Birch Lake Association
Est. 1982
HACKENSACK, MINNESOTA

www.mybirchlake.org

Annual Report 2023

BLA Members: these topics have a lot of detail behind them. Each topic starts with a brief summary followed by lots of (exciting!) details. You can skip to the next topic by clicking on the emoji's

Strength of our Association	
Financial Status	
Membership Events	 
Water Safety, Buoys	
Water Quality and Lake Level	
Aquatic Invasive Species (AIS)	
Fisheries	
Loon Watch and Nesting Platforms	
Purple Martin Nesting	
Beaver Controls	

Strength of the Association, 2023

- Membership:
  - In 2023 we had 170 Family memberships, 25 Individual memberships and 49 Business memberships. We estimate our membership includes 65% of the developed, active properties on the lake.
- Engagement:
  - On-line communications and membership service was implemented in 2023.
  - Members responded to call for volunteers, including butterfly garden, Fish survey netting, buoys and other projects.
  - Membership turnout for our annual meeting was over 100 people. Member businesses donated valuable prizes.
- Relevance:
  - Please see our Lake Management Plan, aligned with our charter, which guides the association activities.
  - BLA is recognized by agency partners, including Cass County, MnDNR, MnPCA, City of Hackensack, others.
- Leadership:
  - Our Board of Directors has many years of continuous service. The board has healthy continuity from long-term directors, while 4 of the current 13 directors have joined within the past 5 years.

Financial Summary, 2023

Income and Expenses

Birch Lake Association
Statement of Activity
January - December 2023

		Total
Revenue		
Contributed income		
Business Memberships - 49		1,237.76
Corporate & foundation grants		612.86
Credit Card Fees - netted		180.97
Donations directed by individuals		345.00
Garden		50.00
Martin House		65.00
Total Donations directed by individuals	$	460.00
Individual Memberships - 195		5,729.73
Total Contributed income	$	8,221.32
Investment income		6.86
Total Revenue	$	8,228.18
Expenditures		
Advertising & marketing		220.12
Annual Meeting		361.42
Chainsaw Event		235.00
Fishing Contest		203.00
Total Advertising & marketing	$	999.54
Contract & professional fees		
Beaver Trapping		450.00
Water Testing		354.00
Total Contract & professional fees	$	804.00
Office expenses		
Bank fees & service charges		180.97
Internet & TV services		68.51
Memberships & subscriptions		477.00
Office supplies		111.43
Shipping & postage		296.80
Software & apps		1,998.49
Total Office expenses	$	3,133.20
Repairs & maintenance		
Garden		143.41
Total Repairs & maintenance	$	143.41
Uncategorized Expense		140.13
Total Expenditures	$	5,297.28
Net Revenue	$	2,930.90

Financial Summary, cont.

Cash Reserves

Why do we maintain a Cash Reserve?

- We are a Non-Profit organization relying on donations for ongoing expenses.
- We do not allow our liabilities to exceed our assets.
- We have no physical assets, just cash or cash-equivalents.
- Our reserves must be able to cover any ups and downs in membership and expenses, without accumulating debt.
- We also maintain an Aquatic Invasive Species (AIS) contingency fund that would allow an immediate response to AIS infestation.

2022 Year-End Cash Reserves	$23,587		
2023 Income	$7,600		
2023 Operating Expenses	($7,540)		
2023 Year-End Cash Reserves	$23,647		
	3.1	times annual expenses	
On-going AIS Emergency Fund	$15,000	1st response study by 3rd party	

Note about AIS Contingencies:

- Our $15k reserve would fund only an immediate 3rd party study required by MnDNR and Cass County, before any AIS controls. We would use this immediately after detecting an AIS infestation
- Longer term, if the infestation is confirmed, an AIS treatment/control would require an ongoing, intense fund-raising. There are AIS controls in MN that are spending on the order of $50k per year controlling AIS infestations.

