degree of conversion effort, either timber salvage, burning, or clearing. Approximately 38 acres have been designated as a "no cut scenic zone" adjacent to Sherman Lake. The remaining acreage is either under timber sale contract or will be harvested during the next three to five years. All other vegetation cover is lowland consisting of grass or grass-brush marsh, managed for waterfowl and sharp-tailed grouse with fire and/or mechanical treatment.

Submitted by: \_\_\_\_\_

C. A. Botwinski

Date: \_\_\_\_\_

cg

5/23/83



FIGURE 2 PROPOSED DEVELOPMENT

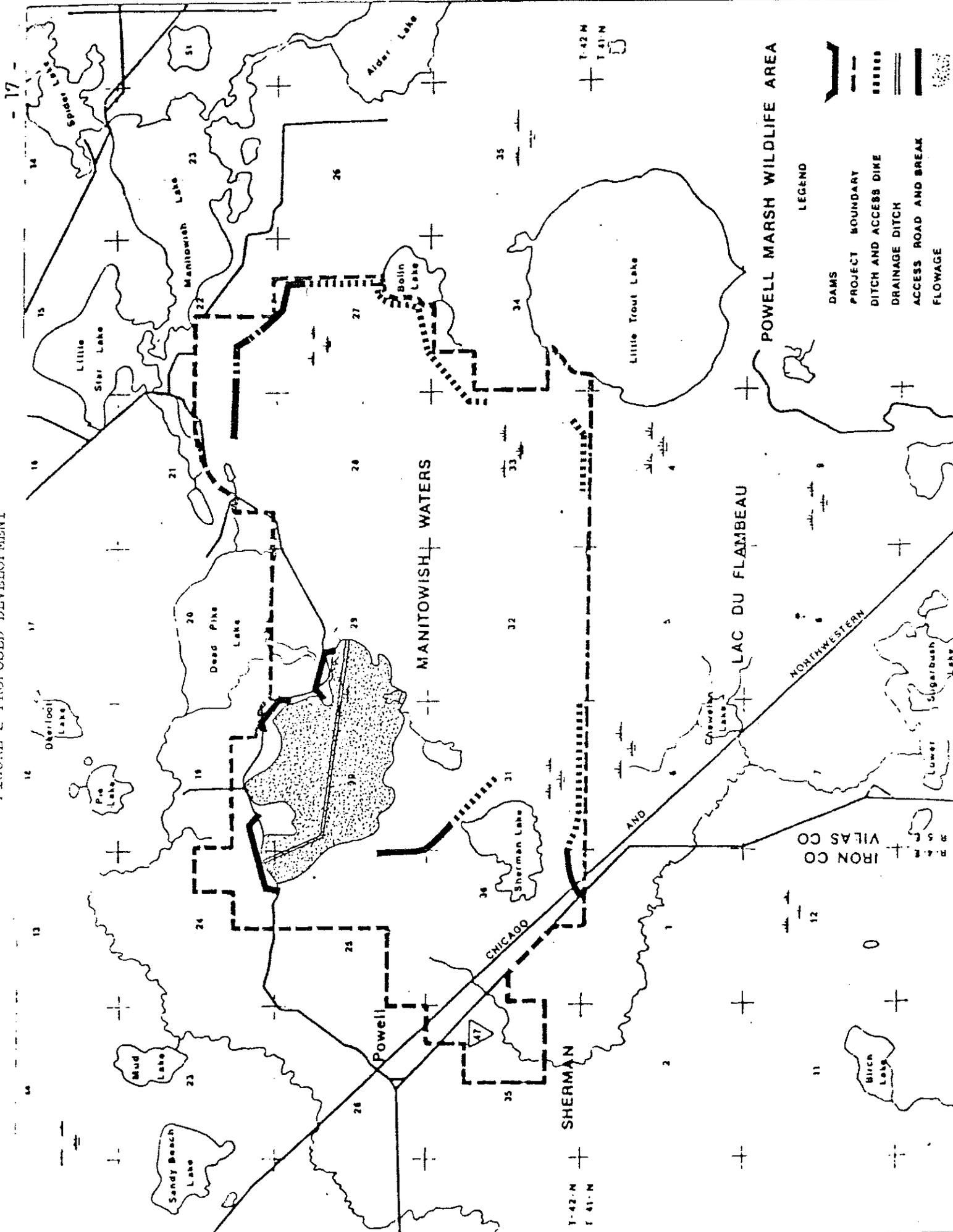
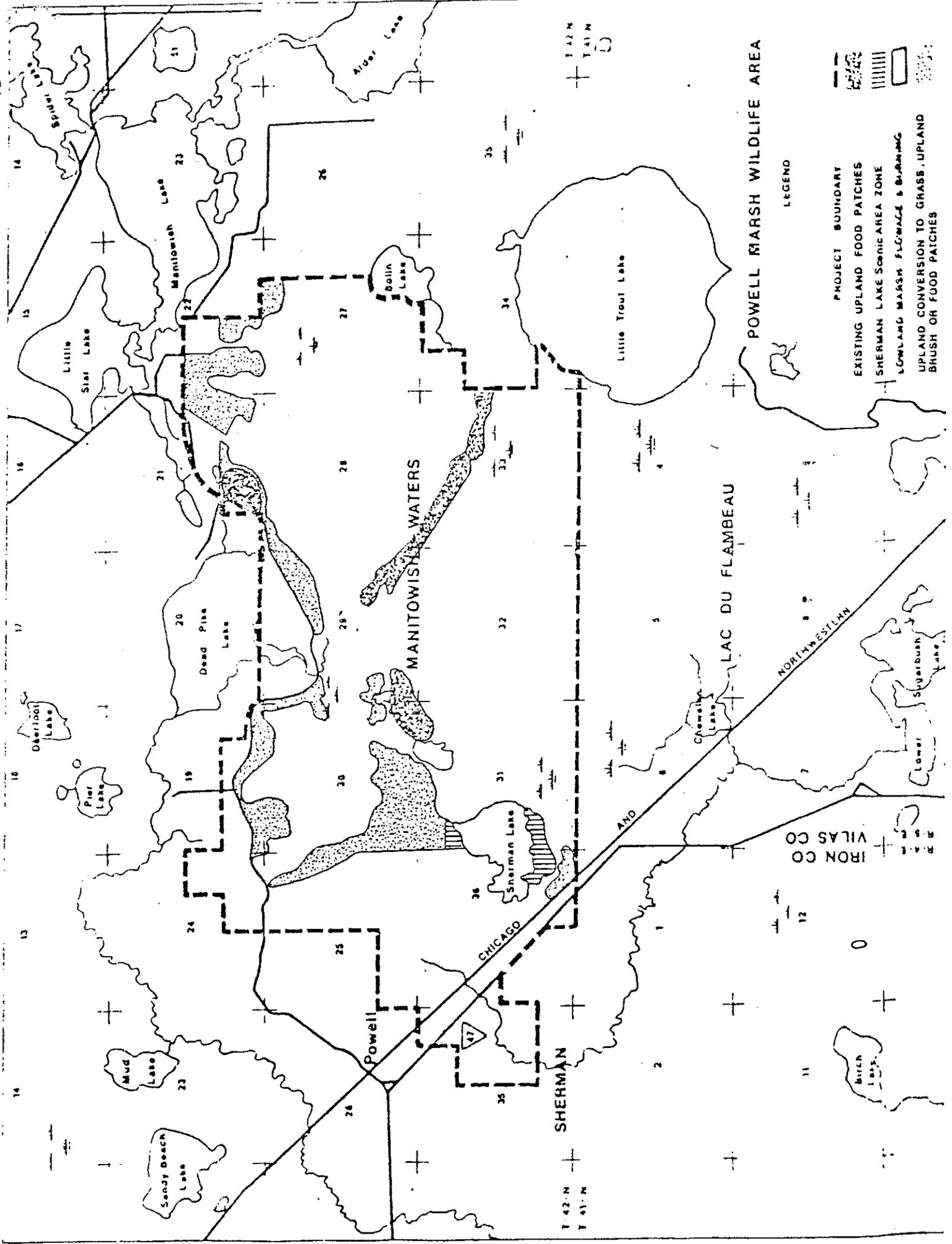


FIGURE 3 VEGETATIVE MANAGEMENT



IRON CO  
& VILAS CO

NORTHWESTERN

LAC DU FLAMBEAU

POWELL MARSH WILDLIFE AREA

LEGEND

- PROJECT BOUNDARY
- EXISTING UPLAND FOOD PATCHES
- SHERMAN LAKE SOMIC AREA ZONE
- LOWLAND MARSH FLOWAGE & BURNINGS
- UPLAND CONVERSION TO GRASS, UPLAND BRUSH OR FOOD PATCHES

T 42-N  
T 41-N

SHERMAN

CHICAGO

MANOWISH WATERS

AND

T 42-N  
T 41-N