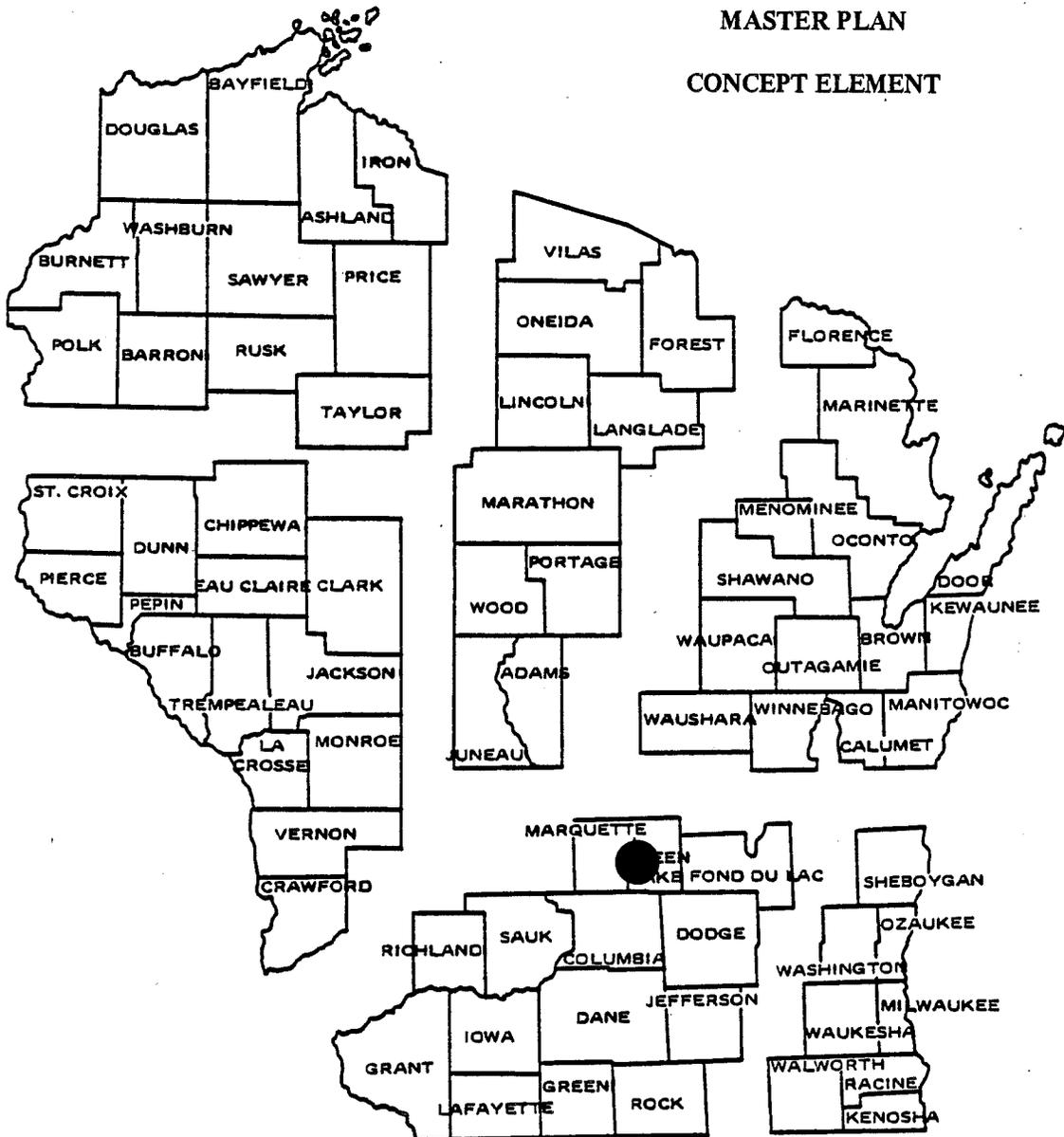


GRAND RIVER MARSH WILDLIFE AREA

MASTER PLAN

CONCEPT ELEMENT



Property Task Force

Approved By: \_\_\_\_\_

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Wildlife Manager  
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James Kronschnabel, Forester

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



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## GRAND RIVER WILDLIFE AREA

### GOALS AND OBJECTIVES

#### Goal

To manage a state-owned wildlife area for duck and pheasant production, endangered species protection, public hunting, trapping, fishing and other compatible recreational and educational opportunities.

#### Annual Objectives

1. Produce .75 duck per acre on 3,135 acres of permanent water (2,350 ducks).
2. Produce an average fall population of 100 wild rooster pheasants.
3. Protect and maintain nesting sites for a minimum breeding population of 125 double-crested cormorants (endangered species).
4. Provide for 900,000 days of goose-use during fall migration with a peak population of 30,000 geese by 1985.
5. Provide for a peak population of 5,000 ducks during fall migration.
6. Provide 16,750 participants days of hunting and trapping opportunity as follows:

<u>Activity</u>	<u>Participant Days</u>
a. Ducks	5,000
b. Geese	7,000
c. Pheasant	1,000
d. Deer (gun and bow)	1,500
e. Furbearers	1,500
f. Other game	750

7. Provide 2,500 angler days of fishing.
8. Provide 500 participant days of snowmobiling recreation associated with a county trail system.
9. Protect two Scientific Areas (80 acres) for recreation, aesthetic and scientific purposes.

#### Annual Additional Benefits

1. Accommodate 3,000 participant days of other recreation including hiking, outdoor education and nature observation.
2. Contribute to the habitat of other wildlife including migratory, endangered and threatened species.

## RECOMMENDED MANAGEMENT

### Development and Maintenance (Figure 2)

To complete the proposed goals and objectives of the property, some additional improvements are needed. Most of the land acquisition and major development projects (dikes, ponds) have been completed. Maintenance of existing development (dikes, structures, ponds, nesting cover) should be given priority over new development projects.

