

GREAT POND FOUNDATION

ANNUAL REPORT 2018



GREAT POND FOUNDATION

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Heritage of Tom Wallace

Over a period of more than 40 years, Tom Wallace has made enormous contributions to the character and health of the Great Pond community, always guided by his vision of thoughtful development with respect for the natural resources around us and for each other. Creation of the Foundation and its increasing effectiveness over two decades are due in large part to his leadership and his service as a quiet, supportive partner of the Town, for which we express our profound thanks and appreciation.



President's Letter

Dear Friends and Supporters,

This is truly a milestone year for Edgartown Great Pond. In 2008, the Massachusetts Estuary Project (MEP) found that the health of our Pond was impaired and established specific standards for a healthy estuary. By January of this year, water quality and ecosystem health have improved to the extent that the criteria for a healthy pond are

now being met - a restoration success story!

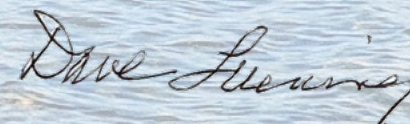
Major contributors to this remarkable improvement have been regular dredging to improve effectiveness of openings to the sea, increased attention to timing the openings, continuing development of a healthy oyster population, and additional regulations to reduce nitrogen input to the Pond. All of this has been possible through cohesive actions by the Foundation, the Town of Edgartown, the Martha's Vineyard Shellfish Group, and others who share our commitment to preserving this extraordinary resource.

While celebrating progress, we are acutely aware of the ongoing challenge presented by this resilient but fragile coastal pond. With the unpredictability of Mother Nature, unexpected threats will continue to appear. In response, we are called to continue investing in science-based understanding of the complex and ever changing aquatic ecosystem.

From the beginning of the Dredge Program in 2008, Steve Ewing has provided invaluable support and guidance, generously sharing his lifelong love of the Pond and 40 years of experience in marine construction. With his retirement as Dredge Manager, we are exploring options for managing the program going forward. At the same time, based on a current assessment of Nessie's physical condition, we are estimating her remaining useful life and evaluating alternatives for repair, overhaul, or replacement.

All of the accomplishments to date have been made possible by the generous support of our donors that is greatly appreciated. It is doubly gratifying to see that the return on this investment goes beyond the shores of our own Pond. Much of what is being learned will be instructive for better management of other estuaries across the Island and beyond.

We hope you find this report to be interesting and informative and welcome your questions and your thoughts. With your continued generosity and support, we will do our very best to be good stewards of Edgartown Great Pond.



Dave Luening, President
Great Pond Foundation

Science and Education Report



In 2018 we began our 3rd season of intensive water sampling on Edgartown Great Pond. Great Pond Foundation's commitment to documenting the water quality and ecosystem health of the Pond allowed us to be the first to document that Edgartown Great Pond is meeting and exceeding pond health standards. Edgartown Great Pond is a [restoration success story](#) and a report from the Martha's Vineyard Commission provides further support for the fact that EGP

may have achieved compliance with the Clean Water Act, likely allowing the "impaired" status, that was designated by the 2008 Massachusetts Estuaries Project (MEP) study, to be lifted.

Great Pond Foundation's longtime supporters, the Town of Edgartown, and other dedicated Island organizations, such as the Martha's Vineyard Shellfish Group, can take credit for this hard-fought but successful restoration story. With your support, Great Pond Foundation funded the purchase of a dredge and established a dredging program to increase the effectiveness of EGP openings in response to the poor water quality documented in 2008. For the last decade Great Pond Foundation, under the management of Steve Ewing, has operated the dredging program with the sole goal of improving the health of our beloved Pond. The effectiveness of this program is demonstrated by the restoration of water quality, the spreading of eelgrass meadows, and the vibrant oyster population.

To learn more about the restoration process and the Edgartown Great Pond ecosystem from scientists and local experts, please join us for our summer science speaker series: [Local Waters, Living Waters](#), this summer at the Edgartown Public Library.

