

Narrrow River Preservation Association: Preserving the Narrow River Watershed Since 1970 / April 2018

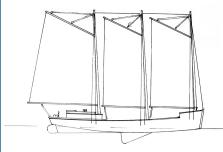
### Shipbuilding along the Pettaquamscutt fosters design innovation

by Sarah Gaines, NRPA Board of Directors

As signs of spring emerge, coastal thoughts naturally turn to boating. For anyone who's spent time on the water in the Pettaquamscutt River, it's not hard to imagine that humans must have been boating these waters since they inhabited the watershed.

It's a larger stretch of the imagination to picture the golden age of shipbuilding in the Pettaquamscutt River between 1813 and 1854, when approximately 20 vessels were built here by Captain John Aldrich Saunders (1786-1832) and his son Captain John A. Saunders II (1808-1882). These ships were used for trade locally, up and down the Eastern Seaboard, and as far south as the West Indies and South America. The Saunders family took a share in some ships they built, at times commanding them personally. The largest vessel (82 feet and 200 tons)

continued on page 6



A sketch of the *Nonsuch* with a gaff rig. *Nonsuch*, John Aldrich Saunders' 13th vessel, was built in 1824 at the head of the Upper Pond of the Pettaquamscutt River, just south of Gilbert Stuart's birthplace from oak and chestnut timber from the abutting farm.

(Saunders family collection)

### **River Watch Program Seeks Volunteer Water Monitors**

In May, NRPA will start its 28th consecutive year of River Watch. By checking temperature, salinity, oxygen, bacteria and other measures at fourteen different locations in the watershed, we are able to assess the cleanliness of the water and identify problems so that we can implement solutions. We're currently seeking volunteer monitors for River Watch this year.

**Question:** I don't know what to do. Will I get training? **Answer:** Yes! Volunteers are trained by the URI Watershed Watch program to be Citizen Scientists. You'll attend one classroom training (optional, but highly recommended) and one field training session. Trainings occur in April.

**Q:** Do I have to have a boat?

**A:** No. We have sampling locations that can be reached by land and others that require a boat (power boat, kayak or canoe). If you don't have a boat, we can assign you to a spot you can reach by land.



**Q:** Where will I be assigned to sample?

**A:** Our River Watch coordinator, Annette DeSilva, will work with you to match you to a site that works for you.

**Q:** Will I have to miss my vacation to stay here and sample?

**A:** No. We try to assign each monitoring location with two volunteer monitors. This allows volunteers to work out their schedule to accommodate vacation plans.

**Q:** Does it cost money?

**A:** No. All we ask of you is your time and enthusiasm. All supplies are provided.

**Q:** Can my kids help?

**A:** Yes! We have many families who sample together. As long as an adult accompanies children, we welcome young river monitors.

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**Q:** I have more questions. Where can I get more information? **A:** narrowriver.org/riverwatch and web.uri.edu/watershedwatch are excellent resources.

**Q:** Sounds great! How do I get started?

**A:** Email us at nrpa@narrowriver.org. We look forward to working with you!

Many thanks to the Unitarian Universalist Congregation of South County!

In February, UUCSC donated \$431.50 to NRPA through their 'Share the Plate' program.

Photo: Mary Alice Kimball, UUCSC Share the Plate Coordinator (center), presents a check to Alison Kates and Richard Grant of NRPA.



### **President's Cove**

Dear friends,

During the last few years of our 48 year history, NRPA has been a member of the Rhode Island Rivers Council (RIRC).

Formed in 1991, RI Rivers Council implements and updates a RI State Rivers Policy and Classification Plan, advises state agencies and municipalities about programs and measures to protect and improve river quality, and designates watershed councils to have "standing" before local and

state agencies and courts to testify on issues affecting their watershed and to receive notifications about actions in their watershed.

RIRC also offers annual grants to advance the work of designated watershed councils, fosters public involvement in river planning and decisionmaking through public education and outreach activities, and participates in the State Guide Plan Advisory Committee and the Narragansett Bay Estuary Program. The Rivers Council works on state policies to increase river use and to strengthen local watershed councils

RIRC has designated 10 Watershed Councils in the state which cover 71% of Rhode Island.

NRPA is a proud member of RI Rivers Council and every resident and friend of Narrow River Watershed should be thankful for its guidance.

