



B. WETLANDS OF DANE COUNTY, WISCONSIN  
MAPS AND ANALYSIS

The preparation of this handbook was aided by the report, Wetlands of Dane County, Wisconsin, prepared by Barbara L. Bedford, Elizabeth H. Zimmerman, and James H. Zimmerman. This report was published in 1974 by the Dane County Regional Planning Commission in cooperation with the Wisconsin Department of Natural Resources. It includes analyses of the fine major wetland systems in the Town of Dunn, which are reproduced here.

South Waubesa Marsh  
(Study Area B)

Yahara River Valley Region  
Priority Group I  
Wetland Description

South Waubesa Marsh is a wetland complex of more than 400 acres located at the southwest end of Lake Waubesa. It is one of several important large peat deposits on the Yahara River system and is one of Dane County's most outstanding wetlands.

The marsh sits in a large deep basin which may have been a bay of Lake Waubesa at one time. It is now a rich wetland community of springs, fens, sedge meadow, shallow marsh, deep marsh, and shrub carr on a deep bed of peat. Robert Friedman and Calvin Dewitt, University of Wisconsin researchers who are studying the history, formation, and energy flows of the marsh, estimate the depth of the peat deposit to be 90 feet or more in places. (Friedman and Dewitt, personal communication.)

Nine major springs and numerous seepages provide a constant source of clean water to the marsh. A number of the springs have been ponded, piped, grazed, or otherwise disturbed, but a few are largely undisturbed. Most remarkable among these are a group of springs which arise out in the marsh at the north end (area 16 on the map, Pl. 65, and cover plate). Their combined flow has been measured by the Department of Natural Resources at greater than 2000 gallons per minute. Although these and other springs are the major source of water for the marsh, some agricultural runoff enters the marsh through Swan and Murphy Creeks and from adjacent cropland.

South Waubesa Marsh exhibits a wide range of wetland vegetation types and conditions. While the outer edges have suffered the usual degradations associated with grazing, ditching, cultivation, and siltation, the marsh is large enough that extensive areas remain which appear to have changed little since the time of white settlement. The deep bed of peat, into which farm animals and machinery have reportedly disappeared, has probably acted as a built-in protection against disturbance.

Two of the more uncommon native wetland plant communities in Wisconsin are the southern sedge meadow and fen (DNR Endangered Species Committee, 1973). Although the greatest number of remaining wetland acres in Dane County are what technically can be classed as fresh or sedge meadow (Wisconsin Conservation Department, Dane County Wetlands, 1961), the majority of these have been seriously degraded by grazing, drainage, and cultivation and now have only a remnant and depauperate flora. While fens were not ever abundant, it is likely that Dane County's

## South Waubesa Marsh

calcium-rich water supported a good proportion of those in the state. These have been almost totally destroyed. South Waubesa Marsh has both sedge meadows and fens which remain intact as representative of our native wetland vegetation, with few or no exotic species and a floristic richness indicative of natural areas. The least disturbed of these areas are under consideration for State Scientific Area designation.

The major observed wildlife values of South Waubesa Marsh reflect its large size, variety of plant communities, and year-round supply of clean water. The marsh is considered important to the Lake Waubesa Fisheries both as a spawning ground and as a source of clean water. Use by wetland birds, especially birds of prey and waterfowl, is significant. One to several hawks, including harriers, Cooper's hawks, kestrels, rough-legged hawks, and red-tailed hawks, can usually be seen in the area. Owl wash and pellets are found often, as are the remains of kills. Several hundred waterfowl winter over on the big springs. Counts by the Department of Natural Resources show that the total in some years may exceed 2000 ducks. (Earl Loyster, personal communication.) Waterfowl use is enhanced by the proximity of the marsh to Lake Waubesa and to other wetlands (see map on page 481).

Existing land use in the immediate area is agricultural, residential, and recreational. Most of the upland is still in agricultural usage, but some small tract development has occurred. Rows of cottages, many of which do not meet current shoreland zoning standards for lot size, setback, or removal of vegetation, line the shores of Lake Waubesa east and west of the marsh. Present uses of the marsh include education, research, and recreation. The marsh has been the field laboratory for four university classes, and is now the object of a graduate student's study of wetland dynamics. Approximately 127 acres of the marsh are in public ownership.

Public utility or service lines intersect South Waubesa Marsh in four different places. Most obvious are the high-power transmission lines which cut across the southern third. A large berm built to accommodate the support towers extends about a half mile out in to the marsh and has caused associated changes in soil, topography, water flow patterns, bird mortality, vegetation patterns, and esthetic values (Pl. 13). The effects of the telephone cable, electrical pipeline, and aqueduct which are buried within the marsh are less blatant. Because of its size, the aqueduct, which carries sewage effluent from the Madison Nine Springs Plant to Badfish Creek, disrupted a larger total area than the cable or pipeline. However, its placement at one extreme end where the marsh had been previously impacted minimized its overall effect.

## South Waubesa Marsh

The cable and pipeline, although smaller, were put across the interior of the wetlands through previously less disturbed areas. All of those uses are examples of the inching-away process which continually deteriorates and degrades our wetland resources.

### Threats and Management

Many people have pointed to the need for a private land ethic to replace government purchase and control as the only means of protecting the natural environment. The landowners and other concerned individuals working to preserve South Waubesa Marsh indicate that such an ethic exists. Two landowners have donated a total of approximately 127 acres to the Department of Natural Resources for preservation. Another landowner fought a highway planned too close to the springs she owned and purchased a nearby hill to protect a possible recharge area for the springs from development. The Dunn Town Board has been aroused to concern for this and other wetland resources within the Township by a fourth landowner. At the time of this writing, a cooperative effort is underway by landowners, the Head Foundation (a private organization), the University of Wisconsin, and the Department of Natural Resources to work out a plan for the preservation of South Waubesa Marsh as a natural area with guided use.

The only known immediate threat to the marsh is the sale and development of a piece of low land and an important upland buffer on the southeast. Long-term threats include possible highway construction and additional development of adjacent uplands. The proximity of the official urban service area on the official land use plan forbodes both development and highway construction. It is conceivable that the combination could turn the tide of conditions within the wetlands toward eutrophication by changing the balance of the water source from springs and seepage to overland runoff. Loss of the springs is a threat to both the marsh and the Lake Waubesa fisheries. In view of this and the outstanding value of South Waubesa Marsh, we recommend that the boundaries of the service area be re-defined, until future hydrology studies reveal a clearer picture of recharge areas. Zoning on the immediate upland should remain agricultural and all woodlots should be maintained as important buffer zones.

South Waubesa Marsh

South Waubesa Marsh

SOUTH WAUBESA MARSH

MAP KEY

- Deep-water emergents, usually cattail, in deep water most of the year.
- Various emergents, such as bur reed, cattail, *C. comosa*, *C. lacustris*, in a few inches or more of water, but not in deep water.
- Mixed wetland vegetation with few or no forbs; sedges, bulrushes, scattered cattail, bluejoint, and giant reed grass (*Phragmites communis*). Water depth is a few inches at most.
- Mixed shallow wetland vegetation with forbs, notably aster and goldenrod, usually on wet soil.
- Sedges and bluejoint grasses strongly or entirely dominant.
- Sedge meadow with forbs. Tussock sedge and bluejoint locally dominant, some *Carex aquatilis*, goldenrods, asters, scattered shrubs, cattails, and marsh dock.
- Grazed sedge meadow.
- Fen.
- Bog birch on fen.
- Lowland shrubs (mostly willows and red-osier dogwood, except as noted).
- Disturbed wetland (mostly reed canary, but also other disturbance indicators).
- Old field.

Wooded.

Upland pasture.

Cropland.

Suburban development and construction areas.

Spring.

Drainage ditch.

