

Farm Pond 2020

M.V.C. SAMPLING SUMMARY

Nature of the Pond

Farm Pond is a coastal salt pond with limited tidal flushing within the Town of Oak Bluffs. Approximately 8 acres of salt marsh border this pond. The main culvert at the barrier beach connects this pond to the Vineyard Sound but does not provide adequate flushing. A secondary culvert does exist but is not functional. Progress is being made towards enlarging and improving the main culvert's flow. Eelgrass is present throughout the pond and provides much-needed habitat for several marine species, but is showing signs stress and degradation. An invasive stinging jellyfish have been found in the pond.

Summary for 2020

In 2020, Farm Pond had some noticeable changes, and consistent monitoring should continue. Nitrogen levels have increased slightly at all stations, while total pigment levels decreased. FRM-3, which is furthest from the inlet, continues to be the most impaired, maintaining high levels of nutrients. Dissolved Oxygen remains above the impairment level of 4 mg/L but still below 6 mg/L indicating an impaired system.

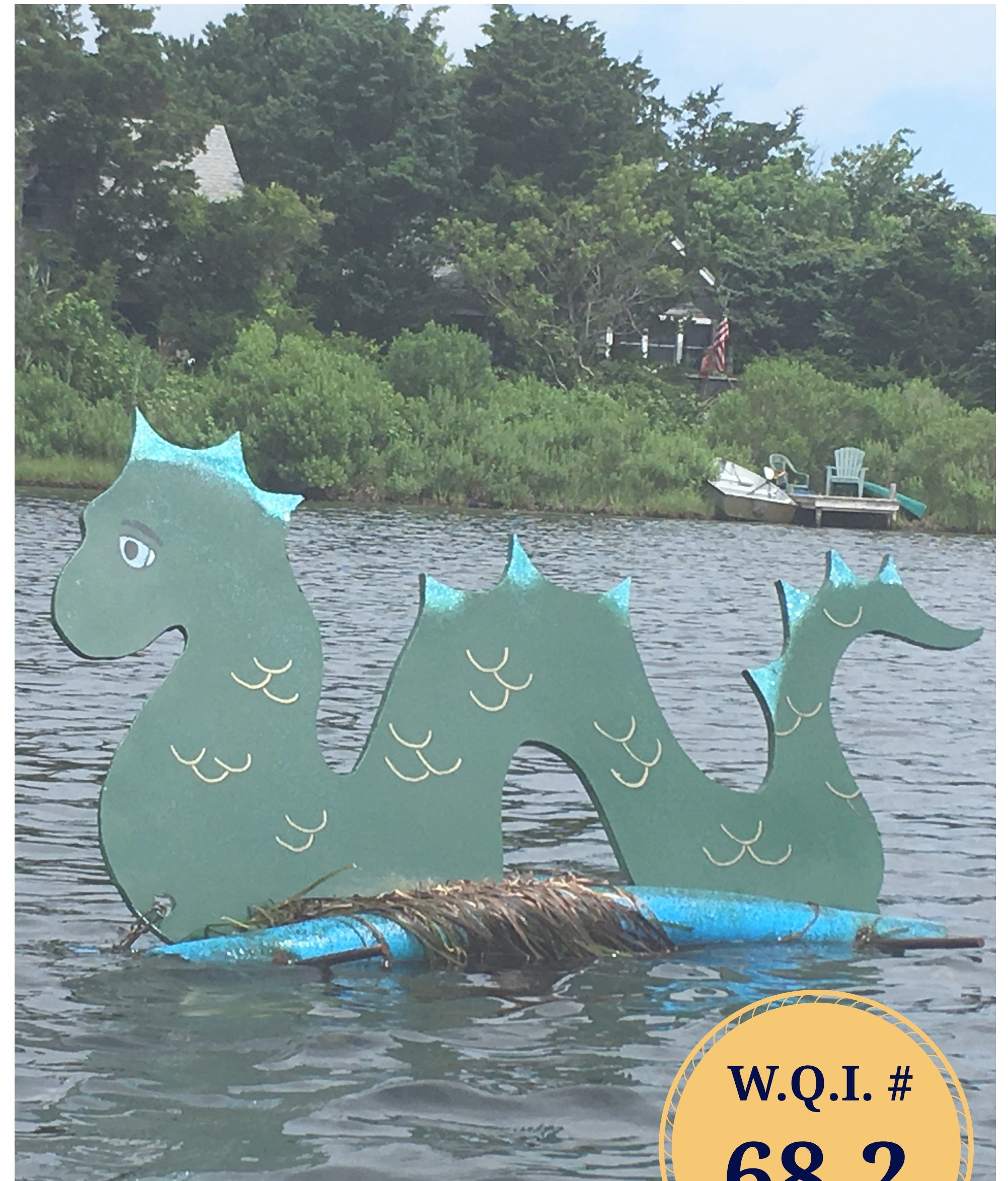
Enlarging the culvert will improve the flushing and thereby the water quality of the pond. Some areas of the pond are conditionally approved for shellfishing.

