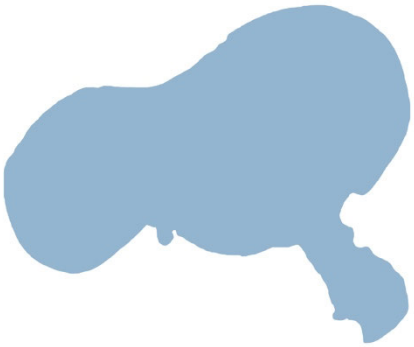
2024 YEAR END REPORT

BIG SAND LAKE

PREPARED BY:
Emelia Thielman, RMB Lakes Program Coordinator

BIG SAND LAKE 29-0185-00



Big Sand Lake is located eight miles northeast of Park Rapids, Minnesota. It covers 1,659 acres and has a mostly round shape.

Big Sand Lake has two inlets and one outlet, which classifies it as a drainage lake. The inlets enter from Emma Lake and a wetland area. The outlet is located at the south end of the lake, and flows through Ida Lake into Little Sand Lake. From Little Sand Lake, the water flows through many other lakes, and ends up draining into the Crow Wing River.

Water quality data have been collected on Big Sand Lake since 1975 (Table 3). These data show that the lake is oligotrophic, which is characterized by clear water throughout the summer and excellent recreational opportunities.

The Big Sand Lake Association was formed during the summer of 1988 and is "dedicated to the betterment and preservation of Big Sand Lake." They are active in many projects, including water quality monitoring, safety buoys, a newsletter, a resident directory, and social activities. They are also a member of the Hubbard County Coalition of Lake Associations (HCCOLA).

Table 1. Big Sand Lake location data and key physical characteristics.

LOCATION DATA		PHYSICAL CHARACTERISTICS	
MN Lake ID:	29-0185-00	Surface Area:	1,659 acres
County:	Hubbard	Littoral Area:	465 acres (28%)
Ecoregion:	Northern Lakes & Forests	Maximum Depth:	135 ft
Major Drainage Basin:	Upper Mississippi River	Inlets:	2
Latitude / Longitude:	47.001111 / -94.967500	Outlets:	1
Invasive Species:	None as of 2024	Public Accesses:	1

Table 2. Data availability for Big Sand Lake.

DATA AVAILABILITY		
Transparency Data	✓	Excellent data set through the Citizens Lake Monitoring Program.
Chemical Data	✓	Excellent data set through the RMB Lakes Monitoring Program.
Inlet / Outlet Data	✗	No inlet or outlet data exist for this lake.

LAKE MAP

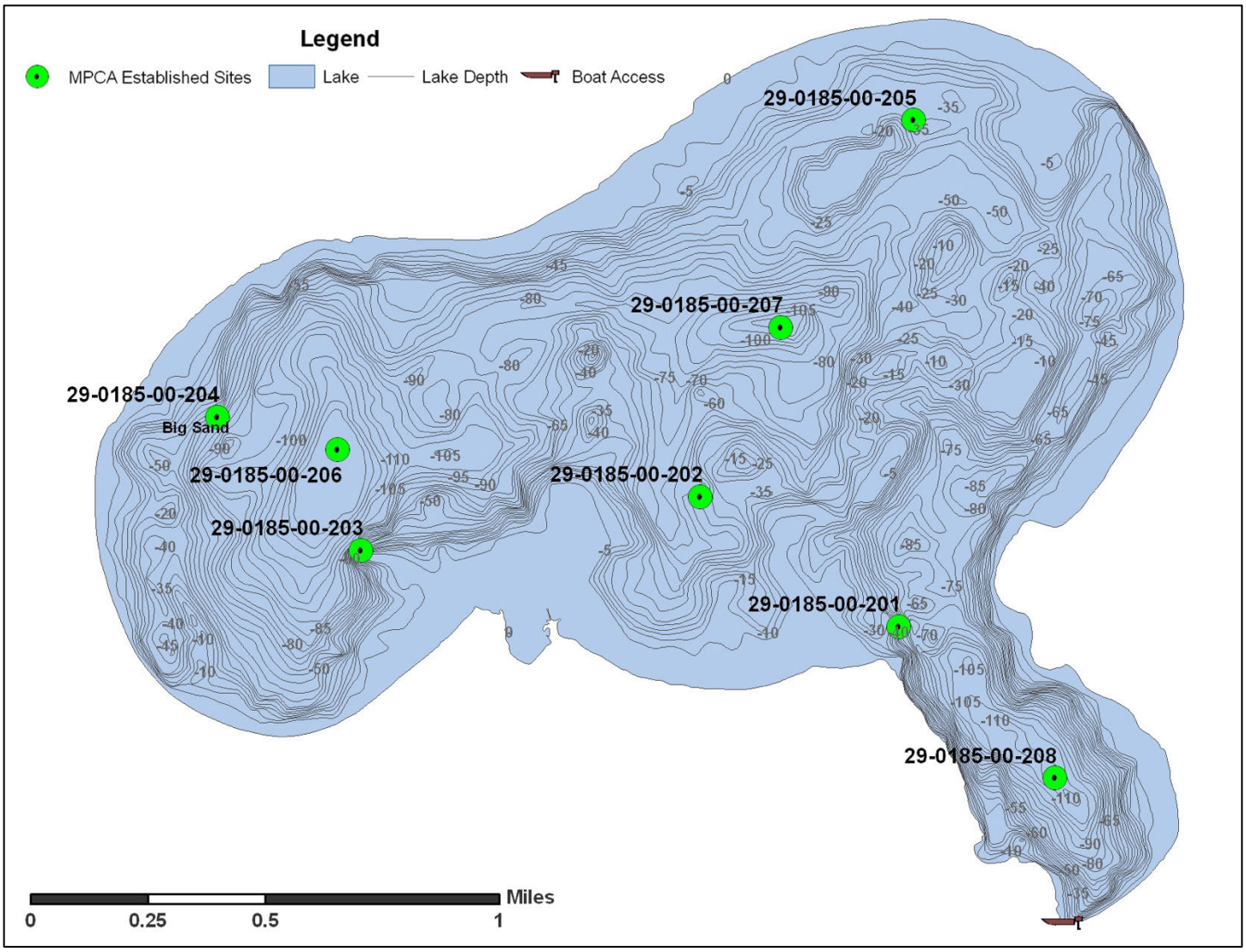


Figure 1. Map of Big Sand Lake showing established monitoring sites, lake depth, and boat accesses.

*Table 3. Monitoring programs and associated monitoring sites. Monitoring programs include the Citizens Lake Monitoring Program (CLMP) and RMB Environmental Laboratories Lakes Program (RMBEL). * Site 207 is the primary monitoring site.*

LAKE SITE	DEPTH (FT)	MONITORING PROGRAMS
201	45	CLMP: 1975
202	40	CLMP: 1987 - 1994, 2003, 2022 - 2023
203	35	CLMP: 1987 - 2003, 2008 - 2010
204	65	CLMP: 1989 - 2008
205	35	CLMP: 1990 - 2002
206	130	CLMP: 1994 - 2023
207*	**110**	**CLMP: 1994 - 2011; RMBEL: 1998 - 2024**
208	110	CLMP: 1994 - 2023

WATER QUALITY CHARACTERISTICS

Table 4. Water quality means and ranges for Big Sand Lake primary site 207 from 1998 to 2024.

