



Kestrel
Educational
Adventures

Inspiring wonder, understanding and connection to the natural world through playful, outdoor, scientific inquiry



**2019
Annual
Report**

9 May Street, Beverly, MA • www.kestreleducation.org

From the Founder -

At 5:45pm on a Wednesday, twelve somewhat muddy middle- and high-schoolers climb back into the Kestrel vehicles. Several, the designated animal observers, are carrying nets coated in algae, and small notebooks.

These youth are part of our Conservation Club, a program that meets every Wednesday afternoon through the fall and spring to conduct in-depth, youth-directed project-based learning. For the first several weeks of each season, we go on outdoor adventures and figure out how to run a meeting democratically, decide what project to take on, and help everyone choose project-leadership roles. This is a complex and messy process, one that most of our instructors will admit gives them pause at times. *Will* we iron out the project details and complete the project on time? *Does* the youth in charge of recording data know where the data notebooks are? Instructors conduct a debrief meeting after each day in the field with our youth, planning our next steps, responding to the youth where they are, and figuring out how to move on to the next level. It all boils down to providing coaching and structure, and then stepping back to allow the youth to experiment, make decisions together, and reflect on what does and doesn't work for them.

By the last two weeks of the season, the youth are running most of the meetings, distributing the snacks, and planning where to go on each field visit. They know how they want their project to look, and they know they will be trusted to make big decisions.. They've stopped expecting the adults to plan things for them and pack the supplies, and have fallen into a habit of reminding *us* what time it is and what we need to remember to bring. It's a remarkable transformation. In just ten weeks, that kid who didn't say anything at first is working on a webpage about the Ipswich River, along with new friends, and the kids who tended to dominate conversations have learned to use their big voices to amplify other kids' ideas. On the final day, parents and siblings press into our little clubhouse. Our youth stand, only slightly giddy, at the front of the room. In front of mostly adults, they share thoughtfully about their experiences, and answer questions. They discuss not only the animal life in the Ipswich River, this season's chosen topic, but also what it means to plan and run a project, most notably what it is like to have the "Voice of the People" job. They know what equipment they need and how to outfit the group properly with boots. They demonstrate the use of the public website they've created with their findings from traveling along the edges of the Ipswich River.

At the end of the presentation, everyone shares some festive snacks and some of the youth make plans to work on an independent environmental project over the summer. What strikes us most as instructors is not the finished project itself, but the way the youth describe the finished piece, and the process of getting there. They describe it as though it's all theirs, which it is. Even better, I find, is that they don't hide the messiness or complexity. They tell stories of capsized canoes and forgotten equipment. And that's why we do project-based field learning at Kestrel; because the stories, the process of learning how to become a conservation science team, is the part that most helps these young people to become community leaders, adventurers, and maybe even scientists.



From the Board Chairperson-

I'm sitting inside on this rainy autumn Sunday grateful that my toddler is taking a nap and not begging me to go outside. I have letters to write, lesson plans to revise and a raft of unanswered emails. But also, it's kind of wet out there and I'm happy that the dog and the kid and I got to frolic earlier in the day when conditions were better. Not so the toddler!

She is happy to plunge into the wet, revels in the sight of her raincoat and begs to put on her shoes when any hapless adult makes the slightest move toward the door. Getting outside centers her, soothes any upsets or unsettled feelings, replaces a nap and distracts from a missed meal. She is a walking (not yet talking), squirming, wallowing illustration of the benefits kids get when they go outside.

My tedious adult reluctance to plunge into the wet is echoed throughout educational institutions. At Kestrel we put as much emphasis on getting outside as my toddler does. While Kestrel's mission is deeply tied to scientific inquiry and the pursuit of big ideas and questions too complex to answer in an afternoon, one of our deepest commitments is to getting kids outside to do that science. This year, among our other accomplishments, we are particularly proud of our deepening commitment to Kestrel's Conservation Club, a weekly club where big kids (5th through 10th grade) get to experience that reset - going outside each week on adventures of their own design, wearing their own thrilling rain gear, armed with science equipment (and snacks that they choose and budget for!), big questions and adults who can facilitate their adventures.



