



NSRWA
therivershed.org

October 2008

RiverWatch

THE NORTH AND SOUTH RIVERS WATERSHED ASSOCIATION, INC.

Building the Next Generation of River Stewards

As I write for this October newsletter it is mid-August (yes, we have to plan that far in advance for everything!) and I am bemoaning the approaching end of summer. It's always sad to say good bye to the warm, mostly sunny days when we can get out and enjoy the rivers.

My summer was filled with reaching out and interacting with young people. From River Campers, to high school volunteers, to college interns, my summer was filled with educating the next genera-

tion about our rivers and watershed. The NSRWA was particularly fortunate to have several high school and college students working with us this year as either volunteers or paid interns, all of whom have made contributions to this newsletter and to our mission to protect, restore and educate others to be stewards of our watershed.

Third Herring Brook in Hanover. Nik, an undergraduate student at Pomona College in California majoring in Environmental Analysis, approached us in the spring seeking a summer intern position. With his kayak skills, environmental academics and his personal knowledge of the rivers, I quickly realized he would be a great River Adventures Camp Counselor. Nik writes about his experience introducing 48 young people ages 10- 14 to his very own backyard natural wonder on page 11.

Stormwater plans and conducted intensive water quality sampling in the South River to try to identify the sources of bacterial pollution. You can read the intriguing results of her work on page 4.

RiverWatch, our summer program to monitor water quality in the rivers, was run by an extremely capable young woman, Alyssa Scoppettuolo. Alyssa met up with us a couple of years ago when she



Nik Tyack

For 12 weeks this summer the NSRWA hosted an EPA intern, Hannah Bruce. Hannah hails from Mississippi and will be attending her Senior year at Missouri University of Science and Technology where she is majoring in Environmental Engineering. While with us Hannah investigated the progress Scituate and Marshfield were making on meeting their EPA

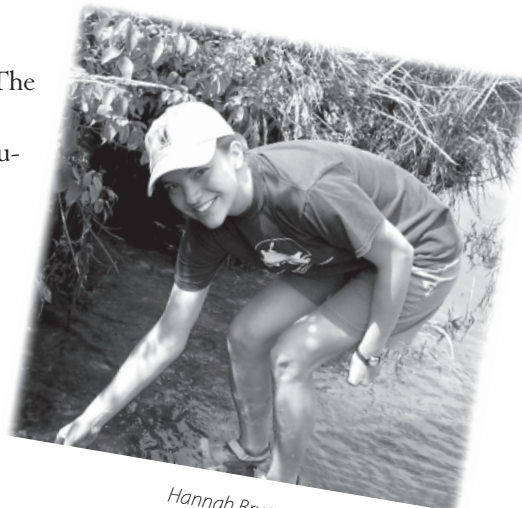


Alyssa Scoppettuolo (right) with her Mom.

met her community service requirements by volunteering in our River Clean Up Day. She became interested in the NSRWA and since then has become a great asset. This year she took on the RiverWatch program and taught others how to care for the rivers too. You can read about her experience and the results from this year's sampling on page 12.

I hope you will be as inspired and proud of the work these young people did for our rivers as I was this summer. The watershed and our legacy depend on this next generation being engaged and educated.

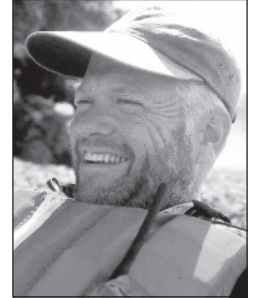
Nik Tyack is one of those newsletter contributors. Nik and his family are long time members of the NSRWA who live on the



Hannah Bruce

by Samantha Woods
Executive Director

Letter From The President



The Cape Cod Outdoor Education Center was one of those great places to work for fledgling teacher/naturalists on their journey to make a difference in the world (certainly not the world economy). Located at two summer camp facilities and owned and operated by a wonderful couple, Judy and David Silverman, the Center provided school groups an opportunity to explore the tidal marshes, dunes, kettle ponds and the pitch pine/scrub oak forests of the Cape. Each season the Silvermans would hire just under thirty staff, most of us, fresh out of college (either by way of graduation or empty coffers). Our charge was to take groups of students on daily short adventures, gently recruiting twelve year olds into the fold of future tree huggers and social activists. More often than not our fanatical agenda was tempered by reality, the kids were there to have fun and to see how late they could stay up.

The afternoon activities were mandatory but elective. After lunch we would assemble in the lodge, each staff member arranged in alphabetical order around the periphery of the room. Our task was to introduce our activity and then students would sign up for the one that interested them the most. We learned quickly (some more quickly than others) that your presentation would determine what kind of students you would be responsible for that whole afternoon. Madeleine, a seasoned veteran, was the master of this delicate dance. In her soft, sing-song voice, she would offer a leisurely wild-flower walk or a haiku workshop. The rest of us would curse under our breath as the ten quietest and most well behaved girls flocked to her.

Jay was exuberant and dramatic in his approach, promising mud walks through abandoned cranberry bogs. Jay's target audience was often kids who were excited about frogs, snakes and other cool stuff. He was just eccentric enough that the jocks and tough boys wouldn't sign on. The rest of us were foiled again, watching each round as the pool thinned down to the few apathetic students whose rallying cry was often "This is stooopid."

In the end though, no matter which students came along on your adventure, whether through genuine interest or osmosis, each kid would smell the aromatic resin of sweet gale, roll thin plants between their fingers and learn that "sedges have edges, rushes are round," and standing in circles as they passed the thread of a yarn ball back and forth, they learned the complex intricacies of "the web of life". Students would huddle close as a screech owl, night heron or cicada joined the nocturnal chorus on one of our weekly night walks. As the week progressed, even the initially apathetic students would be drawn into Nature's wizardry. By the time we visited the Cape Cod National Seashore nothing was "stooopid" anymore. The radula and feeding habits of a dog whelk became "awesome", the coiled seed pod of jewel weed became "that is sooo cool". Kids have a remarkable curiosity and capacity to learn.

Jay's irrepressible enthusiasm would inspire. Madeleine's respectful reverence would engender. When the school buses pulled away on Friday afternoon, another hundred students left with visions of lichens as the marriage of Freddie Fungus and Alice Algae. Madeleine, Jay and the rest of us saw busloads of future stewards of the Earth.