PARAMETER	TOTAL PHOSPHORUS	CHLOROPHYLL *A*	SECCHI DEPTH
Range:	<5 – 22 ug/L	<1 – 9 ug/L	8 – 45.5 ft
Observations:	136	135	132
Mean:	8.1 ug/L	2.1 ug/L	22.1 ft

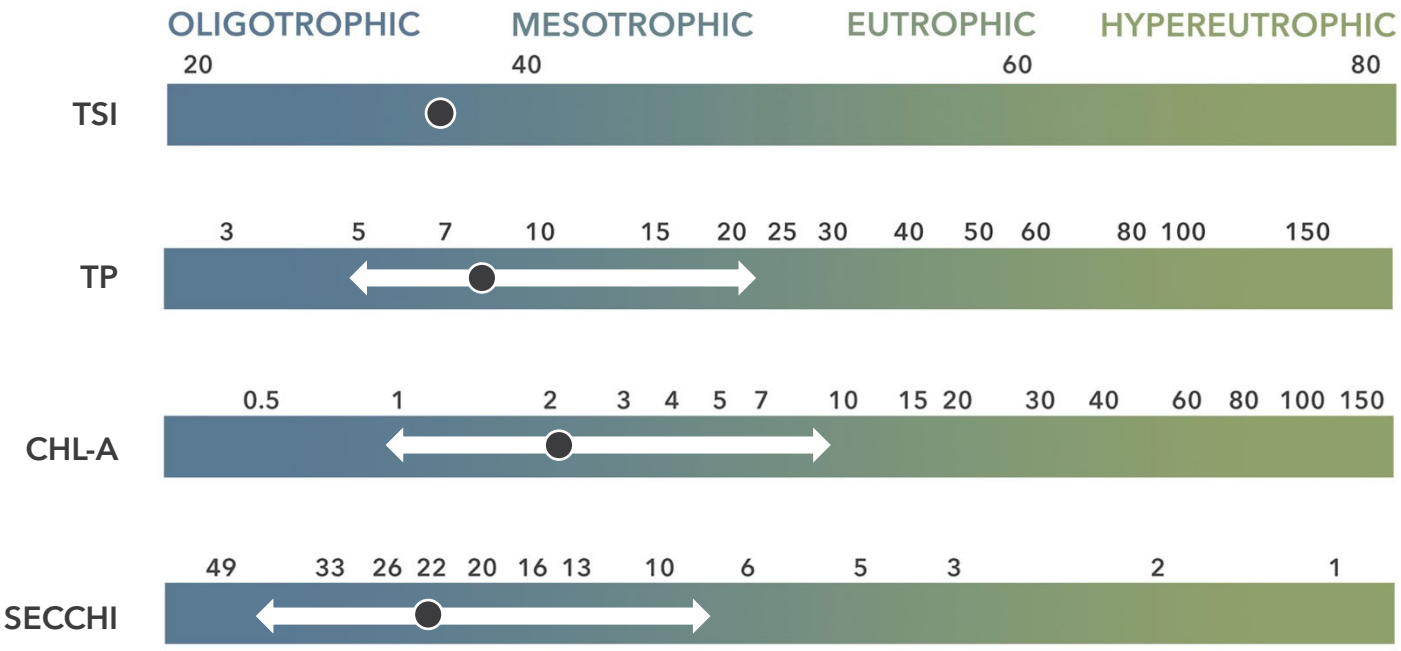


Figure 2. Big Sand Lake total phosphorus, chlorophyll-a, and transparency historical ranges for primary site 207 from 1998 - 2024. The arrow represents the range, and the black dot represents the historical mean.

TRANSPARENCY (SECCHI DEPTH)

Transparency is how easily light can pass through a substance. In lakes it is how deep sunlight penetrates through the water. Plants and algae need sunlight to grow, so they are only able to grow in areas of lakes where the sun penetrates. Water transparency depends on the amount of particles in the water. An increase in particulates results in a decrease in transparency. The transparency varies year to year due to changes in weather, precipitation, lake use, flooding, temperature, lake levels, etc.

For years 1975 to 2023 at multiple sites there is evidence of improving water clarity in Big Sand Lake, of approximately 3.2 feet per decade. For the most recent year of the analysis, median water clarity was 6.89 feet higher than the watershed median. The transparency pattern is somewhat unique in Big Sand Lake, as the annual mean transparencies were low in the 1990s and very high in the 2000s (Figure 3). Transparency monitoring should be continued at sites 202, 206, 207, and 208 to track water quality in Big Sand Lake.

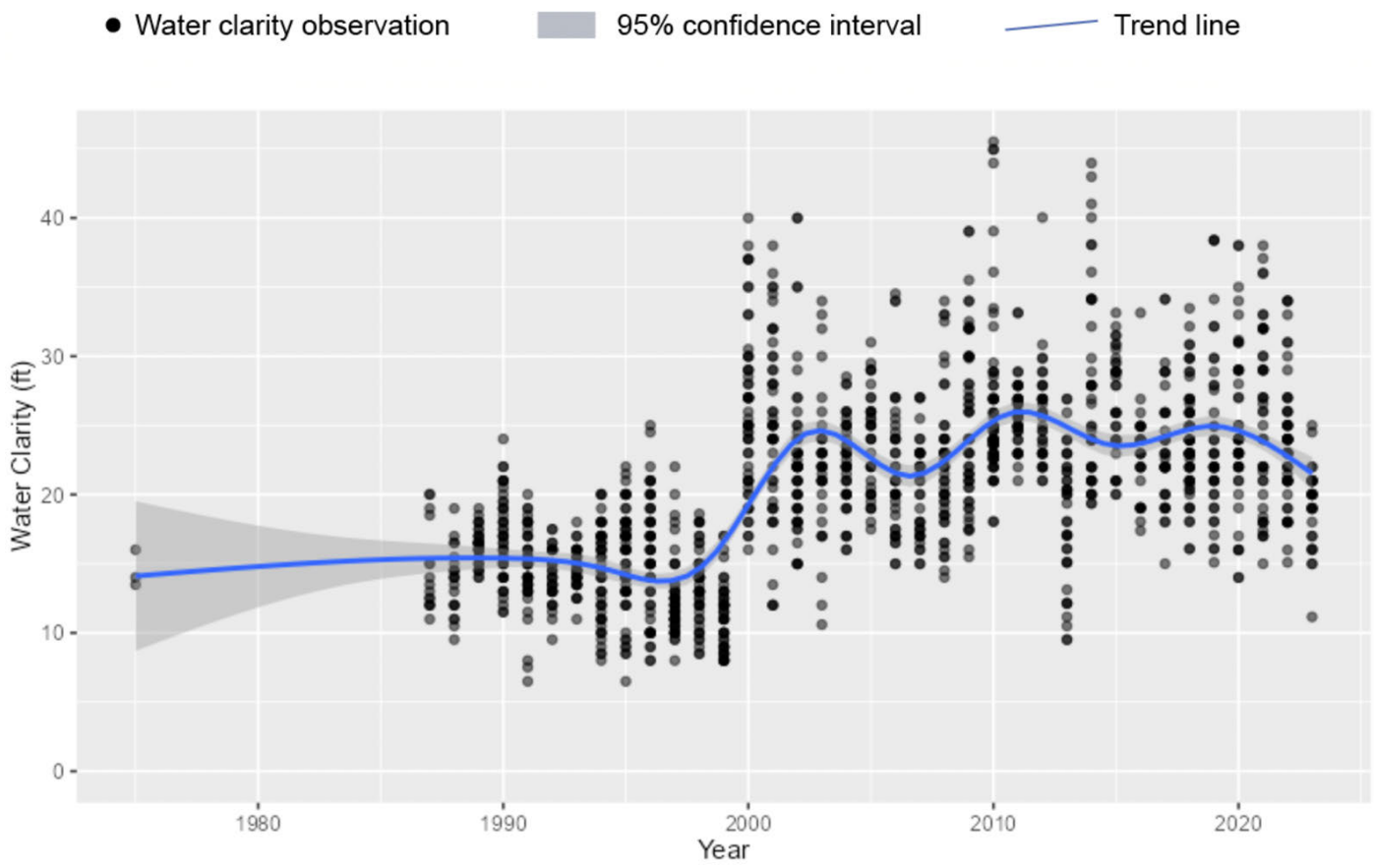


Figure 3. Historical water clarity data for multiple sites in Big Sand Lake from 1975 - 2023, MPCA.

