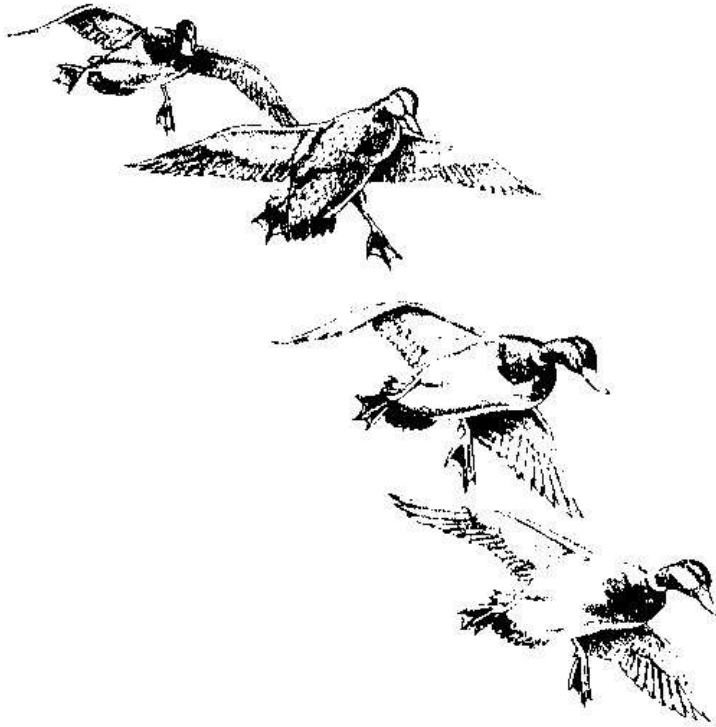


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# Wildlife Lake Habitat Survey Report

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**NAME OF LAKE:** Freeborn

**DOW LAKE ID #:** 24004400

**DATE OF SURVEY:** 7/20/2015

**TYPE OF SURVEY:** Wildlife Lake Survey

**SURVEY CREW:** B. Berndt & H. Kalbus



Information Provided by:

Minnesota Department of Natural Resources  
Wildlife Management Section  
Shallow Lakes Program

Friday, January 15, 2016



DOW Lake ID: 24004400  
Survey Date: 7/20/2015

## General Lake Information

### Location Information

Primary County: Freeborn

### Legal Description

Township: 105 Range: 23 Section: 35

Work Area Name:

Wildlife Work Area:

### General DOW Lake Information

Basin Area (Acres): 2,222

DOW Wetland Type: 4

Secchi Depth (feet): 0

Watershed ID: 32031

PWI Class: P

USGS Quad Name: Freeborn

Number of Public Accesses: 1

Miles of Shoreline: 11

Survey Maximum Lake Depth: 5.5

DOW Maximum Lake Depth: 3.0

Survey Mean Lake Depth: 3.2

DOW Mean Lake Depth: 1.0

Survey Maximum Secchi Depth: 0.3

Survey Mean Secchi Depth: 0.3

### Lake Survey Conditions

Time:

Cloud Cover (%): 25-75

Temperature Air / Water (F): 78.8 / 80.5

Wind Speed (mph): 15.5 Direction: N

### Previous Wildlife Lake Survey Information

Type of Survey	Survey Year	Survey Date	Survey Crew	Requested by
Wildlife Lake Survey				
Wildlife Lake Survey	1990	10/29/1990		
Wildlife Lake Survey	2002	09/10/2002	Steve Piepgras & Ann Geisen	Jeanine Vorland, AWM
Wildlife Lake Survey	2012	08/09/2012	N. Myhra & B. Johnson	Jeanine Vorland, AWM
Wildlife Lake Survey	2014	08/13/2014	S. Kittelson	
Wildlife Lake Survey	2015	07/20/2015	B. Berndt & H. Kalbus	Owatonna AWM; Jeanine Vorland

### Lake Survey Access Information

Ownership: County Access Type: Concrete

Description: The lake was accessed at the Arrowhead Park public access off of 267th street on the east side of the lake. A sport boat was used to survey the lake.

Ownership: MN Department of Natural Resources Access Type: Other

Description: There is an additional access owned by the DNR located on the east side of the south bay of the lake, but it is currently undeveloped.

DOW Lake ID: 24004400  
Survey Date: 7/20/2015

## Inlets and Outlets Information

### Inlet Information

**Inlet Name:** Cobb River

**Inlet Type Code (a):** IF

**Inlet Cover Type (c) and Description:**

**Fish Barrier (Y/N) (e):** N

**Fish Barrier Description:**

**Comments:**

Cobb River inlets Freeborn Lake on the southeast side.

### Inlet Flow Information

**Flow (fps):**                      **Average Width (feet):**

**Flow (cfs):**                      **Average Depth (feet):**

**Method (d):**                      **Inlet Surface Temp (F)**

### Outlet Information

**Outlet Name:** Cobb River

**Lake or River ID:**

**Tributary To:**

#### Water Control Structure Information

**Type and Description:** FC: Concrete with fixed sill  
Fixed sill and sheet piling

**Owner and Description** COU

**Head Reading:** 1215.6

**Sill Reading:** 1209.2

**Gauge Reading**

**Comments:**

The Cobb River outlets Freeborn Lake on the northwest side of the basin and is intermittent flowing. The recorded dam elevations are from a Ducks Unlimited survey conducted on 7/7/15 (elevations are in NAVD88). Overall the dam was found to be in poor condition.

