

# Breeding Birds of the Mink River Natural Area in Door County

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*Breeding bird surveys of the Mink River Natural Area were conducted in 1989. Observations were made in lowland forest and an open wetland. The results are summarized.*

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The Mink River Natural Area is one of Wisconsin's most important nature reserves. Although less than 2000 ha in size, it encompasses the central portion of an entire watershed and includes one of the only undeveloped estuarine wetlands along the coast of Lake Michigan (Keough 1986). The watershed empties into Rowley's Bay from a bedrock valley extending across Highway 42 near the tip of the Door Peninsula (T32N, R28E and 29E). Keough (1986) presented a detailed description of the area's geology, hydrology, and vegetation features. According to her maps, marsh and wet meadow covered approximately 200 ha along the margins of the inlet during 1981, an area consistent with our observations during 1990. Lowland forest, dominated mainly by northern white cedar (*Thuja occidentalis*) and tamarack (*Larix laricina*), extends along the margins of the wetlands, covering more than 300 ha. Upland forest occupies approximately 100 ha in the higher portions of the water-

shed, although a significant fraction of the original forest has been cleared for agricultural fields.

This study focuses on breeding birds of two major habitats comprising the core of the natural area: lowland forest and emergent wetland. Our purpose is to systematically document the breeding bird community and to provide a baseline for future studies at this site and for comparisons with other forested areas along the Lake Michigan shoreline, including Toft Point Natural Area, The Ridges Sanctuary, Newport Beach State Park, Mud Lake Wildlife Area, and Whitefish Dunes State Park.

## SITE DESCRIPTION

**Lowland Forest**—Our lowland forest site was located at latitude 45° 10', longitude 87° 01' in the SW ¼ of the SE ¼ of Section 24, T34N R28E (Fig. 1). The 12 ha plot has relatively flat topography (mean elevation 147 m above sea level interrupted by moderate ridges and

swales running parallel with the lakeshore. The dense tree canopy is dominated by *Thuja occidentalis*, with patches of *Abies balsamea* and scattered *Betula papyrifera*, *Betula lenta*, *Larix laricina*, and *Fraxinus nigra*. The shrub layer is dominated by *Cornus stolonifera*. A moist carpet of *Sphagnum* covers much of the ground, with pools of standing water persisting well into the summer. The site has numerous cedar blowdowns and associated openings. A small stream flows diagonally through the site from a spring pond (approximately 10 m  $\pm$  15 m) near the northeastern border. The maximum depth of the spring pond was 1.5 m during the summer of 1989. Mature cedar-dominated forest extends beyond the edges of the plot. Evidence of selective cutting can be found throughout the plot but many of the trees are quite large; intensive logging probably has never occurred here. Just east of the study plot is a large blowdown area where dead trees are densely stacked, providing ideal nesting habitat for birds like Winter Wren and other shrub- or ground-nesting birds.

**Open Wetland**—The open wetland site is located in a 37 ha open wetland at the upper reaches of the Mink River watercourse, latitude 45° 10', longitude 87° 3', SW $\frac{1}{4}$  of SE $\frac{1}{4}$  Section 24, T32N, R28E. The site includes persistent and non-persistent lacustrine-littoral wetlands (Cowardin 1979), classified by Keough (1986) as shallow marsh dominated by *Carex* spp. and deep marsh dominated by *Scirpus* spp. During the period of this investigation the shoreline along the river had re-

ceded to expose extensive areas of mud flats, also included in the study area. By 1993 most of these muddy areas had become submerged due to higher lake levels. The wetland vegetation had changed markedly from that reported by Keough (1986), with cattails (*Typha angustifolia*) replacing areas of *Scirpus* and the vegetation assuming a drier character as a result of a widespread drought during 1988 (NOAA climatic records). The sedge meadow, a significant element of the open wetland study area, was dominated by *Carex hystericina*, *C. bebbii*, *C. cephalantha*, *Scirpus validus*, *Eleocharis erythriopoda*, and *Sagittaria* sp.

## METHODS

The lowland forest study area was marked with a 12 ha grid system. Plastic color-coded flags were placed at 44 m intervals, with 16 census points distributed 88 m apart. Most of the points were sampled 3 times; all were visited at least once between 26 May and 1 July 1989.

