Pipe and North Pipe Lake

Nature Notes

Water… Land… Animals

Pipe Lake and North Pipe Lake –

Historical Look at Water Quality

By Dick Hollar

Taking time to learn about the environment, whether about the lakes, forests and plants or animals, whether fish or wildlife is of extreme importance. Each of these aspects of the environment needs to be taken care of and understood by everyone.

A new series of articles about nature here at Pipe Lake will be published approximately once every six weeks. The information will provide a well-rounded understanding about the area around Pipe Lake.

The first article provides a basis for understanding the quality of the lake water in Pipe and North Pipe Lakes. Dick Hollar, a North Pipe Lake resident since 1998. He has collected this historical data from which we can begin the understanding of lake quality.

Hollar began collecting physical and chemical data from Pipe and North Pipe Lake in July 1998. Larry Bresina joined him in 2000, and since then several other volunteers joined the effort. Today Dan Woll has been collecting data from North Pipe for 2 years and Doug Stevens has been collecting data from Pipe Lake for 5 years. Much data has been accumulated over the past 22 years; enough to define the condition of our water and establish some long-term trends.

Larry Bresina has taken all this data and put together the graphs at the end of this article:

Figures 1 & 2 show the actual Secchi data (water clarity) gathered for North Pipe Lake and Pipe Lake, respectively, through 2019.

Figure 3 shows the annual Secchi depth averages for both lakes and constructed a 21-year trend line.

Figure 4 shows the average annual Phosphorus in both lakes and a 21-year trend line. Phosphorus is studied and is important because that primarily is the chemical that affects the clarity of our water and the amount of algae present.

The Secchi readings for North Pipe Lake are significantly less than Pipe Lake due to the brownish color of the water. This is caused by tannic acid that originates from the watershed, but does no harm to humans, animals, fish, etc. It simply discolors the water.

Figure 1 shows that North Pipe has had only 6 readings over 10+ feet since 2007. However, looking at the minimum readings, Pipe lake in Figure 2 has had only 3 readings of 10 feet or less, whereas North Pipe Lake has had many readings of 5 feet or less. Notice the lowest readings for North Pipe Lake generally occur during the month of August. This is when algae blooms are most prevalent. Pipe Lake does not have algae blooms to this degree.

Figure 2 clearly shows that we have not had a 20+ foot Secchi reading on Pipe Lake since 2012 and only 7 readings since 2007. It appears we had 16 20+ foot readings from 1999 to 2007.

The trend lines in Figure 3 show the average Secchi depth (water clarity) readings have decreased 1.7 feet over the 21 years for North Pipe Lake and 3 feet for Pipe Lake. For North Pipe Lake, this change is quite visible. For example, Hollar states he can no longer see the bottom of the lake from the end of his dock. On Pipe Lake, a significant change in water clarity may not be noted. It may be more difficult to perceive this difference in 15 to 20 feet of water. This reduction in the clarity of Pipe Lake along with the higher increase in Phosphorus levels indicates that the water quality of Pipe Lake is decreasing. If nothing is done, there will be a time when the change in water quality will be significant.

Figure 4 shows the annualized average Phosphorus levels in both lakes since 1999. Notice the trend lines: The Phosphorus level in Pipe Lake is increasing at a faster rate than for North Pipe Lake. Remember the amount of algae present is dependent upon the amount of Phosphorus that is present since algae feeds on Phosphorus.

Next topic:

What causes changes in water quality in Pipe Lake and North Pipe Lake? What actions can we take to prevent changes in water quality?