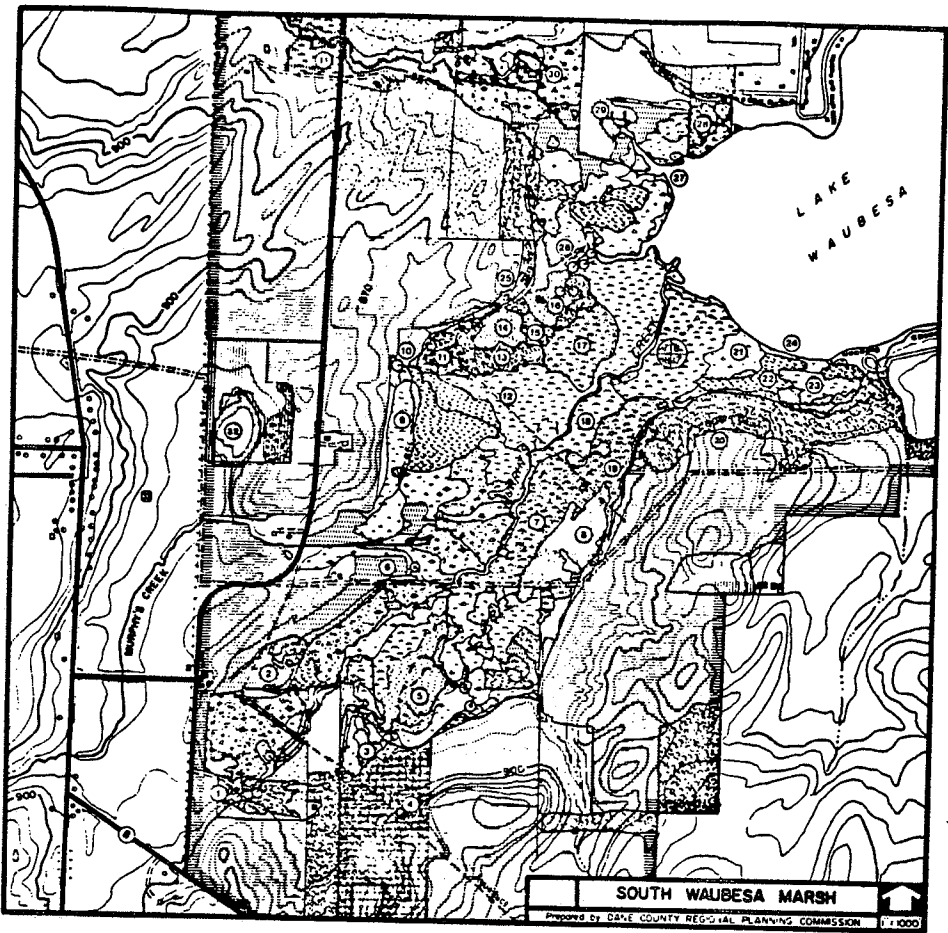
Buried telephone cable.

Aqueduct (Madison Metropolitan Sewerage District).

Power line routing.

Proposed project boundary of the South Waubesa Wetlands Preserve.

NOTE: Only those cultivated fields lying within the project boundary have been so indicated by tone. The lands outside of the boundary are predominantly in agricultural use.



South Waubesa Marsh

SOUTH WAUBESA MARSH

MAP EXPLANATION FROM WINTER SURVEY DATA

- 1) A major spring area. Old field, bur oak (*Quercus macrocarpa*), and black cherry (*Prunus serotina*) are on the hillside above and around the spring.
- 2) Spring area ponded since 1962. The flow is southeast toward the main channel. The general area is disturbed; reed canary grass (*Phalaris arundinacea*) is dominant.
- 3) Black willow (*Salix nigra*) and sandbar willow (*Salix interior*) area. The spring to the southwest has been used in the past by grazing animals; a pipe was found sunk into the area of upwelling. Rusty blackbirds were found here in February, 1973. The nearby horse pasture (to west) does not include the spring.
- 4) Wooded area now under development. The approximate region of house construction is indicated. A ravine runs through toward the marsh.
- 5) Floating mat of bur reed (*Spartanium eurycarpum*) and cattail (*Typha latifolia*). The stream from the spring to the southwest is well-defined up to this area, but here the flow spreads out, apparently under a "floating mat". Not all of this mat will support a person's weight. Snipe were found here in February, 1973.
- 6) Pond created since 1962 by power line berm construction. The pond contains a large population of Blanding's turtles.
- 7) Sedge meadow with forbs. Tussock sedge (*Carex stricta*) and bluejoint (*Calamagrostis canadensis*) are locally dominant; some *Carex aquatilis*, goldenrods (*Solidago* spp.), asters (*Aster* spp.), scattered shrubs, cattails, and marsh dock (*Rumex orbiculatus*) are present.
- 8) Largest shrub area in the marsh, with dense red-osier dogwood (*Cornus stolonifera*) and willows on sedges with some forbs. The willows include *Salix petiolaris*, *S. bebbiana*, and *S. discolor*. Some bog birch (*Betula* sp. [Sandbergii?]) was also found.
- 9) Sedge-grass area with a few fen plants; not as good a fen as areas 14 and 16.

South Waubesa Marsh

- 10) Large spring, disturbed by construction, with a wall of stone and soil. This flow apparently influences a large area of the marsh. The medium water depth symbol indicates an area of cattail and Carex lacustris.
- 11) Shrub area, dense red-osier dogwood and willow.
- 12) Sedge-grass area with buried telephone cable. Part of the cable line shows deeper water and associated plants.
- 13) South edge of fen area. Bog birch, willow, and red-osier dogwood are growing with sedge, grass, cattail, and scattered fen plants.
- 14) Fen. Some indicator plants here are bromes grass (Bromus sp. [Kalmii?]), aster (Aster junciflorus), Riddell's goldenrod (Solidago riddellii), grass of Parnassus (Parnassia glauca), sage willow (Salix candida), fall-blooming willow (S. serotina), bog birch, and lesser fringed gentian (Gentiana procerca).
- 15) Red-osier dogwood, willows, and some of fen species listed in area 14.
- 16) Fen and spring. See area 14 above for the plant list. A small ditch, which crosses this area, contains watercress (Nasturtium officinale), and scuds (shrimp). The area grades into sedge-bluejoint grass along the edge near the springs. This spring area is the largest in the marsh and is excellent for winter waterfowl use since it remains unfrozen and is large (see front cover and Pl. 65). Wildlife activity is particularly intense here. The flow rate has not been measured. Water quality appears to be excellent, and the discharge area has not been physically altered. Purple bacteria (or algae?) are a special feature of interest for teaching and research.
- 17) Sedge-grass area with Muhlenbergia sp. Areas 14-17 show little disturbance.
- 18) Sedge-grass area as in area 7, but with forbs scattered and much less dense.
- 19) Area which has received soil from upland field nearby. Indicator plants of mud flow found here are monkey flower (Mimulus ringens), boneset (Eupatorium perfoliatum), bur marigold (Bidens coronata), smartweed (Polygonum coccineum), bull thistle (Cirsium vulgare), ditch stonecrop (Perthorium sedoides). Bluejoint grass is dominant. Tufted loosestrife (Lythnacha thyrsiflora) and willow herb (Epilobium coloratum) were also seen. Proposed real estate development (see area 20) would increase indications of disturbance in this area.

South Waubesa Marsh

- 20) Area of proposed real estate development. Sale of the farm south of 19 and 20 to the Head Foundation and the University of Wisconsin should protect it from development.
- 21) Possible floating mat. Dominants are Carex lacustris and Carex lasiocarpa. Cattail, boneset, tufted loosestrife, bluejoint grass, Joe-Pye weed (Eupatorium maculatum), and some bur reed are also present. The area shows little disturbance.
- 22) Carex lacustris area with little disturbance.
- 23) Bluejoint grass with some shrub invasion.
- 24) Narrow-leaf cattail (Typha angustifolia) edge, with river bulrush (Scirpus fluviatilis) and soft-stem bulrush (Scirpus validus) included. This cattail is found along most of the edge facing the lake. A dense weed bed offshore affords the marsh some protection from motorboat activity.
- 25) Steep grazed hillside with some oak invasion, and a few large bur and white oaks (Quercus alba) and basswoods (Milia americana). This is excellent for animal dens, and would be a good site for a prairie restoration project. The vegetation grades into planted pines on the south and oak woods on the north. The wooded area has a canopy of mostly white oak, with some bur and black oak (Quercus velutina). Younger trees include black cherry, basswood, yellowbud hickory (Carya cordiformis) and quaking aspen (Populus tremuloides) on the lowland edge. The understory is mostly gray dogwood (Cornus racemosa), with some hazelnut (Corylus americana), but the north half contains much honeysuckle (Lonicera bella) invasion. This is an excellent site for hawk or owl nesting (as in area 20).
- 26) Carex lacustris, C. stricta, bluejoint grass area. Kills by a large predator have been noted here, and owl pellets were found in the woods to the northwest. Turk's cap lily (Lilium michiganense) was found here.
- 27) The flow of water here is muddy, in contrast to clear flow from two other outlets south of here. Grazing, ditching, and other disturbance along the stream valley have worsened this situation.
- 28) Red-osier dogwood and willow shrubs invading Carex stricta.
- 29) Pasture, used for horses in early 1973, mostly reed canary grass. Allowing a buffer zone around the open water to revegetate could enhance both wildlife use and water quality.

