SITE INFORMATION

SAX-ZIM BOG

County (Primary): St. Louis
Townships: Cotton, Sax, Zim, Meadowlands, Northland, McDavitt, Ness, Alborn, New Independence

Approximate Size: 146,715 acres
Accuracy of Acreage: (good, medium, poor, unknown)

Central Coordinates:
Latitude: 47.12.68 (47.2117) Longitude: 92.36.19 (-92.6028)

Elevation (max – min): 1,310 ft (400.81m)

BCR Name/Number: Boreal Hardwood Transition
ECS Name: Laurentian Mixed Forest, No. Minnesota Drift and Lake Plains, Tamarack Lowlands

SITE DESCRIPTION

Long known among serious birders as THE place to find northern owls and other boreal birds, the Sax-Zim Bog IBA is home to a unique array of species and habitats not found in other parts of the United States. The Sax Zim Bog has a bird list of over 240 species including northern rarities such as Great Gray Owl, Boreal Owl and Northern Hawk-Owl. Over 450 Great Grays were counted in one weekend in January 2005. Birders and others visiting this IBA are particularly important to the local economy. With its proximity to Duluth and its airport, hotels, restaurants, and rental vehicles – and its attraction from an aesthetic sense – this IBA is an attraction to birders from outside Minnesota who know they can safely visit the area during the winter.

The Sax Zim Bog IBA, located in St. Louis County, approximately 3 hours north of the Minneapolis/St Paul metro area, and 1 hr. west/northwest of Duluth, is bordered on the south by Co. Rd. 8, on the north by Co. Rd. 27, then Co. Rd. 7 to St Louis River, on the west by Co. Rds. 5 and 29, and on the east by US Hwys 33 and 53 (Figure 1). From the Twin Cities, take I-35 north to Hwy 33 into Cloquet, and then north on Hwy. 53. From Duluth, take Hwy 53 north.

This area includes a mixture of State, County and private land as well as the Cloquet Valley State Forest and the Whiteface River State Forest (Figure 2). Sax and Zim Wildlife Management Areas are found here, as well. Nichols, Murphy and Artichoke Lakes, as well as many others are located throughout the IBA. The Whiteface River bisects the IBA, and the St Louis River makes up part of the northern border of the site.
The Sax Zim Bog's unique combinations of many diverse boreal forest habitats make it an ideal choice for birds, both migrants and breeding species. As outlined in the Traveler's Guide to Wildlife in Minnesota, there is a mix of lowland spruce, tamarack, and northern white cedar bog. Norway pine, white spruce, aspen, birch, balsam, and jack pine are found in the upland. Level to gently rolling topography is characteristic of this region. The largest landform is a lake plain. Soils include extensive areas of histosols (peat) over both fine-textured, (silt and clay-rich) and sandy lacustrine deposits. Sedge meadows, lowland brush and hayfields are also found here. There are stemless lady's slippers and other species of bog vegetation such as sundew, pitcher plant, leatherleaf, and bog birch. Other wildlife native to the Sax-Zim area includes black bear, moose, beaver, deer, pine martens and timber wolves.

There are currently hiking trails in McDavitt Township Park. The Minnesota Ornithologists' Union is arranging for a six car parking area to be set up near the land they are leasing at the SW corner of section 21 in T.54.N – R.19W.
Figure 1

Map Source: Audubon Minnesota
Shapefile Status: Done

Sax Zim Bog Important Bird Area
The Sax Zim Bog has a birdlist that includes over 240 species, and is nationally known a great place to see northern owls such as the Great Gray Owl, Boreal Owl and Northern Hawk Owl in the fall and winter months. Over 450 Great Gray Owls were counted in a weekend in January 2005. Black-backed and Three-toed Woodpeckers, Bald Eagles and Rough-legged Hawks are also founds and summer months bring Wilson’s Snipe, and several species of flycatchers, including Yellow-bellied Flycatchers and Alder Flycatchers. Warblers are in abundance and include Connecticut, Black-throated Green, Magnolia, Cape May, Canada, Blackburnian, Palm, and Black-and-White Warblers. Lincoln’s Sparrow, Pine Grosbeak, Boreal Chickadee, Gray Jay, Northern Waterthrush, Sedge Wren, Black-billed Cuckoo, Northern Shrike, Sandhill Cranes, White-winged Crossbill, and LeConte’s Sparrow have also been recorded. A remnant population of Black-billed Magpies can been seen year round, and may be one of the most eastern populations in the United States. The A.B.A. consistently ranks the Yellow Rail in the Top Ten Birds people most want to see, and there are four records of nesting Yellow Rails since 1993.

