



Salt Ponds Coalition



Salt Ponds Coalition

Official Watershed Council for the Salt Ponds



Lots of Slots in Charlestown



Seals on Area Beaches!



Development in Weekapaug



Green Hill Pond Contamination



Pollution Hot Spots in Point Judith Pond

The Tidal Page

News of the Rhode Island Salt Ponds



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The Tidal Page

News of the Rhode Island Salt Ponds

www.saltpondscoalition.org

Official watershed council for the salt ponds

Spring 2007

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Charlestown Gaming Facility Back in the News

Rhode Island voters recently rejected a bid by the Narragansett tribe to build a casino in West Warwick, but now, talk around the ponds concerns a renewed effort to develop a gaming facility on Narragansett land in Charlestown, within the Ninigret pond watershed. There appear to be two initiatives.

The higher profile of the two is an effort to appeal the Chaffee amendment, which was passed by Congress in 1998 and aimed to establish that the 1978 settlement between Rhode Island and the Narragansett tribe, in which the tribe received several million dollars to purchase the roughly 1,800 acres they now own between Rt. 2 and Kings Factory Road, in exchange for a release of any future land claims and agreement to

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Green Hill Pond Water Quality Degraded

Ongoing water-quality testing of Green Hill Pond by the Salt Ponds Coalition (SPC) shows that the Pond has become severely degraded to the point that it may be inadvisable for humans to use the Pond for contact recreation during the summer months, especially after heavy rains. Eastern Ninigret Pond has also tested high for fecal coliform bacteria (fc) and total nitrogen (TN).

Fecal coliform testing is used to determine the safety of waters for the taking and consumption of shellfish and water-contact recreation. Elevated nitrogen levels often cause algae blooms during the warm summer months. When the algae die, decomposition results in depleted oxygen levels in the ponds, which in severe cases can cause fish kills.

Continued on page 6

SPC Publishes Kayakers Guide to the Salt Ponds

Available this spring, order yours today!

The new guide outlines paddling opportunities for Point Judith Pond, Potter Pond, Green Hill Pond, Ninigret Pond, Quonochontaug Pond and Winnapaug Pond. (Trustom and Card Ponds are wildlife sanctuaries and are not accessible for water recreation.) The guide provides maps for each of the ponds with parking and access point notations. A master map of the south-county coast shows where

each pond is located. Written descriptions provide insight on each pond, suggest paddle routes, and point out areas to exercise caution. There are references to kayak rental sources and a section of safety suggestions. Portions of the guide are posted at www.saltpondscoalition.org and the full guide, printed on durable stock with a spiral binding, is available for sale by visiting our website, or calling 401-322-3068.

Message From Our President



Dear Members,

Our plans are underway for an active 2007. I welcome you to visit our new website, which has all sorts of info on the SPC and the salt ponds. The results of pond sampling are posted and we will soon have analyses by Dr. Ted Callender. Several other reports on water quality are posted, as is our new Kayakers Guide to the Salt Ponds. I congratulate our Executive Director, Mark for a splendid job!

This year we plan to expand our nutrient testing to include Point Judith Pond, so we will be seeking financial help as well as local Pond Watchers for sampling and testing. The results of our testing have been the basis for our advocacy role as we address several development projects affecting our ponds. Expanding this program will help strengthen pond protection.

SPC volunteers are now monitoring activities of the various commissions within the four towns surrounding the salt ponds, to keep abreast of development projects proposed for our watershed. It is the intent of SPC to be proactive and to ensure all environmental safeguards are in place for development that affects the ponds.

Salt Ponds Coalition volunteers are participating in four major development proposals currently underway in the watershed: The renovation of the Weekapaug Inn; a proposed condo development in Misquamicut; a potential high-density development near Ninigret Pond; and an early-stage investigation of possible development on Narragansett Indian land in the Ninigret Pond watershed. I urge all our members to stay abreast of these developments and participate in the public process.

We continue to benefit from office and meeting space in the facility at Kettle Pond Center and we hope you will continue to assist us in paying the rent either through cash donations or by volunteering at the center. Half of our rent can be offset by volunteer hours and Nancy Zabel has done a great job coordinating volunteers. The U.S. Fish & Wildlife Service has suffered large cutbacks and more and more of the Kettle Pond services will be done by volunteers. If you can spare some time please help with the Kettle Pond volunteers. You'll be helping us, helping the Wildlife Service, and you'll have a great time.

Thank you for your generous support to date. I hope that you all will continue to support SPC financially and as volunteers. Remember that SPC is as 501(C)(3) non-profit and donations are fully tax deductible. Memberships are due now, but donations are appreciated throughout the year.

In parting, I wish to thank the Board of Directors and our faithful volunteers for their continued support, creativity and dedication. Special thanks to Mark Bullinger for his creativity, dedication and skill.

Yours for a better environment,



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

Ponderings

Personal reflections about life on the salt ponds.
Submitted by Rich Fenton, SPC member.