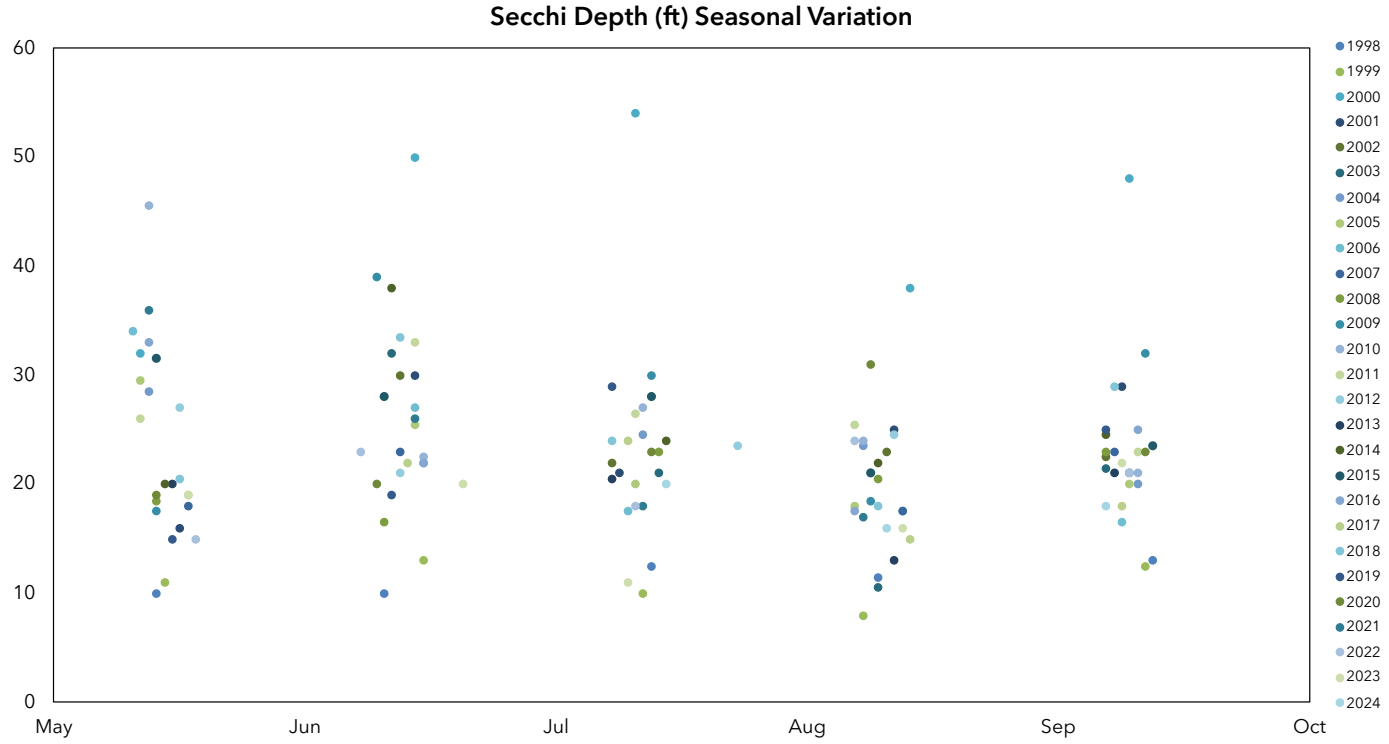


Figure 4. Historical transparency (ft) from 1998 - 2024 at site 207 for Big Sand Lake.

Big Sand Lake transparency ranges from 8 to 45.5 feet at site 207 throughout the summer. Figure 4 shows the seasonal transparency dynamics. The maximum Secchi reading is usually obtained in early summer. Big Sand Lake transparency is high in May and June and depending on the year, may decline slightly through August. When transparency was measured in late September and October the transparency rebounded. The dynamics have to do with algae and zooplankton population dynamics and lake turnover.

It is important for lake residents to understand the seasonal transparency dynamics in their lake so they are not worried about why their transparency is lower in August than it is in June. It is typical for a lake to vary in transparency throughout the summer.

USER PERCEPTIONS

When volunteers collect Secchi depth readings, they record ratings of their perceptions of the water on a scale from 1 (best) to 5 (worst) based on the lake's physical appearance and the recreational suitability. These perceptions can be compared to water quality parameters to see how the lake user would experience the lake at that time.

Looking at transparency data, as the Secchi depth decreases, the perception of the lake's physical appearance rating decreases. Big Sand Lake site 207 was rated as being "clear" 55% of the time from 1995 - 2024 (Figure 5).

As the Secchi depth decreases, the perception of recreational suitability of the lake decreases. Big Sand Lake site 207 was rated as being "very good" 83% of the time from 1995 - 2024 (Figure 6).

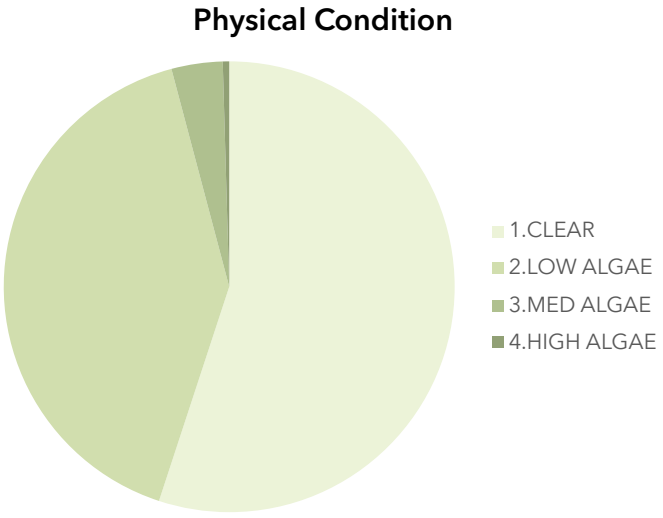


Figure 5. Physical condition rating for Big Sand Lake, as rated by volunteer monitors.

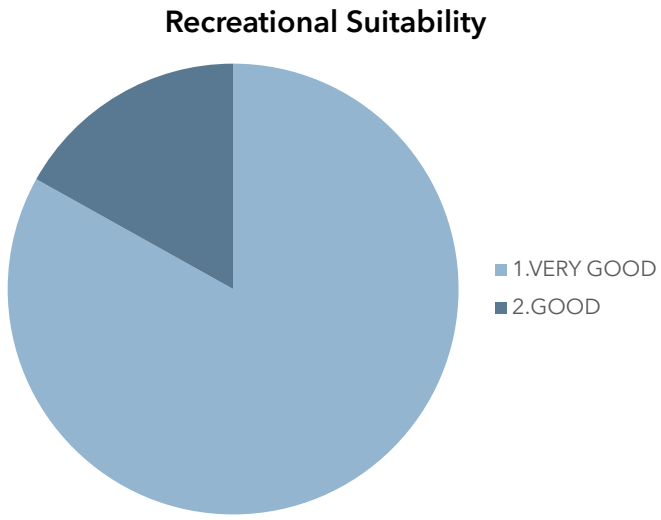


Figure 6. Recreational suitability rating for Big Sand Lake, as rated by volunteer monitors.

TOTAL PHOSPHORUS

Big Sand Lake is phosphorus limited, which means that algae and aquatic plant growth is dependent upon available phosphorus.

