

highway 51 where it runs through Minocqua Lake just north of downtown Minocqua. The new storm sewer system for this section of the highway is “state of the art”.

To further the attack on drainage, the Association made a proposal to the Town Board in September of 2013 to fund an engineering study to improve the rest of the storm sewers in the downtown portion of Minocqua. This proposal is still under consideration.

To reduce the flow from septic systems, the Association has been lobbying since 2010 to find the major offenders who have faulty septic systems. This pursuit needs to be revitalized.

Other than these two areas, there little the Association can do to improve TP loading. It would be good if the DNR applied pressure to the upstream lakes (Big Arbor Vitae, Little Arbor Vitae, Lake Madeline, Carrol Lake, and Mid Lake) in order to remove pressure from Minocqua and Kawaguesaga. (Lake Tomahawk does not seem to be a major contributor.)

In summary:

1. Lake Kawaguesaga should be removed from the submission to the EPA. If future studies firmly establish that the lake is a two-story fishery, the submission can be considered at that time.
2. Minocqua Lake should be considered for a “site specific” classification.

Richard W. Garrett
For the Board of Directors
Minocqua/Kawaguesaga Lakes Protection Association

March 5, 2014

Here is information taken from a 2010 USGS¹ study conducted on the two lakes. (The cost of this study was \$330,000 – a copy is available on the Lake Associations web site in the Lake Studies section; site address: <http://minocquakawaga.org/>)

Here is the total phosphorus balance:

Sources and Disappearance of Phosphorus					
Into and From Minocqua Lake and Kawaguesaga Lake					
				lbs/yr	
Sources:					
	Minocqua Thoroughfare			1460	38%
	Thomahawk thoroughfare			1220	32%
	Precipitation			332	9%
	Drainage into lakes			370	10%
	Ground water			124	3%
	Septic Systems			296	8%
	Total pounds into lakes			3802	100%
Disappearance					
	Over Dam			1623	43%
	Retained in lake			2179	57%

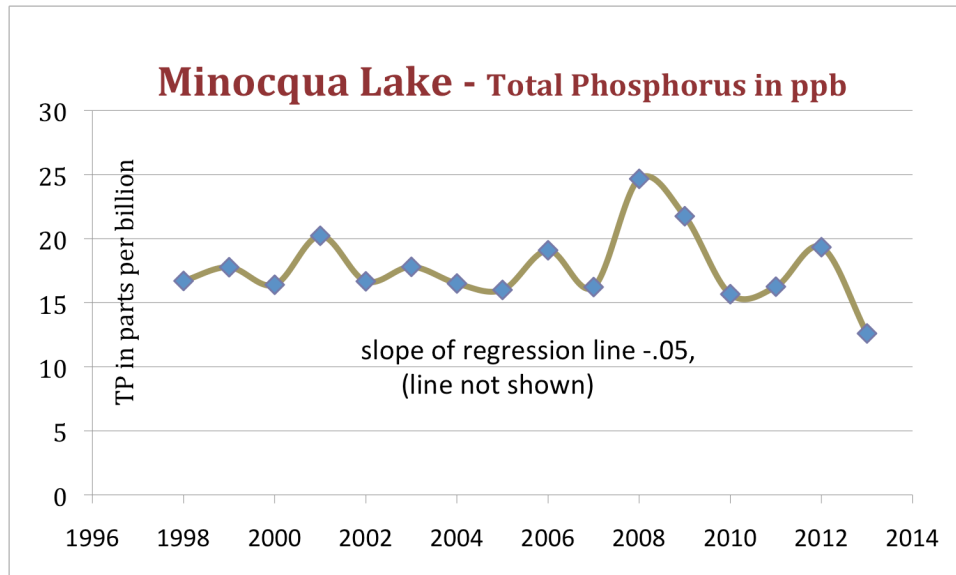
Here it is seen that 38% + 32%= 70% of the annual load is flowing into the lakes from upstream sources. These sources will be difficult for the Lake Association to reduce since they are outside of our control. Here are the sources that are tractable to some extent:

Pounds that have potential to be "better managed"					
	Drainage into lakes			370	
	Septic Systems			296	
				666	18%

The Lake Association is a player in both of these areas. Tackling drainage into the lakes, the Association had a very active role in the recent reconstruction of