Censuses were conducted in the early morning from approximately 5:30 A.M. through 8:30 A.M. Census procedures generally followed the methods for North American "Breeding Bird Censuses" (Hall 1946, Van Velzen 1972), but modifications were necessary because of the dense vegetation and difficulty maneuvering through the habitat. Territories could not be mapped easily (using the method of Kendeigh 1944) because of the long time required for observers to travel between points and the resulting uncertainty about double counting. Instead, avian densities were esti-

mated by dividing the mean number of distinct registrations among all points by the approximate area covered by each point count. Species-specific "areas of detectability" were estimated by personal experience and from published data involving similar species (Emlen and Dejong 1981; Wolf, Howe, and Davis 1995). Results obtained from this method were compared with maps of bird registrations to obtain an estimate of overall bird densities.

The census method for the wetland site was complicated by the relative inaccessibility of some parts of the target area and by the difficulty of detecting certain species like rails and wading birds. Seven census points (Fig. 1) were established along the two main branches of the Mink River channel. The first three censuses were carried out exclusively

from canoes. Because several parts of the target area were not easily observed in this way, however, later censuses included observations from the shallow marsh/sedge meadow which could be traversed on foot due to low water levels.

Two night censuses were carried out at the open wetland, aided by playback of tape recordings of rails and bitterns. Bird densities in the open wetland were estimated by evaluating mapped bird registrations from the six censuses.

## RESULTS

Altogether, 36 species were recorded in the lowland forest site (Table 1a), over half of which were encountered rarely or only once. The most abundant species were Black-throated Green Warbler, Ov-

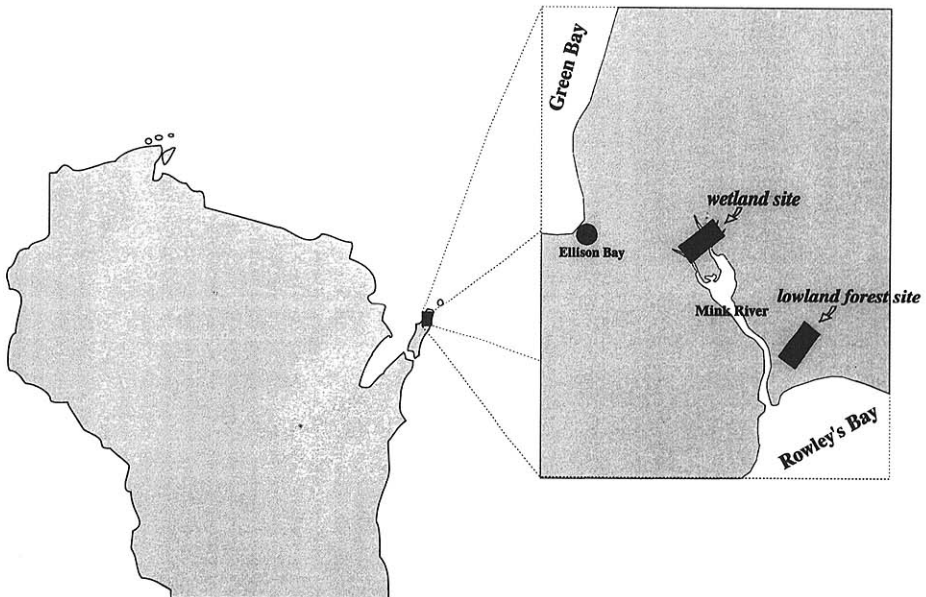


Figure 1. Location of Mink River study areas (shaded boxes).

Table 1a. Estimated number of territories and vocal detection distances for common species in the 12 ha. lowland forest site. Vocal detection distances were estimated within the habitat and from studies in Northern Wisconsin (Wolf et al. 1995). Results are based on 7 visits totaling 20 hours.

