



**Salt Ponds
Coalition**

The Tidal Page

News of the Rhode Island Salt Ponds

www.saltpondscoalition.org

Official Watershed Council for the Salt Ponds

Spring 2012



Dredging Completed at Charlestown Breach

On an unseasonably mild day early in February, an assemblage of people met at the Charlestown breachway parking area for a ribbon cutting ceremony of sorts. There wasn't actually a ribbon, and work had commenced several days earlier, but there were members of the press as well as many who had been active in moving the project forward through the funding and permitting stages. The idea was to say a few words, acknowledge the good work of those involved, and view the heavy equipment at work clearing the channel of a burden of sand that was threatening to inundate recently restored habitat within

the interior of the pond.

Words were said, the site was toured, and as luck would have it the dredging was moving ahead just off the parking area and well within view. A week later, when the Providence Channel 12 Green Team visited the site with video cameras in tow, the big machines were quiet and the dredge team was up to their collective elbows in grease as they changed out the stater motor on the booster pump, a giant heavy-duty device connected to a very large diesel motor. The booster receives a slurry of sand and water and throws it three-quarters of a mile down the shore

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The new Charlestown beach pavilions are well underway and will represent a big improvement over the old setup, both in terms of beach-goer enjoyment and wastewater treatment. Kudos to the town team that brought the project to fruition.

Originally, the project looked like a big problem. The town recreation department was talking about bringing in more day trippers off of Route 1, but continuing to use the antiquated in-ground septic system at the Blue Shutters facility. SPC opposed that plan and argued for sealed wastewater tanks that would be pumped, and the contents trucked off-site for treatment; or for the use of composting toilets.

The town wastewater commission studied the options and chose to recommend composting toilets, such as those that have been utilized for many years at the Misquamicut State Beach pavilion. Gray water - from sinks and washing ma-

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DEM Wastewater Regulations Revised

The Rhode Island Department of Environmental Management (D.E.M.) has published proposed changes to their salt-pond region on-site wastewater treatment regulations that will temporarily relax trigger points that force the replacement of functioning septic systems with new denitrifying technology.

The changes come after Rep. Donna Walsh brought the towns of Charlestown, Westerly and South Kingstown together with state officials to seek relief on several fronts that collectively and individually were viewed as hardships.

- First, the proposed changes will allow modest renovation or additions to homes without requiring a new septic system. Under the proposed rule, construction projects proposing an increase of up to 600 square feet of interior living space, including footprint changes that do not encroach on the existing septic system, do not trigger the requirement to install nitrogen reducing technology. Currently,

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Message From Our President



Spring is upon us after a rather unusual winter, mild by some standards and harsh by others. With the spring comes renewal and that means lots to do. Please do your part in your local Earth Day efforts to spruce up your neighborhoods.

As you can see from the images posted on our website, the south shore took a major hit of beach erosion. Hurricane Irene took away the summer beach buildup along the beach face leaving no buffer against the winter storms. I've seen it worse, but not much worse. Now that the more gentle wave action is beginning to deposit sand, it is a good time for communities to focus on beach stabilization and dune building. There are several low cost ways to help enhance your beaches, such as snow fencing and vegetative planting. URI, CRMC and other natural resource agencies have good information available. Remember, even a repair requires a CRMC maintenance permit, which can be applied for at the Stedman Government Center.

We are proud to report that Charlestown Breachway maintenance dredging is complete. Roughly 75,000 cubic yards (yd³) were placed along the Charlestown Town Beach shoreline. In my over 40 years doing conservation work, I've never seen such a successful cooperative project. The Town, CRMC, local legislators and Salt Ponds Coalition all came together to get this accomplished in one season, on time and under budget! Steve McCandless and Dan Goulet did a stellar job shepherding the project along.

Our Salt Pond Watchers are set to begin sampling in May. Thanks as always to all of the Pond Watchers and Roy Jeffrey, coordinator. Roy has had his share of health problems this winter and we wish him a speedy recovery.

We welcome Mike Doyle, the new Executive Director of the Weekapaug Foundation. Mike is the son of Anne & Tom Doyle of Quonnie. Anne served on our Board for many years. Mike along with SPC will be planning a kayak trip focusing on the acquisition of Bill's Island. Watch our website for scheduling. We will have two additional kayak trips this summer as well. I have abandoned my futile attempts at spring and fall trips, which seem to be foiled by the weather gods. Our first kayak trip will be on Green Hill Pond June 23.

We look forward to the annual pizza fundraiser at George & Cathy Hill's July 12th. We are also planning some neighborhood cocktail party fundraisers for smaller groups. Contact either Sharon Frost or Sassy Dodd if you would like to host one. We hope to have another Champagne & Oyster event sometime in the future, but not as an annual event.

We certainly cannot do this good work without the dedication of our Board, volunteers and supports like you. We look forward to a busy and safe 2012 season.



Salt Ponds Coalition

The Salt Ponds Coalition stands up for the health and sustainable use of the southern Rhode Island salt ponds. SPC is the only organization whose sole charter is to monitor and protect these unique resources.

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**Tidal Page Editorial
and Layout**

Mark Bullinger

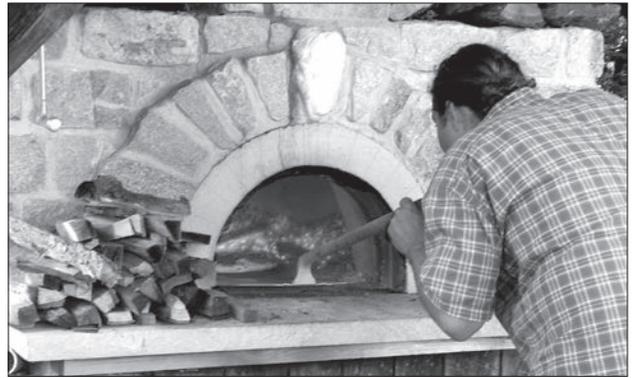
Join us for our traditional Gourmet Pizza Garden Party

Thursday July 12th (Rain date July 13th)

Indigo Point (between Charlestown and
Matunuck) 5:00 to 8:00P.M.

