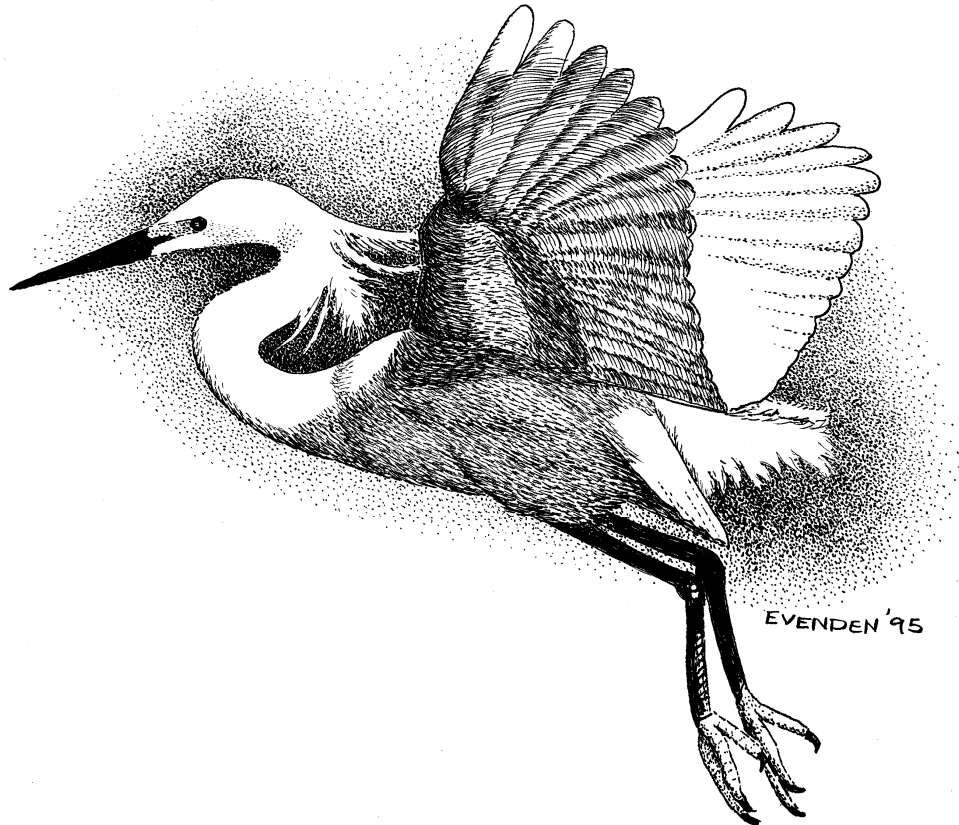


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28th Annual  
Cape Cod Natural History Conference



Saturday, March 8, 2025

List of Conference Supporters & Sponsors

Conference Agenda

Presentation Abstracts



The Cape Cod Natural History Conference is organized and presented by:



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*Thank you* to the above businesses and individuals.  
And, of course, *thanks to all of the presenters* for sharing their studies. Enjoy the conference!

## Conference Agenda

- 8:30 Registration and refreshments
- 9:00 Welcome and opening remarks by Melissa Lowe, Director, Mass Audubon Cape Cod
- 9:10 **Developing Nature-based Solutions to Improve the Resilience of a Wellfleet Harbor Salt Marsh**  
Alex Patterson, Senior Ecologist, EA Engineering
- 9:30 **Marsh Resiliency and Restoration at Chase Garden Creek Salt Marsh**  
Molly Autery, Salt Marsh Specialist, Association to Preserve Cape Cod (APCC)
- 9:50 **Windswept Bog Wetland Restoration Project, Nantucket Island, MA: Progress and Lessons Learned from Taking a Phased Implementation Approach**  
Karen C. Beattie, Vice President of Science and Stewardship, Nantucket Conservation Foundation, Inc. (NCF)
- 10:10 **Profiling our Shores: Community Science for Coastal Resilience**  
Tricia Teixeira Santoianni, Environmental Advocate, Town of Brewster/Cape Cod Community College (CCCC)
- 10:30 BREAK (20 minutes) - View poster presentations
- 10:50 **Orthoptera of Martha's Vineyard**  
Matt Pelikan, Community Naturalist, BiodiversityWorks
- 11:10 **Southern Pine Beetle on Cape Cod and the Islands**  
James Rassman, Forester, Department of Conservation & Recreation (DCR)
- 11:30 **Two Decades of Change in Martha's Vineyard Plant Communities**  
Patrick Farrar, Research Assistant, Woodwell Climate Research Center
- 11:50 LUNCH BREAK in cafeteria (50 minutes) – Desserts provided.
- 12:40 **Using Publicly Available Data to Guide Citizen Scientists Toward Real-World Biodiversity Conservation Impact**  
David Fryxell, Executive Director & Ecologist, Dennis Conservation Land Trust (DCLT)
- 1:00 **Occurrence and Distribution of Cyanobacteria Blooms on Cape Cod 2022-2024: What are the Risks and How to Best Communicate Them?**  
Sophia M. Feuerhake, Freshwater Science Coordinator, Association to Preserve Cape Cod (APCC)
- 1:20 **Establishing a Central Database and Web Portal for Freshwater Pond Monitoring Data**  
Jessica Rempel, Natural Resources Analyst, Cape Cod Commission
- 1:40 BREAK (20 minutes) - View poster presentations
- 2:00 **Where to Stay on The Cape: The Impact of Habitat on Migrant Songbirds at Wellfleet Bay Wildlife Sanctuary and Monomoy National Wildlife Refuge**  
James Junda, Lead Bird Bander, Mass Audubon
- 2:20 **eDNA Analysis of Red Knot Diet at Staging Sites in the Monomoy-Pleasant Bay System of Cape Cod, Massachusetts**  
Liana DiNunzio, Shorebird Biologist, Manomet Conservation Science
- 2:40 **2024 Great Shearwater Tracking, Preliminary Results**  
Liam Waters, Research Technician, Stellwagen Bank National Marine Sanctuary (SBNMS)
- 3:00 **Monitoring the Terrestrial Acoustic and Disturbance Ecology of Gray Seals at an Ephemeral Haul Out**  
Callyan Lacio, PhD Student, University of New Hampshire
- 3:20 Closing Comments
-

