

The Wrack Line

Newsletter of Parker River National Wildlife Refuge • Newburyport, MA



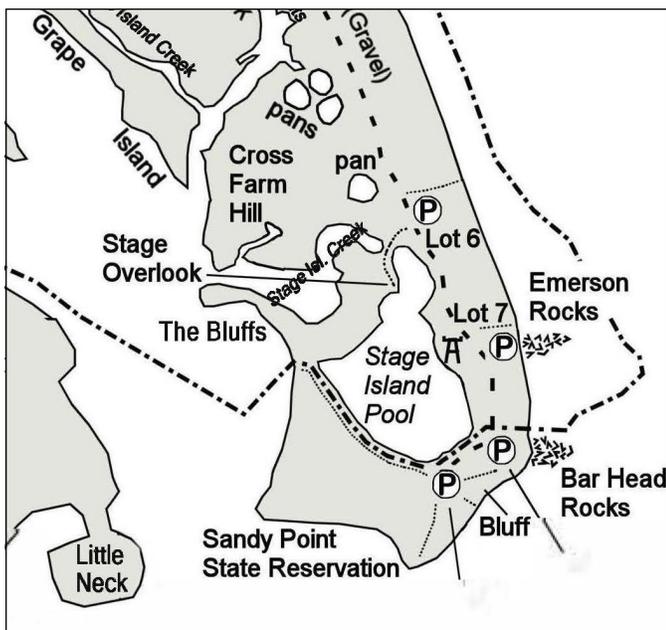
United States Fish & Wildlife Service

Winter/Spring, 2017

Stage Island and the Cottages at the Bluffs

by volunteers *Alix McArdle and Kate Murray*

Before Stage Island was accessible from the Refuge Road, it was reached by water as early as 1664, and for centuries prior by indigenous peoples. Swift river currents bring big fish in and out of Plum Island Sound, and in several tranquil coves clams and lobsters are abundant. By the mid-1700s, there were houses on the island, among them the well-known Willow Cottage, built in 1781. Additionally, there were farming enterprises, and a hotel which existed until 1932. Refuge maintenance man Tom Stubbs took the remnants of the Stage Island Salt Works (built in 1830) and transformed them into the Stage Island Pool: twenty-eight ditches and evaporation tanks dug out of the marsh and fed by the Bluffs



Across from Parking Lot 6, Stage Island covers 155 acres. The man-made dike, built in 1953, leads to a drumlin with panoramic views. The field was once planted with millet and wheat to attract migratory birds, while the pool created by the dike was designed for ducks requiring fresh water.

Creek. When the Salt Works failed, the land was purchased by the Dole family, in whose possession it mostly remained until 1936, when it was purchased by Mass Audubon.

The Knowles, Foster, and Mehaffey families were the island's last private owners. Amber Knowles Hovey, Bob Foster and cousin Jane Boyer, and Bill Mehaffey shared their childhood memories of the island with us for this article. The Bluffs were easily reached by a family boat departing from the Rowley Landing. Later, when the rough one-lane Refuge Road extended south to Bar Head (Sandy Point) and back up along a present-day path, a Jeep could navigate the deep sand, but only at low tide. Life at the cottages were extended family affairs, with occupancy amicably negotiated for private vacations or group outings. In recent years, reunions brought descendants from all over the country, at times numbering close to eighty. Six generations of Amber Hovey's family recall time at the Anchorage.

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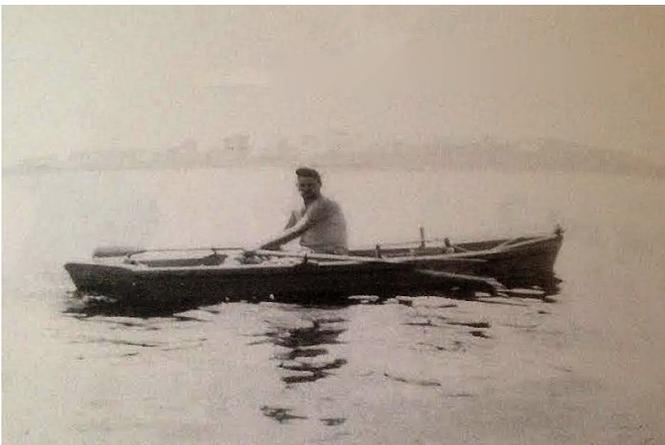
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Stage Island and the Cottages at the Bluffs

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The cottages were heated by fireplaces (and later, some coal burners), refrigeration was by ice blocks brought over from the mainland, and bottled gas was used for cooking. Kerosene lamps provided light, and all cottages contained indoor hand pumps to access water from dug wells. And there were, of course, outhouses, some private, some shared (see aerial photograph). The adults were in charge of liming the outhouses and disposing of the waste, and also of cleaning the sooty chimneys of the kerosene lamps, as these posed a distinct fire hazard. As children, none of the folks interviewed remembered a fire, but, in October 1946, the large Mehaffey cottage burned to the ground. The cause was officially listed as arson. Back in the 1950s, cottages were few and far between and break-ins were not uncommon.