Conservation Club sampling living things at Strawberry Hill in Ipswich



Building a tinder nest and using a fire steel to make a fire at Survival Rockport Camp

One of our strategic plan goals is to remove barriers to participation in Kestrel's programs and teaching. This work is hard and takes imagination, resources and most essentially, money. This year we have chipped away at this goal in ways big and small: Conservation Club is practically free; we transported kids from Beverly to our Survival Camp in Rockport; and we partnered with Beverly Children's Learning Center to provide programming for their after-school kids in their existing nature playground space. These small steps are important, but the work of breaking down barriers so that every kid gets to experience our deep science learning and inquiry while outside getting all the benefits of nature connection is a big mission. Thank you so much for being a part of it.

- Caitlin Featherstone
Chairperson of the Board of Directors

Kestrel Staff

Jessica Kagle, Program Director

Jessica holds a master's degree from Harvard Graduate School of Education, and has a lifelong passion for playing in the woods and along the shorelines. She has 20 years of experience as a professional naturalist and educator, and a great love for the wildlife and lands of New England. She spent five years as a middle school science teacher, with an emphasis on designing semester long service learning projects with her students. Jessica teaches primarily through asking children to design creations based on real experiences, and by encouraging them to be adventurous and muddy. She loves nothing more than educating people through relationships with wildlife. Jessica founded Kestrel 18 years ago, and specializes in curriculum design for project based learning.



Fern MacDougal, Instructor

Growing up in Gloucester, Fern spent countless hours rambling in Dogtown and in the evergreen North Woods. She has an insatiable curiosity about plants and wildlife, and a great knowledge of both. Fern graduated from Warren Wilson College with a degree in Environmental Science and holds a master's degree in conservation ecology from the University of Michigan. Fern works both as an environmental activist and an educator.



Curtis Sarkin, Instructor

Curtis received a bachelor's degree in Natural History from UMass Amherst. Before working for Kestrel, he taught hands-on marine science, conducted whale and turtle research, and explored the rainforests and reefs of Central America and Australia. He has been educating the public about local wildlife for over ten years, and enjoys nothing more than when children ask him challenging and thought-provoking nature questions. Curtis served for two years as the Kestrel science program and nature cabin instructor at the YMCA's Camp Spindrift, and also taught school and after school programs during the rest of the year.



Lis Kernan, Instructor

Lis graduated with her BSc in Zoology & Ecology from James Cook University in Australia, and spent virtually all her free time in the tropics meeting as much of the unique native wildlife as she could find. She worked for many years at Tolga Bat Hospital in Queensland, where each wet season she morphed into a full-time mother bat for hundreds of orphaned baby flying-foxes. She grew up exploring her "own" woods in her backyard in Lexington, MA. Lis is unendingly curious about the surprising behaviors, habits, and interactions of living things that can be found in natural and urbanized spaces right around us, and is passionate about fostering a peaceful (and beneficial!) coexistence between humans and wildlife.



Kestrel Staff

Emily Craig, Instructor

Emily graduated from Essex Technical High School with a concentration in Natural Resource Management. She is now a student at Endicott College majoring in Early Childhood Education. Emily found Kestrel her senior year of high school and interned for us throughout the winter and spring. As she moved on to college she could not resist coming back to Kestrel and now works for us! She enjoys being outside, learning, and adventuring. She has a passion for teaching and the outdoors. She grew up in a very adventurous family where she got to explore the environment around her, but she wishes she had a place like Kestrel when she was growing up!

Amber Espar, Instructor

Amber has worked as an environmental educator and community organizer for over 18 years. She has taught programs for ages preschool through high school with Kestrel, Groundwork Somerville, Mass Audubon, the Palo Alto Junior Museum & Zoo, and the Cambridge School of Weston. Amber is part of the True Story Theater company, performing improvisation that celebrates human connection and promotes healing of divides. She has worked for Kestrel as an instructor on and off for over ten years, and especially enjoys bringing improvisation and storytelling into our science programs.