Why Sampling is Important

Field measurements and water samples are collected during the summer months to determine the pond's water quality. MVC staff collects water samples and water quality indicators including: temperature, oxygen levels, salinity, conductivity, pH, time, depth, and weather conditions at the time of our sampling. Water samples are also tested for several nutrients that in excess can be detrimental to the quality of the water and the systems it supports. Our sampling protocol is consistent with the Massachusetts Estuaries Project (MEP) and the Mass DEP TMDL recommendations, which developed the nitrogen threshold. Water samples are sent for analysis to the University of Massachusetts at Dartmouth, School of Marine Science and Technology.



Please forward questions to:
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Martha's Vineyard Commission (508) 693-3453



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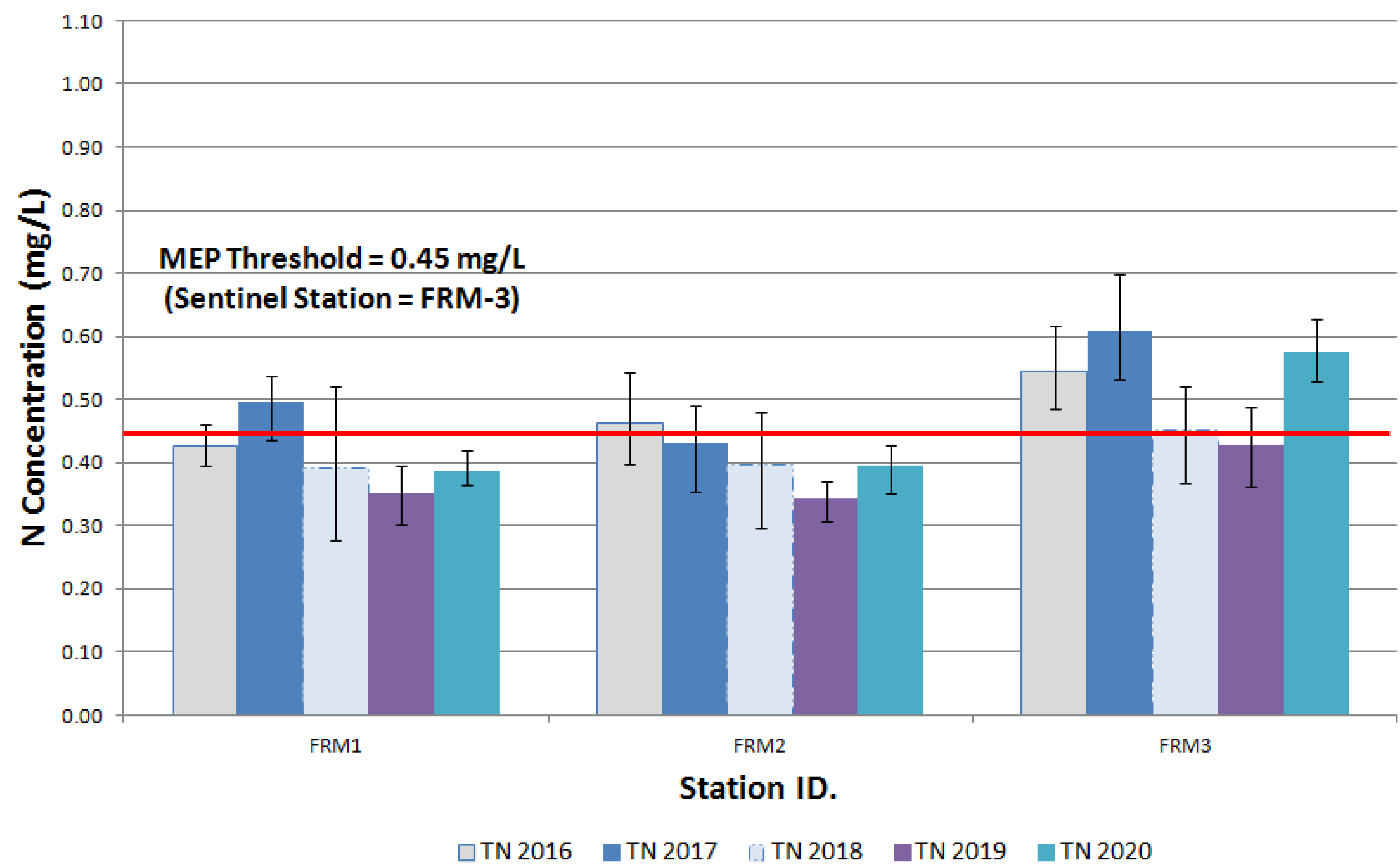
Water Quality Index