The children's chores included gathering rain water from the collectors, pounding laundry with a plunger in an outdoor basin, and harvesting supper. They clammed, fished off the pier for flounder with simple drop lines, "rowed all over the place," and picked wild strawberries, cranberries, and beach plums (none recall blueberries). If their families wanted lobsters for dinner, a bushel basket and a \$5 bill were left at the end of their pier and at the close of day, the children hauled it back home fully loaded



Early passage to The Bluffs was by row boat. Even as larger, motorized boats became available, row boats continued as the preferred mode of transportation to the island. Paying strict attention to the current and wind direction were critical for safe passage! On Friday evenings, family fathers would park cars on the mainland and flash their headlights as beacons to summon the family "water taxis."



A 1968 photograph showing cottages built 1885 – 1895 by Nathaniel Dole. Far right: The Anchorage, owned by Amber Knowles Hovey's ancestors. Center: Two cottages owned by Bob Foster's family. Note the his and hers outhouses behind the main buildings! Bill Mehaffey's family transported their replacement camp, once a World War II officer's quarters, by boat down the Rowley River. The pier was built by these Rowley families.

by one of their lobstermen uncles. No one tended a garden as the soil was mostly clay and the constant wind would have necessitated frequent watering, not a preferred use for the fresh water. A shoreline pit, dug by the children, provided hours of creative fun and more than a few clay ashtrays. "We didn't go barefoot on the Bluffs" as it was covered with brambles, thistles, and broken shells. The Knowles family kept a box of old sneakers — "muckers" and yours if they fit you— to wear in the water to protect feet from sharp shells.

There were no hunters among these families, but all remember deer as plentiful. Muskrats and marten were frequently seen, some quite unafraid of people. There were many more woodcock, gulls, and swallows, especially bank swallows that colonized huge swaths of Grape Island, but there were no osprey or cormorants. Big flounder and striped bass could be caught from their pier, and clamming was an easy and rewarding way to spend an hour at low tide. In spite of the free rein the children enjoyed, none recall a drowning, significant injuries, getting lost, or even bad sunburns. It was storms, usually those with lightning, that provided the most frightening memories with visions of strikes rebounding off the

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Another Great Merrimack River Eagle Festival!

by Matt Poole, Visitor Services Manager

The Merrimack River Eagle Festival has grown in popularity each year since it was conceived nearly a decade ago. This year's event, held on a chilly, sun-soaked Saturday in mid-February, was the busiest festival ever. As in past years, there were a variety of activities for the public to attend, including a live eagle viewing along the Merrimack River, a raptor show in Newburyport's historic city hall auditorium, and lots of family activities at both the Parker River National Wildlife Refuge and the Massachusetts Audubon Center at Joppa Flats. Since its inception, the Eagle Fest has been a joint venture organized by the refuge and Mass Audubon.

This year, refuge visitors were treated to two live raptor demonstrations. Owls from Mass Audubon's Drumlin Farm held court in the refuge classroom. Raptor rehabilitator Jane Kelly impressed a packed house in the auditorium with another collection of live birds of prey. Lots of fun, hands-on kid activities, facilitated by an enthusiastic group of refuge volunteers, rounded out the offerings. As always, the owl pellet dissection table was a big hit. The Friends of Parker River NWR table also attracted lots of attention. Jean Adams, coordinator for the visitor center activities, speculated that it might have been the busiest Eagle Fest ever.

Due to the relatively mild winter and lack of ice on the river, there was concern that eagle viewing opportunities would be few. Though not a banner year for eagles number-wise, eagles were discovered at numerous locations throughout the day. Wildlife viewing was aided by two volunteer-staffed stations on Plum Island: one at the north end, where people were able to view seals and sea ducks; the other, at the refuge's North Pool Overlook.

My role this year was helping to introduce, along with Mass Audubon's David Moon, the raptor shows held at Town Hall. This year's program was provided by the Connecticut organization **Horizon Wings Raptor Rehabilitation and Education**. The audience was able to see, up close, a screech owl, a red-tailed hawk, and a juvenile male American bald eagle. I had to chuckle when the presenter referred to the eagle as relatively small. From my position in the balcony, the bird looked anything but small!



Juvenile male American bald eagle that was featured in the raptor program at the Newburyport City Hall

My final duty at Eagle Fest was to join the traditional VIP Tour at day's end. Representatives from the refuge and Mass Audubon at Joppa boarded minivans, along with a group of event sponsors, and together we headed out for some eagle viewing along the Merrimack River. I was shocked when our tour navigator announced that our first stop would be the "Kent Street owl." Sure enough, there was an eastern screech owl sitting in a large tree cavity at the edge of Kent Street. Wicked cool, that! What a great festival. I can't wait for next year!

A little trivia: Benjamin Franklin suggested that the wild turkey serve as America's national symbol. Can you imagine that!