South Waubesa Marsh

- 30) Spring and meander cut off by ditching. The small spring appears to have received silt from cultivation on the hillside immediately to the north.
- 31) Grazed sedge meadow with an unusually large number of anthills.
- 32) Small wetland area. Open water is indicated for spring or high water conditions. Note the drainage ditches.
- 33) Additional hillside buffer. Although not within the proposed boundary of the South Waubesa Wetlands Preserve, this area and the stream below it will have an influence on the quality of the wetlands. Strict water and erosion control measures are recommended. Any erosion or runoff from the hillside would feed into the stream and, hence, into the wetland. Further development in the area might necessitate the use of the lowland along Murphy's Creek for the construction of siltation ponds.

Grass Lake - Dunn  
(Study Area C)

GRASS LAKE - TOWN OF DUNN

Moraine Region  
Priority Group I (tentative)  
Wetland Description

Grass Lake is a long, narrow deep-water marsh west of Hook Lake in the Town of Dunn (Pl. 58). Because we were not granted permission to enter this marsh, our observations of it were limited.

The vegetation is typical of deep-water marshes, with areas of both open water and emergent aquatic plants. At the north end there is a dense stand of cattail, broken by only a few scattered, small patches of open water. However, a somewhat irregular edge between the cattails and the open water to the south provides good nesting sites for marsh birds. The central area, which is predominantly open water, has scattered "islands" of bur reed, soft-stem bulrush, arrowhead, or cattails. A dense bed of arrowhead is located at the south end. In 1972 and 1973, the ratio of cover to water was approximately 50-50 with moderate interspersions of the vegetation with open water.

Hundreds of both surface-feeding and diving ducks use the marsh during migrations. Of these, the gadwalls and canvasbacks are especially noteworthy. Nesting species include, among others, wood ducks, pied-billed grebes, green herons, black terns, and the seldom-seen gallinule.









The marsh itself is maintained as a licensed fur farm. Land use and conditions bordering the marsh are variable. A big ditch constructed by the Madison Metropolitan Sewerage District cuts across the northwest corner of the marsh and runs along its western boundary. Young trees and shrubs line the berm. Woodlots, portions of which are grazed, border the marsh to the northwest and northeast. The land on the slope to the east is cultivated almost to the marsh edge.

Land use in the immediate vicinity is primarily agricultural, with some small tract development in the area. The City of Stoughton operates a solid waste disposal site southwest of the marsh.

Threats and Management

The only known threats to Grass Lake are those relating to possible future development and to possible water contamination from the effluent ditch. If development occurs, an adequate buffer zone should be maintained for the marsh and strict erosion control measures enforced during the construction process. Six private wells in the immediate vicinity of the lake are monitored by the Department of Natural Resources as part of the Nine Springs Area Groundwater Survey and a complete water quality analysis of the surface water in the ditch south of the lake is done regularly by the Madison Metropolitan Sewerage District. Continued surface and ground water monitoring, including the marsh, is recommended.

GRASS LAKE - TOWN OF DUNN  
MAP KEY AND EXPLANATION

-  Emergent vegetation, mostly cattail in deep marsh.
-  Shallow marsh vegetation, not examined, may be wetland disturbance vegetation.
-  Probably wetland disturbance vegetation.
-  Woodlot
-  Cultivated.
-  Houses (tract development).
-  Gravel pit.
-  Area not examined, probably pasture, except west edge of map.
- 1) Outline of emergent vegetation from 1968 aerial photograph. No examination made only from shore; permission to enter not gained.
- 2) Shallow marsh area connected with Hook Lake.
- 3) One of many shallow ponds in glacial deposit. Not examined; condition not known.
- 4) Gravel pit.
- 5) Open ditch carrying Madison Metropolitan sewage plant effluent, separated from marsh by road-sized berm.
- 6) Area of emergent vegetation, predominantly arrowhead (*Sagittaria latifolia*).





Hook Lake  
(Study Area D)

Moraine Region  
Priority Group I  
Wetland Description

Hook Lake ranks as one of the most important wetlands in Dane County, both in terms of quality and of uniqueness. It is one of three bogs in the county, and the only one still in excellent condition (Pl. 11). Further, we have not been able to locate any bog elsewhere in southern Wisconsin of the same type, and only a few of such undisturbed condition.

The lake appears to be a kettle hole depression in glacial deposit 20-80 feet thick (cf. Cline, 1965 pls. 5 and 6, and USGS 15 min. Evansville Quad.). An island in the lake is apparently glacial deposit. At the present time, the lake is isolated, but may have been connected on the surface to the Oregon Branch of Badfish Creek in the past. Hearsay indicates that the ditching of the latter caused a lowering of the water level in the lake, but this does not prove a surface water connection. A ring of birches (which sprout along damp shorelines) along the lake edge supports but does not confirm such lowering (Pl. 32). At the east edge the altitude of the lake surface is about 940 feet above sea level, the water table (April-May, 1960) at about 920 feet, and the surface of bedrock 900-920 feet. This is not accurate enough to state whether or not any of the glacial deposit is saturated, but it does show that there is no appreciable flow from the surrounding ground water into the lake. It appears then that the water sources of the lake are nutrient-poor rainfall and a limited surface runoff. This has been substantiated by a 1974 test series which shows that alkalinity and total hardness do not exceed 20 parts per million (ppm), which makes Hook Lake a soft-water lake, rare in southern Wisconsin. It also agrees with theories of bog formation. The peat itself or a clay pan layer underneath, or both, could account for the lake level being above the surrounding water table. Without detailed study, nothing can be said about the sensitivity of the bog to wells and surface drainage in the area.

Hook Lake is one of a group of wetlands. Within three miles are the South Waubesa Wetlands and Lower Mud Lake, both parts of the Yahara system, and isolated wetlands such as Grass Lake (Town of Dunn) and Island Lake (see map in South Waubesa Marsh section). Hook Lake and Grass Lake appear to be located in a broad recharge area for South Waubesa and Lower Mud Lake. To our knowledge, no previous work has been done on these relationships.

Water quality at Hook Lake appeared to be good at all visits in that turbidity was low and there were no algal blooms. The color was the transparent brown usually encountered in bogs. The vegetation agrees with acid, calcium-poor, fairly nutrient-poor, water conditions. No cold spots, such as those due to springs, were noted in warm weather. The bottom sediment was entirely organic except where disturbed by man, or along outer edges. Maximum peat depth was not measured.

Major vegetation zones, which almost form a "textbook" pattern, are: tamarack stand on *Sphagnum* in the south center (Pl. 31), ringed by bog birch (Pl. 26) and leatherleaf stands on *Sphagnum* (Pl. 30) and wiregrass sedge (Pl. 29), separate stands of leatherleaf and bog birch on *Sphagnum* at the north end, a large mat of wiregrass sedge, mixed with cattail in some areas, a mead of open water and cattail around the outside edge (Pl. 11) and a cattail-sedge stand at the south end (see map for details). A small, separated pond at the south end contains *Carex atheyodes* and woodgrass, and is surrounded by steeplesbush, an indicator of acid sandy soil (Pl. 59). The island is dominated by basswood and oak, and has an excellent spring flora. Much of the south-east and north edges of the lake are in upland forest.

Although much of the remaining shoreline is grazed or cultivated, the lake bed proper is largely undisturbed and the vegetation almost entirely of native species. The insectivorous sun-dew plant (Pl. 28), pipewort (*Eriocaulon septangulare*), and the bog sedge *Carex trispirma* have not been reported anywhere else in the county. Pickerelweed, water shield, leatherleaf, bog bean, pitcher plant, and the bog sedge *Carex cephalantha* are not common in wetlands of this county, each occurring in only one to four other locations. In late April and early May, the south exposure of the wooded island is a solid carpet of spring wild-flowers, most notably Dutchman's breeches, bloodroot, and leek. These sensitive species persist only in those few remaining areas undisturbed by man.