Last year, 2018, marked the first sighting of the clinging jellyfish, *Gonionemus vertens*, in Edgartown Great Pond. This small and potent jellyfish clings to eelgrass blades and its earliest local observation was recorded in the 1800's in Woods Hole. The first [scientific study](#) about clinging jellyfish in Edgartown Great Pond was published in the spring of 2019, along with our colleagues from the Woods Hole Oceanographic Institution (WHOI) and the Oak Bluffs Shell-

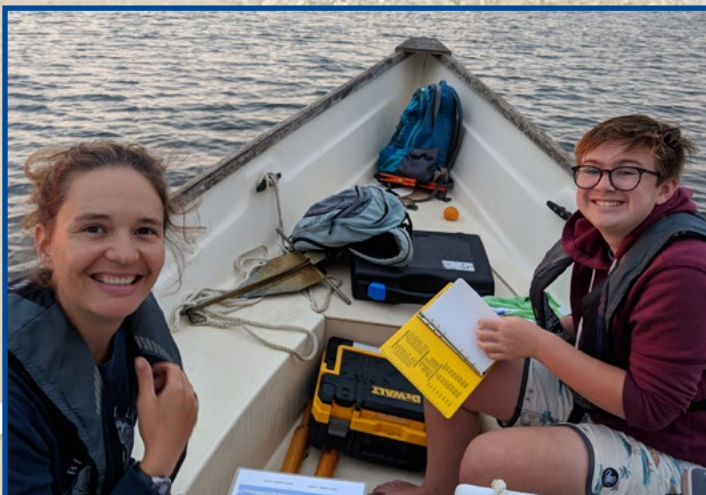
fish Department. Learn more about this study from WHOI scientist Mary Carman in a summary of the study entitled "Pond Invaders". The jellyfish samples from Edgartown Great Pond were collected by our 2018 summer interns Sam Hartman and Spencer Goldsmith. After 3 seasons as a GPF intern, Sam is now pursuing an undergraduate degree in Biology at Clark University. In the fall of 2019, Spencer will begin a year studying abroad in Germany.



Mary, Spencer and Sam after collecting jellyfish.

Edgartown Great Pond has a thriving ecosystem today because Pond and Town leaders had the foresight to begin monitoring and protecting this unique and precious habitat decades ago. One of the earliest among us to begin this work was John MacKenty on Wintucket Cove. Learn more about the early conservation efforts to designate Edgartown Great Pond as a District of Critical Planning Concern (DCPC) and the nearly 30 years of Pond elevation and opening data that John has been collecting in "John MacKenty: Keeping a Pulse on Edgartown Great Pond". As we plan for the next 30 years of Pond conservation, we build upon the work of those early leaders and combine the body of historical data with modern technology. John has been gracious enough to entrust GPF with his treasure trove of Pond data. Julie Pringle, GPF's Field Science Coordinator, has begun the process of digitizing John's data so that it can be analyzed with the modern data we are generating today. These current and historical records will provide valuable insight to help improve pond opening efficiency, and also add context for historical water quality data.

Emily Reddington
Executive Director



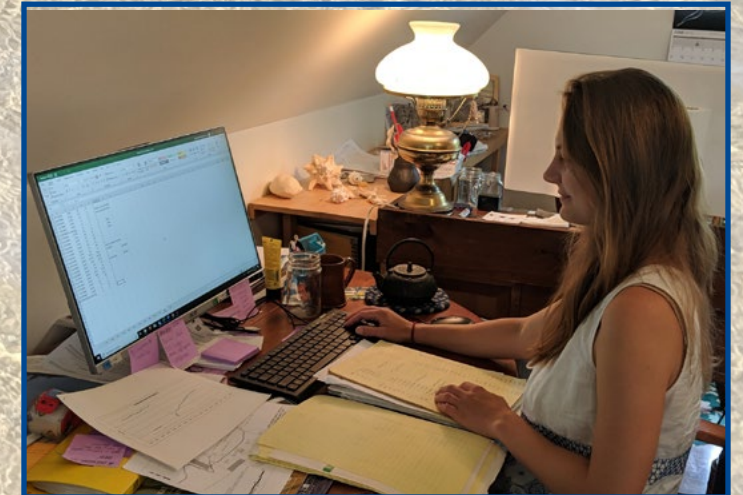
Jess Drysdale and Spencer collecting data.