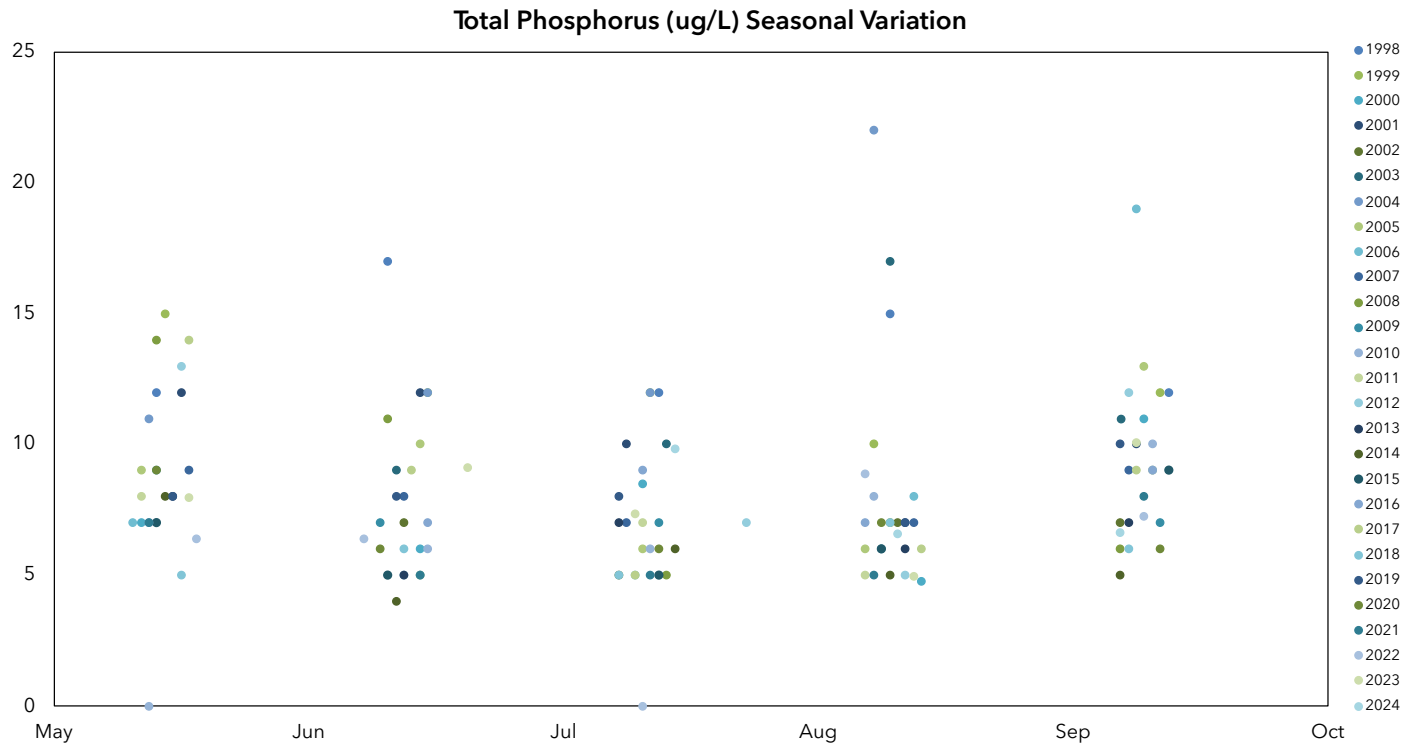


Figure 7. Historical total phosphorus concentrations (ug/L) from 1998 - 2024 at site 207 for Big Sand Lake.

Total phosphorus was evaluated in Big Sand Lake from 1998 – 2024 (Figure 7). Most of the data points fall into the oligotrophic range. There is not much seasonal variation in the phosphorus concentration for Big Sand Lake. Phosphorus should continue to be monitored to track any future changes in water quality.

CHLOROPHYLL *A*

Chlorophyll *a* is the pigment that makes plants and algae green. Chlorophyll *a* is tested in lakes to determine the algae concentration, or how "green" the water is.

Chlorophyll *a* concentrations greater than 10 ug/L are perceived as a mild algae bloom, while concentrations greater than 20 ug/L are perceived as a nuisance.

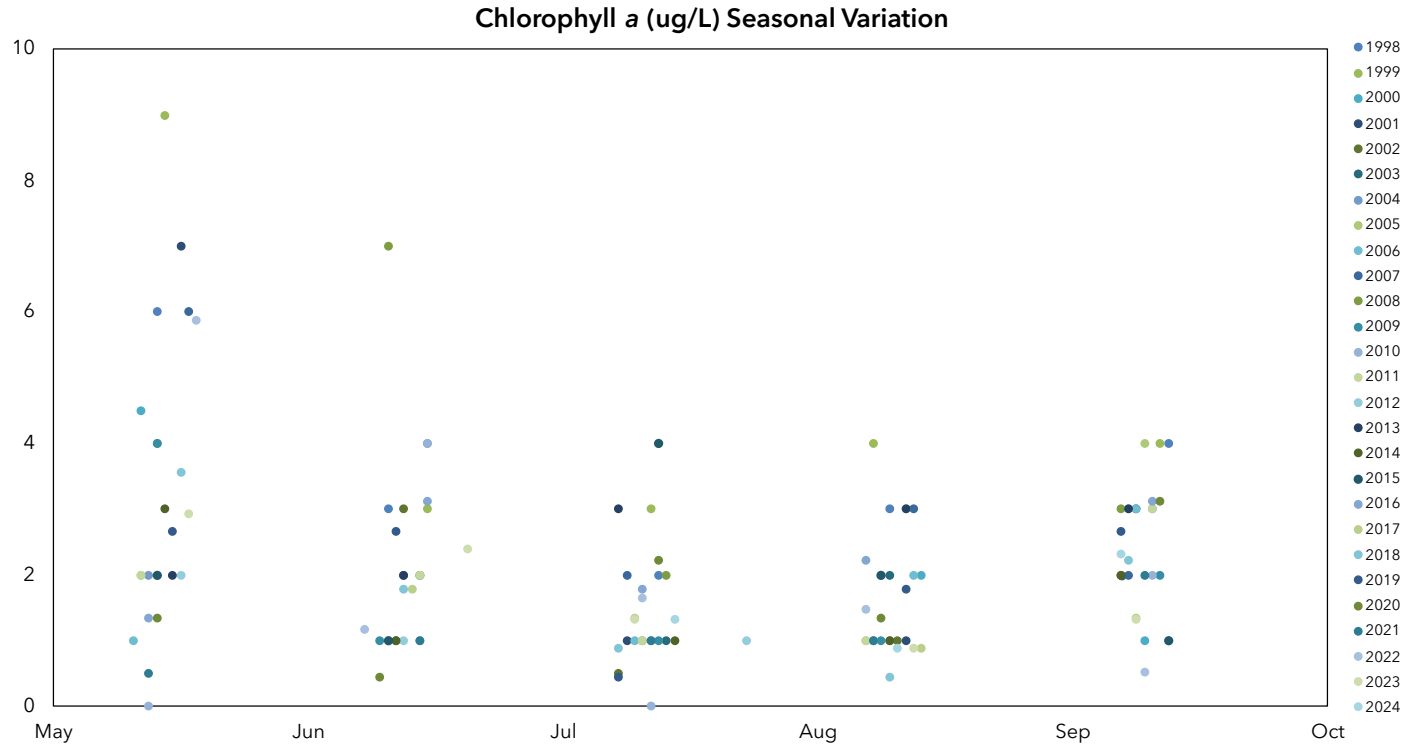


Figure 8. Historical chlorophyll-a concentrations (ug/L) from 1998 - 2024 at site 207 for Big Sand Lake.

Chlorophyll *a* was evaluated in Big Sand Lake from 1998 - 2024 (Figure 8). Concentrations have consistently remained below 10 ug/L, indicating clear water all summer and no nuisance algae blooms. Chlorophyll *a* should continue to be monitored to track any future changes in water quality.

TROPHIC STATE INDEX

Phosphorus (nutrients), chlorophyll *a* (algae concentration), and Secchi depth (transparency) are related. As phosphorus increases, there is more food available for algae, resulting in increased algal concentrations. When algal concentrations increase, the water becomes less transparent and the Secchi depth decreases.

The results from these three measurements cover different units and ranges and thus cannot be directly compared to each other or averaged. In order to standardize these three measurements to make them directly comparable, they are converted to a trophic state index (TSI).

Figure 9. Mean Trophic State Index (TSI = 34) for Big Sand Lake at site 207.

The mean TSI for Big Sand Lake falls into the oligotrophic range (Figure 9). There is good agreement between the TSI for phosphorus, chlorophyll *a*, and transparency, indicating that these variables are strongly related.

Oligotrophic lakes are characteristic of clear water throughout the summer and are excellent for recreation (Table 5). They have very low nutrient levels and sandy/rocky shores. If there is enough hypolimnetic oxygen, trout can survive.