## Poster Presentations

Poster Presentations will be displayed in the lobby during breaks and the lunch hour and available for review and discussion. Poster Presentations include:

### **Water Quality and the Important Role of Citizen Scientists**

Sara Sampieri Horvet, Research Associate and Analytical Laboratory Manager, UMASS Dartmouth

### **Cape Cod Freshwater Pond Buffer Guidance**

Heather McElroy, Natural Resources Program Manager, Cape Cod Commission

### **Cape Cod Pond Watcher Bio-Survey Program: Preliminary Results**

Julie Hambrook Berkman, PhD, Pond and Cyanobacteria Program Manager, Association to Preserve Cape Cod (APCC)

### **Cape Cod Water Resources Restoration Project**

Martha Craig, Program Manager, Cape Cod Conservation District

### **Eelgrass Restoration Project**

Kta'n Paul, Natural Resource Fellow, Mashpee Wampanoag Tribe

### **Conservation and Survey Techniques to Estimate Abundance of the Northern Diamondback Terrapin**

Emma Keene-Reinhard, Diamondback Terrapin Field Technician, Zoo New England, Mass Wildlife

### **Discovery and Conservation of Papillose Nut-sedge (*Scleria pauciflora*) at Camp Edwards**

Erin Hilley, Conservation Biologist, MA Army National Guard

### **Impacts of Baiting Practices on Catch and Bycatch in Gillnets and Design of an Effective Outreach Program to Minimize Seabird Bycatch**

Liese Siemann, Senior Research Biologist, Coonamessett Farm Foundation, Inc. (CFF)

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## Developing Nature-based Solutions to Improve the Resilience of a Wellfleet Harbor Salt Marsh

**DESCRIPTION:** Wellfleet Bay Wildlife Sanctuary (WBWS) on Cape Cod, Massachusetts is a 1,200-acre protected area consisting of an expansive salt marsh and barrier beach/dune system owned and managed by Mass Audubon. WBWS has been identified as a priority marsh system by the Atlantic Coast Joint Venture for preserving high-quality saltmarsh sparrow breeding habitat. At WBWS, localized threats increase the vulnerability of salt marshes to the negative impacts of sea level rise (SLR). Primary among these are the impacts of purple marsh crab grazing and burrowing, which has denuded expansive areas of the marsh. Other factors include tidal restrictions and the presence of groins and a revetment along the barrier beach. Additionally, the local landform affords few areas adjacent to the marsh where meaningful marsh migration could occur. These factors contribute to an overall increase in the vulnerability of the system to SLR and threaten the long-term sustainability of nesting habitat for saltmarsh sparrow. The project team (USACE Engineering with Nature Program, Mass Audubon, EA Engineering, and others) developed and implemented an innovative approach to characterize existing threats to the marsh and develop initial designs for recommended actions to improve the resilience of the system. Sediment augmentation is expected to be critical for supporting the ability of the marsh to persist in the future and has very recently become permissible in Massachusetts under new state guidelines. This project is intended to be among the first marsh sediment augmentation projects in Massachusetts and will serve as a case study to inform future projects.

**PRESENTER:** Alex Patterson, Senior Ecologist, EA Engineering

**COLLABORATORS:** Sara Grady, PhD, Mass Audubon; Jeff King, PhD, PE, U.S. Army Corps of Engineers (USACE) Engineering with Nature (EWN) Program

**BIOGRAPHICAL INFORMATION:** Alex is a Certified Ecological Restoration Practitioner (CERP) and project manager with over 15 years of experience in planning, design, permitting, and oversight of ecological restoration and habitat management projects. His project work has included salt marsh habitat restorations, tidal restorations and other coastal resilience improvements, cranberry bog and other freshwater wetland restorations, dam removals, stream bank restorations, coastal and freshwater dredging, and habitat management, primarily in the Northeastern United States.

**CONTACT:** Alex Patterson ([apatterson@eaest.com](mailto:apatterson@eaest.com); 401-287-0369)

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## Marsh Resiliency and Restoration at Chase Garden Creek Salt Marsh

**DESCRIPTION:** The Chase Garden Creek (CGC) salt marsh (Yarmouth, MA) demonstrates how localized variations in morphology (elevation, proximity to tidal channels, the presence of sandy shoals, etc.) can impact ecosystem resiliency and restoration decision-making within a marsh system. In 2024, the Association to Preserve Cape Cod, in partnership with the Center for Coastal Studies, conducted vegetation surveys, monitored water levels, and measured sediment deposition at three (3) sub-sites within the Chase Garden Creek salt marsh to identify the main drivers of visible creek bank erosion and subsidence, and to inform future restoration strategies. The three sub-sites show distinct differences in morphology, tidal inundation, and vegetation. The marsh area closest to the Cape Cod Bay inlet (approximately 660 meters) is highly channelized with the lowest average elevation but also receives the highest rate of sediment deposition. The sub-site closest to the back barrier dune (approximately 800 meters from the inlet) contains several well-vegetated depressions suspected to be the site of previously drained pools. The area farthest from the inlet (approximately 950 meters) shows the highest average elevation and greater vegetation diversity indicating a more stable and resilient platform. This study shows how variable conditions within a salt marsh will likely necessitate an adaptable, multi-faceted approach to restoration and conservation.

**PRESENTER:** Molly Autery, Salt Marsh Specialist, Association to Preserve Cape Cod (APCC)

**COLLABORATORS:** Jordan Mora, Lead Ecologist and Science Advisor, Association to Preserve Cape Cod (APCC); Dr. Katie Castagno, Director of Land-Sea Interaction Program, Center for Coastal Studies (CCS)

**BIOGRAPHICAL INFORMATION:** Molly received her Bachelor of Science in Geology and is completing her Master of Science in Geosciences at the University of Massachusetts Amherst. She is the Salt Marsh Specialist at The Association to Preserve Cape Cod and assists restoration projects in tidal salt marshes throughout Cape Cod. Molly was born and raised in Barnstable, Massachusetts and is excited to help preserve Cape Cod's beautiful coastal environments.

