Water Quality Parameter Guide for Selected Fish Species

Adapted from Post 1988. Note that the minimum required dissolved oxygen levels may be less in the winter if the aquatic organisms have acclimated to their environment.

Fish Species	Water Temperature Range(°F)	Water Type	Water Clarity	Minimum Oxygen Requirement (ppm)	pH
Bluegill	65 - 80	Eutrophic to Mesotrophic. Warmwater streams, rivers, and ponds.	Less turbid waters.	3.0 - 5.0	5.5 - 9.0
Channel catfish	75 - 85	Eutrophic. Warmwater streams, rivers, and ponds.	Clear to turbid; can adapt to waters most fish can't tolerate.	3.0	4.5 - 9.0
Common carp	55 - 80	Eutrophic. Warmwater streams, rivers, and ponds.	Clear to turbid; can adapt to waters most fish can't tolerate.	0.8	4.0 - 9.5
Freshwater drum	55 - 75	Eutrophic. Warmwater rivers.	Clear to turbid.	3.0 - 5.0	4.5 - 9.0
Northern pike	45 - 75	Mesotrophic to Oligotrophic. Coolwater lakes, large rivers, and reservoirs.	Clear with moderate amounts of aquatic vegetation.	4.0	6.0 - 9.0
Rainbow trout	40 - 60	Mesotrophic to Oligotrophic. Coldwater streams, rivers, and deep lakes.	Clear with some to very little fertility and moderate vegetation.	6.0	6.5 - 8.5
Walleye	35 - 80	Mesotrophic. Large coolwater lakes and streams.	Clear, sometimes turbid waters with good fertility.	5.0	6.0 - 9.0
White bass	55 - 78	Eutrophic to Mesotrophic. Warmwater rivers and lakes.	Clear, sometimes turbid waters.	5	5.5 - 9.0
White sucker	40 - 65	Oligotrophic. Coolwater lakes and streams.	Clear with scant fertility and aquatic vegetation.	4.0	6.5 - 8.5

GET TO THE ROOT OF THE PROBLEM

Suppose that your lake is not as clear as others in the area, and that there is some indication of clay turbidity in the spring and after rainstorms. However, the color of your lake is green indicating that algae, not clay, is affecting water clarity. What do you do now?

First, do some detective work.

Your data have given you some clues as to the sources and cycles of nutrients and erosion materials. Drive through the watershed, preferably after a recent rain and observe the condition of the streams entering your lake. Are some more turbid than others? Look upstream and try to track down the sources of turbidity. If you're lucky, you may find some point sources (e.g., pipes) or specific locations such as a field or housing development that is the source of the problem. If you aren't lucky, you may find that there are numerous contributors to stream turbidity. Are there any sewage treatment plants discharging into the river or are houses in the watershed using septic tanks? Sewage in any form is high in nutrients and septic systems sometimes fail or are deliberately by-passed. By the time you have done several of these surveys you might have a better idea of the sources of your lake's problems. It might even be necessary to obtain a detailed map that includes the watershed and start mapping problem streams and sources.

Second, take more Secchi measurements in your lake.

Even though the Self-Help network requires you to collect data every other week, you can sample more often if you think it is important. Make a point to sample your lake after rainstorms to see if there is any relationship between rainfall and your lake's turbidity. You may also want to sample more sites on your lake, preferably near the mouths of streams that you think may be causing turbidity. To make these new sites "official" contact your Self-Help regional coordinator. If you think weekend watercraft use may be affecting your water clarity, try sampling the lake during the week and again on the weekend (Don't forget to make a note of this on your data sheet!). Volunteers have even used their Secchi data to detect the consequences of leaking septic systems by monitoring decreases in transparency near houses. Be sure to write down all of your observations and report your data to the Self-Help network. We really do want to know more about your lake, too!

constantly available to feed weeds or algae. In a deep lake, the nutrients may become isolated in the deep, cold water (the hypolimnion), where they are unavailable to be used again until the lake mixes.

How Does My Lake Compare to Others?

To examine how your lake quality compares to others around the state, the summary reports generated by the Self-Help network contain graphs that chart the Secchi TSIs for each lake type in each georegion. You can find these reports online at **dnr.wi.gov/org/water/fhp/lakes/selfhelp/lakedata.asp**.

What if Your Data is Better Than Average

If your Secchi readings and other data are better than average for your lake type and georegion, you will want to work to protect your lake and keep it the way it is. One way to help protect your lake is through a Lake Protection Grant. Qualified lake associations, **lake districts**, as well as, counties, towns, cities, or villages are eligible to receive lake planning and protection grant funding. Through these 75% cost-share grants (75% grant/25% local share), money is available for lake and watershed data collection, development of local lake management plans, land acquisition, and other lake protection activities. For more information on lake grants, contact your Self-Help regional coordinator or a UW-Extension lake specialist. The Wisconsin DNR also has excellent information on lake grants online at **dnr.wi.gov/org/water/fhp/lakes/lkgrants.htm**.

Another way to protect your lake is to keep invasive species out by