Over the past few years I had developed a comfortable friendship with a client practicing medicine in Fall River. Now in his mid-forties he often spoke of his boyhood years growing up on the family farm in the remote forested region of northern Brazil. There were many stories of hunting pheasant and quail with his father and grandfather that conveyed a genuine appreciation for the outdoors. I extended an invitation to join me for a duck hunt on Ninigret Pond, which was readily accepted.

Five-thirty a.m. on the third Sunday of January usually presents the harshest winter conditions coastal Rhode Island can offer--- this day was no exception. A clear, moon less night left a passive mosaic of stars stretching across the sky, but a stiff northerly wind produced a significant chop rolling over the pond. Upon launching the fourteen-foot aluminum skiff we turned upwind toward our island blind destination and endured a steady spray as waves rhythmically disintegrated against the bow. Once beached amid the rocky island edge the flashlight beam showed sparkling ice formations framing hat lids and eyebrows. My South American companion was visibly shaking of cold yet voiced no complaints. I directed him to the duck blind, providing hand and boot warmers, and set about placing the decoy rig. Twenty minutes later I took my bench seat in the blind, eliminating the abrasive wind chill, as dawn slowly displaced the black night sky.

My guest was armed with binoculars and camera, while my shotgun rested idly against the shelter's front panel. As sunrise approached, the southeastern sky became an explosion of warm pastels transforming the inky-black water into a churning cauldron of orange, pink and yellow hues. The doctor seemed mesmerized as the sun crested the barrier beach and the pond came alive with wildlife.

As I listened to his singular comments, "beautiful...amazing...spectacular..." spoken with his homeland accent, I imagined what discovering the ponds would be like through the eyes of a first-time visitor...

A child leans over the boat's sidewall to absorb all that passes along the shallow pond floor. Occasional horseshoe crabs and random skates draw shrieks of unexpected discovery.

The recreational clammer steals away to the salt pond on a balmy April weekday with waders, rake and mesh bag. His rake stirs the sandy bottom, garnering a cache of cherrystones, while also releasing scores of ripe sandworms into the hip-deep water. Suddenly, the water is boiling as schooly bass swirl and slurp the spring-time feast.

A wind surfer who developed skills on freshwater lakes of "inner New England" finally treks to the legendary Ninigret pond to sample the boarding of lore. The stiff westerly breeze and miles of pristine water provide an experience so exhilarating the boarder never lake sails again.

Suddenly my hunter's ear recognizes the distinctive rhythmic whistle of range-ready ducks in flight, snapping me from the daydreams. Before a shot can be taken the eight birds have already flashed over the decoys and banked in unison toward the open water. Although this would ultimately be the only shooting opportunity of the hunt, there was no sense of disappointment as our morning excursion ended.

My friend keeps a framed photo of a Great Blue heron hung in his office that he took from fifteen feet away as the bird visited our island stakeout that January morning. He often references his experience on Ninigret pond as one of the "most peaceful" things he's done since coming to America eighteen years ago. It makes me appreciate my proximity to the pond, as I sense this "peacefulness" with every visit.

SPC Launches New Web site

Salt Ponds Coalition has launched a new web site. Visitors to www.saltpondscoalition.org will find a lot of interesting info regarding the salt ponds. There are profiles of each pond and general descriptions of how the ponds formed. There is specific testing data for each of the ponds as well as links to other high-value sites. There is specific information about the SPC and how we work, copies of press releases the SPC has issued, reports from our environmental committee and overviews of the threats the ponds face. Coming soon, there will be a section spotlighting creatures that live in and around the ponds, as well as a historical section and an image gallery.

Outings

Continued from previous page

Waves and Shore

How are barrier beaches formed and destroyed? On April 21st, US Fish and Wildlife will host a two-part program that will walk you through millions of years of coastal change, as well as daily geologic shifts along the tide line. Wow! This will be an action packed exploration of your ocean surrounded home! 11:00am lecture at Kettle Pond Visitor Center, followed by a 1:00pm guided beach walk. The program will be presented by Charlie Hickox, a well-known USFWS Volunteer and retired geologist.

www.saltpondscoalition.org

SPC Schedule

April 21st, 11:00am

Waves and Shore workshop and walk. (see description opposite page)

June 2nd, 9:00am

SPC Kayak trip on Quonny Pond (see description this page)

June 18th, 7:00pm

SPC Summer Seminar series, at Kettle Pond Visitor Center

July 16th, 7:00pm

SPC Summer Seminar series, at Kettle Pond Visitor Center

July 12th, 6:00pm (rain-date July 13)

Annual Gourmet, Wood-oven Pizza Fund-raiser.

August 20th, 6:00pm

SPC Annual Meeting - members invited - followed by guest speaker

Last Saturday of the Month, May through September, 10:00am

Seaside Safaris with Jane Whyte at Ninigret Park

Volunteer News

Salt Ponds Coalition relies on the involvement and expertise of volunteers to fulfill its mission. The SPC has just one paid position - the Executive Director - and that position, theoretically, is just twenty-hours per week. (Yeah, right!) A number of SPC board members put in countless hours conducting SPC business and dozens of more members contribute their dedication and skills.