The pizza is gourmet, the gardens sublime.

Handmade pizzas, baked before your eyes in a wood-fired outdoor field-stone oven, are served with salads and dessert in the rambling gardens of hosts George and Cathy Hill. Call 401-789-4218 for reservations. (P.S. Please bring a beverage to share.)



Events details for all events can be found at www.saltpondscoalition.org

June 23rd - Kayak Trip Our early-season paddle will be on Green Hill Pond, which is partially in South Kingstown and partially in Charlestown. We will meet at the Ocean Ridge Civic Assoc. parking lot on Ram Island Road at 8:30am and return before noon. This is a lovely pond but suffers from environmental challenges that present a case study in aquatic health and public policy. We will have experts along to explain. As usual there is no fee for the paddle, but we do accept donations to the Abby Aukerman Scholarship Fund.

Salt Pond Safari Series Join SPC on the third Saturday of the month, from June through September, for our Salt Pond Safari series. We meet at the Grassy Point parking area at the end of the main access road into Ninigret Park. From there it's a ten minute walk to the shore of the pond where we pull our thirty-foot long seine net to catch all kinds of pond creatures. We examine what we catch, and then release it back to the wild. The safaris meet up at 10:00am and return to the parking area by noon. More info at our website.

July 12th - Annual Pizza Fundraiser Our renowned al-fresco wood oven pizza fundraiser will be on July 12th from 5:00 until 8:00pm. The event is held in the beautiful gardens of George and Cathy Hill, which are just a few minutes east of Charlestown Breachway Road in the community of Indigo Point. In the hustle of mid summer, this is always a wonderfully relaxing event. See above for more details.

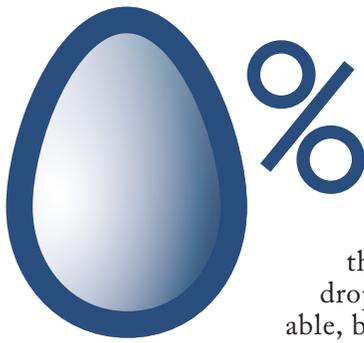
SPC Hosts Booth at RI Saltwater Fishing Show

Salt Ponds Coalition extended its public outreach efforts to the saltwater fishing community this year by hosting a booth at the annual March fishing show at the Rhode Island Convention Center. The booth space was kindly donated to SPC by the Rhode Island Saltwater Anglers Association, which produces the popular show.

The SPC booth featured a six-foot long high-resolution image of the south shore, from Watch Hill to Point Judith, displayed on a table along the front of the booth. Scores of anglers stopped by to study the lay of the land, spot their favorite fishing holes and in some cases their houses. The chart provided a perfect segue to talk about the importance of the salt ponds not only for recreation, but also for the production of every major fish in our coastal waters. Our belief is that spreading word about water quality and danger of habitat loss is an ongoing and never ending job and the more people we engage with this message the better.



Art Ganz spreading the word at the Saltwater Fishing show at the Rhode Island Convention Center. The three-day show was on March 9th, 10th & 11th.



Goose Egg

0% is the kind of goose egg a lot of people around the salt ponds would like to see when it comes to the reproductive success of the native Canada Goose population, at least until the population decreases dramatically. As just about everyone knows, the year-round population of the Canada Goose has boomed over the past couple of decades. We now host thousands of non-migratory birds who feast on the cultivated grass of lawns, golf courses and playing fields, before retiring to the salt ponds for the remainder of the day, where they deposit copious quantities of their nitrogen-rich droppings. Totally eliminating the resident geese is not realistic and probably not desirable, but there are techniques, widely considered humane, that can make a big dent in the population explosion. Countless communities across the nation face the same problem and in many of them organizations have been formed to conduct state, town and federal sanctioned campaigns to disrupt the breeding success of the birds. The most humane way to prevent reproduction is to render the eggs non-viable shortly after they are laid. This process is called addling and can be conducted in a number of ways. One is to shake the egg, so as to scramble it inside the shell, but the technique considered the most humane is to coat the shell with vegetable or mineral oil, which cuts off the air supply necessary for development. Whichever technique is used, the eggs are returned to the nest as quickly as possible, so the nesting pair continue to tend to the eggs. Otherwise they would lay a new clutch in short order. Both the Humane Society and People for the Ethical Treatment of Animals (PETA) endorse the oiling technique of goose management. PETA has an informative brochure online at http://loseesgoosecontrol.com/PETA_HumaneGooseControl.pdf that goes over the issue in some detail.

Charlestown has recently voted to pursue a program for the spring of 2013. During the spring of 2012 volunteers will be scouting out nesting locations and town officials will participate in training programs. If you would like to help, contact the Town of Charlestown at (401) 364-5030 to learn more or to report observed nesting sites on Green Hill, Ninigret and Quonnie ponds. Canada Geese are a protected under the migratory species act so a permit from US Fish and Wildlife is required before anyone is allowed to mess with their eggs.

Pavilions *(continued from page 1)*

chines - if on site -will be processed in small in ground systems.

Not only is this a good option for the salt pond environment, it is also a safer investment for the town, as both pavilion sites are at beach level or below and flood in big storms. The new pavilions are built on pilings and the composting units will be well above water level and relatively safe from damage. The alternative in-ground option would have cost \$100,000 or more and would have been at risk of inundation during storms.

Modern industrial composting toilets are able to handle the volume of waste generated at a beach facility. Between dehydration and the composting action, the waste is rendered inert and is reduced to such a small volume that the storage bins can go several years before being emptied.

Once emptied the composted waste can be used as fertilizer, or disposed of off site. The compost should not be used on sensitive sites close to water since the concentrated nutrients can easily wash into the water.

