

James Pond 2019

M.V.C. SAMPLING SUMMARY

Nature of the Pond

James Pond is a shallow salt pond with a single basin and a restricted tidal inlet to Vineyard Sound. The pond and its watershed are located in West Tisbury. James Pond has been monitored for three consecutive years and now trends can be established and evaluated for restoration options. A herring run is currently present but an inlet improvement would provide better access for herring and other species and would improve water quality.

Summary for 2019

In 2019, we saw significant increases in nitrogen and total pigment in James Pond which diminished pond quality. Poor flushing has resulted in low dissolved oxygen, low salinity and higher nutrient levels. Water clarity is also reduced by poor flushing and waters can appear murky and dark which decreases the habitat quality and aesthetic value of the pond. Several species of fish and water fowl currently live in the pond, management efforts need be made to increase water quality for those and other species to live there. A hydro-geological study could help determine an opening point for the pond which would increase flushing and help improve water quality but may change the habitats supported by the pond now.

2019 Sampling Dates

June 24
July 10, 24, 31
August 8, 14, 28
September 20



Please forward questions to:
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Fun Fact

This summer we saw over 11 species on the pond, including an otter!

It is our opinion that opening James Pond to Lambert's Cove would improve circulation and increase the overall water quality and aesthetic value of the pond.

Water Quality Index

W.Q.I. #
27

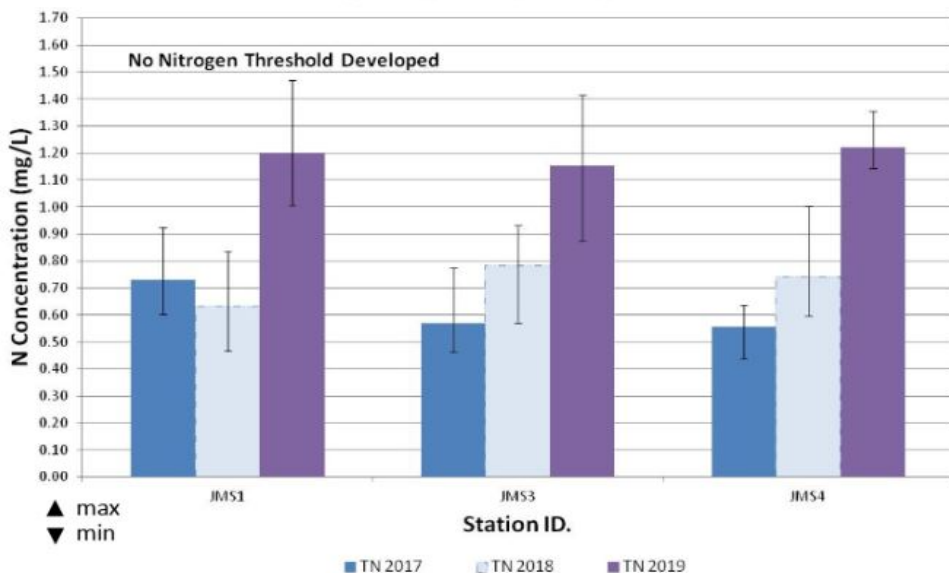
The water quality index score can range from 0 to 100 (low to high), and is based on parameters that are consistently monitored in this pond. Overall the water quality of James Pond is poor. There were increases in nutrients and total pigment at all sample sites.

The entire pond will continue to be monitored to understand changes in water quality trends and determine water quality solutions.