Over the past year, SPC secretary Nancy Zabel has coordinated the efforts of a dedicated band of volunteers who have worked at the Kettle Pond Visitor Center desk to help offset our office rent. Nancy can always use more helpers. Ralph Minopoli is again coordinating the Pond Watcher program and needs additional pond-water sample collectors, particularly on the ponds to the east.

Volunteering for the SPC is a great way to meet a lot of interesting people who love coastal Rhode Island and to help the salt pond environment. For students, volunteering is a fine way to gain experience and to help develop a resume for college or work ambitions.

Volunteers Needed

Kettle Pond Visitor Desk

Work with great people in a super wild-life center, mixing with families, school kids, and Fish & Wildlife Service staff. Training is provided and schedules are flexible.

Pond Watchers for Point Judith Pond.

We need people to help collect water samples on a regular basis during the spring and summer months. Collections take place every two weeks.

Communications

Help write and edit content for the SPC newsletter and web site. Bring your expertise, or learn new skills.

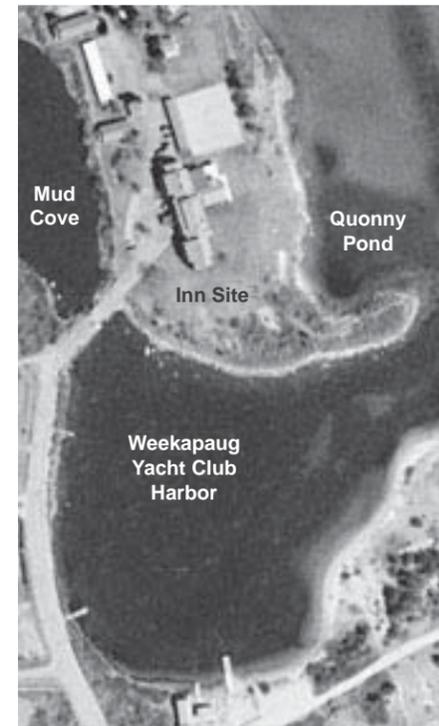
Creative Writers

We need submissions for future editions of Ponderings (the column at right). Here's a chance to be creative and to get published! Poems, essays, reflections etc, welcomed.

To learn more about volunteer opportunities for adults, and students, please visit the volunteer page at

www.saltpondscoalition.org.

Weekapaug Inn Update



Weekapaug Inn site surrounded on three sides by Mud Cove, Weekapaug Harbor, and Quonny Pond.

The owners of the Weekapaug Inn - which is located on the western shore of Quonochontaug Pond - are seeking permits to modify the facility for year-round business. The Inn recently filed its third application for individual septic disposal system (ISDS) approval, after the previous two designs were denied. The location of the Inn, though spectacular, is challenging to work with because it is surrounded on three sides by water. In the 1954 hurricane, storm waters inundated the low-lying peninsula.

The latest ISDS proposal is for a high-tech pressurized system that will use membrane filtration to clean bacteria and nutrients from the wastewater. In theory, these systems can deliver impressive results, and could be a significant improvement over the existing system. Of course performance is dependent on proper maintenance.

Recently, the owners of the Inn and representatives from Weekapaug community worked out an agreement whereby the Inn commits to a significant decrease in nitrate and other discharges into the pond from present levels when calculate daily and over the entire year. Both parties will fund ongoing monitoring.

SPC has tested existing conditions and has delivered the results to parties involved. In general, we found that Weekapaug harbor has slightly elevated levels of bacteria, though still within safe shell-fishing limits; Mud Cove shows bacteria levels above the safe shellfishing limits, but within recreation standards.

This is a complex project, and the SPC will continue to represent the health of the ponds as this project moves through hearings and towards resolution and hopes to be involved in ongoing testing.

Salt Pond Outings

Trustom Pond Trails

If you enjoy walking on well maintained trails, over gentle grades, you should visit Trustom Pond, part of the U.S. Fish & Wildlife Service National Refuge System. The refuge is just off of Route 1, in the Green Hill area of South Kingstown, and has a nice visitor center (open seasonally) and free parking year around. The pond serves as habitat for migratory waterfowl and shore birds, and the woods and fields associated with the reserve attract an array of upland birds and animals. Hiking through the reserve is very scenic, as are the views once you arrive at the pond. To reach the reserve, take Route 1 to Moonstone Beach Road. Head south to Matunuck Schoolhouse Road, turn right and look for the reserve sign about a mile down on the left.



Observation platform at Trustom Pond was built with funds from SPC

Quonny Kayak Trip

On June 2nd, SPC will lead an interpretive kayak trip on Quonny Pond. Joining the paddlers will be experts in birding, marine biology, fisheries, and local history. If you love the ponds and enjoy paddling, this is a unique opportunity to learn a lot about the pond first hand. The pace of the outing will be relaxed. Participants should rendezvous at the Quonny public launch at 9:00am. There should be ample free parking.

