



Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
703.842.0740 • www.asmf.org

MEMORANDUM

September 28, 2023

To: Horseshoe Crab Management Board
From: Tina Berger, Director of Communications
RE: Advisory Panel Nomination

Please find attached a nomination to the Horseshoe Crab Advisory Panel – Sam Martin, a commercial mobile tending gear fisherman for Maryland. While Sam’s nomination says that he has been found in violation of a criminal or civil federal fishery law or regulation. He incorrectly said yes to the answer and this has also been confirmed by the appointing state. Please review this nomination for action at the next Board meeting.

If you have any questions, please feel free to contact me at (703) 842-0749 or tberger@asmfc.org.

Enc.

cc: Caitlin Starks

M23-79

HORSESHOE CRAB ADVISORY PANEL

Bolded names await approval by the Horseshoe Crab Management Board

October 10, 2023

Massachusetts

David Meservey (comm/inshore otter trawl)
P.O. Box 128
South Chatham, MA 02659
Phone: 508.237.4366
dmese@yahoo.com
Appt Confirmed 8/2/22

Chair, Brett Hoffmeister (biomedical)
Associates of Cape Cod
124 Bernard East St Jean Drive
Falmouth MA 02536
Phone (day): 508.444.1426
BHoffmeister@acciusa.com
Appt Confirmed 2/3/16
Appt. Reconfirmed 8/18

Rhode Island

Vacancy (comm/otter trawl)

New York

John L. Turner (conservation)
10 Clark Boulevard
Massapequa, NY 11762
Phone (day): 631.451.6455
Phone (eve): 516.797.9786
jturner@seatuck.org
Appt. Confirmed 2/10/05
Appt Reconfirmed 5/10

Vacancy – commercial pot

New Jersey

Benjie Swan (biomedical)
Limuli Laboratories
Dias Creek, 5 Bay Avenue
Cape May Courthouse, NJ 08210-2556
Phone: 609.465.6552
Swan24@verizon.net
Appt. Confirmed 8/5/10

Delaware

Lawrence Voss (comm./pot)
3215 Big Oak Road
Smyrna, DE 19977
Phone: (302)359-0951

shrlyvss@aol.com

Appt. Confirmed 10/24/18

2 vacancies - dealer/processor & conservation/environmental

Maryland

George Topping (comm/rawl)
32182 Bowhill Road
Salisbury, MD 21804
Phone: 443.497.2141
george@zztopping.com
Appt. Confirmed 5/16

Jeffrey Eutsler (comm/rawl)
11933 Gray's Corner Road
Berlin, MD 21811
Phone: 443.497.3078
jeffeutsler@me.com
Appt. Confirmed 2/4/98
Appt. Reconfirmed 10/02; 10/06; 5/10

Allen L. Burgenson (biomedical)
8875 Hawbottom Road
Middletown, MD 21769
Phone: 301.378.1263
allen.burgenson@lonza.com
Appt. Confirmed 8/21/08
past chair

Sam Martin (comm mobile tending/biomedical harvest)

**985 Ocean Drive
Cape May, NJ 08204
Phone: 609.381.8892
smartin@atlanticcapes.com**

Virginia

Richard B. Robins, Jr. (processor/dealer)
3969 Shady Oaks Drive
Virginia Beach, VA 23455
Phone (day): 757.244.8400
Phone (eve): 757.363.9506
richardbrobins@gmail.com
Appt. Confirmed: 2/9/00
Appt. Reconfirmed 1/2/06; 5/10

HORSESHOE CRAB ADVISORY PANEL

Bolded names await approval by the Horseshoe Crab Management Board

October 10, 2023

Christina M. Lecker
FUJIFILM Wako Chemicals U.S.A. Corporation,
LAL Division
Plant Manager - Cape Charles Facility
301 Patrick Henry Avenue
Cape Charles, VA 23310
Phone: 757-331-4240, 757-331-2026
FAX: 757-331-2046
christina.lecker@fujifilm.com
Appt. Confirmed 10/21/2020

