
Wildlife Lake Habitat Survey Report



NAME OF LAKE: Artichoke

DOW LAKE ID #: 06000200

DATE OF SURVEY: 6/1/2009

TYPE OF SURVEY: Wildlife Lake Survey

SURVEY CREW: A. Tiemann & B. Arne



Information Provided by:

**Minnesota Department of Natural Resources
Wildlife Management Section
Shallow Lakes Program
Tuesday, November 09, 2010**



DOW Lake ID: 06000200
Survey Date: 6/1/2009

General Lake Information

Location Information

Legal Description

Township: 122 Range: 44 Section: 36

Primary County: Big Stone

Work Area Name:

Wildlife Work Area:

General DOW Lake Information

Basin Area (Acres): 1,964

Secchi Depth (feet): 4

PWI Class: P

Number of Public Accesses 2

DOW Wetland Type: 5

Watershed ID: 23001

USGS Quad Name: Artichoke Lake

Miles of Shoreline: 19

Survey Maximum Lake Depth: 13.5

Survey Mean Lake Depth: 8.5

Survey Maximum Secchi Depth 7.5

Survey Mean Secchi Depth: 4.3

DOW Maximum Lake Depth 13.0

DOW Mean Lake Depth: 0.0

Lake Survey Conditions

Time:

Temperature Air / Water (F): 73 / 66.5

Cloud Cover (%): 50-70% cloud cover

Wind Speed (mph): 5-10 Direction: NW

Previous Wildlife Lake Survey Information

Type of Survey	Survey Year	Survey Date	Survey Crew	Requested by
Wildlife Lake Survey				
Wildlife Lake Survey	2005	07/12/2005	Rob Rabasco & Ann Geisen	case study project team
Wildlife Lake Survey	2008	07/31/2008	T. Sindt & C. Wright	Case Study Project team
Wildlife Lake Survey	2009	06/01/2009	A. Tiemann & B. Arne	Slice project coordinator

Lake Survey Access Information

Ownership: MN Department of Natural Resources Access Type: Concrete

Description: Located on the south side of the lake. DNR access off of County Road 80 and Swift County Road 53.

Ownership: MN Department of Natural Resources Access Type: Concrete

Description: Access located on the northwest side of the lake. DNR public access located off of County Road 25.

Ownership: Township Access Type: Concrete

Description: Located on the east side of the lake. Go west off of 260th St, take 387th street to a minimum maintenance road with an aerator sign.

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Inlets and Outlets Information

Inlet Information

No Information Was Collected

Outlet Information

No Information Was Collected

-
- (a) (ID) Intermittent - Dry (no flow at mouth, still may contain water), (IF) Intermittent - Flowing (currently has flow at mouth), (C)ontinuous flow, (X) Unkown
 - (b) (N)amed lake (give name), (U)nnamed lake, (M)arsh, (S)pring, (W)ell, (T)ile, (SS) Storm sewer, (D)itch, (O)ther (describe), (X) Unkown
 - (c) Give up to two most common in order of abundance: (H)ardwoods, (CO)nifers, (MI)xed Forest, (G)rasses, (CR)ops, (P)asture, (MU)ncipal, (R)esidential, (O)ther (describe), (X) Unkown
 - (d) (F)loating object, (C)urrent meter, (D)irect time and volume measurement (gpm / 15.9 = cfs). Describe where the flow measurement and avg. width/depth estimates were taken on the flow worksheet section
 - (e) (Y)es, (N)o, (X) Unkown
 - (f) List the species code for up to 4 species with known spawning runs in this inlet
 - (g) (TC) type "C" with stoplogs, (SP) Sheet piling, (DI) Drop inlet with stoplogs, (CF) Concrete with fixed sill, (BD) Beaver dam, (O)ther (describe), (X) Unkown
 - (h) (DNR), (UFS), (DOT), (COU)nty, (COE), (NPS), (FWS), (CIT)y, (TOW)nship, (NPS), (PRI)vate (describe), (None) (natural dam), (O)ther (describe), (X) Unkown

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Water Level and Chemistry

Water Level Information

Code: BM

Water Level Reading Date:

Benchmark/Gauge Description:

Benchmark is Double "60d" spikes located 0.9 feet above ground in the west-southwest side of a transformer-light pole. The pole is located about 45 feet south of the landward edge of the concrete boat ramp at the public access on the south end of the lake. Reading taken with laser level.

