Waterfowl/Wildlife Biodiversity Monitoring
Lake Sinissippi

Prepared for

Lake Sinissippi Association, Inc.

Prepared by

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September 1994

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Appendices

Waterfowl/Wildlife Biodiversity Monitoring

Lake Sinissippi

I. Introduction

A. Purpose

As part of the Wisconsin lakes planning grant program for the Lake Sinissippi Association, Inc., William Poole, an independent consultant, surveyed waterfowl and wildlife and their associated habitat on and adjacent to Lake Sinissippi in Dodge County, Wisconsin.

The objective of these surveys was to:

- Develop a baseline monitoring protocol for the initial collection and continued assessment of general wildlife and ecological information.
- Determine species composition, relative abundance, and seasonal use of the lake and associated habitats by waterfowl, herons/egrets, frogs/toads, and other relevant birds.

B. Scope

A wildlife specialist familiar with the biology, habitat, and identification of Wisconsin's waterfowl and wildlife conducted surveys in spring and summer of 1994 in consultation with the Lake Sinissippi Association and the Wisconsin Department of Natural Resources (WDNR). This report presents the findings of the various tasks conducted to date. The survey tasks, methods, and scope were based on a review of available information, access logistics, workable sampling size, and the study plan developed to follow WDNR recommendations.

II. Description of the Study Area

Lake Sinissippi is located in Dodge County, Wisconsin, on the Rock River approximately 6 miles downstream from the Horicon Marsh. The lake is formed by a dam located in the City of Hustisford and covers approximately 2,855 acres. (See Appendix A for a location map.)

The surface features of this portion of Dodge County, including much of the project area, has been influenced primarily by several stages of glaciation and subsequent erosion. Dodge County is south of the "tension zone" that separates the Northern Hardwoods floristic province to the north from the Prairie-Forest province to the south. The rich prairie and wetland soils encouraged farming, and agricultural cropland, wetlands, and woodlots share dominance over the local vegetative cover.

Typical wetland plant species near the project area include cattails, dogwoods, and black willow. The upland areas are dominated by red oak, white oak, and aspen. Vast wetlands, prairies, and forests were common in presettlement days. Today, a few prairie remnants are found near the project area,

but the large tracts of woodlands no longer exist. There are still relatively large wetlands along the river.

The scenic and historic Rock River, including Lake Sinissippi, draws recreational users for activities such as boating, fishing, and hunting. Generally, the project boundary is typified by residential development, agricultural cropland, and undeveloped wetland areas.

For the purposes of the waterfowl and other wildlife surveys, the study area encompassed the lake from the dam in Hustisford upstream to Club Grounds Road.

III. Conclusions

A. Waterfowl

Lake Sinissippi is used by a variety of waterfowl, primarily for migratory staging. This is especially evident during the spring migration. Because of the flowing water beneath the ice and early season rains in this region, open water is available on this lake before most preferred migrational water bodies thaw. Also, because the lake has limited macrophyte production, it does not possess the forage base required to support a large number of waterfowl for an extended period. Therefore, most waterfowl only remain for a short period of time.

Waterfowl nesting habitat is limited due to the amount of riparian development and local land use practices. However, Canada geese exhibit success in breeding and local production, with little or no contribution by ducks.

B. Heron/Egret

Lake Sinissippi supports foraging and loafing opportunities for a relatively large number of great blue herons, and to a lesser degree green herons and double-crested cormorants. No egrets were observed using the lake proper during the field surveys. Shallow bays, small islands, and backwater areas with undeveloped shorelines provide the preferred foraging and loafing habitat with minimal disturbance. Because of the location of such areas, most of this activity appears to be concentrated to the north and west areas of the lake, although herons were observed in all areas of the lake at some time. There does not appear to be a need to protect foraging and loafing herons from disturbance at this time.

A limited amount of potential nesting habitat does exist. However, due to the proximity of development and the amount of human disturbance from riparian residences and recreational users, the likelihood of a heronry being established is minimal.

C. Frog/Toad

Given the amount of wetland habitat contiguous to and surrounding the lake, there should be concern for the low numbers and diversity of frogs observed during the 1994 field surveys. This appears to be consistent with the statewide trend of declines in frog populations since annual surveys began in the 1970s. The actual cause for these declines is uncertain but speculation by professionals suggests that acid rain, increased ultraviolet rays from the thinned ozone layer,

agricultural chemicals that can harm vulnerable frogs' eggs, not to mention wetland losses and degradation, may all be factors.

D. Breeding Birds

Riparian development and local land use practices have limited the amount and quality of habitat available for breeding birds. However, the variety and relative abundance of birds encountered in the project area is characteristic of the amount and types of habitat available within this geographic range.

IV. Methods and Materials

A. Information Review

The primary objective of the information review was to collect all available ecological information for the project vicinity. The information gathered was then used to develop a field study protocol appropriate to the geographic area, site conditions, and known biological attributes of the study area. Information was available in several forms:

- Published literature
- Written reports
- Aerial photographs and maps
- Interviews and communications with local residents and WDNR biological experts.

WDNR personnel (Rich Kahl and Ron Gatti) provided historic and recent information regarding waterfowl activity in the general area, as well as on Lake Sinissippi itself.

B. Survey Techniques

1. Waterfowl Surveys

a. Migratory – The lake was subdivided into observation zones based on access logistics and workable sampling size. A map of the lake depicting the observation zones was developed. Species lists and accounts were recorded on the field map or on field log sheets (Appendix B).

Five survey bouts were conducted between April 10 and April 23, 1994. The surveys began one-half hour before sunrise and ended by noon. All waterfowl observed within each zone were identified and recorded. Observations were conducted with 10 x 50 binoculars and/or a spotting scope. Prior to each survey, temperature, wind direction, sky condition, and precipitation were recorded.

b. Breeding – One survey was conducted on May 8, 1994, to document breeding waterfowl. This event was coordinated with the WDNR to coincide with the Department's May 3, 1994, Habitat Restoration Area (HRA) helicopter survey to provide additional information. In addition to the HRA counts, the WDNR also flew designated transects

around the north end of the lake specifically established for the Lake Sinissippi studies. The May 8 survey was conducted by slowly motoring around the shoreline and islands of the lake in a small boat. The boat was guided parallel to the shoreline at a sufficient distance to reduce the likelihood of alarming waterfowl prior to identification, and to avoid running the boat into shallows or other navigational obstructions. Waterfowl were identified with the aid of 10 x 50 binoculars when necessary, and all species identified were recorded. Efforts were made to avoid recounting any birds that were alarmed and flushed.

c. **Broods** – Three surveys were conducted between June 1 and June 15 to document the occurrence of waterfowl reproduction and brood-rearing habitat. These surveys were conducted using the same techniques as described for the breeding waterfowl survey.

2. **Heron/Egret**

a. Rookery Habitat Evaluation – One day was dedicated to searching areas associated with the lake for potential rookery habitat. In addition, a literature search for historic data was conducted to determine if any former rookeries existed in the area.

b. Feeding/loafing – Five surveys to identify the primary feeding and loafing areas and level of usage were conducted concurrently with the April Migratory Waterfowl Surveys. In addition, surveys were conducted once each month in May, June, July, and August. These surveys were also used as anecdotal indicators of the frequency and magnitude of disturbance resulting from human activity.

The surveys began one-half hour before sunrise and ended by noon. Observations were conducted using 10 x 50 binoculars and/or a spotting scope. Incidental observations of heron/egret activity were noted.

c. Frog/Toad - A survey route including 10 observation sites was established around the lake and associated wetlands (Appendix C). The survey locations were selected to include a variety of representative habitat types.

One survey was conducted to coincide with the phenology of frog calling in early spring. Two additional surveys were conducted in late spring and summer. Surveys began after dark and under favorable conditions in accordance with the Wisconsin Frog and Toad Survey protocol. All observations and ambient conditions were recorded on the standard survey sheet. In addition, a general habitat description was recorded for each survey site.

3. **Breeding Birds** – Three breeding bird surveys were conducted at the height of the breeding season (late May – June) and began one-half hour before sunrise. Survey transects were established in or along representative habitats associated with the lake. Each transect consisted of a number of observation points determined by field conditions. At these points, all birds observed were recorded. A description of habitat types for each transect was documented.

V. Results and Discussion[1]

A. Waterfowl

1. **Migratory Significance/Habitat.** Lake Sinissippi is located within the Mississippi Valley Flyway, a major migration route for North American waterfowl. To determine waterfowl populations and the significance of certain Wisconsin lakes for migratory staging, the WDNR conducts spring and fall aerial counts. Lake Sinissippi is included in these surveys, and a summary of the counts from the spring of 1994 is included in Appendix E. These surveys, combined with the ground-based observations conducted in April, 1994 (Appendix B), indicate that the lake is consistently used by a variety of waterfowl during migratory periods. However, the number of waterfowl is relatively low compared to similar water bodies within the general region. The data also indicate that the number of waterfowl staging on the lake is highest immediately after ice-out and decreases within a relatively short period. An unexpected exception to this trend occurred on April 20, 1994, when a relatively large number and variety of waterfowl appeared on the lake. However, waterfowl that appear only remain for a short period of time. Early migrants find holes and strips of open water near the inlets on lakes such this one prior to ice-out on preferred migrational water bodies. Ice-free waters provide resting and feeding sites for ducks and govern the distribution of birds in late winter and early spring (Jahn and Hunt, 1964). It is suspected that the amount and types of forage required to hold and sustain a large number of migrating waterfowl is limited in this system, thereby explaining the fairly limited use by waterfowl.

2. **Breeding/Habitat.** The surveys conducted on Lake Sinissippi on May 3, 1994 (by the WDNR) and on May 8, 1994, were used to formulate a general indication of waterfowl breeding within the project area. As a result, four species of waterfowl were listed as confirmed breeders within the project area: mallard, wood duck, blue-winged teal, and Canada goose. One of the WDNR HRA helicopter transects passes over a portion of the north end of the lake. Several waterfowl and other water-bird species were observed during the May 3 count and included the Canada goose, lesser scaup, great blue heron, and cormorant. The annual results of this survey from 1991 – 1994 are presented in Appendix F. There has been some variability in the species and number of ducks and geese recorded over the past four years. This may be influenced by a number of factors including water levels on the lake and available water in the region; the level of human disturbance; local land practices; and the increasing population of resident Canada geese. However, given the relatively short period these surveys cover, it is not uncommon to see variation of this magnitude from year to year. Long-term monitoring would be needed to observe more actual trends in species composition and abundance. The WDNR also conducted aerial counts for breeding waterfowl along designated transects around the north end of the lake (Appendix G). This area was selected because of the existing habitat and the potential it had for holding breeding birds. Eight species of waterfowl were identified. However, only the mallard, blue-winged teal, wood duck, and Canada goose are confirmed or likely local breeders. A brood of five Canada geese was recorded during the flight. Other water-birds

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[1] A table listing the scientific names of species discussed in this report is presented in Appendix D.

observed included the great blue heron, American coot, double-crested cormorant, and pied-billed grebe. A total of 10 mallards, 4 wood ducks,____ blue-winged teal, and 66 canada geese were recorded during the May 8 survey. During these surveys, no transient waterfowl species—those not considered to be local breeders—were observed, which indicated that the spring migration had passed this latitude by that time. For this reason, it is likely that the local breeding species that were counted were representative of the actual number of waterfowl estimated to be breeding in the survey area. However, some birds hold up in heavy cover and may not have been observed.

With a low density of breeding ducks in the area, it is difficult to obtain sufficient quantitative data to evaluate the influence of various factors on duck populations. The potential factors affecting breeding in the area—such as land use, plant succession, disease, human disturbance, and features of the habitat on the breeding population—are largely descriptive. Zimmerman (1953) reported that some Wisconsin lakes bordered with homes were so heavily used for recreation that breeding ducks were discouraged from utilizing otherwise suitable habitat. On the other hand, the Canada goose appears to have adapted quite well to the semi-developed state of the lake's shoreline and adjacent woodlands. A relatively large number of nesting and/or suspected local breeders were observed.

3. **Broods/Habitat.** Three surveys were conducted on June 5, 11, and 15 to document the occurrence of waterfowl reproduction within the lake and associated riparian habitat. In light of the number of ducks observed as local breeders, no duck broods were observed during the surveys. Conversations with local residents regarding observations of duck broods also indicated a lack of visible duck reproduction. Some broods may have been present in dense shoreline vegetation or backwater areas not accessible by boat, but they were not visible. Also, because of the reproductive phenology of waterfowl, a certain number of the hens were likely incubating during some of the surveys, and some drakes desert their home ranges for molting areas (Jahn and Hunt, 1964). Other factors that may affect the success of duck reproduction and brood survival are predation by snapping turtles and avian predators, land use practices on nesting habitat adjacent to the lake, and a possible lack of preferred invertebrate forage due to the lack of aquatic macrophytes. It is somewhat surprising that there was not any mallard duck reproduction observed, because on April 10, 1994, a hen mallard was observed nesting in the cavity of a willow tree and was incubating a full clutch. Typically, mallards are more adaptable in the selection of a nesting site. Game managers have reported finding nests with eggs on floating mats of leather leaf; in jack pine needles on uplands up to one-quarter of a mile from water; in wild hay meadows and various types of hay and crop fields; in grassy herbaceous vegetation interspersed with brush but located near water (within 200 meters); on muskrat houses; on dock pilings; in crotches of trees 12 feet above the ground; and on cement walls in cities adjacent to streams. It is suspected birds of both wild and semi-domestic strains are involved in this wide range of nesting sites (Jahn and Hunt, 1964).

During the three surveys, 471 Canada geese were recorded (Appendix H). Of this total, 301, or 64 percent, were young-of-year birds. Observed numbers of geese cannot be taken at face value. It is likely that some of the birds were recounted during subsequent survey bouts, thereby suggesting an inflated local breeding estimate. However, it is also likely that during each survey, a number of birds present in the area were not detected. Therefore, according to the surveys, the mean number of geese inhabiting the lake during the waterfowl

production season includes 57 adults and 100 juveniles. The geese appear to have adapted to the semi-developed nature of the lake's shoreline, as in many other urban and suburban areas of the state, and take advantage of foraging on the lush manicured lawns that surround the lake. The aggressive territorial nature of these geese may have some influence on the apparent lack of breeding ducks found.

B. Heron/Egret

1. **Rookery Habitat Evaluation.** One field trip was dedicated to searching the areas associated with the lake for potential rookery habitat. Visual observations were also noted during scheduled waterfowl and heron/egret surveys. To date, there are no known heron nesting area near the lake, and the potential for future opportunity appears to be limited. The closest known heron colony exists on an island in the Horicon Marsh approximately 7 miles to the north. It is suspected that many of the herons observed using Lake Sinissippi come from this colony.

   A large portion of the immediate shoreline is residentially developed, and the village of Hustisford borders the south end of the lake. In addition, much of the surrounding landscape consists of agricultural fields and wetlands. Due to this level of development and human influence on the local vegetation, the tracts of isolated super-canopy trees preferred for colonization are very limited. In addition, the level of human disturbance associated with the high level of recreational use on the lake is probably more than the herons are willing to tolerate. Some limited areas of suitable nesting habitat were identified and are indicated on the map in Appendix I. The three small islands and area identified at the north end of the lake have some potential, only in that this area is somewhat removed from development. The types and sizes of trees present in this area are marginal for nesting preference. However, several dead snags located on those islands are consistently used for loafing by herons and double-crested cormorants. The two islands (Crane and Stone) in the middle area of the lake possess the isolation and vegetation components that could be suitable for nesting; however, these islands are privately owned and are used by campers throughout the spring and summer season. Although, the large island (Anthony) at the southeast corner of the lake contains a fairly large area of suitable trees, the north half of the island is occupied by homes, and a county highway passes along the east shore approximately 500 yards from the island. Lastly, the large narrow island (Koch) at the south end of the lake is completely undeveloped and also contains suitable nesting trees. However, this island is located near the village of Hustisford and the public boat landing. Given the relatively high level of use by herons feeding and loafing on the lake, it would appear that at least one of these sites would be occupied if any were truly acceptable, but they hold potential nonetheless.

2. **Feeding/Loafing.** Seven complete and two incomplete surveys were conducted to identify primary feeding and loafing areas around the lake. The incomplete surveys were conducted in conjunction with the migratory waterfowl surveys and did not include the entire shoreline of the lake. Results indicate that the herons tend to concentrate along the undeveloped portions of the shoreline and islands. This appears to correlate with the number of herons observed in the backwater areas toward the north and northwest portion of the lake, and along the west-southwest shoreline (Appendix I). A number of herons were observed around the various islands and the developed shoreline some of the time. Interviews with

some local residents revealed that the herons are observed loafing on boat docks and residential lawns, but this primarily occurs early in the morning prior to the increase in human activity. A total of 177 great blue herons were counted over the course of the seven complete surveys. As many as 40, and as few as 12, were observed on any given survey bout with an average daily count of 25.3. The level of use on the lake by herons appeared to increase as the summer season progressed. This may be due to smaller bodies of water and drainage ditches in the general area drying up with the onset of summer conditions. The only observations of egrets were made in a wetland area near Strange Road, north of the lake, and in a wet meadow several miles west of the lake.

Disturbance to the heron's feeding and loafing activities as a result of human activity does not appear to be a significant concern. Many of the areas where herons were observed are located in shallow, undeveloped portions of the lake. Because of the shallow conditions, very few boaters venture into these areas and access from shore is very limited. Other portions of the lake are used early in the morning and again in the evening when human activity on the water is low. During the surveys, it became evident that individual herons had varying degrees of tolerance to disturbance. As the boat that was used for the surveys would approach or pass by herons, approximately 50 percent would flush. Of the birds that did flush, most would only fly several hundred yards, or over to an adjacent bay, before landing again.

C. Frog/Toad

Three scheduled frog and toad surveys were conducted to coincide with the breeding phenology of the 12 species of Wisconsin's frogs and toads (Appendix C). These fell within the recommended listing periods and water temperatures. During the early time period, the water temperatures averaged slightly above the 50 degree minimum water temperature requirement, and the winds were light. The leopard frog was the only species observed during this survey episode. Even though it was documented at eight of the 10 listing sites, the number of individuals was relatively low. During the middle time period, the average water temperature was about 65 degrees. Winds were calm at the beginning of the survey, but increased significantly by the end of the route. This increase in wind may have affected the observer's ability to hear all frogs calling. The chorus frog was observed at two locations, while only one American toad and one cricket frog were observed at individual sites. The third and final survey was conducted in mid-July, when water temperatures ranged between 70 and 77 degrees. Winds were fairly calm; however, the amount of cloud cover increased during the course of the survey. The green frog was observed at four locations, along with the American toad at two of these locations. It is unusually late in the season to hear toads calling during this time period.