1 vacancy - comm/pot/conch

South Carolina

Nora Blair (biomedical)
Charles River Laboratories Microbial Solutions
1852 Cheshire Drive
Charleston, SC 29412
843.276.7819
Nora.Blair@crl.com
Appt. Confirmed 5/1/19

Vacancy - comm/pot/trawl

Nontraditional Stakeholders

Jeff Shenot
7900 McClure Road
Upper Marlboro, MD 20772
Phone: 301.580.4524
JUGBAY@msn.com
Appt. Confirmed 8/2018

Walker Golder
Executive Director, Coastal Land Trust
3 Pine Valley Dr.
Wilmington, NC 28412
Office: 910.790.4524 x2060
Cell: 910.619.6244
walker@coastallandtrust.org
Appt. Confirmed 8/2018



ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by: Michael Luisi State: MI
(your name)

Name of Nominee: Sam Martin
 Address: 985 Ocean Drive
 City, State, Zip: Cape May, NJ 08204

Please provide the appropriate numbers where the nominee can be reached:
 Phone (day): 609-381-8892 Phone (evening): same
 FAX: 609-884-3261 Email: smartin@atlanticcapes.com

FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.
 1. Horseshore Crab
 2. _____
 3. _____
 4. _____

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?
 yes YES no _____

3. Is the nominee a member of any fishermen's organizations or clubs?
 yes YES no _____

If "yes," please list them below by name.

Garden State Seafood Association

Science Center for Marine Fisheries

Fishery Survival Fund

Responsible Offshore Development Association

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

Horseshoe Crab

Squid

Black Sea Bass

Summer Flounder

Scallops

Surf Clams

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

same

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business? 25 years

2. Is the nominee employed only in commercial fishing? yes YES no _____

3. What is the predominant gear type used by the nominee? Mobile Tending

4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)? Inshore and Offshore - Mid-Atlantic and New England

FOR CHARTER/HEADBOAT CAPTAINS:

1. How long has the nominee been employed in the charter/headboat business? 25 years

2. Is the nominee employed only in the charter/headboat industry? yes YES no _____

If "no," please list other type(s) of business(es) and/occupation(s): _____

3. How many years has the nominee lived in the home port community? 25 years

If less than five years, please indicate the nominee's previous home port community.

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? 25 years
2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes YES no _____

If "yes," please explain.

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing? 25 years

2. Is the nominee employed only in the business of seafood processing/dealing?

yes YES no _____ If "no," please list other type(s) of business(es) and/or occupation(s):

3. How many years has the nominee lived in the home port community? 25 years

If less than five years, please indicate the nominee's previous home port community.

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? 25 years

2. Is the nominee employed in the fishing business or the field of fisheries management? yes YES no _____

If "no," please list other type(s) of business(es) and/or occupation(s):

FOR ALL NOMINEES:

In the space provided below, please provide the Commission with any additional information which you feel would assist us in making choosing new Advisors. You may use as many pages as needed.

I ALSO AM ON THE ADVISORY PANELS OF THE MANTFC FOR SURFLINN/OCEAN QUAHOG, SPINY DOGFISH AND SAUID, MAC, BUTTERFISH
I SIT ON THE MONKFISH AP FOR NEFMIC.

I THINK IT IS IMPORTANT TO HAVE ADVISORS THAT ARE FULLY ENGAGED IN A BROAD RANGE OF REGULATORY BODIES, WITH A FOCUS ON ECD SYSTEM MANAGEMENT THE GIVES ENHANCED PERSPECTIVE IN SUSTAINING FISHERIES AND FISHING COMMUNITIES.

I WOULD LIKE TO SIT ON THE AP FOR HORSESHOE CRAB AS WE ARE FULLY ENGAGED IN THE FISHERY COMMERCIALY AS WELL AS IN BIO-MEDICAL.

Nominee Signature: Sam

Date: 5/4/2023

Name: Sam Martin
(please print)

COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)

Michael J. ...
State Director

for Lynn ...
Foghy

State Legislator

Governor's Appointee

* Confirmed support from
Dave and Russell via email/
txt.