Water Level Reading (feet + or -): -4.95

Current Water Level:

Water Level Description:

Average Annual Fluctuation:

Annual Fluctuation Description:

Annual Level Fluctuation Source:

Extreme Fluctuation:

Water Level History Comments:

Water Chemistry

Lake or Inlet (L or I): L

Station Number of Water Sample: 110

Sample Date:

Depth Sample Taken (ft):

Date Sample Analyzed:

Bottom Depth (ft):

Nonstandard Description:

Color Cause Code and Description:

Water Color Code and Description:

Biological O2 Demand (ppm):

Dissolved Oxygen (ppm):

Organic Dissolved Solids (ppm)

Ortho Phosphorus (ppm):

Conductivity (umhos): 866

Total Phosphorus (ppm): 0.329

Sulphate Ion (ppm):

Chloride Ion (ppm):

pH: 8.71

Nitrite [NO2-N] (ppm):

Nitrogen TLKJ (ppm):

Alkalinity (ppm): 319

Dissolved Iron (ppm):

Dissolved Solids (ppm): 624

Alkalinity Method:

Ammonia [NH3-N] (ppm):

Nitrate [NO3-N] (ppm):

Total Iron (ppm):

Suspended Solids (ppm):

Chlorophyl A (ppm): 0.023

Other Measurements:

Chlorophyll A-Pheophytin (ppm): 0.0163

Comments:

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Observations and Field Notes

Waterfowl and Wildlife Observations / Field Notes

Waterfowl Observations:

Waterfowl observations at the time of the survey included 1 Canada goose, 15 mallards, 3 wood ducks, and 2 blue-winged teal.

Other Wildlife Observations:

Other wildlife observations at the time of the survey included sightings of 83 American white pelicans, 2 double-crested cormorants, 1 great blue heron (also nesting), 13 black terns, 1 green heron, 13 ring-billed gulls, and 16 black birds.

Field Notes:

Artichoke Lake is a large, somewhat sheltered lake, with a very limited submerged aquatic plant community. Much of the lake has a rock/gravel bottom, especially around the shoreline and islands. The few plant species observed in the lake during the survey include the invasive curly-leaf pondweed, and a small amount of narrowleaf pondweed species. A few bays and islands contained emergent plants such as hardstem bulrush and narrowleaf cattail species. Most of the shoreline was lined with sedge and willow in the more rocky areas. Some islands show extensive erosion. Wildlife use was fairly high at the time of the survey, with fish-eating birds most commonly observed. Several dead carp were observed throughout the lake, and appeared to be rather recent deaths. Live carp were also observed. Water clarity at the time of the survey ranged from 2.25-7.0 feet, which differs greatly from previous surveys on this basin. This is likely due to the time of year when the survey was conducted. Depths ranged from 3-13.5 feet (at point 120). A moderate presence of filamentous and planktonic algae was noticed throughout the basin.

Wildlife Managers Comments or Management Recommendations:

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Wildlife Lake Sample Station Summary - Artichoke

Sample Station Information

Minimum Depth: 3.0 Minimum Secchi: 2.3 Initial # of Stations: 129

Maximum Depth: 13.5 Maximum Secchi: 7.5 Number of Stations Sampled: 129

Mean Depth: 8.5 Mean Secchi: 4.3

Vegetation Summary

Number of Sample Stations: 129

Lakewide Species Richness: 4

Percent of Vegetated Plots: 6.2%

Vegetation Species	# of Plots Occurring	Species Frequency	95% CI	High C / I	Low C / I	Frequency Value
No Vegetation Found No Vegetation	121	93.8%	0.0457	0.9836	0.8923	0.9380
Potamogeton crispus Curly-leaf Pondweed	3	2.3%	0.0300	0.0532	-0.0067	0.0233
Scirpus acutus Hardstem Bulrush	2	1.6%	0.0253	0.0408	-0.0098	0.0155
Potamogeton NL spp. Narrowleaf Pondweed Group	2	1.6%	0.0253	0.0408	-0.0098	0.0155
Typha angustifolia or glauca Narrowleaf Cattail Group	1	0.8%	0.0191	0.0268	-0.0113	0.0078

Survey Map