D. Breeding Birds

During the course of three breeding bird surveys, conducted in late May and June, a total of 43 species of birds was documented, not including waterfowl. A table summarizing the species observed is presented in Appendix J. Several of the species observed rely on aquatic resources for forage and included great blue heron, green heron, belted kingfisher, and osprey. These species prey on fish and other aquatic organisms in the lake and associated habitats.

Upland bird species were observed occupying the various habitats found along the project boundary. Species ranged from birds of prey such as the red-tailed hawk, to a variety of songbirds, woodpeckers, and gallinaceous birds like the ring-necked pheasant. Bird surveys were conducted along pre-determined transects that represented the various general habitat types found around the lake (Appendix J). The species recorded along these transects are likely representative of the birds that inhabit the entire lake and adjacent uplands. Also, because of the general geographic location, and because the river corridor is likely used as a migration/travel route, some birds observed and some that were not detected may move to and through the lake area during various daily and seasonal periods.

Although much of the lake's shoreline is developed with private residences, some species of birds such as the house sparrow, American robin, house finch, and blue jay have adapted to urban habitat types. The remaining undeveloped ares contain a variety of habitats ranging from open fields and wooded shorelines to cattail marshes. This type of diversity provides habitat for a variety of birds. However, each habitat type is limited in size and diversity, and consequently can only support a limited number of each bird species present.

The habitat types included in the surveys varied in composition. Transect No. 1, located at the public boat landing near Hustisford, consisted of open mown grassy areas, an old field, deciduous trees and shrubs along the shoreline, and an asphalt parking lot. Transect No. 2, which was bordered by the east side of the lake on one side and County Highway E on the other, primarily comprised a narrow band of a dense mixture of deciduous trees and shrubs along the shoreline. A number of private residences were located on the east the side of the county highway. Transect No. 3 was situated along a residentially developed shoreline of the lake. Much of the area across the road from the lakefront homes was undeveloped and comprised mature deciduous trees and a fallow field. Transect No. 4, also located along County highway E, included a cattail marsh with pockets of open water interspersed, shrubby vegetation along the upland bank, and open fields across the road. Transect No. 5 followed the portion of Strange Road that passed through the deciduous wood lot adjacent to a shallow bay partially surrounded by cattails. Transect No. 6 was located at the north end of the lake on the property owned by the state of Wisconsin. This area comprised an open grassland that sloped down toward the lake, where a transition to alder and cattails occurred.

E. Recommendation

The following recommendations are made for consideration purposes only. The implementation of any such recommendations, either in part or in full, must be coordinated with the appropriate state resource agencies.

1. Waterfowl

- Improve water quality and clarity to promote growth of valuable aquatic macrophytes, which provide provide the necessary food sources for migrating waterfowl, resident breeders, and brood rearing. This may be accomplished through the implementation of a watershed management plan which, in part, would reduce excessive nutrient-loading from agricultural and residential practices. In addition, removal and control of rough fish would aid in improving water quality by reducing nutrient cycling and suspended sediments and would

reduce the level of foraging activity performed by rough fish, which up-root aquatic macrophytes.

- Protect, maintain, and, where possible, improve existing wetlands adjacent to and near the lake.

- Given the relatively large number of resident Canada geese inhabiting the lake and the lack of local breeding ducks, some consideration should be given to removing a portion of this population. This can be accomplished through a trap-and-transfer method, or a specialized hunt.

- Grasslands and hay fields adjacent to and within one-half mile of the lake should not be cut prior to June 15 to protect nesting waterfowl.

2. Heron/Egret

- Protect existing potential heronry habitat for possible future use. There is no immediate need to protect herons from disturbance.

3. Frog/Toad

- The recommendations for waterfowl (above) regarding water quality and wetland protection also apply for protecting and improving frogs and toads.

4. Breeding Birds

- Protect existing undeveloped areas from destruction and development, and establish more vegetation along the developed shorelines. More shrubs and trees along the water's edge and in yards will increase the habitat and cover need for more nesting song birds. This can also aid in promoting more diversity of species present.

  Grasslands and hay fields adjacent to and within ½ mile of the lake should not be cut prior to June 15 to protect nesting gallinaceous and song birds. Periodic prescribed burns should be performed on local open grasslands to maintain quality nesting cover and prevent invasion of woody vegetation.

Periodic monitoring should be conducted to document significant changes or trends in the wildlife communities that use and inhabit the lake.

VI. Literature Cited

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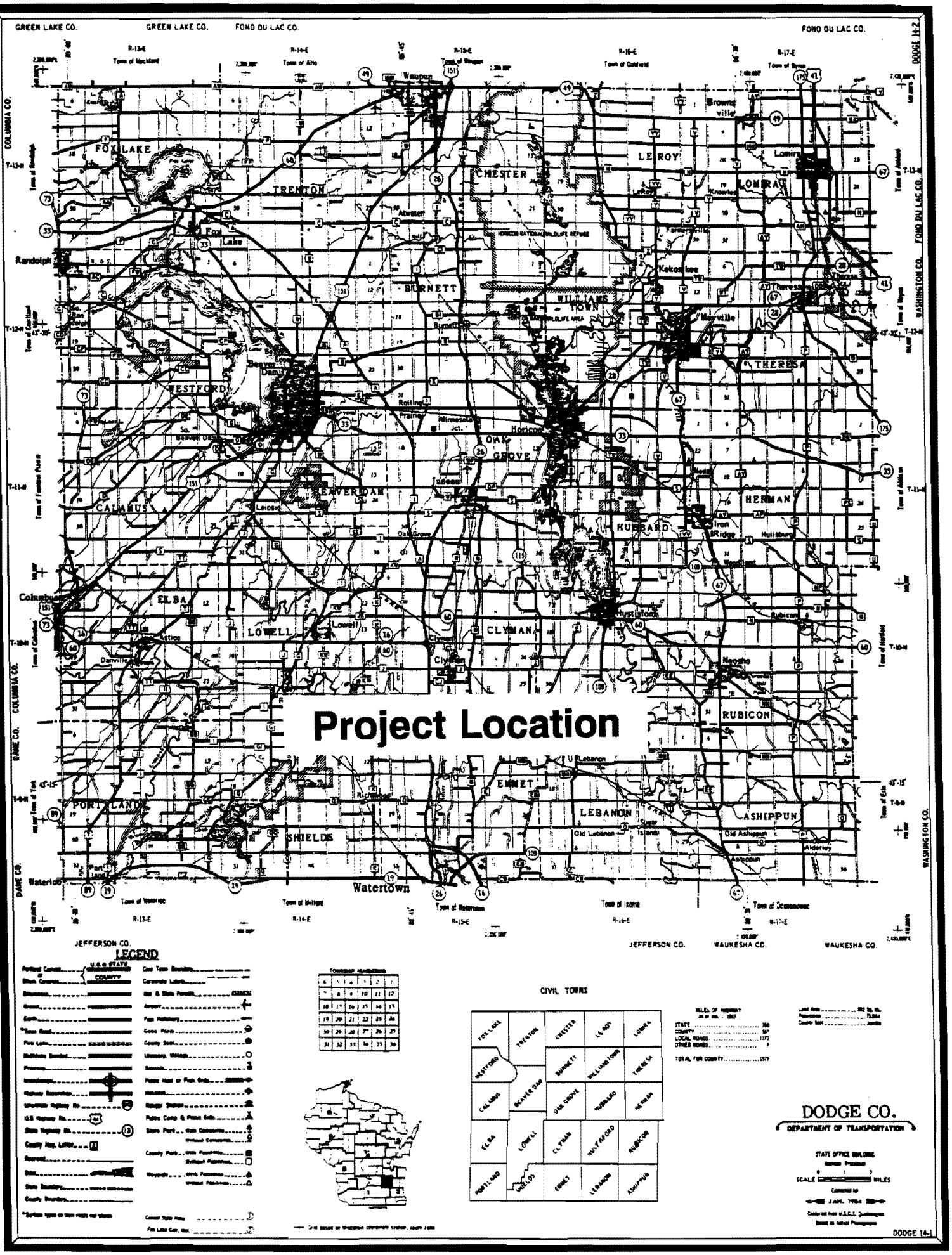
Kahl, R., 1991. Restoration of Canvasaback Migrational Staging Habitat in Wisconsin. Wisconsin Department of Natural Resources, Technical Bulletin No. 172.

Zimmerman, F.R., 1953. Waterfowl Habitat Survey and Food Habitat Studies, 1940–1943. Wisconsin Conservation Department, Madison. 176 p. (multilith).

Black, H., 1994. A Little Night Music. Wisconsin Natural Resources, April 1994, pp. 25–29.

Appendix A. Location Map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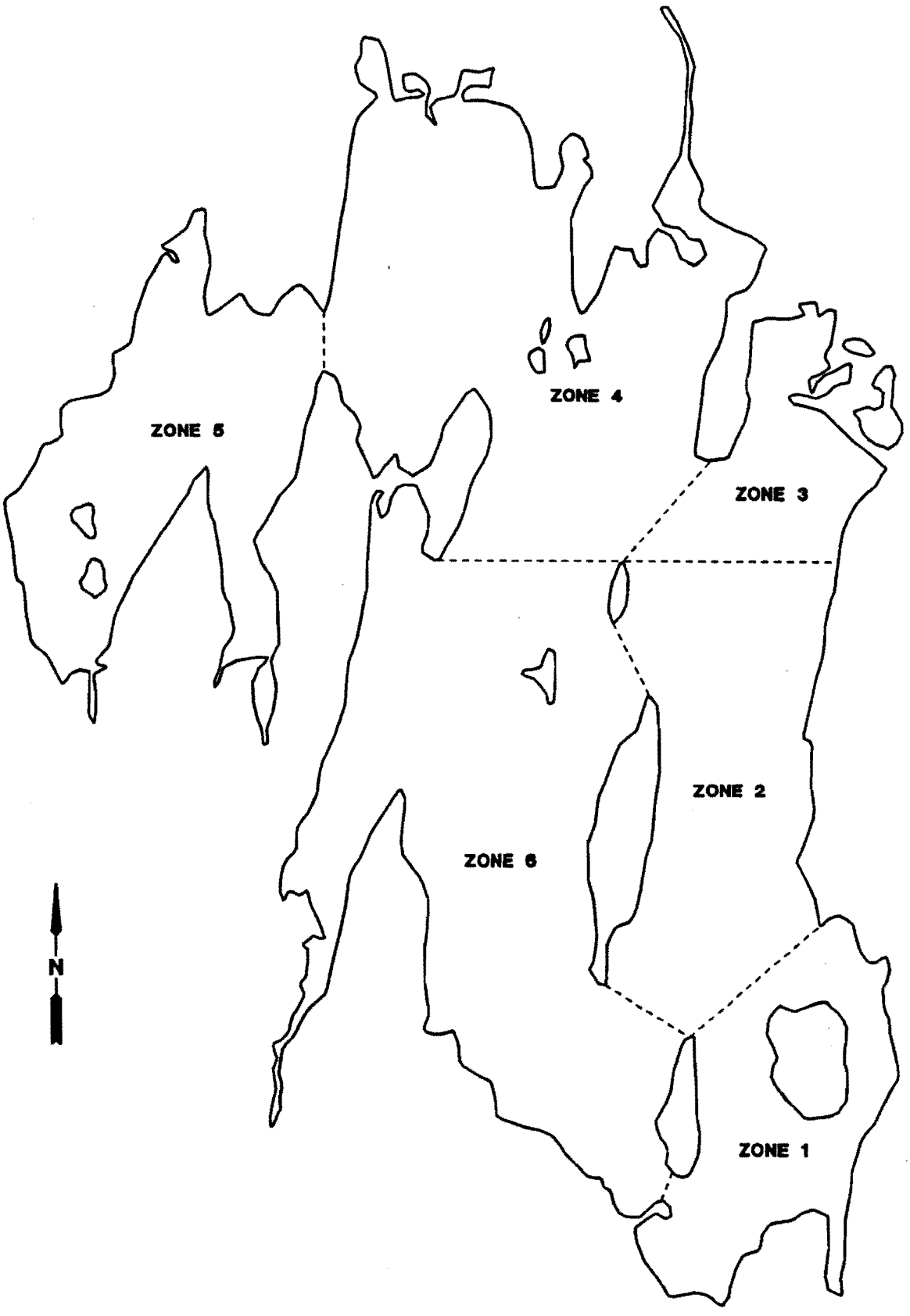
GREEN LAKE CO.
FOND DU LAC CO.
FOND DU LAC CO.
COLUMBIA CO.
DANE CO.
COLUMBIA CO.
DANE CO.
WASHINGTON CO.
FOND DU LAC CO.
WASHINGTON CO.
JEFFERSON CO.
JEFFERSON CO.
WAUKESHA CO.
WAUKESHA CO.
FOX LAKE
TRENTON
CHESTER
LE ROY
LOMIRA
BURNETT
WILLIAMSTOWN
THERESA
WESTFORD
BEAVER DAM
OAK GROVE
HERMAN
CALAMUS
LEEDS
HUBBARD
ELBA
LOWELL
CLYMAN
RUBICON
PORTLAND
SHIELDS
EMMET
LEBANON
ASHIPPUN
Project Location
LEGEND
CIVIL TOWNS
DODGE CO.
DEPARTMENT OF TRANSPORTATION
DODGE 14-1

Appendix B. Migratory Waterfowl Data



LAKE SINISSIPPI

WATERFOWL SURVEY

OBSERVATION ZONES

WATERFOWL SURVEY

Location: Zone 1, 2 + 3
Date: 4/10/94
Observers: B. Poole

Weather: Wind NW 10-20 mph
Temperature: ~40°
% Cloud Cover: 100

Dabbling Ducks

Species	Zone 1	Zone 2	Zone 3	Comments
Black duck				
Mallard	1-Drake	1-Drake	3-Drake 2-(Pair)	
Wood duck			4 (2-Pair)	
G.W. Teal				
B.W. Teal			11	
Pintail				
Shoveler			2 (Pair)	
Gadwall				
Wigeon				

Diving Ducks

Species	Zone 1	Zone 2	Zone 3	Comments
Goldeneye				
Bufflehead			3	
Ruddy duck				
Common merganser				
Hooded merganser				
Redhead				
Canvasback				
Ring-necked duck			5	
Greater scaup		2	2	
Lesser scaup				

Other

Species	Zone 1	Zone 2	Zone 3	Comments
Canada goose			8	
Snow goose				
Whistling swan				
Mute swan				
Coot				
Loon				
Pied-billed grebe		1	11	

Brown Creeper, Song Sparrow, Grackle, House Sparrow, Robin
Mourning Dove, Starling, Tree Swallow, Blue Jay, Junco, R.W. Blk. Bird
Osprey, Red-Tailed Hawk, House Finch, Pheasant, R.B./Hering Gull
Cardinal, Killdeer

WATERFOWL SURVEY

Location: Zone 4, 5 + 6
Date: 4/10/94
Observers: R. Poole

Weather: Wind NW 10-20 mph
Temperature: 45°-50°
% Cloud Cover: 100

Dabbling Ducks

Zone 4 Zone 5 Zone 6

Species		Number		Comments
Black duck				
Mallard	3	1		Hen nesting in willow cover - 1 egg
Wood duck		2		
G.W. Teal				
B.W. Teal		1		
Pintail				
Shoveler				
Gadwall				
Wigeon	1			

Diving Ducks

Species	Number			Comments
Goldeneye				
Bufflehead				
Ruddy duck	25	36		
Common merganser			3	
Hooded merganser				
Redhead				
Canvasback				
Ring-necked duck				
Greater scaup	55	27		
Lesser scaup				

Other

Species	Number			Comments
Canada goose		11		
Snow goose				
Whistling swan				
Mute swan				
Coot	20			
Loon		1		
Pied-billed grebe	1	1		

Cormorant 9

WATERFOWL SURVEY

Location: Zone 1 2 + 3
Date: 4/14/94
Observers: B. Poole

Weather: Clear Wind SW 5 mph
Temperature: ~45° F
% Cloud Cover: 0

Dabbling Ducks

Species	Zone 1	Number Zone 2	Zone 3	Comments
Black duck				
Mallard			16	
Wood duck	6	6		
G.W. Teal				
B.W. Teal			9	Backwater area near Strange Rd. Farm
Pintail				
Shoveler				
Gadwall				
Wigeon			4	Backwater area near Strange Rd. Farm

Diving Ducks

Species	Number			Comments
Goldeneye				
Bufflehead				
Ruddy duck				
Common merganser				
Hooded merganser				
Redhead				
Canvasback			1	
Ring-necked duck				
Greater scaup			3	
Lesser scaup				

Other

Species	Number			Comments
Canada goose			13	Several nesting Pairs
Snow goose				
Whistling swan				
Mute swan				
Coot				
Loon				
Pied-billed grebe	2			

Tree Swallow
Starling
Song Sparrow
Flicker
Chickadee

Heron - 1
Egret - 1

WATERFOWL SURVEY

Location: Zone 4, 5 + 6
Date: 4/14/94
Observers: B. Poole

Weather: Clear Wind S.W. 12-15 mph
Temperature:
% Cloud Cover: 0

Dabbling Ducks

Zone 4 Zone 5 Zone 6

Species		Number		Comments
Black duck				
Mallard	4			
Wood duck	1		4	
G.W. Teal				
B.W. Teal	1			
Pintail				
Shoveler				
Gadwall				
Wigeon				

Diving Ducks

Species	Number			Comments
Goldeneye				
Bufflehead				
Ruddy duck				
Common merganser				
Hooded merganser				
Redhead				
Canvasback				
Ring-necked duck	4			
Greater scaup				
Lesser scaup				

Other

Species	Number			Comments
Canada goose	10	9	11	
Snow goose				
Whistling swan				
Mute swan				
Coot				
Loon	1		5	
Pied-billed grebe				