Stephanie Scadding, Development Associate

Stephanie has a degree in English from the University of Vermont, and 10 years of development experience at Oxfam and Alliance for Democracy. She is working on establishing more long term revenue for Kestrel, through grant writing and donor relations. She enjoys being able to engage with donors, and helping to connect them with projects they find meaningful. Outside of work, Stephanie loves spending time outdoors with her family and new dog Lucky. Her current favorite job perk is hanging out with baby turtles.

Tracy Bowen, Bookkeeper

Tracy is grateful to have grown up in a place and a time where she was free to roam unsupervised in the Great Sippewissett Marsh and play with the animals at neighboring Sacconnesset Farm on Cape Cod. She's a great believer in giving kids time to explore nature and in Kestrel's mission; she's hopelessly drawn to working in non-profits. Tracy keeps our finances organized and manages our payroll.



Program Highlights

Gloucester High School (GHS) Predator Ecology

Thanks to support from Applied Materials Foundation, Brace Cove Foundation and Sam Park & Co. (Gloucester Crossing), we have launched a multi-year partnership with GHS to study the presence and impact of local predators such as Eastern Coyotes.

Kestrel instructors collaborated with Biology, Ecology, and Environmental Science teachers to put together a science exploration-based study of the ecology of nearby Seine Field, a rare heath plain habitat in East Gloucester. The students collected authentic data to be used to track not only the larger predators, but also their prey, and the food their prey eat.



The Kestrel Instructors and Gloucester teachers aimed for the students to be part of understanding and documenting the interconnections and changes in a local ecosystem, and understanding the value of predators and how they interact with small animals and plants. The students conducted an inventory of the plants that provide food for small mammals and birds, such as oak, sumac, and pine trees, and blueberry shrubs. They also collected data on scat, burrows, and feeding sign of small mammals. Additionally, students monitored four trail cameras, which captured footage of larger wildlife, and which continue to be monitored.

As a classroom project, students used their own field data to pull this information together. In small groups, they drew trophic pyramids that represented the amount of energy required to support the living creatures of their local woods, at each level of the pyramid.



Thanks to our generous funders, this program will be continuing at Gloucester High School for the next two years.

Beverly Children's Learning Center



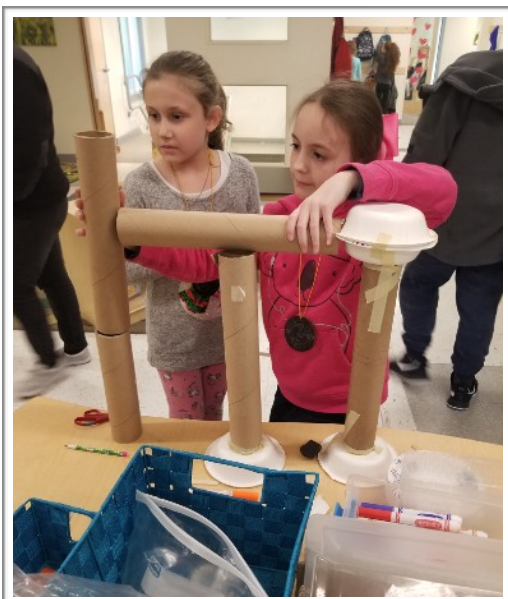
This year, we began a yearlong partnership with BCLC, a community child care and community services agency in Beverly. BCLC's nurturing, child centered and nature - connected philosophy is a close match for Kestrel's programming.

We began with a five week long session based on biomimicry, with all school age kids at BCLC meeting with us once a week. Students learned about animals that design extraordinary homes and are able to have security systems, underwater and underground entrances, and superb warmth. They met some live animals and learned about their building techniques.

Each week, our students used our array of art materials to craft something *for humans* to live in that mimicked some of the designs used by the study animal of the day. Students were given highly open ended challenges such as *design a human home with an underwater entrance*, or *design a super warm sleeping space for people*. On the final day, students were challenged to review the wildlife building skills we had explored, and choose one or more of these skills to inspire a human home. The kids could barely

stand the planning and discussion phase; they were so excited to start building. Once they got their hands on the art materials, they could not be stopped. They naturally formed small groups, brainstormed and argued and experimented. Their final pieces included elaborate tunnel systems connecting parts of homes, and giant insulated nest- like structures.