The most important and costly planned development will be the completion of a storage-shop facility. Without this facility, it will be extremely difficult to properly manage the property and assure safe and adequate storage of equipment and supplies.

Firewood permits will be issued to remove undesirable trees that cause a hazard to facilities, roads and parking areas or are species with little or no wildlife or commercial value. Annual mowing, spraying and burning will be necessary to control brush and undesirable tree invasion. At least 100 acres need treatment annually. These practices will sustain the grasslands for waterfowl, pheasants, rabbits and quail.

Three small parking lots will be needed on the southeast and northeast portions of the public hunting area to provide adequate parking for hunters. Five hundred (500) acres of dense nesting cover (DNC) will be developed on grasslands and croplands where improvement in quality nesting habitat is needed. The main grass species planted will be Blackwell Switchgrass.

One thousand (1,000) feet of bank stabilization is planned on the upper Grand River where erosion has damaged the river bank habitat for fish and wildlife. An additional 60 nest structures are planned to be attached to the existing poles located in the blue heron-cormorant colony.

One of the primary species of trees on the property is oak. Because oak is an important mast producer for wildlife food, harvest is not immediately planned and any cutting of timber will be limited to maintain species usable to wildlife. Regeneration of oak may require a selective cutting and planting program. A county sponsored snowmobile trail is maintained by land use agreement. Trail posting is the responsibility of the county.

About 10 old building sites need further landscaping and some permanent well capping to eliminate health and safety hazards. These sites also act as dens for predators that may have a detrimental effect on nesting birds.

Any new acquisitions where buildings are involved will result in subsequent sales with acreage or salvage of surplus buildings and cleanup of debris, capping wells and landscaping the sites. There are three building sites left within the proposed boundary. There are also three old building sites currently being used for management and research of the property which will eventually be eliminated. About 1/4 mile of boundary

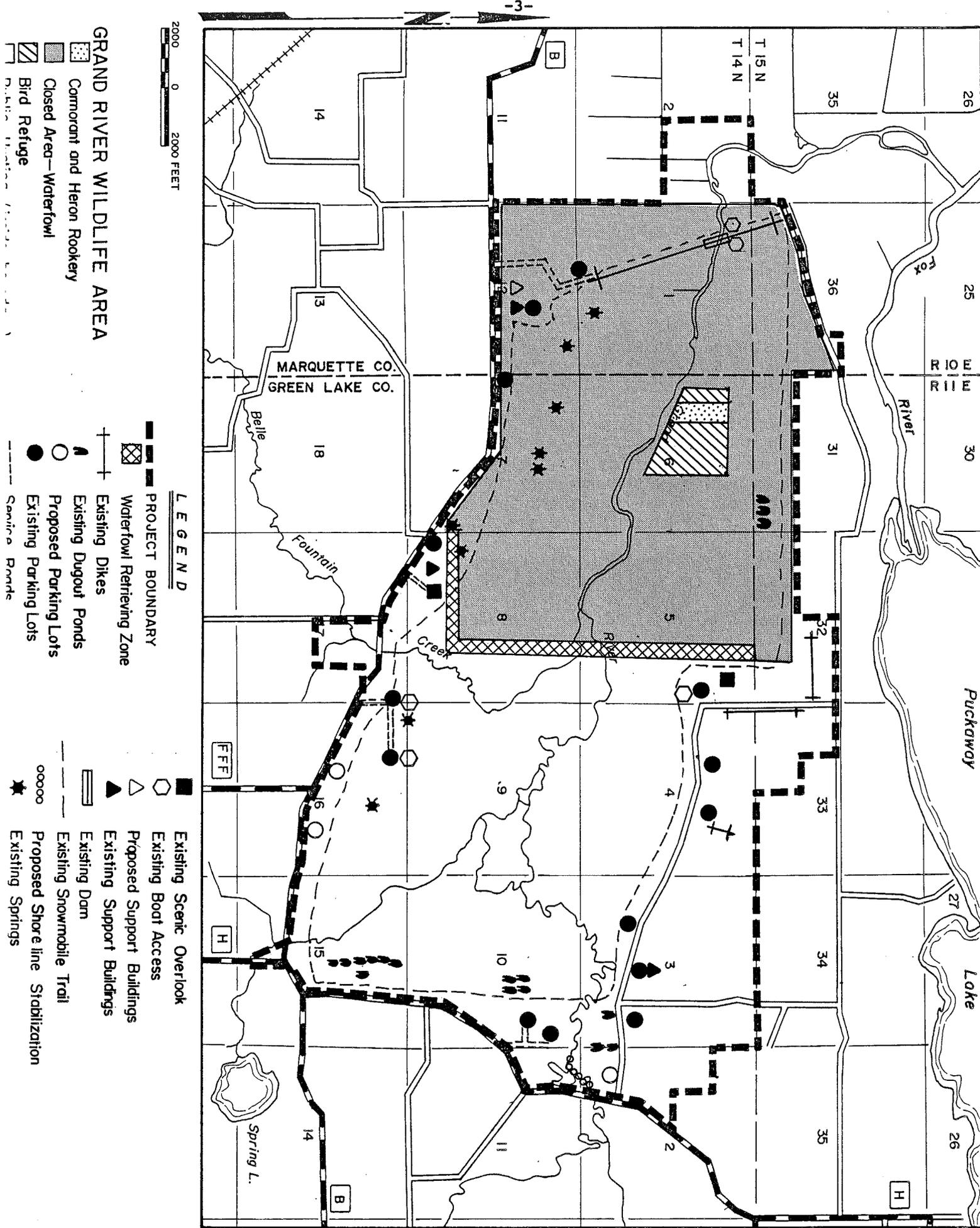


FIGURE 2 PROPOSED AND EXISTING DEVELOPMENTS

line fencing is required annually and accomplished either by agreements or DNR crews. Research has shown that predation by raccoons, skunks, and fox substantially lowers duck nesting success in some years to less than 20%. Encouragement or incentives for increased trapping and hunting of predatory animals will be given careful consideration.