Section continued on opposite page

Casino

Continued from front page

be governed by state law, was the permanent intent of Congress and should not be superseded by subsequent laws, such as the 1988 Indian Gaming Act.

The second initiative is largely unknown among the public and seems to be the dark horse in this story. The tribe has requested that 30 acres of Narragansett land on the west side of Kings Factory Road, be taken into a Federal Indian trust, that would result in a legal definition of the land that could allow gaming. This case was already decided in favor of the Narragansetts, and an appeal was filed by Charlestown. Arguments on both sides have been made and a ruling by the 1st Circuit Court of Appeals in Boston is expected this spring.

The Salt Ponds Coalition has voiced deep concern to Rhode Island Senate and Congressional representatives over the prospect of a gaming facility so close to Ninigret pond. Even with a state-of-the-art sewage plant, we fear that nitrogen levels would be likely to rise due to the sheer volume of wastewater a gaming facility hosting tens of thousands of guests would produce. Nitrogen is a major threat to the salt ponds (see Environmental Report on page 4 for a description of eutrophication) and Ninigret Pond, in particular, is already struggling with elevated levels. Ninigret Pond provides wildlife habitat, public recreation, and contributes substantial revenues to two of Rhode Island's largest industries: tourism and fisheries.

There should also be concern over hor-

mones and unmetabolized pharmaceuticals, which are present in human waste, and over a number of cleaning chemicals that can have estrogen-like characteristics. Growing numbers of scientists are concerned over evidence that suggests these compounds can have profound effects on fish reproduction.

Waste produced by large-scale food service operations and maintenance operations, as well as runoff from paved areas handling thousands of vehicles, are of additional concern. Soils within the watershed are sandy and permeable and ground water and surface water move towards the pond. The SPC will continue to keep a close watch on this issue and work to raise awareness of potential environmental impacts such development could have.

Environmental News

Ted Callender, SPC Vice-President and Chair, Environmental Committee

Introduction

Since I became associated with the Salt Ponds Coalition (SPC) and started to use such scientific terms to describe the health of our salt ponds, people have repeatedly asked me what this long and obscure term means. Its definition doesn't appear in any common dictionary but it is a very familiar term to aquatic ecologists who study our water environment. Eutrophication is a process whereby water bodies receive excess nutrients that stimulate excessive plant growth of algae and nuisance plant weeds. During my early scientific career at the University of Michigan I spent considerable time studying the Great Lakes where algal growth was stimulated by the nutrient phosphorus. Now, in the twilight of my scientific career, I am studying brackish-water coastal ponds whose algae are stimulated by the input of nitrogen compounds.

Symptoms of coastal eutrophication include: reduced biodiversity; increased seaweed biomass; loss of eelgrass habitat; increased disease in fish, crabs, and lobsters; increase in the aerial extent and frequency of low oxygen events resulting in the depletion of fish and shellfish populations; and the loss of aesthetic quality and recreational use. It is not the purpose of this report to give an extensive review of all of these consequences and in fact it is not possible to quantify some of these effects in our coastal ponds. However, the Salt Ponds Coalition, in partnership with the University of Rhode Island and the Rhode Island Department of Environmental Management, has accumulated several years of nutrient (nitrogen and phosphorus compounds) and water-quality data

Eutrophication of the Rhode Island Coastal Salt Ponds

(dissolved oxygen and chlorophyll) that can be used to evaluate the trophic status of several of our coastal salt ponds.

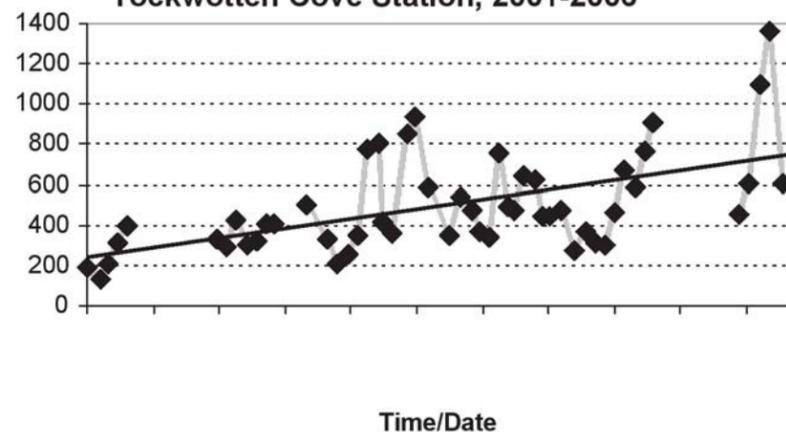
Nitrogen and Chlorophyll

Rhode Island's coastal salt ponds are classified as estuaries due to the mixture of seawater from Block Island Sound and freshwater from streams and creeks flowing into the ponds from the land-based watershed. The most important nutrient that fertilizes these coastal salt ponds is nitrogen, notably nitrate and ammonia. The Massachusetts Estuaries Project (MEP) has developed site specific total nitrogen (TN) and chlorophyll (Chl) thresholds that are used to classify the water-quality status of many embayments in southeastern Massachusetts. Rhode Island's coastal ponds exhibit

flourish. When the TN concentrations exceed 600 ug/L and the Chl values exceed 10 ug/L, waters are deemed to have significantly-impaired water quality.