**CONTACT:** Molly Autery ([mautery@apcc.org](mailto:mautery@apcc.org))

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## **Windswept Bog Wetland Restoration Project, Nantucket Island, MA: Progress and Lessons Learned from Taking a Phased Implementation Approach**

**DESCRIPTION:** The Nantucket Conservation Foundation (NCF), Massachusetts Division of Ecological Restoration Cranberry Bog Program, Fuss & O'Neill engineers and SumCo Eco-contracting are undertaking a wetland restoration project at NCF's Windswept Bog property on Nantucket Island, Massachusetts, which was retired from cranberry cultivation in 2018. Active restoration work is taking place during the winter dormant season to avoid rare species impacts. Phase 1 construction began in January 2024 and was completed in March 2024, with ~14.0 acres of former cranberry bog cells restored to hydrologically connected wetlands. Restoration of the remaining bog cells (~26.0 acres) commenced in November 2024 and is currently underway, with expected completion of construction activities in mid-March 2025. This project is setting a trajectory for natural recovery of ~40 total acres of retired cranberry bogs to diverse wetland habitats that enhance refugia for inland wildlife species, provide ecosystem services such as water quality improvement and flood storage, and increase coastal resilience by creating a pathway for eventual salt marsh migration. Extensive pre-restoration research on site conditions, rare plant and animal species and exemplary habitats was undertaken prior to construction and extensively informed the wetland restoration design. This data serves as an important baseline for determining post-restoration success in meeting ecological goals. Lessons learned, preliminary results from the completion of Phase 1 and how this information was used to adaptively adjust plans for Phase 2 are presented. This project underscores the benefits of undertaking restoration in a phased approach and the importance of gaining a thorough understanding of existing site conditions prior to initiating ecological restoration work.

**PRESENTER:** Karen C. Beattie, Vice President of Science and Stewardship, Department of Ecological Research, Stewardship and Restoration, Nantucket Conservation Foundation, Inc. (NCF)

**COLLABORATORS:** Jessica Cohn, Massachusetts Division of Ecological Restoration Cranberry Bog Program (DER); Dr. Julianne Busa and Michael Soares, Fuss & O'Neill Environmental Engineering; Travis Sumner, SumCo Eco-Contracting

**BIOGRAPHICAL INFORMATION:** Karen Beattie is the Vice President of Science and Stewardship for the Nantucket Conservation Foundation (NCF), a private, non-profit land trust that owns, protects, and stewards over 9,014 acres of conservation land on Nantucket Island, MA. She holds a B.S. degree in Biological Sciences from the State University of New York at Stony Brook and an M.S. degree in Wildlife Management from the University of Massachusetts at Amherst. Karen has worked for NCF since 1992 and currently oversees the Department of Ecological Research, Stewardship and Restoration. The department, which hosts wildlife ecology, botany and plant ecology, and coastal ecology programs, focuses on research aimed at informing the restoration and stewardship of rare resources on NCF's properties.

**CONTACT:** Karen C. Beattie ([kbeattie@nantucketconservation.org](mailto:kbeattie@nantucketconservation.org); 508-228-2884 x 105)

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## Profiling our Shores: Community Science for Coastal Resilience

**DESCRIPTION:** This presentation introduces a proposed Community Science Coastal Resources Monitoring Program and shares trial results from 2024 conducted in the Town of Brewster, MA. Aligned with Brewster's Coastal Resource Management Plan, the program engages local residents, municipal authorities, and agencies to document the impacts of climate change and coastal erosion on Brewster's beaches. The data gathered aims to inform coastal resiliency decision-making. Funding is currently being sought to support a broader pilot program and expansion over the next 1–2 years. The presentation shows how simple tools (e.g., Emery Rods), photography, and scientific methods empower community scientists to monitor, profile, and collect actionable data on annual erosion and accretion cycles. Attendees will see how these efforts can help evaluate the effectiveness of soft and hard erosion control solutions. The collected data will play a crucial role in guiding coastal management decisions and climate action planning to protect Brewster's natural resources and public infrastructure. The program draws inspiration from a successful 25-year+ initiative along Maine's southern coastline. In Brewster, community scientists will measure beach contour changes biweekly, monthly, and after major storms, providing critical insights into sand distribution dynamics. *CONTEXT:* Climate change and sea-level rise pose serious threats to coastal assets. These challenges are exacerbated by coastal engineering structures that often alter sand movement unintentionally. To mitigate environmental and financial risks, it is essential to identify, protect, and restore areas that reduce flood and erosion impacts. The collection of local beach profiling data is vital for understanding coastal processes, tracking changes, and making informed, data-driven decisions. These efforts support sustainable management and long-term adaptation strategies for Brewster's beaches and beyond. Attendees will leave with an understanding of how simple tools and an empowered community can help address coastal resiliency challenges on Cape Cod.

**PRESENTER:** Tricia Teixeira Santoianni, Environmental Advocate, Town of Brewster/Cape Cod Community College (CCCC)

**COLLABORATORS:** Ryan Burch, Senior Shellfish & Natural Resources Officer, Dave Johnson, Assistant Shellfish & Natural Resources Officer, Kim Crocker Pearson, Natural Resources Advisory Chair, and Chris Miller, Natural Resources Director, Town of Brewster; Savannah Gray, AmeriCorps Member; Bryan McCormack, Coastal Processes and Hazards Specialist, Cape Cod Cooperative Extension (CCCE) / Woods Hole Oceanographic Institution (WHOI) SeaGrant

### **BIOGRAPHICAL INFORMATION:**

Tricia Teixeira Santoianni has an extensive career in high tech as an executive in sales, marketing, strategy and operations at large Enterprises and SaaS startups. Recently, she embarked on a second career and has graduated with an AS degree in Environmental Science/Blue Economy and Coastal Zone Management Certificate to complement her business skills so she can make a tangible and direct contribution in helping preserve and sustain the natural beauty of her local environment and community on Cape Cod, Massachusetts. Tricia also has an Executive MBA from Boston University and BS in Business Administration from Northeastern University.