The water quality index score is a tool used to assess the well-being of a pond. It is composed of several parameters on the pond including water clarity, Oxygen levels, and nutrient levels. The score can range from 0 (low) to 100 (high) and is developed from data collected as part of a rigorous sampling schedule.

Water quality in Farm Pond is moderate to high, it has improved significantly since last year (2019 score of 49).



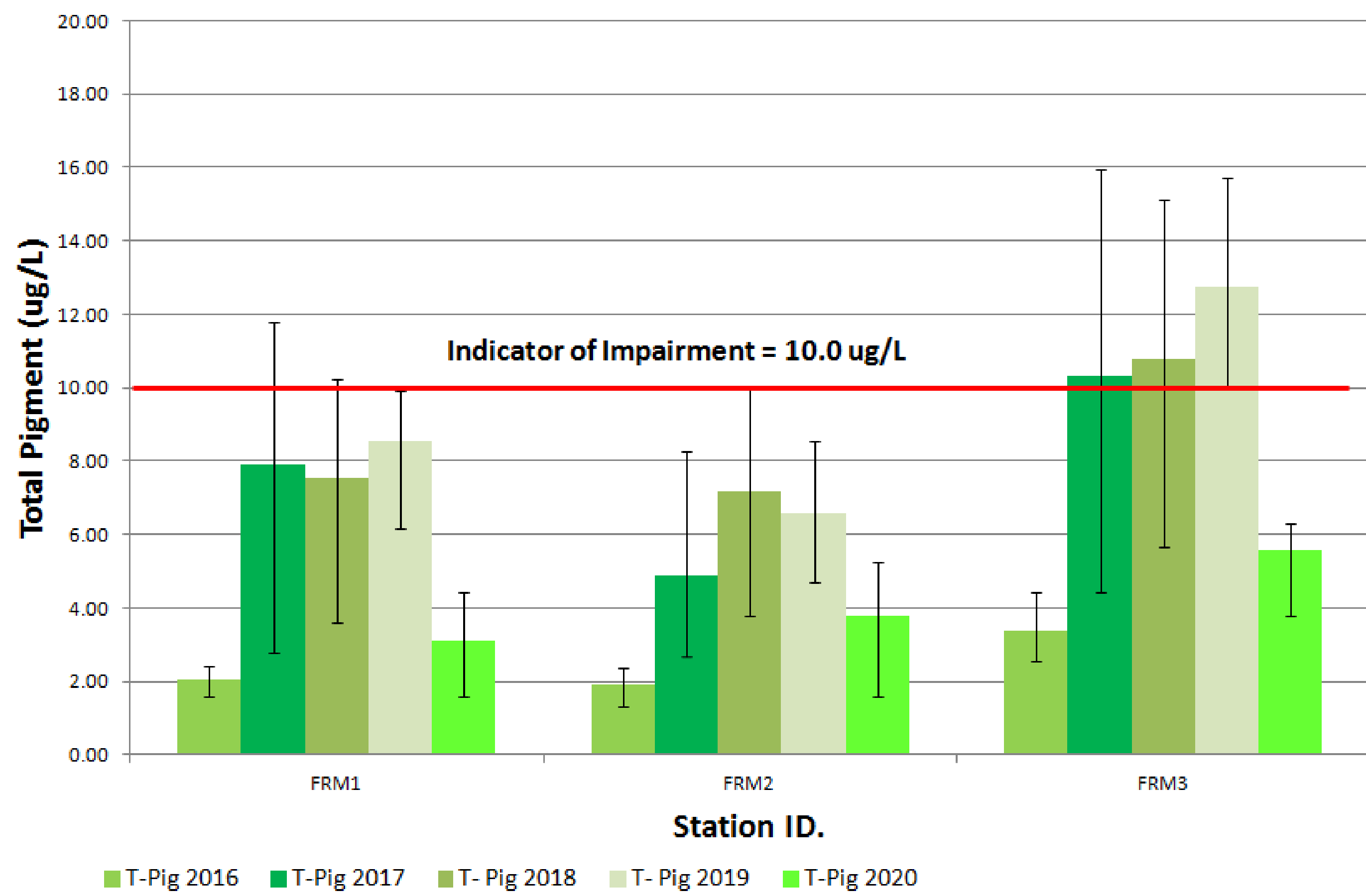
Farm Pond: Total N Gradient (2016, 2017, 2018, 2019, 2020)



Total Nitrogen

Nitrogen is a limiting nutrient and is necessary for plant, phytoplankton, and algae growth. Excessive nitrogen can be detrimental to the pond. In 2020, average nitrogen levels have increased at all stations compared to previous years, with FRM3 exceeding the targeted threshold.