Member Events, 2023

Annual Meeting

July 29, 2023

We had a big turn-out of our members, over 100 people attended.

Our Business members donated great prizes.

Boat Parade!

July 4th, 2023

Happens every year, don't miss it !

Thanks to boaters and on-shore fans of the parade.

🍔 🍺

Member Events, 2023

Indeed Fundraiser

September 20, 2023

Many BLA Members joined the Indeed Brewery event in Minneapolis. Indeed Brewing donated their day's profits from the tap room to Birch Lake Association, over $600 !

2023 DNR Fisheries Survey

Thanks to the Birch Lake volunteers who helped the DNR with their netting survey this year.

Water Safety / Buoys, 2023

Buoy Locations on Birch Lake

A Channel between Lakes
B Rock Bar from Big Island
C Sand Bar in West Bay
D Rock Bar in South Bay
E Rocks in Little Birch
F Miller Bay Markers
G City Beach

BLA owns, installs, removes and stores all the water safety buoys. Without a lake association, there would be no buoys.

When limited by time or volunteers, markers will be prioritized in order from A-to-G.

2023 Install Date: May 6th
2023 Removal Date: October 9th

Water Quality, 2023

The (3) critical water quality tests below have been sampled by Birch Lake volunteers for many decades.

Water samples are taken each non-winter month, typically 5 samples per year
We have over 23 years of data for Birch Lake!

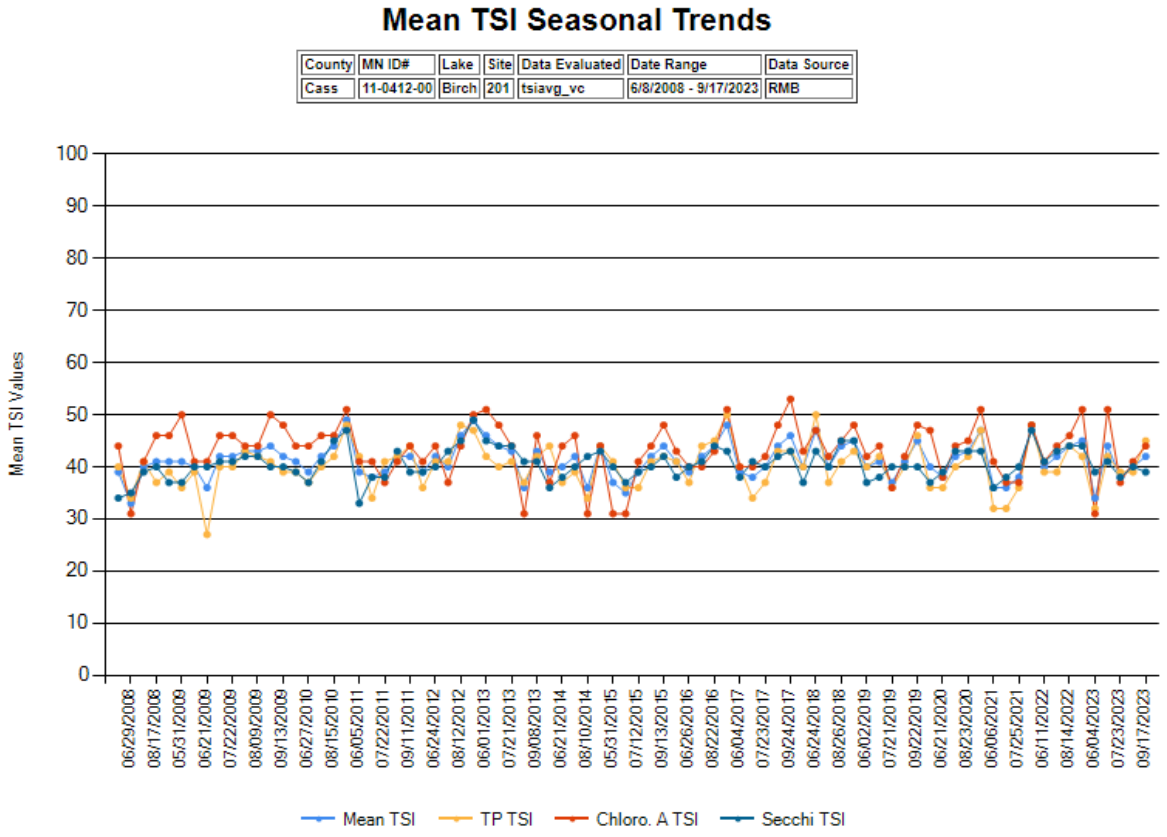
- Total Phosphorus
  - Phosphorus, important for plant growth. In most lakes, phosphorus is the limiting nutrient, meaning the more phosphorus is available, the more plants and algae there are in the lake. Major sources of phosphorus include **human and animal wastes, soil erosion, detergents, septic systems and runoff from farmland or fertilized lawns**.
- Chlorophyll-a
  - Chlorophyll-a is tested in lakes to determine how much algae is in the lake. Algae adds oxygen to the water, but if there is too much algae in a lake it can produce a foul odor and be unpleasant for swimming.
- Water Transparency (secchi)
  - Water transparency is measured with a Secchi disk. A Secchi disk is a metal disk, 8 inches in diameter that is lowered into the water on a cord. The depth that the Secchi disk can no longer be seen through the water is the Secchi depth.