Figure 1 is an example of the time trend (2001 to 2006) of TN at the Tockwotten Cove Station in Eastern Ninigret Pond. One can see that during 2001 and 2002, the TN concentrations were below 400 ug/L and thus the water quality was good! However, after this time to the present, TN concentrations increase to nearly 800 ug/L and the water quality has deteriorated to significantly impaired! This graph shows two important features: the increasing trend of TN with time and the present-day high concentrations of TN signaling a time of impaired water quality. All the sam-

Time Trend of Total Nitrogen at Ninigret Pond, Tockwotten Cove Station, 2001-2006



similar characteristics to these embayments and thus the MEP classification can be used here. When TN concentrations are below 390 ug/L and the Chl is below 10 ug/L, waters are deemed to be of good water quality. Such waters generally have good biodiversity (a variety of aquatic life) and dissolved oxygen concentrations suitable for aquatic life to

pling stations in Green Hill and Eastern Ninigret Ponds show the same trends in and concentrations of TN.

Figure 2 is a graph showing the concentrations in chlorophyll during the spring-summer-fall months at the Tockwotten Cove Station for the years 2001 to 2005. Like the TN graph, one can see that the

SPC Hosts Seal Seminar

SPC hosted a seminar with Heather Medic, Stranding Coordinator for the Mystic Aquarium Stranding Program. Here's a recap.

In recent years, the population of seals has been growing. With increased competition for food and territory up north, we are seeing a larger number and wider variety of seals in Rhode Island waters. Seals, unlike other marine mammals, need to come up on land to rest and can stay on land for days without eating or getting wet. They haul out of the water for a variety of reasons including rest, to give birth, and to shed. They also come ashore when they are sick or injured.

There are four types of seals seen in Southern New England. The regional seals (harbor and gray seals) make Rhode Island their home from September through June, sometimes never leaving at all. Harbor and gray seals keep their distance from people, haul out together in large groups, and account for most sightings. A regional seal will usually retreat to the water when approached, unless it is a pup.

Since the mid 1990s two species of ice seals (harp and hooded seals), have visited Rhode Island in the winter months. Ice seals are from Canada and even further north toward Greenland, where they spend most of their lives on ice floes. Harp and hooded seals can be seen in New England from mid January to early May. Ice seals are almost always sighted alone in this region and can be found on docks, floating ice, lawns, beaches, and even up rivers. Ice seals have limited knowledge of people and will not usually retreat to the water when approached. Ice seals can be aggressive; open-mouth displays and vocalizations are signs that you are too close. Ice seals can easily become stressed when approached by people or dogs, and, when stressed,

young seals will sometimes swallow sand or stones which can be fatal. Ice seals might also shiver when stressed and are doing this as a nervous response and not because they are cold. The best way to help the seal is to move back - they do not need a blanket! In fact, it is against Federal law to harass any seal.

To help with identification, consider the following. Harbor seals are the most common in our waters and have a dog-like face. Their coat is an evenly mottled brown. Adult Harp seals have a dark V-shaped marking running from their neck down either side of their back, and often lay on their sides, head and tail raised in a banana-shaped pose. Adult Hooded seals are large and have irregular dark blotches. Gray seals are also large, but have a distinctive, horse-like head. Often, seals spotted on area beaches and in the ponds are young. Ice seals are on their own when they are only 12 days old, and our regional seals leave mom after 5 weeks. The pictures and descriptions to the right review the characteristics of younger seals.

Most of the seals that people see are just looking for a place to rest before their next big meal. Just because a seal is on land, does not mean that the animal needs rehabilitation. However, to provide a quick response to those that do need help, people are encouraged to call Mystic Aquarium when they sight an individual on land. Mystic will assess the situation and respond as needed.

To report marine mammals or sea turtles in distress, please call Mystic Aquarium at **860-572-5955 x. 107**

From top:

Juvenile hooded seal. Note the solid coloration on the back which is blue/gray. Dark mask around eyes and over nose. Ice seals have curled, claw-like front flippers.

Juvenile Harp seal. Irregular brown spots on back. Note seal is pictured on snow, which a harbor or gray seal would avoid.

Gray seal pup. Note loose skin with folds and an unusual horse-head shape. Experts believe gray seals pup on Block Island, so very young pups are not uncommon along the Charlestown and Green Hill beaches.

Harbor seal pup. Huge eyes, an evenly mottled brown coat and dog-like face are characteristic of these regional seals.



Creature Feature

No, it's not from the Black Lagoon... but it is from the mud flats! The pond creature featured in this issue is a favorite of Rhode Islanders and the SPC.