Best,

Richard Evant

Richard Grant NRPA President

### RI Rivers Council: Ten Designated Watershed Councils Covering 71% of Rhode Island VILLE CONN. RHODE **ZUSGS** RIGI RIRC Designated Watershed Councils Blackstone R. WC/Friends of the Blackstone Salt Ponds Coalition Buckeye Brook Coalition Friends of the Moshassuck Wood-Pawcatuck Watershed Assn Woonasquatucket River WC Narrow River Preservation Assn RI Areas Without a Designated WC Pawtuxet River Authority and WC

### MISSION STATEMENT

The Narrow River Preservation Association (NRPA) works to preserve, protect, and restore the natural environment and the quality of life of all communities within the Narrow (Pettaquamscutt) River Estuary and Watershed.

### NARROW RIVER PRESERVATION ASSOCIATION

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Alison Kates, Program Coordinator Submissions and correspondence to nrpa@narrowriver.org



### **NRPA Lesa Meng College Scholarship Applications Due April 23**

This spring, NRPA will award up to four \$1,000 college scholarships to students graduating from high schools in the watershed: Narragansett High School, North Kingstown High School, The Prout School and South Kingstown High School.

NRPA began awarding college scholarships in 1995 and has granted over \$52,000 to local high school seniors since its inception.

Scholarship applications are available at the Guidance Departments of all four high schools in the watershed.

The scholarship applications are judged on:

- Student's environmentally oriented activities in and out of high school
- An original essay on mitigating an environmental problem or issue relevant to Narrow River
- Science teacher's recommendation
- Academic achievement in math and science courses.

Completed applications must be submitted to the student's guidance counselor (not to NRPA) by Monday, April 23, 2018.

Meet NRPA's new osprey ambassador, Pette, short for 'Pettaguamscutt'.

Found deceased by RIDEM Division of Fish and Wildlife, donated to

NRPA and prepared by a local taxidermist, Pette will teach people about osprey.

Come see Pette up close at one of NRPA's upcoming events.



### **Local High School Students Win NRPA Science Fair Awards**

Two local high school students presented their winning science fair projects to the NRPA Board of Directors at their meeting on March 6th.

In her project, "How Seawater Acidification Affects Oyster Shells", Olivia Kelly from South Kingstown High School (SKHS) submerged oyster shells in salt water with varying pH levels, finding that as pH level decreased, the calcium contained in the shells dissolved at a higher rate.

Grace Rumowicz of North Kingstown High School (NKHS) presented her project "Invasive Species Reacting with Rhode Island Natives." Grace planted some Garlic Mustard (an invasive species) alone and some with Rhode Island native plant Purple Milkweed. Over 6 weeks, she found that the Garlic Mustard living with the Milkweed thrived while the Garlic Mustard planted alone withered and died.

Grace and Olivia were recognized by NRPA for their rigorous use of the scientific method and the relevance of their project to current environmental concerns.

NRPA also awarded the following Honorable Mentions:

South Kingstown High School:

- Miles Corayer Effect of Chemical Fertilizers on Water
- Elwood Roberts The Effect Sea Level Rise Will Have on Different Shore-
- Kacie Curran and Abigail Marcotte Oil Remediation Using Microorgan-

North Kingstown High School:

- Katrina Kulesh Bioluminescence and Water Disturbance
- Mateo Garcia Effects of Aquatic Plants on the pH of Water



Olivia Kelly (left) of South Kingstown High School and Grace Rumowicz of North Kingstown High School present their winning science fair projects at the NRPA Board of Directors Meeting on March 6, 2018. Photo by Veronica Berounsky

### Monitoring the American Eel on the Narrow River

by Patrick McGee, Fisheries Biologist – RIDEM Division of Fish and Wildlife

Springtime in Rhode Island marks the return of numerous animal species. In the Narrow River, the most familiar of the returning visitors are the river herring. However, a lesser known, lesser understood migration is also taking place – that is, the American eel.

To many, the American eel (Anguilla rostrata) is a well-known resident of ponds and lakes in the state of Rhode Island. But few are aware of the complex, fascinating life history of a fish whose journey begins with a trip spanning hundreds (sometimes thousands) of miles on ocean currents before making landfall into the freshwaters of the Atlantic coast.