Table 5. Trophic State Index attributes and their corresponding fisheries and recreation characteristics. Adapted from: Carlson, R.E. 1997. A trophic state index for lakes. Limnology and Oceanography. 22:361-369.

TSI	ATTRIBUTES	FISHERIES & RECREATION
< 30	**Oligotrophy:** Clear water, oxygen throughout the year at the bottom of the lake, very deep cold water.	Trout fisheries dominate.
30 - 40	Bottom of shallower lakes may become anoxic (no oxygen).	Trout fisheries in deep lakes only. Walleye, Tullibee present.
40 - 50	**Mesotrophy:** Water moderately clear most of the summer. May be "greener" in late summer.	No oxygen at the bottom of the lake results in loss of trout. Walleye may predominate.
50 - 60	**Eutrophy:** Algae and aquatic plant problems possible. "Green" water most of the year.	Warm-water fisheries only. Bass may dominate.
60 - 70	Blue-green algae dominate, algal scums and aquatic plant problems.	Dense algae and aquatic plants. Low water clarity may discourage swimming and boating.
70 - 80	**Hypereutrophy:** Dense algae and aquatic plants.	Water is not suitable for recreation.
> 80	Algal scums, few aquatic plants.	Rough fish (carp) dominate; summer fish kills possible.

TREND ANALYSIS

For detecting trends, a minimum of 8-10 years of data with 4 or more readings per season are recommended. Minimum confidence accepted by the MPCA is 90%. This means that there is a 90% chance that the data are showing a true trend and a 10% chance that the trend is a random result of the data. Only short-term trends can be determined with just a few years of data, because there can be different wet years and dry years, water levels, weather, etc., that affect the water quality naturally.

There is enough historical data to perform trend analysis for total phosphorus, chlorophyll *a*, and transparency on Big Sand Lake (Table 6). The data was analyzed using the Mann Kendall Trend Analysis.

Table 6. Trend analysis for Big Sand Lake.

LAKE SITE	PARAMETER	DATE RANGE	TREND	PROBABILITY
207	Transparency	1998 – 2024	No trend	N/A
207	Total Phosphorus	1998 – 2024	Improving	99.9%
207	Chlorophyll *a*	1998 – 2024	Improving	99%

ECOREGION COMPARISONS

Minnesota is divided into 7 ecoregions based on land use, vegetation, precipitation, and geology (Figure 10). The MPCA has developed a way to determine the "average range" of water quality expected for lakes in each ecoregion. From 1985-1988, the MPCA evaluated the lake water quality for reference lakes. These reference lakes are not considered pristine, but are considered to have little human impact and therefore are representative of the typical lakes within the ecoregion. The "average range" refers to the 25th - 75th percentile range for data within each ecoregion.

Big Sand Lake is located in the Northern Lakes and Forests Ecoregion.

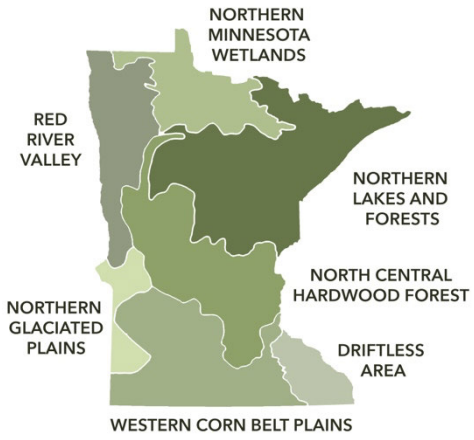


Figure 10. Map of Minnesota ecoregions.

Table 7. Big Sand Lake compared to Northern Lakes and Forest Ecoregion ranges.

PARAMETER	ECOREGION RANGE	BIG SAND LAKE
Secchi Depth	8 – 15 ft	Better Than Expected Range
Total Phosphorus	14 – 27 ug/L	Better Than Expected Range
Chlorophyll *a*	< 10 ug/L	Within Expected Range

LAKESHED

Understanding a lakeshed requires an understanding of basic hydrology. A watershed is defined as all land and water surface area that contribute excess water to a defined point. The MN DNR has delineated three basic scales of watersheds (from large to small): 1) basins, 2) major watersheds, and 3) minor watersheds.

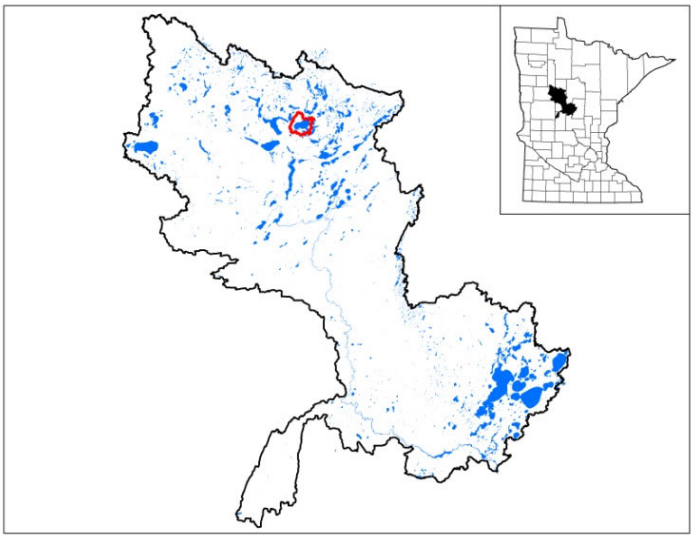


Figure 11. Crow Wing River Watershed

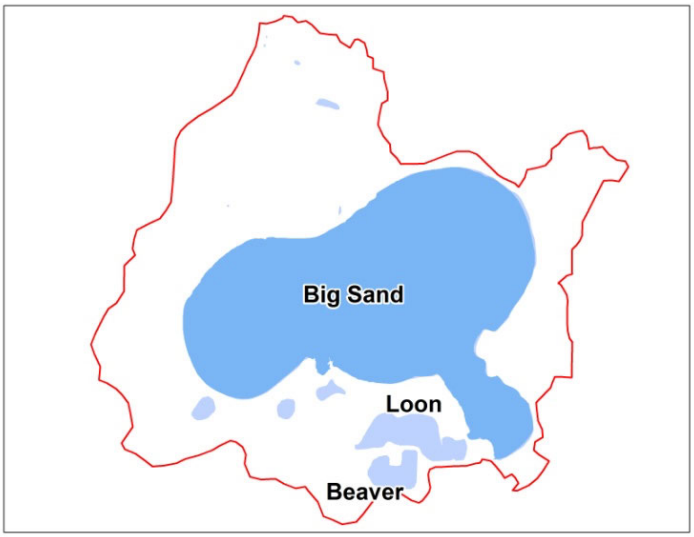


Figure 12. Minor watershed 12015

The Crow Wing River Major Watershed is one of the watersheds that make up the Upper Mississippi River Basin, which drains south to the Gulf of Mexico (Figure 11). This major watershed is made up of 136 minor watersheds. Big Sand Lake is located in minor watershed 12015 (Figure 12).

The MN DNR also has evaluated catchments for each individual lake with greater than 100 acres surface area. These lakesheds (catchments) are the "building blocks" for the larger scale watersheds. Big Sand Lake falls within the Big Sand (1201500) lakeshed (Figure 13). Though very useful for displaying the land and water that contribute directly to a lake, lakesheds are not always true watersheds because they may not show the water flowing into a lake from upstream streams or rivers. While some lakes may have only one or two upstream lakesheds draining into them, others may be connected to a large number of lakesheds, reflecting a larger drainage area via stream or river networks.