Certainly our most important shellfish species is the quahaug, also known by out-of-staters as the quahog or hard shell clam. The bay quahaug was designated as our state's official shellfish by proclamation of the General Assembly. The Narragansett Bay quahaug fishery is the largest outboard-powered commercial fishery in the world. There are in excess of 1200 commercial license holders in the state and active full-time quahaugers number between 400 and 500. Countless recreational diggers harvest the quahaug statewide. The fishery produces anywhere between 1 million to 16 million pounds annually, depending on the year. Like so many of our marine fisheries, the number of harvesters has declined due to declining water quality and habitat degradation.

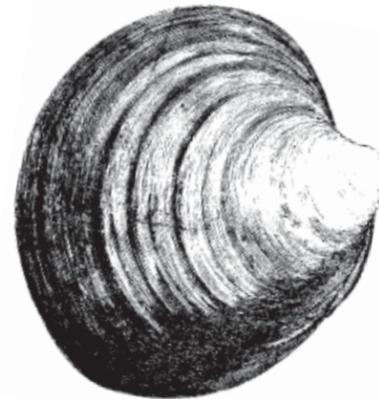
The quahaug has a relatively simple life cycle and can live up to 30 or 40 years. In the spring, when water temperatures warm above 50 degrees, they begin feeding and their reproductive process, called gametogenesis. The males and females produce millions of sperm and eggs. When an environmental stimulus occurs (such as a full moon, rapid change in temperature etc.) quahaugs spawn (release their eggs and sperm) into the water. Eggs and sperm fertilize by sheer numbers and by chance, which then begins a sequence of embryonic stages. After between 14 and 20 days of planktonic embryonic development, the juvenile quahaug sinks to the bottom—which is called setting. The quahaug burrows into the bottom and feeds. Quahaugs, like oysters, feed and fatten up during the late summer and fall. When the water temperature falls below 50 degrees, the quahaug stops pumping and hibernates

through the winter until the water rises above 50 degrees again in the spring. Quahaugs achieve sexual maturity at 2 to 3 years.

From a market standpoint, quahaugs are graded or classified in terms of size: undersized (less than 1”), the “littleneck” is the most valued for the half shell trade, the mid sized are “cherrystones” and the largest are called “chowders” for the chowder or stuffed clam market.

Although the quahaug is a hearty animal, its harvestability depends on suitable water quality. Quahaugs, like mussels, soft shell clams and oysters are filter feeders. They pump in water through their siphons (also referred to as their “neck”) and extract plankton (microscopic plants & animals) through their gills. In contaminated waters, they can filter in bacteria and other potentially harmful substances in their normal feeding process. Therefore, the Department of Environmental Management routinely classifies waterways as approved or restricted for shellfish harvesting. Sampling by the Salt Ponds Coalition supplements the periodic state sampling.

Quahaugs do, however, grow and flourish in areas closed due to pollution. Since those living in contaminated waters are unaffected, they can thrive and actually become overcrowded in certain areas. Marine biologists from D.E.M., with the cooperation of commercial fishermen and citizen volunteers, have successfully transplanted quahaugs from closed areas to special areas called Shellfish Management Areas. The transplanted quahaugs purge themselves of the contaminants after being transplanted, usually in about



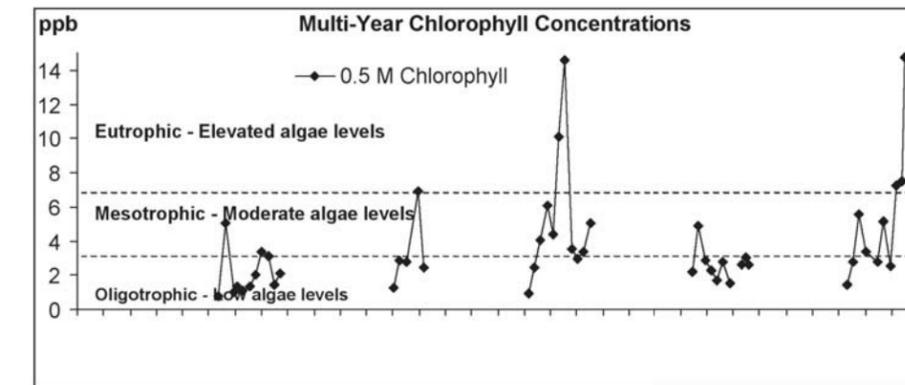
15 days. After testing and certification by the R.I. Department of Health, these shellfish may be harvested. In the coastal salt ponds, specific areas are set aside as Spawner Sanctuaries. These areas are closed to harvesting and receive transplanted shellfish. These transplanted shellfish are not harvested, but serve as a brood stock to replenish adjacent areas of the salt pond. The Spawner Sanctuary in Quonochontaug Pond was responsible for doubling the population density of the rest of the pond. These Spawner Sanctuaries are also used for planting scallops and oysters.