The diversity and structuring of the vegetation and the cover-water interspersed are such as to offer an excellent variety of habitat and cover for wildlife. Structural zones include open water, reed-bed, sedge mat, cattail, shrub, deciduous and coniferous forest areas. This is reflected in the diversity of wildlife, although the numbers of each species present were not found to be particularly high. Nesting birds include snipe, woodcock, sora, green heron, wood duck, and the less commonly seen pied-billed grebe and black tern. Great blue herons and red-tailed hawks use the area for feeding. Muskrat and mink are both trapped. (See animal species list for other wildlife.) Wildlife food sources were not checked. Oligotrophic (low nutrient) water conditions may be reflected in low wildlife density.

Shoreline conditions result from land use in the area. With the exception of the two large woodlots and a homestead, this is entirely agricultural. Disturbance indicators are the usual ones, reed catary grass, yarrow, nettle, and the sedge *Carex scoparia*. A number of planted conifers are in the woodlot toward the south end.

Use of the lake itself is generally recreational. It is maintained as a public hunting ground for ducks, pheasants, rabbits, and squirrels. Since the floating mat is so difficult to reach and to walk on, this does not result in heavy impact. There is not enough open water to attract recreational boating. Muskrat trapping is carried out in the winter, but only those animals building lodges in open water are trapped. The Madison Retriever Club and the Oregon Sportman's Club use the lake, and the former has done some peat removal along the edge. This has been moderate enough not to seriously affect a significant portion of the bog mat. Moderate hunting, trapping, and dog training do not appear to be incompatible with maintaining the integrity of the lake.

#### Threats, Management

The major threat to the integrity of Hook Lake is from housing development, with its attendant hydrologic changes and disturbance of water quality and wildlife values. The hydrology has been discussed above. In the event further development threats, with well-drilling or channeling in the area, a ground water impact study will be essential. Small-tract development has already begun in the area. With present lack of land use controls, individual landowners may develop small tracts of houses almost at will. Placement of septic systems seems to be the only control. Due to the valuable esthetic setting of Hook Lake and its suitable topography, we introduce "skyline zoning" below. Esthetic, wildlife, and water quality values can be simultaneously protected by a zoning approach. Beyond the no-construction zone should be a minimum or low density construction zone, reversing the usual lakeshore use pattern. In the event of great population growth in the area in the distant future, public access by trails to the lake edge might be considered, such as in a county nature reserve. In the same spirit, the Department of Natural Resources access to the lake should not be improved for automobile traffic. Lake-shore parking would increase use pressure and be unsightly. At present, Hook Lake enjoys some remoteness since it is barely visible from the established public roads.

Two more points should be brought to the attention of the Department of Natural Resources. Hook Lake bog is of Scientific Area quality. There are very few areas left even in adjacent counties which are undisturbed examples of relic bog vegetation. Hook Lake's isolated nature makes its preservation relatively easy. Second, due to the scientific value of the vegetation pattern, no further dredging, blasting, digging, or removal of peat should be permitted.

Minimum Needed Buffer Zone

It is necessary to stress that the integrity of Hook Lake bog cannot be protected by protecting the wet area alone. A buffer zone must be set up around the lake, with zoning restricting it to no further construction. It is impossible in a qualitative study to predict the exact minimum buffer which will protect the lake. Therefore three considerations were used to estimate the extent of the minimum needed buffer zone.

- 1) On much of the periphery there is a slope toward the lake, which if built upon, would cause siltation and influx of nutrients. The closer to the water such building might occur, the more difficult it would be to halt such an influx before it reaches the water. This is especially true on the steeper portions.
- 2) An area is needed for wildlife use and movement around the lake. Presently existing woodlots are wide enough to provide for at least some of this need, and should remain intact.
- 3) The small number of dwellings with considerable setback from the lake do not appear to affect it much. Therefore, a small number of additional structures just outside the buffer zone would probably not cause great damage.

Skyline Zoning

Hook Lake is unusual in Dane County in that one can view the surroundings from almost anywhere on the lake and see little evidence of human activity. A rough attempt to draw the skyline or horizon, as seen from the lake, has been made. This breaks down in the southwest corner. In order to maintain the lake as a small wild area, a zoning of no further construction within this skyline boundary would be adequate. This assumes a wildlife corridor connecting with other natural areas. Southwest of the lake, this purpose would probably be adequately fulfilled by zoning to the roads. Some recent development has taken place along Sand Hill Road, and this seems enough for this area. Where the skyline is very close to the lake, as on the northeast, the minimum buffer zone has been placed outside it to provide adequate wildlife space and protect the woods.

Our purpose here has been to provide maximum and minimum needed buffer zones for zoning regulation. Although these are qualitative, nothing of this sort exists at all at present. Without adequate zoning, it will be extremely difficult to protect Hook Lake in future years. Since healthy bogs are now uncommon to rare in southern Wisconsin, and since this is Dane County's only one, we urge its protection as soon as possible.

HOOK LAKE

Bird Species List - 1968, 1971-1974

- \* Nesting
- # Presumed nesting in area
- + Upland species
- \* Pied-billed Grebe
- \* Great Blue Heron
- \* Green Heron
- \* Canada Goose
- \* Mallard
- \* Black Duck
- \* Green-winged Teal
- \* Blue-winged Teal
- \* Wood Duck
- \* Ring-necked Duck
- \* Lesser Scaup
- \* Common Goldeneye
- \* Red-tailed Hawk
- \* Harrier
- \* Ring-necked Pheasant (stocked)
- \* Sandhill Crane
- \* Virginia Rail
- \* Sora
- \* American Woodcock
- \* Common Snipe
- \* Black Tern
- \*+ Mourning Dove
- \*+ Belted Kingfisher
- \*+ Common Flicker
- \*+ Red-headed Woodpecker
- \*+ Hairy Woodpecker
- \*+ Downy Woodpecker
- \* Tree Swallow
- \* Purple Martin
- \*+ Blue Jay
- \*+ Black-capped Chickadee
- \*+ White-breasted Nuthatch
- \*+ Brown Creeper
- \*+ Long-billed Marsh Wren
- \*+ American Robin
- \*+ Golden-crowned Kinglet
- \*+ Common Yellowthroat
- \* Red-winged Blackbird
- \* Rusty Blackbird
- \*+ Common Grackle
- \*+ American Goldfinch
- \* Fox Sparrow
- \* Swamp Sparrow
- \* Song Sparrow