**MN – 1 (e) Species Diversity** – Sax Zim supports a wide range of breeding and migrating birds. The Audubon Christmas Bird Count (Ref. 2) reported 52 species during the last 20 seasons. A Sax Zim Bog bird checklist (Ref. 7) compiled in January 2004 by the Minnesota Ornithologists Union listed 236 species historically seen in the area. A Saint Louis County bird checklist completed in 2005 (Ref. 6) added six more species to the Sax Zim Bog area, bringing the total to 242. Data sheets from bird surveys carried out in nearby lowland conifer areas (Ref. 4) recorded 17 species of singing warblers, sparrows and others. Dancing Sharp tailed grouse are counted by the Minnesota Department of Natural Resources in the spring (Ref. 1).

**MN – 1 (f) Significant numbers.** – Great Gray Owls have historically been seen in the Sax Zim area every fall and winter, with larger numbers present during irruption years. There are several nesting records of Great Grays in the area, as well. The fall and winter of 2004/2005 saw an unprecedented number of Great Gray Owls in the state of Minnesota. The Sax Zim Bog was the first site in Minnesota to see non-resident Great Gray Owls in October 2004. As reported by Minnesota Ornithologists Union President Mark Alt, in a State of the Owls Report on February 22, 2005, (Ref. 8) there were 450 Great Gray Owls counted in a January weekend in the Sax Zim Bog area. An estimated 2500 Great Gray Owls were recorded in Minnesota during the winter of 2004/2005, so it is possible that the Sax Zim Bog may have hosted almost 20% of the irruption population. These numbers are in stark contrast to the 28 Great Gray owls counted for the Sax Zim Bog in a single winter season as the highest numbers previously recorded. There were 70 Great Grays counted in the 2004/2005 Sax Zim Bog Christmas Bird Count.

With information from the April 04 Birding magazine, it has been estimated that there are 30,000 Great Gray Owls world-wide, and that about 83%, or just under 25,000 are in North America. D. Duncan estimated that the Manitoba population is somewhere between 500 and 3000 Great Grays, and that likely 10% of the North American population was in Minnesota in 2004-5.
Forty-two Northern Hawk-Owls were counted in Sax Zim in the Christmas Bird Count 2004/2005, (Ref. 2) as compared to nine of these birds as a previous Minnesota state season record.

**MN – 2a – Species of Special Conservation Concern (federally Endangered, Threatened, or of Special Concern).** –

Yellow Rails - There have been four documented nesting areas of Yellow Rails in the Sax Zim Bog area since 1993 (Ref. 9). These locations were published in the Loon (volume 65, number 4, pp-196-199.) This is perhaps only one of three sites of recorded Yellow Rail nesting areas in the state. The MNDNR Natural Heritage database lists approximately 195 total Minnesota records.

**MN – 2b – Species of Special Conservation Concern**

**American Bittern** – There are four documented records of American Bittern in the Sax Zim Bog area, and approximately 290 records for the state (Ref 11).

**Sharp-tailed Grouse** – the DNR has six leks that have recorded dancing birds there since 1990 (Ref 1).

**Great Gray Owls** – At least three nesting records in the area since 1983. Great Gray Owls have historically been seen in the Sax Zim area every fall and winter, with larger numbers present during irruption years. As reported by Minnesota Ornithologists Union President Mark Alt, in a State of the Owls Report on February 22, 2005, there were 450 Great Gray Owls counted in a January weekend in the Sax Zim Bog area (Ref 8). A site has been selected within the Bog to set up eight to ten nesting platforms for the Great Grays, and will be monitored for nesting activity. (Ref. 10).

