

# James Pond

## 2020

### M.V.C. SAMPLING SUMMARY

#### Nature of the Pond

James Pond is a shallow salt pond with a single basin and a large sand flat. The pond and its watershed are located in West Tisbury. It is used recreationally, providing non-motor boating and aesthetic to the surrounding land owners and limited public. A herring run is present in the pond, providing a restricted inlet that connects it to Vineyard Sound. The pond is fed by a spring at the southeast end of the pond. A large sand flat along the barrier beach provides habitat for many shore birds and a soft landing spot for boats.

#### Summary for 2020

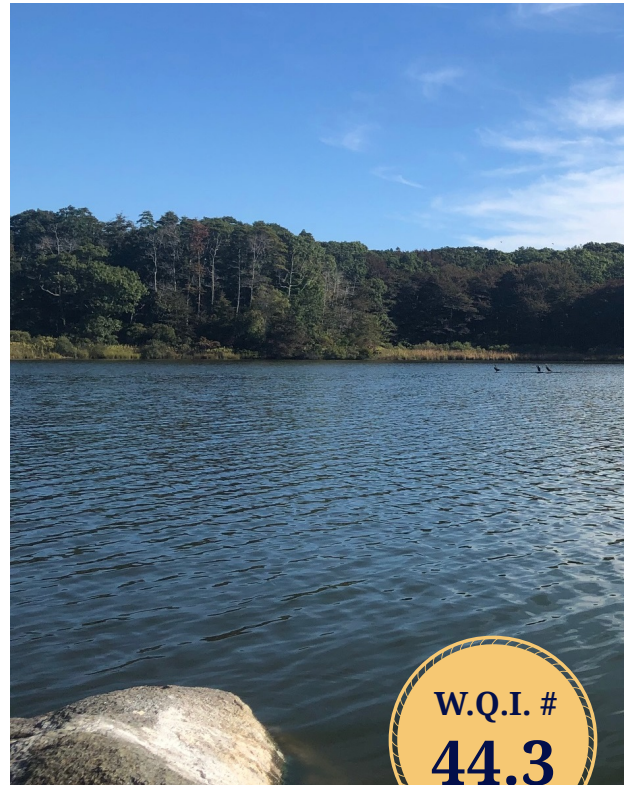
In 2020, James Pond saw some improvement in some of its water quality indicators. Although decreases in total nitrogen and total pigment were reported at all stations, water clarity and dissolved oxygen levels saw little change compared to past years. Several species of fish and waterfowl currently live in the pond. We recommend that future discussions about management efforts focus on improving water quality as well as improving access for and protecting wildlife. A hydro-geological study is under way to determine an opening point for the pond, which would increase flushing, improve fish access and help improve water quality but may change the habitats supported by the pond now. The entire pond will continue to be monitored to understand water quality trends and determine water quality solutions.

#### 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.



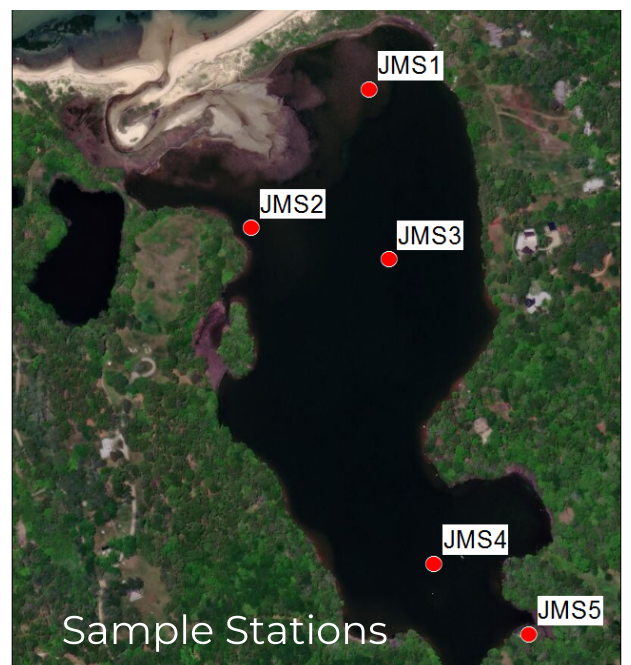
Please forward questions to:  
Sheri Caseau, Water Resource Planner  
Martha's Vineyard Commission (508) 693-3453



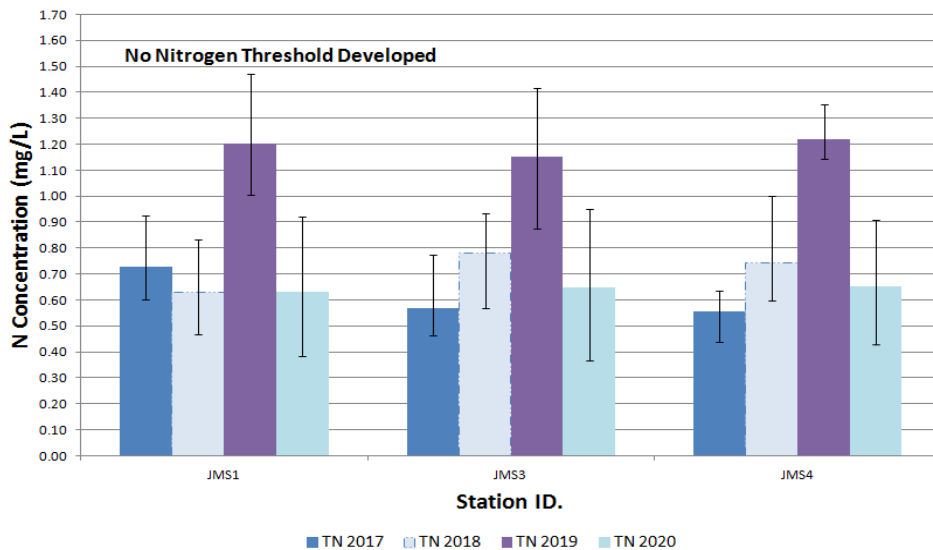
#### Water Quality Index Score

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 to 100 and is developed from data collected as part of a rigorous sampling schedule.