Generally, as **Phosphorus** increases, **Chlorophyll-a** will increase and **Secchi** depth will decrease.

RMB Environmental Labs, Inc., is paid by BLA for lab testing.
We credit RMB Labs for water quality technical information and data included in this report.

Water Quality, continued

Water Quality Test Results for Birch Lake

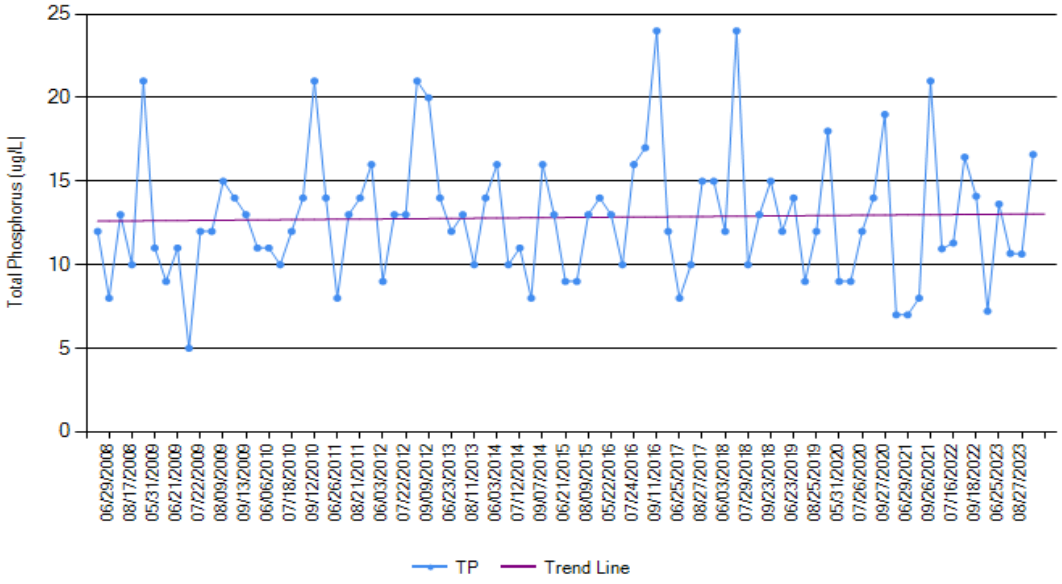


TSI, (Lake Trophic State), is an index of Phosphorus, Chlorophyll-a and Secchi data, to help define how fertile the lake has become.

