



The Three Bays Monitor

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Sea Lettuce Harvesting Demonstration Project

Each year, sea lettuce growth in Prince's Cove, Warren's Cove and adjacent areas gets increasingly worse. It smothers the growth of shoreline grasses, shellfish and other marine life, and impedes navigation of boats and kayaks. It causes low dissolved oxygen levels injurious to fish. When it washes up on shore it creates objectionable odors, visual pollution, and discourages swimming. Some experts believe it may enhance the re-growth of fecal coliforms.

Gross sea lettuce infestations are a major problem in many parts of the world and the use of mechanical harvesters to remove it has been successful. Sea lettuce thrives when soluble nitrogen, almost always from sewage, mixes with phosphorus rich seawater. In the open ocean, dilution prevents excessive growths. However, in poorly flushed estuaries, accumulated concentrations of nitrogen, along with the phosphorus naturally present in seawater, cause

extensive growths of sea lettuce and other undesirable algae. In the Three Bays, the source of nitrogen is groundwater which contains the nitrogen rich effluent from onsite septic systems. Due to the porous soil on Cape Cod, septic systems have been successfully and widely employed for sewage treatment. Unfortunately, the nitrogen impacts of these systems was largely ignored until estuaries on the South Shore of the Cape lost almost all of the eelgrass that is so essential to a thriving estuary.

Several years ago the Commonwealth initiated the Massachusetts Estuary Project to find solutions to these nutrient-driven problems. The most proven solution is the construction of sewers and treatment facilities that will remove the nitrogen from the wastewater before it is discharged to the groundwater. However, during the many years it will take this work to

reach fruition, the sea lettuce situation in the Three Bays will become much worse than it is now.

Two years ago Three Bays Preservation began an in-depth study of sea lettuce impacts to explore near term solutions. Many scientific, fisheries, and wildlife experts were contacted to determine both the positive and negative aspects of sea lettuce. The responses overwhelmingly indicated that there would be many positive impacts, and few or no negative ones, if the sea lettuce is physically removed. Moreover, it appears that the sea lettuce could be composted with other organic material to produce a more nitrogen rich product. The State of Delaware has successfully applied this approach in its estuaries and has found that although harvesting cures mainly the symptoms of excessive human nitrogen sources, it also substantially reduces re-growth in subsequent years.

You are invited to the Annual Meeting of Three Bays Preservation

**Saturday, September 17th, 2005
6:30 pm—8:30 pm**

Wianno Yacht Club, 101 Bridge Street, Osterville

Cocktails and Hors d'oeuvres

**If you plan to attend, please let us know by Thursday
at**

508-420-0780 or info@3bays.org

Within the past two years it has become apparent that the sea lettuce, formerly confined to our northerly coves, has now established a growing resident crop in North Bay. Because of this, we now believe that mechanical harvesting and composting of sea lettuce is worthy of a pilot demonstration project in Prince's and Warren's Coves, and Dam Pond. We are taking steps to achieve funding and approvals to perform this test in the Spring of 2006. Based on the experience in other areas of the world, if sea lettuce is allowed to grow unchecked the Three Bays will become a much less desirable place to live and enjoy.

Our First Summer as Stewards of Dead Neck/Sampson's Island

If you had the chance to visit Dead Neck/Sampson's Island this summer, you probably encountered one of our summer rangers. We were very fortunate to have some truly wonderful people working for us and we would like to tell everyone a little something about each one.

Pictured below on the left is Jennifer Granger of Marstons Mills. She has just entered her senior year at Westfield State College, majoring in Criminal Justice.

To the right is Katrina Lassiter of Sandwich. Katie is a graduate of URI Kingston, and is now making

her way cross country to pursue her Master's Degree in Coastal Zone Management at the University of Washington in Seattle.



Massachusetts Maritime Academy in Buzzards Bay.

Pictured below, on the left, is Bob Heller from Marstons Mills. Bob is a graduate of the University of Maine at Fort Kent where he majored in Environmental Science, and is also a graduate of Lesley University where he obtained his Master's Degree in Education. For the past 15 years he has been an 8th grade science teacher at the Lawrence Middle School in Falmouth. To the right is his nephew Ed Heller, helping out for the day.



Another of our summer interns was Juan Bacigalupi from Mashpee, pictured above. Juan began his internship with us last spring while a senior at Cape Cod Academy. As part of his senior project, he fulfilled 80 hours of community service helping us with our water quality monitoring program and various other projects. He is currently a new cadet at the