**CONTACT:** Tricia Teixeira Santoianni ([tricia.teixeira@gmail.com](mailto:tricia.teixeira@gmail.com))

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## Orthoptera of Martha's Vineyard

**DESCRIPTION:** Since 2010, my ongoing study of Orthoptera (grasshoppers, crickets, and katydids) on Martha's Vineyard has documented about 70 species on the island, most or all of which presumably also occur on Cape Cod. I will describe the various study methods I employ, summarize regional diversity and essential aspects of Orthoptera ecology, and offer suggestions on finding Orthoptera and identifying them by sight and sound.

**PRESENTER:** Matt Pelikan, Community Naturalist, BiodiversityWorks

**BIOGRAPHICAL INFORMATION:** A year-round Vineyard resident since 1997, Matt Pelikan is a versatile naturalist who has led or participated in numerous surveys and checklist projects, community science efforts, and conservation programs. Current interests include Orthoptera, bees, and the fly families Syrphidae and Asilidae. Matt writes frequently about Vineyard conservation and ecology for local and regional publications and since 2002 has contributed a twice-monthly natural history column to the *Martha's Vineyard Times*. In his current position with BiodiversityWorks, he presents frequently on Vineyard wildlife and coordinates the Martha's Vineyard Atlas of Life, an ongoing, community-powered survey of Vineyard biodiversity.

**CONTACT:** Matt Pelikan ([mpelikan@biodiversityworksmv.org](mailto:mpelikan@biodiversityworksmv.org); [mval.biodiversityworksmv.org](http://mval.biodiversityworksmv.org))

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## **Southern Pine Beetle on Cape Cod and the Islands**

**DESCRIPTION:** Southern Pine Beetle (SPB) has been detected on the Cape and the Islands for the past decade, but now the numbers have risen to the point that SPB is killing trees on Martha's Vineyard and Nantucket. It is expected that detections and infestations will continue to increase on Cape Cod and in Southeastern Massachusetts. I will present on the status of SPB on the Cape and Islands, monitoring for SPB on private, municipal, and land trust properties and forest management options for pitch pine stands that consider the impacts of SPB.

**PRESENTER:** James Rassman, Service Forester, Department of Conservation and Recreation (DCR)

**COLLABORATORS:** Sheriffs Meadow Foundation, Martha's Vineyard

**BIOGRAPHICAL INFORMATION:** James Rassman is a Service Forester for the Commonwealth of Massachusetts. Mr. Rassman's work assists forestland owners with long term management and land protection in Southeastern Massachusetts. He holds a Masters in Natural Resource Management and a BS in Forestry. He has previously worked for the EPA on riparian stream bank stabilization and restoration, the US Forest Service, Colorado State University, and several state agencies on the development and monitoring of best management practices to protect water quality.

**CONTACT:** James Rassman ([james.rassman@mass.gov](mailto:james.rassman@mass.gov); 508-269-1645)

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## Two Decades of Change in Martha's Vineyard Plant Communities

**DESCRIPTION:** The island of Martha's Vineyard has about 40 percent of its land area in conservation and contains regionally rare habitats that are important biodiversity hotspots. Plant community changes over time in protected areas across the island's different habitat types have implications for biodiversity that can guide land management. In 2022, we resurveyed 101 plots of 20 by 20 meters in protected forests, grasslands, scrub oak, shrublands, and coastal habitats that were first surveyed in 2000. In each plot, we identified all plant species present and estimated the abundance of each species as percent cover of the plot. Plant species richness, or the number of different species per plot, was greater in grasslands and shrublands than in forests, scrub oak, and coastal habitats, and declined across all habitats from 2000 to 2022. Declines in species richness were similar in each except for coastal habitats, which had more pronounced losses due to shoreline erosion since 2000. Forb and graminoid species and woody species declined in similar proportions in forests, grasslands, and coastal habitats, and forb and graminoid species declined in larger proportions than woody species in shrublands and scrub oak habitats. Woody plant abundance did not change in any habitat. Most changes were of native species; non-native species richness increased only slightly in grasslands, and non-native species abundance did not change in any habitat. These findings suggest that early-successional, disturbance-dependent grassland habitats are being managed to maintain low abundances of woody and non-native species successfully but are still losing species over time. Declines in plant species richness across different habitat types in protected areas have regional conservation implications and suggest that more work is needed to determine and mitigate possible causes of biodiversity loss.

**PRESENTER:** Patrick Farrar, Research Assistant, Woodwell Climate Research Center

**COLLABORATORS:** Christopher Neill, PhD, Woodwell Climate Research Center; Julia Charest; Glenn Motzkin

**BIOGRAPHICAL INFORMATION:** Patrick works with Dr. Christopher Neill at Woodwell Climate Research Center in Falmouth on several regional projects. These include monitoring and assessing plant biodiversity trajectories in protected areas and restored cranberry bogs as well as the water quality of rivers and streams that flow into Buzzards Bay.

**CONTACT:** Patrick Farrar ([pfarrar@woodwellclimate.org](mailto:pfarrar@woodwellclimate.org))

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## Using Publicly Available Data to Guide Citizen Scientists Toward Real-World Biodiversity Conservation Impact

**DESCRIPTION:** In Massachusetts, volunteer “citizen scientists” have an exceptional opportunity to contribute to biodiversity conservation by reporting the presence of state-listed and vernal pool species. However, the degree to which communities have capitalized on these tools varies widely across Cape Cod, and over the last two decades, reporting rates have fallen sharply, almost to a standstill. Here, we used publicly available, state-wide datasets to conduct new analyses aimed at motivating, prioritizing, and guiding species reporting efforts. First, to determine the places in greatest need of reporting, we ranked communities (towns) by how well they have protected habitats through reporting in the past. Second, we conducted analyses to determine the species and habitats most likely to be found, or to reap new regulatory protections by reporting on Cape Cod. Third, we are creating practical guidance and phone-based tools to assist conservation organizations in the creation and implementation of new volunteer-led reporting programs.