- A northern MN, deep, cold, rocky lake may be TSI<30 (**Oligotrophic state)**
- Birch Lake is **Mesotrophic** Lake (TSI 40-50). means a medium amount of nutrients (Phosphorus and Nitrogen). Mesotrophic lakes are usually found in central Minnesota and have clear water with some algal blooms in late summer.
- A southern MN lake, fertile soils, agricultural area, may be TSI>70 (**Eutrophic state)**

Water Quality, continued

For Birch Lake, we should Focus on Phosphorus



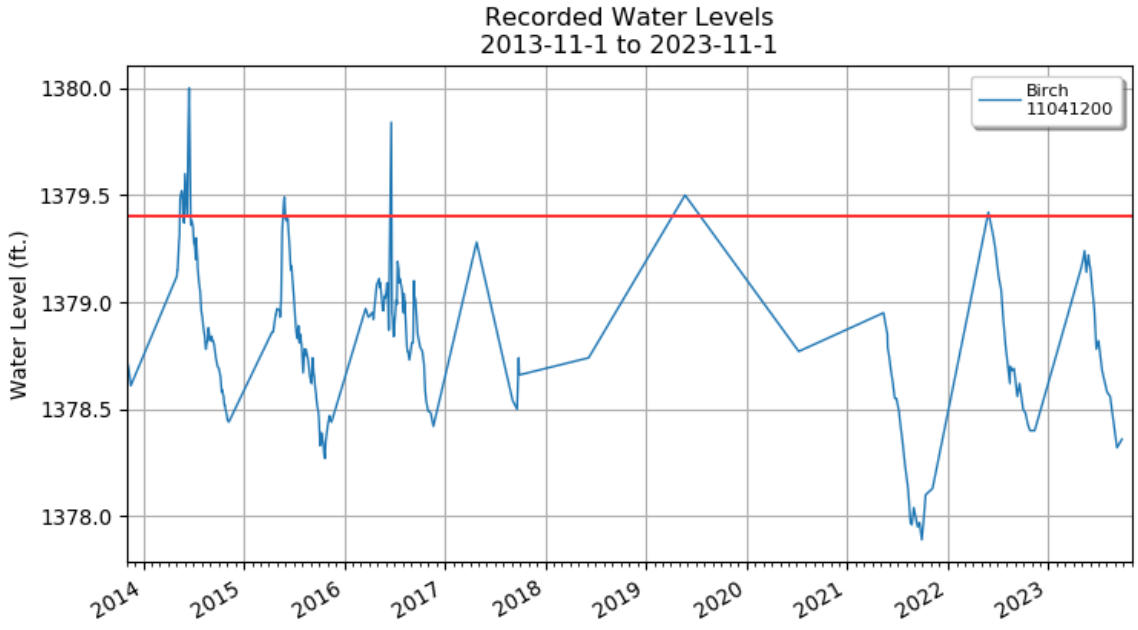
This above chart shows only Phosphorus, actual measured in our sample, not an index. It is highly variable, so it takes many years to have a valid trend line, as we have.

Although not a statistically significant trend, you can see it is slightly increasing over time.

The individual water quality measure to watch most closely is Phosphorus. Phosphorus is a limiting nutrient, meaning the more phosphorus is available, the more plants and algae there will be in the lake.

Major sources of phosphorus include human and animal wastes, soil erosion, detergents, septic systems and runoff from fertilized lawns. We encourage all of our Birch Lake Association members to do whatever they can to control sources of contamination to our lake water.

Birch Lake Water Level, 2023



--- OHW, Ordinary High-Water Level.

Thanks to BLA Member, Fred Karlisch
for taking these measurements in recent years.

Aquatic Invasive Species Report, 2023

We do not identify every species of aquatic plants/animals we find in Birch Lake. But, we CAN identify the below **AIS.** So, our approach is to go looking for these (which we did NOT find in the 2023 surveys):

Eurasian Watermilfoil

Starry Stonewart

Curly-leaf Pondweed.

