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IMPACT
REPORT



Rising Together

Dear SML Supporters and Friends,

There are many things I could say about the challenges that 2020 presented to Shoals Marine Laboratory. The pandemic truly shook up our traditional approach to operating the lab. And you know what? A lot of incredible things happened. I have witnessed the strength of our community grow tenfold as members stepped forward through volunteerism, donations, and other forms of support. I was very moved when a few dedicated donors and supporters reached out last spring and asked – “what can I do to help Shoals navigate this pandemic?” Their commitment to SML’s mission lit a fire under me that has kept me going all year.

The staff certainly rose to the occasion as well. The typical “can do” attitude that Shoals is known for became a “can do stuff we never dreamed of” attitude that highlights the dedication of this team. From reframing our budget, business, and academic models to pivoting our operational plans several times, our staff pushed forward with patience and trust as we prepared for a season unlike any in the 55 years of the Lab’s existence. Over the summer, we hired a small posse of staff veterans who through leaps and bounds of innovation and creativity catapulted our programs online with great success. Our academic faculty were right beside us with their willingness and adaptability and the students were the lynchpin that brought it all together. At times, I wondered if they would enroll due to remote learning fatigue. They signed on in surprising numbers and were excited, flexible, and forgiving. With all this in place, we created an interactive and immersive online field learning experience! We – in person, field station devotees – discovered that online learning helped broaden and welcome more into our academic community.

The events of this year also shined a spotlight on our responsibility to understand and address our policies and practices that allow institutional racism to persist. In the fall, our staff engaged in a three-month diversity and equity training program to deepen our understanding of inequality in marine science, academia, and beyond. This initiative included community forums where over 50 Shoalers joined in conversation with staff to discuss avenues for addressing the barriers to accessibility and reducing inequities at SML. You brought dynamic, fresh ideas and we are so grateful for your enthusiasm as we work to make Shoals a place of belonging for all. Since then, we have launched our first ever Shoals Diversity Scholarship, developed an environmental justice course, and have begun formulating a strategic plan that will sustain diversity and inclusion over the long haul.

Shoals Marine Laboratory has grown immeasurably in 2020, and we could not have done it without you. We are excited to employ all that we have gained in terms of new knowledge, ideas, resources, and renewed commitment to continue delivering world-class academic, scientific, and outreach programs. The summer of 2021 looks to be another innovative opportunity. I hope you are as excited as we are to move forward with eyes wide open and hearts full of hope. Thank you for being a member of our community.

With gratitude,



Jennifer Seavey, Ph.D.
Executive Director



Education

An Innovative Approach to Bringing the Island to Our Students

As a marine field station whose primary mode of education is hands-on learning, we knew it was time to get creative when our programs shifted online. Our team, including faculty and a small group of staff members operating remotely from Appledore Island, underwent specialized training and deployed customized equipment to create interactive online lesson plans that brought the island experience to our students.

Julie Burgess, a UNH Zoology major enrolled in *Coastal Habitat Field Research Methods*, was amongst a dozen other students who ventured virtually into Appledore's diverse ecosystems via livestreams broadcasts. Julie and her classmates could ask questions and interact with their faculty and TA's, who were live in the field delivering real-time lectures and lessons.



"Online experiential learning sounded like an oxymoron, but I was very impressed with how interactive an online course could be. After livestreaming with Dr. Moore in the field, he had us conduct our own research projects and plant collections which allowed me to apply newly acquired knowledge to my backyard. Making that connection to my own physical environment was an extremely valuable learning experience."

Julie Burgess, '21, University of New Hampshire

In addition to livestreams, our team of videographers spent countless hours on the rocky shore, below the surface, and elbows deep in sea tables photographing and recording organisms and environments that captured the ecological complexity of the Gulf of Maine. This content opened doors to new possibilities by bringing students into environments that are often inaccessible.

