

The Sandpiper

Great South Bay Audubon Society

A Chapter of National Audubon Society

GENERAL MEMBERSHIP MEETINGS AND MONTHLY PROGRAMS

All GSBAS Activities are FREE
and open to the public.

Join us and bring a friend.

General Membership Meetings are held on the
third Thursday of each month, except May,
(which is our Annual Dinner), July & August.

Pre-program refreshments begin at 7:00.

Program begins at 7:30 pm.

Held at Connetquot River State Park Preserve.

See page 3 for directions.

Backyard Birding

This summer Great South Bay Audubon
will be hosting classes on

Attracting and Identifying Backyard Birds

at our headquarters:

Brookside County Park

59 Brook Street, Sayville

These classes will be open to members
of GSBAS as well as members of our
community and are divided into two sessions:

Session 1: Friday, August 7, 6:30 - 8 pm

We will view a slide show of common birds
and learn tips to identify them.

Afterwards, we will walk through the park to
see how many of these species we can find
there and at the park's bird feeders.

Session 2: Friday, August 14, 6:30 - 8 pm

Learn how different types of feed/
feeders attract different types of
birds and how to make your yard

"bird friendly" with plants and flowers.

We will conclude with a walk through the
park to find and identify some birds.

RSVP: Space is limited

email: info@gsbas.org or call 631-563-7716 to
register or with any questions.

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**The General Membership Programs for
September 17 and October 15 have not been
finalized and will appear in the next issue
of the Sandpiper and on our website:
GSBAS.org**

Atlantic Horseshoe Crabs: Over 400 Million Years in the Making *Does Long Island Need to do More to Protect this Ancient Species?*

By Curran Boyce & Maria Brown, MS, PWS, Conservation Chair

The Atlantic horseshoe crab (*Limulus polyphemus*), arose over 400 million years ago in the middle Paleozoic Era and attained a similar morphological appearance to the one it has today, by the middle Mesozoic Era (Avise, Nelson, & Sugita, 1994). This lack of morphotypic evolution over time has led its well-deserved reputation as a "living fossil" (Avise et al, 1994) as its distant relatives, the trilobites who became extinct in the Permian, approximately 250 million years ago. It is a marine arthropod, most closely related to spiders, ticks, and scorpions, and has three Asiatic cousins, (*Tachypleus gigas*, *T. tridentatus*, and *Carcinoscorpius rotundicda*) (Pierce, Tan, & Gaffney, 2000).

L. polyphemus is distributed across the Atlantic coast of North America, from Maine to the Gulf of Mexico, and can be found within many estuaries along the eastern coast of North America as well as in the contiguous continental shelf areas (Shuster, 1979). The largest spawning population of *L. polyphemus* is found during the high tides of the full and new moons of May through July in the Delaware Bay. Considerable mating takes place during the moon-tide



photo by Maria Brown

The male horseshoe crab has attached himself to the female by his front claws to ensure that she will dig when she lays her eggs in the nest. He then fertilizes them externally before any other male has the chance.

phases in June and July in Long Island Bays (Dr. John Tanacredi, Personal Communication June, 2012). *L. polyphemus* mate during these high tides as a male *L. polyphemus* will attach to a larger female where they then move to the high-tide line (Brockmann, 1990). The female will dig a nest in the sand and lay thousands of eggs which are externally fertilized (Brockmann, 1990). The pair will remain attached until all the eggs have been buried and fertilized, which sometimes causes the attached pair to leave the shore line as the tide falls and return with the new high tide to complete the mating process (Brockmann, 1990).

Shuster (1979) reported that *L. polyphemus* spend a portion of their life within the estuary and the other portion of their life along the inner continental shelf, returning to the mainland to nest (Shuster, 1979). The techniques of radio tagging and telemetry have proven to be useful tools in determining the spawning behavior and migration patterns of *L. polyphemus* and to determine whether some crabs return to the same beaches annually (site fidelity) (Brousseau, Sclafani, Smith & Carter, 2004). In Florida and Delaware Bays, it was discovered that horseshoe crabs displayed remarkable nest site fidelity during the nesting season (Brousseau et al, 2004).

L. polyphemus has great ecological importance throughout the Atlantic coast. Within the estuaries, horseshoe crab eggs serve as a vital source of food for

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Mission Statement

The primary mission of the Great South Bay Audubon Society is to advocate for the conservation of habitats for native birds and other native wildlife on Long Island.