HOOK LAKE

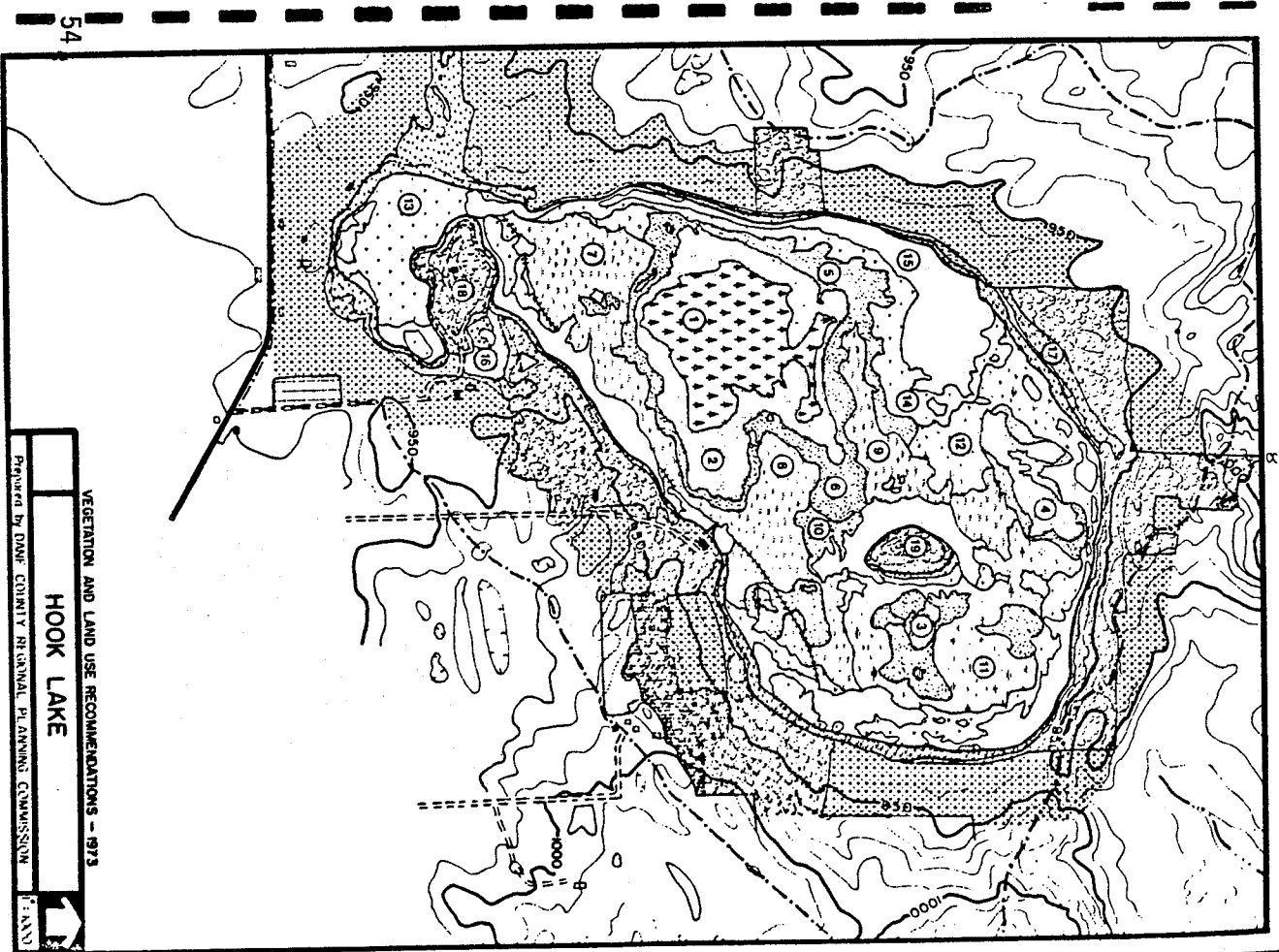
MAP KEY

Hook Lake

- ☐ Mixed emergents; cattail dominant, with or without sedges.
- ☐ Mixed emergents; wiregrass sedge, with more or less scattered cattail.
- ☐ Early bog succession.
- ☐ Sedge; *Carex lasiocarpa* mat with little or no broad-leaf cattail, open water patches, *Sphagnum* spp. missing or not built up above water level.
- ☐ Sedge; *Carex lasiocarpa* over *Sphagnum* spp., being invaded by leatherleaf, bluejoint over *Sphagnum* spp. locally.
- ☐ Sedge or lowland grass, edge species.
- ☐ Shrub; bog birch and/or leatherleaf growing on *Sphagnum* spp., other shrubs locally.
- ☐ Tamarack growing on *Sphagnum* spp.
- ☐ Disturbed edge (includes raspberry, vervain, nettle, thistle).
- ☐ Deciduous upland forest.
- ☐ Pasture.
- ☐ MINIMUM needed buffer zone (no further construction) in addition to wooded edges shown. See text for explanation.
- △ Scenic area.

Boundary of "skyline zoning" (see text for explanation).

Snowmobile track.



HOOK LAKE

MAP EXPLANATION

Hook Lake

Hook Lake

- 1) Tamarack (*Taxus laricina*) stand on *Sphagnum* spp., some bog birch (*Betula* sp. [sandbergii?]), leatherleaf (*Chamaedaphne calyculata*), white birch (*Betula papyrifera*), cranberry (*Vaccinium* sp.), and spinnulose wood fern (*Dryopteris spinulosa*). As of 1974, possibly due to two years of high water, much of the tamarack is dying. Note the lack of needles on trees in Pl. 31, taken in summer.
- 2) Ring of dense bog birch surrounding tamaracks, with ring of dense leatherleaf surrounding that. At the location of the number is a stand of the large cottongrass (*Eriophorum virginicum*). The tamaracks are invading the leatherleaf, and probably vice versa now that many of the older tamaracks are dead.
- 3) Leatherleaf and bog birch on *Sphagnum* spp.
- 4) Leatherleaf on *Sphagnum* spp., some steeplesbush (*Spiraea tomentosa*) and buttonbush (*Cephalanthus occidentalis*), with scattered cattail (*Typha* spp.).
- 5) Wiregrass sedge (*Carex lasiocarpa*) mat being invaded by *Sphagnum* spp. This grades southward into bluejoint (*Calamagrostis canadensis*) and scattered buttonbush on *Sphagnum* spp., the latter area being invaded by leatherleaf.
- 6) Sedge mat, *Carex lasiocarpa* on *Sphagnum* spp.
- 7) Large stand of *Carex lasiocarpa*, little or no *Sphagnum* visible in winter, many patches of open water or wet organic mud. Such openings contain stands of rush (*Juncus* sp.) and spike rush (*Eleocharis* spp.). Species for this area include cattail, three-way sedge (*Panicum arundinaceum*), softstem bulrush (*Scirpus validus*), woolgrass (*Scirpus cyperinus*), St. John's worts (*Hypericum virginicum*), water horehound (*Lycopus* spp.), wild iris (*Iris virginica*), tufted loosestrife (*Lythymachia thysiflora*), steeplesbush, and buttonbush.
- 8) Large stand of *Carex lasiocarpa* with almost no cattail. Rice cutgrass (*Leersia oryzoides*) was found on the east border. Marsh cinquefoil (*Potentilla palustris*) is abundant.
- 9) Large stand of *Carex lasiocarpa* with almost no cattail; willow herb (*Epilobium coloratum*) noted here, mat weak and gnarly, otherwise much as area 7.
- 10) Early bog succession area. Large amounts of two sander species (*Drosera rotundifolia* and *D. intermedia*) were noted here, along with bog bean (*Menyanthes trifoliata*), and the bog sedge *Carex cephalantha*.
- 11) *Carex lasiocarpa* mixed with cattail.
- 12) *Carex lasiocarpa* mixed with cattail, some stands of river bulrush (*Scirpus fluviatilis*) along pond edge.
- 13) Floating peat mat with cattail, some sedge, but no *Carex lasiocarpa*. Open water areas contain water plantain (*Alisma Plantago-aquatica*). The entire area is shallow. The mat is surrounded by open water as of 1974.
- 14) Dense cattail stand surrounding pond. At the location of the number is cattail (scattered except close to open water) which may be a hybrid, (*T. latifolia* x *T. angustifolia*). Also present are abundant tufted loosestrife, woolgrass (common), St. John's wort, and *Carex lasiocarpa*.
- 15) Open water area throughout most of year, contains stand of arrowhead (*Sagittaria latifolia*) in summer. A few muskrats use this area and are being trapped. The shallow extreme south end of the pond contains a dense stand of water plantain, surrounded by mixtures including smartweed (*Polygonum* spp.), bur marigold (*Bidens cernua*), *Carex atherodes*, and buttonbush. The edge toward the shore is disturbed.
- 16) Small shallow area separated from lake proper. The center contains *Carex atherodes*, woolgrass and perennial smartweeds surrounded by ring of bluejoint and some red-osier dogwood (*Cornus stolonifera*). A ring of steeplesbush with some buttonbush runs along the north, east, and south edges.
- 17) Beach ridge and shallow sedge area. The beach ridge has nettle (*Urtica dioica*) and ragweed (*Ambrosia* sp.) under old bur oaks (*Quercus macrocarpa*). The sedge area contains tussock sedge (*Carex stricta*), *Carex lasiocarpa*, bluejoint, and steeplesbush. Elderberry (*Sambucus canadensis*) was found along northwest and north shores.
- 18) Glacial deposit with deciduous forest. This area contains large oaks, and has white birch and buttonbush along the shoreline. The view through the birches and oaks toward the tamaracks is unusually scenic, but the area has been planted to conifers. Northeast of this portion, some of the wooded area is grazed by beef cattle, and is somewhat degraded.
- 19) Basswood (*Tilia americana*) forest on island made by glacial deposit. The understory of native woodland flora is excellent. Species on the island include basswood, red oak (*Quercus rubra*), big-tooth aspen (*Populus grandidentata*), bladderbush (*Staphylea trifolia*), Dutchman's breeches (*Dicentra cucullaria*), bloodroot (*Sanguinaria canadensis*), blue cohosh (*Gaultheria thalictroides*), and wild leek (*Allium tricoccum*).