**Connecticut Warbler** – Several birds recorded singing in summer of 2004 in a breeding bird survey carried out by the MNDNR (Ref. 4).
MN – 3a – Sites containing assemblages of species characteristic of a representative, rare, threatened, or unique habitat.

**Patterned Peatlands** – of the 23 species listed, all are recorded as present. These include:

- American Bittern
- Northern Harrier
- Spruce Grouse
- Yellow Rail
- Sandhill Crane
- Wilson’s Phalarope
- Black-billed Cuckoo
- Great Gray Owl
- Northern Hawk Owl
- Short-eared Owl
- Olive-sided Flycatcher
- Yellow-bellied Flycatcher
- Alder Flycatcher
- Sedge Wren
- Cape May Warbler
- Palm Warbler
- Bay-breasted Warbler
- Connecticut Warbler
- Clay-colored Sparrow
- Le Conte’s Sparrow
- Nelson’s Sharp-tailed Sparrow
- Lincoln’s Sparrow
- Dark-eyed Junco
- Bobolink

MN – 3b – Assemblage of Species Characteristic of a Habitat Type –

**Conifer Swamps** – of the 35 species listed in the Audubon Site Criteria for this habitat type, all of the species are recorded as present. These are:

- Spruce Grouse
- Great Gray Owl
- Boreal Owl
- Northern Hawk Owl
- Three-toed Woodpecker
- Black-backed Woodpecker
- Olive-sided Flycatcher
- Yellow-bellied Flycatcher
- Blue-headed Vireo
- Gray Jay
- Boreal Chickadee
- Red-breasted Nuthatch
- Winter Wren
- Golden-crowned Kinglet
- Ruby-crowned Kinglet
- Swainson’s Thrush
- Hermit Thrush
- Tennessee Warbler
- Northern Parula
- Magnolia Warbler
- Yellow-rumped Warbler
- Blackburnian Warbler
- Bay-breasted Warbler
- Cape May Warbler
- Palm Warbler
- Black-and-white Warbler
- Northern Waterthrush
- Connecticut Warbler
- Canada Warbler
- Lincoln’s Sparrow
- White-throated Sparrow
- Dark-eyed Junco
- Purple Finch
- White-winged Crossbill
- Pine Siskin
- Evening Grosbeak
**Floodplain Forest** – of the 22 species listed in the Audubon Site Criteria for this habitat type, 14 of the species are recorded as present. These are:

- Black-billed Cuckoo
- Barred Owl
- Yellow-bellied Sapsucker
- Pileated Woodpecker
- Eastern Wood-Pewee
- Least Flycatcher
- Great Crested Flycatcher
- Yellow-throated Vireo
- White-Breasted Nuthatch
- Brown Creeper
- Veery
- Golden-winged Warbler
- American Redstart
- Scarlet Tanager

**Upland Deciduous Forest** - of the 33 species listed in the Audubon Site Criteria for this habitat type, 22 of the species are recorded as present. These are:

- Broad-winged Hawk
- Ruffed Grouse
- Black-billed Cuckoo
- Barred Owl
- Whip-poor-will
- Yellow-bellied Sapsucker
- Pileated Woodpecker
- Eastern Wood Pewee
- Least Flycatcher
- Great Crested Flycatcher
- Yellow-throated Vireo
- White-breasted Nuthatch
- Brown Creeper
- Veery
- Wood Thrush
- Golden-winged Warbler
- Chestnut-sided Warbler
- Black-throated Blue Warbler
- American Redstart
- Ovenbird
- Mourning Warbler
- Scarlet Tanager

