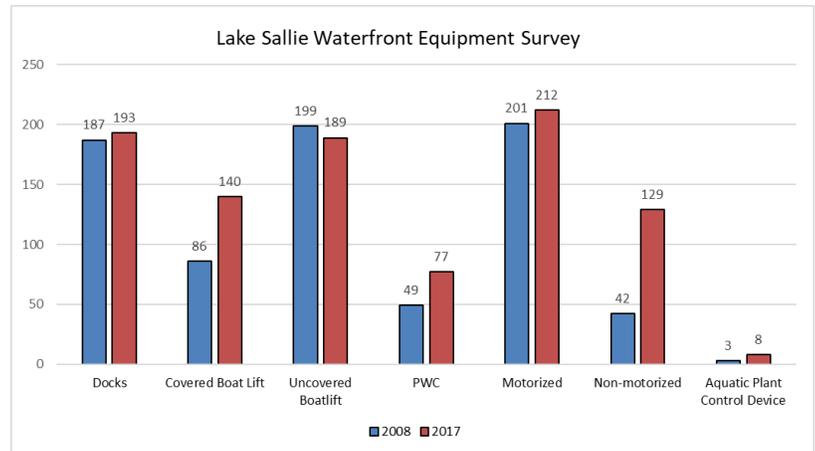


2017 Shoreline Survey Summary

The Pelican River Watershed District conducts periodic assessments of the land use, lake use, and level of shoreline alteration on lots on District Lakes. In 2017, District staff completed surveys of Muskrat, Sallie, and Melissa Lakes. Each parcel was documented for shoreline alterations, the use of the Shore Impact Zone (SIZ), and the amount/type of waterfront equipment. The previous survey for Sallie and Melissa was done in 2008. 2017 was the first year that Muskrat was surveyed.

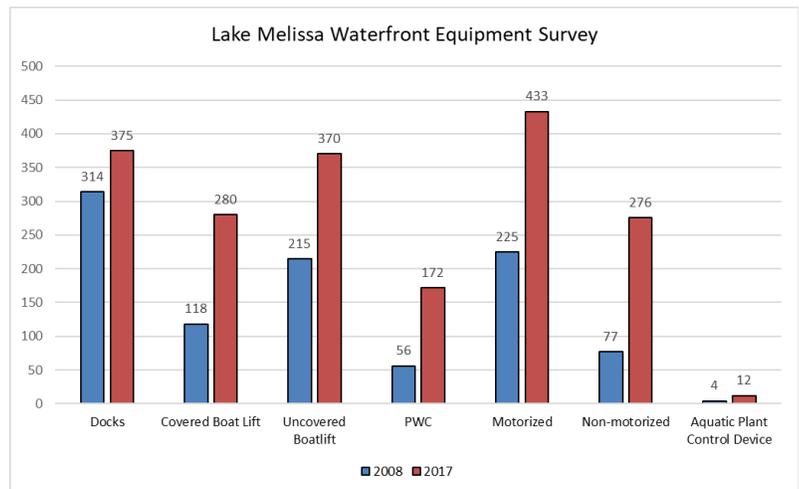
Lake Sallie

In comparing the 2008 and 2017 survey, there is significant growth in the amount of recreational lake use equipment located on the shoreline of Lake Sallie. The number of docks present rose slightly, about 3%. The only decrease in equipment was uncovered boat lifts, a 5% decrease. However, when compared to the large increase in covered boat lifts, 60% increase, it becomes apparent that more homeowners have shifted from uncovered to covered boat lifts. Motorized boats, including ski boats, fishing boats, and pontoons remained nearly the same, however, there has been a large increase in proportion of pontoons that are present. PWC's (Personal Watercraft) increased by 60%. Interestingly, there was a very large rise, nearly tripling, the number of nonmotorized equipment. This includes paddle boats, kayaks, canoes, and stand up paddle boards.



