WHITE LAKE PRESERVATION PROJECT

LET'S HAVE SOME CLARITY ABOUT WHITE LAKE

or How Has the Water Changed Since the Arrival of Zebra Mussels?

One of the most dramatic changes in White Lake water quality which we have observed since the arrival of zebra mussels in 2016 is the increase in water clarity. So how much clearer is the water now compared to 2015 when the lake was in its natural state?

It turns out that the water clarity has changed differently in different parts of the lake. In areas close to shorelines (where most zebra mussels are found) like Three Mile Bay, water clarity has doubled! At locations further away from shorelines, the Secchi depth (see box on right) has increased by about 80%. In the middle of the lake, the increase is only about 60%.

In July of 2015, the Secchi depth in Three Mile Bay was 2.1 metres and by July 2017, the Secchi depth had increased to 4.1 metres. We are now measuring Secchi depths of over 6 metres at some locations. So what?

Water clarity on the surface appears to be a good thing. However, there are some important consequences to consider:

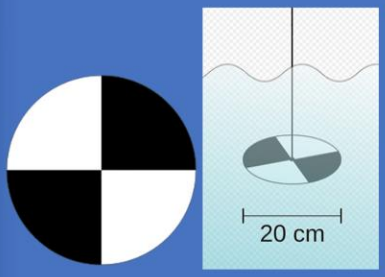
- Aquatic plants will propagate in deeper parts of the lake.
- Aquatic weed beds will thicken in shallow areas where weeds currently exist.
- More zebra mussel habitat will be created on new plant beds.
- Enhanced water clarity means less food for small creatures, including fish.
- The presence of filamentous green algae along shorelines will become more prominent. This 'green angel hair' was visible in nearly all parts of the lake this year.
- Fish will have a harder time hiding from predators.
- Currently, there are no proven ways of reversing any of the changes noted above. We must now prevent the spread of zebra mussels from White Lake to other water bodies.

The WLPP continues its extensive and systematic water quality monitoring program. We will continue to occasionally provide you with Science Bulletins like this one. More information is available on all aspects of White Lake at www.WLPP.ca. Contact us at WLPPmail@gmail.com.

WLPP Science Committee September, 2017

WHAT IS SECCHI DEPTH AND HOW IS IT MEASURED?

The Secchi depth is a measure of the clarity or transparency of the water. The Secchi disk, named after an Italian scientist, is used to make the measurement. The disk is segmented black and white and 20 cm in diameter:



The disk is lowered into the water until it is no longer visible. The recorded depth, in metres, is one half of the distance that light can travel through the body of water being measured. A Secchi depth of 6 metres, for example, means that light can travel through 12 metres of water. White Lake is a maximum of 9.1 metres deep.