Our NSRWA's River Adventures program is now several years old and its mission continues to inspire and engender. By now, we can claim hundreds of kids have explored the wizardry of our watershed. With their collective experiences and burgeoning interest, these Adventurers will be writing the future chapters for the stewardship of our watershed. Your membership and contributions have helped make this program possible. You should be proud.

Thanks and see you on the water.

Doug Lowry



Rivershed Steward Profile: Kathy Miller

Kathy Miller has been a reliable volunteer for our marine invasive species survey program since 2006, assisting with a majority of surveys and in the process becoming skilled at identification of invasive species. She was featured along with our Mass Bays watershed ecologist, Sara Grady, in a *Patriot Ledger* article about tidepool “critters” and invasive species. Kathy chatted with us recently about her involvement in this project and with the watershed.

How long have you been a member of the North and South Rivers Watershed Association?

We’ve been living in Scituate for nine years on Third Cliff, and as soon as we heard about the NSRWA, we joined.

How did you first come to know about the NSRWA?

Well, I had seen articles in the newspaper that were written about the NSRWA. Since we love to kayak, that attracted our attention. I read the paper pretty carefully, and I notice things that other people might not and fun things that might be going on.

Why did you become a member?

Well, certainly because it’s important! I think conserving and protecting delicate areas is critical, so I would like to do anything to support that. That’s why I volunteer as well, because I think it’s important to get the information that’s necessary to preserve it.

Why did you decide to get involved with our marine invasive species surveys?

I’ve always been interested in the ocean. I consider myself a biologist from my work, not from my degree. I’ve worked for Fish and Game in Alaska, the New England Aquarium as an aquarist for the childrens’ gallery, and a mussel company in Rhode Island. That particular interest [marine invasives] is so I can learn more. It’s a subject that’s close to my heart. You



Kathy Miller in a tidepool. Photo by Gary Higgins/The Patriot Ledger.

get more out of life when you volunteer and help people out. It keeps you healthy - it keeps your brain working. I’ve also had a chance to go to places that I’ve never been before. I’ve seen them from the river but I’ve never seen them from the land side. I had never been over to Fourth Cliff but had stared at it from Third Cliff. I had never been to Rexhame Beach before.

What has been your favorite part of participating in the invasives surveys?

Going to all the different places and just learning. It’s also a wonderful opportunity to get outdoors when I might not otherwise. It’s a lot of fun going out to do the surveys, and more people should do it!

What concerns you most about the future of the watershed?

I worry about the invasives. On the Vineyard there’s a seaweed, *Codium*, that is more pervasive there than it used to be, and it tears up the scallops and blows ashore. I am aware of plant invasives too, because my family gardens, and I know there are similar things going on out in the water that we don’t see.

Where is your favorite place in the watershed?

We really have fun kayaking on the North River. We have it figured out so we can go in with the tide and come out with the tide, and we don’t have to paddle too hard. We really enjoy it.

What are the two things you think everyone who lives in the watershed should know about the watershed?

How beautiful it is - I think the NSRWA has done a good job trying to protect it. I also would want them to know how delicate it can be and that we need to take care of it.

The NSRWA and Massachusetts Bays Program are grateful to Kathy for all her assistance and interest in our watershed, and we’re lucky to have someone so dedicated to helping us.

The NSRWA Steward Profile is a series of interviews of active volunteers that have contributed their skills, hard work and commitment to the North and South Rivers watershed community. The NSRWA thanks each of our volunteers —our organization thrives because of your participation.



Mississippi to Missouri to Massachusetts: Three-eighths through the M-State Tour

I made my first trip to New England in May, and had quite a beautiful drive to get here. I actually seemed to travel back in time a bit as I reached cooler climates. The trees were still budding for spring as I made my way through the mountains of Pennsylvania. I soon came to regret my oversight in leaving all my jackets and long-sleeved shirts at my rental house at school in Missouri. The days warmed up soon, though, and the mildness of the Massachusetts summer was very pleasant when my family was baking down south in Mississippi.

Cyndi Koebert, of North Scituate, graciously took me in as a boarder in her home on only a phone conversation. I could not have asked for better living arrangements. She and her son Joey were quite welcoming and much better cooks than I. Her beautifully landscaped yard and proximity to Minot Beach made for a very pleasant setting and comfortable place to call home. I spent most of my weekends exploring the area. Among the most beautiful places I visited were the

South River Pollution - Not Just Stormwater

As part of EPA's National Pollutant Discharge Elimination System (NPDES) program, communities in urbanized areas (as outlined by the U.S. Census Bureau) are required to create and implement stormwater management plans. The NSRWA and Mass Bays Program requested an intern through the EPA Region I office to help provide assistance to the South Shore towns in meeting their requirements.

This summer, my work focused mostly on the South River. I read through annual reports Scituate and Marshfield sent to EPA and met with representatives of the stormwater program in each town to get an idea of how stormwater management programs are going in those towns. Later, Sara Grady and I began a water sampling project to

evaluate the contribution of stormwater to elevated bacteria levels in the South River.

We chose the areas for testing based on previous high level readings and by the suggestion of the Marshfield Town Engineer. We collected samples on three dry weather days and one wet weather day from stormdrain outfall pipes and from points in the stream and its tributaries (Fig. 1). The parameters tested were conductivity, fecal coliform, total suspended solids (TSS), and detergents. Conductivity was used as an indicator of salinity. Since many of the samples were taken from tidal areas, conductivity allowed for a view of tidal influence and dilution by tidal water. Fecal coliform and detergents were evaluated as possible indicators of illicit connections of septic systems to stormwater sewers. TSS was evaluated so that samples could be compared to deter-