Heron –
Osprey

WATERFOWL SURVEY

Location: Zone 1, 2 + 3
Date: 4/17/94
Observers: B. Poole

Weather: Wind N.W. 5-12 mph
Temperature: ~45° F
% Cloud Cover: 0

Dabbling Ducks

Zone 1 Zone 2 Zone 3

Species		Number		Comments
Black duck				
Mallard	3		7	Flying through Zone 1
Wood duck	4			Flying through Zone 1
G.W. Teal			1	
B.W. Teal			2	
Pintail				
Shoveler			5	
Gadwall				
Wigeon			2	

Diving Ducks

Species	Number			Comments
Goldeneye				
Bufflehead			3	
Ruddy duck				
Common merganser				
Hooded merganser				
Redhead				
Canvasback				
Ring-necked duck			8	
Greater scaup		7		
Lesser scaup				

Other

Species	Number			Comments
Canada goose	2		6	
Snow goose				
Whistling swan				
Mute swan				
Coot				
Loon				
Pied-billed grebe		1	2	
Cormorant	2		3	
Junco				
Heron			3	Flying through

WATERFOWL SURVEY

Location: Zone 4, 5 + 6
Date: 4/17/94
Observers: B. Poole

Weather: Wind N.W. 15+ mph
Temperature: 45° - 50° F
% Cloud Cover: 0

Dabbling Ducks

Zone 4 Zone 5 Zone 6

Species		Number		Comments
Black duck				
Mallard	4	1		
Wood duck	2			
G.W. Teal				
B.W. Teal		2		
Pintail				
Shoveler				
Gadwall				
Wigeon		2		

Diving Ducks

Species	Number			Comments
Goldeneye				
Bufflehead				
Ruddy duck				
Common merganser				
Hooded merganser				
Redhead				
Canvasback				
Ring-necked duck				
Greater scaup	4			
Lesser scaup				

Other

Species	Number			Comments
Canada goose	12	6	1	
Snow goose				
Whistling swan				
Mute swan				
Coot				
Loon				
Pied-billed grebe	1			

Hera. — Flying over
Egret — 1 — Near Strange Rd. Farm
Great horned owl

2 - Boats Near Inlet of Lake 1 - Canoe

WATERFOWL SURVEY

Location: Zone 1, 2, +3
Date: 4/20/94
Observers: B. Poole

Weather: Wind N.W. 3-5 mph
Temperature: ~40°F
% Cloud Cover: 0

Dabbling Ducks

Species	Zone 1	Zone 2	Zone 3	Comments
Black duck				
Mallard		2	6	
Wood duck	2	2	1	
G.W. Teal			2	
B.W. Teal			3	
Pintail				
Shoveler			6	
Gadwall				
Wigeon				

Diving Ducks

Species	Number			Comments
Goldeneye				
Bufflehead		20		
Ruddy duck		9	244	
Common merganser				
Hooded merganser				
Redhead			80	
Canvasback			15	
Ring-necked duck				
Greater scaup		16	185	
Lesser scaup				

Other

Species	Number			Comments
Canada goose			4	
Snow goose				
Whistling swan				
Mute swan				
Coot			11	
Loon				
Pied-billed grebe	2			

Cormorant 3 Flying over
Heron 2 1 1

Killdeer
Chipping Sparrow
Turkey

WATERFOWL SURVEY

Location: Zone 4, 5 + 6
Date: 4/20/94
Observers: R. Pomle

Weather: Wind N.W. 10 mph
Temperature: ~ 45-50°F
% Cloud Cover: 0

Dabbling Ducks

Species	Zone 4	Number Zone 5	Zone 6	Comments
Black duck				
Mallard				
Wood duck				
G.W. Teal				
B.W. Teal		8		
Pintail				
Shoveler		4	7	
Gadwall				
Wigeon				

Diving Ducks

Species	Number			Comments
Goldeneye				
Bufflehead	30		6	
Ruddy duck	282	63	15	
Common merganser				
Hooded merganser				
Redhead	20	65		
Canvasback	5			
Ring-necked duck	10	22	15	
Greater scaup	283	65	30	
Lesser scaup				

Other

Species	Number			Comments
Canada goose	7	83	2	
Snow goose				
Whistling swan				
Mute swan				
Coot				
Loon				
Pied-billed grebe				
Heron		3		
Cormorant		1		

WATERFOWL SURVEY

Location: Zone 1, 2, 3
Date: 4/23/94
Observers: B. Poole

Weather: Wind 10-15mph S.W.
Temperature: ~40°F
% Cloud Cover: 10%

Dabbling Ducks

Zone 1 Zone 2 Zone 3

Species		Number		Comments
Black duck				
Mallard			5	
Wood duck	2		2	Flying [illegible] Zone 1
G.W. Teal				
B.W. Teal				
Pintail				
Shoveler				
Gadwall				
Wigeon				

Diving Ducks

Species	Number			Comments
Goldeneye				
Bufflehead				
Ruddy duck				
Common merganser				
Hooded merganser				
Redhead				
Canvasback				
Ring-necked duck				
Greater scaup				
Lesser scaup				

Other

Species	Number			Comments
Canada goose			7	one on [illegible]
Snow goose				
Whistling swan				
Mute swan				
Coot				
Loon				
Pied-billed grebe				

Chipping Sparrow
Swamp Sparrow

WATERFOWL SURVEY

Location: Zone 4, 5 + 6
Date: 4/23/94
Observers: B. Poole

Weather: Wind S-SW 10-15
Temperature: ~50°F
% Cloud Cover: 5%

Dabbling Ducks

Zone 4 Zone 5 Zone 6

Species		Number		Comments
Black duck				
Mallard	3			
Wood duck				
G.W. Teal				
B.W. Teal	2			
Pintail				
Shoveler				
Gadwall				
Wigeon				

Diving Ducks

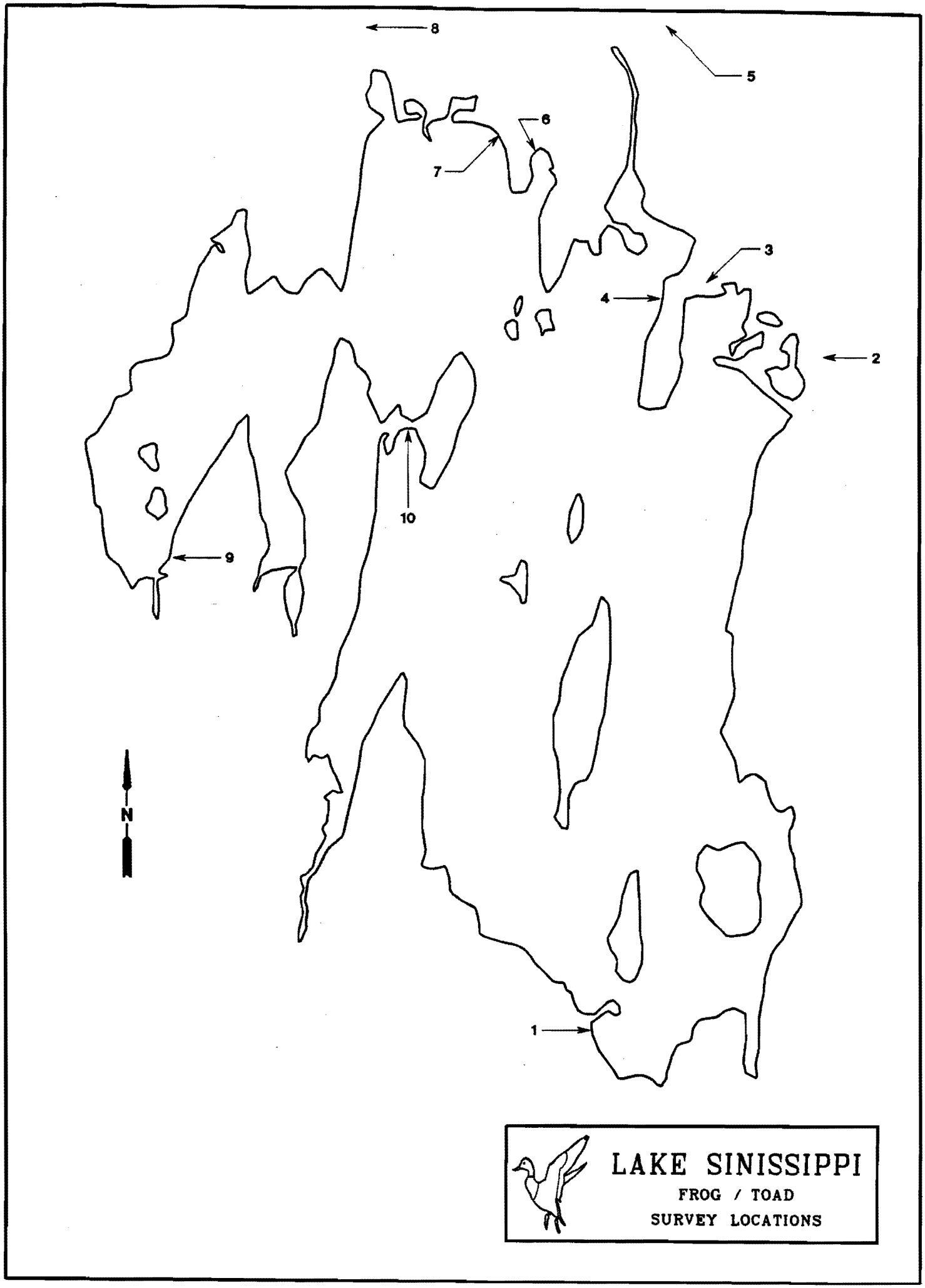
Species	Number			Comments
Goldeneye				
Bufflehead				
Ruddy duck				
Common merganser				
Hooded merganser				
Redhead				
Canvasback				
Ring-necked duck				
Greater scaup				
Lesser scaup				

Other

Species	Number			Comments
Canada goose	7	19	4	
Snow goose				
Whistling swan				
Mute swan				
Coot				
Loon				
Pied-billed grebe				
Heron	1	1		

Goldfinch
Red-Bellied Woodpecker
Red-Headed Woodpecker

Appendix C. Frog/Toad Survey Information


8
5
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N
1
LAKE SINISSIPPI
FROG / TOAD
SURVEY LOCATIONS

Bureau of Endangered Resources
Department of Natural Resources
Box 7921, Madison, WI 53707

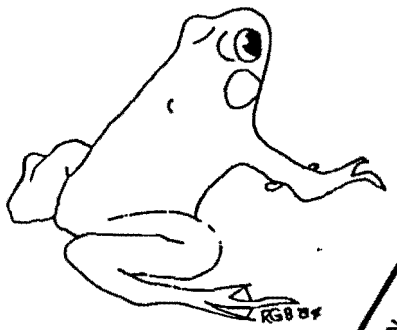
(Add address and phone on back.)

RUN 2 _____

RUN 3 _____

County Dodge

INSTRUCTIONS: Use this form for new or established survey routes. Each route consists of 10 listening sites, and is repeated 3 times during the breeding season, according to t minimum water temperatures and approximate range of dates given below for each survey period. Run surveys after dark, when wind velocity is less than 8 m Listen 5-10 minutes at each site and record a call index value of 1,2, or 3 (see below) for each species calling. See back of sheet for wind and sky codes and additional comments. Return to above address by 15 August.



	FIRST RUN Water 50°F; 1-30 April	SECOND RUN Water 60°F; 20 May - 5 June	THIRD RUN Water 70°F; 1-15 July
BEGIN:	Date 4/20/94 Time: 20:20 Wind: 1 Sky: 1 Air temp. (F): 52	Date 5/27/94 Time: 21:00 Wind: 1 Sky: 0 Air temp. (F): 57	Date 7/15/94 Time: 21:00 Wind: 1 Sky: 1 Air temp. (F): 70
END:	Time: 22:20 Wind: 2 Sky: 1 Air temp. (F): 47	Time: 22:30 Wind: 3 Sky: 0 Air temp. (F): 54	Time: 22:1 Wind: 1 Sky Air temp. (F):

SITE NAME	Site Number	Water Temp (F)	CALL INDEX* Wood frog	Chorus frog	Spring peeper	Leopard frog	Pickerel frog	Am. toad	E. gray tree frog	C. gray tree frog	Cricket frog	Mink frog	Green frog	Bullfrog
1. Hustis Ford Boat Landing	1.	52°			2									
2. Co. Hwy E N.E. Marsh	2.	49°			1									
3. Wildcat Rd. (1)	3.	49°												
4. Wildcat Rd. (2)	4.	54°			1									
5. Strange Rd. (1)	5.	50°			2									
6. " (2)	6.	54°			1									
7. " (3)	7.	54°			1									
8. Horseshoe Rd.	8.	50°			2									
9. Arrowhead Rd.	9.	52°			3									
10. Butternut Isl. Causeway	10.	52°												
For office use only — Mean														
For office use only — Freq.														

SITE NAME	Site Number	Water Temp (F)	CALL INDEX* Wood frog	Chorus frog	Spring peeper	Leopard frog	Pickerel frog	Am. toad	E. gray tree frog	C. gray tree frog	Cricket frog	Mink frog	Green frog	Bullfrog
1. Hustis Ford Boat Landing	1.	64°												
2. Co. Hwy E N.E. Marsh	2.	65°	2											
3. Wildcat Rd. (1)	3.	65°												
4. Wildcat Rd. (2)	4.	66°					1							
5. Strange Rd. (1)	5.	66°	3						1					
6. " (2)	6.	—												
7. " (3)	7.	—												
8. Horseshoe Rd.	8.	60°												
9. Arrowhead Rd.	9.	—												
10. Butternut Isl. Causeway	10.	64°												
For office use only — Mean														
For office use only — Freq.														

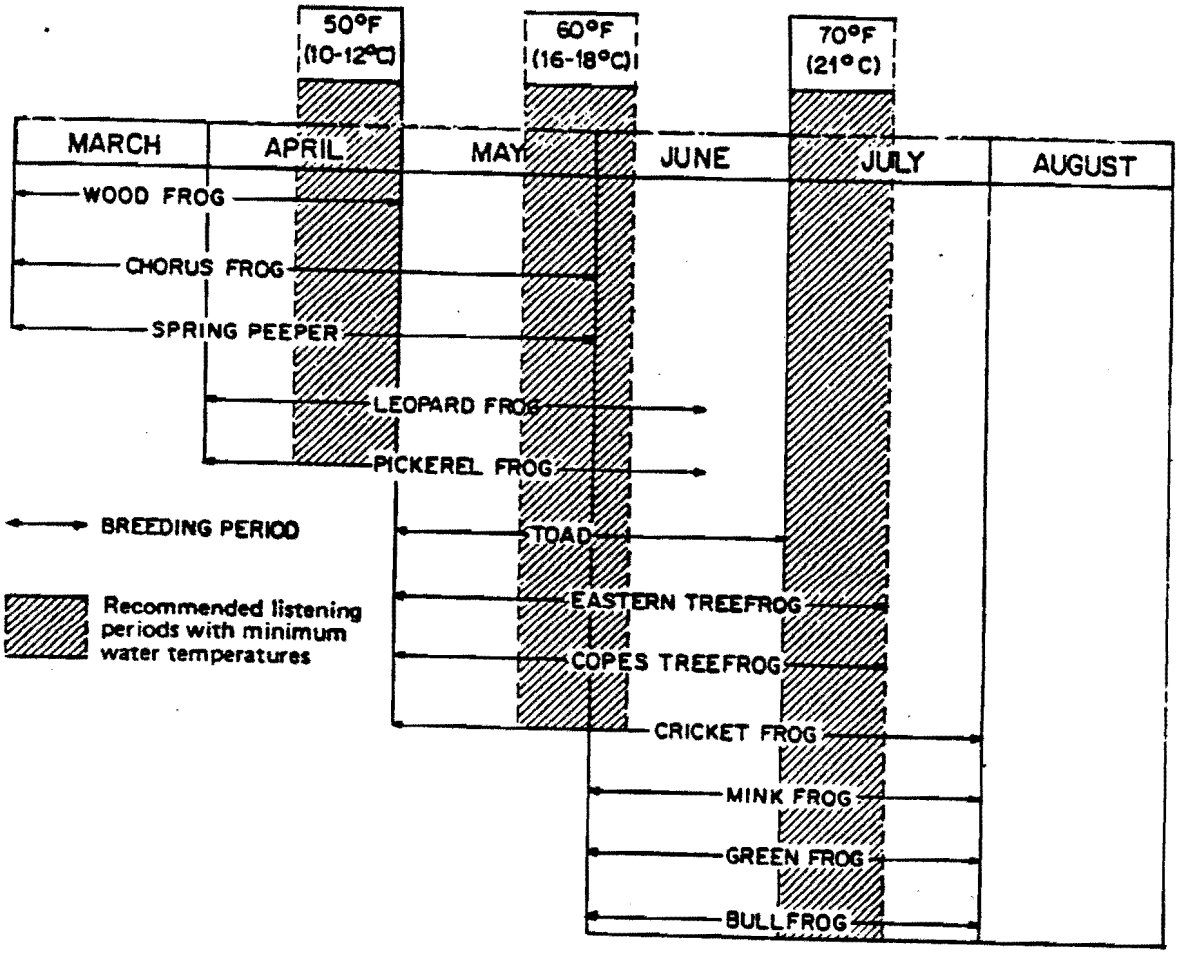
SITE NAME	Site Number	Water Temp (F)	CALL INDEX* Wood frog	Chorus frog	Spring peeper	Leopard frog	Pickerel frog	Am. toad	E. gray tree frog	C. gray tree frog	Cricket frog	Mink frog	Green frog	Bullfrog
1. Hustis Ford Boat Landing	1.	70°												
2. Co. Hwy E N.E. Marsh	2.	77°										2		
3. Wildcat Rd. (1)	3.	—										2		
4. Wildcat Rd. (2)	4.	76°												
5. Strange Rd. (1)	5.	—						1				1		
6. " (2)	6.	—												
7. " (3)	7.	—						1				2		
8. Horseshoe Rd.	8.	—												
9. Arrowhead Rd.	9.	—												
10. Butternut Isl. Causeway	10.	77°												
For office use only — Mean														
For office use only — Freq.														

*The call index is a rough estimate of the numbers of calling males of a particular species, according to the following index values:

1 Individuals can be counted; there is space between calls.

2 Calls of individuals can be distinguished but there is some overlapping of c[illegible]term[illegible] betw[illegible]1" a[illegible]").