Photo: FWS

Viewing Sea Ducks and Seals from the Beach

A Festive, Fabulous Conservation Film Festival!

by Matt Poole, Visitor Services Manager

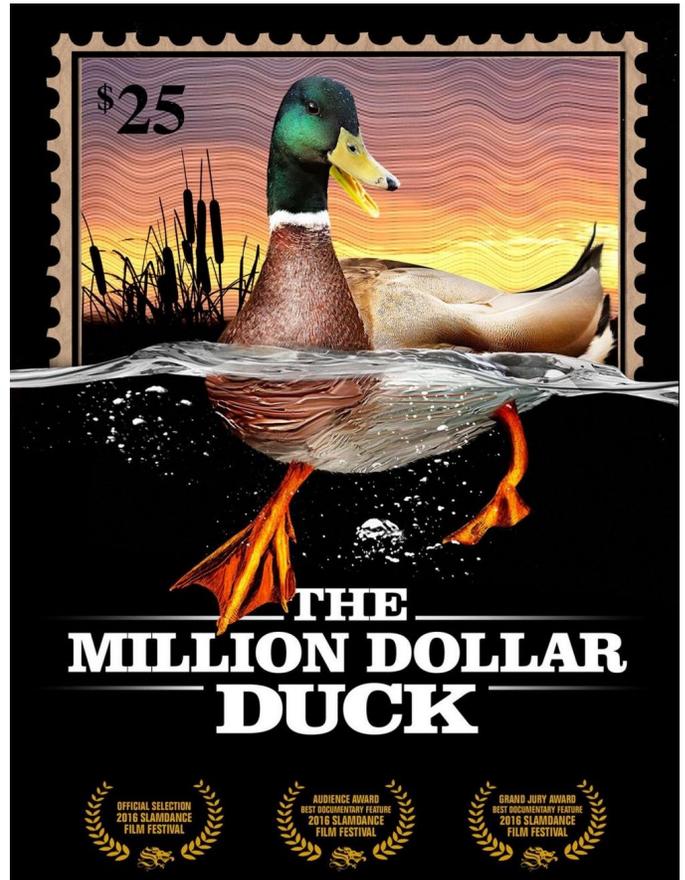
This year's third annual Conservation Film Festival at Parker River NWR was a huge success! A total of eleven full-length films, spanning a wide range of conservation-related topics, were shown Friday evening, March 3, through Sunday afternoon, March 5.

The weekend kicked-off Friday night with *The Million Dollar Duck*. This entertaining documentary told the story of the only U.S. Government-run art competition, the Federal Duck Stamp Contest. The film profiled a variety of passionate wildlife artists intent on winning the ultimate in wildlife art competition. Here at Parker NWR, the Duck Stamp has particular significance, since 98% of the refuge's acreage was purchased with revenue generated by Duck Stamp sales. In the film, the Duck Stamp program — a huge U.S. Fish and Wildlife Service conservation success story — was presented in an interesting, often humorous, and otherwise compelling way.

Each year at Parker NWR, we try to showcase films that focus on local conservation issues and/or success stories. This year we struck gold in discovering *Marion Stoddart: The Work of 1000*. This 30-minute documentary told the story of a Massachusetts woman who, beginning in the 1960s, catalyzed a successful grassroots effort to reclaim the heavily polluted Nashua River (a tributary to the Merrimack). The Nashua was once included in a National Geographic magazine article that profiled the nation's most defiled rivers. Stoddart's tale is the story of inspired and victorious citizen activism.

Based on our informal exit polling, one of this year's most popular films was *Sonic Sea*. This documentary focused on the impact of ocean noise pollution on whales and other marine life. Though the harmful effects of ocean noise pollution are terribly disturbing, and the incredible video footage tugs at the emotions, the film ultimately struck a more hopeful tone by making an elegantly simple point: Unlike other forms of pollution that can be difficult to mitigate, when it comes to noise pollution, all we need do is stop making the noise!

The popularity of the festival's video shorts was an unexpected and pleasant surprise. This was great news, for there are a many good conservation-related



films that fall outside of the standard, full-length feature film category. A lot more topical terrain can be covered by including the shorts. Furthermore, the shorter films help to mix things up and keep the audience engaged. This year's short films focused on the monarch butterfly, the technical marvel of creating a panoramic photograph of the world's largest tree (a giant sequoia), and the story of a retired Texan who reclaimed a parcel of defiled landscape by, almost literally, getting water from stone. Based on participant feedback, there is no doubt that we will include more film shorts next year!

After three years of conservation film "festival-ing," I can honestly say that we have created a real winner of an event. The timing on the calendar works well; people are itching to get out of their homes by mid-winter (i.e., cabin fever). More importantly, and when done well, conservation films can rise to the highest level of environmental interpretation by touching hearts and motivating people to action.



Our Best Year Yet for the Refuge Photo Contest!

by Matt Poole, Visitor Services Manager

An important part of the refuge's busy photography program is the annual nature and wildlife photography contest. This, our fifth year, proved to be our biggest contest yet. To increase the number, as well as the diversity of photo submissions, we created two major categories this year: images taken on Plum Island, and those taken elsewhere in New England. We expected the latter category to open up a wellspring of additional entries, and we were right! In all, a combined 212 photos were submitted this year in the adult and youth class.



Photo: Ken Jordan

Gray squirrels: 2017 refuge photo contest "Best of Show."