Special thanks to New England Biolabs Foundation and Corporate Donation Committee for their generous support of this program, our Conservation Club, and other Essex County programs!



Rockport Middle School (RMS) 7th Grade Turtle Head Start

During the second year of Kestrel's turtle raising partnership with RMS, the students' conservation science project waded deeper into the study and analysis of the turtles and their growth. Supervised in this work by Grassroots Wildlife Conservation, Kestrel is a volunteer Head Start site. Similar to last year, Kestrel raised two rare Blanding's Turtles, keeping them warm and well fed all year, in preparation for their release into the wild. Head started turtles are much larger than their wild counterparts, and have a far greater chance of survival, thus aiding in the recovery of rare species. The entire 7th grade took part in monitoring Bert and Ernie the turtles' growth, comparing their growth rates to other Head Start turtles.



Unlike the second year Blandings' turtles we cared for last year, we took in Bert and Ernie when they were only about 2 weeks old, and at the time, were refusing food. We had to monitor their health, eating, and weights carefully to make sure they were progressing. By the end of the year, they were ravenous eaters and growing quickly. Alongside the turtle monitoring, we conducted an investigation into the big ideas of food webs, ecosystems, population ecology, and nutrition and growth, using the turtle project as a touchpoint for understanding concepts. At the end of the year, they chose the layout and headings, contributed original photography and their own observations, and researched the history of the project and wild habits of Blanding's Turtles. You can view their website live: <https://rmsturtles.blogspot.com/p/conservation-science.html>

Special thanks to the Institution for Savings Charitable Foundation and the Rockport PTO for their support of this program!



Kestrel Summer Adventures Camp: Being Animals

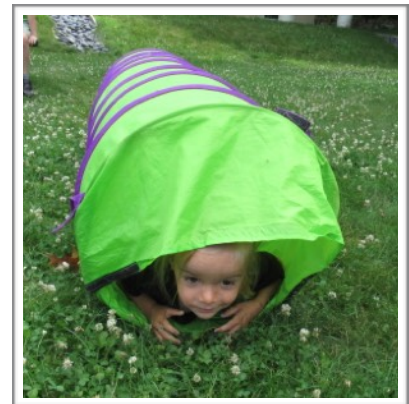


Camper displays her "claycorn"

Our little animal were once again stationed at Glen Urquhart School in Beverly Farms this summer. Each morning, a different spell transformed the 4 to 6 year old campers into local animals. We started with stories every day, learning what it would be like to be a Caddisfly, Red Fox, River Otter, or other creature. Our campers impressed us with their insatiable curiosity about each animal, and their imagination.

For Eastern Chipmunk day, campers made themselves pretend snacks out of modeling dough that they deemed "claycorns." They even practiced carving nibbles into the claycorns to show how different animals would feed on them, and played animal meal guessing games. On our caddisfly morning, we actually found many of these small water creatures by overturning rocks in the stream, placing them in our water tubs, and watching them crawl around

Actual caddisfly and being a caddisfly!



like living sticks. Then we made our own caddisfly cases out of sticky tape and things we found in the woods.

On heron day, it was extremely hot, and our campers spent a good long time wading in our kiddie pool (pretend lake), spearing prey with their (skewer stick) beaks. On otter day, we practiced our sliding and hunting for fish. One of the favorite moments was the morning we were all White Tailed deer. We had a spotted jacket, into which we would zip a camper playing the role of a young, spotted deer fawn. Several other campers would then, as adult deer, hide their fawn in the forest, and the rest of the campers would have to find the little spotted fawn, which was camouflaged against the forest floor.



Can you spot the hidden fawn?