Sam, our Senior Intern in his 3rd year at GPF.



Wild oysters after a remarkable 2018 natural set.



Julie entering John MacKenty's historical data.



Finance Report

Contributions to the Great Pond Foundation in 2018 reached a record \$261,785, up \$51,773, or 25%, from 2017. However, reflecting depressed fi-

nancial market conditions at the close of 2018, net investment return was a negative \$25,671, or \$99,900 less than the prior year. As a result, total revenue declined \$48,127, or 17%, to \$236,114.

tions. Dredging significantly increases the effectiveness of Pond openings, which are normally managed by the Town. To remedy an exceptionally high Pond level in March 2018, the Foundation obtained permission from the Town to immediately open the Pond. Dredging represented 33% of 2018 total expenses.

Looking Ahead

Depreciation of \$31,192, or 9% of the total, was 15% lower than the prior year. Fundraising, handled largely by volunteers, was \$6,763, or 2% of the total.

Our 2016 change in fiscal year appeared to have affected the timing of contributions in 2017, so we were particularly appreciative that donations rebounded solidly in 2018. There was broad support from around the Pond, with notable increases from the Boldwater, Turkeyland and Herring Creek neighborhoods. Total 2018 expenses of \$339,351 were \$30,722, or 8%, lower than a year earlier.

Our focus is on proactively maintaining and enhancing the health of Edgartown Great Pond. To that end, our emphasis has been on dredging and, increasingly, on Science and Education programs to monitor the effectiveness of our activities. Science and Education programs represented 41% of total expenses. Spending declined 6% from a year earlier to \$139,934 despite increased spending on professional fees, including research and publication on invasive clinging jellyfish in the Pond. The prior year, we had a Martha's Vineyard Vision Fellowship intern on staff.

Nevertheless, there are challenges. The Pond, while healthy now, is fragile, and adverse conditions or neglect could undermine years of effort. Nessie, our dredge, is approaching the end of its projected useful life. And financially, after years of building reserves to finance the maintenance and ultimate replacement of Nessie, revenues have fallen short of expenses for the past two years.

Our success in maintaining a healthy and beautiful Great Pond relies on the continued and increased support of our generous contributors. For that, we are extremely grateful.

Bob Rukeyser

Bob Rukeyser
Treasurer

Dredging activities totaled \$111,118, 18% less than 2017. Dredging expense varies significantly depending on weather conditions and maintenance needs. We had significantly fewer labor hours in 2018, and the prior year we had the expense of a new steel skiff to better support dredging activity in icy winter condi-



Dredge Report

The 2018/19 dredge season was a very good one for Edgartown Great Pond. The crew operated the dredge from October of 2018 to the beginning of May, 2019. The amount of dredging accomplished translated into a good Pond flush when the opening was cut on March 24, 2019. The opening was of decent duration and resulted in a fine tidal exchange with the sea.

There was a fair share of ice during the winter months, which made it somewhat difficult to get across the Pond and out to the dredge each morning. However, the new steel skiff acquired by the Foundation last year proved its merit in spades as it rode up on the ice and broke it up as it moved ahead.

The dredge program in Edgartown Great Pond has been run under a private-public partnership with the Town of Edgartown which has allowed Nessie, the Foundation's 10-year-old portable dredge, to pump all the sand out of the flood delta that is allotted under dredging permits held by the Town. This has been accomplished thanks to Tracey's incredible resourcefulness and mechanical ability along with Russ's skill in making the dredge "talk" as he moves just the right amount of sand without pushing her too hard.

Thanks again to our Slough Cove neighbors the Schwartzs, the Malms, and Glenda Madeiras for providing space for staging operating equipment in a difficult time of year and storage in the off season. Thanks also to Emily Reddington and her husband Marty Harris, both of whom were very helpful in dealing with important issues over the course of the winter.

When the season ended in May, and before Nessie was hauled out of the Pond for the winter, a marine survey of her condition was undertaken to assess the dredge's mechanical status and to gauge her overall condition. Discussion is currently underway to better determine her life expectancy and consider alternatives for operation of the dredge program going forward.