Species	Vocal detection distance (meters)	Density (# males/pt.)	Total # of males	Estimated # of territories
Black-and-white Warbler ( <i>Mniotilta varia</i> )	100	0.16	1.91	2
Black-capped Chickadee ( <i>Parus atricapillus</i> )	100	0.28	3.3	3
Black-throated Green Warbler ( <i>Dendroica virens</i> )	100	0.41	4.95	5
Blackburnian Warbler ( <i>Dendroica fusca</i> )	100	0.1	1.52	2
Blue Jay ( <i>Cyanocitta cristata</i> )	175	0.21	2.52	3
Brown Creeper ( <i>Certhia familiaris</i> )	75	0.1	1.23	2
Canada Warbler ( <i>Wilsonia canadensis</i> )	100	0.13	1.53	2
Eastern Wood-Pewee ( <i>Contopus virens</i> )	125	0.01	0.17	1
Golden-crowned Kinglet ( <i>Regulus satrapa</i> )	75	0.11	1.32	2
Great Crested Flycatcher ( <i>Myiarchus crinitus</i> )	100	0.07	0.87	1
Hairy Woodpecker ( <i>Dendrocopos villosus</i> )	100	0.09	1.13	1
Hermit Thrush ( <i>Catharus guttatus</i> )	100	0.05	0.64	1
Nashville Warbler ( <i>Vermivora ruficapilla</i> )	100	0.25	2.95	3
Northern Waterthrush ( <i>Seiurus noveboracensis</i> )	125	0.15	1.78	2
Ovenbird ( <i>Seiurus aurocapillus</i> )	125	0.27	3.22	4
Red-breasted Nuthatch ( <i>Sitta canadensis</i> )	75	0.13	1.54	2
Rose-breasted Grosbeak ( <i>Pheucticus ludovicianus</i> )	125	0.02	0.22	1
Winter Wren ( <i>Troglodytes troglodytes</i> )	125	0.2	2.39	3

enbird, Winter Wren, Black-capped Chickadee, Blue Jay, and Nashville Warbler. Nests were found for two species, Canada Warbler and Sharpshinned Hawk, the latter not encountered regularly during the censuses. We observed a rich diversity of warblers (10 species) and northern or boreal species including Hermit Thrush, Golden-crowned Kinglet, Dark-eyed Junco, and Northern Raven.

The open wetland yielded a lower number of species (33), dominated by a few very abundant species: Red-winged Blackbird, Sedge Wren, Common Yellowthroat, and Song Sparrow (Table 2a). Particularly no-

table was the unexpected finding of Yellow Rails, a species known from few nesting localities in Wisconsin (Grimm 1992). On 9 June 1989, we heard at least four Yellow Rails at the open wetland site. Two individuals were flushed (separately) approximately 5 meters away from us. The white wing markings were clearly visible, confirming the auditory identifications made earlier. Interestingly, these birds continued calling from the sedge-dominated wetland until approximately 8:20 A.M. We observed the rails again on 21 June and 1 July.

Additional bird species were seen or heard along the Mink River cor-

Table 1b. Other birds recorded at the lowland forest site I. Many of these species undoubtedly nest in the area, but their numbers were too low for reasonable territory estimates.

Species
American Robin ( <i>Turdus migratorius</i> )
American Crow ( <i>Corvus brachyrhynchos</i> )
Broad-winged Hawk ( <i>Buteo platypterus</i> )
Cedar Waxwing ( <i>Bombycilla cedrorum</i> )
Common Yellowthroat ( <i>Geothlypis trichas</i> )
Common Raven ( <i>Corvus corax</i> )
Dark-eyed Junco ( <i>Junco hyemalis</i> )
Downy Woodpecker ( <i>Dendrocopos pubescens</i> )
House Wren ( <i>Troglodytes aedon</i> )
Mourning Warbler ( <i>Oporornis philadelphia</i> )
Northern Flicker ( <i>Colaptes auratus</i> )
Pine Warbler ( <i>Dendroica pinus</i> )
Ruffed Grouse ( <i>Bonasa umbellus</i> )
Scarlet Tanager ( <i>Piranga olivacea</i> )
Sharp-shinned Hawk ( <i>Accipiter striatus</i> )
Veery ( <i>Catharus fuscescens</i> )
White-throated Sparrow ( <i>Zonotrichia albicollis</i> )
Yellow-rumped Warbler ( <i>Dendroica coronata</i> )

ridor during this study (Tables 1b, 2b, and 2c) but did not occur at the designated study sites. Notable records included Bald Eagle and Osprey, which have begun to nest again in Door County during recent years.

