

October 20, 2020

Board of Directors,

A summary of the Water Quality Committee activities is presented below.

PROGRESS

Water Quality Plan

At the October 17, 2020 fall Town Meeting, the members approved (111 – 5!) the expenditure of \$71,024 as Plymouth's share of the cost of the Herring Ponds Watershed Water Quality Plan. We have received most of the money collected from Facebook and I have sent out email notices to all those who had made pledges to our \$10,000 fundraising effort. David Gould's plan is to collect the money, pay SMAST and get a fall start on the study. I have asked for a meeting with David to talk about the implications of the results that we have recently obtained from samples taken from the LHP spring to GHP to this study. This funding has been a long time in the making; the Board is to be congratulated on its hard work to make this quest successful.

SMAST Sampling

The intrepid crew of Tom O'Brien, Jack and Denise Kedian, Kim Tower, Jerry Levine and Don Williams took the SMAST samples on Great Herring Pond on October 7. We (Lee Pulis, Jerry Levine and Don Williams) also took samples from the old cranberry bog north of Little Herring Pond, LHP spring, north LHP, central LHP, LHP outlet, Carters River and Great Herring Pond for nitrate and total phosphorus measurements by Envirotech. Secchi Disk reading was 4 meters, a great improvement from this summer's readings.

The samples were taken on a very windy day and the DO readings were deferred. They have not yet been taken.

Elbow Pond

Results have not yet been received from the Elbow Pond samples.

Raman Spectroscopy

I participated in a Zoom meeting with my friend from Nags Head, Bob Lane, and Professor Ryan Senger of Virginia Tech. Dr. Senger has used Raman Spectroscopy to detect bladder cancer in urine samples. I asked him if he could detect phosphorus and know from the spectrum whether the origin was from septic, sediment or runoff. He was optimistic that small spectral differences could, using statistics, be used to identify phosphorus origin. He also thought that he might be able to detect markers that would distinguish "natural" E. coli from E. coli due to a defective septic system. I told him that we took samples from an old cranberry bog north of Little Herring Pond, LHP spring, north LHP, central LHP, LHP outlet, Carters River and Great Herring Pond for nitrate and total phosphorus measurements and that these samples might have different sources of nitrate and phosphorus. I contacted Envirotech and found that they still had our August samples and could also give me our October samples. I mailed them to Dr. Senger and am awaiting word of his results. This method could have great value for water quality studies and Dr. Senger was eager to start work. There would be no charge for this project assessment stage.