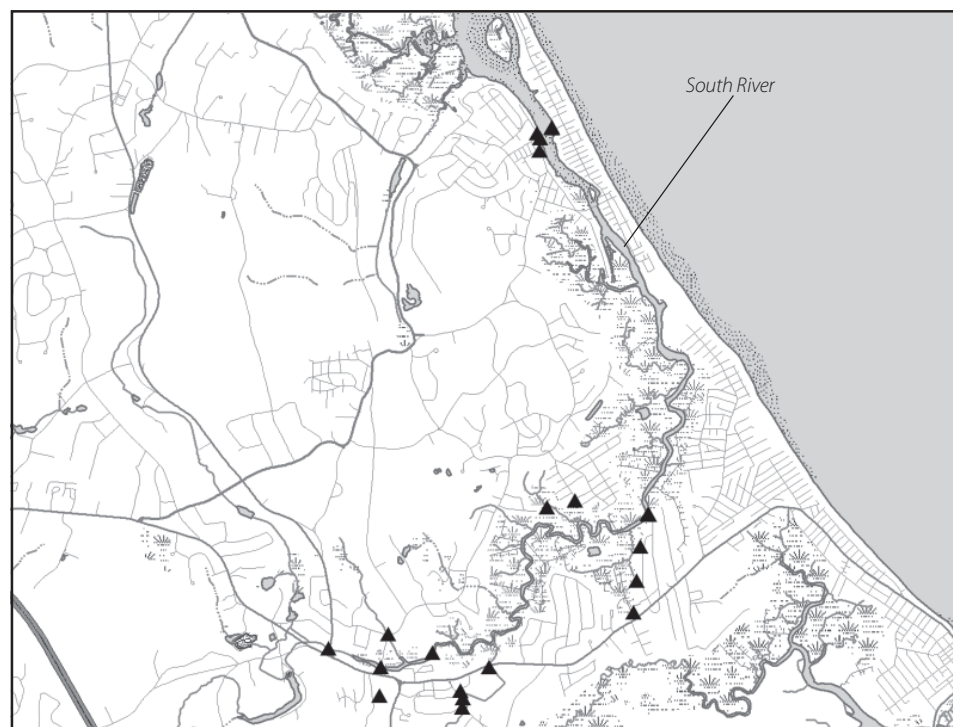


Figure 1. Map of South River sampling locators.

South River Pollution, cont.

mine stormwater contribution. Conductivity, fecal coliform, and TSS were evaluated on all possible sites. Detergents were only evaluated on samples from outfalls pipes and from other areas that had suspicious bubbling or foaming.

During sampling, we found a few outfall pipes that were flowing in dry weather as well as some areas that had high amounts of bacteria, over the 400cfu/100mL primary contact (swimming) and 2,000cfu/100mL secondary contact (boating) standards. High bacteria and detergents levels at Kent Park Ave. (WAXRS, Fig. 2) in dry weather may suggest contribution from domestic septic systems, which supports the town's interest in sewerage that area. Locations that had high fecal coliform levels without any associated detergents included the creek that runs along Tea Rock Lane and under Taylor Lumber into the South River (TLC) and a creek that runs under

Webster St (WS sites). The South River itself picked up bacteria between Veteran's Memorial Park (SR@VMP) and the Keville Footbridge (KFB) in dry weather but stayed roughly the same during wet weather, suggesting a source of bacteria in downtown Marshfield that is not increased by rainfall. A few outfalls that only flowed during wet weather had markedly high fecal coliform levels, particularly at Bourne Park Ave (BPA and LR sites). This demonstrated stormwater contribution to impairment of the stream.

The next step will be to begin identifying sources of stormwater pollution. Identification will require more sampling to validate the results of the testing we performed this summer. It will also require obtaining mapping of stormdrain/outfall connectivity from Marshfield and Scituate so that pollution can be traced back to source areas.

by Hannah Bruce

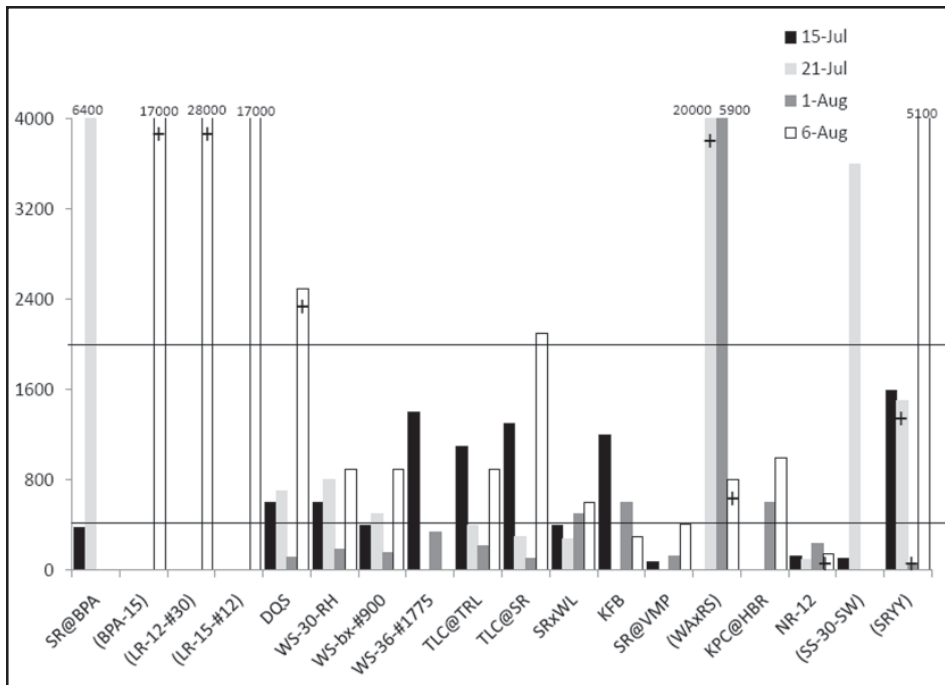


Figure 2. Bar graph of fecal coliform from samples taken on three dry weather (7/15, 7/21, 8/1) and one wet weather (8/6) sampling events. Absence of bars at a site for a given date indicates no sample was taken. Bars marked with plus signs indicate that detergents were present in the sample. Sites marked with parentheses were pipes; all others are in stream sampling locations.

World's End Reservation and the beaches at Martha's Vineyard. I found the city of Boston to be quite nice and very easy to explore on foot. Even being packed like a sardine on the "T" when leaving the Independence Day fireworks display was an experience for me (though perhaps not one I'd like to repeat often).

I was very well accommodated at the NSRWA office, with a desk and computer of my own, facing two windows out of which to gaze and to be lost in beautiful sunny days and rainstorms, alike - quite a nice situation for an intern. I also got occasional trips out into the nice days, which was definitely my favorite part of the job. As an engineering student, the work I did at the watershed really introduced me to another side of environmental work. I did a lot of data-collecting that will be used to promote the NSRWA's mission to "protect, educate and restore."