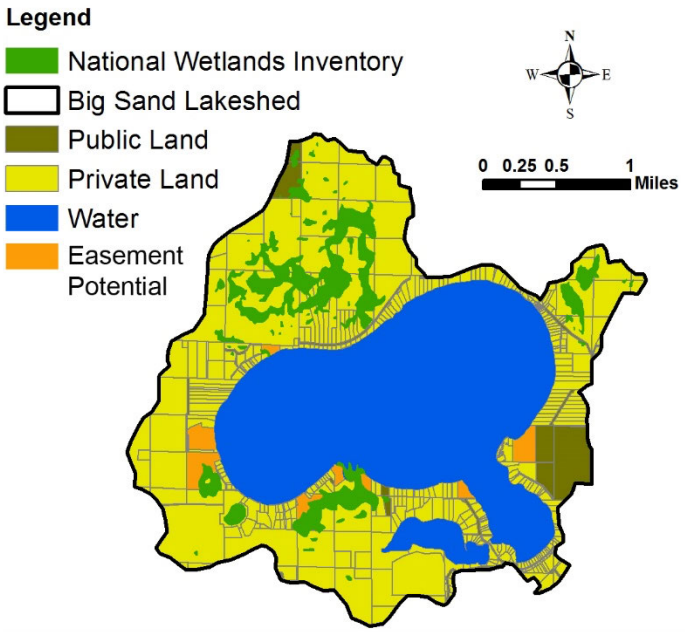


Figure 13. Big Sand lakeshed (1201500) with land ownership, lakes, wetlands, and rivers illustrated.

The lakeshed vitals table (Table 8) identifies where to focus organizational and management efforts for the lake. Criteria were developed using limnological concepts to determine the effect to lake water quality.

- Possibly detrimental to the lake
- Warrants attention
- Beneficial to the lake
- Descriptive

Table 8. Big Sand Lake lakeshed vitals.

LAKESHED VITALS		RATING
Lake Area	1,636 acres	
Littoral Zone Area	465 acres	
Lake Max Depth	135 feet	
Lake Mean Depth	43.8 feet	
Miles of Stream	0.9	
Inlets	2	
Outlets	1	
Major Watershed	12 – Crow Wing River	
Minor Watershed	12015	
Ecoregion	Northern Lakes & Forests	
Total Lakeshed to Lake Area Ratio	3:1	
Standard Watershed to Lake Basin Ratio	22:1	
Wetland Coverage	8%	
Aquatic Invasive Species	None	
Public Drainage Ditches	None	
Public Lake Accesses	1	
Miles of Shoreline	8.3	
Shoreline Development Index	1.5	
Public Land to Private Land Ratio (excludes water)	0.07:1	
Development Classification	Recreational Development	
Miles of Road	17.5	
Municipalities in Lakeshed	None	
Forestry Practices	Hubbard County Forest Resources Mgmt. Plan	
Feedlots	None	
Sewage Management	Individual waste treatment systems	
Lake Management Plan	Healthy Lakes & Rivers Partnership, 2003	
Lake Vegetation Survey / Plan	October 2023	

LAND COVER

The activities that occur on the land within the lakeshed can greatly impact a lake. Land use planning helps ensure the use of land resources in an organized fashion so that the needs of the present and future generations can be best addressed. The basic purpose of land use planning is to ensure that each area of land will be used in a manner that provides maximum social benefits without degradation of the land resource.

Changes in land use, and ultimately land cover, impact the hydrology of a lakeshed. Land cover is also directly related to the land's ability to absorb and store water rather than cause it to flow overland (gathering nutrients and sediment as it moves) towards the lowest point, typically the lake. Impervious intensity describes the land's inability to absorb water, the higher the percentage impervious intensity the more area that water cannot penetrate into the soils. Monitoring the changes in land use can assist in future planning procedures to address the needs of future generations.

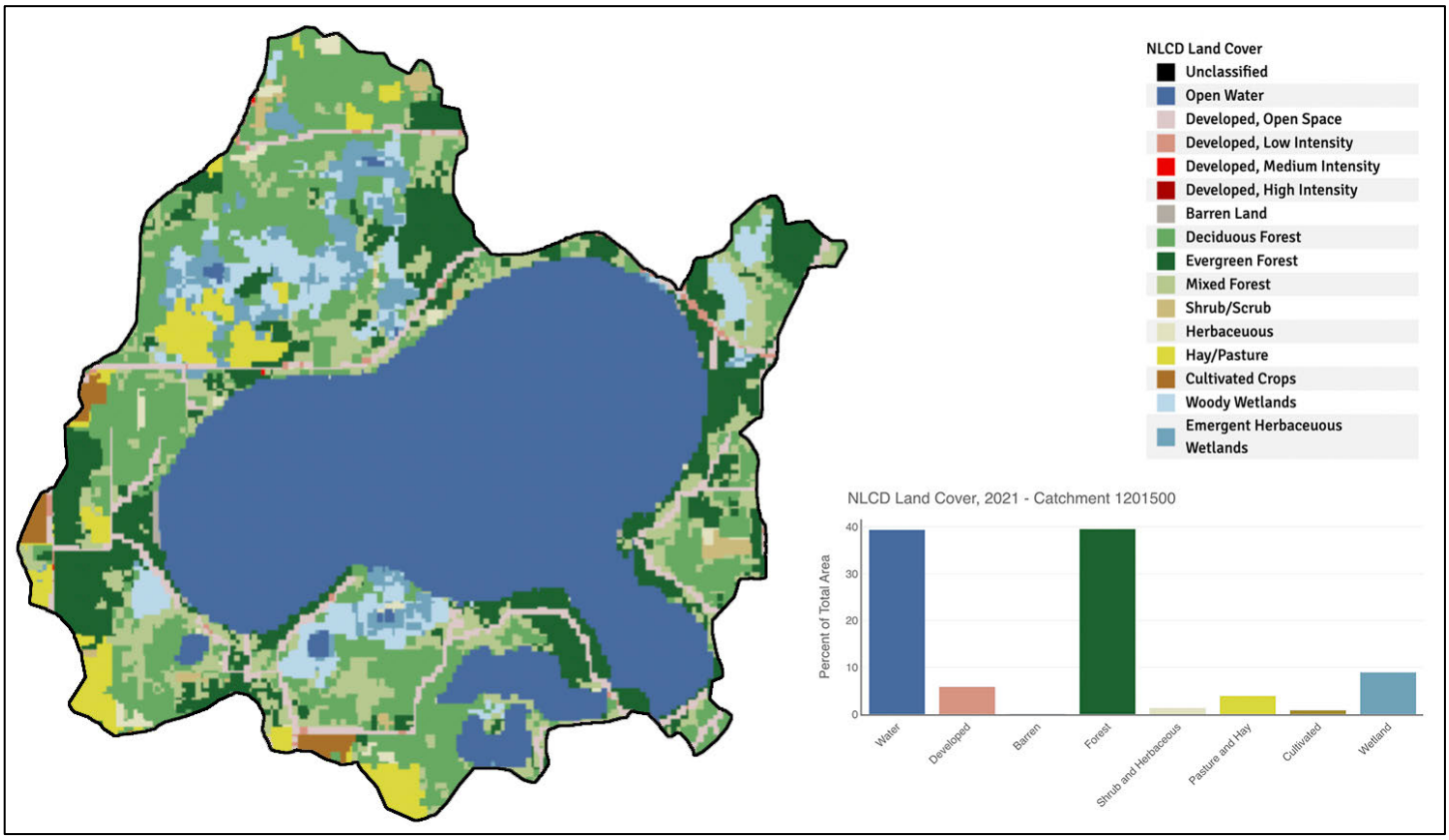


Figure 14. Map and graph showing land cover in the Big Sand Lakeshed (1201500), NLCD 2021.

LAKESHED WATER QUALITY PROTECTION STRATEGY

Each lakeshed has a different makeup of public and private lands. Looking in more detail at the makeup of these lands can give insight on where to focus protection efforts. The protected lands (easements, wetlands, public land) are the future water quality infrastructure for the lake. Developed land and agricultural lands contribute the largest amount of phosphorus through runoff, so this land should be minimized for water quality protection.

The majority of the land within Big Sand Lake's lakeshed (1201500) is made up of private forested uplands (Figure 14). This land should be the focus of protection efforts in the lakeshed.