Launching Marine Science Resources Webpage

We built a library of over 100 educational videos, ranging from intertidal ecology to physical oceanography, that are packaged in playlists and available to our faculty, students, and the public. These videos increase the accessibility of our learning programs by offering public educational materials for students enrolled in courses at SML and other institutions. Please contact us to learn more.



2020 Education Highlights

- + Offered six online courses for the first time in the Lab's history
- + Over 100 course enrollments
- + Students enrolled from 18 undergraduate institutions & 38 high schools
- + 74% of total enrolled students received financial aid
- + SML awarded over \$165,000 in donor-funded scholarships
- + SML staff built a library of over 100 educational videos
- + Established first ever Shoals Diversity Scholarship



Videographer David Brown conducting a livestream dive, bringing students underwater for an immersive experience

Research

SURG Goes Remote

In a typical summer, the Shoals Undergraduate Research Group (SURG), comprised of approximately 18 undergraduates from around the world, spend 10 weeks on Appledore conducting independent studies. Last summer, SML hosted four remote undergraduate researchers from Cornell University, the University of New Hampshire, and Stanford University. Working with pre-existing data sets, these students conducted independent studies on topics ranging from the impacts of climate

change on seabird diets to the diving behavior of sleeper sharks. Their program involved weekly meetings with their collaborative mentors, Dr. Mike Sigler, Dr. Elizabeth Craig, and Dr. Kylla Bennes.

As a SURG member, **Olivia Smith** conducted research on the effects of climate-mediated changes in the diet of the threatened common tern.

"This opportunity has taught me so much about the scientific process, statistics, and of course seabirds. Despite being virtual, the SURG mentors did a wonderful job connecting the interns and creating a sense of community, which is one of my favorite aspects of the Lab. The skills I learned this summer are ones I will carry throughout my career as I pursue my passion for protecting seabirds."

Olivia Smith, '22 University of New Hampshire



2020 Research Highlights

- + Four students conducted remote research under the SURG Program
- + SURG presented at three scientific conferences & symposia
- + Shoals Tern Conservation Program recorded greatest number of Common Tern breeding pairs (3,280)
- + SML researchers continued data collection for 38 year old Shoals intertidal transect study
- + With the support of a generous donor, SML installed two live webcams to facilitate remote research of the Appledore Island gull colony & Duck Island seal population

Shoals Tern Conservation Program Discovers Record Highs

Every summer, a group of three scientists implement restoration, management, and research of threatened and endangered terns on White and Seavey Islands. These efforts include predator control, habitat management, diet studies, etc. This year, tern populations continued to rise as researchers recorded the highest number of state-threatened Common Terns to date (3,280 breeding pairs total). These numbers reflect the importance of conservation efforts for these vulnerable species and others alike.



Continuing Long-Term Data Sets

SML has several long-term research projects that represent an archive of uninterrupted data collected over the last 50 years. To prevent breaks in these critical data sets, the Lab hosted several researchers who spent days in the field making up for what would be a summer's worth of work. We are incredibly grateful for their contributions to these unique studies that strengthen our understanding of long-term changes in the Gulf of Maine.



Outreach

Reimagining SML's Rock Talk Seminar Series

Our Rock Talk Seminar Series is a well-loved tradition that offers students the opportunity to hear from professionals in STEM. In a typical year, guest speakers visit the island and present on a variety of topics, giving students a valuable glimpse at real-world challenges being addressed in marine science. To continue offering this learning opportunity, SML held weekly zoom webinars featuring over 20 guest speakers from around the world and extended our series to run from May through December. By shifting these presentations online and opening them to the public, we increased the accessibility of our learning programs and nearly doubled the size of the audience we were able to reach.