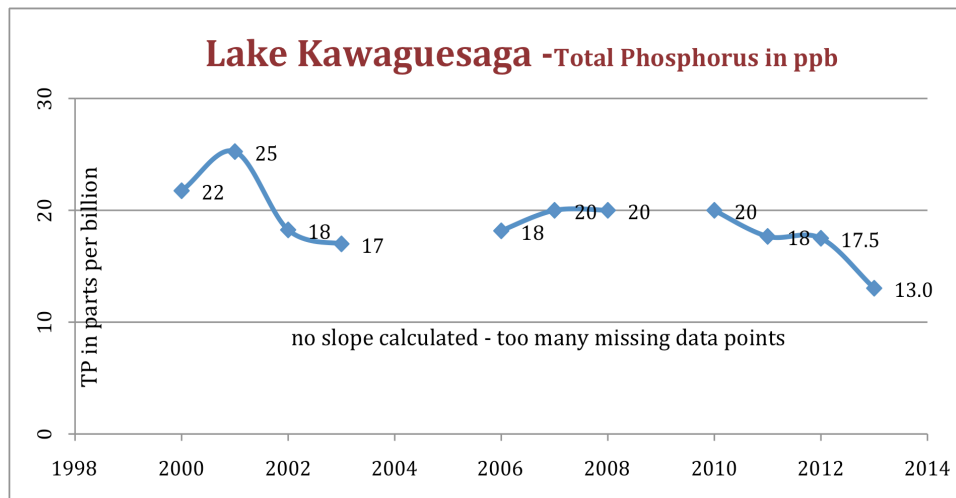
¹ Hydrology, Water Quality, and Response to Changes in Phosphorus Loading of Minocqua and Kawaguesaga Lakes, Oneida County, Wisconsin, With Special Emphasis on Effects of Urbanization
By Herbert S. Garn, Dale M. Robertson, William J. Rose, and David A. Saad

are the two lakes now and the recent past. Here is a TP graph for Minocqua Lake:



Since the slope of the regression line is negative, the trend is flat to slightly down – good news for Minocqua Lake.

Here is a graph for Lake Kawaguesaga:



Though no slope was calculated, it is visually clear that the trend is down.

This analysis of TP for both lakes indicates that TP is not increasing at this time so the threat to the Minocqua Lake two-story fishery in Minocqua Lake is not great.

To: Aaron Larson
Water Evaluation Section (WY/3)

Request to Wisconsin DNR to Reconsider the Classification of Minocqua Lake and Kawaguesaga Lake as Impaired Waters

This is a request to the DNR to reconsider the classification of our two lakes as impaired waters. We begin this discussion with a dictionary definition of the word impaired:

being in a less than perfect or whole condition: as a : disabled or functionally defective —

As one looks at this definition it seems important to seriously consider the implications of being classified as impaired waters. A visit to our lakes would reveal what most people consider to be pristine waters. Water clarity is at least 10 feet and there is an absence of serious algae problems. Our two lakes are excellent fisheries as was demonstrated in a previous submission (e-mail 2/26/14). As property owners, we are very concerned about our lakes being classified as impaired. Real estate agents will be warning prospective homebuyers that they are looking at a home that is on a lake that has been classified as impaired by the DNR and the EPA. Very few lay people will understand the subtle nature of this classification. It is a very serious issue from a homeowner's point of view.

The basis of the classification is that our two lakes are two-story fisheries with a maximum limit of 15 parts per billion of TP (total phosphorus). What is a two-story fishery? It is a deep body of water, with a cold-water layer that is the habitat for cisco, whitefish and lake trout. Are both lakes two-story fisheries?

The data that supports the classification of two-story fishery for Lake Kawaguesaga is taken from a 1970 report that placed an X in the column indicating "cisco presence known". It seems a bit of a stretch to offer up Lake Kawaguesaga for classification as a two-story fishery based on an X mark on a report that is forty-four years old. Minocqua Lake, on the other hand, has fresh data from 2010. At that time nets were set deep and netted twenty-three cisco. This data, along with additional data from 1989, supports the classification as a two-story fishery. Here's what John Kubisiak, Oneida County Fisheries Biologist says: "So there's a cisco population out there, with two main size classes, one around 8 inches and the other at 15-16", but it doesn't seem overly large." There were no instances where whitefish or lake trout were netted in either lake.

Remediation

One implication of being classified as impaired waters is that effort will be expended to reduce the level of TP to get it below 15 ppb. What sort of condition