**PRESENTER:** David Fryxell, Ph.D., Executive Director & Ecologist, Dennis Conservation Land Trust (DCLT)

**COLLABORATORS:** Fernando Mendonca, Ph.D., Biodiversity Scientist, Leeza Barstein, TerraCorps Service Member, Jen Clifford, AmeriCorps Cape Cod Service Member, Dennis Conservation Land Trust (DCLT)

**BIOGRAPHICAL INFORMATION:** Dave completed a Ph.D. in Ecology & Evolutionary Biology at UC Santa Cruz and then a postdoc at University of Auckland’s School of Environment before returning home to the Northeast. He has served as the Executive Director of the Dennis Conservation Land Trust since 2022, where he has focused on engaging students and volunteers with all aspects of the organization's conservation mission.

**CONTACT:** David Fryxell, Ph.D. ([dfryxell@dennisconservationlandtrust.org](mailto:dfryxell@dennisconservationlandtrust.org); 508-694-7812)

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## Occurrence and Distribution of Cyanobacteria Blooms on Cape Cod 2022-2024: What are the Risks and How to Best Communicate Them?

**DESCRIPTION:** Cape Cod's freshwater kettle hole ponds are part of the Atlantic Coastal Pine Barrens Ecosystem, which are threatened by increased development and excess nutrients, resulting in cyanobacteria blooms becoming more common with our warming climate. The Association to Preserve Cape Cod (APCC) has been actively monitoring freshwater ponds on Cape Cod through two key programs: the Cyanobacteria Monitoring Program and the Cape Cod Regional Pond Monitoring Program, which is part of the Cape Cod Commission's Freshwater Initiative. APCC's Cyanobacteria Monitoring Program began as a pilot program monitoring five ponds in 2017 and has since expanded significantly, with 133 ponds of the 890 Cape Cod ponds monitored regularly in 2024. Ponds in all 15 towns on Cape Cod are currently monitored in this program, which serves both residents and millions of summer visitors. Citizen engagement is pivotal; with local pond groups actively collecting water samples, community members informing APCC of potential Harmful Cyanobacteria Blooms (HCB's) and advocating to make this work possible. Results from 2022-2024 showed 24, 13 and 16 ponds, respectively, with HCBs that were categorized in APCC's Use Restriction Warranted Risk Tier in up to eleven towns across Cape Cod. As of 2022, Barnstable County Lab provided toxin analysis of microcystin for which the EPA and MADPH have set a recreational risk limit of 8 ug/L. APCC's approach to public communication of cyanobacteria risk includes APCC's cyano alert email and interactive cyano map through which we typically provide the status of ponds within 24 hours of sampling. We report findings to local officials in a timely manner, as well as to our partner pond groups, so that all are informed. Our discussion will provide insights into both the monitoring data and the evolving strategies to protect public health and improve water quality on Cape Cod.

**PRESENTER:** Sophia M. Feuerhake, Freshwater Science Coordinator, Association to Preserve Cape Cod (APCC)

**COLLABORATORS:** Julie Hambrook Berkman, PhD, Pond and Cyanobacteria Program Manager, and Lynn Francis, Pond and Cyanobacteria Operations Manager, Association to Preserve Cape Cod (APCC)

**BIOGRAPHICAL INFORMATION:** Sophia Feuerhake is the freshwater science coordinator for the Association to Preserve Cape Cod. She serves as APCC's scientific expert for the Cyanobacteria Monitoring Program and the Cape Cod Regional Pond Monitoring Program. She oversees and manages water quality data, training, and quality control of data collection, processing and analysis to ensure scientific credibility, transparency, and usefulness of data collected by both programs. Prior to working with APCC, Sophia served at the Cape Cod National Seashore, U.S. Fish and Wildlife Service and earned a M.Sc. in Marine Biology from the Rijkuniversiteit Groningen, Netherlands.

**CONTACT:** Sophia M. Feuerhake ([sfeuerhake@apcc.org](mailto:sfeuerhake@apcc.org))

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## Establishing a Central Database and Web Portal for Freshwater Pond Monitoring Data

**DESCRIPTION:** Cape Cod contains nearly 900 freshwater ponds and lakes, spread among 15 towns under various scenarios of ownership and management responsibility. The Cape Cod region has a long history of robust volunteer pond monitoring that stretches over two decades, yet fragmentation of the data and competing local priorities have made it challenging to synthesize that data to better understand individual ponds for management purposes, and especially to examine the region's ponds collectively for changes related to large scale processes like climate change and the Clean Air Act. To facilitate a regional analysis of pond data the Cape Cod Commission (Commission) compiled water quality data from historical monitoring activities spanning over 20 years at over 200 ponds and lakes across Cape Cod in a single format for incorporation into the Commission's Regional Water Quality Database. The Commission worked with the Woods Hole Oceanographic Institution and limnologists to conduct a regional analysis of available freshwater pond monitoring data and investigate the water quality status of ponds. Commission staff will present results from the regional analysis of data for nearly 200 Cape Cod ponds between 2001- 2023 and showcase the newly launched freshwater data portal.

**PRESENTER:** Jessica Rempel, Natural Resources Analyst, Cape Cod Commission

**COLLABORATORS:** Kristy Senatori, Erin Perry, Heather McElroy, Tim Pasakarnis, Tara Nye Lewis, and Phil Detjens, Cape Cod Commission; Jennie Rheuban and Dylan Titmuss, Woods Hole Oceanographic Institute (WHOI); Liz Moran, Anchor QEA, LLC

**BIOGRAPHICAL INFORMATION:** Jessica Rempel has been the Cape Cod Commission's Natural Resources Analyst since 2019. She provides technical expertise, analysis, and decision-support to towns and the public on planning and regulatory issues related to natural resources and open space protection. She has a background in environmental regulation and endangered species research and monitoring. Ms. Rempel grew up on Cape Cod and is a graduate of the Nauset public schools. She has a M.S. in Biology from California State University, Northridge.