Yahara River Valley RegionPriority Group IWetland Description

Lower Mud Lake is a natural widening of the Yahara River (Pl. 61). It is surrounded on both sides of the river by marshes. We use the name Lower Mud Lake Marshes to refer to the entire complex. These wetlands are among the many large peat deposits along the Yahara River. The system will be discussed in three parts: west side, river widening (open water), and east side.

The west side marsh is a large peat bed located east of South Waubesa Marsh and parallel to it. These two wetlands are approximately the same size, are both fed partly by springs and partly by overland runoff, and are not ditched. Lower Mud Lake appears to differ from South Waubesa in that: a) the discharge is by small streams; b) the percentage of shallow marsh is greater, that is, the area seems wetter; c) overland flow entering the marsh is less; d) no fen areas have been found; e) there are two natural islands near the Yahara (South Waubesa has no islands); and f) there is less isolation (U. S. 51 crosses it) and therefore not as large an undisturbed wildlife area. A few ponds have been dug west of the highway.

The open water where the river widens is noted as a place to watch migrating ducks in spring. As a waterfowl area it rates with Crystal Lake, the Lake Barney Wetlands, the Mazomanie Wildlife Area, and University Bay (as it was until recently). However, Lower Mud Lake is open in the spring before any of the others, and is, therefore, good for early migrants. We were interested in the character of the bottom and emergent vegetation here as an attraction for waterfowl. Roughly, the bottom was siltier at the north end and sandier at the south end, with an organic layer over a firm bottom where protected by cattails. The name Mud Lake has usually been applied to lakes having an organic bottom, however. In some areas, the submerged aquatic plants were dense. Conditions appeared more eutrophic in 1973 than in 1972, presumably because the high spring rainfall washed more silt and nutrients into the river than it usually receives in such an interval. Early algal blooms were noted in 1973 and the water appeared less clear than in 1972.

The east side wetland is mostly sedge meadow on peat, and is drier than the west side. There are several small ditches, a large area where shrubs and some trees are invading, and a large reed canopy grass area. Along the river edge is a wider narrow-leaf cattail strip than is found on the west side of the river. There appears to be considerable woodcock habitat here; breeding snipe and woodcock were noted. Much of this area offers fair isolation from human disturbance.

On the west side, dominant plants in separate and mixed stands are cattail (Pl. 7), bur reed, *Carex lacustris* (Pl. 19), bluejoint grass, various wetland forbs, shrub willows, and red-osier dogwood. Some bog birch, a stand of cordgrass, and a few stands of giant reed were noted. Numerous muskrat houses and bullfrogs were seen. Fish Lake is the only other Dane County wetland in which bullfrogs were observed.

An interesting plant community of sedges on floating mat was found on the far west side. This may be comparable to the mat at Fish Lake, but needs further comparative study. The ponds which have been dug in this region, at least one of which altered a spring and probably the flow distribution, may be responsible for the confusing vegetation in this region. Such a semi-floating sedge mat may represent an early stage of peat formation in this climate, or result from severe peat oxidation in dry years causing the peat to float up where re-wetted.

Along the edge of the river much of the narrow-leaf cattail strip is on a built-up organic material which is dry enough for jewelweed (*Impatiens biflora*) to invade. An exception is a point at the north end with a large stand of this cattail in shallow water. This is a nesting area for yellow-headed blackbirds. In the small bays where streams enter the river are floating peat chunks with plants of both wet and dry peat.

The big wooded island on the west side contains a mixture of bur and black oak, black cherry, basswood, yellowbud hickory, and aspen. Probably both prairie relics and forest wildflowers exist there because summer access by people and cattle is usually difficult.

On the east side of the river are large areas of sedge and bluejoint. Nearer the river are stands of narrow-leaf cattail. Willows, red-osier dogwood, and aspen are heavily invading a 10-acre plot as well as surrounding areas. Boundaries of 40-acre plots and portions thereof are clearly visible in the vegetation when viewed from the air.

Threats and Management

The only threats to the wetland areas themselves which we are aware of are from continued pond digging at the west end and from development on the hillside overlooking the marsh on either side of the river. The latter is especially noticeable north of the lake along the south edge of McFarland. Although at present the development does not come close to the water, it is certainly possible in the future. Even maintaining a park reaching the shore line could reduce duck use substantially, because of human activity.

The most valuable endangered asset in the area is the waterfowl use in spring. From our review of the history of Lake Wingra, we feel that perhaps the worst thing that can happen in this respect is dredging. This can place a greater portion of the bottom below the reach of sunlight and cut down on duck food plants. When soil is disturbed on the upland, pioneer plant species invade. These may include various familiar ones, such as ragweed (*Ambrosia trifida*) and velvetleaf (*Abutilon theophrasti*). When subsoil is exposed, as by bulldozing or quarrying, the plant species which appear afterward can be very different from those present beforehand. We have not seen any mention in the literature of the possibility that pioneer submerged aquatic plants also exist. After dredging, the species distribution might change and might no longer favor duck foods. Since this appears to be a still unstudied subject and since we have so few good waterfowl areas left, it stands to reason that dredging should be strictly avoided here. A further complication is that dredging spoils are usually dumped nearby, such as at the edge of a marsh. This would disrupt the natural shoreline and the interactions which depend upon it.

A lesser but also serious threat to migrating waterfowl is disturbance by boats. We urge strict control over boat use during migration, with no motorboats allowed. There should be no access by road right to the edge of the water. Waterfowl are "spooked" easily by people at the shoreline and move to the far side. A blind or barrier for bird watchers to hide behind would prevent the ducks from being alarmed and would keep the watchers out of the wind.

In general, the wetland area should be managed as an ecosystem. Since this is a discharge area, at least on the west side, ground water sources should be protected. There are already a highway and a power line crossing the marsh. Further crossings should be prevented, as each cuts up the wetland a little more. A buffer zone should be established around the wetlands. This does not mean tree planting. Low prairie would be more appropriate toward maintaining the original landscape character and maintaining the openness preferred by most waterfowl. Light pasturing, with a fence between pasture and wetland, or hayfields would also form an open buffer zone. Such areas, if not disturbed during late spring and early summer, might become useful for waterfowl nesting also. Any future development should be esthetically planned with graded density. There must be no ditching and no further pond digging if the peat area is to retain its character. Ditching would decrease its value in protecting water quality and maintaining flood control, and would probably adversely affect the duck use.