The American eel is a catadromous fish - the only one of its kind in North America. That is, they spawn in marine waters off of Florida, known as the Sargasso Sea, and those offspring migrate back into fresh and brackish waters to grow and mature. From the Sargasso, larval eel, at this point known as leptocephali, drift on ocean currents off the coast of the Americas. As they develop fins and begin to look like tiny, transparent eels, they start to make landfall, crossing the continental shelf on their way inland. Referred to as glass eels, they disperse as far north as Greenland, as far south as northern South America and everywhere in between. As they feed, grow, and become pigmented, they develop into elvers, and then into yellow eels – the phase most people encounter them at. Eels may spend upwards of twenty years inland before preparing for the long, arduous journey back out to sea to spawn. In the final transformation of the eels' life cycle, they begin to shift to a silvery-gray coloration, making them more difficult for marine predators to see. Now called silver eels, they will leave their freshwater homes and begin their journey to spawn in the Sargasso, where a new generation will begin this complex life cycle all over again.

In recent years these spectacular fish have catapulted to the forefront of conservation efforts due to data suggesting that their populations have been declining for decades. Impacted by habitat fragmentation, predation, water contamination, overfishing, disease, and a host of other variables, numbers are thought to have plummeted. Important as both predator and prey, in both marine and inland waters, the U.S.

Fish and Wildlife Service was tasked in 2007 and again in 2015 to review the species for listing under the Endangered Species Act. The Service found, in both reviews, that listing was not warranted for the eel. However, research efforts coastwide, particularly here in Rhode Island, have been greatly expanded to try to gain a better understanding of the populations of this mysterious fish. The first site to be officially studied for glass eels – the Narrow River.

In 2000, the Rhode Island Division of Fish & Wildlife (RIFW) implemented an official glass eel survey, examining the migration of glass eels through the Narrow River. This survey requirement of the Atlantic States Marine Fisheries Commission (ASMFC) aimed to gain a better understanding of the number of glass eels entering the system, and the yearly fluctuations of migrants. Following the model created on the Narrow River, a second site was set on the Annaquatucket River four years later.

This survey used the dam at the Gilbert Stuart Museum to set up a modified Irish elver ramp and trap. Essentially a ramp over the dam, the baby transparent eels use it to climb over the dam, and are collected in a bucket at the end. Checked daily, biologists and staff collect these eels, taking essential data such as weights, lengths, pigments, and counts, before releasing them over the dam to continue their journey upstream. In addition to this data, physical and environmental data are also collected, such as water temperatures, dissolved oxygen, water level, moon phase, and weather, in order to be able to correlate these factors with movements. Over the



American eel illustration by Robert Jon Golder

course of this twelve week survey, hundreds, often thousands of eels are sampled. The peak of this survey saw over 30,000 glass eels pass through the trap. The Narrow River and the Annaquatucket data are shared with the other Atlantic states through the ASMFC to gain a better understanding of the habits and populations of these fish.

Since its inception in 2000, the Narrow River glass eel survey has served as a model for new sites throughout the state. Going into its nineteenth year of data collection, the Narrow River is now one of six glass eel survey sites. Partly due to the data collected in these surveys, eel passage has gained a much greater level of importance in conservation efforts coast wide. As seen in the eel ramp installation at Horseshoe Falls fishway on the Pawcatuck River, eel passage has begun to be incorporated into permanent fish passage structures to assist the in-migration of young eels. While just a small step in the conservation of the species, Rhode Island has continued making strides to improve passage and expand habitat for the American eel.

More photos at narrowriver.org.



Young American eel caught at Gilbert Stuart Stream fish ramp.

### **NRPA Welcomes Four New Board Members**

NRPA is pleased to introduce the four newest members of the NRPA Board of Directors.

Erin Chille is pursuing a Marine Biology Degree at URI. As a lab technician at the URI Watershed Watch laboratory and a Watchstander at URI's Inner Space Center, Erin is involved in many aspects of environmental work in Rhode Island. In 2015, Erin received a Lesa Meng College Scholarship from NRPA.

Erin is working to engage the URI community in NRPA conservation and education efforts.





Barry Devine with his grandson at the Narrow River

Barry Devine served on the NRPA Board of Directors

decades ago before moving to the US Virgin Islands. Now that he has returned to Rhode Island, Barry is reconnecting with NRPA.