**CONTACT:** Jessica Rempel ([jessica.rempel@capecodcommission.org](mailto:jessica.rempel@capecodcommission.org); 3225 Main St., Barnstable, MA 02630)

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## **Where to Stay on The Cape: The Impact of Habitat on Migrant Songbirds at Wellfleet Bay Wildlife Sanctuary and Monomoy National Wildlife Refuge**

**DESCRIPTION:** Cape Cod has long been known as a refuge for migrating songbirds, offering sanctuary for those that get blown out to the edge of the continent against an impassible ocean. We compare over a decade of migrant songbird banding data from Mass Audubon's Wellfleet Bay Sanctuary and Monomoy National Wildlife Refuge to see how the different habitats at these locations impact the birds that stop by Cape Cod. The two locations differ in habitat composition: Wellfleet Bay has extensive deciduous forest and fresh water, offering more cover for foraging and resting, while South Monomoy Island is dominated by brushy marsh and dune, with limited forest and fresh water offering less structure and cover. To demonstrate the importance of these rest areas for lost and hungry avian visitors on the Cape, we compare the stopover duration and body condition of different migrant bird species banded at both sites. By understanding the value of various coastal habitats, we can work to increase the resiliency of our landscapes to climate change while providing for birds in increasingly challenging times.

**PRESENTER:** James Junda, Lead Bird Bander, Mass Audubon

**COLLABORATORS:** Valérie Bourdeau; Mark Faherty, Mass Audubon

**BIOGRAPHICAL INFORMATION:** James has been banding songbirds for over 20 years and has banded over 50,000 birds in five countries. He has run the Wellfleet Bay Wildlife Sanctuary and Monomoy National Wildlife Refuge banding stations on the Cape for over a decade with his wife and collaborator Valérie Bourdeau. His research focuses on songbird molt, stopover, and everything about Pine Warblers.

**CONTACT:** James Junda ([jjunda@massaudubon.org](mailto:jjunda@massaudubon.org))

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## **eDNA Analysis of Red Knot Diet in the Monomoy-Pleasant Bay System of Cape Cod, Massachusetts**

**DESCRIPTION:** The Monomoy-Pleasant Bay system of Cape Cod, Massachusetts is an important migration staging area for Red Knots, a state and federally threatened shorebird species. This area provides critical resources for an estimated 1,500-2,000 knots annually. Throughout the last few decades, there has been a shift in the distribution and abundance of knots within the Monomoy-Pleasant Bay system, but the cause of this shift is poorly understood. One hypothesis is that the displacement of knots is being driven by the shifting distribution of their invertebrate prey. We used environmental DNA (eDNA) metabarcoding techniques to characterize the invertebrate community of the mudflats at sites within Monomoy National Wildlife Refuge and Pleasant Bay. In addition, we applied these eDNA methods to analyze fecal samples collected from Red Knots foraging at the study sites to determine their diets. This approach allowed us to compare food availability with Red Knot diet in the Monomoy-Pleasant Bay system.

**PRESENTER:** Liana DiNunzio, Shorebird Biologist, Manomet Conservation Sciences

**COLLABORATORS:** Alan Kneidel, Senior Conservation Biologist, and Stephen Brown, Vice President of Science, Manomet Conservation Sciences; Erin Grey, Assistant Professor of Aquatic Genetics, and Christiana Teye, Ph.D. Student, University of Maine

**BIOGRAPHICAL INFORMATION:** Liana is a Shorebird Biologist for Manomet's Resilient Habitats program. Her work focuses on improving our understanding of how shorebirds use the Massachusetts coast during migration in order to guide conservation efforts. Before joining the Manomet team, Liana was involved in many aspects of the environmental field including research, education, ecological restoration, permitting, and habitat management. She holds a bachelor's degree in Zoology from the University of New Hampshire and a master's degree in environmental science and management from the University of Rhode Island.

**CONTACT:** Liana DiNunzio ([ldinunzio@manomet.org](mailto:ldinunzio@manomet.org); 508-209-1575)

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## 2024 Great Shearwater Tracking, Preliminary Results

**DESCRIPTION:** Researchers at Stellwagen Bank National Marine Sanctuary have been tracking Great Shearwaters (*Ardenna gravis*) since 2013 with solar powered satellite tags. Great Shearwaters are the most abundant shearwater around Cape Cod during summer months before they return to the South Atlantic. This presentation will cover the preliminary results from the 2024 season, in which 17 individuals were tagged. Results covered will include this season's movements of birds within the Gulf of Maine and their migrations to the South Atlantic, tag performance, and how this year compares to prior years.

**PRESENTER:** Liam Waters, Research Technician, Stellwagen Bank National Marine Sanctuary (SBNMS)

**COLLABORATORS:** David Wiley, Kevin Powers, Tammy Silva, and Mike Thompson, Stellwagen Bank National Marine Sanctuary (SBNMS); Linda Welch, U.S. Fish and Wildlife Service (USFWS) Maine Coastal Islands National Wildlife Refuge (NWR).

**BIOGRAPHICAL INFORMATION:** Liam Waters is a seasoned seabirder currently working at Stellwagen Bank National Marine Sanctuary monitoring, tracking, and analyzing marine life. He graduated from UMass Amherst with a B.S. in Wildlife Ecology and Conservation in 2020 and went on to earn a Master's in Geographic Information Science and Technology in 2021.

**CONTACT:** Liam Waters ([liam.waters@noaa.gov](mailto:liam.waters@noaa.gov))

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## Monitoring the Terrestrial Acoustic and Disturbance Ecology of Gray Seals at an Ephemeral Haul Out.