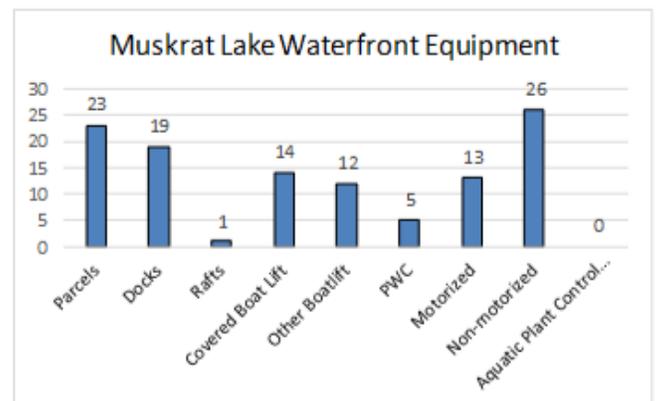
Lake Melissa

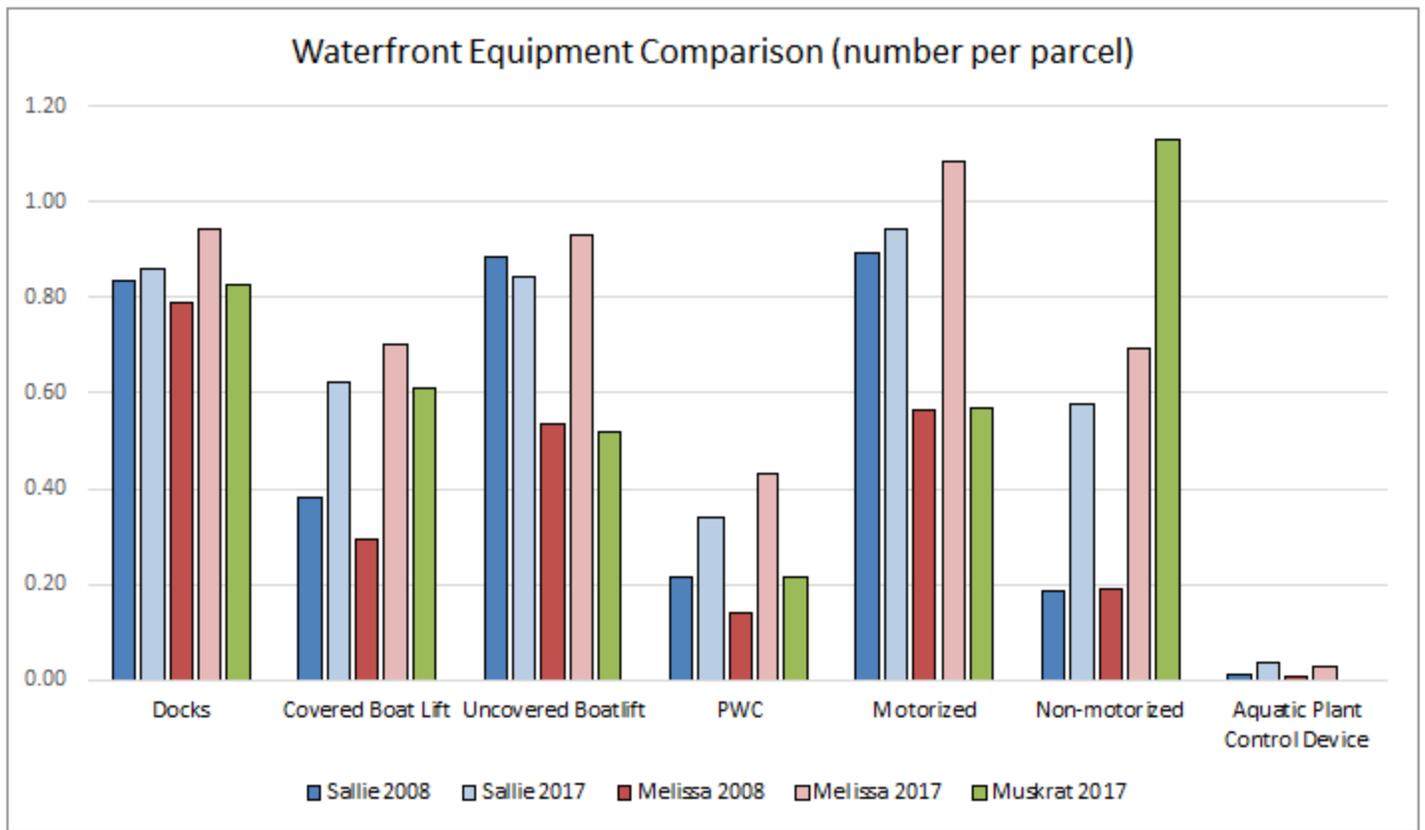
There has been a drastic increase in the quantity of waterfront equipment along the shoreline of Lake Melissa. The number of boats increased to 433, a 92% increase, totaling 1.1 boats per parcel. As to be expected with a near doubling of motorized watercraft, the number of lifts, both covered and uncovered also nearly doubled. PWC's nearly tripled in the last ten years. Currently there is nearly 1 vessel for every two lake parcels. It was noted during the survey that many of the motorized watercraft were pontoons, shifting from predominantly fishing boats in 2008.



Muskrat Lake

Muskrat Lake was surveyed for the first time in 2017. Of the 23 parcels on the lake, 14 of them remain in a natural (or near natural) condition in terms of vegetation and alterations, 8 minimally altered, and 1 moderately altered. It should be noted that over 1/2 of the shoreline remains undeveloped. Because of the navigable channel to Detroit Lake and a tram to Sallie, there is a higher concentration of watercraft, including PWC's, than in lakes similar in size and classification.





Highlights

- No significant change in the amount of docks.
- Significant increase in covered boat lifts.
- Increase in all types of watercraft on all lakes.
- Increases in PWC on both Sallie and Melissa. Due to connectivity to Sallie and Detroit there is a large number of PWC on Muskrat, considering size and classification.
- Drastic increases in motorized boat per parcel in Melissa.
- Significant increase in use of Aquatic Plant Control Devices (i.e. weed roller) on both Sallie and Melissa.

Other notes:

Comparing the extent of alteration between 2008 and 2017 was not possible due to the differences in definition of each classification. Beginning in 2017, District staff developed a more detailed guide for individuals surveying the lakes so that data collected was more consistent in determining the extent of alteration in equipment and use.

Aqua Thrusters

There were several instances where “water thruster” were observed being used illegally. These devices use a motor to create water current, disrupting the lake bed and aquatic vegetation growth. These devices are also extremely harmful to sensitive nearshore habitat. They are capable of disrupting and resuspending large amounts of sediment, severely decreasing water clarity. Sensitive fish habitat can be destroyed in a short period of time with the improper (illegal) use of these machines. The Minnesota DNR has forbidden the use of Aqua Thrusters for aquatic plant control or sediment removal. District staff has witnessed various areas on district lakes where it is apparent these devices are being used to scour lake sediment and remove rooted aquatic vegetation.