Hopefully the work I did this summer will be useful in mitigating the pollution to the South River caused by stormwater runoff. I will return home with good memories of Massachusetts and my experiences here. I would like to thank everyone I met for making me feel so welcome.

Hannah worked at the NSRWA office from May 27 until August 15. Her internship was a part of her EPA Greater Research Opportunities (GRO) Fellowship, which has provided support for her schoolwork and for environmental research during the school year. She is a senior in environmental engineering at the Missouri University of Science and Technology and plans to pursue a graduate degree in civil engineering with a focus on water resources and hydrology. Her hometown is Saltillo, MS.

Buy Good Grass Seed from Us

THE NSRWA is selling Pearl's Premium grass seed as part of the Greenscapes program.

Pearl's Premium is a blend of five native fescue grasses, specially selected for certain properties, such as repelling insects, ability to spread, etc. These grasses have been in Massachusetts for thousands of years and have adapted to our climate. They are exceptionally shade tolerant, although they can do well in full sun.

According to Jackson Madnick, the creator of Pearl's Premium, the grass:

- Never needs fertilizer
- Doesn't need to be watered once established
- Stays green all winter
- Grows so slowly it only needs mowing two or three times a summer
- Grows 12" roots

Overseeding your lawn with Pearl's Premium is not difficult. The grass is very fine, but very durable, and according to Madnick, crowds out non-native grasses such as Kentucky bluegrass, and troublesome grasses such as crab grass

Questions? Call Debbie Cook at the NSRWA office - 781.659.8168, or e-mail Debbie@nsrwa.org.

The price is \$36 for five pounds, which seeds about 1000 sf, and \$6 for shipping and handling. The savings in watering, fertilizing and mowing will more than pay for the grass.

Grass - the Good and the Bad

When you consider that grass covers 40 million acres of America, the choice of how we care for our lawns makes quite an environmental impact. But if we care for our lawns appropriately, we can have a vibrant, healthy lawn that positively impacts the environment.

In fact, lawns can actually be an excellent carbon sink. Recent research conducted by NASA Fellow Cristina Milesi found that "If people recycle grass clippings, leaving them to decompose on the lawn, the U.S. lawn area could store up to 16.7 teragrams of carbon each year. That's equivalent to about 37 billion pounds-the weight of about 147,000 blue whales. Even if people bag their grass clippings and compost them off site, lawn surfaces still appear to be a carbon sink, although at a much smaller rate of about 5.9 teragrams of carbon per year. However, if the clippings decompose in a landfill, all bets are off, as the oxygen-poor environment increases production of carbon-containing methane, a potent greenhouse gas."

Despite this potentially positive impact on the environment, many other environmental problems can come from the use of commercial fertilizers, pesticides,

and herbicides that are used everyday to make our yards that perfect green. According to the EPA, lawn chemicals can last a year in carpets and are 10X more toxic in our homes than outside. Making matters worse, often lawns are hard packed (particularly in newer developments) and encourage these chemicals to run off our properties through storm events or when watering. We also use an incredible amount of potable water to keep all that grass green.

So why are we selling Pearl's Premium grass seed through the NSRWA if we are bemoaning today's lawncare methods? Well lawns certainly have their place. What better place than a lawn to play fetch with your dog, or push your child on a rope swing?

But we can and need to do lawns better. Products like Pearl's Premium allow us to "have our cake and eat it too" because it gives us a lush lawn with virtually no care. We can also do simple things, such as leaving grass clippings on our lawns,

which are terrific fertilizers, that don't migrate into our rivers and streams the way commercial fertilizers do. Natural substitutes for potentially toxic chemicals can also work, such as putting corn gluten on pre-emergent weeds in the spring and introducing beneficial insects. There are many terrific ideas on our website, www.greenscapes.org, for ways to have a vibrant, healthy yard (and you can also sign up for our timely e-newsletter which will come 6 times a year with lots of helpful Greenscapes information).

But the bottom line is that in order to have a living, breathing, healthy and safe lawn, we have to accept some imperfections. The green lawn may look perfect, but having that kind of perfection on 40 million acres is taking quite a toll across the country, in our communities and in our own backyards.

*By Debbie Cook,
Greenscapes Manager*



NSRWA's 18th Annual Great River Race

The rain and thunder storms held off for the NSRWA's 18th Annual Great River Race, with 87 non-motorized craft filled with enthusiastic paddlers and rowers racing to the finish line. The race course is 6.5 miles starting at the Union Street Bridge in Norwell and ending at the Old Washington Street Bridge at the Pembroke/Hanover line.

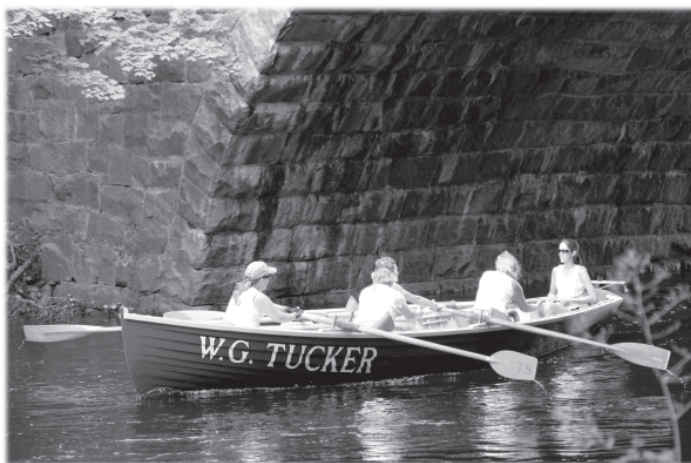
The 25+ volunteers, who wore orange t-shirts to distinguish themselves from the racers, were incredible helping the race participants unload their boats, working on registration, and parking and timing at the finish line. Corporate sponsors funded the many expenses associated with this race, which truly is the NSRWA's signature event.