James Pond has been determined to have moderate water quality with a score of 44.3 in 2020, with an increase in quality since last year (2019 score of 27).



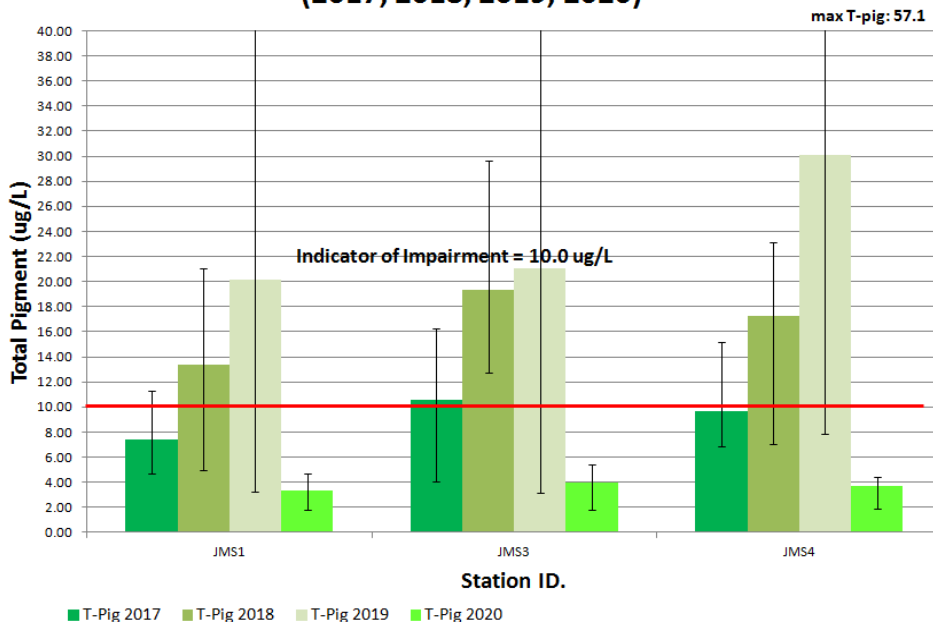
## James Pond: Total N Gradient (2017, 2018, 2019, 2020)



## Total Nitrogen

Nitrogen is necessary for plant, phytoplankton, and algae growth, but in excess can be harmful to the system. In 2020, nitrogen values were reduced from levels found in previous years across all sampling stations. Future testing will help identify nitrogen level trends.

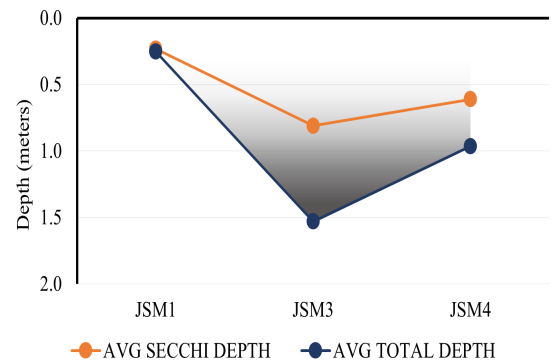
## James Pond: Total Pigment Gradient (2017, 2018, 2019, 2020)



## Total Pigment

Total Pigment indicates the level of microscopic plant matter in the water, plant matter that is often influenced by nitrogen levels. In 2020, total pigment averages were below the targeted threshold value. This represents a significant improvement when compared to the previous years (2017, 2018, and 2019).

## Water Clarity

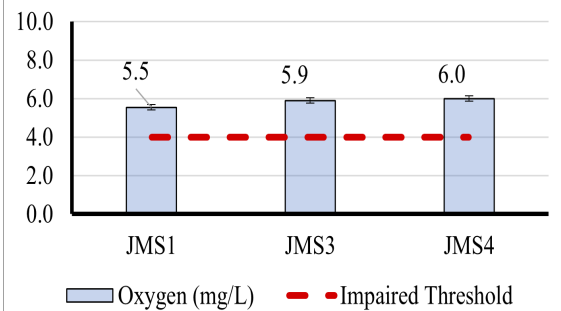


Water clarity in 2020 did not significantly improve when compared to previous years. Even at shallow sampling sites, light was only able to penetrate approximately half of the water column, reaching a maximum depth of 1.5m.

## 2020 Sampling Dates

- June 29th
- June 30th
- July 15th
- July 29th
- August 16th
- September 15th

## Dissolved Oxygen



Dissolved Oxygen(DO) levels for 2020 were above the impairment threshold, but a decreasing trend has been noticed over the past four years. Although average DO levels were above the stress threshold of 4 mg/L, we observed minimum values for nearly all stations that were below the threshold.

Disclaimer: Dissolved Oxygen (DO) concentrations shown here are snapshots of conditions at the time the sample were taken. DO levels can fluctuate widely throughout the day and night due to photosynthesis and respiration of plants.