DNR FISHERIES APPROACH FOR LAKE PROTECTION AND RESTORATION

Credit: Peter Jacobson and Michael Duval, Minnesota DNR Fisheries

In an effort to prioritize protection and restoration efforts of fishery lakes, the MN DNR has developed a ranking system by separating lakes into two categories, those needing protection and those needing restoration. Modeling by the DNR Fisheries Research Unit suggests that total phosphorus concentrations increase significantly over natural concentrations in lakes that have watershed with disturbance greater than 25%. Therefore, lakes with watersheds that have less than 25% disturbance need protection and lakes with more than 25% disturbance need restoration (Table 9). Watershed disturbance was defined as having urban, agricultural and mining land uses. Watershed protection is defined as publicly owned land or conservation easement.

Table 9. Suggested approaches for watershed protection and restoration of DNR-managed fish lakes in Minnesota.

DISTURBED	PROTECTED	MANAGEMENT	COMMENTS
< 25%	> 75%	**Vigilance**	Sufficiently protected. Water quality supports healthy and diverse native fish communities. Keep public lands protected.
	< 75%	**Protection**	Excellent candidates for protection. Water quality can be maintained in a range that supports healthy and diverse native fish communities. Disturbed lands should be limited to less than 25%.
25-60%	N/A	**Full Restoration**	Realistic chance for full restoration of water quality and improvement in quality of fish communities. Disturbed land percentage should be reduced and BMPs implemented.
>60%	N/A	**Partial Restoration**	Restoration will be very expensive and probably will not achieve water quality conditions necessary to sustain healthy fish communities. Restoration opportunities must be critically evaluated to assure feasible positive outcomes.

The next step was to prioritize lakes within each of these management categories. DNR Fisheries identified high value fishery lakes, such as cisco refuge lakes. Ciscos (*Coregonusartedi*) can be an early indicator of eutrophication in a lake because they require cold hypolimnetic temperatures and high dissolved oxygen levels. These watersheds with low disturbance and high value fishery lakes are excellent candidates for priority protection measures, especially those that are related to forestry and minimizing the effects of landscape disturbance.

Big Sand Lake was classified with having 42.5% of the watershed protected and 7.8% of the watershed disturbed (Figure 15). Therefore, Big Sand Lake should have a protection focus. Goals for the lake should be to limit any increase in disturbed land use. In addition, Big Sand Lake was designated by DNR Fisheries as a high valued fishery lake because of its cisco population.

Figure 16 displays the upstream lakesheds that contribute water to the lakeshed of interest. All of the land and water area in this figure has the potential to contribute water to Big Sand Lake, whether through direct overland flow or through a creek or river. All of the upstream lakesheds have a protection focus as well. Goals for this watershed should be to limit any increase in disturbed land use and implement Best Management Practices.

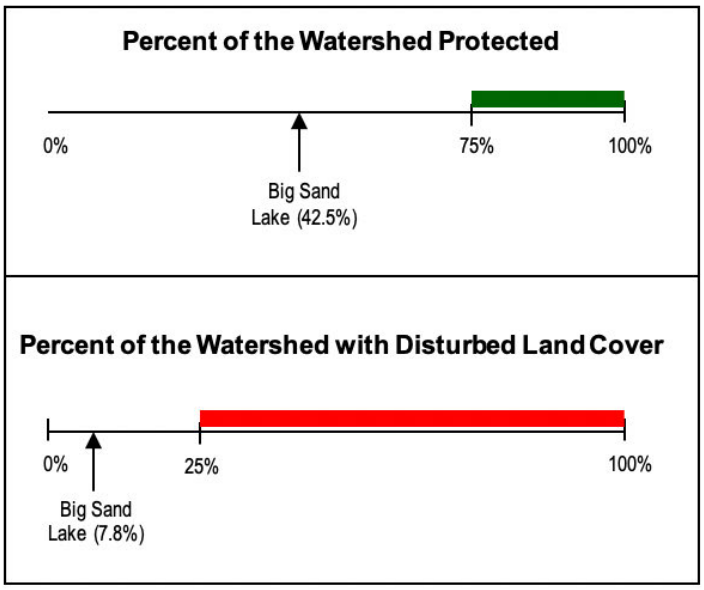


Figure 15. Big Sand Lake lakeshed percentage of watershed protected and disturbed.

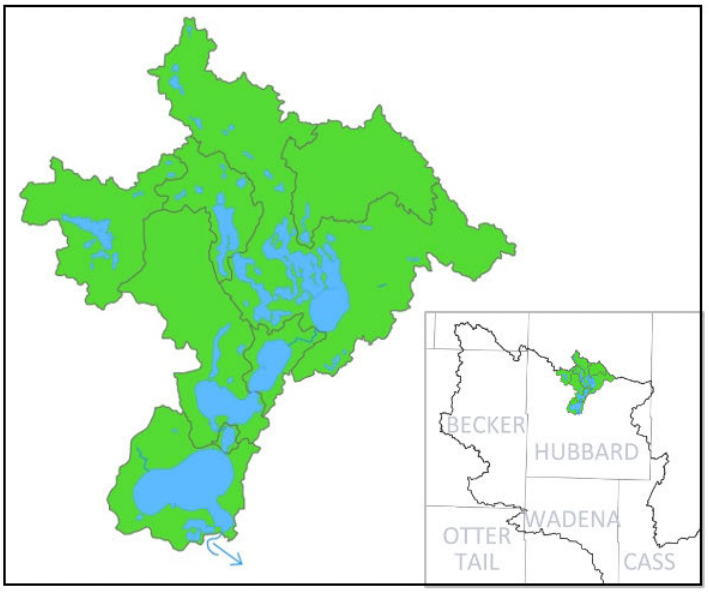


Figure 16. Upstream lakesheds that contribute water to the Big Sand lakeshed.

STATUS OF THE FISHERY (MN DNR)

Big Sand is located 2.5 miles north of Dorset in Hubbard County. Big Sand has a surface area of 1,635 acres and a maximum depth of 135 feet. A public access is located on the southeast shore of the lake at the outlet. Big Sand is noted for its Walleye population and exceptional water clarity. Big Sand has a protected slot length limit regulation that requires the release of all Walleye between 20 to 28 inches, with only one fish allowed over 28.0 inches in possession.

The Minnesota Department of Natural Resources (DNR) has classified Minnesota's lakes into 43 different types based on physical, chemical, and other characteristics. Big Sand is in lake class 22. Class 22 lakes have the characteristics of being deep, having hard water, and small littoral zone (lake area less than 15 feet in depth). Other area lakes in this same classification include: Kabekona, Long, Lower Bottle, and Potato.

Walleye abundance was high for this lake class, similar to recent survey on Big Sand. An abundant 2017 and 2016 year classes are present and anglers will find good numbers of Walleye in the 12-16 size range. Sampled Walleye had an average length of 15.1 inches with fish measured up to 26 inches. Yellow Perch and Tullibee (Cisco) populations provide important forage for Walleye in Big Sand. Yellow Perch were sampled in low numbers for this lake class and their abundance has been low since the 2011 survey. Yellow Perch are small in size, with few fish of an acceptable size for angling.

Big Sand has a low Northern Pike population; however, it is known for producing some large-sized fish. Northern Pike up to 34.4 inches were sampled. Tullibee (Cisco) and White Sucker provide an excellent forage base for growing large Northern Pike.

Both Smallmouth Bass and Largemouth Bass are present in Big Sand, with Smallmouth Bass the more abundant of the two species. Big Sand has excellent Smallmouth Bass habitat of rock, rubble, and sand bottom areas. Good size range of Smallmouth Bass are present in Big Sand. Largemouth Bass are present in low to moderate numbers and are concentrated in areas of preferred Largemouth Bass habitat.

Currently no aquatic invasive species (AIS) have been identified in Big Sand. To avoid spreading AIS, lake users are required to remove all aquatic plants or animals form their watercraft and drain all water from their boats before leaving the access.

For More Information:

Park Rapids Area Fisheries Supervisor
301 S Grove Ave, Park Rapids, MN
Phone: 218-552-2311
Email: ParkRapids.Fisheries@state.mn.us

Minnesota Department of Natural Resources (MN DNR), 2024
https://www.dnr.state.mn.us/lakefind/showreport.html?downum=29018500

LAKE WATER LEVELS

Lake water levels have been monitored from 1960 - 2024. The graph below shows the past 10 years of water level data (Figure 17).