Racers literally came from far and wide, including Jack & Nancy LaMarre from Bakersville, North Carolina, for the fourth year in a row. Although they qualify for the

Senior Division at ages 72 and 71, they had no problem placing first place in the Canoe Mixed division. The same for local race veterans, Ed Halpin and Peter Olson at ages 71 and 68. They have been placing first place for years in the Men's Canoe Division. New comer to the race, Ty Dell of Scituate, was like a rocket ship, finishing fastest time overall at 57:03. The winner of the special vessel category, "The Tucker" was propelled for the first time in this race by



"Wild Turkey Canoe" was the Best Decorated Boat



The Women of Saquish row The Tucker across the finish line.



Nancy & Jack LaMarre

an all women crew "the Women of Saquish." Everyone got a great chuckle out of the best decorated boat the "Wild Turkey Canoe" with spinning life size turkeys adorning the boat. The race has become a tradition with many of the boaters and their families with addition of new young participants year after year.

Safety is paramount to the Great River Race. Safety kay-

aks were strategically positioned throughout the race course with a sweep boat following the last racers. Hanover and Norwell firemen were patrolling the race course in motorized Zodiacs. The Hanover fire department came to the aid of two kayakers, towing them to safety at the takeout.

The after-race awards ceremony was particularly festive and energized, as it was held indoors because of the threat of rain. The party was hosted by McGreal's Tavern in Norwell Center. The owners, Mary and Kevin McGreal generously donated a wonderful spread of food to the racers, their friends and families and volunteers.

by Paula Christie

Thanks to volunteer Marliisa Clapp, you can now view 200 additional photos from the Great River Race at www.mcdstudios.com.

Scenes From The Race ...



RACE RESULTS

Best Decorated Boat:

Wild Turkey Canoe

Canoe Family

1:19:26 The Moe Family
1:21:18 The Hahn Family
1:32:59 The Lawrence Family

Canoe Men

0:57:09 Ed Halpin & Pete Olson (SR)
1:02:25 Tim Bailey & Dennis Collins
1:17:14 Karl & Mat Honkenan
1:23:40 Craig McNeil & Nat Crosby

Canoe Mixed

1:03:32 John LaMarre & Nanci
LaMarre (SR)
1:17:33 Nick Tyack & Angela Murrery
1:33:00 Darlene Corson & David
Lawrence
1:35:44 Margaret & Ronnie Goodwin
1:38:18 Bob & Ginny Sears

Canoe Women

DNF Katey Cullen & Charlotte
Poppe

Kayak Double

1:07:20 Samantha Jones & Benjamin
Ellison
1:13:59 Ken & Kris Kelloway
1:18:54 Wayne Wilson & Ann
Diamond
1:20:34 Jason & Christian Ingargiola
1:22:21 John & Michael Mannix
1:24:15 David & Graham White
1:28:05 Lawrence & Robert Heighton
1:40:16 Steven & Nick Biagini
1:43:55 Kevin & Meredith Jones
1:50:10 Noah & Lyn McDaniel

Kayak Racing

0:57:03 Ty Dell

Kayak Single Men

1:01:28 Philip Sherman
1:01:30 Dan Jones
1:03:44 Bob Khederian
1:05:17 Mark Norton
1:05:30 Jim Dollof
1:06:01 John Karoff
1:06:29 Scot Mackeill
1:06:38 Jordan Jacobs
1:07:01 John Zarkauskas
1:07:44 Bruce Meacham
1:08:04 George Kylier
1:09:27 Don Brown (SR)
1:10:23 Billy Grial
1:10:39 John O'Leary
1:12:34 Corey Morris
1:13:04 Jeff Goodale
1:16:18 Neil Oliwa
1:18:16 Richard Leach
1:18:42 Matt Gill
1:19:31 John Paybella
1:20:11 Greg Howell
1:20:12 David Vetelino
1:22:33 Ryan Blake
1:22:44 John Gahriel
1:22:46 Norman Thoms (SR)
1:23:55 Stephen Travi
1:24:11 Paul Karoff
1:24:14 Dan Cavicchi
1:26:10 Mark Leahy
1:26:46 Mark Richardson
1:27:00 William Roy
1:28:46 Ken Holland
1:33:33 Larry Dynan
1:37:22 Paul Cleary (SR)
1:38:02 Warren Talbot
1:40:50 David Kusek
1:47:14 Tim Jones

Kayak Single Women

1:04:45 Debra McCarthy
1:08:54 Nancy Whipple
1:12:08 Bea Ellis
1:14:10 Joanne Papandrea (SR)
1:19:33 Prue Goodale
1:21:34 Eileen Kelleher
1:23:34 Melinda Lynch
1:27:20 Elizabeth Durant (SR)
1:29:41 Lisa Dynan
1:34:47 Eleanor Cleary
1:35:28 Karen Monaco
1:38:08 Caroline Jones
1:38:52 Jill Leahy
1:39:42 Lindsay McGrath
DNF Janice Goslin
DNF Mary Ellen McDonald
DNF Mary Smedile

Rowing Fixed Seat Double

0:59:21 Sean Bercaw & Bill
Armitage
1:03:01 Craig Robinson & John
Strusiany

Rowing Fixed Seat Single

1:03:48 Tim Carpenter
1:07:27 Michael Cushing

Rowing Sliding Seat Double

0:59:16 Craig Wolfe & Dee Cogill

Rowing Sliding Seat Single

1:04:35 Peter Kelly-Detwiler
1:06:23 Nowell Bloomenthal
1:06:58 Scott Thorburn

Special Vessel

1:17:28 Women of Saquish Rowing,
The Tucker

Special Thanks to our 2008 Great River Race Corporate Sponsors

A.W. Perry Inc.
Black Pond Veterinary Service
Bond Printing Company, Inc.
Charles River Canoe & Kayak
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REI
Scituate Federal Savings

Watershed Notes

ENVIRONMENTAL BOND BILL PASSES! On August 14, Governor Deval Patrick signed into law the 2008 Environmental Bond, authorizing up to \$1.68 billion to provide capital funds for vital state environmental programs over the next 5 years. The NSRWA was part of a Coalition of 260 groups and businesses that supported this bill's passage. The Environmental Bond will provide the capital resources to protect open space, improve water and air quality, repair and maintain public parks, increase energy efficiency, support agricultural resources, and more. The final text of the bill is online at: www.envirobond.org. To all of our members who contacted your legislators in support of this bill, thank you!