The Sandpiper

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is August 20.



The Great South Bay Audubon Library is located at our Brookside Headquarters, 59 Brook St. in Sayville. It can be accessed Wednesday and Sunday from 1 to 3pm

Please consider joining us on one our Nature Walks listed on Page 3. Our experienced leaders are always willing to share their expertise. Everything we do centers on what's out there to be enjoyed and, if need be, protected.
Hope to see you soon!

The Board-Walk by Annette Brownell

As springtime breezes bring new life to the wonders of nature and give way to the expectations of summer, an exciting time is upon us! Well – an exciting time is always upon us if we have eyes to see the colorful wondrous world around us. I grew up in the “ask not what your country can do for you...” era of our nation. Being a farm girl, that was definitely the philosophy around my house! Recently another quote has caught my attention that reflects very well my thoughts on the world around me.

“I am only one, but I am still one.

I cannot do everything, but still I can do something;
and because I cannot do everything,
I will not refuse to do the something I can do.”

Edward Everett Hale

With that thought in mind, I think about who we are as Great South Bay Audubon Society. Individually we cannot do it all. As a society we cannot do it all. Yet we can do something, alone or together. There are a lot of environmental and nature control issues that face us - Pest and diseases brought in from abroad, pesticide issues, litter/balloon patrol in our environment, and the emotional issue feral cats.

If each of us makes a small investment, working with others with a sensitive attitude toward problem resolution, we can make that difference. Much of this starts with education and finding a moderate road to walk where others can meet and join us. At GSBAS it is our mission to aid in improvement of the environment. This is why we do the beach clean up in August, clean up Brookside in the spring, offer educational lectures and continue to look for a respectful way to approach the feral cat issue. We hope that each person reading this will join us.

As always, we welcome suggestions, comments and a helping hand in all our endeavors.

Water, Water - But Not Everywhere by Harry Anderson

Water is still H₂O - that colorless, tasteless, transparent liquid without which we aren't. Life on any planet is contingent on its presence as we spend millions looking for it on Mars while we are ironically complacent about it here.

Although 70% of our planet is covered by water, only 3% is fresh and just a meager portion of that is not potable without treatment. What does exist is hardly distributed equally throughout the world, let alone equitably. We wash cars and water lawns with it, while others drink from polluted rivers and draw from pesticide tainted wells.

Approximately 40% of the world's population suffer water shortages. Brazil has more water than Saudi Arabia has oil, yet it is having a water crisis. Its rivers are being polluted while the population soars, and the Sao Paulo River is drying up, leaving the Cantareria Reservoir down to just 6% of total capacity. According to the UN ten years ago, 5.5 billion people could suffer water shortages, that's two thirds of the globe's population. Water is being now seen as the new currency, becoming what has become a major source of conflict. People die from it and ironically even for it.

Here on Long Island we have plenty of water, but there are the rumblings of concern including ground pollution and salt water intrusion into the aquifers. The toxic plume generated from the old Grumman site in Bethpage has been found to extend from Hicksville to south of the Southern State Parkway. And last February, Nassau and New York City officials met to discuss (and argue) about the city's plans to begin pumping 33 million gallons of water a day from the aquifers the county and city share. Both Nassau and Suffolk Counties pump from a single-source aquifer also, but unlike the city, it is their only water source. Apparently, the city's upstate aqueduct system is leaking and NYC wants to supplement its supply by reopening closed Queens wells. Who owns the aquifer? Apparently not NYC because they abandoned the plan.

Back in 2003 the United Nation launched, “The Year of Fresh Water,” but our complacency does not seem to have changed. There are occasional conservation efforts but our lawn sprinklers continue to work during the pouring rain while California is experiencing the worst drought in 1,200 years. Lake Mead in Nevada is down to 38% of its capacity and has dropped 130 feet. The American Association for the Advancement of Science predicts the southwest and the Great Plains will experience a megadrought this century that could last for three decades. Maybe one of our anthems will be that 60 year old song, “Cry Me a River.” Water can't be invented. The same rain that fell on a dinosaur's head still falls on ours. Water is not a renewable resource. Let's hope we continue to be.

Great South Bay Audubon Society Activities

General Membership Meetings and Programs

All General Membership Meetings are held at Connetquot River State Park Preserve in the beautiful and historic main building. The entrance is in the back of the building; please park near the garages. There is a handicap ramp at this entrance. Please do not park on the grass or in the circle in front of the building.