**IBA SITE CRITERIA**

<table>
<thead>
<tr>
<th>BIOTICS Field Name: IBA/Criteria Fields</th>
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<tbody>
<tr>
<td>MN-1. Significant concentrations of breeding, migrating or wintering:</td>
</tr>
<tr>
<td>(a) waterfowl</td>
</tr>
<tr>
<td>(b) shorebirds</td>
</tr>
<tr>
<td>(c) waterbirds</td>
</tr>
<tr>
<td>(d) migratory raptors or cranes</td>
</tr>
<tr>
<td>X (e) species diversity</td>
</tr>
<tr>
<td>X (f) significant numbers</td>
</tr>
<tr>
<td>X MN-2a. Endangered, threatened or species of special concern</td>
</tr>
<tr>
<td>X MN-2b. Species of conservation concern</td>
</tr>
<tr>
<td>X MN-3. Rare, threatened, or unique habitat assemblages</td>
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<tr>
<td>MN-4. Long-term research, monitoring or urban value</td>
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</tbody>
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### SPECIES OF IMPORTANCE

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>SPECIES</th>
<th>SEASON</th>
<th>MAX. NUMBERS</th>
<th>YEAR(S)</th>
<th>ACCURACY</th>
<th>REFERENCES</th>
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<tr>
<td>MN – 1f</td>
<td>Great Gray Owl</td>
<td>2004-2005</td>
<td>450</td>
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<tr>
<td>MN – 1f</td>
<td>Northern Hawk Owl</td>
<td>2004-2005</td>
<td>42</td>
<td></td>
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<tr>
<td>MN – 2a</td>
<td>Yellow Rail</td>
<td>1993</td>
<td>4 breeding locations, 14 males calling total</td>
<td></td>
<td></td>
<td>4</td>
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<tr>
<td>MN – 2b</td>
<td>American Bittern</td>
<td>2005</td>
<td>4 records</td>
<td></td>
<td></td>
<td>11</td>
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<tr>
<td>MN – 2b</td>
<td>Sharp-tailed Grouse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
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<tr>
<td>MN – 2b</td>
<td>Great Gray Owls</td>
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<td></td>
<td></td>
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<td>8</td>
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<tr>
<td>MN – 2b</td>
<td>Whip-poor-will</td>
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<td></td>
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<tr>
<td>MN – 2b</td>
<td>Connecticut Warbler</td>
<td>2004</td>
<td>1 male calling on 2 different dates</td>
<td></td>
<td></td>
<td>3</td>
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</table>

1 Season (on which quantitative data are based): B=Breeding, W=Winter, SM=Spring Migration, FM=Fall Migration.
2 Accuracy: R=Rough Estimate, G=Good Estimate, A= Accurate Count or Estimate
3 Cite references by number listed below.

### REFERENCES

<table>
<thead>
<tr>
<th>BIOTICS Field Name: Documentation/References</th>
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</thead>
<tbody>
<tr>
<td>Give citation in following format: year, author, source, page number(s)</td>
</tr>
</tbody>
</table>

1  Dancing Sharp Tailed Grouse count, 1990-2004. MN DNR.
3  North American Breeding Bird Survey – Floodwood Route. USGS.
4  Bird Survey – lowland conifer areas near Sax Zim Bog – spring/summer 2004 - MNDNR
5  Owl Surveys – 2000-2002. MNDNR.
9  Loon, 1993, volume 65, number 4, pp 196-199; Steve Stucker (Yellow Rail records)
10 Permission from St Louis County to set up Great Gray nesting platforms.
11 DNR Natural Heritage database; Steve Stucker e-mail
BIBLIOGRAPHY


Sax/Zim Logging and Habitat Management Plans. Saint Louis County Land Department.


Jeff Hines, Wildlife Assistant Manager, Minnesota Department of Natural Resources.

Tom Rusch, Area Wildlife Manager, Minnesota Department of Natural Resources.

Maya Hamady, Non-Game Wildlife Specialist, Minnesota Department of Natural Resources.

Jim Lind, Research Scientist, Natural Resources Research Institute, University of Minnesota at Duluth.

Bill Lane, local birding expert.

Peder H. Svingen, local birding expert.