Rhode Island residents are allowed to harvest 1 peck (1/4 bushel) daily without a license, as long as they are not offered for sale. Both non-residents and non-resident property owners must be licensed. Non-resident licenses are offered for sale at bait shops, marinas and Wal-Mart. Non-resident property owners can be licensed by D.E.M. Commercial harvesters, entitled to 3 bushels per day, must be residents and licensed.

Chl levels increase from below 10 ug/L in 2001 and 2002 to around 15 ug/L in 2003 and 2005. The MEP guidelines using the Chl data indicate that the water quality has declined from good to significantly impaired. The chlorophyll data for all other stations in Green Hill and Eastern Ninigret Ponds show a similar trend with time.

Dissolved Oxygen

While elevated TN and Chl concentra-

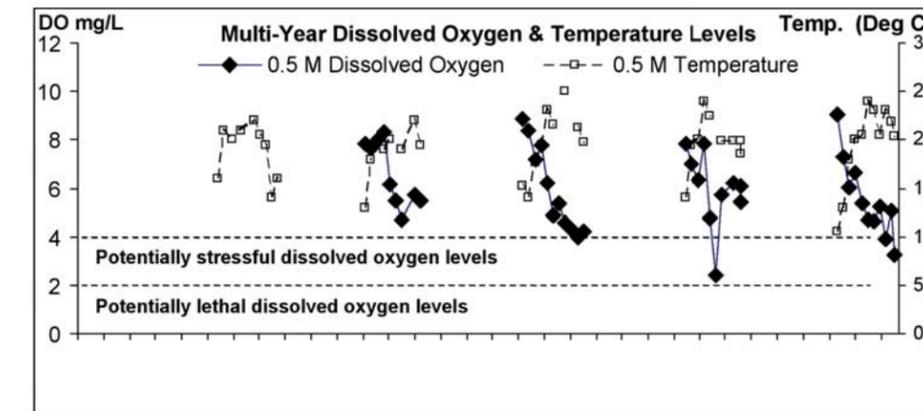


tions are two important harbingers of deteriorating water quality, declining dissolved oxygen (DO) levels are the direct result of eutrophication. With increasing levels of algae, caused by elevated concentrations of nitrogen, more DO in the water column is consumed when the algae die and sink to the bottom. The MEP guidelines for DO are: DO depletions below 4 mg/L are rare when water quality is good; stressful DO conditions (major periods of DO concentrations below 4 mg/L) represent significantly impaired water quality.

Figure 3 is a graph showing the DO concentrations (black diamonds) in surface waters from the Tockwotten Cove Station for the spring-summer-fall pe-

riod of the years 2002 to 2005. Like the TN and Chl graphs, we can see a noticeable trend in the DO data. Progressing from 2002 to 2005, late summer DO levels have declined from 5 mg/L to nearly 2 mg/L in 2004 and 2005. These low DO concentrations represent stressful oxygen conditions for aquatic life. As is the case for the TN and Chl data, all other stations in Green Hill and Eastern Ninigret Ponds are experiencing stressful DO levels (below 4 mg/L) through-

out the period 2001 to 2005. The trend towards stressful DO levels during the summer months of 2006 is evident from the SPC data collected by our expanded nutrient monitoring program.



Conclusions

In this short article, I have presented graphic data for one station in Eastern Ninigret Pond (Tockwotten Cove) to show that Green Hill and Eastern Ninigret Ponds are experiencing eutrophication at the beginning of the twenty-first century. If this was a one or two-year occurrence at a few stations, then we might not be too concerned. But, this is a widespread occurrence and the level of parameters used to define eutrophication (TN, Chl, DO depletion) are becoming more alarming. What is even more alarming is that the levels of these parameters in Western Ninigret and Western Quonochontaug Ponds are also increasing to values that suggest water quality is deteriorating due to impending eutrophication. It seems clear that substantial groundwater inputs of nitrogen are fertilizing algae blooms in Green Hill and Eastern Ninigret Ponds. A significant fraction of the groundwater input to these ponds is associated with very high housing density that contain many outdated ISDS systems in the watershed area adjacent to the ponds. However, the western basin of Ninigret and Quonochontaug Ponds are surrounded by shoreline with moderate

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Eutrophication

Continued from previous page

to low housing density and most ISDS systems have been upgraded above the cesspool level. Obviously there are other factors besides groundwater inputs that may contribute to the deterioration of water quality in these areas. Two obvious areas are surface stormwater runoff and the isolation of shallow-water areas from replenishment by clean, oxygenated seawater through breachways to the ocean. These factors might bear future study.

Green Hill

Continued from page one

A major problem is that Green Hill and eastern Ninigret Ponds are surrounded by a shoreline dominated with high-density housing, many of which are serviced by outdated waste-water disposal systems. In addition, Green Hill Pond is poorly flushed and receives little clean ocean water through the Charlestown Breachway. It is estimated that these two coastal ponds receive much of their nitrogen content from stormwater runoff and groundwater input, both of which are minimally regulated in the watershed.

