

# Edgartown Great Pond 2019

## M.V.C. SAMPLING SUMMARY

### Nature of the Pond

Edgartown Great Pond is a coastal salt pond estuary that lies entirely within Edgartown, with the watershed extending to West Tisbury. This pond has many embayments and is primarily used for recreational swimming, fishing and boating, as well as commercial fin-fishing and shellfishing. Recent improvements in water quality may be due to decreases in nitrogen loading and regularly scheduled inlet openings. Eelgrass thrives in the lower portion of the pond, south of Swan's Neck, but re-establishment in the tributaries will continue with improvements in water quality.

### Summary for 2019

Water quality in Edgartown Great Pond is on the rise, however consistent monitoring of trends should continue. As of last year, total nitrogen levels were below the recommended threshold, but more work can be done to further improve eelgrass recovery. Inlet opening events and wastewater treatment facility advancements appear to have improved water quality in the pond and its embayments. Areas that don't flush and have tributaries that contribute nutrient rich water are still a concern. Further improvement of the pond, including decreasing nutrient input from septic and agricultural systems, can only increase the commercial, recreational, and aesthetic value of Edgartown Great Pond.

### 2019 Sampling Dates

July 29

August 28

October 22

### Fun Fact

Field measurements are taken at surface, middle and bottom at all 9 sites in this pond!



Please forward questions to:  
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With managed regular openings and upgrades to the waste water treatment plant we're seeing improvements in water quality and the return of eelgrass!

W.Q.I. #  
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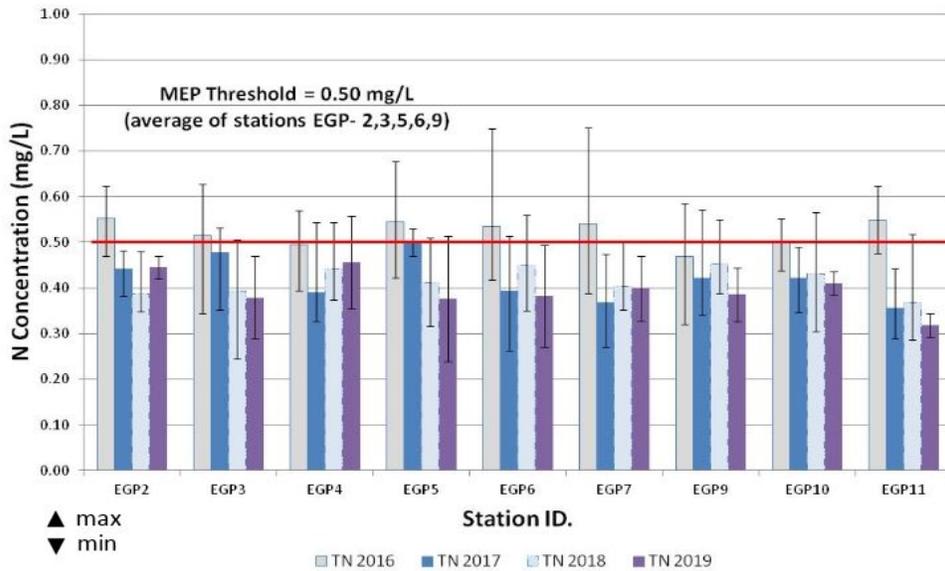
### Water Quality Index

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 quality of Edgartown Great Pond is of moderate to high quality. We have seen reductions in harmful nutrients, including nitrogen in recent years but still need further reductions to support benthic and eelgrass recovery. Station EGP-4 is the most impaired relative to the rest of the pond and will continue to be closely monitored to establish data trends and identify sources.

### Why Sampling is Important

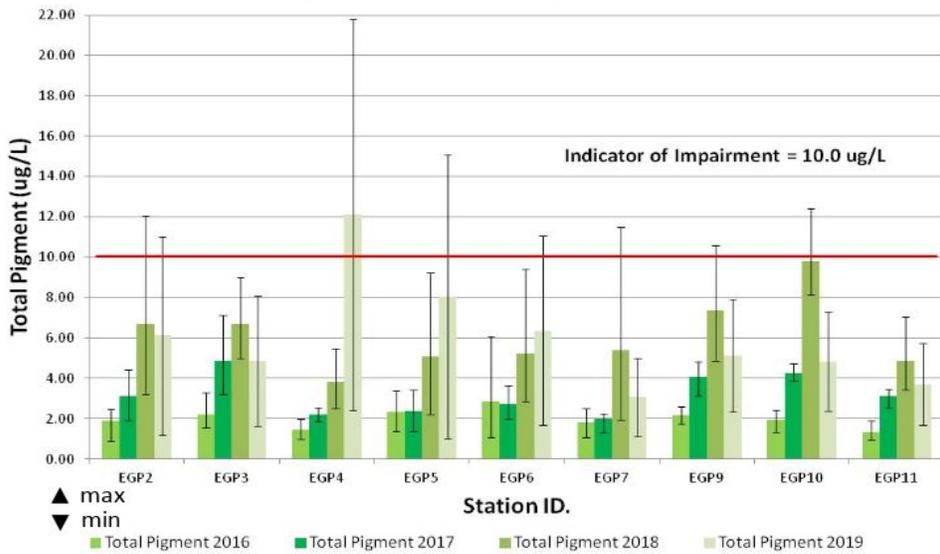
Field measurements and water samples are collected during the summer months in order to determine water quality of the pond. MVC staff collects water samples as well as a number of indicators of pond health including temperature, oxygen levels, salinity, conductivity, pH, and the time, depth and weather 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.