Form 1700-8
4-86



Calling calendar for frogs and toads in central Wisconsin

WISCONSIN FROG AND TOAD SURVEY

Bureau of Endangered Resources, Box 7921, Madison WI 53707

(Veg) SURVEY ROUTE DESCRIPTION

County Dodge

Route Number _____

Route Name _____

Name(s) of observer(s) completing this form:

Bill Poole

Year 1994

SITE DESCRIPTIONS

Site No.	Location of Listening Point (Town/range/¼-section, road names, where to stand)	Description of Wetland
1.	T 10 N R 16 Sec 9 SW ¼ Hustisford Boat landing – off of County Hwy. E Stand at the Boat Landing.	Shrub Carr adjacent to shallow bay + vegetated shoreline.
2.	T 10 N R 16 Sec 33 NW ¼ County Hwy. E – N.E. Corner of the Lake Between Lake Dr. + Wildcat Rd.	Cattail marsh with Pockets of open water containing other emergent aquatic macrophytes (Lily Pads, etc.)
3.	T 10 N R 16 Sec 33/28 NW ¼/SW ¼ Wildcat Rd. – Approximately ¼ mile East of Hwy. E – water on both sides of the road.	↑ same
4.	T 10 N R 16 Sec 32 NE ¼ Wildcat Rd. – unimproved boat landing on west side of the Peninsula Just before the 1st house	Vegetated shoreline adjacent to shallow bay
5.	T 10 N R 16 Sec 29 NE ¼ Strange Rd.-West of Hwy. E at the culvert between the highway + the Farm	Shallow marsh with sedges, cattails, some Alder + dogwood, and open
6.	T 10 N R 16 Sec 29/32 SE ¼/NE ¼ Strange Rd. – Along the gravel road that Passes through the woods S.W. of the Farm. Stand near the back of the Bay.	Shallow bay surrounded by cattails and woody vegetation
7.	T 10 N R 16 Sec 29 SW ¼ Strange Rd. – The shoreline of a Private residence at the end of the road.	Shallow bay with residentially developed shoreline + some cattails to the north.
8.	T 10 N R 16 Sec 30 NE ¼ The Southern Point of Horseshoe Rd. where a culvert runs under the Road.	Small inlet stream / drainage leading to the lake + bordered by cattails + other emergent macrophytes
9.	T 10 N R 16 Sec 31 SW ¼ Arrowhead Trail – along the road over looking the bay to the west	Shallow bay surrounded by cattails, with some emergent aquatic macrophytes (Lily Pads)
10.	T 10 N R 16 Sec 31 NE ¼ + SE ¼ On the causeway leading to Butternut Island.	Shallow bay with a large Patch of Cattails

Appendix D. Species List (Scientific Names)

ANIMAL SPECIES POTENTIALLY OCCURRING IN THE STUDY AREA

REPTILES AND AMPHIBIANS	
Common Name	**Scientific Name**
Common Snapping Turtle	*Chelydra serpentina*
Painted Turtle	*Chrysemys picta*
Blanding's Turtle	*Emydoidea blandingi*
Wood Turtle	*Clemmys insculpta*
Map Turtle	*Graptemys geographica*
False Map Turtle	*Graptemys pseudographica p.*
Smooth Softshell Turtle	*Trionyx muticus*
Eastern Spiny Softshell Turtle	*Trionyx feroxspiniferus*
Five-Lined Skink	*Eumeces fasciatus*
Northern Red-Bellied Snake	*Storeria occipitomaculata*
Northern Water Snake	*Natrix sipedon sipedon*
Common Garter Snake	*Thamnophis sirtalis*
Eastern Hognose Snake	*Heterodon platyrhinos*
Northern Ringneck Snake	*Diadophis punctatus edwardski*
Eastern Smooth Green Snake	*Opheodrys vernalis vernalis*
Bullsnake	*Pituophis melanoleucus sayi*
Western Fox Snake	*Elaphe vulpina vulpina*
Eastern Milk Snake	*Lampropeltis triangulum*
Massasauga	*Sistrurus catenatus*
Mudpuppy	*Necturus maculosus*
Central Newt	*Notophthalmus viridescens louisianens*
Blue Spotted Salamander	*Ambystoma laterale*
Spotted Salamander	*Ambystoma maculatum*
Eastern Tiger Salamander	*Ambystoma tigrinum tigrinum*
Red-Backed Salamander	*Plethoden cinereus*
Four-Toed Salamander	*Hemidactylium scutatum*
American Toad	*Bufo americanus*
Northern Spring Peeper	*Hyla crucifer*
Gray Tree Frog	*Hyla versicolor*
Chorus Frog	*Pseudacris triseriata*
Pickerel Frog	*Rana palustris*
Leopard Frog	*Rana pipiens*
Green Frog	*Rana clamitans*
Wood Frog	*Rana sylvantica*
Bullfrog	*Rana catesbeiana*

BIRDS	
Common Name	**Scientific Name**
Common Loon	*Gavia immer*
Pied-Billed Grebe	*Podilymbus podiceps*
Whistling Swan	*Olor columbianus*
Canada Goose	*Branta canadensis*
Snow Goose (Blue Goose)	*Chen caerulescens*
Mallard	*Anas platyrhynchos*
Black Duck	*Anas rubripes*
Pintail	*Anas acuta*
Gadwall	*Anas strepera*
American Wigeon	*Anas americana*
Northern Shoveler	*Anas clypeata*
Blue-Winged Teal	*Anas discors*
Green-Winged Teal	*Anas crecca*
Wood Duck	*Aix sponsa*
Redhead	*Aythya americana*
Canvasback	*Aythya valisineria*
Ring-Necked Duck	*Aythya collaris*
Lesser Scaup	*Aythya affinis*
Greater Scaup	*Aythya marila*
Common Goldeneye	*Bucephala clangula*
Bufflehead	*Bucephala albeola*
Ruddy Duck	*Oxyura jamaicensis*
Common Merganser	*Mergus merganser*
Red-Breasted Merganser	*Mergus serrator*
Hooded Merganser	*Lophodytes cucullatus*
Turkey Vulture	*Cathartes aura*
Goshawk	*Accepiter gentilis*
Cooper's Hawk	*Accipiter cooperii*
Sharp-Shinned Hawk	*Accipiter striatus*
Northern Harrier	*Circus cyaneus*
Rough-Legged Hawk	*Buteo lagopus*
Red-Tailed Hawk	*Buteo jamaicensis*
Red-Shouldered Hawk	*Buteo lineatus*
Broad-Winged Hawk	*Buteo platypterus*
Merlin	*Falco columbarius*
American Kestrel	*Falco sparverius*
Ruffed Grouse	*Bonasa umbellus*
Great Egret	*Casmerodius albus*
Great Blue Heron	*Ardea herodias*
Green Heron	*Butorides striatus*
American Bittern	*Botaurus lentiginosus*
Least Bittern	*Ixobrychus exilis*
Sandhill Crane	*Grus canadensis*

Birds — continued	
Common Name	**Scientific Name**
Virginia Rail	*Rallus limicola*
Sora	*Porzana carolina*
Yellow Rail	*Coturnicops noveboracensis*
King Rail	*Rallus elegans*
American Coot	*Fulica americana*
American Golden Plover	*Pluvialis dominica*
Black-Bellied Plover	*Pluvialis squatarola*
Piping Plover	*Charadrius melodus*
Semipalmated Plover	*Charadrius semipalmatus*
Killdeer	*Chardrius vociferus*
Upland Sandpiper	*Bartramia longicauda*
Solitary Sandpiper	*Tringa solitaria*
Spotted Sandpiper	*Actitis macularia*
Greater Yellowlegs	*Tinga melanoleucus*
Lesser Yellowlegs	*Tinga flavipes*
Pectoral Sandpiper	*Calidris melanotos*
American Woodcock	*Philohela minor*
Common Snipe	*Capella gallinago*
Herring Gull	*larus argentatus*
Common Tern	*Sterna hirundo*
Black Tern	*Chlidonias niger*
Rock Dove	*Columba livia*
Mourning Dove	*Zenaida macroura*
Yellow-Billed Cuckoo	*Coccyzus americanus*
Black-Billed Cuckoo	*Coccyzus erythropthalmus*
Screech Owl	*Otus asio*
Great Horned Owl	*Bubo virginianus*
Long-Eared Owl	*Asio otus*
Short-Eared Owl	*Asio flammeus*
Snowy Owl	*Nyctea scandiaca*
Barred Owl	*Strix varia*
Saw-Whet Owl	*Aegolius acadicus*
Whip-Poor-Will	*Caprimulgus vociferus*
Common Nighthawk	*Chordeiles minor*
Chimney Swift	*Chaetura pelagica*
Ruby-Throated Hummingbird	*Archilochus colubris*
Belted Kingfisher	*Megaceryle alcyon*
Common Flicker	*Colaptes auratus*
Pileated Woodpecker	*Dryocopus pileatus*
Red-Bellied Woodpecker	*Melanerpes carolinus*
Red-Headed Woodpecker	*Melanerpes erythrocephalus*
Yellow-Bellied Sapsucker	*Sphyrpicus varius*

Birds — continued	
Common Name	**Scientific Name**
Harry Woodpecker	*Picoides villosus*
Downy Woodpecker	*Picoides pubescens*
Eastern Kingbird	*Tyrannus tyrannus*
Great Crested Flycatcher	*Myiarchus crinitus*
Eastern Phoebe	*Sayornis phoebe*
Yellow-Bellied Flycatcher	*Empidonax flaviventris*
Willow Flycatcher	*Empidonax trailli*
Least Flycatcher	*Empidonax minimum*
Eastern Pewee	*Conopus virens*
Olive-Sided Flycatcher	*Nuttallornis borealis*
Horned Lark	*Eremophila alpestris*
Barn Swallow	*Hirundo rustica*
Cliff Swallow	*Petrochelidon pyrrhonota*
Tree Swallow	*Iridoprocne bicolor*
Bank Swallow	*Riperia riparia*
Rough-Winged Swallow	*Stelgidopteryx ruficollis*
Purple Martin	*Progne subis*
Blue Jay	*Cyanocitta cristata*
Northern Raven	*Corvus corax*
Common Crow	*Corvus brachryhynochos*
Black-Capped Chickadee	*Parus atricapillus*
Tufted Titmouse	*Parus bicolor*
White-Breasted Nuthatch	*Sitta carolinensis*
Red-Breasted Nuthatch	*Sitta canadensis*
Brown Creeper	*Certhia familiaris*
House Wren	*Troglodytes aedon*
Winter Wren	*Troglodytes troglodytes*
Marsh Wren	*Cistothorus palustris*
Northern Mockingbird	*Mimus polyglottos*
Gray Catbird	*Dumetella carolinensis*
Brown Thrasher	*Toxostoma rufum*
Robin	*Turdus migratorius*
Wood Thrush	*Hylocichla mustelina*
Hermit Thrust	*Catharus guttatus*
Swainson's Trush	*Catharus ustulatus*
Gray-Cheeked Thrush	*Catharus minimus*
Veery	*Catharus fuscenscens*
Eastern Bluebird	*Sialia sialis*
Blue-Gray Gnatcatcher	*Polioptila caerulea*

Birds — continued	
Common Name	**Scientific Name**
Golden-Crowned Kinglet	*Regulus satrapa*
Ruby-Crowned Kinglet	*Regulus calendula*
Water Pipit	*Anthus spinoletta*
Cedar Waxwing	*Bombycilla cedrorum*
Northern Shrike	*Lanius excubitor*
European Starling	*Sturnus vulgaris*
Solitary Vireo	*Vireo solitarius*
Yellow-Throated Vireo	*Vireo flavifrons*
Red-Eyed Vireo	*Vireo olivaceus*
Warbling Vireo	*Vireo gilvus*
Black-And-White Warbler	*Mniotilta varia*
Golden-Winged Warbler	*Vermivora chrysoptera*
Tennessee Warbler	*Vermivora peregrina*
Nashville Warbler	*Vermivora ruficapilla*
Parula Warbler	*Parula americana*
Yellow Warbler	*Dendroica petechia*
Magnolia Warbler	*Dendroica magnolia*
Cape May Warbler	*Dendroica tigrina*
Myrtle Warbler	*Dendroica coronata*
Black-Throated Green Warbler	*Dendroica virens*
Black-Throated Blue Warbler	*Dendroica caerulescens*
Cerulean Warbler	*Dendroica cerulea*
Blackburnian Warbler	*Dendroica fusca*
Chestnut-Sided Warbler	*Dendroica pensylvanica*
Bay-Breasted Barbler	*Dendroica castanea*
Blackpoll Warbler	*Dendroica striata*
Pine Warbler	*Dendroica pinus*
Palm Warbler	*Dendroica palmarum*
Ovenbird	*Seiurus aurocapillus*
Northern Waterthrush	*Seiurus noveboracensis*
Louisiana Waterthrush	*Seiurus motacilla*
Common Yellowthroat	*Geothlypis trichas*
Yellow-Breasted Chat	*Icteria virens*
Mourning Warbler	*Oporonis philadelphia*
Connecticut Warbler	*Oporonis agilis*
Wilson's Warbler	*Wilsonia pusilla*
Canada Warbler	*Wilsonia canadensis*
American Redstart	*Setophaga ruticilla*
House Sparrow	*Passer domesticus*
Bobolink	*Dolichonyx oryzivorus*
Eastern Meadowlark	*Sturnella magna*
Western Meadowlark	*Sturnella neglecta*

Birds — continued	
Common Name	**Scientific Name**
Yellow-Headed Blackbird	*Xanthocephalus xanthocephalus*
Red-Winged Blackbird	*Agelaius phoeniceus*
Brewer's Blackbird	*Euphagus cyanocephalus*
Common Grackle	*Quiscalus quiscula*
Brown-Headed Cowbird	*Molothrus ater*
Northern Oriole	*Icterus galbula*
Scarlet Tanager	*Piranga olivacea*
Northern Cardinal	*Cardinalis cardinalis*
Rose-Breasted Grosbeak	*Pheucticus ludovivianus*
Evening Grosbeak	*Hesperiphona vespertina*
Indigo Bunting	*Passerina cyanea*
Purple Finch	*Carpodacus purpureus*
Pine Grosbeak	*Pinicola enucleator*
Common Redpoll	*Carduelis flammea*
Pine Siskin	*Carduelis pinus*
American Goldfinch	*Carduelis tristis*
Red Crossbill	*Loxia curvirostra*
White-Winged Crossbill	*Loxia leucoptera*
Dickcissel	*Spiza americana*
Rufous-Sided Towlee	*Pipilo erythrophthalmus*
Savannah Sparrow	*Passerculus sandwichensis*
Grasshopper Sparrow	*Ammodramus savannarum*
Henslow's Sparrow	*Ammodramus henslowii*
Le Contes Sparrow	*Ammospiza caudacutus*
Sharp-Tailed Sparrow	*Ammospiza caudacuta*
Vesper Sparrow	*Pooecetes gramineus*
Lark Sparrow	*Chondestes grammacus*
Slate-Colored Junco	*Junco hyemalis*
Tree Sparrow	*Spizella arborea*
Chipping Sparrow	*Spizella passerina*
Clay-Coloed Sparrow	*Spizella pallida*
Field Sparrow	*Spizella pusilla*
Harris' Sparrow	*Zonotrichia guerula*
White-Crowned Sparrow	*Zonotrichia leucophrys*
White-Throated Sparrow	*Zonotrichia albicollis*
Fox Sparrow	*Passerella iliaca*
Lincoln's Sparrow	*Melospiza lincolnii*
Swamp Sparrow	*Melospiza georgiana*
Song Sparrow	*Melospiza melodia*
Lapland Longspur	*Calcarius lapponicus*
Snow Bunting	*Plectrophenax nivalis*

MAMMALS	
Common Name	**Scientific Name**
Opossum	*Didelphis marsupialis*
Long-Tailed Shrew	*Sorex cinereus cinereus*
Saddle-Backed Shrew	*Sorex arcticus*
Water Shrew	*Sorex palustris*
Short-Tailed Shrew	*Blarina brevicauda*
Star-Nosed Mole	*Condylura cristata*
Little Brown Bat	*Myotis lucifugus*
Eastern Long-Eared Bat	*Myotis keenii*
Silver-Haired Bat	*Lasionycteris noctiragans*
Big Brown Bat	*Eptesicus fuscus*
Red Bat	*Lasiurus borealis*
Hoary Bat	*Lasiurus cinereus*
Cottontail Rabbit	*Sylvilagus flordanus*
Woodchuck	*Marmota monax*
Thirteen-Lined Ground Squirrel	*Citellus tridecemlineatus*
Eastern Chipmunk	*Tamias striatus*
Least Chipmunk	*Eutamias minimus*
Gray Squirrel	*Sciurus carolinensis*
Fox Squirrel	*Sciurus niger*
Red Squirrel	*Tamiasciurus hudsonicus*
Northern Flying Squirrel	*Glaucomys sabrinus*
Beaver	*Castor canadensis*
Woodland Deer Mouse	*Peromyscus maniculatus gracilis*
Northern White-Footed Mouse	*Peromyscus leucopus*
Cooper's Lemming Mouse	*Synaptomys cooperi cooperi*
Red-Backed Vole	*Clethrionomys gapperi*
Meadow Vole	*Microtus pennsylvanicus*
Muskrat	*Ondatra zibethicus*
Norway Rat	*Rattus norvegicus*
Common Rat	*Rattus rattus*
House Mouse	*Mus musculus*
Meadow Jumping Mouse	*Zapus hudsonius*
Woodland Jumping Mouse	*Napaeozapus insignis*
Porcupine	*Erethizon dorsatum*
Coyote	*Canis latrans*
Red Fox	*Vuples fulva*
Gray Fox	*Urocyon cinereoargenteus*
Black Bear	*Ursus americanus*
Raccoon	*Procyon lotor*
Short-Tailed Weasel	*Mustela erminea*
Long-Tailed Weasel	*Mustela frenata*
Mink	*Mustela vison*
Badger	*Taxidea taxus*
Striped Skunk	*Mephitis mephitis*
Otter	*Lutra canadensis*
Bobcat	*Lynx rufus*
White-Tailed Deer	*Odocoileus virginianus*