Join us at 7:00 p.m. for pre-program refreshments and casual conversation. Our bird experts will be on hand to field your questions, discuss equipment and share their favorite birding spots.

Directions to the Connetquot River State Park Preserve: Approaching from the East, the entrance is on the north side of the Sunrise Highway (Route 27), opposite the Sunrise-Montauk Highway merge. From the West, exit Sunrise Highway (Route 27) at Oakdale-Bohemia Road, cross over Sunrise Highway, merge on to westbound Route 27 and watch for the Park entrance on the right.

Louise Titus Memorial Tuesday Midweek Walks*

Tuesday, Sept 1, Heckscher State Park, 9:30 am • Meet in the Field 4 parking lot at the north west end of the field.

Note change from Field 5 to Field 4 due to parking restrictions

Tuesday, Sept 8, Shinnecock Dune Rd, 9:30 am • Sunrise Hwy. East to Exit 65 South to Montauk Highway. Go east and follow signs to Ocean Beaches. Cross Ponquogue Bridge and turn left at the traffic light. Go to end of road to parking lot at inlet.

Tuesday, Sept 15, Oceanside MNSA & Jones Beach, 9:00 am • Southern State Pkwy. to Meadowbrook Pkwy. South to Merrick Road (27A). Go west on Merrick Road a short distance and turn left on Mill Road and bear left (on Main Street) turn right on Atlantic Avenue to Waukena Ave. left to Park Avenue to Golf Drive (brown signs from Atlantic to Oceanside Marine EC)

Tuesday, Sept 22, Jamaica Bay NWR, 9:30 am • Southern State Pkwy. to Belt Pkwy. to Exit 17, Cross Bay Blvd. South. Continue south for about 2 miles. Look for entrance of refuge on the right (west) side. There are signs for park entrance.

Tuesday, Sept 29, Massapequa Preserve, 9:30 am • Take Southern State Pkwy. to Exit 30 (Broadway south) to Pittsburgh Ave., go left 2 blocks to Parkside Blvd. Park on street, and walk into the park.

Weekend Nature Walks*

Saturday August 15, Baiting Hollow Hummingbird Sanctuary, 9:30 am • Leader: Alice Heller (631-827-6561)

Contact Alice Heller to RSVP and arrange carpooling (parking is limited) Directions can be found at WWW.LIHUMMER.ORG. It is expected of all visitors to do their homework and study the maps, directions, warnings and instructions at www.lihummer.org.

Saturday August 29, Jamaica Bay, 8:00 am • Leaders: John Gluth (631-827-0120), Steve D'Amato (516-680-4002)

Southern State Pkwy to Belt Pkwy to Exit 17, Cross Bay Blvd. South. Continue south for about 2 miles. Look for entrance of refuge on the right (west) side. There are signs for park entrance.

Saturday September 12, Connetquot Breakfast & Birding, 8:00 am • Leaders: Ken Thompson (631-612-8028) Edith & Bob Wilson, Helga Merryman. Continental breakfast hosted by Friends of Connetquot. Reservations required - call Connetquot River State Park Preserve at 581-1072 to register. Registration fee \$4. plus \$8 parking fee per car - unless you have yearly Empire pass.

Saturday September 26, Robert Moses Hawk Watch & Jones Beach West End, 8:00 am • Leaders: John Gluth (631-827-0120) Steve D'Amato (516-680-4002) Meet at Robert Moses State Park parking field #5 northeast corner.

Friday, Saturday & Sunday October 2, 3 & 4 Cape May & Brigantine • Leaders: Steve D'Amato (516-680-4002), Ken Thompson (631-612-8028), Vera Capogna (516-639-5430, email vlvcap@yahoo.com) Meet at Brigantine (Edwin B. Forsythe NWR) Parking lot at **1:00 pm** on Friday afternoon. Southern State Pkwy. West to Belt Pkwy West. Take the 1-278/Verrazano Narrows Bridge to Outerbridge Crossing. Take the US-9 S/Garden State Pkwy to Exit 48 towards Port Republic/Smithville at Oceanville on Route 9 look for signs to Refuge (left turn). Those wishing to continue the trip will go down to Cape May - Garden State Parkway to end. If going directly to Cape May on Saturday, we will depart from the West Cape Motel parking lot at **6 am**. Motels: Jersey Cape Motel: 609-884-7382, West Cape Motel: 609-884-4280. Contact Vera Capogna with questions or carpool inquiries and to RSVP as soon as possible so she can give you additional info and any updates.