Photo: Alyssa Christoph

Cascade: 2017 refuge photo "Best of Show" in youth class.

[See more contest photos on page 7.](#)

As in years past, all contest entries were displayed in the refuge's visitor center classroom for over a week. Quite a few visitors viewed the exhibit, and most offered very positive feedback on image caliber. An oft-repeated refrain went like this: "Those judges are going to have a real challenge selecting the winners!"

This year's judging panel was comprised of Photo Society board members Nancy Landry, Diane Bowles, Anne Post Poole, Norman Tabor and, yours truly, Ranger Poole. We reviewed the prints in each category and recorded our responses on a simple scoring sheet. We then compared our results and came to an agreement on the finalists.

We announced contest winners on March 5 before a large audience in the visitor center auditorium. Once again, Hunt's Photo provided gift cards for the top finishers. This year's "Best of Show" award went to Ken Jordan for his photograph of four juvenile gray squirrels. And, because the entries in this year's youth category were so impressive, the judges made the decision to declare an additional "Best of Show for Youth" award. Alyssa Christoph won that award for her image of a cascading stream.

The Art of Photo Contest Judging

by Matt Poole, Visitor Services Manager

Every year I hear the same comments from refuge visitors who come to view our photo contest entries. Many express the same sentiment; i.e., that selecting a winner must be a difficult task. And it is, but I often wonder if there is any thought given to the judging process itself. Do we judges simply react and select our favorites? Or do we apply some purely analytical and objective filter to pick a winner?

Refuge photo contest judges actually adhere to the same judging criteria used in most photo competitions. First, there are the technical considerations. Is the image well exposed or too dark/light? Is the image sharply focused or blurry? After that, we look at compositional considerations or the artistic merits of

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New Faces at the Refuge!

Sharon Ware is the new Deputy Project Leader at Parker River National Wildlife Refuge, and Jim Naylor is the new maintenance worker.

Before joining the staff at Parker River, Sharon provided oversight of many key projects at the Long Island NWR Complex, including establishment of a seasonal RV volunteer program, reconstruction of an observation platform damaged during Hurricane Sandy, and development of a comprehensive Visitor Services Plan.

Sharon grew up west of Boston in Southborough and studied Environmental Science and Wildlife Management at Framingham State University. After graduating with a Bachelor of Science degree, she went on to become a trainee at Great Meadows NWR in Sudbury, Massachusetts, and has held various refuge management positions at coastal Refuges throughout New England since 1991. She has quite a bit of experience with nesting seabirds and salt marsh restoration, which will be very useful here, but looks forward to new challenges, as well.

In her spare time, Sharon enjoys fishing, competing in agility with her dog, and exploring local museums and nature centers with her young nieces and nephews. Sharon's family is all in Massachusetts so this move gives her a wonderful opportunity to be closer to home and her family.

Jim Naylor, born and raised in Arlington, has an older sister named Marianne. Jim served in the U.S. Navy from 1988-1992 aboard the USS Peleliu as a search and rescue boat coxswain. He was deployed to the Persian Gulf for Operation Desert Storm and again, later, for Operation Desert Shield.

Jim brings plenty of related experience to his new position at Parker River. Since leaving the Navy, he has worked in the construction field, including crane operation, roofing, carpentry, painting and plumbing.

Jim has two kids — Abigail (age 7) and Christopher (age 15). In his time off, he's an avid golfer and he also enjoys riding his Harley Davidson.



New refuge staff members Sharon Ware and Jim Naylor.
Photos: Matt Poole/FWS

The Art of Photo Contest Judging

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the photograph. Is the photo's primary subject placed effectively within the frame? Is depth of field (i.e., the sharpness from foreground to background) used effectively in the shot? Is the image dynamic? Does it tell a story? If it's a wildlife image, does the photo illustrate some behavior or convey a relationship to the animal's habitat, or is it a simple, static animal portrait? Did the photographer take an original or creative approach to photograph a common subject? Does the photo follow the classic rules of composition? Finally, and this is likely the least tangible metric, does the image have impact?

This year's best of show image, taken by Ken Jordan, captures four juvenile gray squirrels nestled into an opening in a tree. Because I expected questions as to why we selected an image of such a common backyard animal, I made a point of providing a critical analysis of the merits of the image during our recent Photo Society meeting. First, the image is nearly perfect on the technical side. It's tack sharp, and the exposure is spot on. The image shows typical animal behavior, and it provides habitat context. From a strictly technical standpoint, odd numbers always work well compositionally, particularly the number three. The three squirrels, nestled together and staring directly at the camera, thus works very well. From the three siblings, the viewer's eye moves along that bushy tail of the fourth squirrel, and then back to the three. That's why this image is such a winner. It's not enough simply to say, "Oh, they are so cute!"

So there you have it — Photo Judging 101!

More Winning Images from This Year's Photo Contest!



Contest photo credits, clockwise from top:

Plum Island Nature, Susan Gilmartin, adult class

Plum Island: Lillian Preston, youth class

Plum Island Wildlife: Leigh Scott, adult class

New England Nature: Stephen Wiswell, adult class



Photo: Matt Poole/FWS

Fisheye view of all photo contest entries. Some 212 prints were submitted this year in the adult and youth class.