## LOWER MUD LAKE MARSHES













Bird Species List, 1969-1975

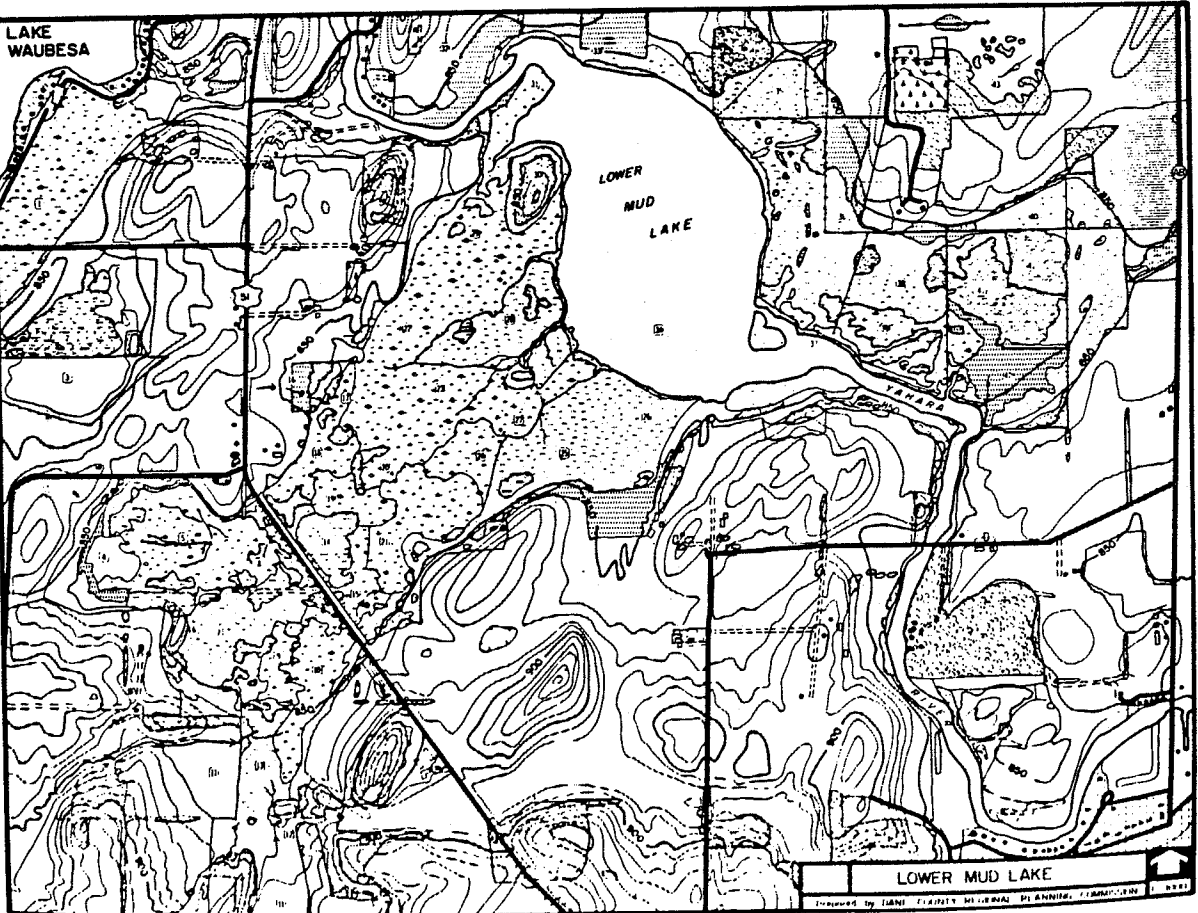
- |                     |                           |                                  |
|---------------------|---------------------------|----------------------------------|
| * Known to breed    | Horned Grebe              | # Sora                           |
| # Presumed to breed | Pied-billed Grebe         | A Coot                           |
| A Abundant migrant  | Great Blue Heron          | # Killdeer                       |
|                     | Green Heron               | # American Woodcock              |
|                     | Black-crowned Night Heron | # Common Snipe                   |
|                     | Least Bittern (1973)      | Spotted Sandpiper                |
|                     | # American Bittern        | Herring Gull                     |
|                     | Whistling Swan            | Ring-billed Gull                 |
|                     | Canada Goose              | Foster's Tern                    |
|                     | # Mallard                 | Black Tern                       |
|                     | Black Duck                | Common Nighthawk                 |
|                     | A Gadwall                 | Belted Kingfisher                |
|                     | Pintail                   | Common Flicker                   |
|                     | Green-winged Teal         | Willow Flycatcher                |
|                     | Blue-winged Teal          | Tree Swallow                     |
|                     | American Wigeon           | Bank Swallow                     |
|                     | Northern Shoveler         | Rough-winged Swallow             |
|                     | Redhead                   | Barn Swallow                     |
|                     | Ring-necked Duck          | Common Crow                      |
|                     | Canvasback                | Long-billed Marsh Wren           |
|                     | Greater Scaup             | Short-billed Marsh Wren          |
| A Lesser Scaup      | Common Goldeneye          | Brown Thrasher                   |
|                     | Bufflehead                | # Yellow Warbler                 |
|                     | Ruddy Duck                | # Common Yellowthroat            |
|                     | Hooded Merganser          | * Yellow-headed Blackbird (1973) |
|                     | Common Merganser          | * Red-winged Blackbird           |
|                     | Red-breasted Merganser    | # Rusty Blackbird                |
|                     | Red-tailed Hawk           | # Common Grackle                 |
|                     | Bald Eagle                | Brown-headed Cowbird             |
|                     | # Ring-necked Pheasant    | Cardinal                         |
|                     | Sandhill Crane            | # Common Goldfinch               |
|                     | # Virginia Rail           | # Swamp Sparrow                  |
|                     |                           | # Song Sparrow                   |

Lower Mud Lake

LOWER MUD LAKE MARSHES

MAP KEY

-  Deep marsh, mostly stands of narrow-leaf cattail (*Typha angustifolia*).
  -  Shallow marsh, stands of various plants, alone or mixed, as discussed in Map Explanation.
  -  Sedge meadow, with sedges (*Carex* spp.) and bluejoint grass (*Calamagrostis canadensis*).
  -  Grazed sedge meadow.
  -  Dry sedge meadow with forbs.
  -  Shrubs.
  -  Wetland disturbance vegetation.
  -  Upland old field.
  -  Trees.
  -  Pasture.
  -  Cultivated or mowed.
  -  Development.
- Water flow channels in marsh, usually remaining open in winter.*





LOWER MUD LAKE MARSHES

MAP EXPLANATION

Lower Mud Lake

Lower Mud Lake

- 1) Shallow marsh dominated by broad-leaf cattail (Typha latifolia), not examined in detail.
- 2) Dense shrubs. The ponds have been added since 1968.
- 3) Not examined in field, but appears to be cultivated in dry years.
- 4) Mostly open water, with scattered soft-stem bulrush (Scirpus validus) and cattail, some disturbance species such as reed canary grass (Phalaris arundinacea) and blue vervain (Verbena hastata).
- 5) Shallow marsh with floating chunks of peat, unusual combination of deep water and shallow water marsh vegetation and shrubs. This area may contain springs or seepage, and merits further study. The species diversity here is above average. The mat sedges Carex diandra and Carex lasiocarpa are found here (cf. Fish Lake). Other local dominants are broad-leaf cattail, soft-stem bulrush, bottlebrush sedge (Carex comosa), and bog birch (Betula sp. [sanderbergii?]).
- 6) Set of ponds dug since 1968, at spring.
- 7) Bluejoint grass (Calamagrostis canadensis) with scattered cattail, not examined in detail.
- 8) Mixture of shrubs, sedge meadow, and shallow marsh.
- 9) Shallow marsh with cattail and Carex lacustris.
- 10) Somewhat deeper area than 9), more cattail.
- 11) Area not examined in field.
- 12) Ponded spring, at edge of pasture.
- 13) Sedge-bluejoint grass meadow with stand of cordgrasses (Spartina pectinata), no forbs.
- 14) Dense shrubs.
- 15) Shallow marsh with broad-leaf cattail, Carex lacustris, and shrubs. A flow of water enters here from west of the road.
- 16) The arrows indicate the direction of upland runoff, which may carry pollutants from the road when the ground is frozen.
- 17) During late winter this region was flooded, apparently with salty water from runoff.
- 18) Shallow marsh, mixed vegetation.
- 19) Bur reed (Spartanium eurycarpum) stand.
- 20) Shallow marsh, Carex lacustris mixed with bur reed. A few stands of giant reed (Phragmites communis) are found in this area.
- 21) Shallow marsh dominated by cattail.
- 22) Shallow marsh dominated by Carex lacustris.
- 23) Shallow marsh, vegetation not examined in detail.
- 24) Shallow marsh, dominated by Carex lacustris.
- 25) Sedge meadow with Carex stricta and bluejoint grass.
- 26) Sedge meadow, area not examined in detail.
- 27) Shallow marsh, area not examined in detail.
- 28) Area dominated by bluejoint grass, not examined in detail. The trees and shrubs in this region are on drier soil. A small island to the east is in upland woods. A few white lady slippers (Cypripedium candidum) grow near this island. Stands of cattail.
- 29) Relatively undisturbed wooded island, ash (Fraxinus sp.), bur oak (Quercus macrocarpa) and black oak (Quercus velutina). The island should be checked for spring wildflowers. Hawks roost here.
- 30) Narrow-leaf cattail (Typha angustifolia) region used for nesting by yellow-headed blackbirds.
- 31) Developing area, may no longer be cultivated.
- 32) Vantage point for waterfowl observation.
- 33) High-priority waterfowl use area, one of two large ones left in Dane County (cf. Crystal Lake). Dense stands of water milfoil (Myriophyllum spicatum), coontail (Geratophyllum demersum), and other water weeds are found here.