Barry is spearheading three new NRPA projects: development of a watershed-based GIS system, creation and maintenance of a bibliography of scientific, cultural and historical articles about Narrow River and a book about the area.

Jim Kaczynski is a middle school science teacher and an avid fisherman. When he was an undergrad at URI, he rowed crew on the Narrow River.

Jim is organizing a kayak fishing tournament on the river (tentatively scheduled for October) with the idea of engaging those interested in fishing in the protection and

enjoyment of the river.



Jim Kaczynski volunteering at What Lives in the River

Paula Santos has lived on Narrow River for 40 years. She has been a volunteer water monitor and enjoys the river on her boat. She is committed to protecting the river for future generations. An event planner

by trade, Paula has already started planning a celebration for NRPA's 50th Anniversary in 2020.



Paula Santos and George

### United **United Way** of Rhode Island

NRPA is part of the United Way Workplace Campaign. Our donor option number is

If you plan to give to United Way, please consider designating a portion of your gift to NRPA.



NRPA is participating in the 2018 Rhode Island State Employees Charitable Appeal (SECA). Our fund number is 6239.

### **Many Thanks to Retiring NRPA Board** Members

Annette DeSilva, Charlie Biddle and John McNamara have earned the respect and admiration of NRPA volunteers and members over their years of dedicated service to the Narrow River.

Soon after Annette DeSilva joined the NRPA Board of Directors in 1990, she started River Watch, coordinating volunteers to monitor the water quality in Narrow River. Over the past 27 years, she has coordinated nearly 200 volunteers for more than 7,800 hours of monitoring.

As anyone who knows Annette would suspect, one of the most important attributes that Annette has brought to NRPA is her attitude: she is always positive, always willing to do whatever is needed, and she gets things done!

We are thrilled that although Annette is retiring from the board, she will stay on as NRPA River Watch coordinator.

Since 2011, Charlie Biddle has provided countless hours of support to the watershed. Charlie was a driving force behind 'What Lives in the River', planning, setting up, cleaning up and making sure that everyone in attendance had a wonderful and safe experience.

In addition to supporting NRPA initiatives for the past 7 years, Charlie photographed nearly every NRPA event from the annual road race and swim to 200+ volunteers planting salt marsh seedlings in the lower Narrow River.

Incredible photographs by John Mc-Namara appear in nearly every NRPA publication and display. John shares the beauty and wonder of the Narrow River Watershed through his photographs. From stunning landscapes, aerial photographs and closeups of wildlife in the watershed to capturing event-goers, John has enabled people far and wide to experience the beauty of the watershed.

Thank you John, Charlie, and Annette!

### Shipbuilding along the Pettaquamscutt, continued from front page



A postcard from 1764 showing the landscape of the Upper Pond, and Casey's sill or the Narrows, looking much as it does today, a constriction point in the watershed.

was used for whaling off Japan. These ships were built at four locations along the river; at the training lot, by Bridgetown; in front of the Glebe; and at the mouth of Gilbert Stuart Stream. Evidently, the benefits of the sheltered setting and the proximity to lumber outweighed complications in moving the completed hulls from the river. The opportunities and challenges of building in the Pettaquamscutt watershed fostered a new vernacular in ship design.

It is not clear what brought John Aldrich Saunders from Westerly to the bustling community of Tower Hill, but he established a boatyard on the training lot, the flat field on the west shore of the river at the foot of Torey Rd, so named because militia had trained there. Captain Saunders is credited with building the first known centerboard vessel in the region, called the *Dolphin*, built in 1813. The Saunders' centerboard was eventually patented by his grandson, John G. Saunders (1831-1877), in 1867. Captain Saunders next built the Eagle in 1814, the second of nine vessels he built on the training lot, for John Jay Watson, who used her for general freighting at the pier he had just founded on the east side of Boston Neck. The Commerce, built in 1815, had a movable keel made in three different portions, so that one, two or

all three could be lowered.

The most notable of the ships built in the Pettaquamscutt is the Nonsuch which was completed in 1824 at the head of the river. west of where the Gilbert Stuart Stream enters the Upper Pond. The oak and chestnut timber for the vessel was cut on the Hammond farm, just uphill, and 'hauled from the stump in one day'. The Nonsuch, as her name suggests, was a peculiar flat-bottomed schooner nicknamed the 'Sea Serpent' or the 'Flying Dragon'. According to the records of Hazard 'her frame

was laid with three keels parallel with each other 65 feet in length, with a sheath in the middle for the centerboard or the movable keel that adapted her to shoal water as well as deep...her beam was 18 feet, her depth amidships only 2 feet.'