Saturday October 24, Caumsett SP, 8:30 am • Leaders John Gluth (631-827-0120) Ken Thompson (631-612-8028)

Northern State to exit 42N (Route 35). 35 to 25A. 25A west to West Neck Road (right turn). West Neck/Lloyd Harbor Rd. into Lloyd Neck. Entrance to park on left. Meet in Parking lot.

Young Naturalists Club

First Sunday of the month, 1:15pm, Brookside County Park, 59 Brook St. Sayville*

The Young Naturalists Club focuses on learning about nature and stewardship of a natural area. Outdoor activities include crafting nature boxes and pinecone feeders, nature scavenger hunts, hiking the trails, gardening, and maintaining bird-feeding stations. Indoor activities include examining birds' nests and feather displays and special presentations on subjects such as the Northern Bobwhite Quail, local marine creatures, and bird watching. For details on upcoming Young Naturalists Club activities, please email info@gsbas.org or call 631-581-1731, or visit our website: www.gsbas.org. Registration is not required but recommended. Program is free, but donations or joining GSBAS is encouraged.

*NOTE: Young Naturalists Club will not meet in July due to the holiday weekend.

CHAPTER NEWS

This year's May dinner in review

By Annette Brownell, Dinner Chair

Another May dinner has come and gone. Once again, all the planning and preparation culminated into a fun evening of terrific prizes, great conversation and a really fine presentation by Shai Mitra. Bayport Flower House donated lovely dahlias for centerpieces and we played a fun game (thanks to Vera Capogna) to see who won them.

Of course, the mention of prizes would not be complete without once again thanking Steve D'Amato for the wonderful painting of the oriole family. Steve spends a great deal of time planning and painting these pieces for us. We very much appreciate his generous spirit in supporting the Society.

On behalf of the Board of Directors, I want to thank each of you who attended the dinner as well as everyone who purchased raffle tickets. Of course, if it weren't for the generous people who donate items to be used as prizes we wouldn't have too much of a fund raiser. These funds enable us to plan so many things for Great South Bay Audubon that I get excited just thinking about them!

My hope is that each of you will take some time for yourself to participate in one (or some) of the events, whether it is a Thursday general meeting to enjoy fellowship and the



Steve D'Amato with Stephen and Melissa Lynch, the lucky winners of Steve's beautiful Baltimore Oriole painting.

speaker, the Tuesday nature walks, Saturday bird events or one of the other programs planned. I am reminded over and over again how fortunate we are to have the heart, talent, knowledge and incentive for nature in the Great South Bay Audubon Society that we do. Each of these little pieces, like the pieces of a puzzle, don't look like much when viewed individually and scattered here and there. But the picture would not be complete without each one. Thank you for being the pieces.

"Thank You" to all who donated prizes to our Annual Dinner

Albert's Pizza
Jody Banaszak
Bayport Flower Houses
Annette Brownell
Vera Capogna
Captain Bill's
Dina Champagne
Camille Chernis
Dale Constantino
Country Junque
Kathleen Cully
Fred & Kaya Tyson Drake
Joan Elsebough
Diana Erickson

Lorraine & Jay Fogarty
Friends of Connetquot
GSBAS Board of Directors
Bob Grover
Alice Heller
Home Depot
Patricia Lindsay
Sandra McNeil
Helga Merryman
Tim Meyer
Panera Bread
Mary & Tom Plant
Linda Puglielli
Carol Puleo

Springtimes Garden Center
Anna Mae Stein
Ken Thompson
Tula Kitchen
John Vullo
Johnna Vullo
Wild Birds Unlimited
Bob & Edith Wilson
Bob & Pat Wohler
Julianne Wohler
Mike Yanelli
Jill & Dale Yarmosh
Bill VanZwienen

CHAPTER NEWS

The Who, What and Why about Owls

By Janet Gremli

The Young Naturalists Club met at Brookside County Park on Sunday, June 7, 2015. The club members participated in a discussion about Owls. The children were presented very interesting facts about the how the owl finds its prey, about the exceptional vision and placement of the eyes of the owl, the significance of the serrations on the flight feathers of the owl, and why does an owl produce pellets. The children viewed photos of various owls, noting the detail in the eye discs and coloring of the feathers. Long-eared owl wing feathers were passed around allowing the children to experience the softness of the feathers edge. An owl pellet, found near a local kestrel nest box, was carefully looked at, the tiny bird skull, fine bones and other undigested material all capturing the attention of the children. A short quiz was given, with older members, Vanessa and Ryan, reading the questions aloud. The children then created an owl pin using felt, pine cone pieces and googly-eyes!