D.E.M. *(continued from page 1)*

even closing in an existing breezeway could trigger the rule and so many minor home improvement projects have been on hold. The 600 square foot threshold provision expires on November 1, 2014, at which time the upgrade thresholds will revert to the following: adding a floor level or portion of a floor level, any expansion of building footprint, or any substantial improvement located within a 100- year flood zone.

- Second, the change would create additional pathways to streamline the approval process for nitrogen-reducing technologies and reduce duplicate testing. Vendors are eligible to apply if they can demonstrate their technology has certification under the NSF/ANSI Standard 245 or if the technology is approved in another state with an equivalent review process and nitrogen reduction standard. It is hoped that this change will allow more competition to enter the market and lower prices.
- The proposal is intended to clarify the application process for experimental technologies to undergo limited pilot testing in Rhode Island, again with the goal of speeding along competitive options, from which homeowners can choose.
- Lastly, the rule would change the cesspool phase-out date from Jan 1, 2013 to Jan 1, 2014, to make the date consistent with timing in other related DEM regulations.

The full DEM public hearing notice, which has both a summary and detail on the proposed changes, is posted at www.saltpondscoalition.org/news for easy reference. If you have been contemplating modest changes to your home in the salt ponds critical resource area, or have been putting them off because of the existing regulations, than this is your window of opportunity to get it done and still use your properly functioning septic system.

SPC believes that switching over to denitrifying wastewater systems is part of the long-term solution to clean water in the watershed and we encourage coastal residents to upgrade their systems as they fail or when substantially modifying their homes - particularly if those modifications lead to greater use throughout the year.

Work Complete on the Atlantic Avenue Bridge in Weekapaug

It was a busy fall and winter at the Weekapaug breachway. Starting late last summer, State of Rhode Island workers partially demolished and rebuilt the Atlantic Avenue bridge. The bridge was built in 1938, just in time to test its grit against the great hurricane of the same year. It weathered that storm, plus Hurricane Carol in 1954, and then stood up to many lesser storms over the ensuing half century. In August it weathered one last storm in the form of tropical storm Irene.

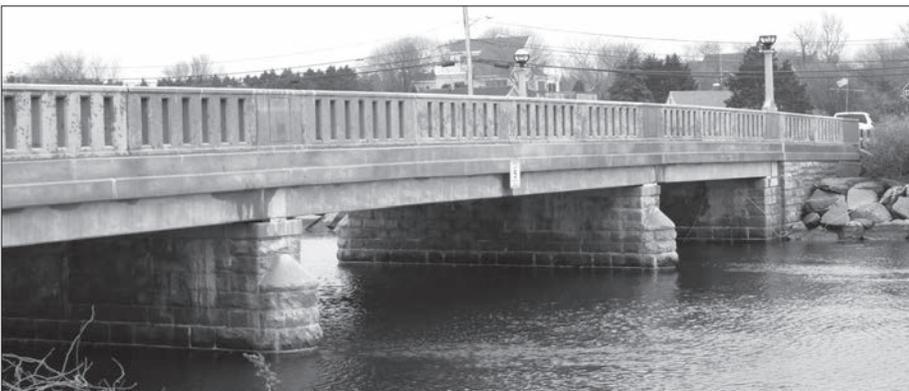
The bridge was built tough, but in recent decades it showed serious signs of age; and so the repair job was viewed with relief by those who passed below in boats and observed first hand the missing stones, crumbling concrete, and decaying pipe.

Work progressed in stages. First the piers were rebuilt by a team of masons and divers who reset loose and missing stones and injected concrete into the interior voids before re-pointing all the seams. This was complicated by swift currents that run in and out with the tides. To protect divers, cofferdams were built around the piers to break the current. These protected the divers, but forced them to work for hours in watery chambers just a couple of feet wide.

Once the piers were in solid shape, the deck and railings were demolished and the necessary fittings were fabricated on top of the piers and abutments. Pre-formed decking sections were installed next and after that concrete railing sections, fabricated to match the original design, were lowered and secured into place. Finally, the surface was paved, lines were painted, and road signs were installed. As a finishing touch, globe lights were installed atop pillars that accent the four corners of the bridge.



Above: The old bridge faces the worst of storm Irene last August. Below: The new bridge, as photographed on March 1, 2012, maintains the traditional look, but is completely rebuilt and up to code. The level of the road surface remained basically unchanged, but the thickness of the deck structure is less, so there are now six to eight additional inches of clearance for boats.



Small Dredge in the Weekapaug Breach

A group of neighbors on Breach Drive in Westerly banded together to dredge a spur off of the main channel feeding Winnapaug Pond. The jug-handle shaped spur was defined by the construction of Walter's Island, during the breachway project of 1954. The island was outlined with stone blocks and then filled with sand from the dredging project. Rather than just adding the dredge sand to the shoreline, engineers made an island so as to provide boat and dock access to waterfront residents who would otherwise be cut off from the water.

This winter's dredge was organized and paid for by residents who wanted to remove sediment that had built up over the years and made the passage too shallow to navigate. Jim Morton of Breach Drive coordinated the project and worked with CRMC dredge coordinator Dan Goulet to develop the plan and secure the necessary permits.

Dredging was done with a clamshell bucket on a crane and sand was deposited in a vacant yard, where it was allowed to de-water. The Town of Westerly was given the sand and they trucked it away for use on the town beach.



A clamshell bucket dredges the Breach Drive spur of the Weekapaug breachway.

Dredge (continued from page 1)

through 14" PVC tubing, to the point where it was discharged on Town Beach, and where a group of seagulls patrolled the out wash fighting over bits of marine worms and crabs disgorged from their winter slumbers.

But all in all, the project went very smoothly and almost a month to the day after work started, the job was finished and under budget, too! The final bill was \$951,882 of which Charlestown paid 1/3 and the state 2/3.