### Outlet Flow Information

**Flow (fps):**

**Flow (cfs):**

**Method (d):**

**Average Width (feet):** 67.50

**Average Depth (feet):**

**Barrier to Fish (Y/N) (e):** N

**Fish Barrier Description:**

- 
- (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) Unknown
- (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)nicipal, (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

DOW Lake ID: 24004400

Survey Date: 7/20/2015

## Water Level and Chemistry

### Water Level Information

Code: BM

Water Level Reading Date: 07/07/2015

Benchmark/Gauge Description:

A water elevation was obtained from Ducks Unlimited taken on 7/7/15 and was recorded at 1215.81 (NAVD88).

Water Level Reading (feet + or -):

1215.81

Current Water Level:

N

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):

Station Number of Water Sample: 80

Sample Date:

7/20/2015

Depth Sample Taken (ft):

0.5

Date Sample Analyzed:

Bottom Depth (ft):

Nonstandard Description:

Color Cause Code and Description:

Water Color Code and Description:

Total Phosphorus (ppm): 0.261

pH:

Dissolved Oxygen (ppm):

Ortho Phosphorus (ppm):

Sulphate Ion (ppm): 4.37

Biological O2 Demand (ppm):

Conductivity (umhos): 230

Chloride Ion (ppm):

Organic Dissolved Solids (ppm):

Nitrate [NO3-N] (ppm):

Total Iron (ppm):

Dissolved Solids (ppm):

Nitrite [NO2-N] (ppm):

Dissolved Iron (ppm):

Suspended Solids (ppm):

Nitrogen TLKJ (ppm):

Alkalinity (ppm):

Chlorophyll A [trichromatic] (ppm): 0.299

Ammonia [NH3-N] (ppm):

Alkalinity Method:

Chlorophyll A [pheophytin] (ppm): 0.278

Other Measurements

Comments:

**Waterfowl and Wildlife Observations / Field Notes**

**Waterfowl Observations:**

No waterfowl were seen out on the lake.

**Other Wildlife Observations:**

Other wildlife seen included 14 American white pelicans, 17 double-crested cormorants, 7 great blue herons, and 11 ring-billed gulls.

**Field Notes:**

Freeborn Lake is mostly lined with deciduous trees. The southern and western portions of the lake had narrowleaf cattails and softstem bulrush along the shoreline. No aquatic vegetation was found at any of the sample points on Freeborn Lake, and the bottom was either silt or muck with a few spots towards shore being sandy. The water clarity of the lake was extremely poor with a Secchi depth reading of 0.25ft at every point. Due to sediments, the water was brown in color. Wildlife/waterfowl present on Freeborn Lake included American white pelicans, double-crested cormorants, great blue herons, and ring-billed gulls. The access to Freeborn Lake is on the east side of the lake by a dock near the county park sign. A sport boat was used to survey the lake due to the lack of vegetation.

**Wildlife Manager Comments/Recommendation:**

Freeborn Lake was low due to drought in 2012 and had indication of a substantial winter kill of common carp and other fishes in the spring of 2014. Despite the low water and subsequent fish kill there was little regeneration of either submersed or emergent vegetation, although some hardstem bulrush stands increased in size and density. Observations suggest little to no improvement in water clarity.

Freeborn Lake should support good abundance of vegetation throughout the basin. A drawdown and continued management to eliminate rough fish and regenerate vegetation is recommended. The dam is in poor condition and should be replaced with a variable crest structure to enable water level management. A fish barrier should be employed at the outlet of the lake on the Cobb River. Rough fish exclusion should improve growing conditions for submersed vegetation.

A cooperative project with the Area Fisheries office should be pursued to restructure the fish community and restock the lake with northern pike, yellow perch and other species compatible with submersed vegetation should a substantial reduction in rough fish can be obtained. Consider chemical reclamation if an effective fish barrier is installed.

DOW Lake ID: 24004400

# Wildlife Lake Sample Station Summary - Freeborn

Survey Date: 7/20/2015

## Sample Station Information

Minimum Depth: 1.50    Minimum Secchi: 0.25    Initial # of Stations: 99  
Maximum Depth: 5.50    Maximum Secchi: 0.25    Number of Stations Sampled: 98  
Mean Depth: 3.24    Mean Secchi: 0.25

## Vegetation Summary

Number of Sample Stations: 98  
Lakewide Species Richness: 0  
Percent of Vegetated Plots: 0.0%

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Vegetation Species	# of Plots Occurring	Species Frequency	95% CI	High C / I	Low C / I	Frequency Value
<i>No Vegetation Present</i> No Vegetation	98	100.0%	0.0051	1.0051	0.9949	1.0000

Survey Map