Based upon SPC actions, the Rhode Island DEM hired the environmental consultant Horsley Witten Group to study bacteria and nitrogen pollution in Green Hill and Eastern Ninigret Ponds and to offer solutions. Charlestown and South Kingstown have also enacted improvements in wastewater disposal, but it appears that these initiatives may need more public, political, and financial support to succeed.

For more information on this topic, please visit the pond-profile section of www.saltpondscoalition.org

Narragansett Plans to Address Pt. Judith Pond "Hot Spots"

By Alicia Lehrer, Southern Rhode Island Conservation District, on behalf of the Town of Narragansett

The Rhode Island Department of Environmental Management (RIDEM) has listed Point Judith Pond's water quality as impaired for pathogens (bacteria and viruses). Contamination prevents certain designated uses of the pond such as the harvesting of shellfish. RIDEM recently completed an assessment of pathogen levels in Point Judith Pond as part of a water quality restoration study. Testing revealed 16 pollution "hot spots" where stormwater entering the pond showed elevated pathogen loads.

Under the state Phase II Program, RIDEM requires that all communities containing urbanized areas treat stormwater before allowing it to discharge into a natural water, focusing as a priority on those with impaired water quality, such as Point Judith Pond (see <http://www.dem.ri.gov/programs/benviron/water/permits/ripdes/stwater/>). The Town of Narragansett takes this responsibility very seriously. Therefore, when the opportunity arose last summer to propose pollution abatement projects for which the costs could be shared using the assistance of state and federal funding through the Narragansett Bay Watershed Restoration Bond Fund and EPA nonpoint source pollution funding (Section 319 funding under the Clean Water Act), Narragansett, in partnership with the Southern Rhode Island Conservation District (SRICD), seized it. The Town proposed projects that address five possible pollution "hot spots" on Point Judith Pond. The five "hot spots" are shown on the map. The numbers "66, 65, 7, 6 and 27" shown with the "!" represent RIDEM monitoring locations along Gull Road and in Champlin's

Cove. Results at each of these locations indicated pathogen (fecal coliform) concentrations in excess of 14 fc/100ml, the shellfish harvesting standard that applies to Point Judith Pond.

As the RIDEM study has only revealed the general areas from which pollution is suspected, proposed work related to sites "65, 66 and 27" includes study to further narrow the sources of pollution. Then the town can make well-informed determinations as to the best locations and most suitable practices for reducing stormwater impacts to Point Judith Pond. The town plans to develop designs for at least two stormwater treatment practices in those areas. The town suspects that sites "6 and 7" have elevated pathogen concentration due to the animals on Sunset Farm, a property owned by the Narragansett Land Trust. The farm is adjacent to Champlin's Cove on the east side and is bordered by Foddering Farm Road, Point Judith Road and Daytona Avenue. The town has teamed up with the USDA Natural Resources Conservation Service (NRCS) to develop and implement plans to reduce the impact of animals and their manure on Point Judith Pond. The professional NRCS planners have outlined a program that will include fencing animals out of all waterways, building a manure storage and composting facility and a system to bring water to the animals away from natural waterways. Narragansett will not learn whether these projects have been funded until late winter or spring of 2007. If they are funded, work will begin late summer or fall of 2007.

The town considers the Salt Ponds Co-

alition (SPC) an important partner in the effort to improve water quality on Point Judith Pond. The town hopes to work with SPC volunteers on a water quality monitoring program at key locations in the Point Judith Pond watershed to help pinpoint pollution sources and track water quality improvements as changes are made. Also, SPC is terrific at helping to get the word out to Point Judith Pond neighbors about how they can do simple things to clean up the pond, like picking up after their pets and turning their downspouts to allow roof runoff to soak into their gardens rather than picking up street pollutants on the way to the Pond.

Narragansett will keep you informed on these projects in upcoming newsletters. For more information, please contact Alicia Lehrer at 401-284-1885 or Alicia.Lehrer@ri.nacdnet.net.

Map shows upper, eastern portion of Point Judith Pond. Point Judith Road is visible in upper right corner, running top to bottom.

Please Help!

SPC strives to maintain low overhead, but we do have significant costs associated with testing, rent, publication, etc. Please help with a tax-deductible contribution. See www.saltpondscoalition.org for more information on how you can help.

Click This

<http://seagrant.gso.uri.edu/daytrip/>

This site is a daytripper's guide to Rhode Island for the saltwater set and includes listings for coastal areas and natural places throughout the state. Maps, formatted as PDF files, will help you locate over 350 sites and the written descriptions should help you choose those that are of particular interest to you.

Interesting Reading

A Place of Quiet Waters, The History and Natural History of Rhode Island's Point Judith Pond and the Harbor of Refuge.

When long-time resident and retired URI marine education specialist Prentice Stout self-published this lovely book, he had little idea how well it would do. But word has been getting around and the book is developing quite a following. No wonder... the 300+ pages in this sleeper are full of insight and humor, and while specifics pertain to Point Judith Pond, the general content - ranging from history to wildlife - is relevant to all the ponds. The book is available for \$30 directly from Prentice by calling (401) 783-0838, and can also be found in local libraries.