LAND CONSERVATION TAX INCENTIVE: The Environmental Bond Bill also included an important state income tax credit for landowners who donate qualifying conservation or agricultural land to a municipality, the state, or a nonprofit conservation organization (effective January 2010). The tax incentive program, which the Governor sent back to the Legislature with a \$2 million per year cap, needs legislative approval. The incentive is a great complement to the funds provided by the Environmental Bond, and will enhance and expand the state's ability to preserve natural areas.

OCEAN MANAGEMENT ACT : This "first in the nation" legislation directs the state to develop an ocean management plan in an attempt to balance all of the current and anticipated uses of our coastal waters. From fishing to renewable energy development to whale watching, the demands on our oceans are great. A specially appointed Task Force, chaired by former Environmental Affairs Secretary Susan Tierney, will meet and develop a comprehensive ocean management plan by December 2009. More information can be found at www.masscoceanaction.org.

PHOSPHORUS BILL : While not as high a priority or wide-reaching in its scope as some of the other bills mentioned above, the phosphorus bill is important to those who care about water quality. The legislation bans phosphorus from dishwashing detergents so it will no longer enter our rivers and streams from wastewater discharges. Previous legislation had banned phosphorus from other products but dishwashing detergent had not been included.

NSRWA FUNDING IN BUDGET : The North and South Rivers benefited from this year's state budget thanks to Representative Hynes and Senator Hedlund's inclusion and support of \$75,000 for restoring the North and South Rivers to meet their water quality standards! This funding will be used to investigate and find solutions for degraded water quality in our rivers—and eventually we hope enable recreational shellfishing in our rivers.

40B DEVELOPMENT PROPOSED NEXT TO THIRD HERRING BROOK : A large affordable housing development has been proposed on a former farm that abuts the Third Herring Brook in Norwell. The proposal calls for 198 units to be built. The NSRWA met with the developer and expressed concerns over how stormwater and wastewater would be handled at the site, encouraging the developer to try Low Impact Development techniques where possible (minimizing impervious surfaces, using pervious pavement, and treating stormwater with bioretention basins). The NSRWA will provide written comment on these issues during the permitting process.

NSRWA IN THE MOVIES! The NSRWA was chosen by Boston University's Center for Digital Imaging to be the focus of a student film project! Board members Russ Haskell and Deb Lenahan coordinated on our end to help the students make a documentary of the NSRWA and the North and South Rivers. The final film will be 4 minute "short" documentary. They have been interviewing lots of "river folk," plus getting footage of programs like RiverWatch water sampling, River Camp, and of course, the Great River Race. (Just a regular week at the NSRWA!). The film premiere will be at our Annual Meeting, November 7. See Page 16 for details.



Making movies with the NSRWA.

What I Did on My Summer Vacation!

For 6 weeks of this summer, around 50 campers at the Mill Pond branch of the South Shore YMCA took a break from the regular pursuits of the camp, and went kayaking with River Adventures, a program run jointly through the NSRWA, the Sandwich YMCA camp (Burgess), and Camp Gordon at Mill Pond.

The leaders, myself included, took the campers from Plymouth's Billington Sea to learn basic kayaking skills, to the salty tidal reaches near the mouth of the rivers, to the middle stretches of the North River towards Blueberry Island from the Union Street Bridge, and finally to the freshwater tidal marsh just southwest of the Route 53 bridge. We also took them on the South River, putting in at Rexhame Beach, a good tide-pooling area located on the site of the old mouth of the river, and up towards the Julian and Sea Street Bridges of Humarock.

River Adventures, of course, involved a good deal of kayaking, along with a good amount of swimming. But what seemed to me to be the magic of the camp was how local kids got to experience and realize the uniqueness of the vast and varied playground that the North and South Rivers offers them, and how much fun they could have there. Embedded in the suburban, automotive South Shore is a wonderful world that offers big skies, an estuary, beaches, and the secluded nature of creeks, brooks and the freshwater tidal marsh of Pembroke and Hanover.

The campers especially saw this when we ventured to the less-frequented spots of the river. A lot of them had spent at least some time on the river, but when we paddled up Pembroke's Herring



Photo by Nik Tyack.

Brook through wild rice to the vibrant flowering freshwater marsh, poked our heads into the serene Second Herring Brook, checked out the vast golden-green fields of reeds alongside Dwelley's Creek, or pulled our boats up to the side of the South River to explore Clapp Creek, we were experiencing parts of the river that most of the kids had never seen before.

By kayaking and swimming, exploring brooks and playing in the sand, the kids who took part in River Adventures learned the intrinsic value of the river. But on top of having fun, they learned about storm drain pollution, North River shipbuilding, anadromous fish and dams; not just by being told, but firsthand through seeing the oil in the river after it rained, reading the metal plaques that mark the historic shipyards, and paddling up the Herring Brook and the Indian Head River to see the traditional spawning grounds of herring and shad, as well as seeing how dams at Mill Pond, Luddam's Ford, and over the Second Herring Brook impede the progress of fish trying to swim upriver.

One of the other lessons of the camp was that stewardship of the watershed not only benefits people and their recreational uses of the river like swimming, fishing, and shellfishing, but also animals and other life, including some threatened species such as least terns and piping plovers

that nest on The Spit. On two occasions, the group was able to meet up with employees of Coastal Waterbirds, a Mass Audubon program that works to protect the nesting habitat of both of the species mentioned above, along with common terns.

As a kid living on Third Herring Brook, I loved mucking around in the river trying to catch minnows, crayfish, and other critters I found, and later exploring in a kayak my grandmother gave me. I pursued my love of rivers and boating by doing three summers of canoe and white-water kayaking wilderness expeditions through the Chewonki Foundation in Wiscasset, Maine, as well as pursuing my love of nature by becoming a counselor at the North River Audubon sanctuary in Marshfield for the following two summers.

The most pleasing and fulfilling part of being a counselor at River Adventures this summer was being able to both pass on my love of the North and South Rivers, boating, and nature, and also being able to relive some of my favorite childhood experiences, so to finish, I'd like to say a huge thank you to the NSRWA, Camp Burgess, and the South Shore YMCA for giving me this great opportunity!

*by Nik Tyack
River Adventures Camp Counselor*

THE NORTH AND SOUTH RIVERS WATERSHED ASSOCIATION

The mission of the North & South Rivers Watershed Association is to preserve, restore, maintain and conserve in their natural state, the waters and related natural resources within the watershed.