The day ended with the filling of the bird feeders and a hike along the trail that encompasses the park. For those that quietly followed the trail, a special sighting of a Black Crown Night Heron was a true reward.



Children of the YNC gaze into the waters of Green's Creek from Wild Island at Brookside.

Using all the clues provided and location details from Vanessa, it was determined that the nest belonged to a Chipping Sparrow, *Spizella Passerina*.

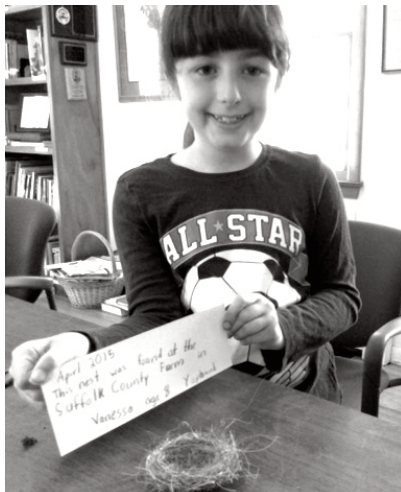
Our day ended with a walk through the park with sightings of fiddle-head ferns, skunk cabbage, Canada mayflower, marsh marigold, jonquils and newly emerging poison ivy. Best of all, was a glimpse of a giant snapping turtle soaking up the sunshine on a fallen log in the west pond.

Whose Nest is This?

By Janet Gremli

On Sunday, May 3, 2015, the Young Naturalist Club met at Brookside County Park. A special contribution was made by eight year old Vanessa Roe. Vanessa brought along a very compact, delicate bird nest that she had found at the Suffolk County Farm in Yaphank. A unique feature of the nest was the horse hair wound gently round the interior to provide protection and warmth for the baby birds. The task at hand was to decipher what bird could have made such a perfect little nest?

Multiple reference guides were retrieved from the Brookside library and everyone began deducing the identity of the avian designer. "It must be a small bird", "Were there horses or a farm nearby", "Is it pocket-like and circular", "Are there grasses or twigs in the nest", "Was it on the ground or in a tree"? These were some of the questions asked during our nest investigation.



Vanessa Roe, 8 years old, displays a Chipping Sparrow nest she found at the Suffolk County Farm in Yaphank.

Volunteer Highlight

Great South Bay Audubon would not be the same without the presence of Ken Thompson. Ken is responsible for researching, planning and scheduling all of our wonderful nature walks, in addition to being a dedicated and helpful trip leader who is always there to offer his wisdom and guidance. As if that wasn't enough, Ken also heads the Mailing Team, ensuring that our newsletters and mailings are sent out in a timely fashion. To top it all off, Ken is always jumping in to help in any capacity, whether it be setting up and cleaning up at programs and meetings, or teaching our members tips on bird identification. Ken-you rock! *Thank you!*



Nature-Inspired Poetry Workshop

The Poetry Workshop with Gladys Henderson will be held on October 3, 2015 at Brookside County Park. Registration forms will be available in the next issue of *The Sandpiper*. This exciting opportunity is designed to encourage and help refine poetry writing skills for the novice as well as the experienced writer. It will be open to the public. Class size will be limited in order for Gladys to be able to work individually with class participants.

GSBAS Spring Nature Walks

Recap by Vera Capogna

Despite a fair amount of rain, we still managed to get in all of our scheduled nature walks this spring. Our destinations were: Gardiner's Park in Bayshore, Norman Levy Preserve in Merrick, Central Park, Belmont Lake State Park, Massapequa Preserve, Hempstead Lake State Park, Jamaica Bay, Ocean-side's Marine Nature Study Area, Jones Beach, Shinnecock Inlet and Dune Rd, and Lakeland County Park in Islandia. We saw spring wildflowers emerging, smelt the sweet scent of honeysuckle and wild roses, and heard the calls of warblers, vireos, thrushes and so many other species. How great it was to be out in the fresh air after such a harsh winter!

Central Park had to be the highlight of our trips. Forty four species, along with beautiful weather and great company made a perfect day.