Photo: Matt Poole/FWS

Top-finishing contest photos will be displayed in the visitor center reading room for the rest of the year.



[Click to view an online slideshow of all the entries in this year's photo contest!](#)

Friends of Parker River Update

by Victor Tine

The birds, mammals and fish of the Parker River National Wildlife Refuge have made a bunch of new friends. And they aren't just Facebook friends, although they'll be on Facebook, too.

After several years of relative dormancy, the Friends of the Parker River National Wildlife Refuge began a revival on January 21 by electing new officers and a new board of directors. Ted Olsson of West Newbury was voted the new president. He'll serve alongside vice presidents Kathryn Carnovale of Byfield and Gary Lavimoniere of Hampton, N.H., treasurer John Smolinsky of Georgetown, and secretary Linda Schwartz of Arlington.

So far this year, the Friends have provided funding via membership dues and donations for a computer tablet for use at the visitor center information desk, and for a complete, new rack with 24 nest box gourds for purple martins.

The refuge turns 75 this year, and the Friends plan to celebrate on the annual observance of Earth Day, Saturday, April 22. The refuge and the Friends will co-sponsor a presentation by award-winning naturalist and author Dr. Bernd Heinrich. The following Saturday, April 29, will feature an appearance by well-known nature photographer Peter Green. Both events are free and open to the public. The Friends are also formulating plans for other events in the coming months that will highlight the history and ecology of the refuge.



Photo: Matt Poole/FWS
President Ted Olsson and board member Emmalee Bowers Tarry at the Friends information-and-recruitment table on February 18, raffling off plush, stuffed eagles at this year's Eagle Festival.

April on Plum Island

Over the tidal river,
along border of Great Marsh,
raspy rattle of redwing blackbirds
newly arrived from south
to establish territories in reeds.
An ascent up tall dunes
of this extensive barrier island
that secures the coast
from full assault launched
by fierce Atlantic storms.
Beach is nearly deserted
on a balmy spring day;
empty strand a protection
for piping plovers who strut
along edge of surf to search
for morsels left by tide.
Set up chair to relax
beside boundary of refuge;
a chain of clouds like
puffs from passing train
hover above the coast.
Gulls gather to squabble
over scraps deposited on sand.
A steady procession of vessels
enter and exit distant harbor.
Waves murmur mysteries
heard in distant realms.
Nothing perturbs the peace
of an April afternoon
and one's thoughts are lost
in the reverie of sea, sky and shore.

Lainie Senechal
Amesbury Poet Laureate

The Remarkable Red Maple

by David Tibbetts, Biological Technician

Our eyes are naturally drawn to the flashy scarlet, orange, and golden-yellow of leaves from the trees that stand out amongst all others heralding the end of our growing season. Some of the most vibrant of these colors come from one particular tree, our native red maple. In autumn, travelers from around the world come to catch a glimpse of the carnival display put on by our deciduous trees. And from the artist's palette, the liveliest of colors are splashed across the landscape and applied generously to the red maples. In summer, this tree can blend in with a hundred shades of green leaves, or in winter, the bare-interlocking twigs and branches weave together the forest community. But the red maple is much, much more than what meets the eye.

All trees provide services within an ecosystem. The red maple, however, is a foundation species stabilizing the plant community, supporting ecosystem functions, and increasing biodiversity. Several plant studies of red maple swamps in New England found there were as many as 50 species of trees, 90 species of shrubs and vines, and more than 300 species of herbaceous plants including some rare yellow and showy lady's slippers.

In spring, red maples are one of the first trees to flower providing much needed nectar for early pollinating insects. They are also wind pollinated making them well adapted to deal with extreme spring conditions, improving the chances for viable seeds each

year. They are one of the first trees to disperse seeds, just a few weeks after flowering. The winged seeds are spread by wind; they whirl and spin with some landing and germinating in sunny sites that give developing seedlings a head start in the growing season. The leaves are grazed by hundreds of insect species which, in turn, provide major food sources for nesting birds. Red maples can be found in almost every habitat in New England and can grow in full sun or total shade, on dry-rocky outcrops, in sand dunes (including on Plum Island), and in mucky wet soils deep in a forest swamp.

Red maples provide many direct benefits to humans as well. Growing abundantly in wetlands, along river and stream banks, it can retain large volumes of storm water runoff that help protect against flooding and, in turn, recharge groundwater aquifers. The Report for Forest Resources, issued by the US Forest Service, cites more board feet of red maple are harvested each year in the US than any other single hardwood species. As our climate changes, sugar maples have been in decline, and more red maples are being tapped for maple syrup. Taste testers have found indistinguishable differences between red and sugar maple syrup. Used as a shade tree and ornamental for landscaping, there are nearly 40 cultivars propagated for different shapes, forms, textures, and fall foliage colors. Truly a remarkable tree for all seasons!



Crossbills: Those Birds with the Crazy-looking Beaks!