Our goals are to:

- Restore the water quality of the rivers by identifying and correcting adverse impacts;
- Encourage stewardship of the watershed through public education, outreach and recreation programs; and
- Promote responsible growth by working in partnerships to preserve open space, scenic vistas and sensitive natural resources.

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NSRWA PROGRAMS

South Shore Water Woes

Pembroke isn't the only place on the South Shore that's having water problems.

Our North and South rivers have been tested by the NSRWA (North and South Rivers Watershed Association) this summer and many locations had high levels of bacteria. Although we don't drink the surface water, it's just as important to keep clean as the water that comes through our faucets.

For over 15 years, the NSRWA has conducted testing of the North and South rivers for bacteria and overall water quality during the summer months. On several days, volunteers test the water in 10 locations along the North and South rivers. The test results are published in the NSRWA newsletter, which can also be viewed online at nsrwa.org.

Recent test results revealed occasional high levels of

a bacterium called fecal coliform, found in warm blooded animal feces. If high levels of these bacteria are found in the rivers, they are unsafe for boating, swimming, or drinking. Tests also revealed occasional high levels of enterococcus bacteria, which is used to test marine and brackish water.

During the summer of 2008, the NSRWA discovered high levels of bacteria at the Old Washington Street Bridge in Hanover, Corn Hill Lane in Marshfield, the Union Street Bridge in Norwell (a popular spot for bridge jumpers), Driftway Park in Scituate, the Julian Street Bridge at Humarock Beach, and the Willow Street Bridge in Marshfield. Many of these locations were under the fecal coliform standard for swimming (400 cfu/100mL) during dry weather (<0.25 inches of rain in last 48 hours) but exceeded the standard after over

an inch of rainfall prior to the July 24th sampling date. All the sites tested for enterococcus were above the enterococcus swimming standard (104 cfu/100mL) on July 24th as well. Others have a tendency to be high even without rainfall, like the Washington Street Bridge and Willow Street Bridge, but get worse after it rains.

Other locations regularly fell under the swimming standard and in many cases under the shellfish standard for fecal coliform as well (14 cfu/100mL). These locations include the Scituate Waste Water Treatment Plant and A to Z Boat works in Scituate, Damon's Point in Marshfield, and the mouth of the North River found at Humarock Beach.

This is my third year volunteering for the NSRWA and my second year as a volunteer for the NSRWA's Riverwatch program. This summer, I led the Riverwatch volunteer group made up of Linda Miller, Claudette Clunan, Ralph Butler, David Leitch, and Renee Parry along with her sons James, Aaron, and Joseph. Sara Grady and Paula Christie of the NSRWA also assisted the group.

Thanks to the NSRWA's wonderful volunteers, we can publish important water statistics that reflect the water quality of our rivers. The NSRWA

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Sampling at the Union Street Bridge.

welcomes anyone interested in volunteering for the Riverwatch and other programs.

As a senior at Pembroke High School, this has been of particular interest to me as I experience first-hand what it means to live with a contaminated water supply. It is ironic that as I am writing this article, my family is boiling water due to Pembroke's water supply's contamination of e-coli and fecal coliform.

I hope the citizens of the South Shore will be inspired to keep our rivers and water supplies clean for my generation and generations to come.

*By Alyssa Scoppettuolo
NSRWA Volunteer*



Above left to right: Sara Grady; Renee Parry and sons James, Aaron and Joseph; Alyssa Scoppettuolo, Linda Miller, Claudette Clunan, Ralph Butler and David Leitch.



Above and at right: Sampling at Damon's Point.

RiverWatch Water Quality Testing Results 2008

		North River and Tributaries								South River		
Date	Type of Bacteria	Washington Street Bridge	Corn Hill Lane	Union Street Bridge	Scituate Outfall Pipe	Driftway Park	North River Marine	Damon's Point	North River Mouth	Julian Street Bridge	Willow Street Bridge	Rainfall in last 48 hrs
6/25/08	FC Enterococcus	400	170	150	6	100 63	66	62 31	6 1	130 19	800	0.14"
7/9/08	FC Enterococcus	400	57	37	1	14 11	11	10 10	0 2	160 10	130	0
7/24/08	FC Enterococcus	4,700	2,900	1,700	12	900 220	120	170 120	1 0	2,300 290	1,000	1.18"
8/7/08	FC Enterococcus	500	150	300	2	18 7	19	18 10	4 2	66 33	130	0.18"
8/21/08	FC Enterococcus	370	190	81	4	18 9	40	15 5	3 1	41 20	200	0.12"

*Numbers indicate colonies of fecal coliform and enterococcus bacteria per 100 mL of water.
Numbers in boldface exceed Massachusetts single sample threshold for swimming (FC: 400/100mL, Enterococcus: 104/100mL).
Massachusetts threshold for shellfish is 14+ per ML and for drinking is 0 per 100 mL.*

Choosing Your Definition

Check Out Don's Backyard Biology Website

If you enjoy the NATURE stories in the NSRWA newsletter, then check out **Backyard Biology** - a nature web blog by Don Salvatore, author of the NATURE stories in the newsletter, and Doug Lowry, the president of the NSRWA Board.

Each month, the web site brings you a new nature story, nature adventure, nature activity and mystery nature picture.

Check it out at: <http://www.backyardbiology.net>

Definition one

Weed: A plant considered undesirable, unattractive, or troublesome, especially one growing where it is not wanted, as in a lawn.

According to this definition of a weed found on the Internet, my yard is a mess. It is a haven for weeds. I looked up lawn weeds on the net and almost every one listed for the northeast grows in my lawn. Here is a partial list of my weeds: plantain, clover, crab grass, dandelion, lambsquarters, violets, asters, queen Anne's lace, sheep sorrel and vetch. Pretty unattractive and certainly troublesome. How did the lawn get in this shape, you might ask. The answer is pretty simple.

A year ago, we had some work done in the back yard that involved heavy equipment. The heavy equipment dug up everything in the back yard including the gardens and the lawn, leaving hardpacked dirt that the weeds seemed to really like. After the work was done, it was time to put the yard back together. The question was - what to tackle first with our limited time. The answer was the garden, in particular a garden that would attract butterflies. So looking up butterfly gardens, we chose some plants that produce a lot of nectar and would attract butterflies. This year, the gardens looked pretty good, unlike the lawn, which was still a wasteland.