Sharing our Sustainability Story

SML is a living laboratory with low-impact infrastructure and behavior that cultivates leaders in sustainability, education, and research. To better understand our sustainability initiatives, we created a live dashboard that allows our engineers and researchers to monitor the Lab's energy consumption and production via solar, wind, and generators. This website consolidates valuable long-term data and serves as an educational tool for our courses, research programs, and outreach initiatives. In fact, SML's energy grid is now serving as a model for a UNH project funded by a \$600,000 grant through the U.S. Economic Development Administration that aims to find viable solutions to the energy and freshwater insecurities of New England coastal communities.

Bringing Celia Thaxter's Island Garden to You

Every summer, hundreds of Garden Tour participants take a step back in time to experience the rich history and serenity of Celia Thaxter's garden. After canceling public tours due to COVID-19, we collaborated with Rolling Green Nursery, the city of Portsmouth, a generous donor, and a team of dedicated garden volunteers to bring Celia's iconic garden to the mainland. While the island flowers flourished and remained untamed, seedlings were sprouting from their fresh beds planted in Prescott Park, Portsmouth. From sweet peas and poppies, to daylilies and hollyhocks, members of the public could safely experience blooming flowers that echoed the unique beauty of Celia Thaxter's island collection.



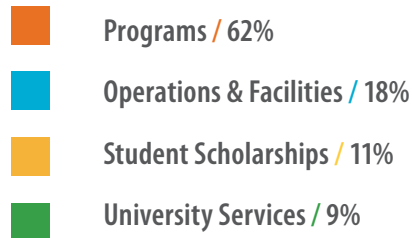
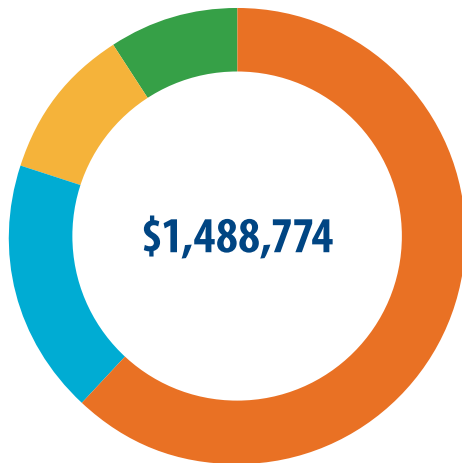
2020 Outreach Highlights

- + Transitioned Rock Talk Seminar Series online, featuring 24 guest speakers
- + Launched Shoals Sustainability Dashboard, a website that tracks & archives energy consumption & production data
- + SML's energy grid assigned as a model for UNH project working to improve energy & freshwater insecure New England coastal communities
- + Installed a Celia Thaxter inspired garden in Portsmouth, NH
- + SML featured in 16 media stories, including CBS Sunday Morning
- + SML hosted a virtual Annual Alumni & Friends event - 115 participants tuned in from around the globe to learn about SML's 2020 season
- + Established volunteer-led Alumni & Friends Recruitment & Networking Committees to strengthen student recruitment & outreach initiatives

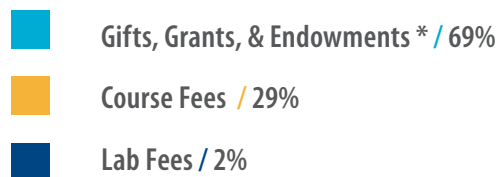
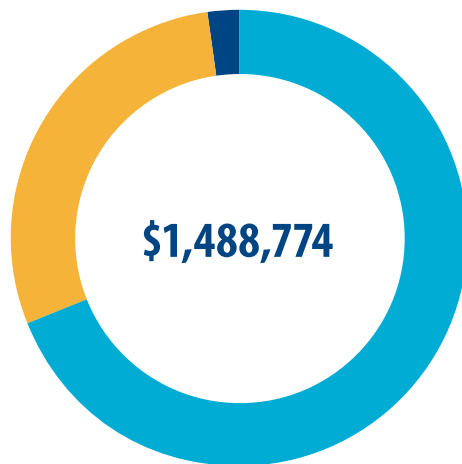
SML Executive Director, Dr. Jennifer Seavey, being interviewed by CBS Sunday Morning reporter, Kelefa Sanneh