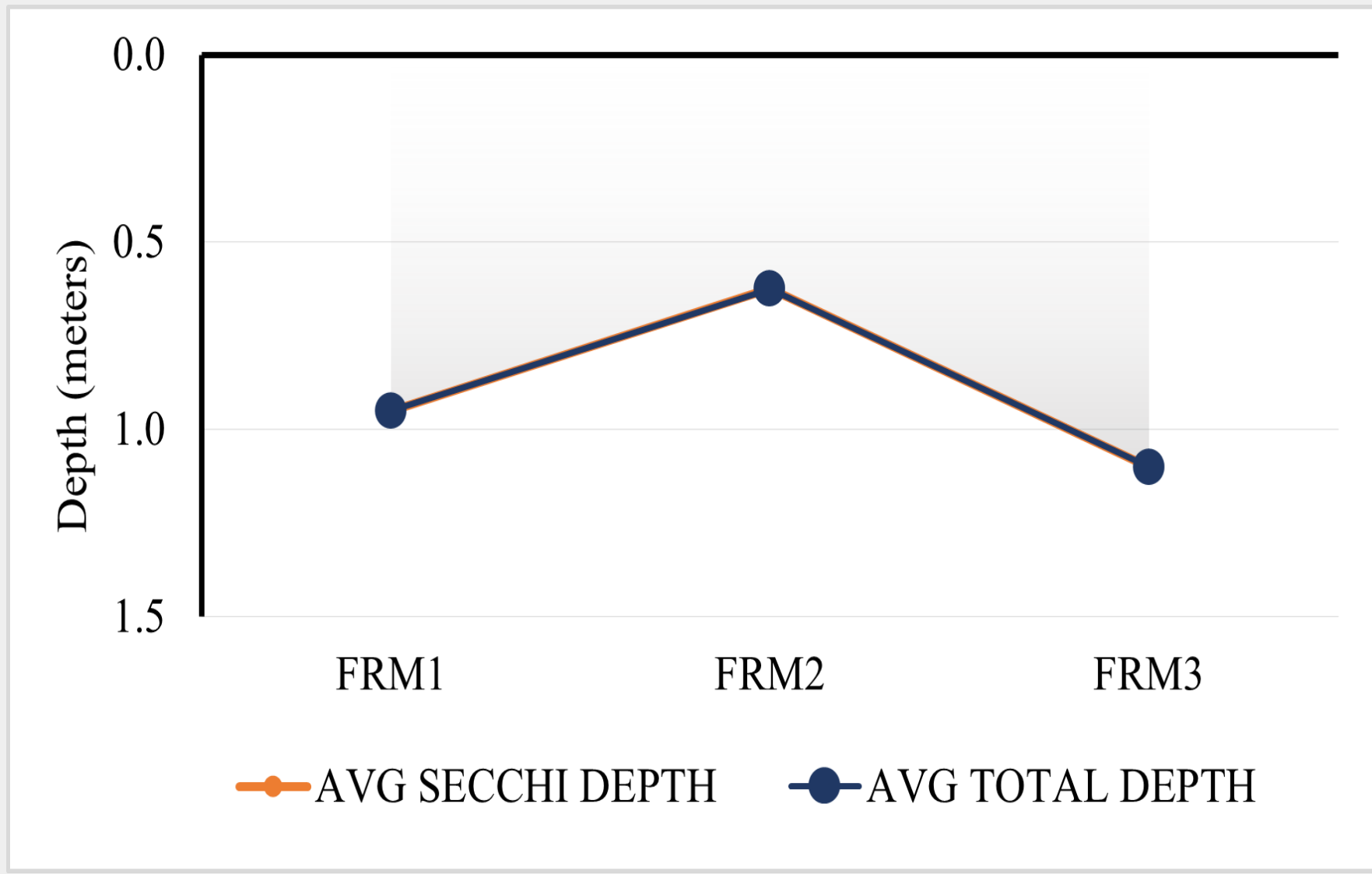
Farm Pond: Total Pigment Gradient (2016, 2017, 2018, 2019, 2020)



Total Pigment

Total Pigment indicates the level of microscopic plant matter in the water, which nitrogen levels can influence. All sampling sights had reduced total pigment concentrations compared to the previous year. All sites were below the targeted threshold of 10 micrograms per liter. FRM-3 saw its first reduction in total pigment for the first time in 5 years, this could be in response to meteorological conditions.