Appendix E. WDNR Spring Waterfowl Counts

DIVING DUCK CENSUS

DATE: 3-30-94 | WEATHER: Cloud cover 5-10%, Wind 5-10 mph W-SW | Temp 30-45°F

	Site	Time	Canvasback 1	Redhead 2	Scaup 3	Ring-neck 4	Ruddy 5	Coot 6	Bufflehead 7	Merganser 8	Golden eye 9	Wigeon 10	Gadwall 11	Mallard 12	BWT 13	GWT 14	Shoveler 15	Geese 16	Cluck 17	Snow Geese 18	19	Swans Tundra 20	Loon 21
1	MENDOTA	1326			115	20		25	30	25	15												3+1
2					45					50	45												
3					100					10	25												
4					60																		
5		1347			45																		
6	KEGONSA	0857			30			100	5	20	7	8	5						2				1
7	5% Ice									10													
8										15													
9										10													
10		0906																					
11	KOSHKONONG	0914	3		600		1100		30	150		30	20	15			20	25					
12	5% Ice				300		1400			120		25											
13	Sw marsh				300	100		400	30	75		20	35	50			3	30					
14	NE Marshes		2		1500	800			50	30	15	700	75	175		40		40					
15	N. Marshes	1008			450	250			20	100	30	25	15	20				10					
16	BEAVER DAM	1109	1		25	5	10		15	20	15	75	10	30		15	15	63	2				
17	90% Ice		15		30	10	5		15	10	10	15	10	26		35		702					
18					15	60			30	30	10			25				225					
19					175					15	25			20				610					
20		1133								40				35				700					
21	Fox L.	1135	5		5	25			5	40	10	7		10	3	30		5					
22	95% Ice				150	35			15	15													
23					50	5																	
24					10																		
25		1143																					
26	MARIA	1145	6		110	110	25		15	20				20				2000		30		10	
27	25% Ice				100	10	30																
28							20																
29							15																
30		1150																					
31	Sinnissippi	1020			15					5				2				2					1
	80% Ice																	8					
																		8					
	Marshes	1037										30	5	4	20			15					

1 Adult Eagle

DIVING DUCK CENSUS

DATE: 4-7-94 WEATHER: Cloud cover - 15-30% high thin; Temp - 30-50° F; Wind - 5-10 mph NE

	SITE	TIME	Canvas back 1	Red-head 2	Scaup 3	Ring-neck 4	Ruddy 5	Coot 6	Buffle head 7	Mer-ganser 8	Golden eye 9	Wigeon 10	God-wall 11	Mallard 12	BWT 13	GWT 14	Shoveler 15	Geese 16	Hawk 17	18	19	20	Loon 21
1	MELDOTA	1336	25	7	250	20		200	25	35	40			20									3+1
2	Bowls 2+1		1		25			80	7		15			8									1+1
3			6		20			60			20												1+1
4					90			350						1									1+3
5					60			300															14
6	KEGONSA	0857			40		15	1200	10	30	15		20	15									1
7					230			370		20					1								
8	(Many scaup on most							300		15													
9	pools of Yahara R.)							800															
10		0905																					
11	KOSHKONONG	0918	20		550		4000	350						10					5				
12	Bowls 2		45		400		4500																
13	SW Marsh			6	450	250	20	3300	26				30	350	50	15	35	20	2				
14	NE Marshes		15		1250	425	25	1300	15		150		100	300	75	150	50	50	8				
15	N Marsh	1000	10		350	150	30	800	25	50		25	75	200	25	25	20	15	3				
16	BEAVER DAM	1105	20	05	9	35	15	150	20	35	39	50	25	4	25	10	35	8	2				2
17				35	125	50	20	260	4		28	10		45		20		3					2
18				10	200	30	27	130	15		20	35		75		30		200					1
19							45											400					
20		1134												1				250					
21	FOX L.	1137			350	20			3	12				30		20		150					
22																							
23																							
24												1			1			1					
25		1140																					
26	MARIA	1144	40		2500	300	1200	150	25	10				20				15					
27																							
28																							
29																							
30		1148																					
31	Sinnissippi	1020						7			2	1	6	2				10					1
	Bowls 1											11		2				3					
		1028												1				8					

DIVING DUCK CENSUS

DATE: 4-14-94 WEATHER: Cloud cover 0% Temp 40-65°F Wind 5-15 mph SW

	SITE	TIME	Canvas back 1	Red-head 2	Scaup 3	Ring-neck 4	Ruddy 5	Coot 6	Buffle head 7	Mer-ganser 8	Golden eye 9	Wigeon 10	God-wall 11	Mall-ard 12	BWT 13	GWT 14	shoveler 15	Gadwall 16	Black 17	Wood Duck 18	19	20	Loons 21
1	MENDOTA	1233			30		50	50	20	10	15	5	15	5		10							2+/+
2	Boats 2-6+/+				5			50	40		10			8									
3					100			20															
4					20			400															
5		1252			30																		
6	KEGONSA	0800			35	5		325	10	10	5	5	15	15			15	2	2				2+/
7	Boats 1+/				45	2		100	20				20	10									1
8								350															
9								150															
10	Comm. Fishing 2	0811																					
11	KOSHKONONG	0819			100		1700											2					
12	Boats 1+2+/+/+						2800																
13	SW Marsh				50	15		1600	50	5	10		25	30	35	20	25	8	2				
14	NE Marshes				240	25	75	1100	70		20	75	85	70	125	50	30	16					
15	N Marsh	0857			10	50		600	20					25	40	35		30					
16	BEAVER DAM	0952		12	25	20	5	20	25			30	15	15	15	25	2	15		1			
17	Boats 1+/+/+			2	100	15		425				7	50	15	5	25	10	65					
18						2		50							20	30		30					
19																		4					
20		1019																					
21	Fox L.	1023	3		15		3		12			7		3	3								
22	Boats 1+/				10				9		1	8											
23					35																		
24					5																		
25		1031																					
26	MARIA	1033	3		350	25	300		50	40	15	20	45	15	20	15	5	25					
27					75		300																
28																							
29																							
30		1037																					
31	Sinnissippi	0913					7							2		8		15					
																		25					
																		22					

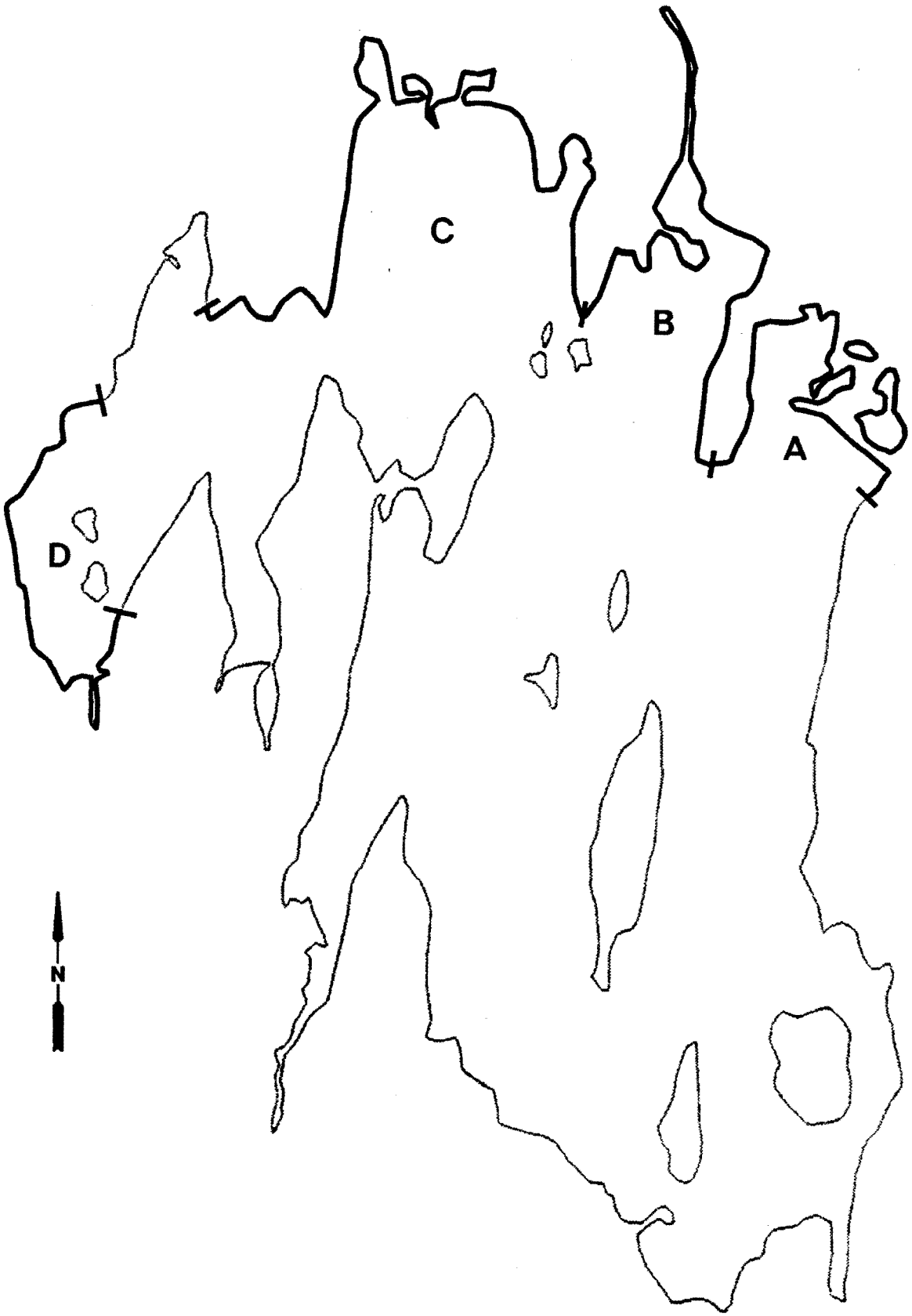
Cormorants 3
GBH 6

Appendix F. WDNR HRA Heliocopter Counts 1991–94

Lake Sinissippi Helicopter Transect
(indicated ducks)

	1991	1992	1993	1994
Canada Goose	5	6	7	10
Mallard	8+ 8 in group	4	6	0
Blue-Winged Teal	6	2	10	0
Great Blue Heron	0	1	1	1
Lesser Scaup	0	0	0	6
Cormorant	0	0	0	1

Appendix G. Breeding Waterfowl Information



LAKE SINISSIPPI

AERIAL COUNT ZONES

BREEDING WATERFOWL

Lake Sinissippi Aerial Count
May 3, 1994

	Area A	Area B	Area C	Area D	Total
Canada Goose	12	18	18*	11	59*
Mallard	2	2	4	0	8
Blue-Winged Teal	0	14	0	4	18
Great Blue Heron	4	5	2	8	19
Ruddy	0	8	0	0	8
Coot	0	0	2	0	2
Cormorant	0	8	0	1	9
Green-Winged Teal	2	0	0	2	4
Pied-Billed Grebe	0	0	0	1	1
Wood Duck	0	2	0	0	2
Common Merganser	0	2	0	0	2
Gadwall	0	14	0	4	18
Total = 50 dabblers and 10 divers					