### Land Acquisition (Figure 3)

The current ownership is 6,958.48 acres including 65 acres under easement. The approved acreage goal is 7,317.31 acres. Seven tracts needed for purchase remain within the approved boundary. There are no recommended changes in the acreage goal although the approved boundary should be amended to exclude parcels A and B. Parcel A is a small acreage located across the town road and has no management use. Parcel B contains a set of buildings and is also not needed for management of the property.

Easement instruments cover parcels C, D, E, F and G. They are included within the property boundary and, to date, adequately protect the Department's interests and management of the property. The easement for Parcel C closes hunting (NR 11.27). Parcel D has public hunting and scenic easements. Parcels E, F and G have flowage easements.

### Timetable and Costs

Under present policy, land acquisition will be completed by negotiations with willing sellers. No private lands remaining in the boundary are essential to meet the goals and objectives of the property. However, these tracts will enhance the total wildlife productivity, increase public use, and, most important, protect wetland resources from development.

Acquisition costs to complete the acreage goal are \$300,000. Development projects, mainly dense nesting cover establishment, will be initiated as parcels are acquired. To completely develop the habitat (mainly nesting cover, maintenance and development) and to attain property goals will take about 10 years. The complete development costs proposed are \$180,000, with about 65% of this cost being in a storage-shop building.

The annual operating costs to maintain current and proposed management of the property are projected at \$15,000, with the eventual hiring of additional manpower (NRA II).

### Other

Because of the recreational potential adjacent and within the project boundary and the close proximity to the population centers, private developments are likely to occur. This is particularly evident because of its attractiveness to large numbers of migratory waterfowl and hunters. Subdivisions, campgrounds, blind rentals and hunting leases have already occurred.

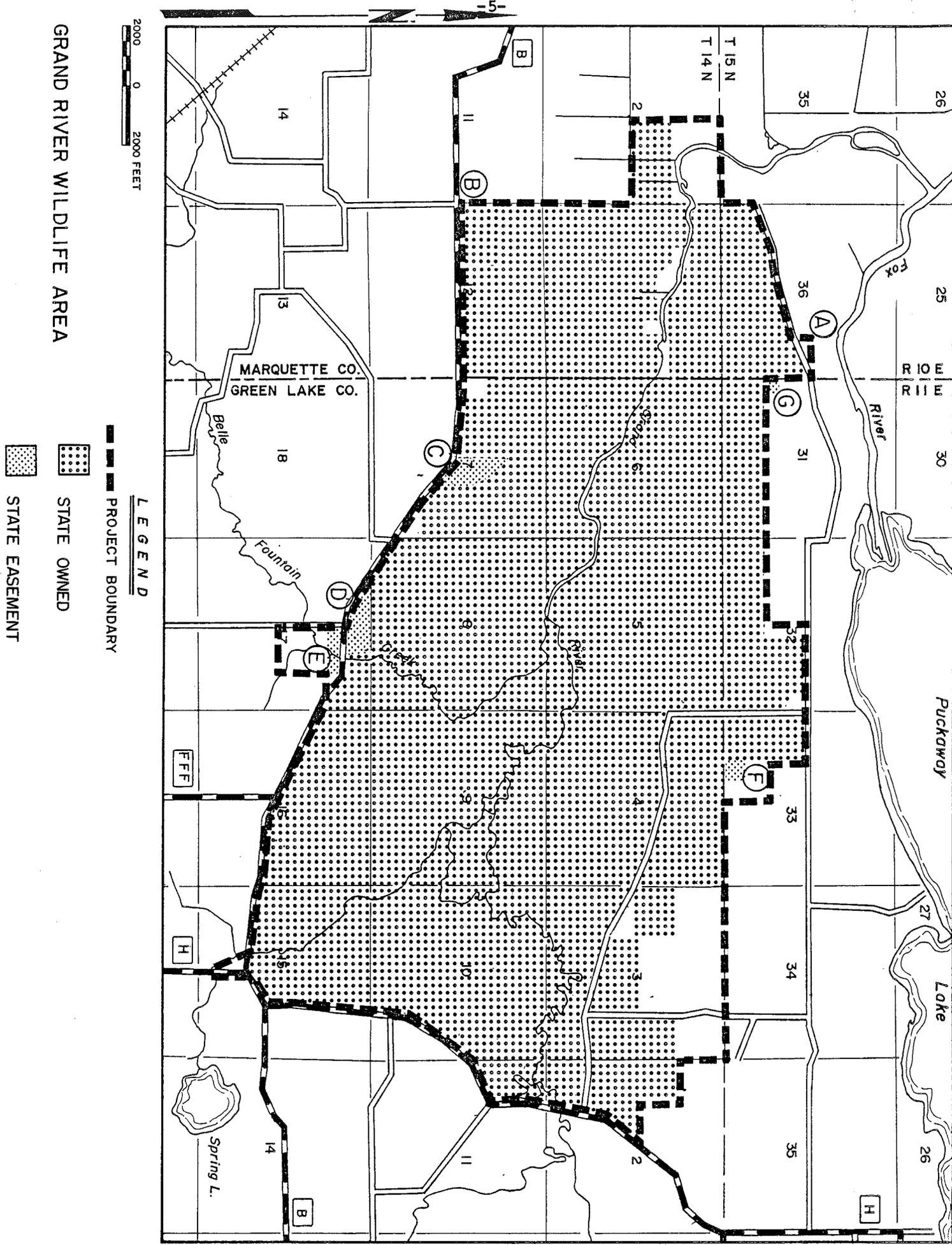


FIGURE 3 OWNERSHIP

The three permanent employees of the work unit managing this property also have wildlife management responsibilities in Marquette and Green Lake counties; maintenance and supervision of the Mecan Youth Conservation Camp, four other wildlife areas - including the White River and Germania waterfowl areas. Any increased management, particularly controlled hunts or restricted hunting programs on this property, will require additional funding and manpower. Managed hunts alone would require hiring an additional four seasonal employees and will require an additional annual budget of \$10,000 (administration, personnel, supplies, equipment).

