

The Three Bays Monitor

Vol. 14 - June 2003

The Optical Brightener Project

Another Method for detecting failing septic systems.

The Optical Brightener Project aims to detect failing septic systems in our Marstons Mills River watershed, the system that feeds the three bays. The project tests for the presence of optical brighteners in nearby waters, indicating ineffective natural cleansing of wastewater.

Optical brighteners are fluorescent white dyes that are added to almost all laundry detergents to help make clothes look brighter. Because these dyes are a component of laundry [effluent](#), they are generally found in domestic waste water and can therefore enter the subsurface environment as a result of ineffective [sewage](#) treatment. Removal of the optical brightener dyes in groundwater is by adsorption onto soil and organic materials; in surface waters they are removed by adsorption and photo decay. Since adsorption is a critically important process in the performance of [septic systems](#), the recovery of these dyes in nearby waters indicates ineffective natural cleansing of wastewater.

Because the optical brightener dye is fluorescent, it doesn't color the waterways. However, it does show up under black light when the dye is "captured" by unbleached cotton cloth left in our streams and rivulets. High [fecal coliform](#) counts *without* a positive reading for optical brighteners in the water is evidence that wildlife is a probable source of the fecal coliform. But when a water sample from a site in our streams shows a positive reading for optical brightener dye *along with* a high fecal coliform count in a water sample, then the likely source is a septic system which is not properly filtering the water before it enters the open stream beds.



The follow-up for failing septic systems in our Marstons Mills River watershed area is in the domain of Dr. Dale Saad, the Town of Barnstable's [Coastal Health Coordinator](#) who, in the interest of public health, can address the problem through the authority of her office.

*Kris Clark and Fred Dempsey,
retrieving test strips from the
Marstons Mills River.*

Proposed Dredging of the Bay Street Channel



Three Bays Preservation, the local area yacht yards and the Town of Barnstable have teamed up to do some much needed dredge work. We are proposing completing the channel from where our last dredge project finished in West Bay, proceeding under the bridge to eight feet of water near St. Mary's Island in North Bay. (See map, left. Click for larger view.) This channel has not been maintained for over 40 years and, unlike the lower bays, this area is comprised of a large amount of fine grained material that cannot be placed on Dead Neck. It is largely because of this disposal problem that this channel has not been dredged.

Several options being considered include nearby marsh creation, land based disposal offsite, and contained aquatic disposal offshore. A strong case can be made to the regulatory authorities that this is a previously permitted project which will provide added benefit of improved water quality. What *Three Bays* needs is funding for the myriad of tests, core samples, applications, etc. that will be required to find a disposal site for the fine grained material.

The budget for this permitting could be as high as \$200,000. Please give generously to this project.

Water Quality Monitoring Schedule set for the 2003 Season

Since 1999, water quality monitoring volunteers for *Three Bays Preservation* have been testing the Marstons Mills River and the related bays for various types of pollutants that have resulted in the closing of shellfish beds and the eutrophication of several ponds. Sources of the pollution include fertilizers, septic systems and illegal piping for washing machines. When we first began, we worked solely on our own. In 2002, we partnered with the Town of Barnstable, UMass Dartmouth School of Marine Science and Technology, the Mass Department of Environmental Protection, the EPA and the County of Barnstable. This partnership has enabled *Three Bays* to become involved in the Estuaries Project, a \$16 million project that will enable us to quantify the amount of pollutants in our watershed. Because of the previous 3 years of data collection, we were chosen to be included in the top 20 embayments to be studied for this year.

We couldn't accomplish what we have without the invaluable help of our volunteers. They come from varied backgrounds...housewives to retired doctors...and they all care about the quality of their community and its watershed. Because of their dedication, we have been able to improve the quality of our water, as proven by the decrease in fecal coliform counts. Won't you consider becoming a volunteer, for this or any other project? Give us a call at 508-420-0780 to see how you can help.

Test #1	Thursday, June 19 at 6 am
Test #2	Tuesday, July 8 at 8 am
Test #3	Monday, July 21 at 7:30 am
Test #4	Tuesday, August 5 at 7 am
Test #5	Tuesday, August 19 at 7 am
Test #6	Wednesday, Sept 3 at 7 am

An Evening by the Sea

**Please join us for a lovely evening of
Cocktails, Dinner, Dancing,
and Auction
to benefit
*Three Bays Preservation, Inc.***

**Friday, June 27th
7:00 pm to 11:30 pm
Wianno Club, Osterville**

**Choice of Filet Mignon with Fresh Mushroom Sauce,
or
Broiled Swordfish Steak with Lemon Butter.**

**Dancing to the sounds of
*The Symphony Swing Band Jazz Quintet***

**\$250 per person
(includes tax-deductible donation of \$100)**

**Please make checks payable to *Three Bays Preservation*,
and send to us, along with your meal choice, by June 13th.**