## Edgartown Great Pond: Total N Gradient (2016, 2017, 2018, 2019)



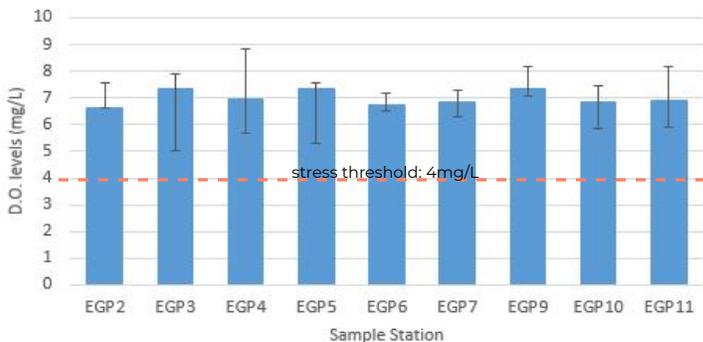
Nitrogen is a limiting nutrient and is necessary for plant, phytoplankton, and algae growth but in excess it can be harmful. Nitrogen concentrations remain near the recommended threshold of 0.5 mg/L but can be reduced further to support eelgrass recovery.

## Edgartown Great Pond: Total Pigment Gradient (2016, 2017, 2018, 2019)



Total Pigment indicates the level of microscopic plant life in the water, which is influenced by nitrogen levels. High temperatures have been observed and may contribute to recent increases in total pigment at some sites.

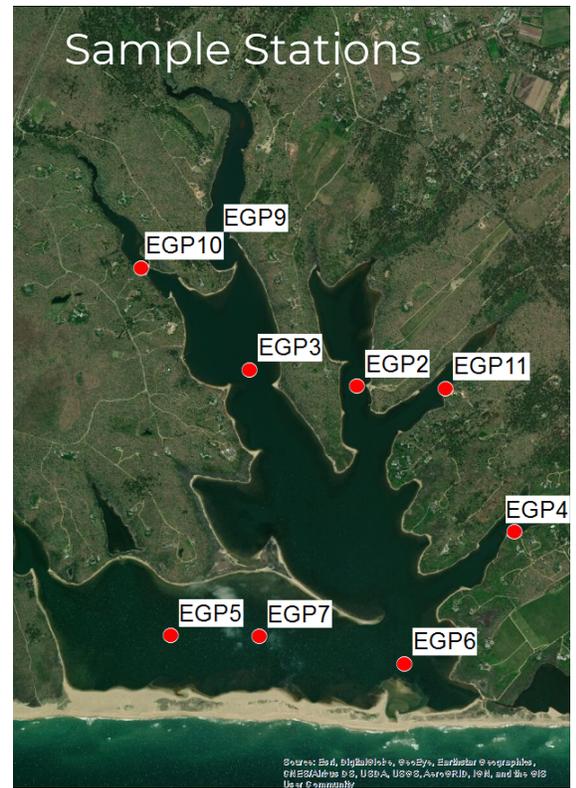
## Dissolved Oxygen 2019 (mg/L)



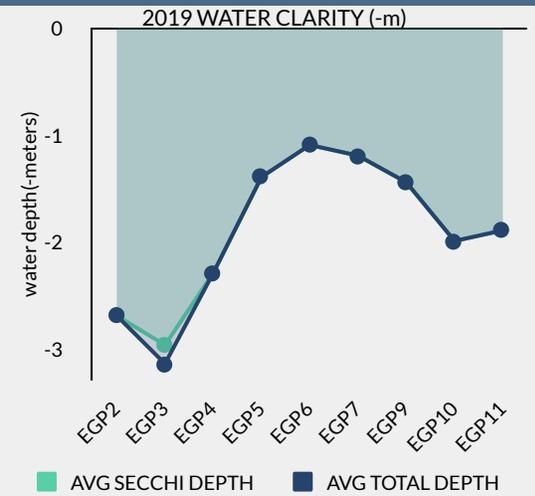
## Dissolved Oxygen

Dissolved Oxygen (DO) in this pond is very good and remains above the stress threshold of 4 mg/L at all monitoring stations. DO above the threshold is ideal and can support natural benthic communities including eelgrass, shellfish, and fin fish in the pond. 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.

## Sample Stations



## Water Clarity



Water clarity in 2019 indicated good flushing. Average water clarity was 100 % at all stations except for EGP-3 which is typical as EGP-3 is the deepest monitoring point on the pond.