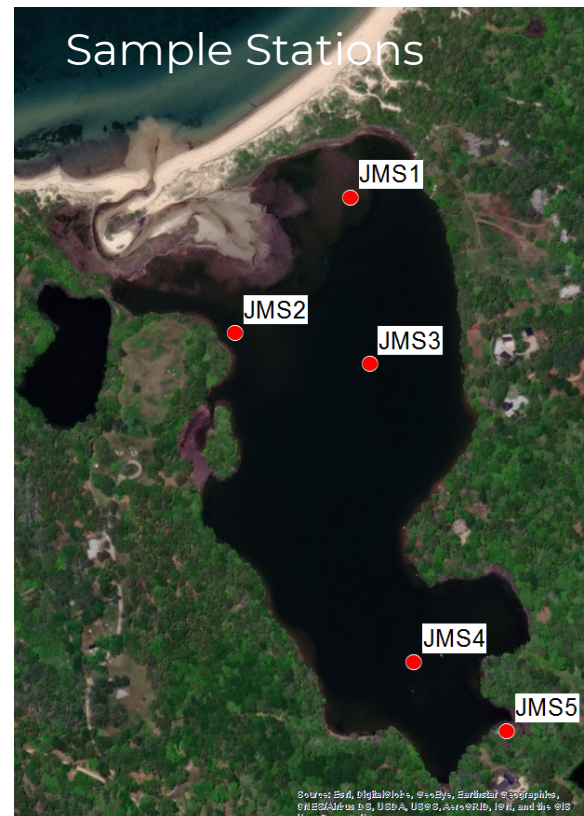
Why Sampling is Important

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

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

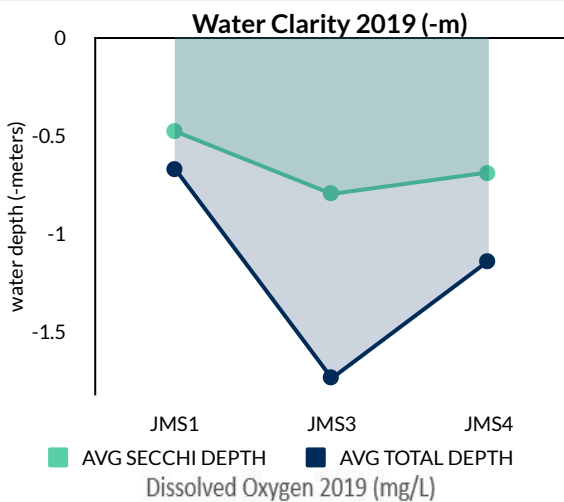


Nitrogen is a limiting nutrient and is necessary for plant, phytoplankton, and algae growth. Excess nitrogen can cause decreased water quality and eutrophication. Total nitrogen is currently high in the pond, and may continue to rise with James Pond's increasingly limited flushing.

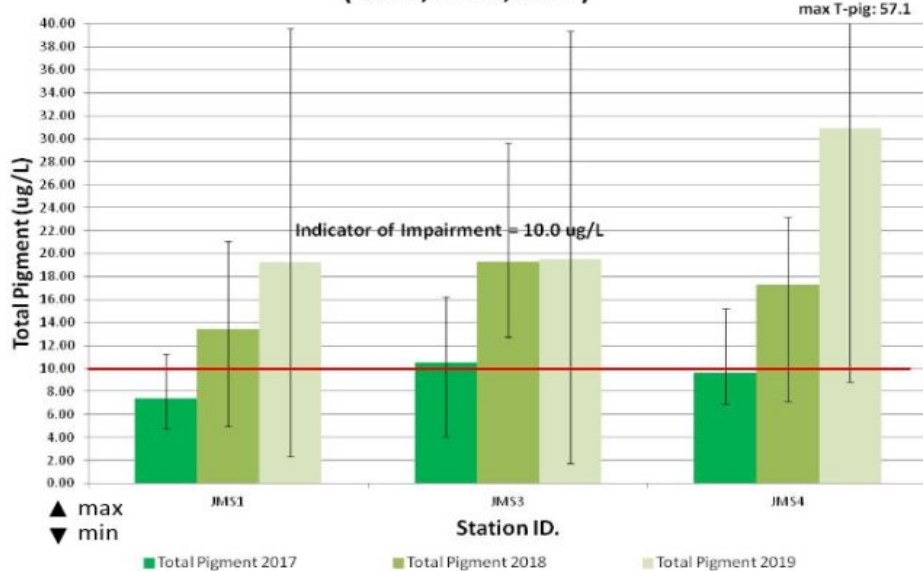


Total Pigment

Total Pigment indicates the level of microscopic plant life in the water, which can be influenced by nitrogen levels. For all three years of monitoring, pigment has been close to or above the threshold of impairment in the pond.



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



Dissolved Oxygen and Water Clarity

Dissolved Oxygen (DO) has been decreasing as a general trend over the past three years. Although average DO levels are above the stress threshold of 4 mg/L, minimum values for nearly all stations were below the threshold. DO concentrations shown here are a snapshot of conditions at the time the sample was taken. DO levels can widely fluctuate throughout the day and night due to photosynthesis and respiration of plants. DO above the threshold is ideal and can support benthic communities in the pond.

Low visibility at all stations indicates low water clarity. As pigment levels rise, we'll continue to see decreased water clarity.