The responsibility for management of the fishery resources is directed by the Bureau of Fish Management's personnel. The immediate restocking of game fishes in the flowage costs \$4,000 to \$5,000 each year. The wildlife area functions as a northern pike nursery to help repopulate downstream Lake Puckaway.

The one mile section of the Grand River below the dam with the electric fish weir and trap will be managed for carp control and removal when upstream migrations occur. Fish will be removed by both mechanical and chemical methods to control carp populations from Lake Puckaway and prevent movements back into the Grand River Marsh. Chemical spot treatments will be used before large scale removal operations are again tried in the flowage.

If the carp populations in the marsh increase and cause significant damage to the aquatic environment, another drawdown of the system will be initiated, followed by retreatment with chemicals to control carp populations. Subsequent treatments will not be as costly as initial efforts, running about \$25,000 for the operation. The drawdown itself will also be beneficial in immediately attracting waterfowl and improving the marsh vegetation that will have been destroyed by direct or indirect actions of the carp.

Fish refuges now posted below the dam will be maintained to facilitate the carp removal operations and protect concentrations of game fish during spring runs. These refuges are posted by authority of Sections NR 26.01 and NR 26.02 of the Wisconsin Administrative Code.

All areas proposed for development will be examined for the presence of endangered and threatened wild animals and wild plants. If listed species are found, development will be suspended until the District Endangered and Nongame Species Coordinator is consulted, the site evaluated, and appropriate protective measures taken.

A complete biological inventory of the property will be conducted as funds permit. Additional property objectives may be developed following completion of such an inventory.

All areas of future development will also be investigated for the presence or absence of historical or archaeological sites and appropriate protective measures taken to protect significant sites. Should any sites be found during development, construction will be suspended until the State Historical Preservation Office is consulted.

## SECTION II - SUPPORT DATA

### BACKGROUND INFORMATION

#### History

The Grand River Marsh has long provided excellent habitat for a variety of wildlife and migratory waterfowl. Area sportsmen's clubs in the 1930's and 1940's conceived the idea of converting it into a wildlife refuge. The proposal received continued support locally as clubs sponsored fund raising projects and contributed money toward acquisition and development. Their verbal and moral support was considered much more valuable than the monetary contributions. Public support for this wildlife area is considered to be among the strongest received in recent history. The preliminary project statement was submitted January 16, 1958, and the Wisconsin Conservation Commission approved acquisition of land within the boundary on February 21, 1958. Land acquisitions began the same year.

Much of the uplands and marsh were farmed and grazed. Portions of the marsh were ditched for farming and the west end, in particular, has deep muck soils. Marsh hay was once an important crop produced on this marsh with canary and wire grass being the prime species.

#### Current Use and Management

Hunting is the main use made of the property at this time. Waterfowl hunting, for both geese and ducks, is the leading activity. There have been 500 cars on the parking lots and roads during peak hunting days. About 3,000 of a 6,938 acre total are posted and closed to hunting and trapping during the waterfowl season (N.R. 11.27) which includes a posted waterfowl retrieval zone. Within the closed area, a 200 acre no entry refuge (NR 15.03) has been established to protect a breeding colony of cormorants.

The closed area had a fall peak count of 56,600 Canada geese in 1977, 5,000 blue and snow geese in 1969, and 20,000 ducks in 1972, 1973, and 1976. The average numbers of waterfowl on the marsh are closer to 20,000 geese and 10,000 ducks.

Among state waterfowl refuges, Grand River has the largest fall concentration of geese and is among the highest in duck concentrations. As required by the state goose management plan, upland food crops are no longer planted for geese. About 250 acres have been converted to duck and pheasant nesting cover. Planting crops to attract large numbers of geese is currently not necessary.

The large water with abundant vegetation and sanctuary area holds large numbers of geese. As the season progresses, geese and ducks fly out to feed. Fall harvest of waterfowl has reached an estimated peak of 5,335 geese in 1978 (mainly Canadas) and 3,050 ducks in 1975. Mallard, blue-winged teal, baldpate, green-winged teal and ringneck are the main species of ducks harvested, but many other species of ducks are represented in the harvest.

Pheasant hunting is the next most important hunting use. The public hunting area of 4,000 acres is stocked annually with 700 pheasants. As many as 266 cars have been counted on opening day of the pheasant season. Moderate hunting pressure occurs during the bow and gun deer seasons with 125 cars using the marsh on peak days. Hunting pressure on other species such as rabbits, squirrels, woodcock, ruffed grouse, raccoon and fox is light.

Other uses made by the public include nature study, bird watching, canoeing, berry-nut-mushroom picking and hiking. A 14-mile county snowmobile trail around the periphery is maintained by the Green Lake County Snowmobile Association.

Trapping of fur-bearing animals occurs for such species as muskrat, fox, mink, otter, raccoon and beaver. Annual harvest of muskrat, the most important fur species, averages between 2,000-3,000 each year.