All this considered, I have decided to step down as the Foundation's Dredge Manager at this time. I will stay on until everyone is comfortable going forward. I am glad to have been given the opportunity to help contribute to the ongoing health of Edgartown Great Pond in this capacity for the last 10 plus years. I am sure the Town also realizes the significant impact GPF's initiative and resources have contributed to the Pond's well being.

Thanks again,

Steve

Steve Ewing
Dredge Manager



Pond Invaders: Clinging Jellyfish

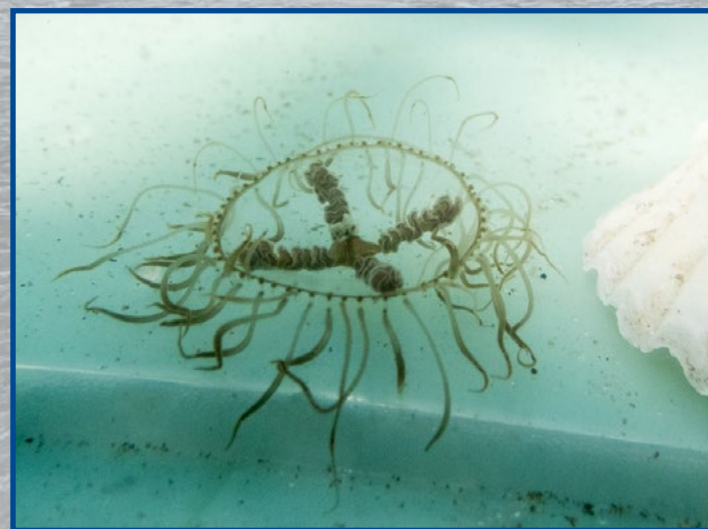
By Mary Carman

In recent years, the cryptogenic and often highly toxic jellyfish *Gonionemus* sp. has appeared in new locations around the globe and has become increasingly abundant in New England where it is now associated with severe stings. Several such stinging incidents have occurred on Martha's Vineyard. It appears that *Gonionemus* sp. may be expanding its range in this region. We surveyed for this jellyfish in the major coastal ponds of Martha's Vineyard in 2018. We found *Gonionemus* sp. present in five ponds: Farm Pond, Sengekontacket Pond, Lake Tashmoo, Stonewall Pond, and Edgartown Great Pond. Medusae were associated with eelgrass in all cases. Salinities for medusa populations ranged from 18 ppt in Edgartown Great Pond to 29 ppt in the other ponds. The lowest, previously documented salinity for *Gonionemus* was 19 ppt. *Gonionemus* sp. was not observed in years prior to 2018 in Edgartown Great Pond, but was observed in the other ponds.

This new occurrence of [Gonionemus sp. in Edgartown Great Pond](#) represents an expansion for the species. However, all of the medusae collected were males and thus may represent an entirely clonal population. These medusae are the first record of *Gonionemus* sp. in Edgartown Great Pond. Medusae were most abundant in the portion of the Pond near the town landing, which suggests that the medusae could have originated by clonal polyps associated with a boat hull. Given the presence of male and female medusae in other parts of Martha's Vineyard, it seems likely that additional genetic individuals will arrive in the near future, potentially establishing a sexually reproductive population (Carman et al. 2019). I look forward to surveying Edgartown Great Pond for *Gonionemus* sp. in 2019.



Mary and EPA scientists after an eelgrass survey.



Gonionemus sp., the clinging jellyfish. Photo by Ray Ewing for the Vineyard Gazette.

Reference:

Carman MR, Grunden DW, Reddington E, Govindarajan, A (2019) Distribution of the highly toxic clinging jellyfish *Gonionemus* sp. around the island of Martha's Vineyard, Massachusetts, USA. *Marine Biodiversity Records* <https://doi.org/10.1186/s41200-019-0166-5>

Field Team 2019

Great Pond Foundation made a further commitment to our scientific program with the addition of Julie Pringle, Field Science Coordinator, to our year-round scientific staff on April 22nd, 2019, Earth Day. A most fortuitous day to start! We feel extremely lucky to have such an intelligent, hard-working, and committed field team in 2019 and we cannot wait for you to meet them.