To: Atlantic States Marine Fisheries Commission (ASMFC)
Horseshoe Crab Management Board

Date: October 09, 2023

Dear Board Members,

I speak for the billions of people in the world that unknowingly rely on the Limulus Amebocyte Lysate (LAL) test to ensure the safety of their health. The worldwide population is the largest stakeholder in the management of horseshoe crabs because of the unique connection between the horseshoe crabs and public health. The LAL product, derived from the white blood cells of the horseshoe crab, tests pharmaceutical drugs and medical devices for deadly bacterial endotoxins. For the past 45 years, the LAL test has proven to be the most accurate and reliable test, and continues to provide the public with the utmost confidence in the safety of medical substances. In addition, LAL use has no effect on the horseshoe crab population due in part to the industry's "Return to Sea" policy and their Best Management Practices (BMPs) for handling the horseshoe crabs. A marine resource being used in the most profound and sustainable way!

In 1978, following FDA guidelines, the LAL test replaced the Rabbit Pyrogen Test because it was more accurate, more sensitive, more reliable and easier to use. LAL is considered the "gold standard" in endotoxin testing, however recently, recombinant products entered the marketplace. The recombinant products do not have the proven track record of LAL, and have not been shown to be an improvement over the LAL test. One issue with using the recombinant products lies in their ability to detect natural endotoxins, and without accurate detection this could cause the death of millions. Another is that the recombinant products are unregulated, meaning their manufacturing and performance measures are variable. One thing is certain, the use of the recombinant products should not be forced by limiting biomedical companies' accessibility to horseshoe crabs.

The availability of horseshoe crabs for the manufacture of LAL is essential and dependent on a healthy horseshoe crab population. From the inception of the ASMFC Interstate Fisheries Management Plan (FMP) for the Horseshoe Crab in 1998, 25 years of data has accumulated from the coastal States, and from the biomedical companies. By all accounts, the American horseshoe crab is thriving. For the year 2022, the Delaware Bay horseshoe crab population was estimated to be 40 million mature males and 16 million mature females, a population of 56 million.

In addition to the FMP, concern for the Red Knot, a long distance migrant bird that feeds on the horseshoe crab eggs, prompted the development of the ARM Model. The objective was to ensure that the horseshoe crab population was not a limiting factor in the survival of the Red Knot. Federal and State fishery biologists, statisticians, and stakeholders including biomedical companies have managed the horseshoe crabs with extreme caution. The management efforts resulted in the drastic reduction in bait harvest

from 2.6 million in 1999 to 570,988 in 2022, closures and restrictions to protect the spawning horseshoe crabs, a large sanctuary, the Carl N. Shuster Jr. Horseshoe Crab Reserve, established in 2001 to protect the young horseshoe crabs, and the accumulation of years of data.

Despite the comprehensive data evidencing a robust horseshoe crab population and the safeguards in place, further limitations for the sake of the Red Knot are demanded. However, there are many pressures that affect the Red Knots during their epic journey. Threats that include but are not limited to habitat loss or degradation, increased frequency and severity of mismatches, Arctic ecosystem change, predation in breeding area, disturbance by humans, pets and domestic animals, predation especially by peregrine falcons, competition with gulls, insufficient water quality, pollution, algal blooms, oil spills, hunting, wind energy and sea level rise.

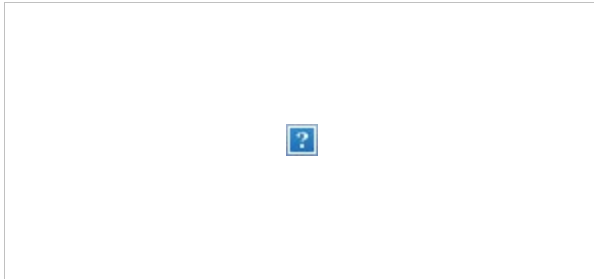
We need to continue to manage the horseshoe crab population based on the historical landing data and the 25 years of data the FMP accumulated.

We need to continue to ensure that biomedical companies have ample access to horseshoe crabs while continuing to be responsible stewards of the resource.