By Linda Schwartz, Volunteer Master Naturalist

Crossbills, members of the finch family, are an irruptive species in our area. When pinecone crops in the boreal forests in Canada are poor, these birds head south to the U.S. for food. Crossbills were last seen here at Parker River back in 2012. This year, we've spotted them hanging out in the pine trees, enjoying the pine cones. With their specialized beaks, crossbills can easily open pine cone seeds. Each crossbill species is ideally suited for feeding on specific conifer seeds. The crossbills insert their bill between the conifer cone scales, and then twist their lower mandible towards the side it crosses. This enables the bird to extract the seed easily, using its tongue.

Crossbills are a fascinating study in adaptations for their food source and divergent evolution. Previously, it was thought that divergence occurred in isolated populations such as on an island. Crossbills are showing that it occurs even in populations living in close proximity to each other. This is known as sympatric speciation. Much of this new research has been made possible with advances in DNA analysis. There is a variant of red crossbills that have adapted to be able to efficiently open the pine cones of a local type of lodgepole pines in one area of South Hills Idaho. They have developed a specific size beak and



Photo: Linda Schwartz

White-winged Crossbill

a slightly different call than other red crossbills in the same area. The slightly different call may be at least partially explained by differences in beak size. There are those that argue that this group of red crossbills should be a separate species. These South Hill red crossbills generally do not interbreed with the other local red crossbills. In crossbills there is more genetic variation related to the shape and size of the bill than the geographic location.

Here at Parker River, we have two similar-looking species — the red, or common crossbill, and the white-winged crossbill. Worldwide, there are nine recognized crossbill species, though it can be difficult to distinguish between them. The red crossbill and the white-winged crossbill are both roughly the size of a large sparrow.

Bills can be crossed either right or left, with approximately a 1:1 ratio in red crossbills; and possibly a 3:1 ratio in white winged crossbills, favoring the lower mandible crossing to the right. The mechanism that causes the bill to cross right or left is not fully understood. It is thought to have some genetic basis, but it has so far been unproven. It is likely the result of several genetic factors, as well as environmental factors, rather than a single gene controlling the right or left crossing of the bill. The young hatch

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Photo: Dave Menke/FWS

Red Crossbill

I Want to Volunteer; What Can I Do at the Refuge?

by Jean Adams, Outdoor Recreation Planner & Volunteer Coordinator

I often get inquiries from people who would like to volunteer, but they just aren't sure as to what they could do to help. They are not confident that they would have any skills to contribute. This should **not** be a concern for anyone who wants to volunteer! The truth is that the **ONLY** skill a person needs is the willingness to help. Enthusiasm, caring, and a desire to work are all that's required of a Parker River NWR volunteer.

Those of you who've attended any of our Volunteer Appreciation Days have often heard me say that it doesn't matter if you have an hour a month, or a day a week to volunteer. Any amount of time you can give is important and appreciated. Don't think that you have nothing to contribute. Everyone who helps here at the refuge is contributing a most valuable commodity: their time. Skills can be learned. Time is the most important thing that you, as a volunteer, need to bring. Everything else can be obtained through training and a desire to learn.

“It doesn't matter if you have an hour a month or one day a week to volunteer. Any amount of time is important and appreciated.”

Our volunteers bring many different skillsets to the refuge. Some folks love talking to people and working the front desk; others are more introverted and prefer to work alone doing maintenance projects; and then there are those who enjoy the science of the refuge and our biological projects. It's all valuable work and is most appreciated. When it comes to volunteering, you're limited only by your imagination and energy level!

Below is just some of the work that our volunteers have done in the past year. You can easily see the variety of the tasks that you can do as a volunteer.

Our refuge volunteers have:

- Constructed a storage shed at the gatehouse.
- Conducted oral history interviews.
- Mowed grass, fixed split rails, cut trees, put up signs, plowed snow.
- Conducted a series of story hours for toddlers.
- Staffed the visitor center information desk, allowing it to be open 7 days a week.
- Helped out with special events such as the Eagle Festival and “Let's Go Outside.”
- Conducted interpretive walks (both historical and biological) and weekly Behind the Scenes Tours.
- Conducted evening woodcock and whip-poor-will walks.
- Maintained purple martin colonies on the refuge and north end of Plum Island.
- Worked at the gatehouse collecting fees, answering questions, controlling crowds.

This is just a sample, but the work goes on every month, every season, every year. It's the people like you who volunteer here at Parker River that make this refuge rock!

Ready to Get Involved?

For more information on volunteering at Parker River National Wildlife Refuge, please contact Jean Adams.

jean_adams@fws.gov

978-465-5753 ext. 208



Just a Few of Our Great Volunteers. This Could Be You!



**VOLUNTEERS
AT
WORK**



Clockwise from top: Walt Thompson helping with beach cleanup; Lynette Leka plover wardening on the beach; Richard Buba trimming back signs at Sandy Point; Peter Hickey and Phil Loring painting bike racks.