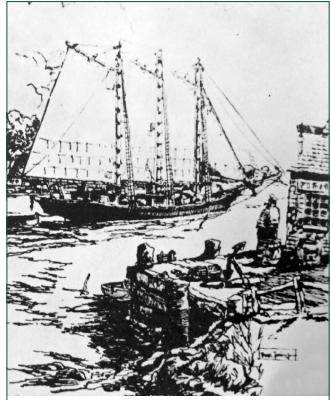
The unique design of this sailing

barge with a broad flat bottom, granted her a spacious hold relative to her weight, while drawing very little (10 inches draft when light and 24 inches when loaded). In addition, her three-masted schooner rig was an innovation, allowing her sails to be handled from the deck with a low center of effort while reducing the heeling moment. Both of these features made her a practical work vessel, allowed her to reach shallow estuary headwaters and the intertidal zone, loading and discharging cargo at minimum expense without reliance on a wharf.

Her first cargo was a

load of 20 cords of wood taken from the Nathan G. Hazard farm which abutted the Upper Pond, not far from where she was built. The Nonsuch was later used for carrying granite to build Fort Adams at Newport and stone navigational beacons that marked the channel at the entrance to Providence harbor. At least some of this stone was quarried from the Narragansett Pier granite outcrops located on the north limb of the mouth of the river, where drill holes can still be found. When business was slack. at one point, Nonsuch was stored in Wesquage Pond, in those days connected to the Bay by a tidal inlet.

After his father's death in 1832, Captain John Aldrich Saunders II took over the shipbuilding operations at the training lot yard. He built Farmer's Returns, a 60- foot schooner, for general freighting in Long Island Sound, at the Glebe in 1837. Peacedale was built at the training lot in 1842. In



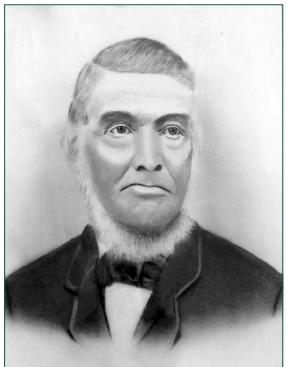
Artist Paule Loring's interpretation of what the Nonsuch may have looked like under sail.

1855, at the encouragement of the Carpenter and Rodman families, John Aldrich Saunders II and family settled 'Willetville', later known as Saunderstown, establishing a shipyard in the current location of the Saunderstown Yacht Club.

In 'Bathymetric implications of historical shipbuilding along the Pettaquamscutt River', an appendix to his 1975 PhD Dissertation for the Graduate School of Oceanography, Arthur Gaines addressed the argument that the shipbuilding history was evidence that channel depths were much greater in the past. He asserted the *Nonsuch* was the only vessel recorded to have left the watershed carrying cargo, but her uniquely shallow draft would probably have allowed her to repeat the trip down the river under current conditions.

The largest ship built in the Upper Pond, the *Albany*, measured 62 feet by 20.5 feet and drew around 5 feet when fully rigged, ballasted and loaded. Dr. Gaines observed that although there are not records of her removal, it is possible that under a spring tide it would have been possible for her to float out under current conditions, especially as a bare hull. Sponsons added to her hull could also have lessened her draft.

That is not to say removing a 60 foot ship from the watershed was without its challenges; there are records of the abutments of 'lower bridge' being taken out to get ships through. John Aldrich Saunders IV recalled stories from his ancestor's experiences getting the ships out of the river. A second generation Saunders remembered a ship moored near the present Sprague Bridge: 'and then after loading, what an exciting time (for me) was the getting down the river and out the bar. The sounding out the channel through the breakers...'



A portrait of Captain John Aldrich Saunders II (1808-1882) shipbuilder and founder of Saunderstown [in charcoal on paper (Saunders Family Collection)]

Besides the now common centerboard and three-masted schooner designs, there are few legacies of this great era to remind us of the shipbuilding industry and innovation in our watershed. As reported in his PhD dissertation for the Graduate School of Oceanography in 2006, Jeremiah Hubeny did tease out some legacy records from the sediments beneath the river. Dr. Hubeny found a spike in levels of retene around 1840 in sediment cores he took from the Lower Pond. This compound is produced from the degradation of pine tars, which could have been found in pine wood decks or preservatives for wood and rigging.