We cannot ignore the facts and the best available science. In doing so, we do a disservice to the natural resource, we put human life in jeopardy, delay the release of life saving drugs and medical devices, and greatly impede the development of new cures, medicines and treatments.

Sincerely,
Benjie Swan
Limuli Laboratories

From: [Meghan Noe Fellows](#)
To: [Comments](#)
Subject: [External] Use of the Adaptive Resource Management Model to Recommend Horseshoe Crab Bait Harvest Quotas
Date: Tuesday, October 10, 2023 3:06:08 PM



Testimony to the Atlantic States Marine Fisheries Commission Public Hearing on the Draft Addendum to the Horseshoe Crab Fishery Management Plan

September 19, 2022, revised October 10, 2023

Part of this testimony was provided verbally at the DNREC hosted public hearing on the addendum held on SEP 8th, 2022. The testimony provided here was expanded after the hearing.

Introduction and Background

The Center for the Inland Bays is a National Estuary Program responsible for developing and facilitating the implementation of the stakeholder-based Inland Bays Comprehensive Conservation and Management Plan (CCMP). Delaware's Inland Bays are three interconnected Atlantic Coastal lagoons that support a significant population of horseshoe crabs.

The Inland Bays CCMP focuses on reversing eutrophication and restoring key habitats and populations of keystone species such as the horseshoe crab. Water quality of the Bays is highly impaired due to nutrient pollution with some areas experiencing severely degraded aquatic habitat. Baygrass meadows and natural oyster reefs have been nearly eliminated due to disease and pollution. Over a quarter of the estuaries' saltmarshes have been eliminated and marshes continue to degrade due to sea level rise. An important objective of the CCMP is to “to enhance and restore fish populations and their habitats” in part through the advocacy for ecosystem based fisheries management.

The Center also develops and oversees the implementation of the Inland Bays

Environmental Monitoring Plan which includes actions related to horseshoe crabs. Since 2008, the Center has conducted the Inland Bays horseshoe crab spawning survey. The survey of five sandy beaches has found the population to be stable and slightly lower than those of the Delaware Bays survey (on the Delaware side). The survey confirms the importance of the Inland Bays as an important spawning area for the crabs. The Center also participates in the USFWS Cooperative Horseshoe Crab Tagging Program. In 2018, the Center used data from the Program to demonstrate that the Inland Bays population of crabs is indistinct from the Delaware Bay population as a whole (McGowan 2018).

While the Inland Bays do not host the large aggregations of shorebirds found along Delaware Bay, the crabs and their eggs remain an important food source for dozens of economically and ecologically important species of finfish, shellfish, and birds of the estuary.

These comments we provide on the horseshoe crab management plan addendum are consistent with the Inland Bays CCMP.

Comments and Recommendations

Harvest

We commend the ASMFC for including more empirical data from the Delaware Bay into the management model. We acknowledge the remarkable deliberations and analysis that produced the framework revision and research recommendations. And we are thankful for the impressive amount of supporting data collected by a wide variety of agencies with the cooperation of the fishing community and volunteer groups. We acknowledge the direct and indirect economic value of the horseshoe crab fishery and the crab's contribution to the value of wildlife viewing, a healthy ecosystem, and other fisheries. We understand the purpose of the horseshoe management to do the following: *“Manage harvest of horseshoe crabs in the Delaware Bay to maximize harvest but also to maintain ecosystem integrity, provide adequate stopover habitat for migrating shorebirds, and ensure that the abundance of horseshoe crabs is not limiting the red knot stopover population or slowing recovery.”*

Female horseshoe crabs are a particularly important resource for the integrity of the regions' estuaries including the Inland Bays due to their fecundity and egg production. The Center does not support the harvest of female horseshoe crabs at this time due to 1) the observed trends in the overall horseshoe crab population from the Delaware Bay region, 2) the need for more information about the abundance and distribution of horseshoe crab eggs and their relationship with the horseshoe crab population, 3) the potential for the limitation of the red knot's stopover population by horseshoe crab abundance, 4) the lack of understanding how rapidly developing climate impacts including severe weather and spawning habitat change could affect the populations of both crabs and birds. In short, now is not the time to further stress the population of the keystone species that is the horseshoe

crab.