Avian highlights of our spring trips, I think, were the warblers: Black-



Central Park Trip Co-Leader John Gluth pointing out the Blackburnian Warbler. As you can see, our nature walks attract nature lovers of all ages. Below: Rick Barns and Annette Brownell in Central Park: "Where the heck is it!?"



Helga Merryman, Linda Puglieli, Bob Glasser, Bill Redshaw, Pete Natalie, Edith Wilson and Ken Thompson at Norman Levy Preserve.

burnian, Yellow-throated, Black-throated Blue, Blue-winged, Magnolia, Nashville and Prairie Warblers. Spotting Ruby-throated Hummingbirds on several of our trips was also very exciting.

Another special thing about spring birding is that there is always the chance that you might see a bird sitting on a nest, and we were lucky enough to witness several species doing just that: An American Robin, Blue-gray Gnatcatcher, Wood Thrush, Warbling Vireo, several Ospreys and a Baltimore Oriole tending its pendulant nest.

Although we were sorry that it had to end, we are already looking forward to fall migration! We'd love for you to join us.



Get the Dirt on Dirt

by Annette Brownell

I grew up on a truck farm. Amazingly, not as the name implies, we did not grow trucks. Rather it was called truck farming because the farmers trucked their product to market, whether it was local or NYC. My grandfather raised vegetables, fruits and berries. I heard about the Dust Bowl all my life from my Uncle Max who was the guru of farming.

In the wake of the Dust Bowl of the 1930's the Natural Resources Conservation Society (NRCS) was born. The Dust Bowl was an environmental disaster caused by over-cultivation, drought and record breaking temperatures that led to millions of acres of soil blowing away. On April 27, 1935, Congress passed a law in which it recognized that "wastage of soil and moisture resources on farm, grazing and forest lands...is a menace to the national welfare." They established the Soil Conservation Service (SCS) as a permanent agency of the USDA. It later became the NRCS. For decades private land owners have voluntarily worked with the NRCS conservationists to prevent erosion,



improve water quality and promote sustainable agriculture.

2015 is the International Year of Soils. Over the next few issues of *The Sandpiper*, I will share with you exciting facts for soil health and how soils are fundamental to our lives today. Soil is one of 4 elements (air, earth, fire and water) that we can-

not live without. It is essential for life. Without soils, life on earth as we know it would not exist. The condition of soil ecosystems affects global warming, carbon sequestration, the quantity and quality of fresh water, the productivity and nutritional value of plants growing in it, the impact of invasive organisms, the health of bays and estuaries and the availability

of new medicines for human health.

Soil is the foundation of agriculture. Without healthy soil it is impossible to feed the world's people. For all time, our relationship with soil has affected our ability to maintain successful civilizations by the ability to cultivate crops. Farmers have the challenge of balancing mineral components, clay, organic matter, air and water for healthy soil quality.

"Land, then, is not merely soil; it is a fountain of energy flowing through a circuit of soil, plants and animals." Aldo Leopold, *A Sand County Almanac*, 1949

Atlantic Horseshoe Crabs *continued from front cover*

shorebirds, such as the red knot (*Calidris canutus*), who double their body weight in a few weeks in order to make their migration of more than 9,000 miles from the southern tip of South America to the Canadian Arctic. Additionally, the eggs serve the loggerhead sea turtle (*Caretta caretta*), and their outer and inner hard covering (carapace) hosts a variety of marine organisms (Smith, Pooler, Swan, Michels, Hall, Himchar, & Millard, 2002). *L. polyphemus* is also popular as eel and conch bait among fishermen, and is caught and bled in bloodletting centers for its copper-based blood, which produces Limulus Amoebocyte Lysate (LAL) (Smith et al, 2002). LAL is used within the medical and pharmaceutical fields to detect pathogenic endotoxins (Smith et al, 2002). However, while it has been officially reported that mortality of bled horseshoe crabs was approximately 10% compared to those that were not bled, the actual rate may be as high as 30% (NYSDEC, Personal Communication March, 2012). Furthermore, pollution, habitat loss, and over-harvesting by fishermen have led to a suspected population decline for *L. polyphemus* (John Tanacredi, PhD Personal Communication March, 2012).