**DESCRIPTION:** Gray seals (*Halichoerus grypus*), a sentinel species crucial to New England's marine ecosystems, rely on vocalizations for communication. However, increasing seal and human populations in the Cape Cod National Seashore (CCNS) present heightened conflicts and challenges for conservation and the economy. Despite the importance of vocalizations in gray seal behavior, limited research is focused on the types and functions of terrestrial vocalizations, seasonal haul-outs, and their response to anthropogenic disturbances. This study, a pilot project in conjunction with the Center for Coastal Studies, addresses these gaps to determine what types of terrestrial gray seal vocalizations are heard in the CCNS, what types of disturbance are present, and the types of behaviors seen. This study took place in Provincetown, MA at two seasonal haul-out locations, Long Point and Lobster Cove, where data was collected using a combination of passive acoustic monitoring (PAM), ethograms, and camera traps. Preliminary data shows that there are 2 confirmed call types thus far present within the CCNS: moans and growls. This data is imperative to explore how gray seals are communicating within these seasonal haul outs and therefore how their calling behavior may be influenced by various disturbances. Preliminary analyses also show that the seals show different proportions of active vs non-active behaviors depending on the disturbances seen/heard (i.e. aircraft, anthropogenic presence, birds, dogs, noise, vessels, and wakes) in the CCNS. The most common disturbance present found was humans on foot and the seals spent approximately 85% of their time during focal follows in the presence of some type of disturbance. This research is part of a greater project that aims to help foster coexistence between seals and humans within the CCNS and the Isles of Shoals while supporting sustainable management strategies for both wildlife and local communities.

**PRESENTER:** Callyan Lacio, PhD Student, University of New Hampshire

**COLLABORATORS:** Lisa Sette, Seal Research Program Manager, Center for Coastal Studies

**BIOGRAPHICAL INFORMATION:** Callyan holds a BS in Zoo Science and Conservation Science from Friends University in Wichita, KS. Her research focused on captive animal behavior, enrichment, and public perceptions. She has prior experience in wildlife rehab, PFAS analysis, and K-12 non-traditional education.

**CONTACT:** Callyan Lacio ([callyan.lacio@unh.edu](mailto:callyan.lacio@unh.edu))

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## Water Quality and the Important Role of Citizen Scientists

**DESCRIPTION:** This poster discusses the issues of water quality (specifically nutrient pollution) and how researchers and citizen scientists are working together to help restore our estuaries to healthy conditions. Come learn about our current research projects and how you can get involved. This poster emphasizes the vital role of citizen scientists and highlights the projects made possible through their contributions. It briefly outlines the methods used for water quality sampling, explores general water quality trends in Southeastern Massachusetts and illustrates the importance of our trained citizen scientists to the success and sustainability of our research projects. We have water quality volunteers located throughout SE Massachusetts including Eastham, Chatham, Orleans, Barnstable, Harwich, Dennis, Mashpee, Falmouth, Nantucket, Martha's Vineyard and Swansea and look forward to training new volunteers for this upcoming summer season.

**PRESENTER:** Sara Sampieri Horvet, Research Associate and Analytical Laboratory Manager, Coastal Systems Program School for Marine Sciences & Technology (SMAST) at UMass Dartmouth

**COLLABORATORS:** Dr. Micheline Labrie Assistant Professor, Director of the Coastal Systems Program School for Marine Sciences & Technology (SMAST) at UMass Dartmouth

**BIOGRAPHICAL INFORMATION:** Department of Estuarine and Ocean Science School for Marine Science and Technology, University of Massachusetts Dartmouth 706 South Rodney French Blvd. New Bedford, MA 02744

**CONTACT:** Sara Sampieri Horvet ([ssampieri@umassd.edu](mailto:ssampieri@umassd.edu)); Dr. Micheline Labrie ([mlabrie@massd.edu](mailto:mlabrie@massd.edu))

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## Cape Cod Freshwater Pond Buffer Guidance

**DESCRIPTION:** One of the environmental features that makes Cape Cod unique is its freshwater ponds. The Cape's 890 freshwater ponds and lakes cover nearly 11,000 acres. They are dynamic natural systems that contribute to the region's identity. They are also fragile ecosystems whose health is increasingly threatened by human activities, including development within sensitive pond shore buffers. Homeowners and municipalities with properties bordering freshwater ponds need guidance and local examples of landscaping and other best practices to help protect and preserve ponds. To help meet this identified need, the Commission engaged with a consultant to develop guidance for pond shore buffers to aid in educating residents and homeowners, increase community acceptance and implementation of appropriate pond shore practices, and support local Conservation Commission review and approval of restorative pond shore projects. The Cape Cod Freshwater Pond Buffer Guidance provides information on the importance of pond shore buffers, best practices for designing, installing and maintaining vegetated buffers, example planting strategies, a plant list focusing on species native to Cape Cod, and resources on sourcing native plants. The Cape Cod Freshwater Pond Buffer Guidance is a product of the Freshwater Initiative. Launched in 2021, the Freshwater Initiative is a science-based, information-driven planning process to engage stakeholders and enable action to protect and restore Cape Cod's freshwater resources.

**PRESENTER:** Heather McElroy, Natural Resources Program Manager, Cape Cod Commission

**COLLABORATORS:** Kristy Senatori, Erin Perry, Jessica Rempel, Tara Nye Lewis, and Tim Pasakarnis, Cape Cod Commission; Kristin Andres, Association to Preserve Cape Cod (APCC); Angela Tannera and Jen Crawford, Jenick Studio / Crawford Land Management

**BIOGRAPHICAL INFORMATION:** Heather McElroy is a planner at the Cape Cod Commission, working to develop appropriate tools and policies to help address the region's natural resource and land use challenges. Her work has contributed to many regional projects focused on improving communication, knowledge, and action on natural resource and climate change issues on Cape Cod.