Kestrel Summer Adventures Camp: Survival Rockport



Over the course of our four weeks of Survival Rockport camp, 45 young adventurers learned to craft warm shelters, build fires without matches, and, perhaps most importantly, form a community. Every week was based on an evolving story; the instructors told the beginning and the campers created the rest. We were wolf and coyote researchers one week, and shipwrecked explorers another. On a third week, we had decided to try to survive off the land for an entire year and convince our families to join us, and, on "experienced camper" week, we had accidentally wandered out "off the map," and had to make our own maps of uncharted territory. On *Wolf Camp* week, the campers made up howling communication codes and formed pack structures. On *Off the Map* week, the campers decided to invite their families to try to find their hidden camp, then to leave them a map at the trailhead and let them try to find their way without any other help.



This summer's campers were, as usual, serious fans of wildlife. They named their wild toad and beetle friends, and practiced their respectful sneaking skills on a large water snake by "Otter Cove." We introduced a high tech element to two of our weeks of otherwise primitive camp, in the form of two motion-activated trail cameras. The campers combed the woods looking for signs of animal activity, then placed the cameras in spots they believed to be dens or feedings sites. To everyone's delight, in only three total nights of camera trapping, we recorded footage of a raccoon, fisher, and coyote. We ended every day of camp with an appreciation routine around our fire, sharing gratitude for people or things that had helped us that day, as we tossed a token ceremonially into the fire. At the end of each week, we celebrated our "rescue" with campers' families. These ending celebrations were run by the campers, who would build and care for our final fire, give tours to the visitors, and tell the stories they created.



Special thanks to Essex County Greenbelt Association for permitting us to use Gott Lane Woods in Rockport as our summer classroom, and thanks to Rockport Elementary School for being our extreme-weather shelter!

Goals and Accomplishments

Strategic Plan 2018-2021

Goal: Remove barriers to participation - Kestrel strives to be inclusive and to serve the needs of all in our service area.

We've heard from families in our community that they struggle to bring their children to programs, especially to our camp in Rockport and our afterschool programs. We addressed this by adding an affordable transportation option from Beverly to Survival Rockport Camp. About a quarter of our campers rode in our "Kestrel-mobile" this summer. We have also added free transportation to our Conservation Club from Beverly Middle School, and more than half our club members use this option. We know that cost can also be a significant barrier, so we have continued to offer financial aid for our camp. The Conservation Club registration fee is only \$40 for ten weeks, in order to ensure its accessibility. We continue to provide a half day of training for all our instructor staff and program volunteers on inclusion and support of participants' abilities and needs.

Goal: Build partnerships with Beverly-area organizations to broaden nature connection offerings, strengthen community, and advocate for experiential learning during and outside of the school-day.

Still in the beginning stages of addressing this goal, we have built a strong partnership with the Beverly Children's Learning Center to provide weekly afterschool nature awareness programming. We continue our partnerships with several Beverly public and private elementary schools. We have been meeting with parents and community partners to form a longer term plan for facilitating greater connections between local schools and youth programs, and the wild spaces that surround them.

Goal: Increase and Deepen Long Term Partnerships with Schools, by including students and school staff in planning and implementation.

It is Kestrel's approach to invite our partner groups to collaborate with our team to design programs that best fit them. This year, the Kestrel instructor team worked closely with the Gloucester High School science teachers to design our multi-part study of local predators. We aligned the program with the standards requested by the teachers, and their ideas about activities for the classroom and field. We also began our partnership at Beverly Children's Learning Center with a collaborative meeting, and have shaped our programming around their needs and the nature playspace just completed on their grounds. Both of these programs are slated to continue into the coming years and to reach more students as a result of the partnership. The turtle Head Start is likely one of our most in-depth partnerships, involving Kestrel instructors working with an entire grade level throughout the year to monitor the growth of baby turtles. The school science teacher brainstormed project ideas with our staff, and facilitated some of the turtle Head Start classes when Kestrel was not in the school. Several additional schools have requested to participate in the turtle Head Start with Kestrel in the coming year.