All photos: Jean Adams/FWS



Using Technology to Track the Shifting Beach Sands

by Kaytee Hojnacki, Biological Technician

Over the past decade, the refuge has attempted to monitor the shifting sands of the primary dunes; however, earlier techniques just weren't precise enough to paint a clear picture of sand accretion and erosion over time. Things changed in 2012, when USFWS Region 5 purchased high-tech GPS units called RTK GPS. These units have millimeter accuracy, and they also measure elevation. Now with the proper equipment for the job, we partnered with Rutgers University to establish transects throughout the refuge and Sandy Point. Rutgers has been conducting dune profile surveys at multiple national parks and seashores all along the east coast, so Parker River NWR would just add to the robust dataset that has been tracking the changes in our Atlantic beach fronts.

Surveys began in the spring of 2012 and have been conducted yearly in the spring and fall (except for 2016 due to equipment problems). Transects run from the road east toward the beach until we reach 0 meters mean sea level. This allows us to measure a cross section of the dunes and beach, and since the same transect is measured every year, it allows us to track changes to the dunes and beach over time. An elevation measurement (along with the GPS coordinates) is recorded where there is a significant elevation shift, or approximately every five meters.

Our data has confirmed the trend that has been evident with the naked eye. Our beach typically erodes in the winter, when storms tend to be most intense, and accretes sand during the calmer summer months. We have also been able to track the growth at the south end of the refuge beach. At both Lots 6 (Figure 1) and 7 (Figure 2), there has been a significant increase in elevation of the upper beach. This increasing elevation leads to a decrease in the amount of beach that is washed over during each high tide. As the beach grows outside the grasps of the tide, it allows this dry area to become a suitable piping plover nesting habitat. In 2012, there was just one pair of plovers nesting between Lot 6 and the southern refuge boundary. By 2016, the population had increased to 13 pairs of plovers in this same stretch of beach. But what Mother Nature gives us, she can also take away, so there's no guarantee that this trend will continue.

Our surveys will continue into the future, adding to our knowledge of how the refuge is impacted by climate change. This data will assist us in making educated decisions on beach and dune management. Rutgers University is planning an in-depth analysis of our collected data, from which we're hoping to get a full picture of sand movement along our beach these past few years. Only time will tell whether our beach will be able to adapt to rising sea levels, or whether the the ocean's fury will reclaim it for herself.

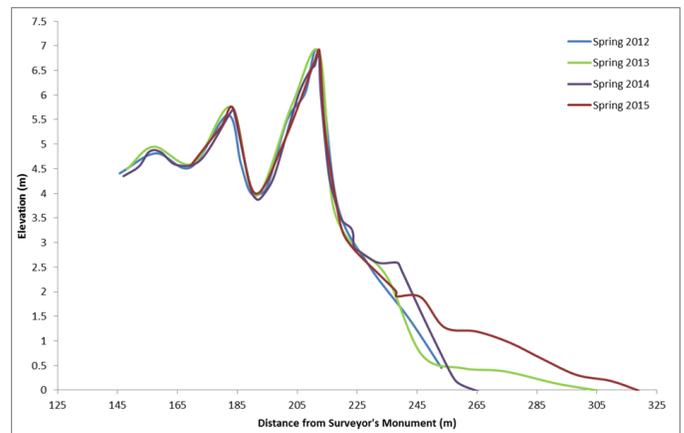


Figure 1. Dune profile of the eastern part of transect 6 (Lot 6 area) collected in the spring 2012 – 2015. The highest peak is the primary dune, with all data to the left collected on the dune face and beach. Data is collected until an elevation of 0m MSL is reached.

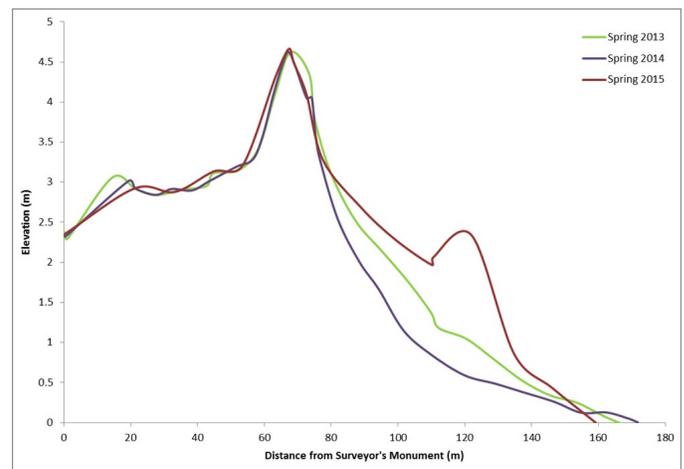


Figure 2. Dune profile of transect 7 (Lot 7 area) collected in the spring 2013 – 2015. The highest peak is the primary dune, with all data to the left collected on the dune face and beach. Data is collected until an elevation of 0m MSL is reached.



Crossbills and Their Crazy-looking Beaks!

(Continued from page 10)

with uncrossed bills, and the bills will develop the crossed mandibles before they fledge and feed independently.

Crossbills mostly eat the seeds of various conifers and occasionally the buds. They will also eat the seeds of deciduous trees as well as some seeds of various weeds. Additionally, they eat some berries and insects (probably mostly when breeding). Those with bigger beaks will specialize in eating larger pinecones.