There were many people who contributed to the success of the project, but several stand-out stars deserve special mention. Rob Lyons, representing the Town of Charlestown, worked tirelessly on all aspects of the project as did Rich Hosp, also of

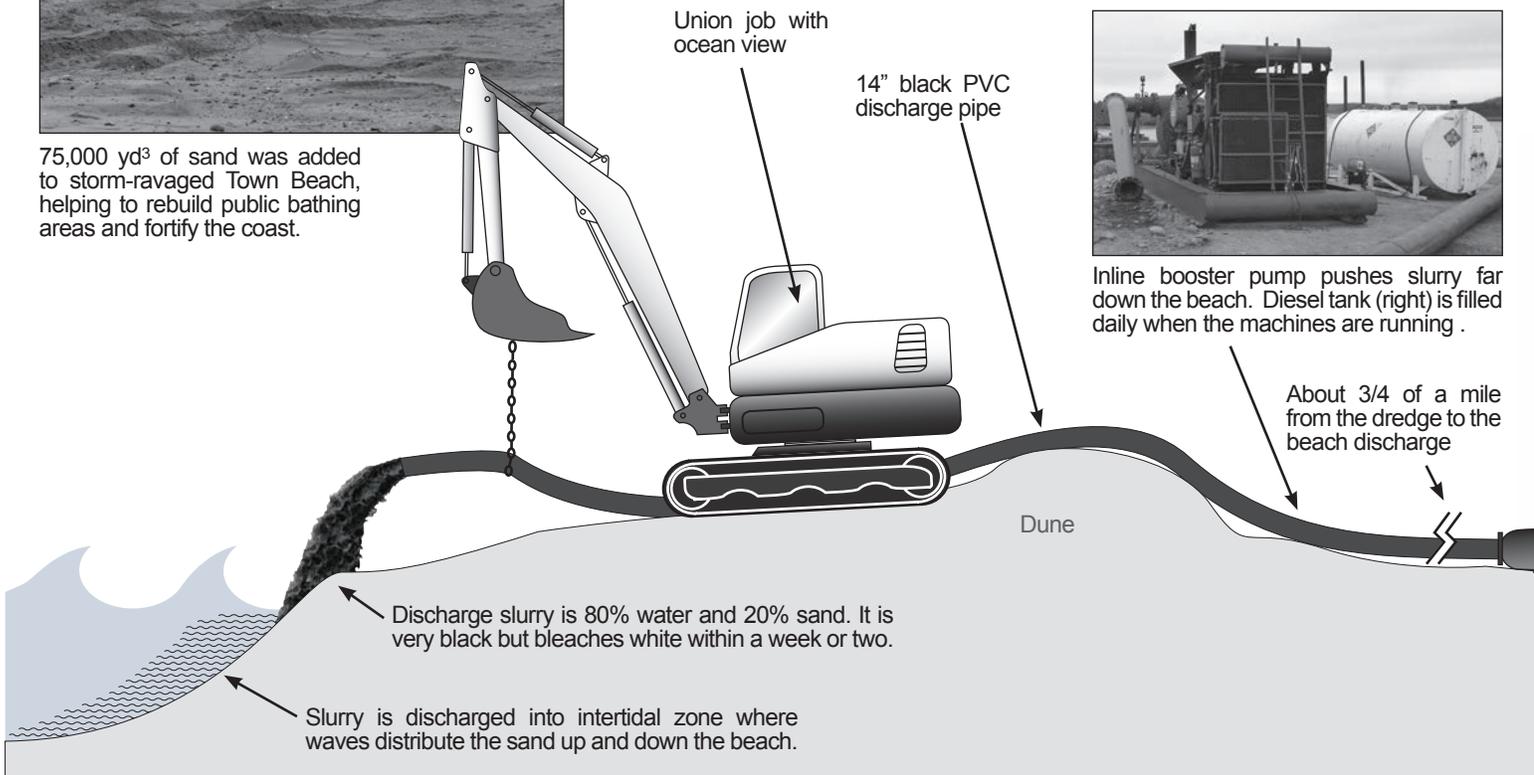
Charlestown. Rep. Donna Walsh was pivotal in securing funding for the project and in moving it forward through many stages and over multiple hurdles. Steve McCandless, GIS Specialist for Charlestown, did much of the heavy lifting through all aspects of the project and was a real asset. On the state side, CRMC Executive Director Grover Fugate championed the project at the State House and helped secure funding. State purchasing agent Jerry Moynahan skillfully moved it through the bidding and award process, and CRMC Dredge Coordinator Dan Goulet expertly shepherded the project to a successful completion. Dan's guidance and expertise throughout the entire project was greatly appreciated by all who were involved.

Dredging Overview

Dredging is an energy-intensive endeavour. It requires a lot of human energy in all phases, from funding to actual work. It requires powerful diesel motors to run the dredge and the booster pump, as well as excavators and graders. The illustrations and photos here provide an overview of the operation.



75,000 yd³ of sand was added to storm-ravaged Town Beach, helping to rebuild public bathing areas and fortify the coast.



Dredge team from left: Dave Prescott, Save the Beach; Steve McCandless, Town of Charlestown (TOC); Rob Lyons, Town of Charlestown; Larry Valencia, SPC; Art Ganz, SPC; Tom Gentz, SPC



Inline booster pump pushes slurry far down the beach. Diesel tank (right) is filled daily when the machines are running.

Probably the best part of the project was the team spirit that took on challenges, divided up the tasks, and amicably moved the process on to the end goal. It's not every day that a fast-moving project is completed ahead of schedule and under budget! In the end, 75,000 yd³ of sand was removed and deposited on Charlestown Town Beach, where it greatly helped to rebuild the beach. Town Beach, like many of the south shore beaches, had experienced severe erosion this winter. The area from the inland edge of the state parking lot north about 400 yards was dredged to a depth of nine feet at mean low water; the channel continuing north to the pond was dredged to a depth of six feet. The nine-foot deep basin is intended to catch much of the sand as

it comes in on winter storm tides and hold it there until a future dredge job cleans it out again, thus preventing further shoaling in the pond and loss of important habitat.