Fishing activity on the flowage and below the dam for northern pike, walleye and panfish occurs during years of reduced carp populations. The marsh has been plagued by abundant carp populations that have decimated the aquatic habitat. The waters were chemically treated to reduce the carp populations in 1976 (winter) and restocked at an estimated cost of \$10,000. A second treatment was completed in 1979 (summer-fall) and restocked at a total cost of \$36,000. The 1979 treatment was very successful and one million pounds of carp were removed.

Electrical weirs on the dam structure and a fish trap below the dam have been installed to block carp migration back into the marsh and remove carp during upstream migrations from Lake Puckaway. Electrical devices have been installed on the main dam to facilitate water control operations.

There is a continuing research study on the property which examines the nesting success, local movements and habitat requirements of waterfowl. The habitat and movement study has been focused mainly on ducks, but some marking and radio telemetry has also been conducted on Canada geese. The research, when finalized, will direct future management on major state waterfowl properties. One of the more significant research studies is the carp control project which dramatically improved the aquatic habitat as well as increased duck use and production.

Periodic management drawdowns have been completed over the past 10 years to produce waterfowl foods, particularly smartweed, and associated moist soil plants. With a reduced carp population, more stable water levels are being kept to fully utilize the marsh and surrounding uplands for needed habitat that stimulates duck production.

There are 2,500 acres of managed and unmanaged grassy nesting cover for ducks. When aquatic habitat on the marsh is abundant, the marsh will produce between 2,000-3,000 ducks each year (mainly blue-winged teal, mallard, gadwall and pintail). Redheads, ruddy ducks and coots also nest in the marsh.

Restrictions have been placed on the property to protect the wildlife populations and habitat and to insure a fuller enjoyment of the area by sportsmen. These include: prohibited uses of off-road vehicles, motor boats and camping (NR 45).

On the state-owned lands, annual wildlife habitat management activities include: sharecrop farming for wildlife nesting cover and winter food on 175 acres, issuance of 10-15 land-use permits and agreements (hay cutting, firewood and bee hives), mowing and spraying of 40-80 acres of field invading brush and trees, controlled burning of 200-300 acres, capping of old wells, banding of ducks and geese and running of 12 wildlife population and habitat surveys, monitoring for waterfowl diseases and prevention programs during disease outbreaks.

In the past 20 years, approximately 200 buildings have been sold or razed and removed from 18 farm sites. The farm sites were leveled, cleaned, made safe and seeded to grass. The sites now serve as habitat for birds and animals or as parking areas for users of the area. Thousands of wildlife food and cover shrubs have been planted. An estimated 60 miles of old interior fences were removed to make the area safer and more convenient for public use.

In addition to license fee revenue, a considerable amount of money used to purchase and initially develop the wildlife area came from federal and state aids programs (P-R, LAWCON, Park-Road, ORAP) and some donations. Considerable wildlife and fish development has occurred since 1968 at a cost of \$453,000.00. These include construction of: one large dam structure (3 roller gates, 1 stoplog section, 2 slide gates, electric fish weir system), rock riprap of main dam, 2 smaller flowages with 5 water control devices, water control modification on dam, dam painting and rust protection, 17 large dugout ponds, 3 miles of access and service roads, 20 artificial cormorant nesting poles with 100 nest structures, 2 observation sites, 16 parking lots, 5 boat accesses, 8 large project signs, 4 road gates, 24 miles of boundary and closed area line fencing and posting.

Five buildings remain on the property and are used as work-storage facilities. All of these facilities require continuing maintenance to keep the wildlife area functional for wildlife and public use. Some of these older buildings will be sold when a new storage facility is constructed.

## RESOURCE CAPABILITY AND INVENTORY

### Soils and Geology

The marsh soils are peat and muck ranging from 12" on the east end to 90" at the dam site. Considerable muck farming activities occur in the vicinity. The upland soil types are sandy, ranging from gravelly sands on the southwest fields to sandy loams on the northeast fields. All the upland soils can become droughty during extended dry periods resulting in poor agricultural production.

The history of this large marsh dates back to the Ice Age when several glaciers passed through Green Lake County. Melting ice formed a lake which, in turn, filled with silt and decaying vegetation to become a marsh. Large marshlands and the surrounding gently rolling uplands are the common features of the Upper Fox River watershed.

### Wildlife

All of the wildlife common to central Wisconsin can be found on this property: white tailed deer, red fox, fox and gray squirrel, cottontail rabbit, ruffed grouse, woodcock, ring-necked pheasant, bobwhite quail, raccoon, muskrat, mink, otter, beaver, Canada geese and many species of puddling and diving ducks. A wide variety of nongame wildlife also as found including sandhill cranes.

### Fish

Various species of fish populate the flowages, river and streams including northern pike, walleye pike, perch, bluegill, crappie, pumpkinseed, largemouth bass, channel catfish, bullheads, suckers, carp and many different species of minnows. No endangered or threatened species of fish, amphibians, reptiles, or molluscs are known to be present.