Students and Schools

Beverly

Beverly Children's Learning Center
Cove Elementary School
Beverly Middle School
Glen Urquhart School

Gloucester

Gloucester High School

Everett

Parlin School

Manchester/Essex

Brookwood School
Essex Elementary School
Manchester Memorial School

Reading

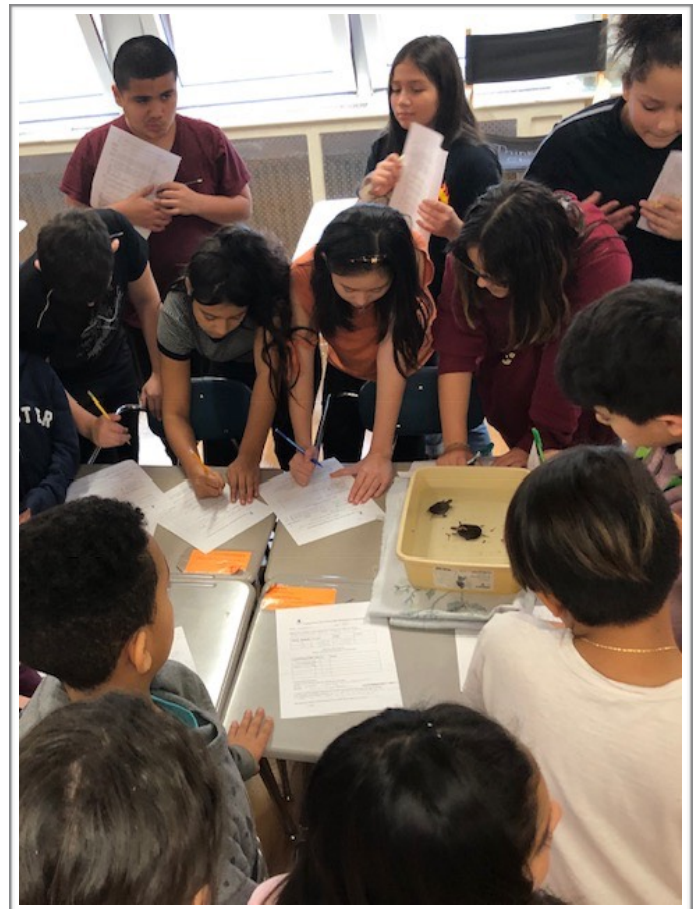
Reading Public Schools Extended Day
Wood End Elementary