Lee Pfannmuller, Director, Division of Ecological Services, Minnesota Department of Natural Resources.

Steve Stucker, Ornithologist, Minnesota County Biological Survey, MNDNR-Ecological Services.

Pam Perry, Non-Game Wildlife Specialist, Minnesota Department of Natural Resources.

Bob Janssen, local birding expert.

Dave Skurla, Forester, Saint Louis County Land Department.

James Larson, Forester, Saint Louis County Land Department.
### HABITAT AND LAND USE

<table>
<thead>
<tr>
<th>Major Habitat Types: NOT a BIOTICS field</th>
<th>Major Land Uses: BIOTICS Field Name: Management/Land Use Comments</th>
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</thead>
<tbody>
<tr>
<td>X Upland Deciduous Forest (e.g. Maple-basswood, oak, aspen, birch, northern hardwoods)</td>
<td>X Agriculture</td>
</tr>
<tr>
<td>X Lowland Deciduous Forest (includes floodplain forest, ash swamp)</td>
<td>Fisheries/Aquaculture</td>
</tr>
<tr>
<td>Upland Mixed Deciduous/Conifer Forest</td>
<td>Forestry</td>
</tr>
<tr>
<td>Lowland Mixed Deciduous/Conifer Forest</td>
<td>Hunting/Fishing</td>
</tr>
<tr>
<td>Upland Coniferous Forest</td>
<td>Military</td>
</tr>
<tr>
<td>X Lowland Coniferous Forest (includes tamarack, black spruce, and white cedar swamps)</td>
<td>Nature Conservation/Research</td>
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<tr>
<td>X Open bog/poor fen</td>
<td>Tourism/Recreation</td>
</tr>
<tr>
<td>Rich fen (narrow-leaved sedges)</td>
<td>Urban/Industrial/Transport</td>
</tr>
<tr>
<td>Shrub Swamp</td>
<td>Water management</td>
</tr>
<tr>
<td>Lowland (wet) Native Prairie</td>
<td>Livestock</td>
</tr>
<tr>
<td>Wet Meadows (broad-leaved sedges)</td>
<td>Mining</td>
</tr>
<tr>
<td>Marsh (cattail/mixed emergent)</td>
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</tr>
<tr>
<td>Upland Native Prairie (includes dry, mesic, and brush prairie)</td>
<td>Land Ownership/Management: check all that apply</td>
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<tr>
<td>Upland Savanna (includes jack pine savanna, oak savanna, and aspen openings)</td>
<td>X State</td>
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<tr>
<td>X Grassland (non-native, planted)</td>
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<tr>
<td>X Agriculture</td>
<td>Municipal</td>
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<tr>
<td>Cliff/Talus</td>
<td>County</td>
</tr>
<tr>
<td>X River/Stream (includes river shore)</td>
<td>Private</td>
</tr>
<tr>
<td>Lake (includes lake shore)</td>
<td>Non-profit</td>
</tr>
<tr>
<td>Sewage Pond</td>
<td>Other (explain)</td>
</tr>
</tbody>
</table>

Habitat management in the area emphasizes maintaining brushlands, and other open land native plant communities with prescribed fire. Combinations of periodic shearing and burning in selected areas emphasize Sharp-tailed Grouse management. Harvesting for timber generally occurs in the winter to not disturb breeding birds.

The Sax Zim Bog has a history of agriculture on the better upland soils. Small grain farming and cattle raising were the predominate and uses for the past 100 years. The area has an extensive system of ditches that provide riparian habitat. The area is slowly being reclaimed by native plant communities as farming disappears on the landscape.