This article is based on research in the collection of the author's godparents, John A. Saunders IV and Laura Smith Saunders kept at Mystic; the collections of the South County History Center; and Cole's History of Washington and Kent Counties, Rhode Island, including their early Settlement and Progress to the present time (1889).

### Linear Park at Canonchet Farm

It's not often, that a local conservation organization like The Friends of Canonchet Farm has an opportunity to design a highly visible, public park for local citizens.

Ten years ago, the Town of Narragansett created a Master Plan for Canonchet Farm that detailed a vision of a Linear Park on the Eastern shore of Lake Canonchet and Littleneck Pond adjacent to Boston Neck Road. A Linear Park is simply a park that is much longer than it is wide.

The Friends of Canonchet Farm have received proposals from statewide Landscape Firms to develop a comprehensive and detailed Master Plan as an essential first step in realizing this vision.

A highlight of the proposed park will be a central walkway along the ponds that will feature shade trees and native shrubs, fishing piers that overlook the pond, a gazebo, and picnic tables for people seeking a respite from the beach.

A second phase of the project would include walking trails around the ponds, outdoor classroom spaces and connection to the final phase of the William O'Neill bike path.

After funding is found, the first phase of the project could be completed as soon as 2020.

Canonchet Farm is a 174 acre park owned by the Town of Narragansett. Lovingly maintained by the non-profit Friends of Canonchet Farm, the park features walking trails and the South County Museum.

### Do we have your email address?

Stay up to date on events and activities in the Narrow River Watershed.
Send your email to nrpa@narrowriver.org to subscribe to NRPA email updates

Non Profit Organization US Postage Paid North Kingstown, RI 02852 Permit No. 3



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Narrow River Preservation Association 2018 Events More information about all of our upcoming events at narrowriver.org
We hope you will join us!

12 May Saturday

## 31st Annual Narrow River Road Race

10K run, 5K run and 5K walk along Narrow River in Narragansett and South Kingstown. Prizes in 36 categories! \$25 preregistration, \$30 day of. Proceeds benefit NRPA 8:30 checkin, 10am races start. Narragansett Town Beach North Pavilion, 77 Boston Neck Road, Narragansett

What

16 All age
critters
June FREE. F
Saturday Mornir

### What Lives in the River

All ages, hands-on exploration of fish, shellfish, crabs and other critters living in Narrow River. Dress to get wet and have fun! FREE. Please preregister at narrowriver.org Morning session 9-11am or afternoon session 11:30-1:30. Middlebridge Marina, 95 Middlebridge Road, Narragansett

23 June Saturday

# URI Boathouse, 166 Walmsley Lane, North Kingstown 11th Annual Pettaquamscutt Paddle

7:45 checkin, 9am swim start. Wetsuit + non-wetsuit divisions.

\$35 preregistration, \$40 day of. Proceeds benefit NRPA

beach, swim half mile, turn around bouy and return.

One mile swim in Narrow River. Start at URI Rowing Center

13th Annual Narrow River Turnaround Swim

Guided sunset paddle from Narrow River Kayaks along Narrow River through Chafee Wildlife Refuge to mouth of the river. After tour snacks and conversation. Proceeds benefit NRPA. 520 single kayak, \$30 double kayak, \$15 bring your own Narrow River Kayaks, 94 Middlberidge Road, Narragansett

Art on the River

Friday

July

Artists of all ages and skill levels create art along Narrow River. Paint, sketch, draw, photograph, make seaweed art or fish prints! Learn from local artists and 'Plein Air' painters.

9-11am, FREE. Please preregister at narrowriver.org Middlebridge Marina, 95 Middlebridge Road, Narragansett

August Saturday What Lives in the River and Salt Marsh Walk

What L

15 All ages,
critters li
9-11am,
Saturday Salt Mars

All ages, hands-on exploration of fish, shellfish, crabs and other critters living in Narrow River. Dress to get wet and have fun! 9-11am, FREE. Please preregister at narrowriver.org Salt Marsh Walk 10am-noon with Narrow River Land Trust Middlebridge Marina, 95 Middlebridge Road, Narragansett