Financials

2020 Expenses



2020 Revenue



*See table below

Because of your support

2020 was a unique year for SML in many ways, including financially. While SML typically relies heavily on academic course fees to fund our mission-critical programs and operations, the pandemic caused our revenue from courses to be less than half that of a normal year. To compensate for this revenue loss, SML was able to divert unrestricted funds (without drawing from endowment principles) toward programs, operations, and staff resources. It is largely due to the ongoing commitment of our generous donors and partners that SML was able to face the challenges of the pandemic with strength and end the year in a healthy financial position. Thank you.

| Gifts, Grants, & Endowment Allocation: \$1,029,229 | |
|--|-----|
| Scholarships | 22% |
| Programs | 37% |
| Staff | 15% |
| Facilities & Operations | 26% |



Dive In!

Tune into Appledore

Visit our website shoalsmarinelaboratory.org to learn about our Public Programs, Rock Talk Seminar Series, online marine science resources, and virtual events!

Donate

SML relies on donor generosity to provide world-class, immersive education and research opportunities to students. Every dollar you invest in a SML student makes a difference in their education and future. Visit shoalsmarinelaboratory.org/give to make your tax-deductible donation through Cornell University or the University of New Hampshire. If you have any questions about how you can make an impact through your philanthropy, please contact Director of Community Relations Isabel Aley at isabel.aley@unh.edu.

Follow Us

Keep up to date with SML happenings by subscribing to our monthly newsletter at shoalsmarinelaboratory.org/newsletters. If you frequent social media, like our Facebook page and follow us on Twitter and Instagram!



Reach Out Anytime

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Front and back cover photos by Collin Love



Thank You 2020 Partners

Shoals Marine Laboratory was fortunate to work with dozens of partners and collaborators who supported our operations and helped make 2020 a successful year, despite the pandemic. We are grateful for their support and collaboration, which allowed SML to develop innovative educational programs and deliver on our mission.

Atlantic White Shark
Conservancy

Backscatter Underwater
Photography &
Videography

City of Portsmouth

Clean Energy NH

Community Development
Finance Authority

Community Loan Fund

Cornell Alumni Affairs and
Development

Cornell College
Agriculture and Life
Sciences

Cornell School of
Continuing Education and
Summer Sessions

Federal Economic
Development
Administration

Island Institute

Kittery Point Yacht Yard

Lewis Family Foundation

Maine Department of
Marine Resources

National Oceanic &
Atmospheric Admin.

National Science
Foundation

New Hampshire
Charitable Foundation

New Hampshire Coastal
Adaptation Workgroup

New Hampshire
Department of Business
and Economic Affairs

New Hampshire
Department of Natural
and Cultural Resources

New Hampshire Fish and
Game Department

New Hampshire General
Court

New Hampshire Sea Grant

Ocean Technology
Systems

Organization of Biological
Field Stations

PEASE Development
Authority

Portsmouth Economic
Development Department

Revision Energy

Revolution Energy

Rolling Green Nursery

Rosamond Thaxter
Foundation

Seacoast Science Center

Star Island Corporation

State of Maine
Department of Health and
Human Services

The Virtual Field Project

U.S. Fish & Wildlife Service

UNH Advancement and
Alumni Relations

UNH College of
Engineering and Physical
Science

UNH College of Life
Sciences and Agriculture

UNH Institute for the
Study of Earth, Oceans,
and Space

UNH School of Marine
Science and Ocean
Engineering

UNH Sponsored Programs
Administration

United States Coast Guard

Unitil Corporation

University of
Massachusetts Boston

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Associate Director

David Brown
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Diving Safety Officer

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Shoals Marine Laboratory is operated jointly by
Cornell University and the University of New Hampshire.



University of
New Hampshire



Cornell University