Figure 1

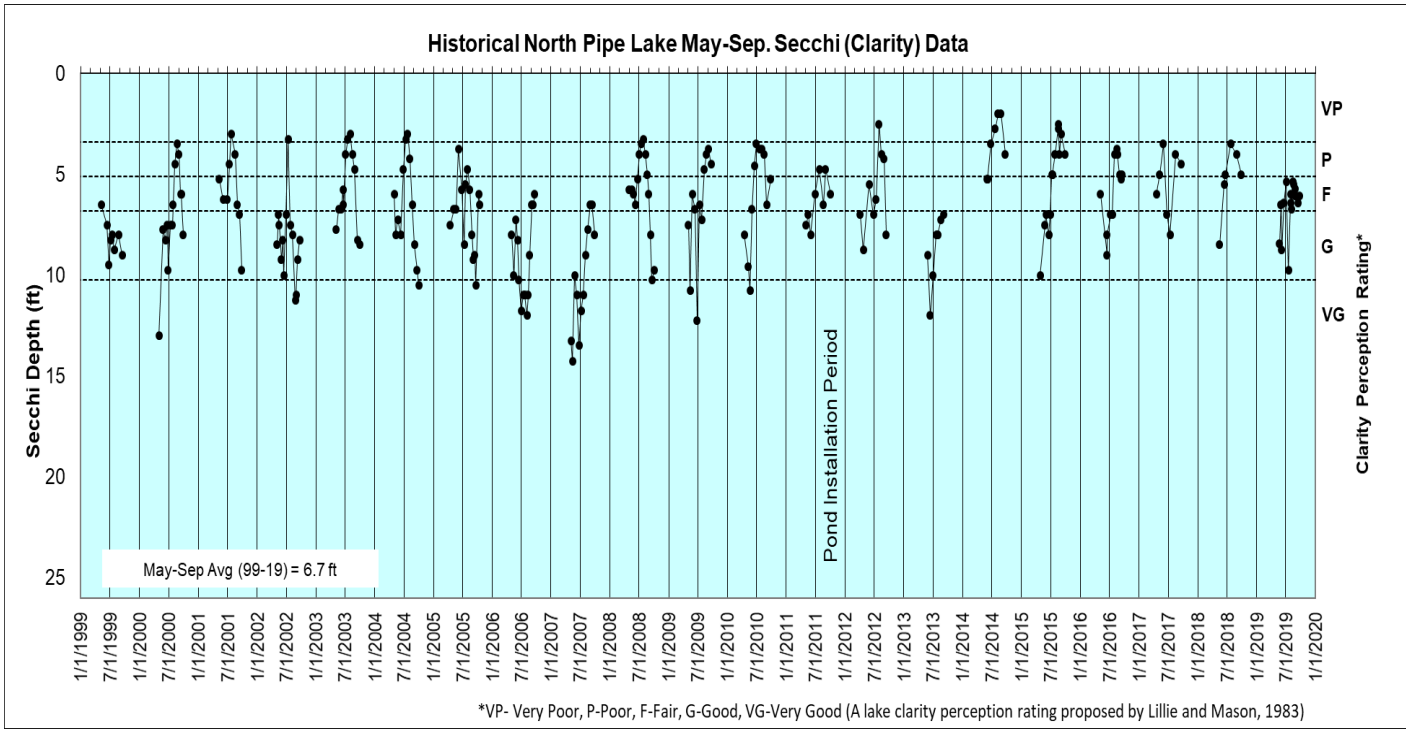

Figure 2