Rockport

Rockport Middle School
Rockport Elementary Afterschool

Other

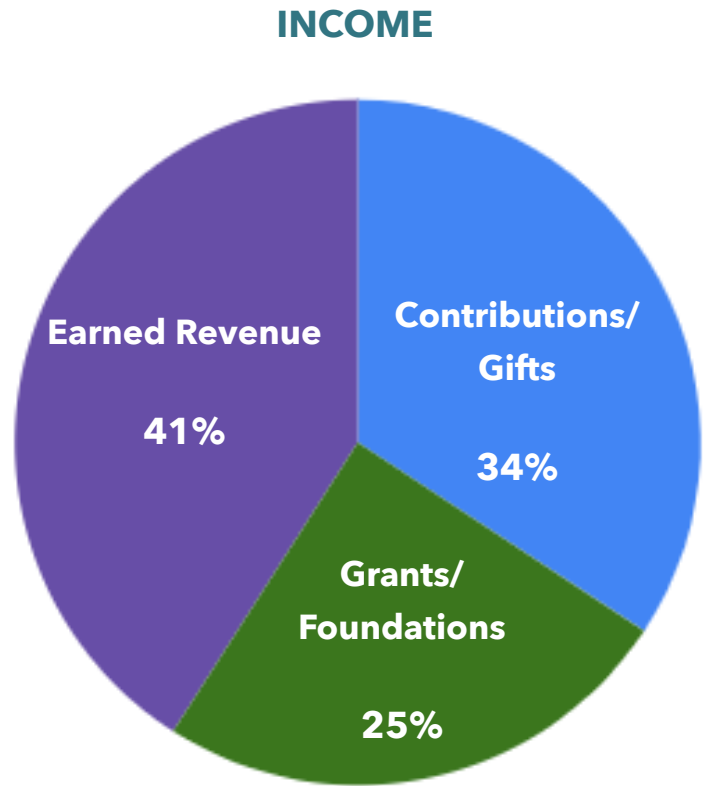
McCaulay Honors College, Brooklyn, NY



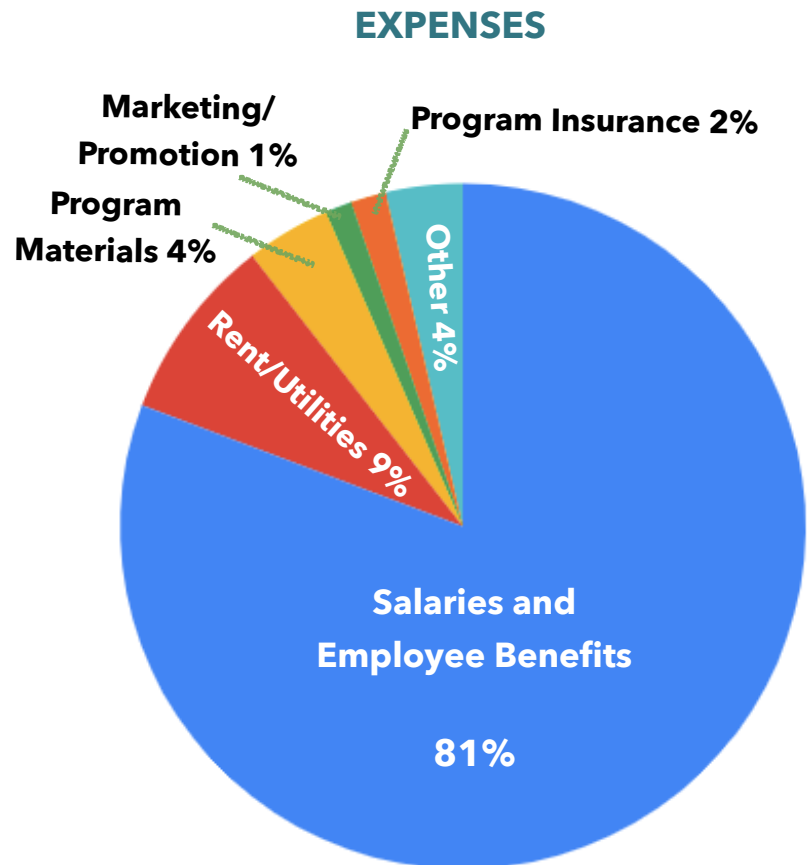
Financials

9/1/18 - 8/31/19

Income	
Contributions and Gifts	\$33,517
Grants and Foundations	\$24,300
Earned Revenue	\$40,164
TOTAL INCOME	\$97,981



Expenses	
Salaries, employee benefits	\$86,327
Rent, Utilities and Maintenance	\$9,329
Program and Office Materials	\$4,264
Marketing and Promotion	\$1,340
Program Insurance	\$1,780
Other	\$4,129
TOTAL EXPENSES	\$107,169
Net for the year	-\$9,188*



*Note: The net reflects grant money that was received the previous fiscal year, but spent this fiscal year.

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We couldn't do our work without the generous people, businesses and foundations that support us. Thank you.