### Endangered or Threatened Wildlife

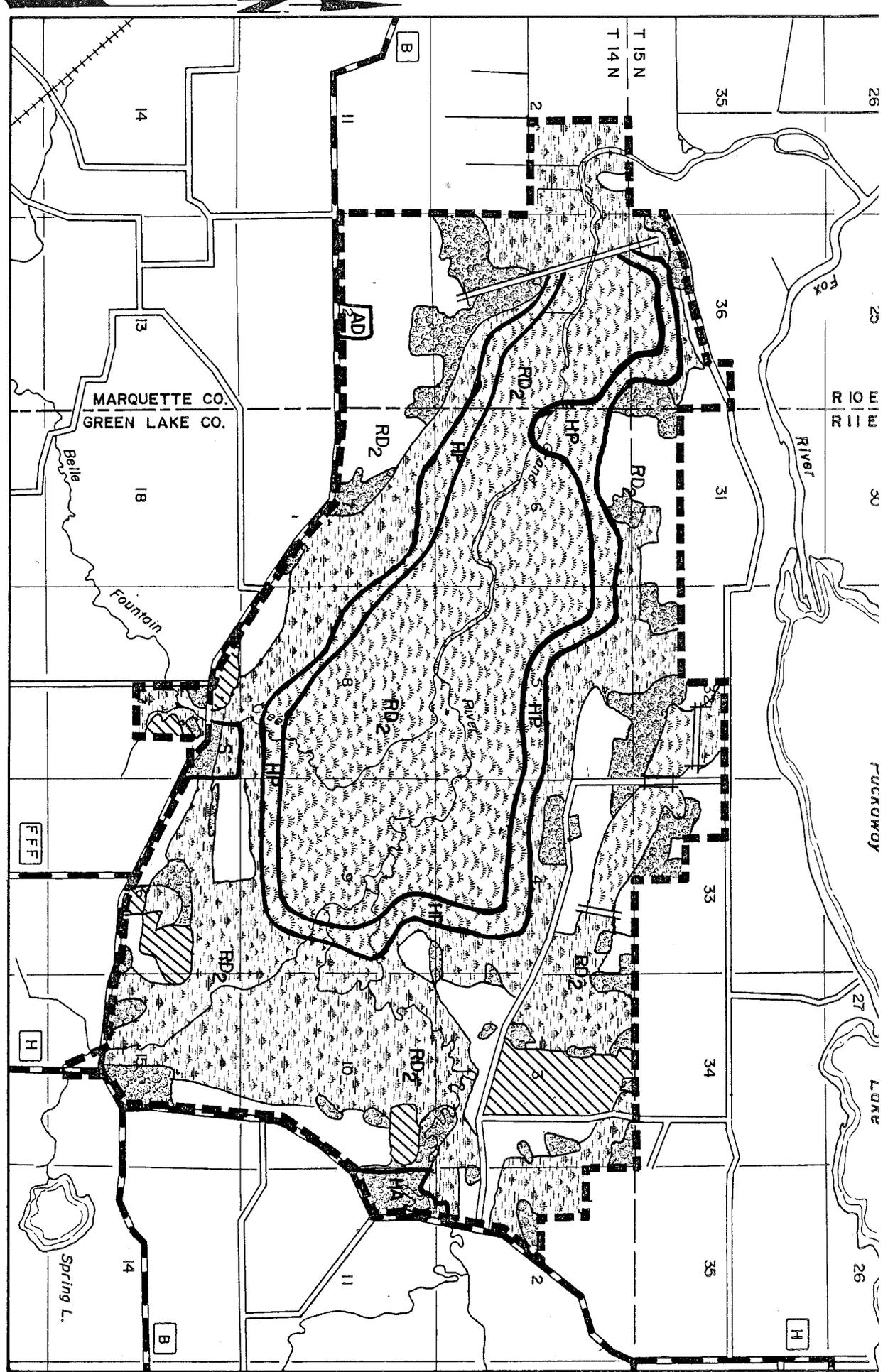
Two Blanding's turtles (endangered) were sighted on the property in 1981. Double crested cormorant, osprey and bald eagles (all endangered) are found on the flowage. Colonies of cormorants, great blue herons and one pair of osprey nested in downed dead trees along the Grand River banks after the marsh was flooded in 1969. The trees have badly deteriorated threatening the nesting colonies. Management action was taken during the marsh drawdown in 1979 to remedy this situation as equipment was moved over the dry marsh and 20 treated poles, 35' long were erected. One hundred artificial nest structures were attached to the poles that winter.

In the spring of 1980, the cormorants and herons responded to the development and occupied 90% of the nesting structures. A breeding population of 125 cormorants and 300 great blue herons use the nest structures and remaining dead trees. One pair of osprey usually nests in a dead tree but have not responded to use of the structures. Bald eagles (up to three) have been observed in the closed area during the fall feeding on crippled and dead waterfowl. Periodic surveys will determine where the ospreys nest and what management may be required.

### Vegetative Cover (Figure 4)

The large open expanses of marshland contain such grasses as reed canary, bluejoint, various sedges and cattail. Some marsh areas have clumps of shrub species including alder, red osier, dogwood and willow. The more wet-marsh communities contain burreed, three square, hardstem-bulrush, saggitaria, pond lilies, pondweeds, coontail, waterweed, water smartweed, bladderwort and a scattering of wild rice.

Wild rice has been planted in the water areas to improve the aquatic habitat for ducks. The open upland areas that were formerly cropped or pastured contain various grasses and forbs including bluegrass, brome, quackgrass, aster, goldenrod, alfalfa, timothy and clovers.



RD2-FISH & WILDLIFE MANAGEMENT  
 HP -HABITAT PRESERVATION  
 HA -HISTORICAL & ARCHAEOLOGICAL  
 AD -PROPERTY HEADQUARTERS  
 S -SCIENTIFIC

**LEGEND**  
 [Thick dashed line] PROJECT BOUNDARY  
 [Line with cross-ticks] DIKE  
 [Stippled pattern] WOODLAND

[Patterned box] GRASS AND BRUSH MARSH  
 [White box] GRASSLANDS  
 [Diagonal lines] CROPLAND  
 [Wavy pattern] GRAND RIVER WILDLIFE AREA  
 [Stippled pattern] CATTAIL, RUSH, AND DEEPWATER MARSH

FIGURE 4 LAND USE CLASSIFICATION & VEGETATION

FIGURE 4

The scattered forested areas contain quaking aspen, red-white-burr oaks, shagbark hickory, white birch, American and Chinese elm, black locust, white ash, red and silver maple, cottonwood, basswood, box elder and planted red pine, jackpine, white pine and spruce. The vegetative cover-type breakdown is 64% lowland and marsh, 27% upland grass and cropland and 9% forested.