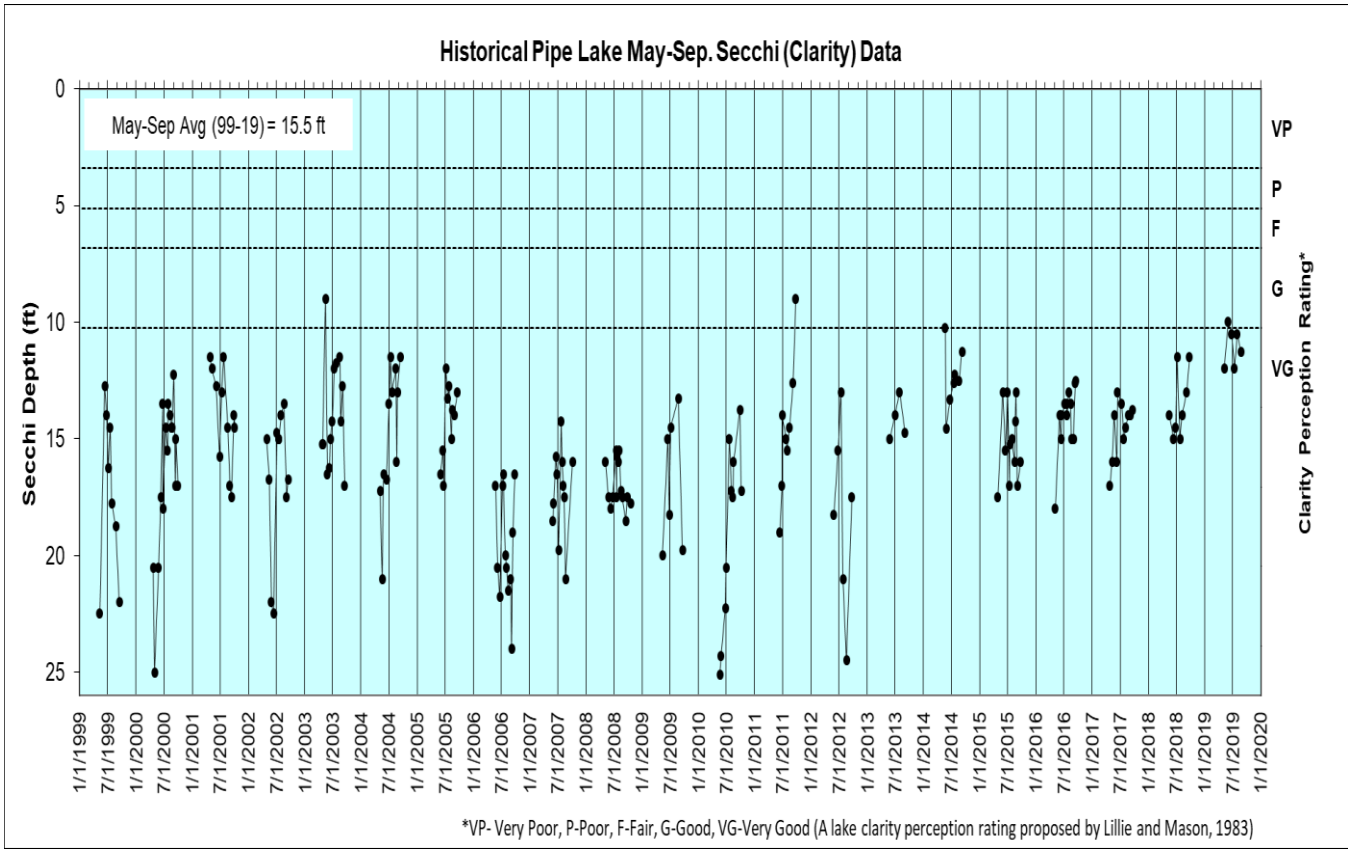

Figure 3

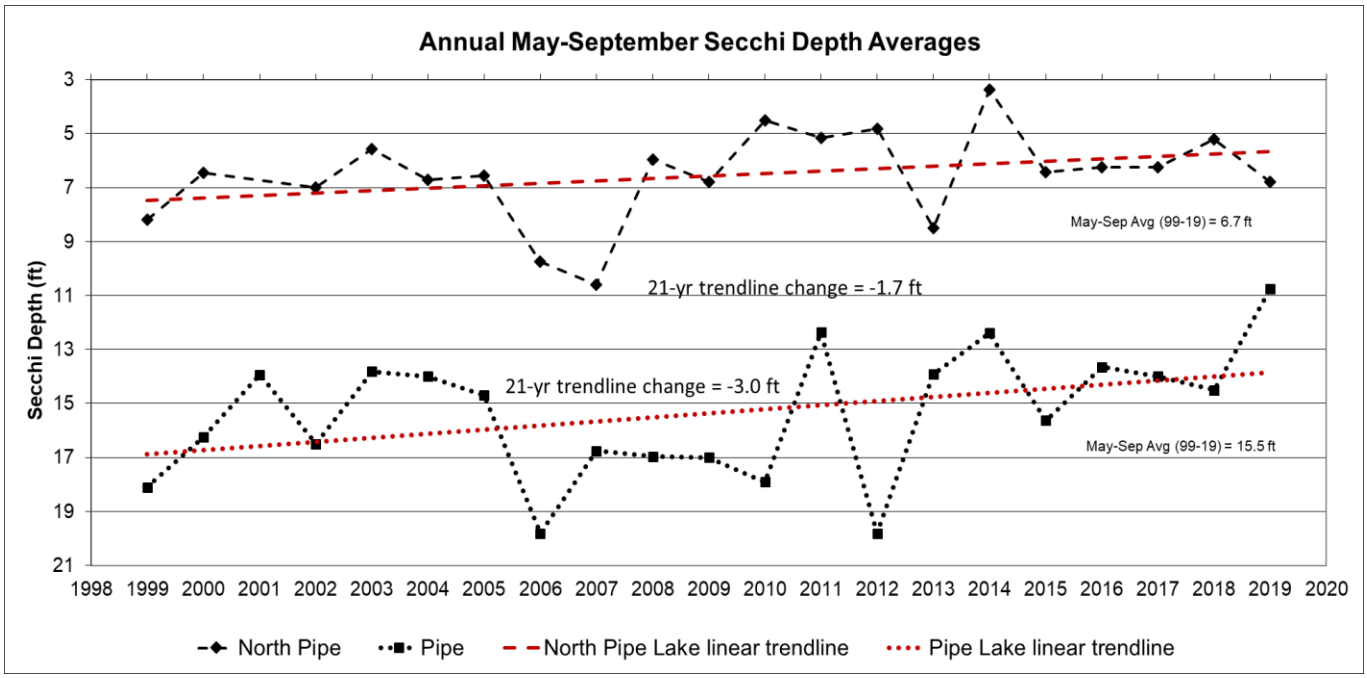

Figure 4