GPF's Field Science Coordinator: Julie Pringle

We are delighted to introduce Julie Pringle, who recently completed her Master's degree at University of Connecticut Avery Point, where she studied biological oceanography. At UConn, Julie's thesis focused on coastal ecology, specifically age and growth patterns of the Atlantic silverside, a small but abundant fish that plays an important role in the food web. Prior to graduate school, Julie worked as the Water Resources Intern at the Martha's Vineyard Commission and as a Laboratory Assistant at the Woods Hole Oceanographic Institution. As an undergraduate, Julie attended Tufts University, where she received a B.S. in biology. Julie has all of the academic qualifications and experience she needs to succeed as a field biologist, but it is her ability to solve problems, think one step ahead, and her careful attention to detail that make her the ideal Field Science Coordinator.



As a native Islander Julie developed a passion for anything water-related from an early age. Her childhood spent sailing and swimming led to a curiosity about the creatures living under the surface, which grew into a desire to protect this wildlife from the many threats they face. Julie hopes to draw on her prior research and work experiences to further expand the science initiatives at the Great Pond Foundation. She is excited to work with the growing dataset of water quality measurements to quantitatively analyze how Pond health has changed over time. If you see her out on the water this summer, say hi!

GPF's Summer Science Intern: Justine Cassel

Welcome Justine Cassel, a 2017 graduate of the Martha's Vineyard Regional High School and a native islander, to the GPF team as our Summer Science Intern. After graduation, Justine spent the summer interning for Friends of Sengekontacket, where she worked closely with local shellfish departments. Justine then served for six months with AmeriCorps - American Conservation Experience in Arizona. In Arizona, Justine worked on trail maintenance and restoration to help promote environmental stewardship. Currently, Justine is a sophomore at the University of New Hampshire pursuing a dual major in Freshwater, Estuary, Marine Biology and Sustainability. Justine is mature beyond her years and combines an incredible level of poise and professionalism. She is a hard-working and intelligent young scientist who we are very lucky to have on our team!



John MacKenty: Keeping a Pulse on Edgartown Great Pond

By Alex Elvin



John MacKenty in his home.

On a clear winter morning, John MacKenty looked out over Wintucket Cove, a quiet corner of Edgartown Great Pond he has known well since the 1940s. A skim coat of ice had turned the surface into a blue and green mirror that extended south toward Nashamois Point, and north to where the cove tapers away to what MacKenty calls “the head of the duck.” Three miles to the south, ocean waves crashed against the barrier beach that contains the Pond for most of the year.

MacKenty first arrived on the Vineyard in 1937, when his family rented a camp on Tisbury Great Pond, a few miles to the west. Then in the 1940s his father, John G. MacKenty, purchased the old Vincent Farm on Edgartown Great Pond, including the 17th-century farmhouse that has since been relocated to the town center and restored as a museum.

“It was rather primitive,” MacKenty recalls of those early days in the Vincent House, with no electricity or plumbing. But

growing up, he enjoyed free rein over the Pond, where he could row wherever he liked and explore the undeveloped landscape. His father taught him the art of duck hunting—a tradition he later passed on to his own children, who in turn passed it on to theirs.

In the 1980s, when the Martha’s Vineyard Commission designated Great Pond a District of Critical Planning Concern (DCPC), MacKenty became involved in the Edgartown ponds advisory committee, which resulted from the new regulations. A group of riparian landowners then formed the Great Pond Foundation in 1998 to further protect the resource. Even in the ‘80s, MacKenty said, the problems were clear to see: An influx of nutrients from the watershed had thrown the Pond ecosystem out of balance, threatening critical eelgrass beds and the many species they support.

Since 1987, when MacKenty returned from New York City to live here full-time and continue his law practice in Edgartown, he has kept close watch over the Pond, especially during the seasonal openings in the barrier beach, managed by the town, which allow the exchange of salt and fresh water and help maintain a healthy environment for shellfish and other organisms. His measurements over the years have helped the Foundation keep a clear pulse on the estuary and gauge the success of each opening.