SPC was proud to be part of this team effort and to play an important role in bringing the project to successful completion. We believe Quonochontaug and Weekapaug breachways also need regular maintenance and hope to work with other concerned groups to develop restoration dredge plans, and then a mechanism by which they can be maintained over the years. There are many actions required to improve water quality, but part of the solution to pollution is dilution - keeping the breachways open helps.



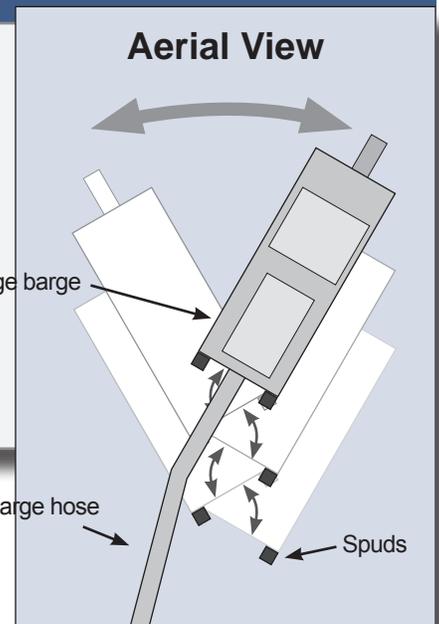
...y; Dan Goulet, CRMC; Steve Mc...s, TOC; Rep. Donna Walsh; Rep. ...TOC; Mark Bullinger, SPC.



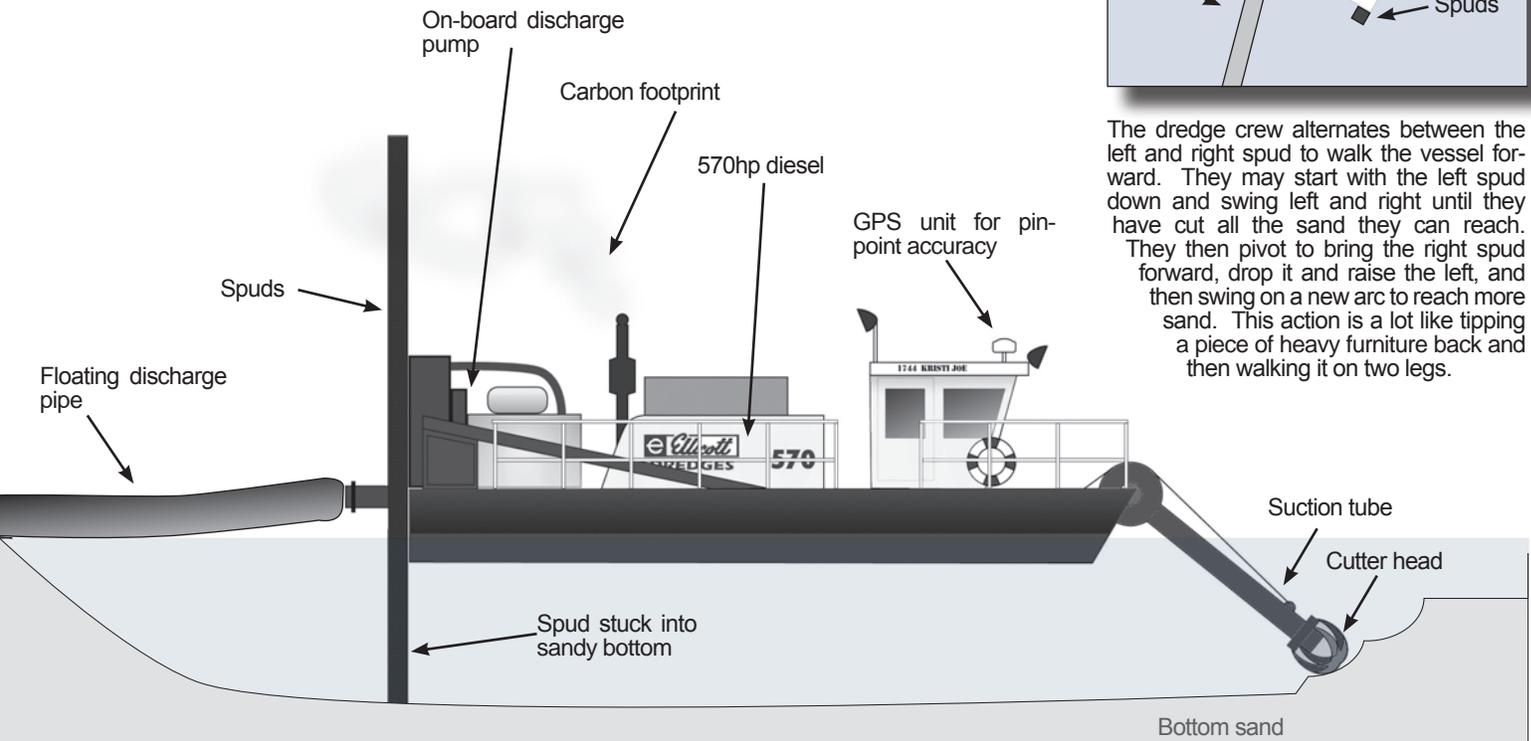
Rep. Larry Valencia and Rep. Donna Walsh were instrumental to success.



Team leaders Rob Lyons of Charlestown, left, and Dan Goulet of CRMC, right.



The dredge crew alternates between the left and right spud to walk the vessel forward. They may start with the left spud down and swing left and right until they have cut all the sand they can reach. They then pivot to bring the right spud forward, drop it and raise the left, and then swing on a new arc to reach more sand. This action is a lot like tipping a piece of heavy furniture back and then walking it on two legs.