Hydrilla

Zebra Mussel

Aquatic Invasive Species Report, cont.

- We have conducted Aquatic Invasive Species (AIS) sampling, focused near the public access, but also throughout the lake. There is still no evidence of AIS in Birch Lake.
- Our Zebra Mussel veliger net sampling had negative results for the 4th straight year. Members continue to monitor Zebra tubes, dock post and lifts, and have reported no zebra mussels this year.
- No detected AIS Plants is a great thing, but we have seen a noticeable increase in a plant we first found last year on the northwest side of the big island, and it has now really taken off in many areas of Birch Lake. Our samples were reviewed by Cass County AIS specialists and confirmed it is NOT AIS. It is either Small Pondweed or Leafy Pondweed, both are native plants, most likely been here longer than any of us. Cass County lakes have reported increased native aquatic plant growth (weeds). It's possible low rainfall and fewer storm events in the previous year have contributed to clearer water (our Secci Disk was 14feet in June this year). Maybe our native Pondweeds are thrilled to have more sunlight through the clearer water. We expect weed growth/decline to be cyclical.

Aquatic Invasive Species Report, cont.

Open Water Zebra Mussel Veliger Sampling at Birch Lake

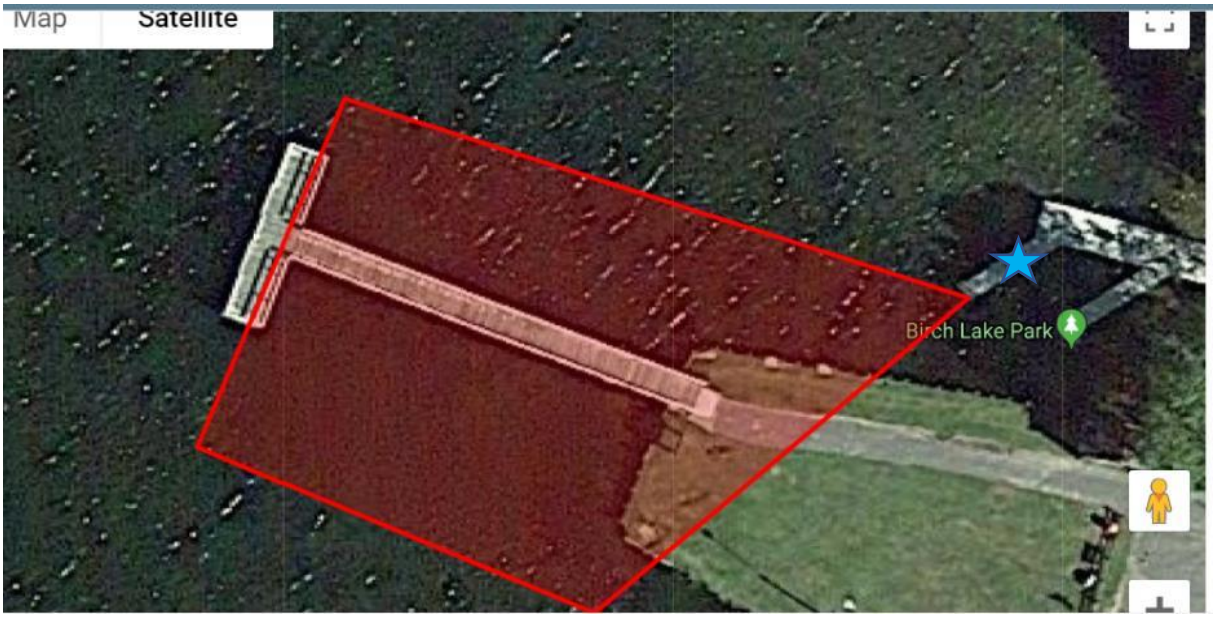
- Samples from (3) locations in Birch Lake, using a Plankton net.
- Locations were roughly 15 feet deep, net dropped to 10 feet from surface, vertically towed upward and concentrated into a single sample.
- The lab evaluation by RMB Labs found no evidence of Zebra mussel veligers.