The Minnesota Ornithologists Union (M.O.U.) recently leased 79 acres for a year, and are looking at leasing more in the future for possible development of recreational birding trails.
## CONSERVATION AND THREATS

<table>
<thead>
<tr>
<th>THREAT</th>
<th>THREAT</th>
</tr>
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<tbody>
<tr>
<td>Abandonment/reduction of land management</td>
<td>Invasive or non-native plants</td>
</tr>
<tr>
<td>Agricultural intensification/expansion</td>
<td>Natural pests/disease</td>
</tr>
<tr>
<td>Aquaculture/fisheries (overfishing)</td>
<td>Overgrazing</td>
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<tr>
<td>Cellular/Wind Towers/Power Lines</td>
<td>Predators</td>
</tr>
<tr>
<td>Construction/impact of dike/dam</td>
<td>Pesticides</td>
</tr>
<tr>
<td>Deforestation</td>
<td>Recreation/tourism</td>
</tr>
<tr>
<td>Disturbance to birds</td>
<td>Selective logging/cutting</td>
</tr>
<tr>
<td>Drainage</td>
<td>Succession</td>
</tr>
<tr>
<td>Extraction industry</td>
<td>Unsustainable exploitation</td>
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<tr>
<td>Groundwater abstraction</td>
<td>Wetland loss</td>
</tr>
<tr>
<td>Industrialization/urbanization</td>
<td>Other</td>
</tr>
<tr>
<td>Introduced animals or feral pets</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

### Threats Comments

- Reduction in land management – Sax Zim plant communities are fire dependent. The open character of the landscape must be maintained through natural or man-made disturbance. Fire exclusion is detrimental.

- Succession – Fire, mowing, shearing, farming, grazing, haying and logging are required to set back succession.

- Non-native plant species – Species such as hybrid poplar are a threat to the open landscapes through the Sax Zim IBA.

- Fragments of the open landscape through tree planting and increased development are threats to this IBA.
OTHER RESOURCES

Nonavian Flora and Fauna

Not a BIOTICS Field

The Sax Zim Bog hosts stemless lady’s slippers and other species of bog vegetation such as sundew, pitcher plant, leatherleaf and bog birch.

Cultural Features

BIOTICS Field Name: Site Description/Cultural Features

Forest management will continue to expand in this area as markets improve to make this area more economical to harvest. Biomass industry is on the horizon and may make lowland brush a marketable product. This will be good for the area. The United Taconite mine is located in the northeast corner.
## NOMINATOR INFORMATION

**BIOTICS Field Name: Site Design/Designer**

<table>
<thead>
<tr>
<th>NAME: Amber Burnette</th>
<th>ADDRESS: 315 University Ave SE #103</th>
</tr>
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<tbody>
<tr>
<td>CITY: Minneapolis</td>
<td>STATE, ZIP: MN</td>
</tr>
<tr>
<td>EMAIL:</td>
<td>AFFILIATION: University of Minnesota</td>
</tr>
<tr>
<td>PHONE:</td>
<td>FAX:</td>
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## PRIVATE LANDOWNER CONTACTS

**BIOTICS: Not a BIOTICS field**

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<td>Phone:</td>
<td>Phone:</td>
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<tr>
<td>Email:</td>
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Have you discussed the nomination of this site with the landowner? **Y**  **N**

Does the landowner agree to the nomination of this site as an IBA? **Y**  **N**

## MANAGED AREA CONTACTS

**BIOTICS: Put names in site description**

<table>
<thead>
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<th>Managed Area Owner:</th>
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<tbody>
<tr>
<td>Managed Area Manager:</td>
<td>Address:</td>
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<tr>
<td>City/State/Zip:</td>
<td>Phone:</td>
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<tr>
<td>Email:</td>
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Have you discussed the nomination of this site with the land manager? **Y**  **N**

Does the land manager agree to the nomination of this site as an IBA? **Y**  **N**
LOCAL GROUPS WITH A CONSERVATION INTEREST IN THIS SITE

<table>
<thead>
<tr>
<th>Name/Group: Minnesota Ornithologists Union</th>
<th>Name/Group:</th>
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<tbody>
<tr>
<td>Address: 10 Church Street S.E.</td>
<td>Address:</td>
</tr>
<tr>
<td>City/State/Zip: Bell Museum of Natural History</td>
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</tr>
<tr>
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**BIOTICS:** Not a BIOTICS field

Other remarks or comments:

*Thank You For Your Help*