Red crossbills (*Loxia curvirostra*) - Males are red or orange, and females are green or yellow with a lot of variation. There are up to 9 variants of this species in North America, mostly distinguished by their calls. The South Hill population in Idaho is one example of a variant of red crossbills. Their preferred food is spruce pinecones and cones from various pines of the *Pinus* species as well as Douglas fir. The red crossbill lacks the white wing patches and is generally a more orangish red than the white winged crossbill. Its wings are more of a dark brownish color as opposed to the bold black wings with 2 white bars of the white winged crossbill.

The breeding range of the red crossbill is throughout southern Canada and into the western United States and even into Central America. In Irruption years they can be seen in much of the United States.

White-winged or 2 barred Crossbill (*Loxia leucoptera*) this species has black wings and bold white wing bars in all plumage. The male is more pinkish red, almost a raspberry pink, while the females are more grayish, lacking the red coloration. They prefer spruce or tamarack cones. They have a more slender bill than the red crossbills. An individual white-winged crossbill can eat a total of about 3,000 seeds per day.

The white-winged crossbill also breeds in Canada; from Alaska and Northern Quebec across Canada South to Newfoundland and British Columbia. Their breeding range is further north than the red-crossbill and they only breed in a small area of the American Northwest. In irruption years they can be

seen in the northern half of the United States. Approximately 85% of the North American population of this species breeds in the Canadian boreal forest.

Both species, in North America, are considered to be of least concern with the IUCN (International Union for Conservation of Nature). Their major threat will be destruction of boreal forest habitat due to logging. The South Hills variant in Idaho is in danger of losing their food source, the lodgepole pine, from climactic change. The South Hills lodgepole pine has a different shaped cone than lodgepole pines in other areas.

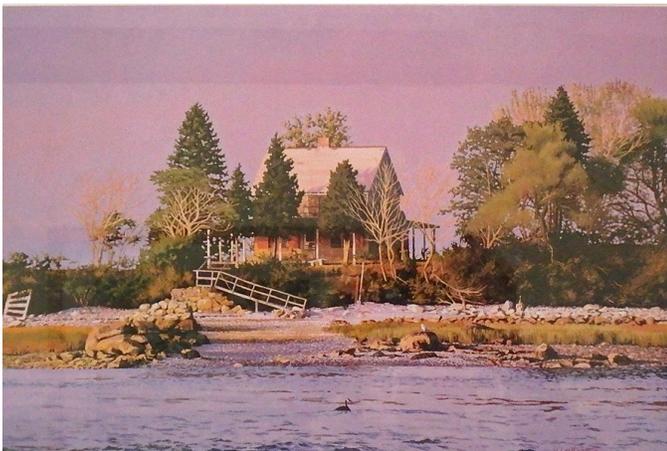
In a project combining Project Feeder Watch and climate data in a statistical analysis, scientists believe they have found what triggers the mass irruptions of boreal songbird species. Data on Crossbills and other irruptive species such as the Pine Grosbeaks, Evening Grosbeaks, Pine Siskins, Bohemian Waxwings, Boreal Chickadees and others is gathered through Project Feeder Watch. Project Feeder Watch, from the Cornell Lab of Ornithology is where volunteers systematically report data on species seen at their feeders from November to May. Through studying this data, scientists have discovered how weather shifts affect the seed production in the boreal forests and trigger the mass irruptions of a number of songbird species in winter. Persistent shifts in rainfall and temperature affect the boom and bust cycles in forest seed production and thus triggers the irruptions. The success of forest seed production depends on the weather of the previous two to three years. This weather data may be able to predict irruption years for these songbird species, possibly up to two years in advance.

Stage Island...

(Continued from page 2)

Sound and crackling through the houses, all of which were equipped with lightning rods. Storms blew up quickly, still true as any local sailor will attest, and, as a young child, Jane recalled a near-tragic adventure with her father at the helm of their 19-foot Lightning. They had departed from the American Yacht Club on the Merrimack under balmy blue skies and once outside a "line storm" quickly blew up from the south, enveloping them. Their boat capsized and only Jane's brother, as the youngest, had a life jacket. They clung to the upright centerboard as the submerged sails carried them out to sea. Only the chance passing of a boat out of Gloucester, as well as Jane's father balancing upright on the inverted hull waving the white life ring, saved them.

After the refuge was established, only cottage owners were allowed on Stage Island until the last remaining owner, Dorice Goodwin, passed away in 2009. Her cottage, The Anchorage, was taken down this past winter. Goodwin family descendants were able to salvage some of the interior beadboard, as well as a few of the cottage's red shutters. One family member swears that she can detect a briny seaside aroma from the century of the shutters weathering by the shore. Says Amber Hovey, "It was a very, very special place, like a little paradise from back in time. We are grateful for the time we had and have memories to cherish."



The Anchorage on Stage Island. The cottage, which had fallen into serious disrepair, was taken down this past winter. Stage Island will be open to the public this summer!



Nellie, the Knowles family goat, made the boat trip with the family each spring to take on unwanted plant life — thistles, brambles, and poison ivy included. With Lawrence Goodwin, whose wife, Dorice, was the last owner of the Anchorage.

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