* *Also brood of 5.*

Lake Sinissippi
Waterfowl Survey Key

Species Code

MA–*Mallard*

WD–*Wood duck*

GT–*Green-winged teal*

BT–*Blue-winged teal*

SV–*Shoveler*

GW–*Gadwall*

GE–*Goldeneye*

BH–*Bufflehead*

RD–*Ruddy duck*

CM–*Common merganser*

HM–*Hooded merganser*

SP–*Scaup spp.*

CG–*Canada goose*

* = Pair

Other Water-bird Species

CT–*American coot*

LN–*Common loon*

PG–*Pied-billed grebe*

DC–*Double-crested cormorant*

PC–*White pelican*

GH–*Great Blue Heron*

Waterfowl Brood Age Classes

I A 1-7 days

B 8-13 days

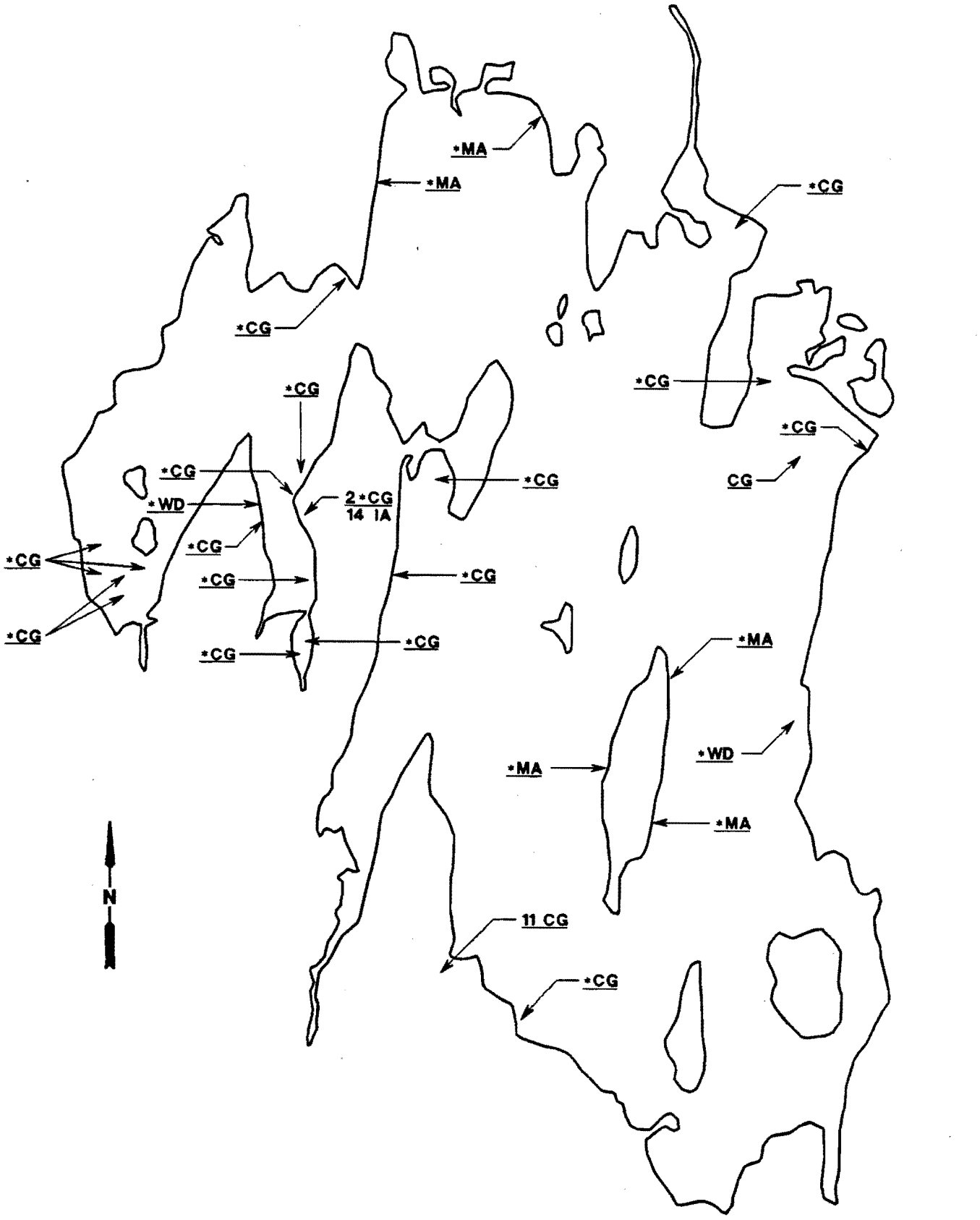
C 14-18 days

II A 19-27 days

B 28-36 days

C 37-42 days

III 43-55 days



LAKE SINISSIPPI

BREEDING WATERFOWL SURVEY

MAY 8, 1994

Appendix H. Waterfowl Reproduction

Lake Sinissippi
Waterfowl Survey Key

Species Code

MA–*Mallard*

WD–*Wood duck*

GT–*Green-winged teal*

BT–*Blue-winged teal*

SV–*Shoveler*

GW–*Gadwall*

GE–*Goldeneye*

BH–*Bufflehead*

RD–*Ruddy duck*

CM–*Common merganser*

HM–*Hooded merganser*

SP–*Scaup spp.*

CG–*Canada goose*

* = Pair

Other Water-bird Species

CT–*American coot*

LN–*Common loon*

PG–*Pied-billed grebe*

DC–*Double-crested cormorant*

PC–*White pelican*

GH–*Great Blue Heron*

Waterfowl Brood Age Classes

I A 1-7 days

B 8-13 days

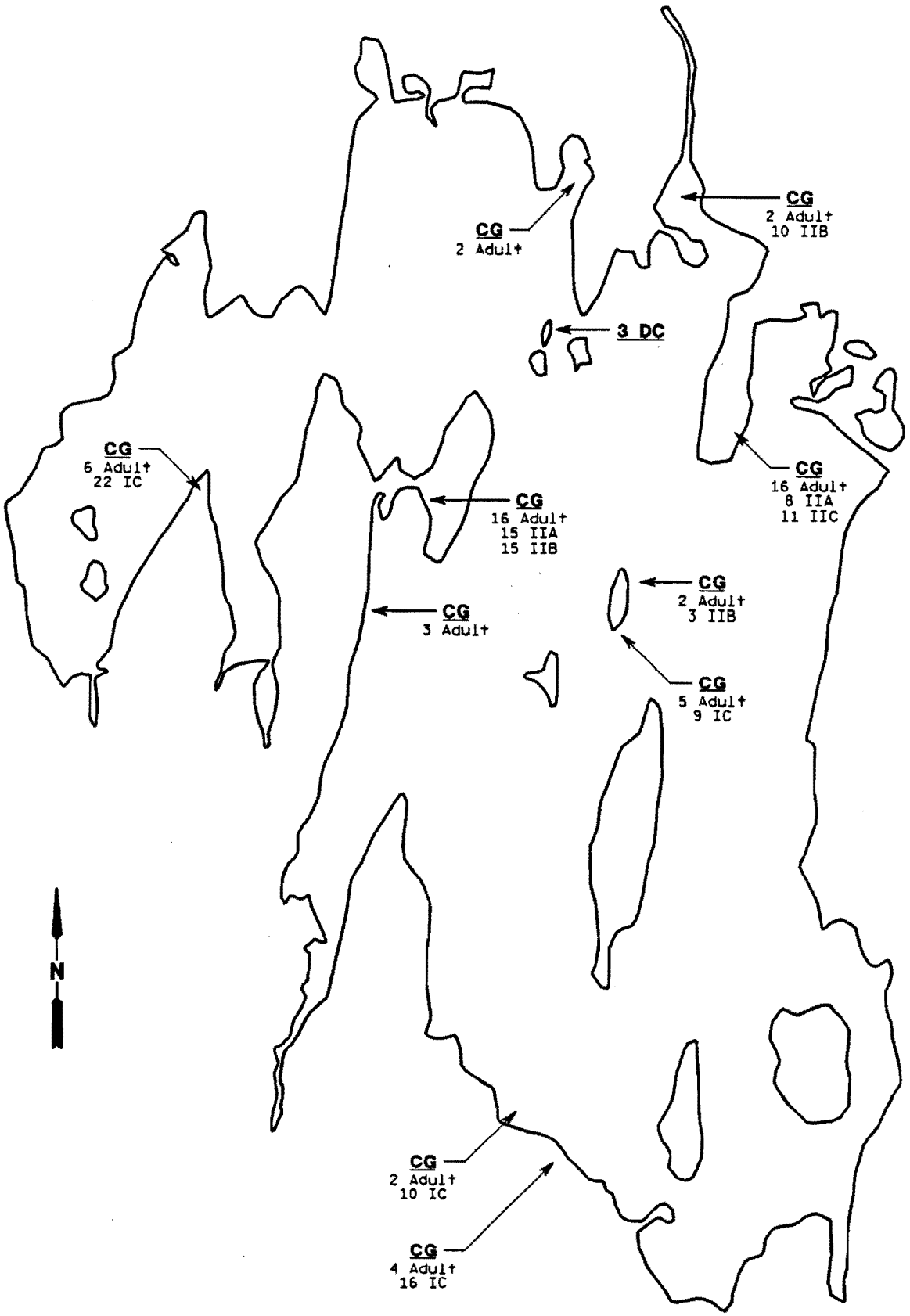
C 14-18 days

II A 19-27 days

B 28-36 days

C 37-42 days

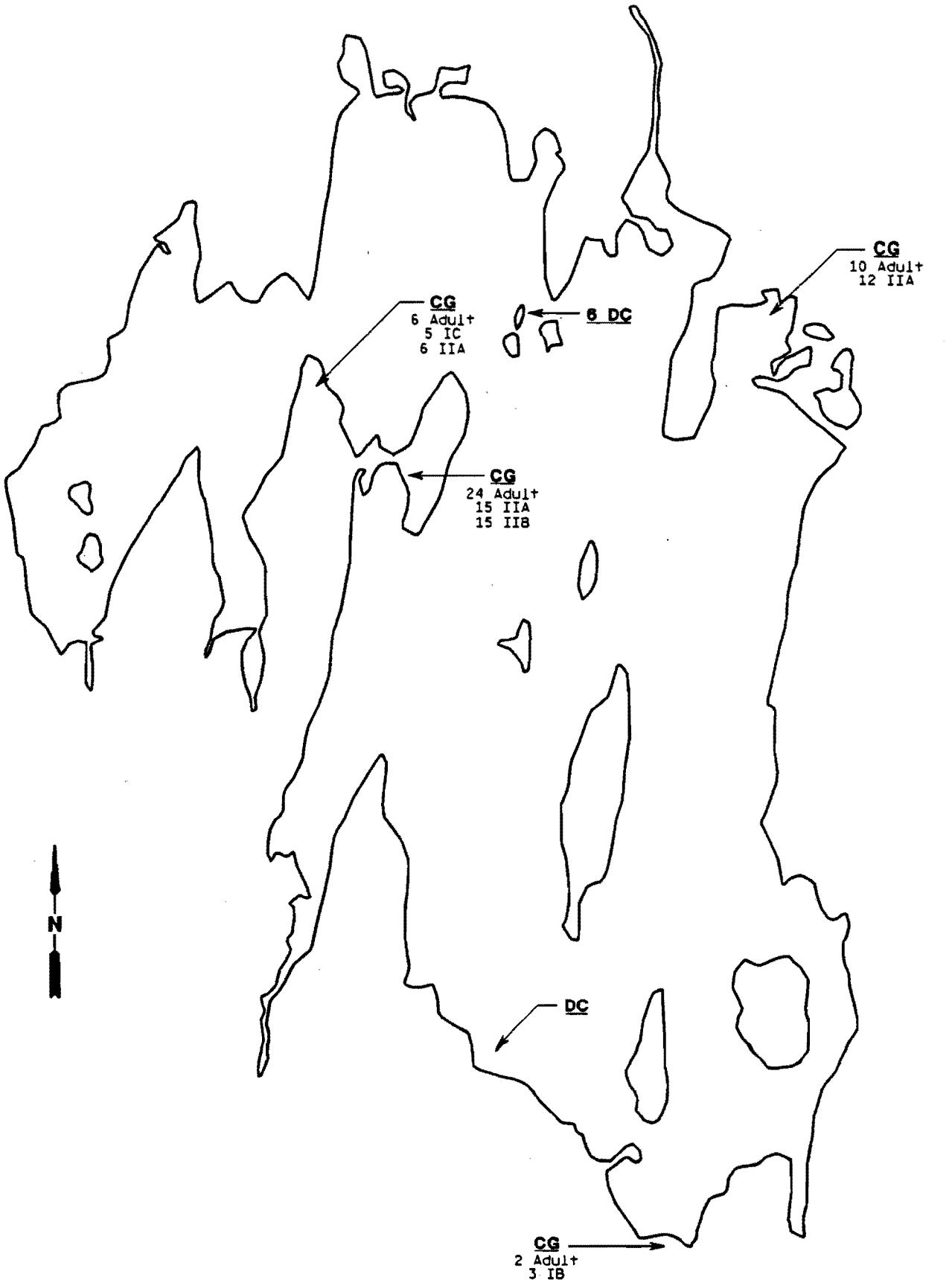
III 43-55 days



LAKE SINISSIPPI

WATERFOWL BROOD COUNTS

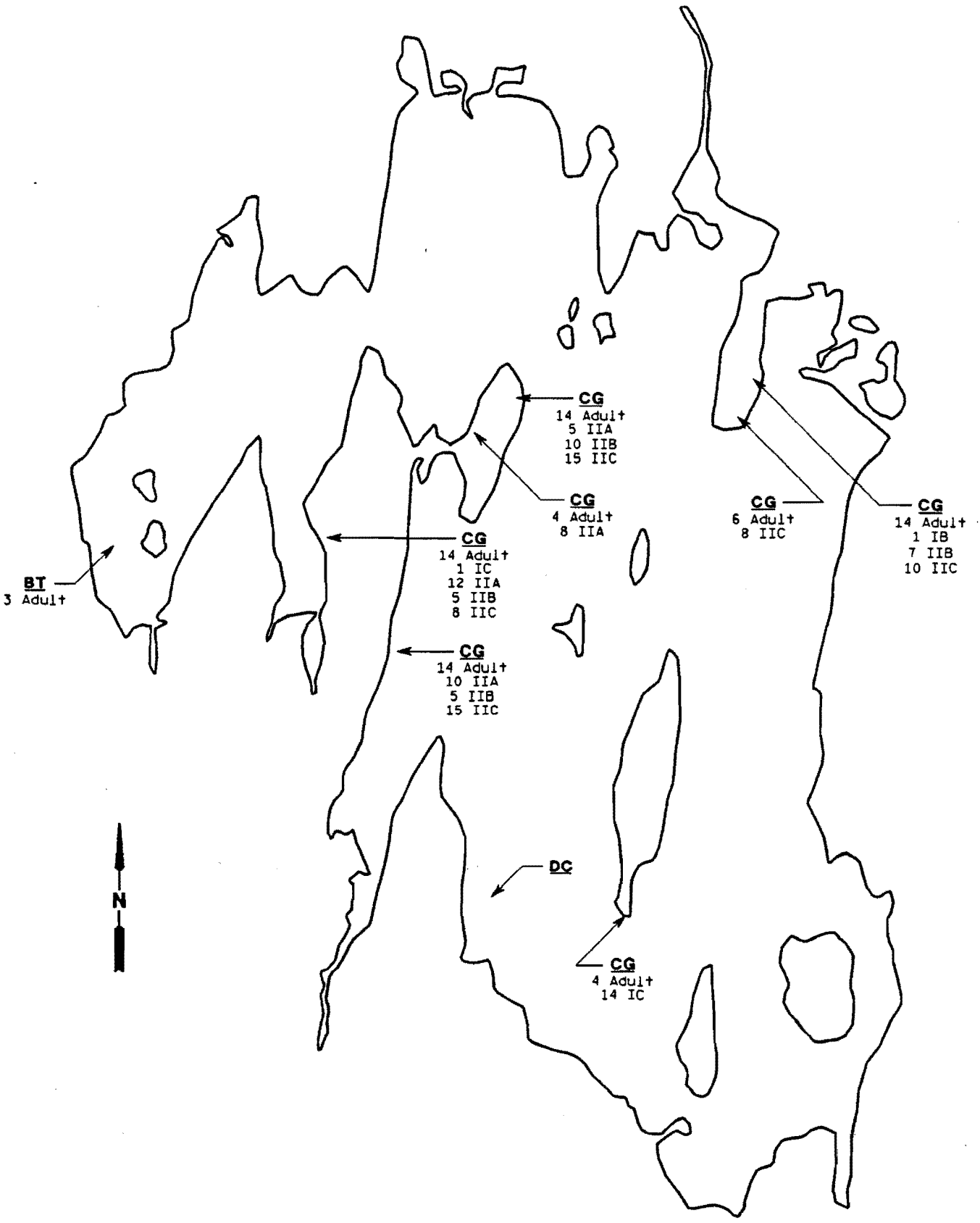
JUNE 5, 1994



LAKE SINISSIPPI

WATERFOWL BROOD COUNTS

JUNE 11, 1994

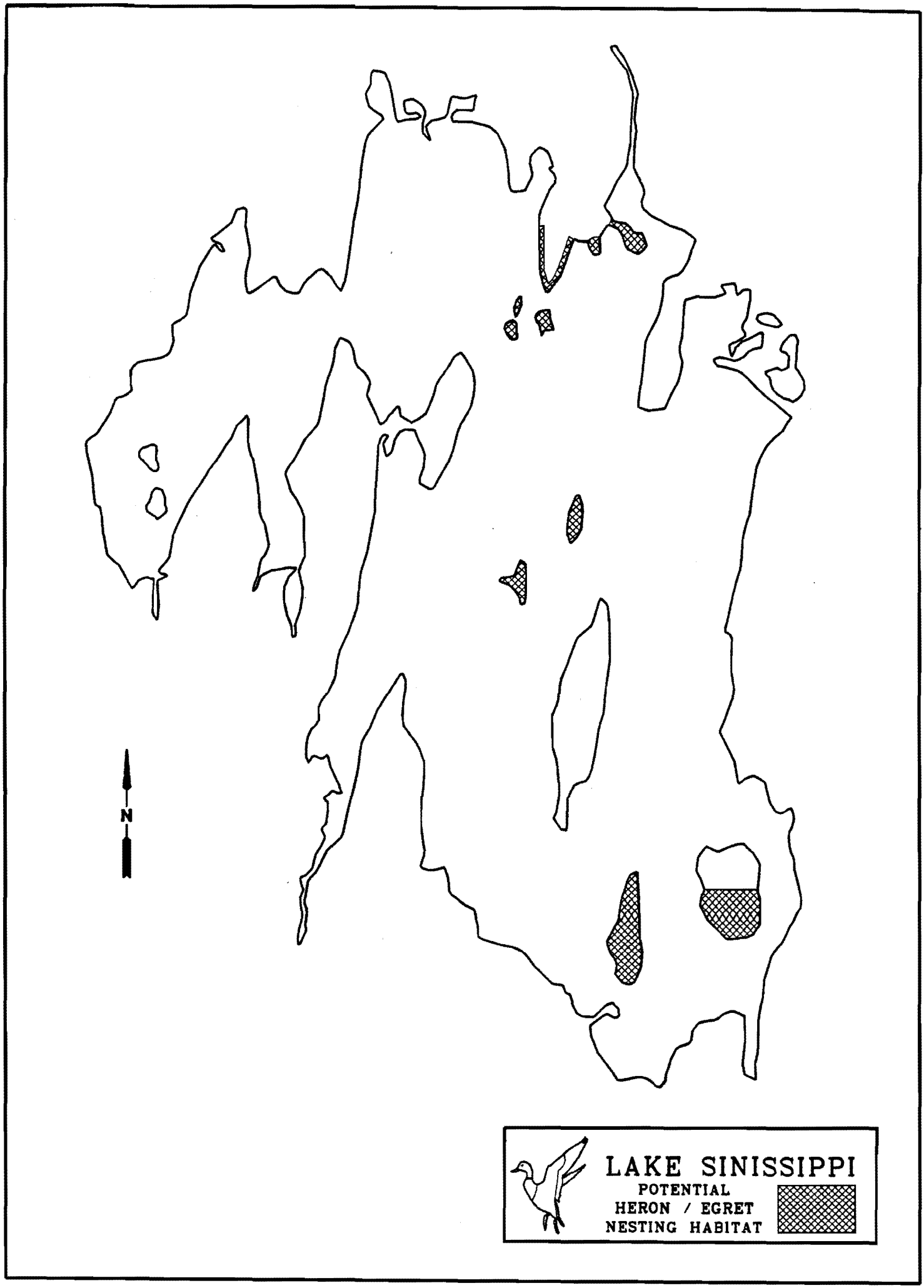


LAKE SINISSIPPI

WATERFOWL BROOD COUNTS

JUNE 15, 1994

Appendix I. Heron/Egret Information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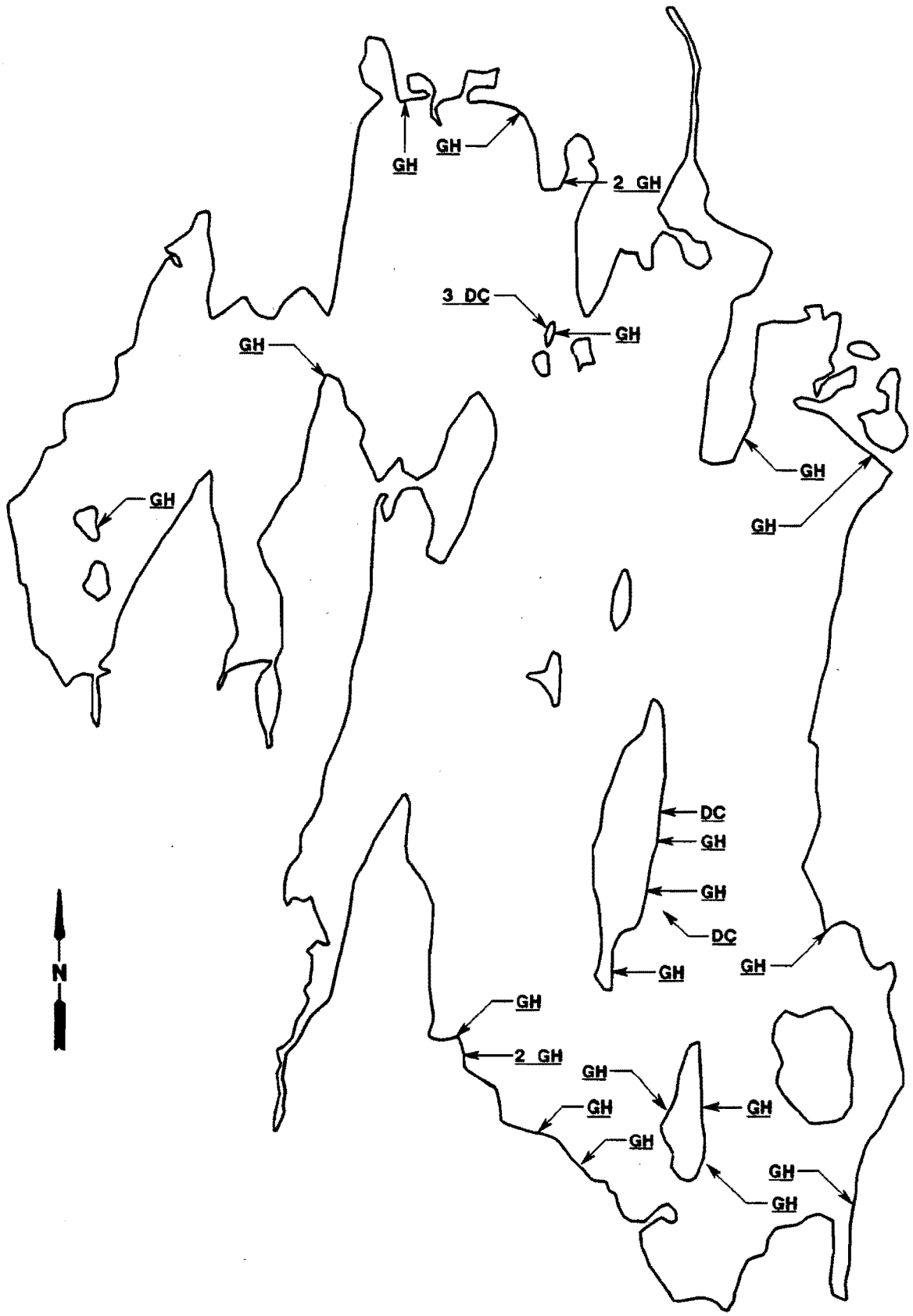
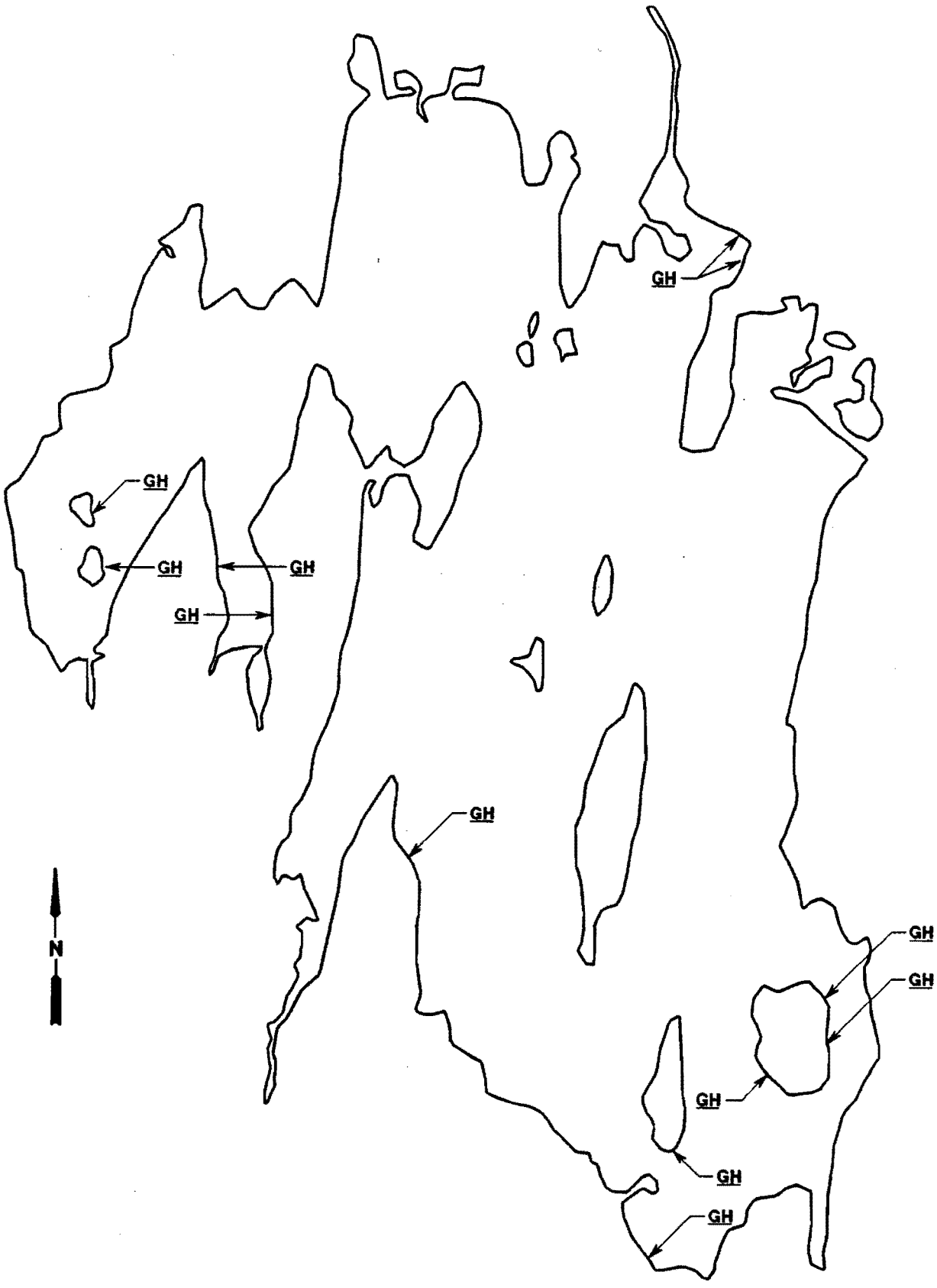
LAKE SINISSIPPI
POTENTIAL
HERON / EGRET
NESTING HABITAT