This is an encouraging result, considering Ten Mile Lake (zebras first detected in 2019) can still detect some zebra mussel veligers using this same test method.

Aquatic Invasive Species Report, cont.

AIS Survey at Birch Lake public access and fishing pier

- Below is the survey area we have used for (4) consecutive years.
- Survey area covered by (9) “rake-throws” within the area, sampling the aquatic plants.
- The blue star shows where a Zebra Mussel tube sampler has been hung, each year, below public dock. No sign of mussels found in this survey.



Aquatic Invasive Species Report, cont.

Zebra Mussel Sampling Devices in Birch Lake

The yellow star locations indicate where a BLA volunteer is maintaining a sampling device, and carefully checking it for Zebra mussels. These results are documented in the DNR's database at the end of summer.

We will use this history to pinpoint the time and location of any future Zebra mussel infestation, giving us a better chance to take control actions.

Devices include PVC tubes suspended off lake bottom or cement blocks submerged in the lake. Keep in mind, many structures in the lake can be used to detect Zebra Mussels, including: Dock posts, boat-lifts, rafts, buoy anchors, and natural rocks that are submerged

Fisheries Report, 2023

Birch Lake fisheries are managed by the MnDNR primarily for Walleye and Northern Pike. Walleye fingerlings have been stocked every other year and appear to be contributing to the population.

The MnDNR conducted a survey in 2023, including gill nets and trap nets. The next previous survey was 2018:

2018 MnDNR Netting, Number of Fish and Size Categories

		Number of fish caught in each category (inches)								
Species	Total	0-5"	6-7"	8-9"	10-11"	12-14"	15-19"	20-24"	25-29"	30-34"
bluegill	213	107	104	2						
northern pike	204				10	30	103	38	21	2
yellow bullhead	156	1	12	56	81	6				
black crappie	41	17	4	8	11	1				
walleye	39				1	4	19	12	3	
pumpkinseed	31	8	23							
largemouth bass	29	2	5	4	13	4	1			
rock bass	16	3	5	7	1					
brown bullhead	10			3	2	5				
yellow perch	10	1	6	3						
black bullhead	4			1	1	2				
bowfin (dogfish)	4							3	1	

*** 2023 MnDNR Netting, Number of Fish and Size Categories (DRAFT)**

		Number of fish caught in each category (inches)								
Species	Total	0-5"	6-7"	8-9"	10-11"	12-14"	15-19"	20-24"	25-29"	30-34"
bluegill	229	86	136	7	0	0	0	0	0	0
northern pike	177	0	0	1	4	39	108	19	5	1
yellow bullhead	103	0	5	40	55	3	0	0	0	0
black crappie	59	26	16	11	5	1	0	0	0	0
walleye	26	0	0	1	1	3	13	8	0	0
pumpkinseed	78	29	49	0	0	0	0	0	0	0
largemouth bass	19	0	0	2	4	10	3	0	0	0
rock bass	20	9	4	6	1	0	0	0	0	0
brown bullhead	9	0	1	2	5	1	0	0	0	0
yellow perch	4	1	2	1	0	0	0	0	0	0
White Sucker	4	0	0	0	0	0	4	0	0	0
Hybrid Sunfish	4	0	2	2	0	0	0	0	0	0

* Unofficial results the MnDNR shared with BLA Volunteers who helped with the survey.

Fisheries Report, cont.