\$3,000 +

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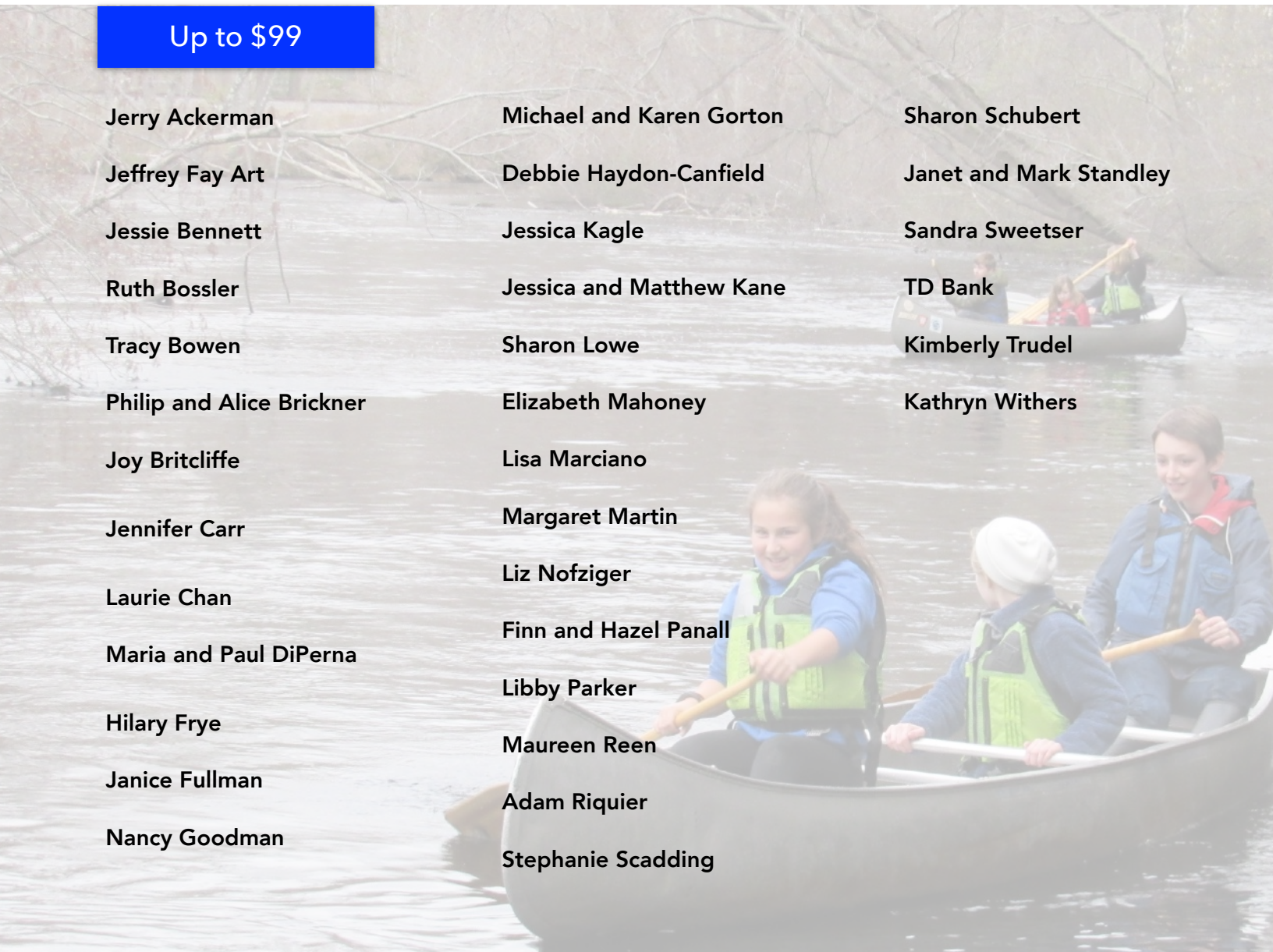
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Kathryn Withers



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Volunteers and In-kind Donations:

Thank you to Torey Adler, Katie Banks Hone, Tracy Bowen, Bram Lutton, Vince Giacalone and Endicott College, Benjamin Flemer, Emily Flaherty, Joseph Giso, Maritime Gloucester, Jim Lovatt, Rick Roth and The Cape Ann Vernal Pond Team, the Scadding Family, Glenn Scott, Jimmy Tarantino, Nick Taormina, William Taylor, Christine Kaye, Peter Warny, Bryan Windmiller and Emilie Schuler, Kathryn Withers, and many others too numerous to mention, who provided advice, support, and inspiration this fiscal year.

We'd also like to give a huge thank you to our auction donors, and the many enthusiastic bidders who continue to make our online auction so successful.