LAKE SINISSIPPI

HERON / EGRET COUNTS

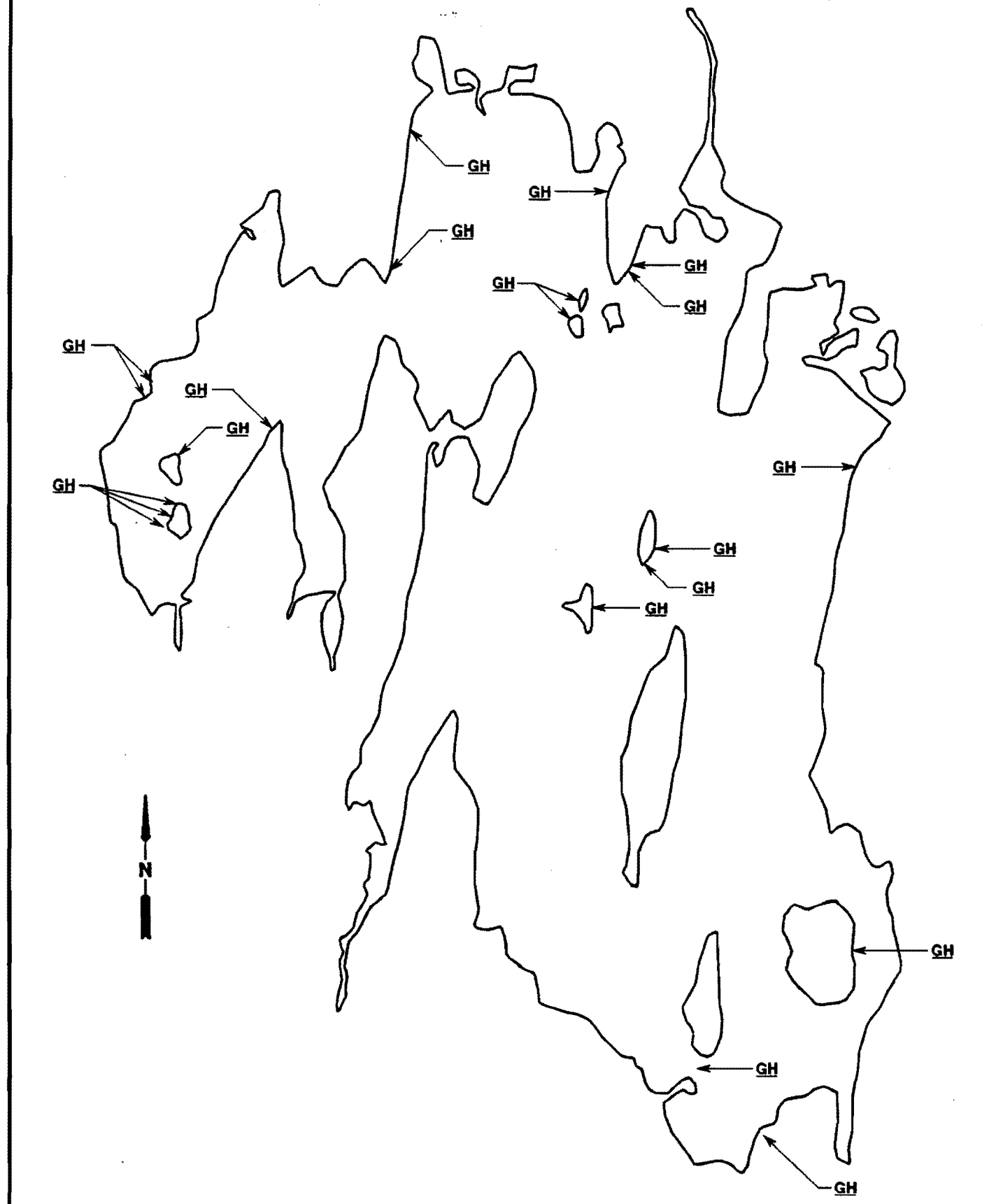
MAY 6, 1994



LAKE SINISSIPPI

HERON / EGRET COUNTS

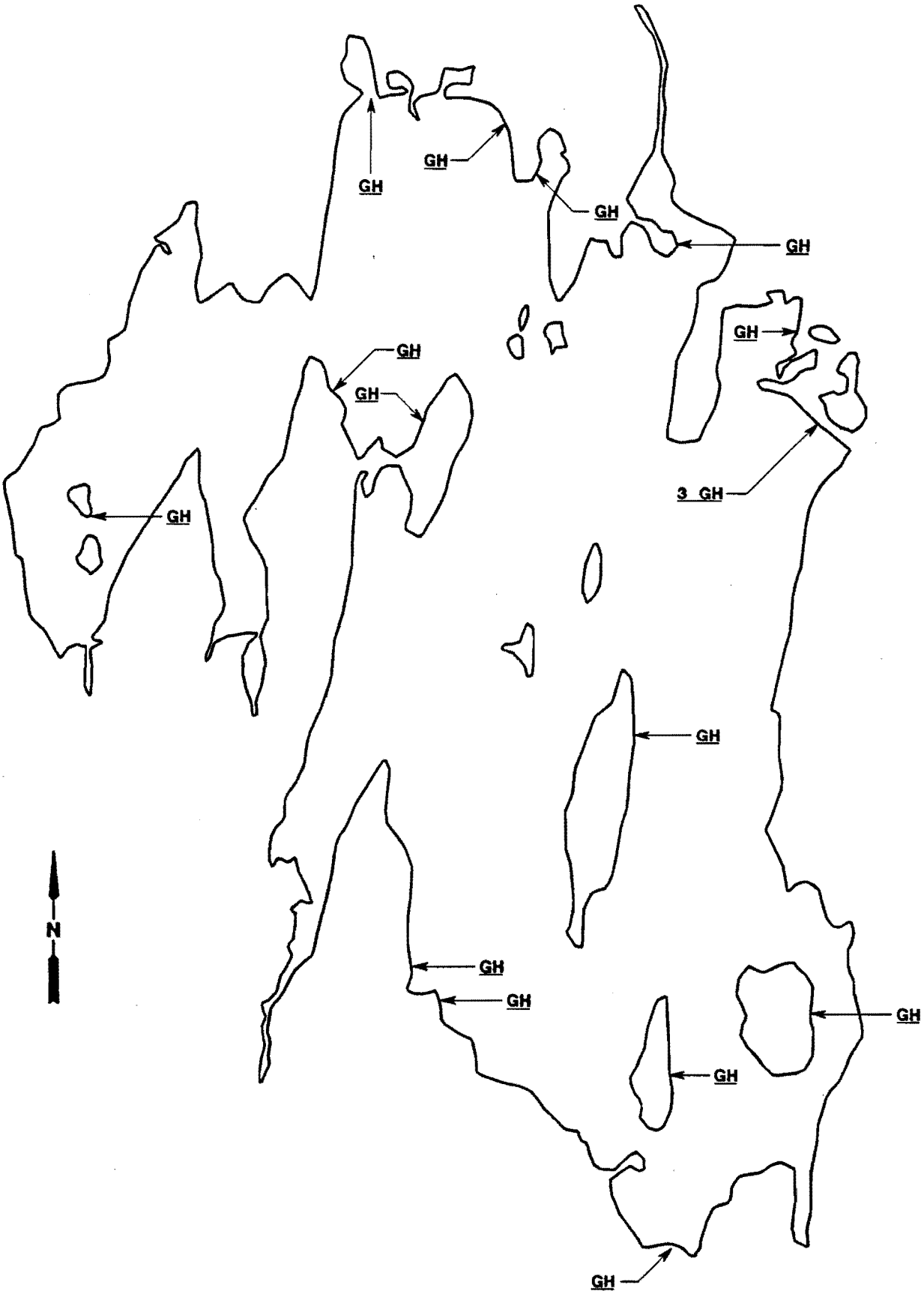
JUNE 5, 1994



LAKE SINISSIPPI

HERON / EGRET COUNTS

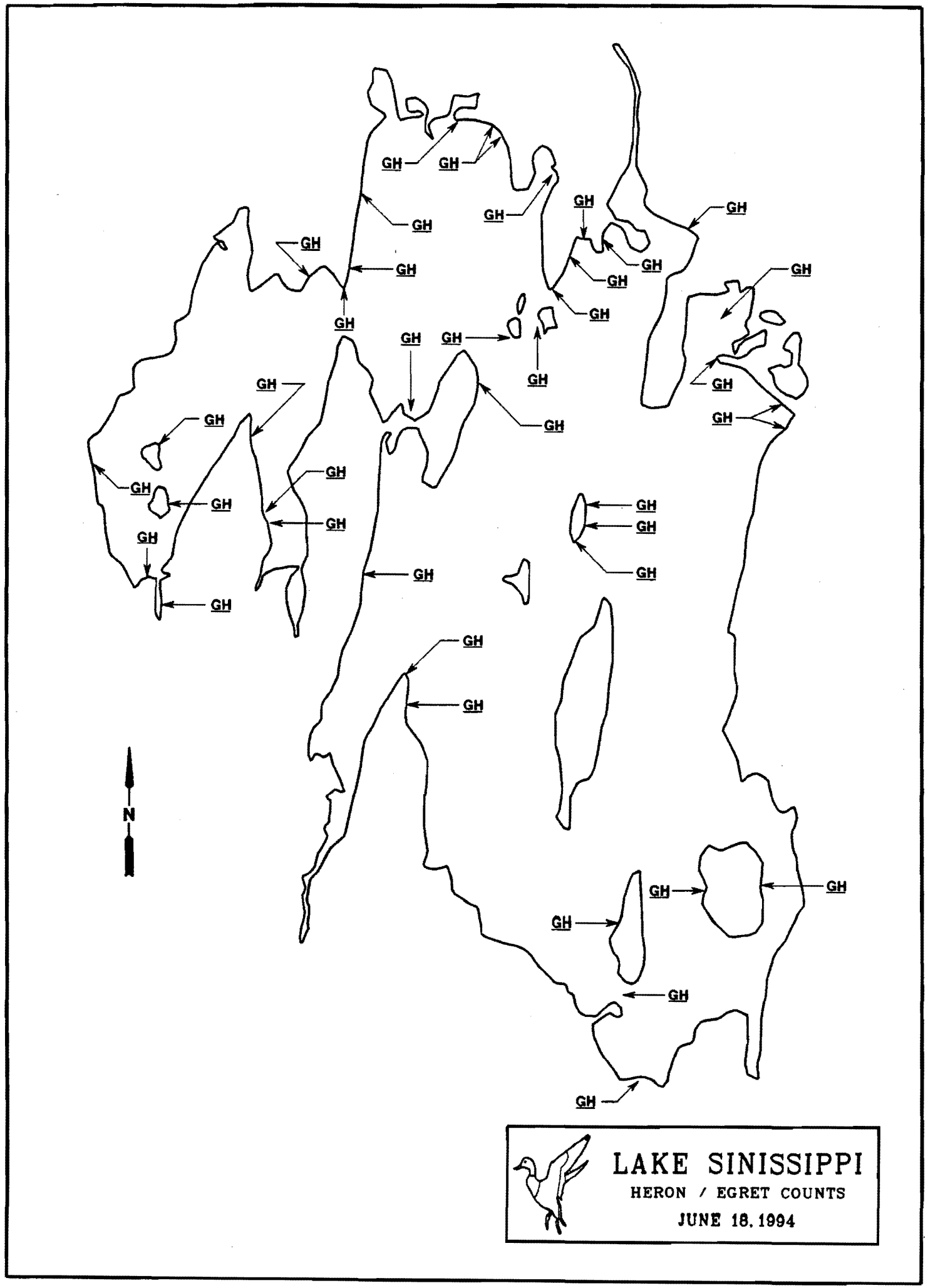
JUNE 11, 1994

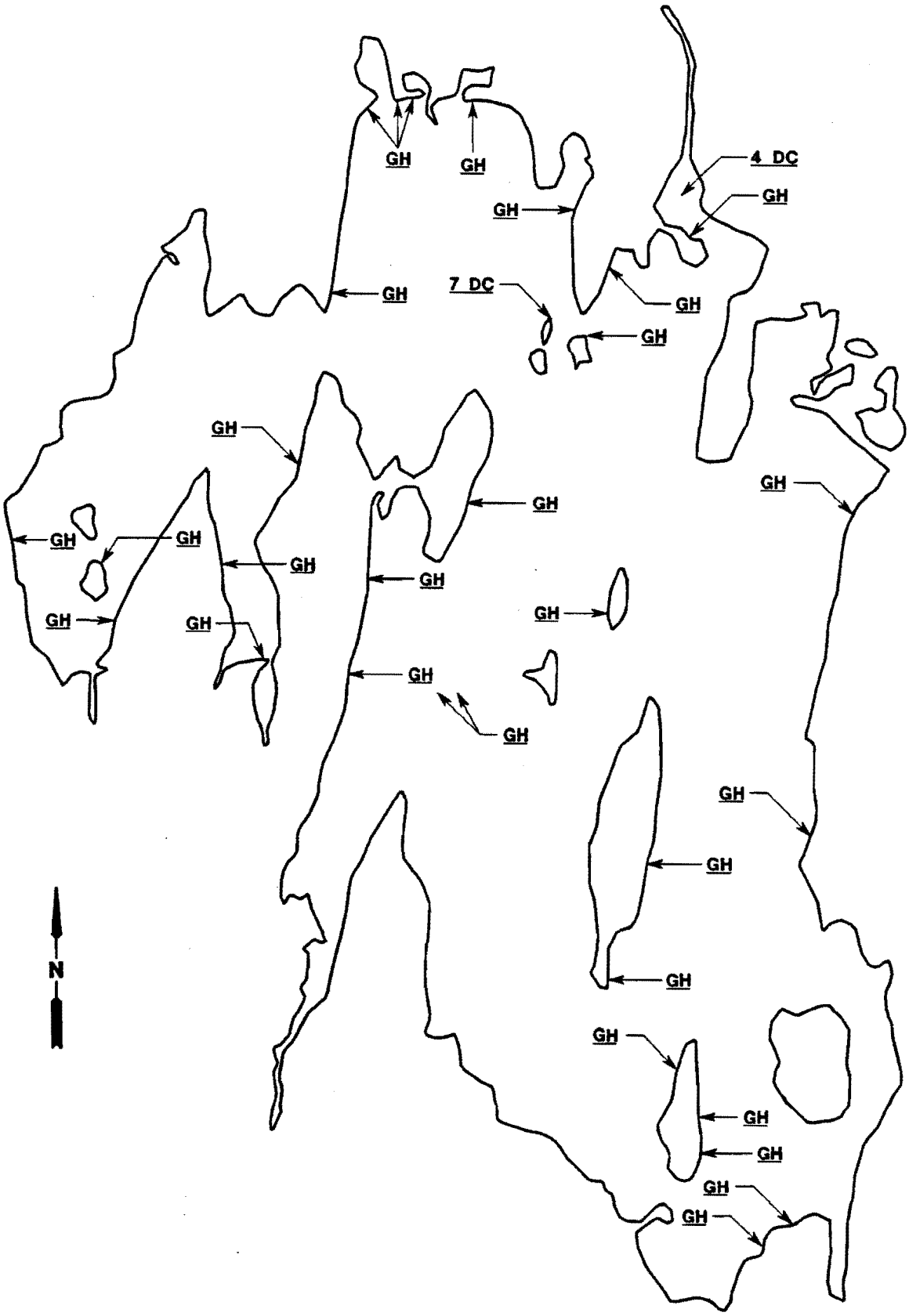


LAKE SINISSIPPI

HERON / EGRET COUNTS

JUNE 15, 1994

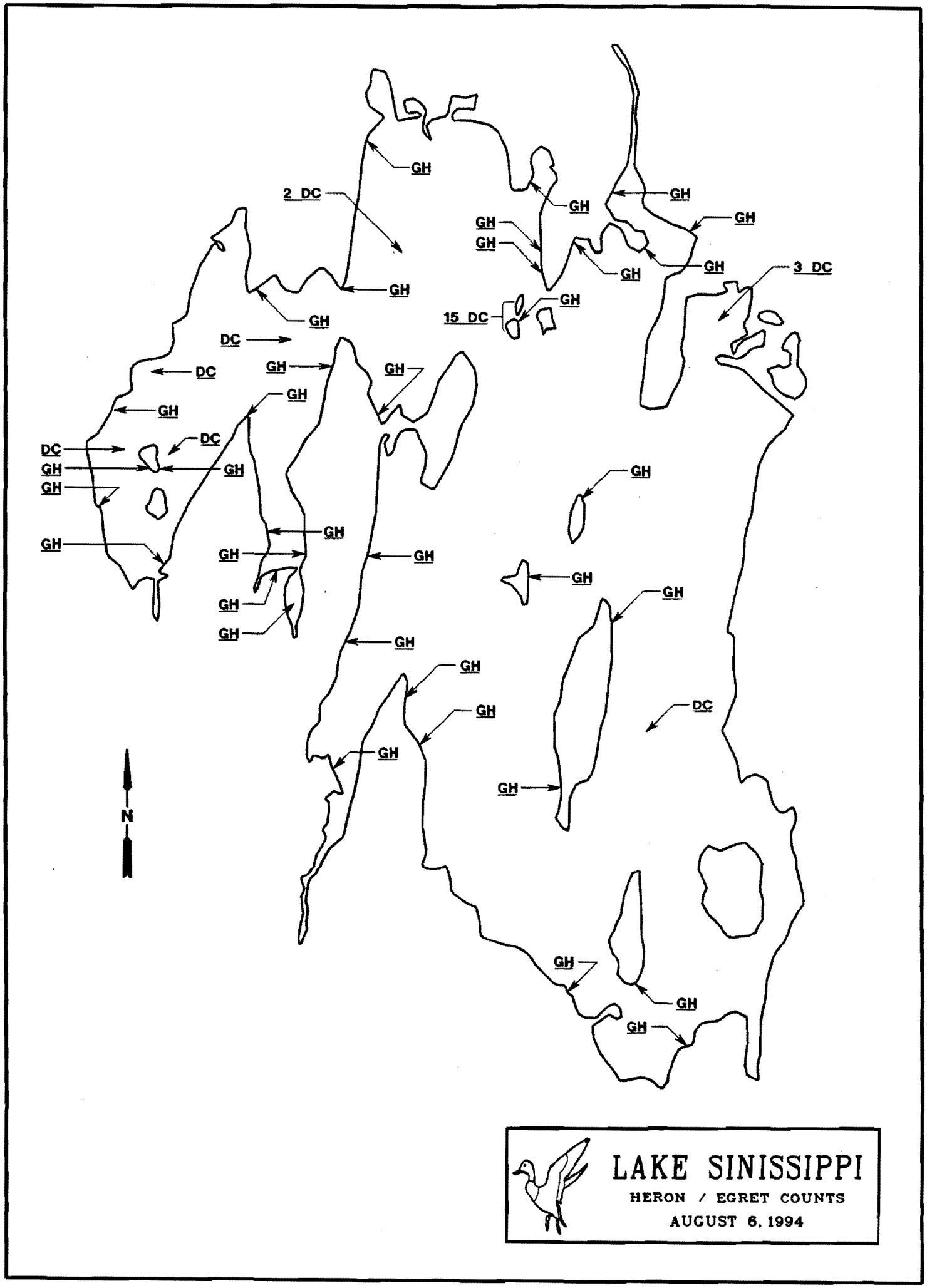

GH
N
LAKE SINISSIPPI
HERON / EGRET COUNTS
JUNE 18, 1994



LAKE SINISSIPPI

HERON / EGRET COUNTS

JULY 10, 1994


GH
2 DC
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3 DC
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15 DC
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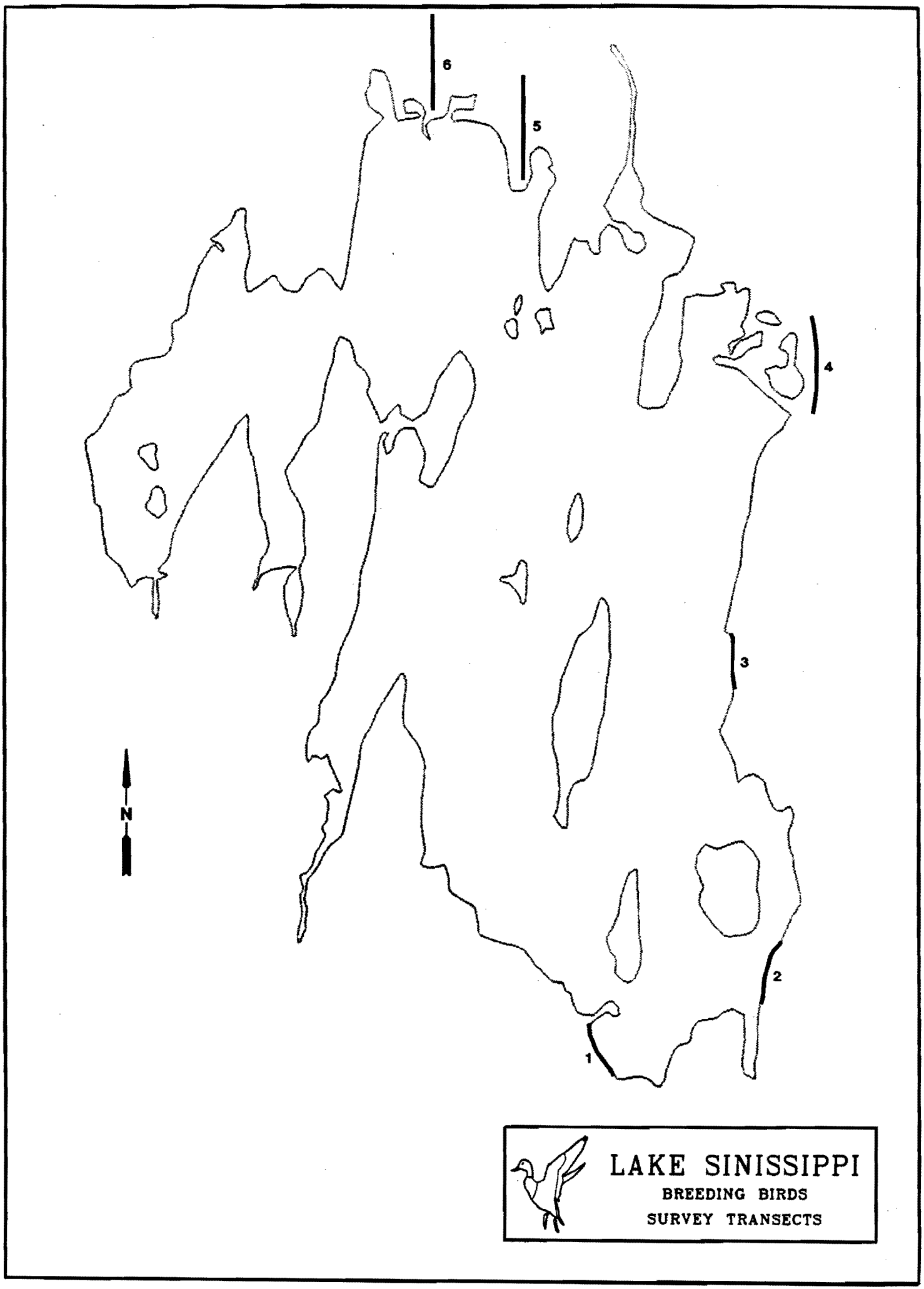
LAKE SINISSIPPI
HERON / EGRET COUNTS
AUGUST 6, 1994

Appendix J. Breeding Bird Information


6
5
4
3
2
1
N
LAKE SINISSIPPI
BREEDING BIRDS
SURVEY TRANSECTS

Abbreviations Used in Annotated Checklist

Abundance column:

A *Abundant, numerous species usually found in suitable habitat, in a suitable season*

C *Common, species usually found in suitable habitat, in a suitable season*

R *Rare, species represented from a single sighting*

Residential and Breeding Status column:

T *Transient*

S *Seasonal resident in breeding season*

P *Permanent resident, year round*

PB *Probable breeder—species with records of any combination of residency during breeding season, singing male or territorial interactions between same sex genders*

CB *Confirmed breeder—species with records of any combination of courtship, nest building or nest location, parental care of young or presence of young*

AB *Area breeder—species that is a probable breeder in the general vicinity of Lake Sinissippi, uses lake for feeding or roosting*

Date	Location	Species	Abundance Index	Residential & Breeding Status
5/28/94	1	American Robin	A	S-PB
		Red-winged Black Bird	A	S-PB
		Song Sparrow	C	P-PB
		Common Grackle	A	P-PB
		Common Yellowthroat	C	S-PB
		American Cardinal	C	S-PB
		Brown Thrasher	C	S-PB
		Gray Catbird	C	S-PB
		American Crow	C	P-AB
		American Goldfinch	C	P-PB
		Chimney Swift	C	S-PB
		Common Nighthawk	C	S-PB
		Brown-headed Cowbird	C	S/P-PB
		Chipping Sparrow	C	S-PB
		House Finch	C	P-PB
5/28/94	2	American Robin	A	S-PB
		Tree Swallow	A	S-PB
		Great Blue Heron	C	S-AB
		House Sparrow	A	P-PB
		Cedar Waxwing	R	P-AB
		American Cardinal	C	P-PB
		Blue Jay	C	P-PB
		Gray Catbird	C	S-PB
		Common Grackle	A	P-PB
		House Finch	C	P-PB
		Mourning Dove	C	S/P-PB
		Chipping Sparrow	C	S-PB
		House Wren	C	S-PB
5/28/94	3	Common Yellowthroat	C	S-PB
		European Starling	A	P-PB
		Tree Swallow	A	S-PB
		American Robin	A	S-PB
		Song Sparrow	C	P-PB
		Great Crested Flycatcher	R	S-PB
		Gray Catbird	C	S-PB
		Chipping Sparrow	C	S-PB
		Least Flycatcher	R	S-AB
		Cedar Waxwing	R	P-AB
		Mourning Dove	C	S/P-PB
		House Sparrow	A	P-PB
		Common Flicker	C	P-AB
		Northern Cardinal	C	P-PB
		Great Blue Heron	C	S-AB
		Common Grackle	A	P-PB
		Red-winged Black Bird	A	S-PB

Date	Location	Species	Abundance Index	Residential & Breeding Status
5/28/94	4	Red-winged Black Bird	A	S-PB
		Common Grackle	A	P-PB
		Double-crested Cormorant	C	S-AB
		Tree Swallow	A	S-PB
		Barn Swallow	C	S-PB
		Great Blue Heron	C	S-AB
		Song Sparrow	C	P-PB
		Common Yellowthroat	C	S-PB
		Chipping Sparrow	C	S-PB
5/28/94	5	Common Yellowthroat	C	S-PB
		Common Flicker	C	P-AB
		Northern Cardinal	C	P-PB
		Red-winged Black Bird	A	S-PB
		American Goldfinch	C	P-PB
		American Robin	C	S-PB
		Great-crested Flycatcher	R	S-PB
		Gray Catbird	C	S-PB
		Mourning Dove	C	S/P-PB
		Eastern Wood Pewee	C	S-PB
		Blue Jay	C	P-PB
		White-breasted Nuthatch	C	P-PB
		Red-tailed Hawk	R	S/P-AB
5/28/94	6	Song Sparrow	C	P-PB
		Barn Swallow	A	S-AB
		Red-winged Black Bird	A	S-PB
		Common Yellowthroat	A	S-CB
		Double-crested Cormorant	C	S-AB
		Red-tailed Hawk	R	S/P-AB
		Field Sparrow	C	S-PB
		American Goldfinch	A	P-PB