Thanks to Rick Zaske, Birch Lake Association Board Member, and MnDNR's primary contact for their fisheries activities on our lake. See below the observations by Rick, making sense of the historical netting surveys and MnDNR fisheries' walleye stocking strategy:

MnDNR has tried increasing Walleye stocking in past years, but the results were overall walleye numbers did not increase enough to warrant continuing increased stocking numbers. Possibly their food, young crappies etc., was decreasing not allowing the walleyes to grow with normal speed.

We need to catch-n-keep Northerns. Catch-n-pickle, catch-n-fillet taking out the Y bones, they make "good eating" when all of the bones are removed, find ways to utilize our large population of Northerns! BLA encourages catch-n-release (except for Northerns, which are in excess) in Birch Lake.

Recent Walleye Stocking History			
Year	Size	Number	Pounds
2022	yearlings	850	170
	fingerlings	15,165	584
2020	fingerlings	15,033	755
2018	adults	4	4
	yearlings	96	49
	fingerlings	6,875	760
2016	adults	583	511
	fingerlings	11,145	689
	fingerlings	10,841	482
	yearlings	19	10
2014	fingerlings	27,779	1,509

Loon Watch Report, 2023

Thanks to Jackie Schumacher, Birch Lake Association Board Member, and MnDNR's primary contact for the Loon Restoration Project on our lake. The following is Jackie's 2023 Report:

In the fall of 2022, the BLA Association was invited to participate with the MN Loon Restoration Project. As part of that program, we received funding to build two new Artificial Nest Platforms (ANP). The MLRP chose the locations for the two new nests based on previous use, natural nest placement and …. Mark Larison repaired our original ANP and built 2 new ones.

April 29 – First loons reported. Ice would not completely go out until May 2.

May 4th - All (3) artificial Nest Platforms were placed with guidance and financial assistance from the MN Loon Project.

May 23 Natural nest observed on the little island
June 17, one chick with an adult near the little island. Chick appears to be less than 48 hours old. Parents and chick are seen frequently in their typical nursery area. We believe it successfully fledged in September or October.

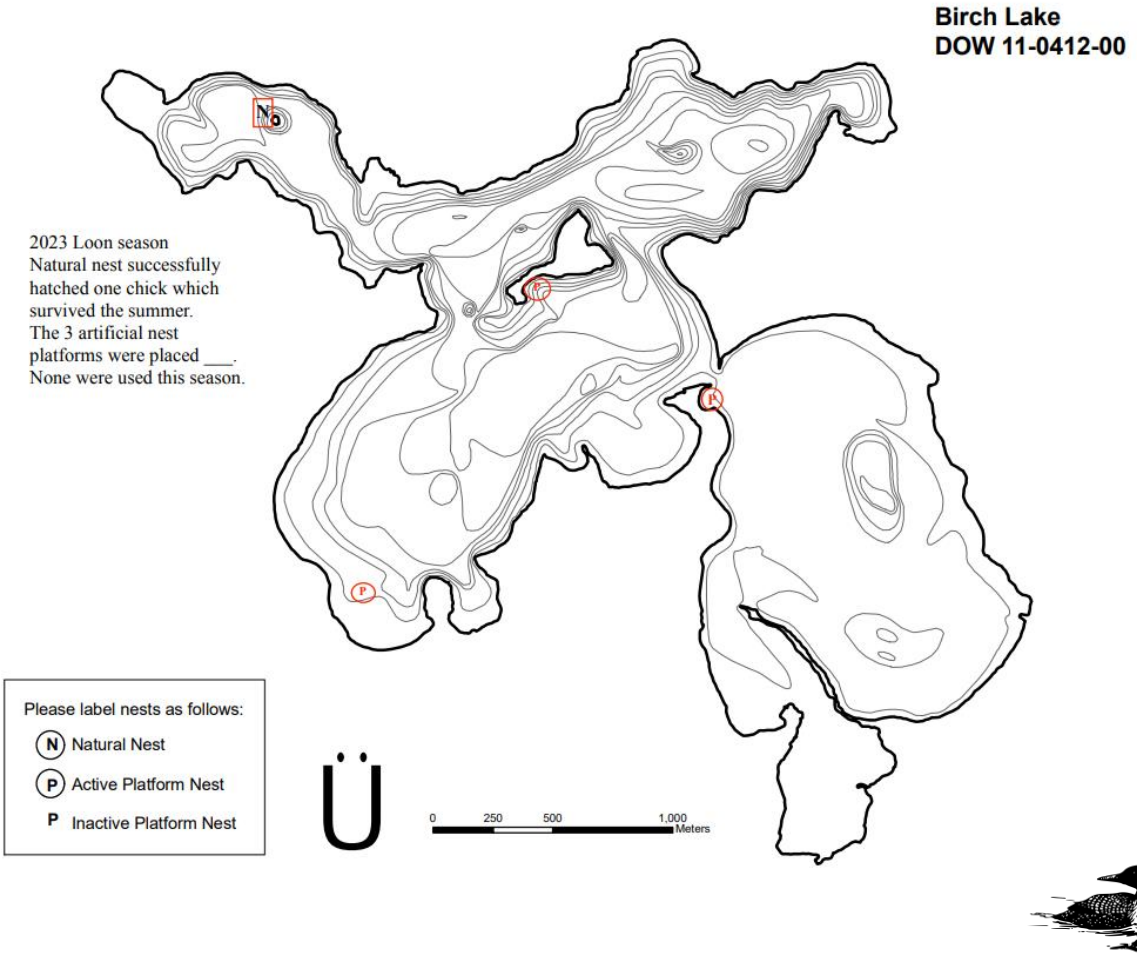
Birch Lake seemed to have a typical number of loons all summer, 6 to 8. They were however much more dispersed than what we usually observe. It was not unusual to see 5 or 6 individual loons on a lake cruise. This is probably because there were no other successful nests.