MacKenty’s wooden pier on Wintucket Cove, although duly licensed, is something of an anomaly, since the DCPC designation had led to a Pond-wide ban on permanent piers to protect shellfish habitat. But it has long played an important role in monitoring the seasonal openings, during which the water level may drop several feet and then rise again when the beach naturally reforms.

Now confined to a wheelchair, MacKenty isn’t able to get down the hill on his own, so an assistant helps him measure the distance from the top of the pier down to the pond surface at regular intervals. According to his records, an opening in November lasted about three weeks and caused a drop of 36 inches. Another cut in March caused a drop of 41 inches and also lasted for several weeks. Both were highly successful.

“Back in the ‘30s they dug the openings by hand,” MacKenty said, recalling his early summers on Tisbury Great Pond. “The whole town would turn out. And all of a sudden, the water is going. People would come out to watch, families would bring picnics, make a big event out of it.”

Nowadays, the manual openings—usually in spring, summer and fall—are quieter affairs, observed by just one or two onlookers and perhaps a few ducks and shorebirds. And although timing is still everything—tides, weather and Pond levels all come into play—a large backhoe makes faster work of digging the channel. If all goes as planned, once the channel is open, the rushing water does the rest and maintains the cut.

Some openings come as a surprise. MacKenty recalls how a storm surge during Hurricane Bob in 1991 filled the Pond enough to break through the barrier beach, causing the water level rise about three feet and then drop six feet. He said that breach lasted for several months and was the longest in recent memory.

The drop in water level often exposes a sizeable island in Wintucket Cove that MacKenty calls Atlantis (his son Mike calls it MacKenty Island), where geese and ducks come to feed. The MacKentys also enjoy the company of swans, who fledge their chicks on the property. “Right now, we have a pair that is looking around, and we’re hopeful they stay,” MacKenty said. “We’ve gotten them to enjoy cracked corn, so we’ll see what happens.” He also keeps the resident mallards well fed.

At one time, duck hunting was both a beloved pastime and necessity for many Islanders. MacKenty’s father would often invite friends to Kanomika Neck to hunt black ducks, bluebills and other species that gathered there in the fall. He even

published a book, *Duck Hunting*, which offers some practical and often humorous advice for hunters, and sheds light on the Vineyard’s hunting culture in the 1950s.

Ducks, swans, turtles and other wildlife all benefit from the seasonal openings, since they feed on aquatic organisms. And thanks largely to the openings, along with the sewerage of homes in the watershed and the foundation’s dredging of sand in the Pond delta, Edgartown Great Pond is now considered among the healthiest estuaries on the Island.

“I would say the last five years have been very good,” MacKenty said, noting an increase in water clarity, lower nitrogen levels and the return of large eelgrass beds to the upper basin and coves. “You look through the water and you see the Pond bottom: That is sensational.”



Since his early years of duck hunting, John has kept a watchful eye on the Pond.

Local Conservation, Global Impact

Eelgrass is a native seagrass that grows in our shallow coastal waters. Eelgrass requires clear and clean water, which makes it an indicator of water quality and overall ecosystem health. However, this is a fragile species that has been struggling both locally and globally.

Why is eelgrass important?



Supporting Local Fisherman

Many of our local fish and shellfish species use eelgrass meadows for nursery and foraging habitat. Eelgrass conservation directly supports commercial harvests of these species, and feeds local families.



Climate Change

Eelgrass absorbs carbon 10x faster than trees. Global seagrasses cover <0.1% of the ocean floor, yet they sequester 11% of the ocean's organic carbon.



Coastal Protection and Erosion Prevention

Eelgrass roots into the ground with rhizomes, extending into the sediment laterally. These roots systems minimize erosion and stabilize the coast from wave action.



Biodiversity

Eelgrass meadows are the rainforests of the sea, forming a biodiversity hotspot in our coastal waters. Eelgrass provides habitat to shellfish, crabs, fish, and 100's of ecologically important species.

What is blue carbon?

Blue Carbon is the carbon sequestered by coastal seagrasses and wetlands; removing carbon from the atmosphere and helping to combat climate change.

COASTAL BLUE CARBON

An investment in wetland restoration supports many important benefits, including *carbon capture*, improved water quality, critical marine habitat, and increased resiliency through storm and flood protection.