Oyster Restoration in the Salt Ponds

Oysters were once plentiful in the salt ponds, but between 1938 and the 1990's they became all but extinct due to over fishing, disease, habitat loss and pollution. Not only were breeding stocks lost, but shell reefs, where oysters historically set, were soon covered with silt, greatly reducing suitable habitat for future generations. Over the past ten years there have been steady efforts on the part of several organizations to rebuild oyster populations in the salt ponds; over the past two years these efforts have shown exciting signs of success.

Important Oyster Fact: Oysters spawn best in low salinity water, but as adults they grow bigger and faster in salty water.

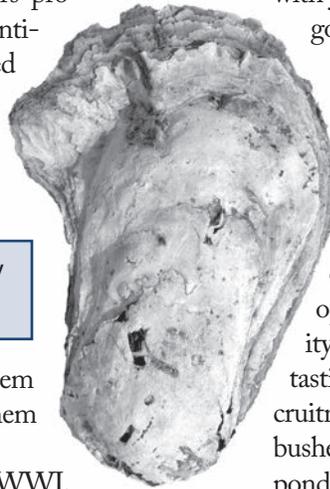
A Little Oyster History

Oysters used to be big business on Narragansett Bay. In the late 1800's and early 1900's the oyster industry thrived as it supplied an important source of protein for hard-working Rhode Islanders. Oysters were affordable, versatile, and they could keep for weeks or longer in cool dark places like a basement or root cellar. In its heyday, the industry boasted some twenty-seven oyster houses around the bay that collectively leased 20,000 acres of bay bottom. Many historic structures on the bay were oyster processing facilities.

Historically, oysters were most plentiful in the very upper reaches of the bay and in the Providence River. But as the city grew, habitat was lost to fill and city expansion. Pollution resulting from poor municipal hygiene and industry made the remaining beds unsafe. Oyster businesses started to move small oysters down the bay where they could depurate and grow quickly into market-sized product. But in order for the industry to grow they needed more seed stock than the Providence River could supply. Some stock was harvested from the salt ponds, but nowhere near what was needed, so oyster companies on the bay started to buy young oysters from

businesses along the Connecticut coast.

When it comes to oysters, Connecticut has a form of natural resource that Rhode Island doesn't - big rivers, and the thousands of acres of brackish estuary where freshwater meets salty Long Island sound. In these low-salinity nurseries, Connecticut growers produced massive quantities of young seed oysters and sold them for profit to oystermen in Rhode Island, who



would then grow them out and harvest them for market.

Starting with WWI, as young men went off to war, the industry went into gradual decline. While much of the workforce was away, the infrastructure fell into disarray. Furthermore, growing urbanization in Connecticut was taking a toll on the estuaries and seed stock production. In the late twenties the depression suppressed demand, or more specifically the ability of people to pay for oysters, and that further beat down the industry. Then in 1938 the great hurricane roared across the coast and buried countless acres of oyster reef under sand and debris. After the '38 only two oyster houses survived - Warren Oysters and Blount Oysters, which eventually became Blount seafood and today supplies clams to large soup manufacturers.

WWII again siphoned off much of the work force. While men were away (and continuing on into the 50's), poachers dredged for clams on the oyster leases - where clams had been largely left alone and were often found in high density - and damaged the shell reefs. When men returned to the bay in the post-war years,

many of them went into clamming - a resource that didn't have to be rebuilt. This era also saw a great increase in the availability of the small outboard motor, which along with the development of the extendable bull rake, allowed a new level of independence for men working the bay. No longer did they need to sign onto a ship; with just a modest investment, they could go it alone and try for better money.

The oyster trade on the salt ponds was generally on a smaller scale, but still impressive. Point Judith Pond seems to have been by far the most prolific producer of finished oysters for market. This was probably due to the fact that its breachway was opened by the late 1800's and salinity was higher, making for larger and tastier oysters. High salinity reduced recruitment of larval oysters, so bushel after bushel of seed stock was harvested from ponds to the west, including Ninigret, Green Hill and Trustom ponds. These ponds did not have hardened breachways, so the salinity remained lower. They produced a lot of small oysters that would take off when set into the salty waters of Point Judith Pond. Maybe that's why Point Judith Pond has long been called "Salt Pond."

As in the bay, large-scale oyster production in Point Judith Pond began a long decline in the 1900's as labor forces dispersed, natural factors reduced oyster populations, and modern commercial farming and fishing presented consumers with more food choices.

Throughout it all, however, small producers and residents cultivating private food sources accounted for a lot of activity on all of the ponds. As mentioned above, Ninigret and Green Hill ponds were actively farmed. Further to the west, oysters were farmed in Winnapaug Pond, often using seed stock harvested from the Pawcatuck River, where the confluence of river water and tidal Fisher's Island Sound created miles of brackish marshland.

In the post WWII years, the popularity of the salt pond region boomed, and as the region grew so did pressure to keep the breachways open. Pollution was making the ponds smelly and green and navigation in and out of the ponds was a priority for many. Many people also believed that open breachways and saltier waters would make their particular pond better at growing market-sized oysters. What happened was a mixed bag of results.

As breachways were hardened through the 50's and early 60's, water quality did improve - probably dramatically. However, salinity also increased dramatically and that hit oyster reproduction hard. Higher salinity also brought new predators in the form of oyster drills - snails that drill through the shell and consume the oyster - and sea stars, which use steady pressure to eventually pry open the shell and then consume the oyster. Later, disease also came with the ocean waters in the form of MSX and Dermo - parasitic conditions that can be fatal to oysters, but harmless to humans.