We will deploy the same 3 Artificial Nest Platforms again in 2024. It is not unusual for ANPs to be in place for a year or two before they are used.

Loon Watch Report, cont.

Artificial Nesting Platforms on Birch Lake

The MnDNR has funded material cost reimbursement for (2) new loon nesting platforms, as part of the BP Gulf Oil Spill recovery. MnDNR is looking to increase successful nesting in Minnesota. Birch Lake was selected as Loon-Friendly lake, for our environmental features as well as our history with the Loon Watch program.



Purple Martin Nesting Report, 2023

by Gary Martin,
Birch Lake Association Board Member

A little history and background first:
The house was put up between 2006-2008, I think. We got birds the very first year.

The 'scouts' arrive between April 15-25, depending on the year. They are coming earlier every year. These 'scouts' are mature males. The mature females come shortly after. The mature females usually lay 6 eggs. The immature females lay 4 or 5 eggs.

This year, all Boxes and Gourds had some eggs by June1st. There were 92 eggs when I counted in early July. Many were already hatched and some about ready to fly.

The Martins left around August 1-10, this was a little early. When I checked all the nests and took them out to clean there were 2 unhatched eggs.

We put 90 young Martins on their migration to Brazil. In Brazil there is less habitat every year. The Brazilian government is letting developers tear down the Amazon forest to make more farm land.

The good news is we are in the process of putting up another Martin house. We hope to fill that next summer.

So, next summer, if you have a few extra minutes, sit on one of the benches and listen to the Martins sing. To quote a famous Minnesotan, it may "level your head and ease your mind."

Have a safe, happy and healthy fall and winter.

Gary Martin
P.S. Purple Website. Lots of info:
https://www.allaboutbirds.org/guide/Purple_Martin/overview#

Beaver Control Report, 2023

From Birch Lake Association, Lake Management Plan:

Wildlife, Beaver Population / Dam Management

Objective: Maintain control of population, within the guidance of MN-DNR and Cass County authorities.

In 2023, our Birch Lake Association spent $450 with a local, licensed contractor to reduce excessive beaver population.