The Pelican River Watershed District is located within the North-Central Hardwood Forest Ecoregion. This region is an area of transition between the forested areas to the north and east, and the agricultural areas to the south and west. The terrain varies from rolling hills to smaller plains and is abundant with glacial lakes, wetlands, and remnant hardwood forests. Plains areas are a mix of row crops, livestock grazing, and native prairie land.

Much of the land surrounding the lakes has been developed for housing and recreation, increasing the nutrient runoff associated with the lawns and impervious surfaces. The lakes in the region are typically mesotrophic but are occasionally found to be slightly eutrophic, especially during mid-late summer and in shallower systems.

With a total of 144 lakes within its jurisdiction, it is important to prioritize lakes and develop a plan for monitoring them. Most are small, pothole lakes with little to no development around them, or they are landlocked and not connected to any surface waterway, and are therefore not a high priority.

There are only 27 lakes which have been identified as having an impact, whether economical or environmental, and these lakes are monitored on a rotating basis. In 2015, 14 of these lakes were monitored for clarity, total phosphorus, orthophosphate, dissolved oxygen and some were tested for chlorophyll-a.

The Pelican River Watershed District also monitors stream water quality within its jurisdiction. Water quality samples are collected on a bi-weekly basis, beginning during the spring melt through September. Stream flow is measured throughout the year at many of the locations so nutrient and sediment loadings can be calculated. 18 sites were included in the monitoring network in 2015 with all locations having a water level gage installed where the height of the stream is measured and recorded. Water samples were taken at 12 locations where the results would allow the nutrient and sediment loads in the streams to be calculated.

Water testing costs for 2015 totaled $8232.00.
During most of 2015, rainfall amounts were below normal, resulting in less stormwater runoff and phosphorus loads to area lakes. With less runoff, water clarity was above average in area lakes. Most notable was Sallie, with 10 ft average summer clarity, double the 5 ft ten-year average.

2015 was a good year to demonstrate how sensitive the lakes are to polluted runoff and how critical our efforts are upstream to continue the trend of increased water clarity.

Impaired Waters
St. Clair lake water quality continues to decline—a trend observed over the past several years. In lake phosphorus concentrations were measured at 152 ppb, far exceeding the 60 ppb standard. Algae blooms also decreased water clarity from 3.25 ft average to 2.5 ft in 2015. In 1998, the District treated St. Clair Lake with alum to reduce phosphorus release from the lake bottom sediments. This treatment has now exceeded its 10-year life expectancy. It is likely the lake will require treatment within the next few years to reduce downstream phosphorus loading to Lake Sallie.
Drought conditions and warmer temperatures prevailed most of 2015, except for an unusually high amount of rainfall during the month of May, which brought the annual total to 13.99 inches. Area lake levels were below ordinary high levels (OHW) most of the ice out season (April-November), with lowest lake levels in October at 1 ft below OHW.

The 2014-15 winter had significantly below average snowfall, at only 24 inches compared to the average 47.5 inches. Periods of warm temperatures and lower than normal rainfall prevailed from March through early May, leading to little snowmelt into District lakes and streams. March was a warm month with an average high temperature of 45 degrees, compared to the monthly average of 35 degrees. On March 15, 2015 the high temperature was 70 degrees. Ice out on area lakes was around April 12th, a week earlier than average. May saw a higher than normal rainfall of 5.1 inches, 2.52 inches above average, bringing an end to the spring drought conditions.

Another notable weather condition throughout the summer months were the smoky skies, courtesy of Canadian forest fires from over 1,000 miles away. During the July 4th holiday, a cold front brought over the thickest smoke/fog, reducing visibilities to a mile and a quarter.

During the summer months (June-August) normal temperatures were experienced, however, rainfall amounts during this period were below average at only 5.04 inches (normal: 11.25 inches). The hottest day of the year was August 14th, with a high temperature of 91 degrees F.

September was another dry month with no precipitation recorded and 2.61 combined rainfall inches for October and November. The 2015 autumn (September-November) was Minnesota's second warmest autumn recorded with an average temperature of 49.5 degrees. Temperatures ran more than six degrees above normal and delayed the usual freeze-up date of Minnesota's lakes, with Detroit Lake freezing up on November 27, 8 days later than average.

The longest warm spell was from November 28 to December 18, constituting 21 consecutive days with warmer than average high temperatures. The month of December had the largest fraction of warmer than average days with 81% days with higher than average high temperatures.
The District has statutory responsibility for the management of 3 public ditch systems that were dug in the early part of the 20th century.

As the Ditch Authority for Ditch 11/12 (Campbell Creek), Ditch 13 (Pelican River), and Ditch 14 (St. Clair Creek), the District is responsible to maintain them, including the removal of beaver dams. These ditches are also monitored for water quality and ditch condition.

2015 was a year of the very busy beaver. Three beaver dams, and the corresponding inhabitants, were removed from the Rice Lake Wetland area. While working on an inventory of the condition of the public drainage systems, an additional 3 were located in Campbell Creek, two were upstream from Campbell Lake and one was downstream.

The total cost for maintenance on the three ditches was $2694.35.