Trends in the horseshoe crab population

While trends from the New Jersey and Delaware fisheries independent population surveys are clearly increasing, the data from the Virginia Tech survey does not show a clearly increasing trend. All of these surveys are rightly utilized in the model to estimate population. However, only the Virginia Tech survey was designed specifically for the crab. The Center values this as the most important survey from a design and analytical approach. Its lack of trend should be valued as a factor in harvest decisions and only clear, cohesive, increasing trends should be used as a basis for consideration of setting a harvest.

Relation of Horseshoe Crab Eggs and Horseshoe Crab Abundance

Counts of horseshoe crab eggs and not the crabs themselves are the most proximate indicator of food for shorebirds and many other predators. In the absence of a long term standardized egg data set, crab abundance should serve as a good indicator of egg availability. However, multiple historical sources of information suggest the occurrence of much higher densities of eggs in the past. The first is an anecdotal account in Goode (1887) as reported in Kremer and Michels (2009) that describes “deposits of eggs so thick on bay beaches that farmers shoveled them up by the wagonload to use as chicken feed”. The second dataset presented in Smith et al. (2022 *in press*) suggest egg densities occurred an order of magnitude greater than present day estimates. Both pieces of evidence should be interpreted with caution: the historical account for its qualitative nature, and comparisons drawn in Smith et al. for their lack of a standardized collection method and focus on a single site. However, the evidence is of sufficient value to warrant establishment of a representative program of egg density monitoring for inclusion in the model. This research should confirm the relationship between horseshoe crab numbers and egg density as well as increase understanding of the relationship between egg densities and shorebird abundance. The Center tested an egg density protocol in summer of 2023, however it is too soon to draw any conclusions from the effort. Available data show a moderate increase in egg abundance from 2015 to 2021.

The Center also feels that sufficient evidence exists to suggest that establishment of a baseline horseshoe crab population level near the peak of a second successive overharvest in the late 1990s (following industrial overharvest from the mid 1800s to mid 1900s) could have led to an under-valuation of the ecological carrying capacity of the crab population and its benefits to the integrity of the the region’s estuaries. The stock assessment presents a status of “neutral” for the crab population based upon the index based reference point of the 1998 fishery-independent population survey. Encouragingly, the model suggests that the horseshoe crab population should reach a dynamic equilibrium in about ten years under levels of harvest resulting from the current harvest levels. We request that after ten years of no female harvest the validity of those projections be evaluated in an attempt to ascertain the actual ecological carrying capacity of the region for

the crab. This period would also allow another generation of horseshoe crabs to mature. Should dynamic equilibrium become apparent after this period, and the results of additional research on key questions support it, a female harvest should once again be considered. This aligns well with the timing of the next ARM framework revision of the proposed management cycle under Option B.

As colonizers, we have often demonstrated a tendency to unintentionally bottom out a living resource population, as we apparently did with the crab after a century of industrial overharvest for fertilizer and livestock feed. Our proposed approach complements and makes reparations for this overharvest and the one that followed by intentionally allowing the return of the population to its maximum abundance, dynamic as that may be, for the benefit of the entire ecosystem; thus validating the limits of the population on both the lower and upper end, then managing from there.

In the meantime, to provide greater potential benefits to the horseshoe crab fishery additional males could be harvested without impacts to recruitment due to the population's high and stable male to female ratio.

Research

The Center supports the research recommendations of the framework revision that has informed the proposed addendum. While they all have merit, we particularly encourage data collection to support 1) inclusion of egg density into the management model and 2) research on the effects of climate change on spawning and breeding habitat for the crabs and birds.