Water Clarity

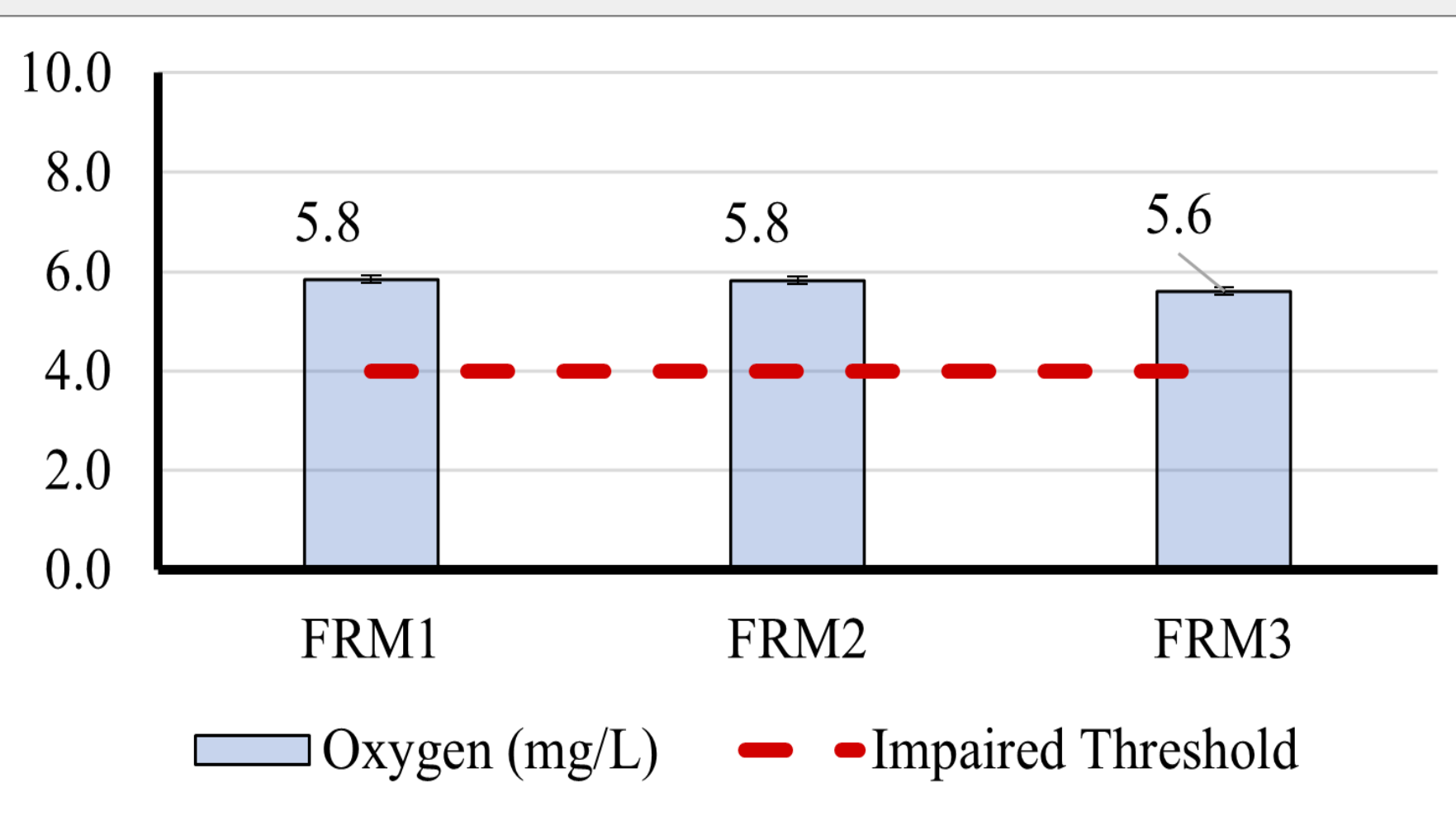


Water Clarity for farm pond within the 2020 year was high, with Secchi depth readings equaling the total depth of all sampling stations. When compared to last year's data, it was observed to have the same results. This is most likely due to the overall depth of the pond being shallow.

2020 Sampling Dates

- July 6th
- August 12th
- July 27th
- September 8th

Dissolved Oxygen



In 2020, Dissolved Oxygen (DO) levels were above the impaired threshold at all sample stations, and no noticeable change was observed compared to previous years of data.

Disclaimer: Dissolved Oxygen (DO) concentrations shown here are a snapshot of conditions when the sample was taken. DO levels can widely fluctuate throughout the day and night due to photosynthesis and respiration of plants.