		Song Sparrow	C	P-PB
		Brown-headed Cowbird	C	S/P-PB
		Common Flicker	C	P-AB
		Green Heron	R	S-PB
		Tree Swallow	A	S-PB
6/19/94	1	American Robin	A	S-PB
		Common Grackle	A	P-PB
		House Sparrow	A	P-PB
		Red-winged Black Bird	A	S-PB
		Tree Swallow	A	S-PB
		Song Sparrow	C	P-PB
		Killdeer	C	S-CB

Date	Location	Species	Abundance Index	Residential & Breeding Status
6/19/94	2	American Goldfinch	C	P-PB
		American Robin	A	S-PB
		Northern Oriole	R	S-PB
		Belted Kingfisher	R	S/P-PB
		Mourning Dove	C	S/P-PB
		Blue Jay	C	P-PB
		Red-winged Black Bird	A	S-PB
		House Finch	C	P-PB
		House Sparrow	A	P-PB
		Gray Catbird	C	S-PB
6/19/94	3	House Wren	C	S-PB
		Common Flicker	C	P-AB
		Tree Swallow	A	S-PB
		Mourning Dove	C	S/P-PB
		Common Grackle	A	P-PB
		House Sparrow	A	P-PB
		American Robin	A	S-PB
		Gray Catbird	C	S-PB
		Northern Cardinal	C	P-PB
		Chipping Sparrow	C	S-PB
		European Starling	C	P-PB
6/19/94	4	Red-winged Black Bird	A	S-PB
		Tree Swallow	A	S-PB
		Chipping Sparrow	C	S-PB
		Common Yellowthroat	C	S-PB
		Song Sparrow	C	P-PB
		Barn Swallow	C	S-PB
		Great Blue Heron	C	S-AB
6/19/94	5	American Robin	C	S-PB
		Gray Catbird	C	S-PB
		Red-winged Black Bird	A	S-PB
		Northern Cardinal	C	P-PB
		Eastern Wood Pewee	C	S-PB
		American Goldfinch	C	P-PB
		Common Crow	C	P-AB
		Common Flicker	C	P-AB
		Blue Jay	C	P-PB

Date	Location	Species	Abundance Index	Residential & Breeding Status
6/19/94	6	American Goldfinch	A	P-PB
		Marsh Wren	R	S-PB
		Song Sparrow	C	P-PB
		Field Sparrow	C	S-PB
		Common Yellowthroat	A	S-CB
		Brown-headed Cowbird	C	S/P-PB
		Red-winged Black Bird	A	S-PB
		Tree Swallow	A	S-PB
6/25/94	1	European Starling	C	P-PB
		Common Grackle	A	--PB
		American Robin	A	S-PB
		Red-winged Black Bird	A	S-PB
		Common Yellowthroat	C	S-PB
		Chipping Sparrow	C	S-PB
		Common Crow	C	P-AB
		Song Sparrow	C	P-PB
		Killdeer	C	S-CB
6/25/94	2	Northern Oriole	R	S-PB
		Black-capped Chickadee	R	P-PB
		American Robin	C	S-PB
		Barn Swallow	C	S-PB
		Brown-headed Cowbird	C	S/P-PB
		Belted Kingfisher	R	S/P-PB
		Mourning Dove	C	S/P-PB
		House Sparrow	A	P-PB
		Chipping Sparrow	C	S-PB
		Great-crested Flycatcher	R	S-AB
		Northern Cardinal	C	P-PB
		Red-winged Black Bird	A	S-PB
6/25/94	3	Gray Catbird	C	S-PB
		Song Sparrow	C	P-PB
		American Robin	A	S-PB
		American Goldfinch	C	P-PB
		House Sparrow	A	P-PB
		Common Grackle	A	P-PB
		Tree Swallow	A	S-PB
		Red-winged Black Bird	C	S-PB
		Mourning Dove	C	S/P-PB
		Northern Oriole	R	S-PB
		Veery	R	S-AB
		House Wren	C	S-PB
		Golden-crowned Kinglet	R	T
		Common Flicker	C	P-AB

Date	Location	Species	Abundance Index	Residential & Breeding Status
6/25/94	4	Red-winged Black Bird	A	S-PB
		Common Yellowthroat	C	S-PB
		House Sparrow	C	P-PB
		Song Sparrow	C	P-PB
		Tree Swallow	A	S-PB
		Common Grackle	A	P-PB
		Northern Oriole	R	S-PB
		Barn Swallow	C	S-PB
		Chipping Sparrow	C	S-PB
		Mourning Dove	C	S/P-PB
		Rufous-sided Towhee	R	S-AB
		Yellow Warbler	R	S-PB
6/25/94	5	Blue Jay	C	P-PB
		Great Crested Flycatcher	R	S-PB
		American Robin	C	S-PB
		Common Yellowthroat	C	S-PB
		Gray Catbird	C	S-PB
		Common Crow	C	P-AB
		Red-winged Black Bird	A	S-PB
		Yellow Warbler	R	S-PB
		American Goldfinch	C	P-PB
		Brown-headed Cowbird	C	S/P-PB
		Northern Cardinal	C	P-PB
6/25/94	6	Eastern Meadowlark	R	P-AB
		Common Yellowthroat	A	S-PB
		American Goldfinch	A	P-PB
		Common Grackle	C	P-PB
		Song Sparrow	C	P-PB
		House Wren	R	S-PB
		Field Sparrow	C	S-PB

Bird Species Observed
(Anecdotal)

Brown Creeper	Northern Cardinal
Song Sparrow	Killdeer
Common Grackle	Double-crested Cormorant
House Sparrow	Common Flicker
American Robin	Black-capped Chickadee
Mourning Dove	Great Blue Heron
European Starling	Great Horned Owl
Tree Swallow	Chipping Sparrow
Blue Jay	Turkey
Slate-colored Junco	Swamp Sparrow
Red-winged Blackbird	American Goldfinch
Osprey	Red-bellied Woodpecker
Red-tailed Hawk	Red-headed Woodpecker
Ring-necked Pheasant	Hermit Thrush
Ring-billed Gull	