Healthy coastal wetlands

BUILD UP SOIL

by taking up carbon and storing it in plants and in the ground.

BLUE CARBON

is the ability of tidal wetland and sea grass habitats to capture and store CO₂ and other greenhouse gases from the atmosphere.

Coastal wetlands...

Globally store
84-233M TONS
of carbon every year

Bury carbon in the ground at rates
10x GREATER
than forests

Capture carbon at rates
2-4x GREATER
than forests on a per area basis

The U.S. is losing coastal wetlands faster than we are restoring them.

The U.S. lost
80,000 ACRES
of coastal wetlands per year
between 2004 and 2009

Losing
2.5 ACRES
of coastal wetlands

releases the
same amount
of carbon as

Losing
25-100 ACRES
of native forest

Restoration of sea grass and wetland habitats locally addresses global rising atmospheric carbon levels while also providing many benefits for fish, wildlife, and the local community.

BLUECARBON.US



RESTORE
AMERICA'S
ESTUARIES



This figure was reproduced with the permission of Restore America's Estuaries.

Thank you for your generous support in 2018!

Blue Carbon Society

Coastal ecosystems are capable of removing large amounts of carbon from the atmosphere and storing it for centuries to millennia. **Blue Carbon** is the carbon sequestered by coastal marine ecosystems. Coastal seagrasses and wetlands remove carbon from the atmosphere and help to combat climate change. In Edgartown Great Pond, the native eelgrass meadows store carbon in the sediments of the Pond floor. When water quality improves as a result of restoration efforts, we cultivate a habitat where eelgrass can proliferate. When you make an investment in the protection of the Pond, you are not only helping to preserve and restore this local resource, but you are also doing something that is good for the health of the planet. Protecting the Pond is an investment in local conservation with global impact. We are introducing the Blue Carbon Society to acknowledge those who have made substantial contributions to the restoration of Edgartown Great Pond, and therefore the planet.

Leadership Circle - \$10,000 +

William Darman
Flying O Foundation
Herring Creek Farm Landowners Association
Kohlberg Foundation
Pam Kohlberg & Curt Greer
Regina Lasko
Elizabeth & John Rolls
John & Inge Stafford Foundation
Mary & Timothy Walsh

Blue Carbon Society - \$5000 to \$9999

Joseph Bower
Edey Foundation
Letty Fonteyne
Thomas Hout
Joseph Loughrey
Anne & Brian Mazar
Elizabeth & Frank Newman
Leah & Bob Rukeyser
Melissa Vail & Norman Selby

Ecosystem Sustainers - \$2500 to \$4999

Lisa Berkower & Mitch Rubin
Michael Corbo
Elizabeth & Andrew Forrester
Irina & Pat Gage
Emilia Fazzalari & Wycliffe Grousebeck
Ellen & Ed Harley
Sarah & Fergus Henderson
Shelley & Allan Holt
Joanne & Martin Homlish
Doris & David Luening
Caroline & Robert Maruska
Kimberly & Brian McCaslin
Mrs. & Dr. Alan Muney
Linda & Michael Purvis
Heather & Jonathan Roberts
Bette & Richard Saltzman
Karen & Michael Shalett
The George and Doris Daniels Wildlife Trust
Gordon Thorne

Clean Water Coalition - \$1000 to \$2499

Karen Bressler & Steve Rabin
Christine Campbell and Bill Massa
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Susan & Robert Hughes
Rebecca & Anthony Hull
Linda & Gerald Jones
Yael & Zeev Pearl
Beth & Eric Schlager
Amy & Howard Seife
Joan & Richard Shumway
Susan & James Snider
The Abraham Sohn Memorial Foundation
Heidi & Robert Wason

Pond Friends - Under \$1000

Katherine Burke
Mary Carman
Angela & Robert Egerton
Robert Gagel
John and Charlotte Klein
Deborah & Glenn Larsen
John MacKenty
Elizabeth & Michael MacKenty
Judith Reynolds
Wallace & Company

P.O. Box 9000
Edgartown, MA 02539
(508) 627-7222

www.greatpondfoundation.org