We also request the development of additional long term research questions to further the ecosystem based management approach in preparation for the next framework revision. The questions should focus on elucidating the predator-prey relationships between crabs (and their eggs) and additional predator species in the Delaware Bay region. We note that these research recommendations appear to be lacking, while the original management plan clearly identifies the importance of continued use of the crab for "other dependent species including fish and wildlife," apparently reaffirmed/restated as "ecosystem integrity" under the current framework. We believe the ultimate goal should be for a dynamic food web model that will estimate the effect of the crab harvest on species in addition to the red knot, thus providing greater information for harvest decisions and tradeoffs. We recognize that this incremental approach would likely require the eventual development of management goals for additional focal species found to be significantly dependent upon the crab under conditions of a rapidly changing environment. At the minimum, this would be particularly important to prevent the management of the crab from falling back to single species management in the instance that the red knot goes extinct; which given the astounding levels of greenhouse gasses in the atmosphere appears very possible.

--

Meghan Noe Fellows, CERP
Director of Estuary Science & Restoration
Delaware Center for the Inland Bays

[Get on Board with the Bays!](#)





HORSESHOE CRAB RECOVERY COALITION

September 25, 2023

Horseshoe Crab Management Board

Atlantic States Marine Fisheries Commission 1050 N. Highland Street, Suite 200A

N Arlington, VA 22201

comments@asmfc.org

**Re: Use of the Adaptive Resource Management Model to Recommend
Horseshoe Crab Bait Harvest Quotas**

Dear Members of the Horseshoe Crab Management Board:

As members of the Horseshoe Crab Recovery Coalition, we are writing to urge the Horseshoe Crab Management Board to maintain its moratorium on the harvest of female Delaware Bay origin horseshoe crabs.

The board's decision not to re-open a female harvest was widely applauded by the conservation community and the public. Interest in the twin survival of the horseshoe crab and red knot has grown strongly in recent years, as evidenced by the 30,000 public comment letters submitted to ASMFC ahead of its Winter 2022 meeting.

Since that time, progress toward protecting horseshoe crabs and the species that depend on them has only continued to advance. In Connecticut, legislation is now in place that bans the hand harvest of horseshoe crabs. In South Carolina, a historic agreement is now in place that will prohibit horseshoe crab collection on the beaches of over 30 islands across the South Carolina coast as well as on harvesting anywhere in Cape Romain National Wildlife Refuge. And in healthcare, the U.S. Pharmacopeia has advanced a proposal to facilitate moving away from horseshoe crab blood toward new recombinant products that do not use the blood of a wild animal.

The recent technical analysis from University of Nevada, Reno Associate Professor Dr. Kevin Shoemaker finds that the ARM computer model used by ASMFC does not accurately represent the impacts of a horseshoe crab bait harvest in Delaware Bay on red knot population viability. As a result of the model's intrinsic flaws, relying on it to justify management decisions would further imperil the red knot and other shorebirds that use the Delaware Bay stopover.

The ASMFC's stated responsibility is to manage horseshoe crab populations to ensure the long-term viability of red knot populations. The premise put forward by the ARM model outputs suggesting that the relationship between horseshoe crab and red knot populations is weak is an outcome of using the wrong metric to measure the relationship. Clearly, horseshoe crab eggs, which have been ignored by the ASMFC since the inception of the ARM framework, have the greatest influence on the trajectory of red knot populations.

Given the new science and overwhelming public concern, and in line with the actions of other entities interested in protecting horseshoe crabs and the species that depend on them, we urge the management board to retain the moratorium on the harvest of female Delaware Bay origin horseshoe crabs. Further, we strongly recommend that the ASMFC revamp the ARM model to prevent further risk to horseshoe crabs and the species that depend on them.

Signed,

Members of the Horseshoe Crab Recovery Coalition

American Bird Conservancy

American Littoral Society

Audubon South Carolina

Center for Biological Diversity

Charleston Audubon Society

Coastal Expeditions Foundation

Delaware Audubon

Delaware Riverkeeper Network

Forest Keeper

Georgia Audubon

League of Women Voters of New Jersey

Maryland Ornithological Society, Inc.

Mass Audubon

Menhaden Defenders

New Jersey Audubon

New York City Audubon

North Carolina Wildlife Federation

One Hundred Miles

ReTurn the Favor

Save Coastal Wildlife

Saw Mill River Audubon

Shark River Cleanup Coalition

Southeastern Massachusetts Pine Barrens Alliance

The Humane Society of the United States

The Wetlands Institute

Wildlife Restoration Partnerships