## DISCUSSION

Although this study covered only a small portion of the Mink River Natural Area, our results reveal significant assemblages of forest and wetland birds, including several regionally rare or uncommon species. Canada Warbler populations in eastern North America have declined during recent years (Thompson et al. 1993); our discovery of a nest with four young at the lowland forest site represents the first reported breeding recorded for this species in Door County (Lukes 1989). A second pair

Table 2a. Resident birds in the 37 ha. open wetland site during the summer of 1989. Territories were estimated subjectively from maps produced at 7 census points during 6 visits, together totalling 13 observation hours.

Species	Estimated # of territories
American Bittern ( <i>Botaurus lentiginosus</i> )	1
Black-crowned Night-Heron ( <i>Nycticorax nycticorax</i> )	1
Blue-winged Teal ( <i>Anas discors</i> )	2
Common Yellowthroat ( <i>Geothlypis trichas</i> )	8
Common Merganser ( <i>Mergus merganser</i> )	2
Great Blue Heron ( <i>Ardea herodias</i> )	2
Killdeer ( <i>Charadrius vociferus</i> )	2
Mallard ( <i>Anas platyrhynchos</i> )	2
Marsh Wren ( <i>Cistothorus palustris</i> )	5
Red-winged Blackbird ( <i>Agelaius phoeniceus</i> )	27
Sandhill Crane ( <i>Grus canadensis</i> )	1
Sedge Wren ( <i>Cistothorus platensis</i> )	14
Song Sparrow ( <i>Melospiza melodia</i> )	5
Sora ( <i>Porzana carolina</i> )	1
Spotted Sandpiper ( <i>Actitis macularia</i> )	2
Swamp Sparrow ( <i>Melospiza georgiana</i> )	4
Virginia Rail ( <i>Rallus limicola</i> )	2
Wood Duck ( <i>Aix sponsa</i> )	2
Yellow Rail ( <i>Coturnicops noveboracensis</i> )	3

at the same site was observed carrying food. A pair of Hermit Thrushes also was observed at the site throughout the census period, representing the first summer reports for this species in Door County.

As far as we know, our observations of Yellow Rails represent the first documented records of this species in Door County. We note that the sedge mat on which the birds were encountered is highly fragile and should not be traversed in search of

Table 2b. Other species recorded at the open wetland site. These species were observed only briefly or were seen flying over sampling area.

Species
American Goldfinch ( <i>Carduelis tristis</i> )
American Robin ( <i>Turdus migratorius</i> )
American Kestrel ( <i>Falco sparverius</i> )
American Crow ( <i>Corvus brachyrhynchos</i> )
Bank Swallow ( <i>Riparia riparia</i> )
Cedar Waxwing ( <i>Bombicilla cedrorum</i> )
Cooper's Hawk ( <i>Accipiter cooperii</i> )
Double-crested Cormorant ( <i>Phalacrocorax auritus</i> )
Eastern Kingbird ( <i>Tyrannus tyrannus</i> )
Mourning Dove ( <i>Zenaida macroura</i> )
Northern Harrier ( <i>Circus cyaneus</i> )
Northern Rough-winged Swallow ( <i>Stelgidopteryx serripennis</i> )
Tree Swallow ( <i>Tachycineta bicolor</i> )
Turkey Vulture ( <i>Cathartes aura</i> )

the birds. Yellow Rails at the Mink River can be heard from a canoe.

Our estimates of population densities at both sites are conservative, but the species lists have considerable value as baseline information. Perhaps as interesting as the species that were identified is the list of expected species that were not found. American Bittern (*Botaurus lentiginosus*), for example, was disappointingly absent from the wetland study area. Northern Parula (*Parula americana*) and Yellow-bellied Flycatcher (*Empidonax flaviventris*) are fairly common in lowland conifer forests of northern Wisconsin, but neither was observed at the Mink River Natural Area. Brown-headed Cowbird (*Molothrus ater*), a brood parasite considered to be a threat to forest birds of eastern North America (Brittingham and Temple 1983), was not encountered at either census area.

The Mink River Natural Area supports a rich and interesting assem-

Table 2c. Other birds seen near (but not within) the open wetland site.