Oyster Restoration

North Cape Initiative: Our modern wave of restoration work began in an unlikely way: with the grounding of the oil barge North Cape on Moonstone Beach in 1996. (See Summer 2010 Tidal Page issue for story.) The resulting oil spill killed millions of surf clams and lobsters, as well as many other forms of fin and shellfish. Settlement money from the tragedy was used to fund many restoration programs.

Between 2003 and 2008, North Cape funds were used to seed 1.2 million oysters each into the Smelt Brook Cove and Sagatucket River area of Point Judith Pond. These oysters were then monitored over the course of several years to determine survival rates. Mortality was high at the Sagatucket site, but survival was somewhat better at the Smelt Brook Cove location, halfway down the pond.

OGRE Oyster Gardening: The Roger Williams University (RWU) OGRE program was started in 2006. The name stands for Oyster Gardening for Restoration and Enhancement. It employs volunteer "gardeners" who host a floating cage containing up to 8,000 small oysters at their dock and maintain it over the course of a summer season by occasionally pulling it ashore and washing away accumulating marine growth. The cages are typically installed by OGRE staff in June, and are pulled out again in the fall. The goal of the program is to



Wild-set oysters at a site that is close to both an OGRE oyster garden and a DEM spawner sanctuary where hundreds of thousands of oysters have been released.

grow out the newly-set oysters to a size where they are better able to resist predation, and then release them into the wild.

The program collects surf clam shells from a local seafood processor and places them in mesh bags, to be soaked in the RWU spawning tank. Once dozens of oyster larvae have set on each shell, the mesh bags are placed at the host docks in floating wire cages. By using volunteers, the program saves on labor costs and also engages members of the public in the process. When the cages are collected in the fall, OGRE staff remove the shell and growing oysters and plant them within the same pond in DEM approved shellfish management areas.

The seed stock used in the OGRE program is grown at the RWU hatchery and was originally derived from large/old oysters that were collected around the

Portsmouth area. They refer to these large oysters as dinosaurs and utilized them because they had shown a natural resistance to disease and were the hardiest stock - survival of the fittest in action. Today they grow spat from the five to six year old descendants of those original animals. Ultimately the goal of this program is to build a large enough breeding population of survivors to repopulate large areas of the ponds.

EQIP Program: The EQIP oyster restoration project, funded through the Natural Resources Conservation Service's (NRCS) Environmental Quality Incentives Program (EQIP), is an effort to increase the population of native oysters and provide essential oyster reef habitat. This will benefit a wide variety of aquatic organisms and help improve water quality. RI NRCS worked in collaboration with the local aquaculture industry, DEM, the University of Rhode Island, Coastal Resources Management Council, Roger Williams University,

Ocean State Aquaculture Association, and The Nature Conservancy to develop the program.

In this initiative, local oyster farmers are paid to grow oysters for release into the wild, alongside their stock that is intended for resale. The oyster farmers save shell from their operations over the year and in the spring bag it and take it to the hatchery in Dennis, MA. There it is soaked in the breeding tank until larvae set. The guys return with a truck to pick up the bags and then set the bags into the water at their individual farms. Over the course of summer the farmers monitor and clean the growing stock. About six months later, when the oysters have reached at least an inch in length, they release them into the wild, piling bag after bag together in order to create new oyster reef. Such proximity increases spawning efficiency as well

as providing anchorage for future sets.

The EQIP program is funded for three years and has put millions of young oysters into Point Judith, Potter, Ninigret and Winnapaug Ponds. The oyster stock used in the EQIP program is standard stock and has no exceptional genetic background or resistance to disease.

TNC Shell Reefs: The Nature Conservancy is working on a project to test the effectiveness of constructing shell reefs to collect naturally occurring larvae, and, with time, to host mature colonies of adult oysters. Their plan calls for collecting shell from seafood processing plants and restaurants, and planting it in consecutive beds of various thicknesses. Each bed would be monitored for several years to observe the rate at which oysters attach and grow. Earlier studies have suggested that thicker beds form into more vibrant living reefs.

The fundamental idea behind this project is that with all the OGRE and EQIP oysters loose in the ponds, and millions of oysters on farmed plots, there are gazillions of larvae in water but a shortage of good substrate for them to set on. Oysters will set on the rocky intertidal zone and on pilings, but they prefer shell reef above all else. There is no planned introduction of oysters in this program, just the test construction of habitat.

The current test is planned for Nini-

gret Pond, where there is a relatively high population of breeders. The project is somewhat mired in regulatory approval as TNC seeks permits. The process is apparently subject to conflicting jurisdiction between CRMC, DEM and the Army Corp of Engineers and is complicated by regulations that liken placing shell to filling with dredge materials. TNC is hoping to have it worked out in time to plant shell for the June spawn.

Oyster Farms: Oyster Farms are not restoration programs in a direct sense, but they probably have a large positive impact on wild populations. They make the EQIP program possible and they host millions of oysters, some of which spawn before being harvested. What is more, the guys who run the farms tend to provide physical help for a variety of restoration efforts, some of which support natural oyster growth.

The State of Oysters in the Salt Ponds

Oyster populations are not exactly booming in the salt ponds, but they are looking better than they have in years. Ninigret Pond has regions where there are pretty good sets on cobble and rocks in the intertidal zone, but only in certain areas. Why these areas have taken

a set while others haven't is a bit of mystery. Perhaps it has to do with currents in the ponds, salinity levels, and maybe even how clean the rocks are, since a slimy layer can hinder attachment at the critical time when spat settles onto its lifetime home.

Quonnie Pond is not as far down the road to recovery, but DEM has taken an aggressive step to help move it along. A couple of years back they conducted a survey and could not find any wild-set oysters. With that in mind they took the position that any oysters now found in the pond are part of the restoration effort and should be left alone to breed. They put in place a five-year moratorium on harvesting oysters in the pond, hoping to give them a chance to establish some significant colonies.

Winnapaug Pond has also been the beneficiary of restoration work through the EQIP program, but to date there are no participants in the OGRE program on Winnapaug Pond. (Anyone want to help?)