Lower Mud Lake

- 35) Sedge meadow with forbs, surrounded by pasture.
- 36) Sedge meadow, bluejoint grass and Carex stricta, small amount of remnant prairie.
- 37) Marsh border of narrow-leaf cattail.
- 38) Sedge-grass meadow.
- 39) Shallow marsh, mostly narrow-leaf cattail.
- 40) Formerly-grazed sedge meadow being invaded by red-osier dogwood (Cornus stolonifera).
- 41) Dense red-osier dogwood and willow shrubs (Salix spp.).
- 42) Large uniform stand of reed canary grass.
- 43) Small wetland, not examined in field.

Door Creek Marsh  
(Study Area 6)

DOOR CREEK MARSH

Yahara River Valley Region

Priority Group II

Wetland Description

Door Creek Marsh rests on one of the major peat deposits of the Yahara River system. The vegetation consists mainly of shallow marsh, with stands of cattail. At the north end of the peat deposit the surface is drier, with sedge meadow and shrubs. Still farther north, the ditched water course of Door Creek is lined with sedge meadow and disturbance vegetation.

The land in the Door Creek region is entirely agricultural, except for a few small groups of houses. The upper valley has been ditched and farmed extensively, and little of the original vegetation remains. The large ditch which has taken over the function of Door Creek has been extended southward through the center of the peat deposit to Lake Kegonsa. This major ditch carries runoff, silt, and nutrients from the farm land, making filtering action by the marsh nearly impossible. An early study (Lackey and Sawyer, 1945) of nutrient loading of the Crawfish, Yahara, and Rock Rivers included Door Creek. Even at that time, the nutrient input of Door Creek was found to be very high.














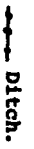
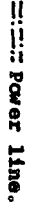
Threats and Management

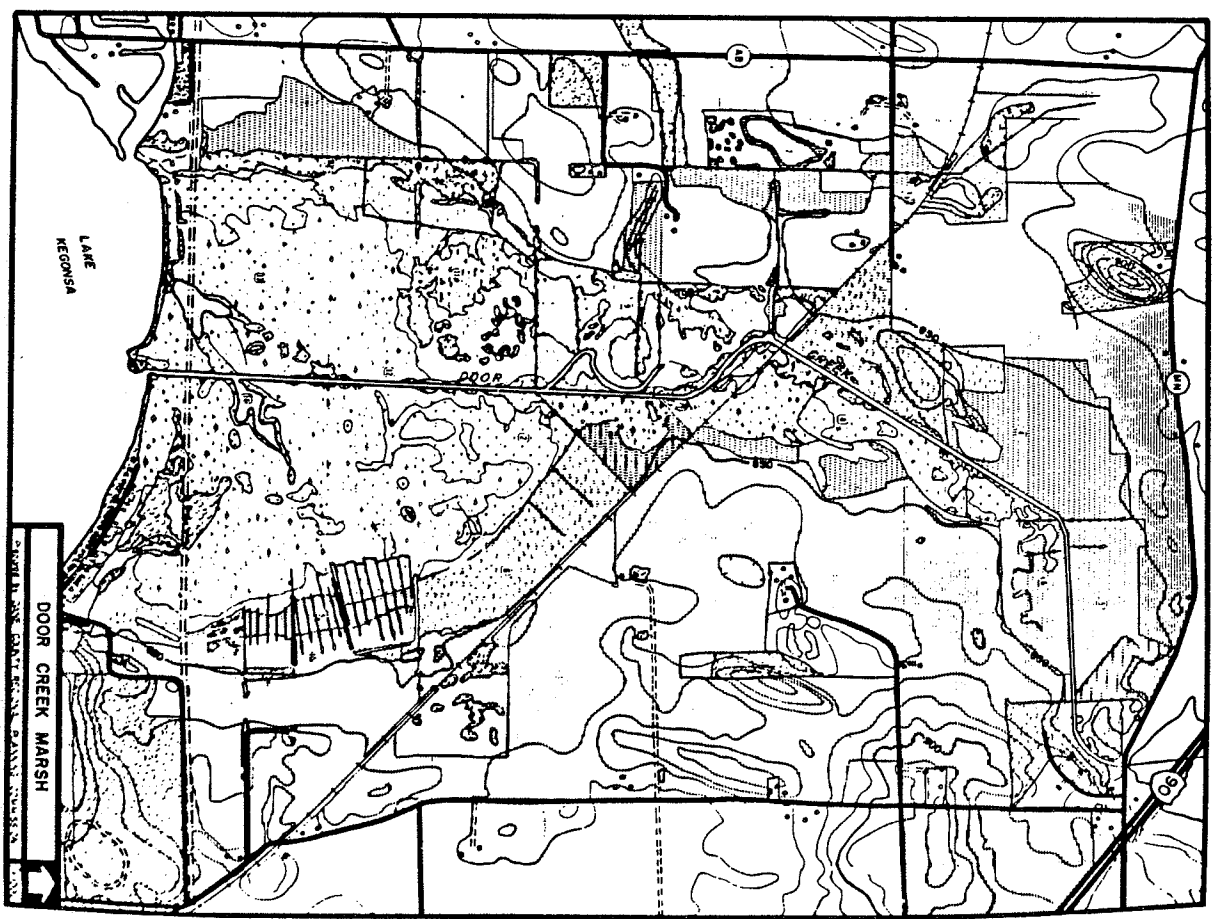
The major threat to the Door Creek Marsh itself is from continued attempts to convert it to conventional agricultural use. Since this has not been successful on any of the deep peat deposits, the further destruction of this natural area does not appear worthwhile. A possible agricultural use is muck farming, but this would destroy the wildlife value of the marsh as well as adding more nutrients to the Yahara River. It should be possible to experiment with closing or partially closing ditches, so as to slow and spread the water flow through the marsh. This may help to preserve it, but there is no substitute for rehabilitation of the upper creek valley. The greatest need for such rehabilitation, however, is the restoration of the quality of the Yahara River.

Door Creek Marsh

DOOR CREEK MARSH

MAP KEY

-  Deep marsh.
-  Shallow marsh.
-  Sedge meadow.
-  Dried out sedge meadow with abundant asters, goldenrod, etc.
-  Shrubs.
-  Wetland disturbance vegetation, especially reed canary grass, giant ragweed, and nettle.
-  Upland old field.
-  Trees.
-  Orchard or planted trees.
-  Pastured.
-  Cultivated.
-  Developed.
-  PALL.
-  Ditch.
-  Power line.



Door Creek Marsh

DOOR CREEK MARSH  
MAP EXPLANATION

NOTE: This area was not examined thoroughly enough in the field for detailed mapping. Differentiation between sedge and shallow marsh areas needs further investigation. Some of the area east of the central ditch was not field checked.

- 1) See Lower Mud Lake for continuation.
- 2) Area not examined in field.
- 3) Small disturbed sedge-reed canary grass (Phalaris arundinacea) area.
- 4) No information obtained in field.
- 5) Grazed and sometimes cultivated, disturbance vegetation.
- 6) Old meanders which hold water in spring, surrounded by reed canary grass.
- 7) Houses built in floodplain.
- 8) Grazed sedge meadow.
- 9) Shrubs heavily invading sedge meadow.
- 10) Probable shrub area, not examined in field.
- 11) Shrubs, almost all red-osier dogwood (Cornus stolonifera), invading sedge meadow.
- 12) Along channel, the vegetation is predominantly red-osier dogwood, elderberry (Sambucus canadensis), black willow (Salix nigra), box elder (Acer negundo), and sandbar willow (Salix interior).
- 13) Shallow marsh, Carex lacustris dominant, scattering and stands of broad-leaf cattail (Typha latifolia), narrow-leaf cattail (Typha angustifolia), Carex aquatilis, soft-stem bulrush (Scirpus validus), and bluejoint grass (Calamagrostis canadensis).
- 14) Vegetation in natural opening predominantly narrow-leaf cattail. Some round stemmed bulrush (Scirpus sp.), Carex comosa, Carex aquatilis, Carex stricta, rice cutgrass (Isoetes cryzoides), jewelweed (Impatiens biflora), water hemlock (Cicuta bulbifera), and marsh dock (Rumex obtusifolius) were seen.
- 15) Disturbance vegetation, not examined.
- 16) Probably can be cultivated only in dry years.
- 17) Lake Kegonsa State Park. This park does not include or protect any of the marsh.