No endangered or threatened species of wild plants are known to be present on the property.

#### Water Resources

Three main water courses run through the property: 1) Grand River enters from the east, and flows through about 7 miles of the property. The river averages 30 feet wide with depths of 6" to 6'. The water is very hard with pH reading of 8.1. The river bottom is silty and sandy. The water is turbid during heavy runoff from extensive agricultural lands and periods of high carp populations. The river maintains a year-round flow, but can subside during a drought.

2) Bell Fountain Creek enters from the south with about 1.5 miles flowing through the wildlife area. The stream averages 25 feet in width and depths of 1 to 4 feet. The water hardness has a 7.7 pH reading. The bottom contains sand, rock and muck materials. The flow is quite constant as much of the water source is from springs.

3) Spring Creek enters from the southeast, with 1.75 miles of frontage on the wildlife area. Its source is from nearby Spring Lake. The stream averages 10 feet in width and one foot in depth. Sand, detritus and muck are common bottom types. The stream maintains a good year-round flow.

The main flowage contains about 3,000 acres of water. Grand River, Belle Fountain and Spring Creeks furnish an adequate source of water to yearly maintain the flowage water levels. The average water level is 1 to 3 feet deep over 2,000 acres and contains mainly emergent marsh plants. About 1,000 acres is 3 to 6 feet in depth being open water and containing mainly submergent aquatic plants. The bottom materials consist of peat, sand, detritus and muck.

The flowage is surrounded by grassy slopes, woodland, fresh and shrub marsh. It contains very hard, moderately alkaline waters with mean readings of 284 ppm methyl orange alkalinity and a 26 month range of 7.1 to 8.1 pH readings. Turbidity readings show poor visibility in the water during years of high carp populations, but clarity improves dramatically immediately after carp are removed. Overall, the flowage contains highly fertile waters and soils that produce an excellent aquatic and marsh environment.

The two smaller flowages are 100 and 35 acres in size. They are shallow and productive flowages for muskrats and waterfowl. The main source of water is from spring runoff and rain.

Seventeen large dugout ponds surround the flowages and furnish more waterfowl habitat. These ponds average 2 to 5 feet in depth and 7,200 square feet in size. There are also 13 smaller natural ponds on the property and nine flowing springs are located at various sites along the south shoreline of the marsh.

#### Historical and Archaeological Features

The State Historical Society has been contacted. Several archaeological sites have been recorded in detail and shown in the appendix. The archaeological features are of Indian origin. Other than the construction of a storage building, there are no planned developments that would affect these sites. The property manager will establish liaison with the State Preservation Officer to establish protective needs prior to the initiation of any ground disturbing activities (Flooding?)

#### Land-Use Potential Areas (Figure 4)

##### Resource Protection

Habitat Preservation (HP) - Shorelines on the main flowage and the waterways within the boundary are important waterfowl and furbearer habitat and fish spawning grounds. When northern pike, bass and panfish are abundant in the flowage, these low marshlands and shorelines offer excellent fish and wildlife habitat where no major alterations are planned or feasible other than vegetation control by mowing and burning and some bank stabilization on the Grand River.

Historical and Archaeological Areas (HA) - Physical developments on these sites shall be limited to vegetation control and there will be no disturbance of the soils. The Historical Society will be notified of any development.

Scientific Areas (S) - The Belle Fountain Creek area is recommended and recognized by the Scientific Areas Preservation Council as a site containing remnant low-prairie plants. The area is maintained for waterfowl nesting and the only management is periodic burning, a practice supported by the State Preservation Council. A complete inventory of the plant species on this site is on file and available for study.

##### Resource Development

Wildlife Management and Fisheries Areas (RD2) - These areas make up the more expansive units of the property. Development projects will be mainly for waterfowl, with some upland game management. The fisheries management area includes most of the main flowage and below the dam where carp control projects will occur. Areas closed to hunting (waterfowl closed area) and to entry (cormorant colony refuge) are included in this section and fish refuges are located below the dam on the Grand River.

Headquarters Site (AD) - Several farm buildings are now being used for a storage and work shop facility. A new or remodeled facility is planned for administration, shop and storage.

#### RESOURCE MANAGEMENT PROBLEMS

1. Off-road vehicle use:

The surrounding housing and summer dwelling developments produce a reservoir of all kinds of off-road vehicles. Constant closing of trails and service roads are necessary to control the problem. Gating and patrol is an additional management operation necessity to stop abuse of the landscape, facilities and vegetation.

2. Public overuse:

Because of the close proximity to the metropolitan areas of southern and eastern Wisconsin, waterfowl hunting pressure has become heavy, resulting in crowding of the private and public lands causing skybusting at birds, arguments over downed birds, safety concerns, unnecessary loss of resources and decreased hunting quality.

A managed goose hunt was held in the closed area in 1978 with generally good results in both success and hunter satisfaction. However, there were some conflicts with adjacent private and wildlife area hunters.

Several factors have reduced hunting pressure on the marsh since the 1970's (reduced goose quotas, gas prices, inflation, steel shot laws). The goose flights have changed direction and no longer fly in appreciable numbers over most of the former managed hunt area.

There will likely be a future need for managed or controlled goose hunting. The hunt in 1978 did not significantly reduce the firing line situation.

The following changes need to be addressed before future hunts are initiated:

- a. Control of all waterfowl hunting on the present public area is necessary for full quality hunting control.
- b. Blind spacing on private lands to complement control on public lands.

With these controls and provisions available, blinds can be placed in the public area with some sections only controlling total numbers of hunters. A reservation and goose tagging system will be used along with a check station operation similar to past managed hunts at both Horicon and Grand River. The system may require only partial hunter control in some of the areas without blinds.