The declining population of the Atlantic horseshoe crab is an obvious cause for concern, especially considering how well adapted it has been to survive over 400 million years of historical change with few morphological changes. If a successful Conservation Plan is to be put in place, knowledge of whether or not *L. polyphemus* populations exhibit site fidelity would be invaluable. If horseshoe crabs exhibit site fidelity, beaches with high numbers of horseshoe crabs and a high degree of genetic variability could be protected to maintain population

levels, biodiversity, and fitness of the species. There are numerous studies currently on-going to assess this by Cornell Cooperative Extension and other research groups in Rhode Island. Additionally, finding a way to accurately record and evaluate the number of crabs taken for blood-letting activities



The Red Knot populations have declined drastically due to the over-harvesting of horseshoe crabs.

from New York waters as well as for bait by fisherman is important in designing a "Best Practices Conservation Management Plan". As their ecosystem services are strongly connected to the long-term survival and sustainability of many migratory threatened and endangered bird species, developing a Conservation Management Plan for them immediately on Long Island would be a great victory. More importantly, there has been a movement to list the Atlantic horseshoe crab as the first UNESCO Natural Heritage

species for its protection which would provide a novel approach for protecting this species for future generations and maintaining an ancient synchronicity between the spawning of billions of tiny green horseshoe crab eggs just as the red knots arrive on our shorelines.

Curran Boyce is a former science research student at Sayville HS who studied site fidelity of Limulus polyphemus through molecular ecology techniques in 2012. He is currently a rising junior at Yale University.

References: Avise, J.C., Nelson, W.S. & Sugita, H. (1994). A speciation history of "living fossils": Molecular evolutionary patterns in horseshoe crabs. *Evolution*, 48(6), 1986-2001. Brockman, H.J. (1990). Mating behavior of horseshoe crabs, *Limulus polyphemus*. *Behavior* 114, 206-220. Brousseau, L.J., Sclafani, M., Smith, D.R., & Carter, D.B. (2004). Acoustic-tracking and radio-tracking of horseshoe crabs to assess spawning behavior and subtidal habitat use in Delaware Bay. *North American Journal of Fisheries Management*, 24, 1376-1384. Pierce, J.C., Tan, G., & Gaffney, P.M. (2000). Delaware Bay and Chesapeake Bay populations of the horseshoe crab (*Limulus polyphemus*) are genetically distinct. *Estuaries*, 23, 690-698. Shuster, C.N., Jr. (1979). Distribution of the American horseshoe "crab", *Limulus polyphemus* (L.), p. 3-26. In E. Cohen (ed.) *Biomedical Applications of the Horseshoe Crab (Limulidae)*. Liss, New York. Smith, D.R., Pooler, P.S., Swan, B.L., Michels, S.F., & Hall, W.R. 2002. Spatial and temporal distribution of horseshoe crab (*Limulus polyphemus*) spawning in Delaware Bay: Implications for monitoring. *Estuaries*, 25(1), 115-125.

Great South Bay Audubon Society

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Steve D'Amato
GSBAS Direct Phone Number (631) 563-7716
GSBAS Email address: info@gsbas.org

For wildlife in need of rescue
please call The STAR Foundation
(631) 736-8207



Great South Bay Audubon Society Membership

Become a member of Great South Bay Audubon Society.
Your contribution will support GSBAS conservation efforts, educational programs and our stewardship at Brookside County Park.

Please make checks payable to:
"Great South Bay Audubon Society" and mail to:
GSBAS, P.O. Box 267, Sayville, NY 11782

☐ New Membership \$20 ☐ New Membership Senior (62+) \$15
☐ Renewal \$20 ☐ Renewal Senior (62+) \$15

Name _____

Address _____

City _____ State _____ Zip _____

Phone _____ Email _____



Nature Walks in Sayville

For those with busy schedules, and/or those who'd rather not travel far to enjoy a nature walk, we invite you to walk the trails of Brookside County Park. Sit by the stream, watch the comings and goings at our bird feeders, and visit our butterfly garden. The members of Great South Bay Audubon Society are proud stewards of this hidden gem. We should all take more advantage of its proximity and enjoy it! The park is open every day, but guides are available every Wednesday and Sunday from 1 - 3. Binoculars are available to borrow. If you'd like, call Vera to confirm there will be a tour guide available: 631-563-4969

Brookside County Park is located at 59 Brook Street, Sayville, diagonally across from Sayville High School.

*In every walk with nature one receives
far more than he seeks.*

John Muir



Steve D'Amato

Great South Bay Audubon Society
PO Box 267, Sayville, NY 11782
A Chapter of National Audubon

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