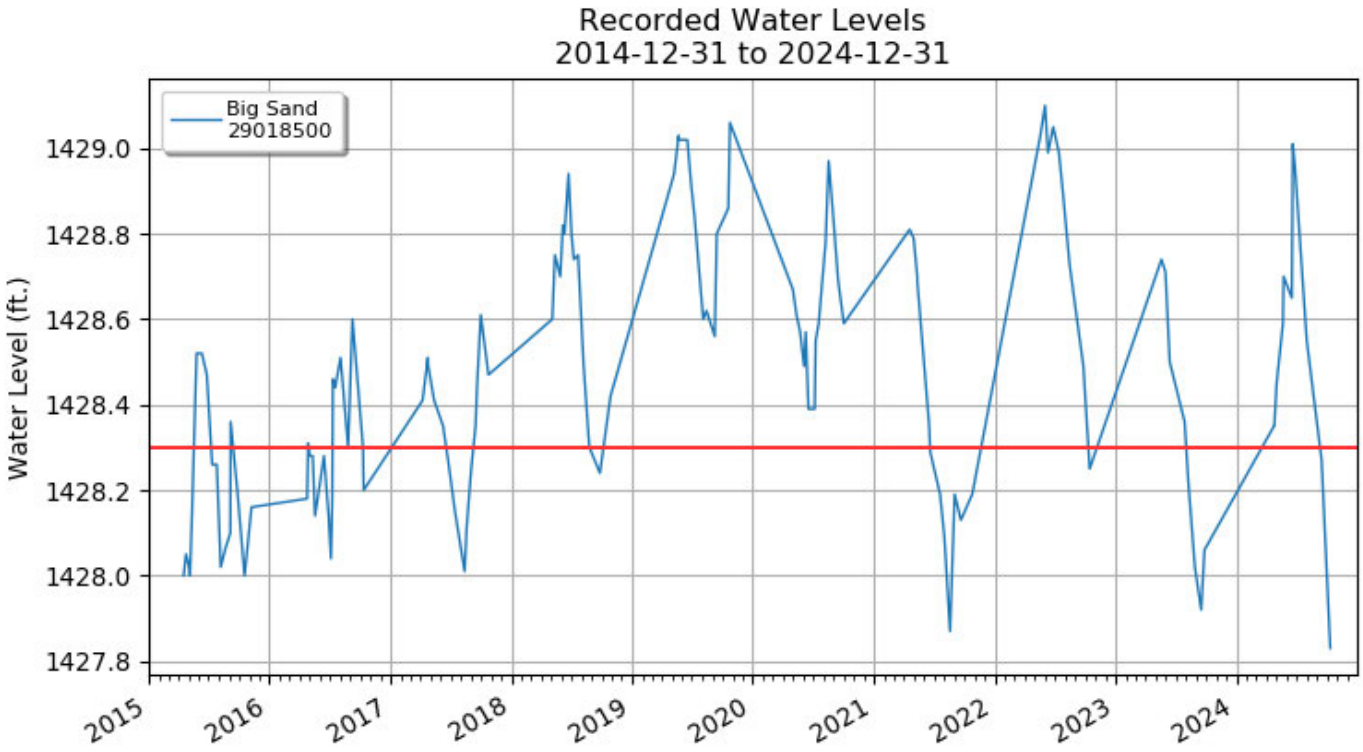


Figure 17. Big Sand Lake water levels, MN DNR.

KEY FINDINGS & RECOMMENDATIONS

MONITORING RECOMMENDATIONS

Monitoring at site 207 should be continued annually. It is important to continue transparency monitoring weekly or at least bimonthly every year to enable year-to-year comparisons and trend analyses. Phosphorus and chlorophyll *a* monitoring should continue, as the budget allows, to track future water quality trends.

Although zebra mussels have not been discovered in Big Sand Lake to date, lake residents should be vigilant to make sure that their boats and docks are zebra mussel-free prior to entering the lake. Zebra mussels and other aquatic invasive species can dramatically change the lake ecosystem if they establish populations in Big Sand Lake. Water quality (e.g., Secchi depth, chlorophyll *a*, and total phosphorus) can change significantly when zebra mussels become established in a lake, altering the fisheries and creating problems near shore.

OVERALL CONCLUSIONS

Big Sand Lake is an outstanding water resource. It is an oligotrophic lake (TSI = 34) with an improving water quality trend in both chlorophyll *a* and phosphorus. The DNR has designated Big Sand Lake as a Cisco refuge lake, which requires cold deep water with high dissolved oxygen levels. Nearly half of the watershed is protected, while only a small portion of the watershed is disturbed. A large percentage of the land is private forested uplands, which is good for water quality.

The improving water quality trend in Big Sand Lake is very significant since the year 2000. The average transparency has nearly doubled since 1994. The dramatic improvement that occurred in 2000 has been maintained since then. It is difficult to pinpoint exactly what caused this improvement; however, there are some potential reasons. In 1992, the county did a lake-wide septic system upgrade program. It usually takes a few years for these upgrades to be completed and implemented, which could explain the delayed water quality improvement.

PRIORITY IMPACTS TO THE LAKE

Overall, the lake's water quality has been maintained and improving. Big Sand Lake is not showing major signs of eutrophication. However, this does not mean the lake is resistant to future changes in water quality. Because Big Sand Lake is such an outstanding water resource and fishery, there is a high degree of development pressure. From 1990 - 2000, the impervious surface area increased by 104%, or 25 acres. Development in the lakeshed has occurred primarily along the shoreline. The population in Lake Emma Township is projected to continue to grow.

BEST MANAGEMENT PRACTICES

The management focus for Big Sand Lake should be to protect the current water quality. Protection efforts should be focused on managing and/or decreasing the impact caused by additional development, including second tier development, and impervious surface area. Project ideas include enforcing county shoreline ordinances, smart development, shoreline restoration, rain gardens, and septic system maintenance.

PROJECT IMPLEMENTATION

Best Management Practices can be implemented by a variety of entities. Some possibilities are listed below.

Table 10. Suggested Best Management Practices to implement for Big Sand Lake.

INDIVIDUAL PROPERTY OWNERS	• Shoreline restoration • Rain gardens • Aquatic plant bed protection (only remove a small area for swimming) • Conservation easements
LAKE ASSOCIATIONS	• Lake condition monitoring • Ground truthing – visual inspection upstream on stream inlets • Watershed runoff mapping by a consultant • Shoreline inventory study by a consultant • Conservation easements
SOIL AND WATER CONSERVATION DISTRICT (SWCD) & NATURAL RESOURCES CONSERVATION SERVICE (NRCS)	• Shoreline restoration • Stream buffers • Wetland restoration • Forest stewardship planning

ORGANIZATIONAL CONTACTS & REFERENCE SITES

Table 11. Relevant organizations and their contact information.

BIG SAND LAKE ASSOCIATION	PO Box 181, Park Rapids MN 56470 info@bigsandlake.org http://www.bigsandlake.org/
DNR FISHERIES OFFICE	301 South Grove Avenue, Park Rapids MN 56470 218-732-4153 parkrapids.fisheries@state.mn.us http://www.dnr.state.mn.us/areas/fisheries/parkrapids/index.html
REGIONAL MINNESOTA POLLUTION CONTROL AGENCY OFFICE	714 Lake Ave., Suite 220, Detroit Lakes MN 56501 218-847-1519, 1-800-657-3864 http://www.pca.state.mn.us/yhiz3e0
HUBBARD COUNTY COALITION OF LAKE ASSOCIATIONS	PO Box 746, Park Rapids, MN 56470 hccolamn@gmail.com https://hubbardcolamn.org/
HUBBARD COUNTY SOIL AND WATER CONSERVATION DISTRICT	212 ½ 2nd St W, Park Rapids MN 56470 218-732-0121 http://www.hubbardswcd.org/