3. Private inholdings:

Because development is essentially complete, this will not have any great effect on management. Completion of acquisition will, however, furnish added acreage for public hunting, protect wetlands from drainage, and increase the waterfowl and upland game nesting habitat.

4. Vandalism, littering, camping:

Overnight parking and camping without supervision and developed facilities lead to vandalism, littering, poaching and pollution. The area will be managed for day-use activities only to assure proper protection of the land and wildlife resources. Even with laws and restrictions, considerable effort must be maintained to restrict abuses.

5. Difficulties in fire control:

Large marsh expanses pose problems of control of wild fires. Fire control specialists are aware of the situation and have plans and resources that can control all but the most extreme situations.

6. Waterfowl disease problems:

The property has had die-offs of waterfowl documented as botulism (1974) and lead shot poisoning (1974, 1980-81). There have been no significant fowl cholera problems to date. However, with the property objective of holding large numbers of geese, there must be continual monitoring programs. Management actions such as clean up of carcasses, prompt laboratory diagnosis, water level manipulations and hazing may be necessary to prevent unnecessary losses of waterfowl to disease.

#### RECREATION NEEDS AND JUSTIFICATION

Hunting pressure on the open area for waterfowl has reached saturation levels because of the high availability of waterfowl moving out of the closed area. Past steel shot rules, decrease in goose tag allotments and possibly higher gasoline prices have tended to lessen the intense pressure on the public hunting area in recent years. However, some control of hunter numbers on both public and private lands may be needed to adequately protect the waterfowl resource and improve hunting quality.

Steel shot rules were removed in 1980 by legislative action. Because of heavy hunting pressure, non-toxic shot rules should always be in effect on this property. Creation of this wildlife area as a waterfowl concentration refuge near the Horicon Marsh was a long-term goal of the Department.

As a goose satellite area, Grand River has the highest concentration of geese among the state areas. While there is a definite need for such management areas in East-Central Wisconsin, the provision for 900,000 goose-use days and 30,000 peak numbers will have a negative impact on fall duck use and possibly subsequent duck production peaks. In the closed area, geese, with their grazing and feeding habits, compete with ducks for food and are extremely destructive to marsh vegetation.

Increased demands for nature study and wildlife observation programs will undoubtedly occur and this property, being within reach of population centers, can furnish this recreational opportunity.

#### ANALYSIS OF ALTERNATIVES

1. Status quo:

No further land acquisition, DNC development, parking facilities, managed hunts, carp treatment projects, pond or flowage developments and facilities construction. Hunting use would likely remain stable or decrease. The Department would expect to hold 15,000-20,000 geese until habitat and facilities deteriorate. Duck production would likely be stable initially, but decrease in the long-term.

Advantages - no increase in budgets or manpower.

Problems - a) when carp increase, aquatic habitat will decrease in quality for marsh fish and wildlife production, b) will not be able to safely handle any increased public uses, c) present wood storage and workshop facilities would deteriorate beyond repair - resulting in an absence of maintenance facilities to properly keep the project in a safe and usable condition for public use, and d) would not be able to meet proposed goals and objectives.

2. Continued acquisition, maintenance and development to meet proposed goals and objectives:

Continue limited acquisition to complete the existing acreage goal. Develop planned projects and facilities (other than an adequate storage-work facility, these developments are quite limited as this project is nearly developed). Maintain all existing developments in a condition to continue high wildlife and public use. When necessary authority and funding exists, managed hunts for waterfowl are planned. Continue with the carp control program.

Advantages - a) will meet reasonable goals and objectives to maximize complete use of existing habitat and facilities consistent with wise and proper resource and public-use management. Duck production levels would be significant. Research has proven that carp control can increase the production of many marsh birds and animals, particularly ducks.

Problems - a) will require some increased budget allotments to complete, and b) one permanent NRA II will be needed to complete all phases of the management goal.



APPENDIX A

HISTORIC PRESERVATION DIVISION

February 17, 1981

Mr. Thomas P. Hansen  
Department of Natural Resources  
P. O. Box 343  
Berlin, Wisconsin 54923

SHSW: 119-81  
RE: Grand River Wildlife Area  
Master Plan

Dear Mr. Hansen:

We are in receipt of your letter of January 28, 1981, regarding the master plan you are preparing for the Grand River Wildlife Area.

There are no known buildings of architectural or historical significance within the Wildlife Area.

There are seven known prehistoric archeological sites within the Wildlife Area. Furthermore, there is a very high probability that there are many more sites yet to be discovered. The known sites include:

- Mq-3 A group of burial mounds located in the NE 1/4 of Section 12, T14N, R10E.
- G1-73 A cemetery located in the S 1/2 of Section 3, T14N, R11E.  
A group of burial mounds located in the NW 1/4 of Section 7, T14N, R11E.
- G1-65 The Walker-Hooper Site (see enclosed National Register Nomination). An enclosure located in the W 1/2 of Section 18, T14N, R11E.
- G1-105 A burial mound and village site located in the NW 1/4 of Section 11, T14N, R11E.
- G1-115 A village site and burial mounds located in the W 1/2 of Section 31, T15N, R11E.

The Walker-Hooper Site (G1-65) has been nominated to the National Register of Historic Places but has not been listed as more information is needed on the exact boundaries of the site. The remaining six sites have not been tested to determine their archeological significance.

Mr. Thomas P. Hansen - 2

February 17, 1981

Considering the variety of environmental conditions to be found in the Wildlife Area, we believe that there is a very good possibility many more site are present. Therefore, we recommend that prior to any ground-disturbing activities within the Wildlife Area the DNR should consult with our office to determine whether an archeological survey is needed.

Should you have any questions on this matter, please contact me at (608) 262-2732.

Sincerely,



Richard W. Dexter  
Compliance Coordinator

RWD:dk

Enclosure



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

STATE OF

3171 N  
(MONTELO)