The flowers were in bloom all summer and some of my favorite butterflies were in attendance: fritillaries, pearl crescents, checkerspot, skippers, satyrs, blues, sulphurs, monarchs, and the list goes on.

Something, however, just didn't seem right to me.

Knowing a little about insects, I realized that the flowers that butterflies are attracted to are usually not the same plants that the caterpillars feed on.

For a successful crop of butterflies, you need to feed both the adults and the caterpillars. If the caterpillars starve for lack of the correct plants to feed on, they will never grow to be butterflies. Our gardens had been planted with flowers to feed the adults, but not the caterpillars. So what were the caterpillars feeding on?

Imagine

my surprise (and delight) when a search of the literature told me that, as caterpillars, my favorite butterflies fed on: plantain, clover, crab grass, dandelion, lambsquarters, violets, asters, queen Anne's lace, sheep sorrel and vetch.

Definition two

Weed: Just a regular plant that is out of place. What is a weed to one person is considered a valuable plant to another person.

According to this definition of a weed found on the Internet, my back yard is perfect! So just sit back and enjoy the butterflies. And caterpillars.

by Don Salvatore



Red clover

NSRWA's Fall 2008 Events

To sign up or
for more information
contact us at
781-659-8168 or
paula@nsrwa.org

Reflections: North & South Rivers Art Show

October 8 - Nov. 22 at the South
Shore Natural Science Center
Opening Wine & Cheese Reception
Saturday, Oct. 11, 2-4 pm

Be sure to visit a beautiful fine arts show featuring the North & South Rivers. The purpose of this show is to raise awareness of the beauty of the North & South Rivers and their tributaries. Friends, family and the public are invited to attend the opening reception on Saturday, October 11.

Wild Rice Paddle

Saturday, October 18 • 2:30 pm
Hanover Canoe Launch

Wild rice (*Zizana aquatica*), also known as Indian Rice is found on the slower flowing portions of the North River & Herring Brook river. It is a favorite food for many of the wildfowl that frequent the rivers.

Join us for a couple of relaxing hours as we paddle and float our way down the river collecting wild rice into our kayaks. This is the first year of collection, so we will be learning as we go. Methods of collection, drying, removing the hull and ultimately, favorite recipes are our goal. Bring a container to hold the rice you collect.

Pre-registration and PFD's are mandatory, as space is limited to 8 boats. Suggested donation: \$5.

Thanksgiving Weekend Walk

at Factory Pond
Sunday, November 30 at 1 pm

Enjoy the magnificent views of Factory Pond along the Indian Head River, a tributary to the North River. The 8.5-mile Hanover Greenway now includes a one-mile loop trail around the pond with three bridge crossings. This conservation area, including the two islands within the pond, is the premier bird habitat in Hanover and home to many other animals as well.

NSRWA Board member Doug Thomson will lead the walk around the full one-mile loop from the King Street entrance just south of Forge Pond. This is a great walk for the whole family. Pre-registration is not required — just show up!

Directions: *The entrance to the walk is on King Street, just south of Forge Pond in Hanover. From Hanover Center (Town Hall), take Route 139 west, left on Circuit Street, left on School Street, left on King Street. Follow King St. for less than 1/4 mile, on the left. Parking is on both sides of the road. Look for the NSRWA sign.*

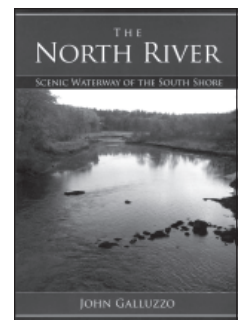
The Tradition Continues NSRWA's New Year's Day Walk

Thursday, January 1, 2009
at 1 pm

Please join us for our annual New Year's Day Walk on the Carl Pipes Trail in Scituate. The trail is on the newly acquired and protected Litchfield Property. The Maxwell Conservation Trust in Scituate has been successful in promoting the protection of these 40 acres of property with the use of CPA funds. The property also helps to protect Cohasset's water supply. The Walk will begin at 1:00. The trail head is off Clapp Road in the West End of Scituate. Clapp Road can be accessed from Rte 3a by Mann Lot Road or Booth Hill Road. After a walk on this woodland trail, hearty refreshments will be served. Pre-registration is not required.

Donate to the Annual Appeal and Receive John Galluzzo's North River Book!

Please consider making your annual appeal donation early this year. For a donation of \$100 or more we will send to you a copy of John Galluzzo's recent book tracing the history of the North River from multiple vantage points—as a shipbuilding center, a highway into the interior and facilitator of trade and a protected wildlife sanctuary today.



Camp Wing South River Walk

Saturday, October 19 • 1 pm • off Franklin Street in Duxbury

Join Lenore White, our most recent board member and knowledgeable wetlands scientist on a tour of Camp Wing Conservation area in Duxbury. Camp Wing Conservation Area protects a 2 mile stretch of stream habitat on the South River. Several rare or uncommon species of plants and animals are known to occur on the property. The walk will be about 1.5 miles in length and is relatively easy hiking. The loop stops at an observation deck overlooking the South River. **Please note there is limited parking for cars at this location and pre-registration is required.**

Directions: *From Rt. 3 South: Take Exit 11 off Rt. 3. Turn left at the end of the off ramp onto Rt. 14 west (Congress Street). Turn right at Franklin Street. Parking is about a half-mile on the left.*

NOTICE:

NSRWA's 38th Annual Meeting

Friday, November 7 at 7 pm
at the South Shore Natural Science Center

Featured Speaker - Frank Hynes
NSRWA Film Premiere - *Streams of Preservation*

A casual wine & cheese reception will be held from 7 - 7:30 pm. Retiring State Representative Frank Hynes, who served 13 terms representing Marshfield and Scituate in the state legislature, will be the featured speaker.

You also won't want to miss our film debut! We are proud to present the premiere of a film made by students at the Boston University's Center for Digital Imaging, "Streams of Preservation." Beautiful views of our rivers and perspectives from the people who care about them are the focus of this 10-minute short film.

In addition we will have our annual Election of Board Members, Volunteer of the Year and Barbara Pearson Awards.

*This is the only notice being sent by mail regarding the Annual Meeting
so please mark your calendars!*



RiverWatch

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