It's encouraging to once again see oysters taking hold in the ponds, since oysters are beneficial to the salt-pond ecosystem in many ways. They are filter feeders and each adult oyster can filter up to fifty gallons of water per day, sequestering the nutrients they feed on in their flesh. Their feeding also helps clear water by removing particulates and microscopic plant life, which helps beneficial vegetation receive more sunlight. They also form reef that



An OGRE intern sets a floating cage off a participant's dock. The cages suspend the young oysters in the top of the water column, where phytoplankton and other food sources are dense.

You can be an OGRE, too!

Participants in the OGRE program are fondly referred to as Ogres. If you have a dock or mooring ball in salt pond waters that are open to shellfishing under DEM regulations, the Roger Williams OGRE team would love to have your participation in their restoration program. Their interns set up the cages in the spring and remove them in the fall. Host participants keep an eye on their cage during the season and pull it out from time to time to hose off slime that could choke the oysters. Kate Fisher of Foster's Cove area reports that it is an easy process and benefits the ponds. John Jurgens, of Shady Harbor, has been with the program for six or seven years and states *"What a fabulous learning experience and positive impact we are all having upon our Rhode Island waters."* Oysters are great to have around your dock because they help clean the water. With time and help from area dock owners, we might all come to benefit from renewed oyster populations in the salt ponds. To learn more about the program, contact Steve Patterson at 401-254-3707.

provides habitat for other creatures such as small eels and fish.

So a question that arises at this time: is it OK to harvest oysters, where it is allowed, or is that damaging to restoration efforts? That's a tough question. On one hand, being able to visit the ponds and come away with a meal's worth of oysters can engage people in the success of the various programs and offer another rea-

son to support efforts to keep the ponds clean and healthy. Consuming the oyster meat removes the sequestered nitrogen from the pond system (albeit on a pretty small scale). On the other hand, removing thousands of oysters not only reduces the breeding community, but the loss of their shells diminishes the density of the reef. This not only reduces they amount of shell surface for larvae to set on, but also

reduces the density of animals, which affects spawning success.

It's a tough call and one with no clear-cut answer. If you do go oystering, best to limit your take in quantity and size. Quantity for obvious reasons and size because the larger animals are older and have demonstrated a hardiness and disease resistance that we should all want in the genetic pool of breeders.

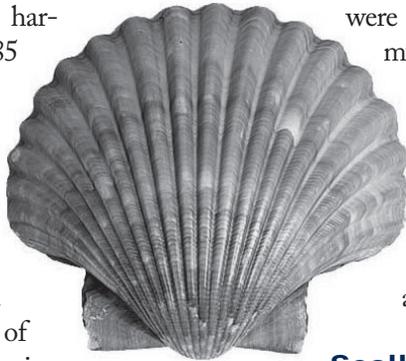
Scallops Are Improving, Too

Scallops were once prevalent and were collected in the ponds by recreational and commercial harvesters alike. But in 1985 brown tide hit the region, affecting shellfish beds from Long Island Sound up through the cape and islands. It dealt a severe blow to our scallop populations. Brown Tide is a bloom of countless microalgal organisms that are so tiny they choke up the gills of shellfish and asphyxiate the less hardy. In 1985 Nantucket was the only regional location that was spared the damaging effect of the tide. Here in Rhode Island, Narragansett Bay had a distinctly brown tint and was particularly hard hit. Hardier species like clams fared pretty well, but the scallops were walloped. For some reason the salt ponds were less affected than the bay, but even here the Brown Tide was strong enough to kill the young of the year scallops. Because scallops grow fast and die young, the population crashed after that and didn't really rebound.

RI DEM had been seeding the ponds prior to the tide, but the sources of their seed scallops - on Long Island and Cape Cod - were wiped out. In the following years seed was purchased from a hatchery on Fisher's Island, but survival met with very limited success - a few took here and there, but nothing like the magnitude of

the 70's. Blue mussels were also devastated. Both wild and farmed animals were killed off and a large mussel farm on the bay had to close up shop due to their losses.

The cause of the bloom is unknown. It persisted for one or two more seasons and then dissipated.



Scallop Restoration

Once again North Cape settlement money was put to work. In 2003 2.1 million seed scallops were released loose into Ninigret, Green Hill, Quonochontaug and Potter ponds. According to one individual, who was employed to survey the results in 2004, the tiny scallops were "crab candy" and survival rates were very low.

In 2005 a modified approach used by DEM in the 90's was employed and 10,000 potential breeders were placed in Ninigret Pond in a series of 2-foot square cages. Each cage had five levels and on each level mesh bags held eighty scallops. Cages were in close proximity and were intended to a) protect the young scallops from predators, and b) keep the scallops close to each other, so as to maximize the likelihood successful spawning.

In 2006 and 2007 the same technique was used in Quonochontaug Pond,

with 10,000 animals employed in 2006 and 20,000 in 2007. After each breeding season was complete, the scallops were released into the pond where they were either harvested or perished at the end of their life cycle.

These efforts didn't lead to a big population of scallops right away, but they did create a background population of breeding scallops that were in place for the next time the conditions aligned. What makes conditions right for a successful set is difficult for the experts to identify, since there are so many variables ranging from water temperature to salinity levels, to the prevalence of predators and microorganisms. The list goes on and on.

In 2010 and again in 2011 those conditions did align across much of the state, and with that small stock of surviving breeders producing millions of larvae each, the population jumped up fast. Most of the salt ponds had populations that were dense enough to provide a tasty meal for those determined enough to get them. Several commercial harvesters could also be seen at work.

Scallops have a short life cycle and once they have bred the chances of them living another season to breed again are slim. The conscientious scalloper should look for a growth ridge on the bottom of the shell, which indicates that the scallop has spawned. The ridge is formed when the growth rate of the animal slows as energy is channeled into reproduction.



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