Species
Alder Flycatcher ( <i>Empidonax alnorum</i> )
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )
Belted Kingfisher ( <i>Ceryle alcyon</i> )
Black-billed Cuckoo ( <i>Coccyzus erythrophthalmus</i> )
Caspian Tern ( <i>Sterna caspia</i> )
Common Raven ( <i>Corvus corax</i> )
Golden-winged Warbler ( <i>Vermivora chrysoptera</i> )
Lesser Yellowlegs ( <i>Tringa flavipes</i> )
Northern Cardinal ( <i>Cardinalis cardinalis</i> )
Northern Flicker ( <i>Colaptes auratus</i> )
Osprey ( <i>Pandion haliaetus</i> )
Upland Sandpiper ( <i>Bartramia longicauda</i> )

blage of birds species. Our study documents 35 species in two major habitats: lowland conifer forest and sedge/cattail wetland. Significant findings include Yellow Rail, Hermit Thrush, Canada Warbler, and other neotropical migrant songbirds. Future studies of upland habitats will be needed to provide a more complete picture of Mink River birds. The Mink River Natural Area is connected with Newport Beach State Park to the north, and lies within 10 miles of other significant forest lands to the south (Mud Lake State Wildlife Area, The Ridges Sanctuary, Toft Point Natural Area). As forest areas in Door County and other Lake Michigan counties become rarer and increasingly fragmented, protection of these remnant forest complexes will be highly significant for the conservation of forest bird communities. The abundance of species like Canada Warbler and other songbirds (e.g., Black-and-white Warbler, Northern Waterthrush) which are uncommon elsewhere in Wisconsin suggest that the Mink River Natural

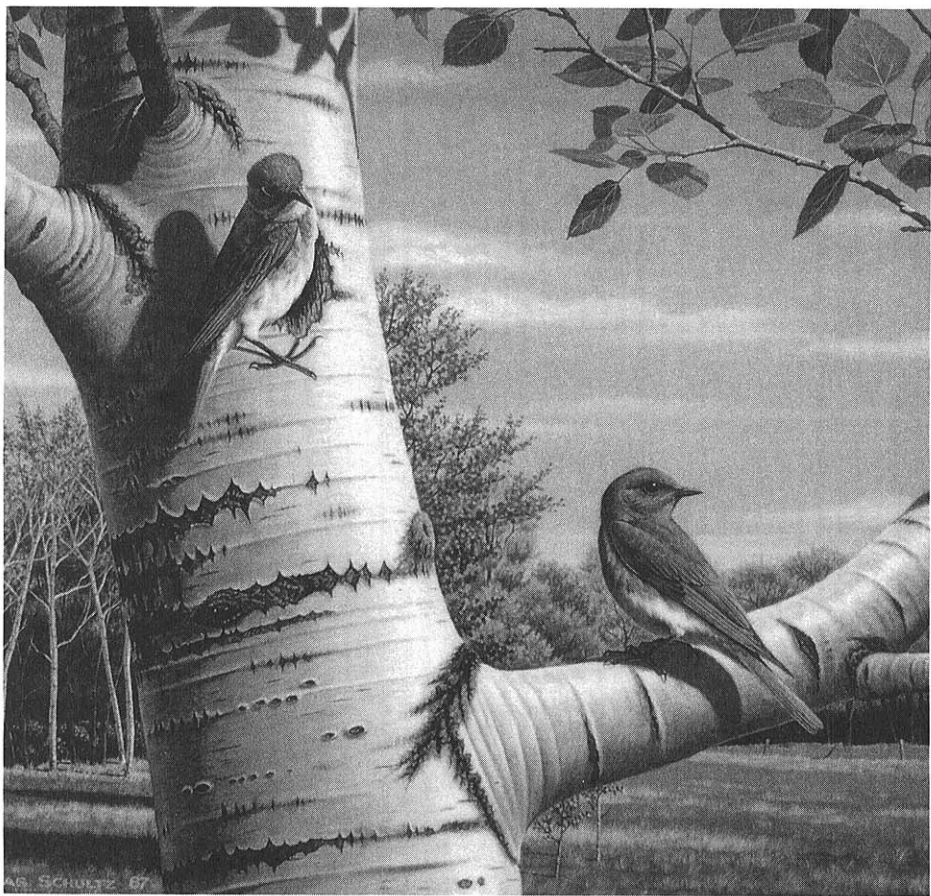
Area might be considered regionally significant for bird conservation.

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“Bluebird Pair” by *Thomas R. Schultz*