**CONTACT:** Heather McElroy ([hmcclroy@capecodcommission.org](mailto:hmcclroy@capecodcommission.org); 3225 Main Street, Barnstable, MA 02630)

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## Cape Cod Pond Watcher Bio-Survey Program: Preliminary Results

The Cape Cod Pond Watcher Bio-Survey Program aims to engage pond groups and other interested people to be citizen scientists and document their observations of life in and around the Cape's freshwater ponds. Field observation forms were provided along with supporting materials to assist in basic identification of plants and animals. The documentation of observations of wildlife and plant life helps to complete the full picture of our Cape ponds, individually and regionwide. In addition to people observing and recording seasonal changes in and around their favorite ponds, it is a goal to create a database that will bring together observations of pond life throughout Cape Cod. Recording both the invasive species as well as the native plants and animals will help identify areas for management and restoration, for sustaining biodiversity, and promoting resilience as we look forward to improving the health of Cape Cod ponds.

The pilot study was launched in summer 2024. During the first three months of the program, 60 observation field forms were submitted. Several designs with varying levels of detail were provided and feedback received. Input is being used to design a digital template and help us to develop and refine this program. The forms submitted represented 56 ponds from the 15 towns on Cape Cod. All forms recorded information on location, temperature (air and water), water level, and plants and animals at various levels of detail, either by checking occurrence yes/no or by writing in the common name. Summaries of the data submitted will be shared. Several versions of the form were used, and feedback is being incorporated into a revised 2025 field observation form that will be available at the Cape Cod Natural History Conference.

**PRESENTER:** Julie Hambrook Berkman, PhD, Pond and Cyanobacteria Program Manager, Association to Preserve Cape Cod (APCC)

**COLLABORATORS:** Sophia M. Feuerhake, Freshwater Science Coordinator, and John-Tyler Percy, Senior Pond Monitoring Technician, Association to Preserve Cape Cod (APCC)

**BIOGRAPHICAL INFORMATION:** Julie Hambrook Berkman, PhD is the Pond and Cyanobacteria Program Manager for the Association to Preserve Cape Cod. Her responsibilities include management, training, budgets, staffing, reporting, and program development. Julie works with citizens and organizations who care about Cape Cod's 890 ponds to obtain quality pond data to help inform our efforts to preserve and improve pond water quality. Prior to working with APCC, she worked with the USGS National Water Quality Assessment Program as an aquatic ecologist. Julie has a PhD in Biological Sciences from the University of Rhode Island and a bachelor's degree in botany and a master's degree in education from the University of New Hampshire.

**CONTACT:** Julie Hambrook Berkman, PhD ([jhambrook@apcc.org](mailto:jhambrook@apcc.org))

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## Cape Cod Water Resources Restoration Project

**DESCRIPTION:** The Cape Cod Water Resources Restoration Project (CCWRRP) is a landmark cooperative initiative aimed at restoring degraded natural ecosystems important to Cape Cod by mitigating impacts on salt marshes, migratory fish passages, and shellfish beds. Salt marshes provide important ecosystem benefits including nursery habitat, sediment retention, coastal storm resiliency, and nutrient uptake. Across Cape Cod, tidal flow to salt marshes has been severely restricted by undersized culverts, causing degradation of water quality, loss of nursery habitat, and reduction in coastal storm resiliency. The CCWRRP works to remove and replace undersized culverts with larger passageways, to restore natural tidal regimes to impaired salt marshes. Numerous freshwater ponds on Cape Cod are connected to the sea by free-flowing creeks and streams. These ponds are essential breeding habitat for migratory river herring that historically supported indigenous human and wildlife populations. Herring populations in Massachusetts have plummeted following the widespread installation of undersized culverts and dams, preventing the movement of migratory fish. The CCWRRP works to restore stream channels and fish ladders to ensure safe passage for these keystone species. Increased development has also resulted in the increase of paved areas across the Cape. When stormwater falls onto these surfaces, it often flows directly into adjacent embayments, carrying pollutants into water bodies with shellfish beds. The resultant water quality impacts can cause shellfish harvesting closures, impacting the livelihood of commercial and recreational harvesters. The CCWRRP works to capture stormwater near runoff locations, allowing it to percolate through the ground, which removes harmful bacteria. This project is funded by the USDA Natural Resources Conservation Service and is implemented by partnerships with all 15 municipalities on the Cape. To date, the project has dedicated over \$69M toward restoration, resulting in 31 completed projects, with an additional 55 projects in progress.

**PRESENTER:** Martha Craig, Program Manager, Cape Cod Conservation District

**COLLABORATORS:** Karissa Collins, Patrick Temple, and Simone Wright, Cape Cod Conservation District

**BIOGRAPHICAL INFORMATION:** Martha has a M.S. from the Virginia Institute of Marine Science at the College of William and Mary and has worked as a wetland scientist for over 35 years. She has worked on coastal restoration projects in Massachusetts for the past 20 years, including salt marsh restoration projects across the Cape.

**CONTACT:** Martha Craig ([martha.craig@usda.gov](mailto:martha.craig@usda.gov); 508-439-9980)

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## **Eelgrass Restoration Project**

**DESCRIPTION:** I have done two internships at the Cape Cod National Seashore and worked with aquatic ecologists and university researchers on an eelgrass restoration project on the Outer Cape. Our goal was to collect seeds from different sites and harvest the reproductive shoots. Once we had collected the seeds, we separated the excess material and non-viable seeds from the viable seeds. Once we have all of the viable seeds, we would begin planting the seeds at different sites that were theorized to be good eelgrass habitats. A total of approximately 42,000 seeds were planted in six locations on the Outer Cape in mid-October 2024. Seeds usually naturally drop before then, but we planted at this time to prevent disruption during hurricane season. This project was inspired by a restoration project in Virginia that was successful and was the first time being attempted in Massachusetts. Hopefully we will begin to see some results within the next few years.

**PRESENTER:** Kta'n Paul, Natural Resource Fellow, Mashpee Wampanoag Tribe

**COLLABORATORS:** Cape Cod National Seashore, Center for Coastal Studies

**BIOGRAPHICAL INFORMATION:** I'm from the Mashpee Wampanoag tribe and I'm currently working in the natural resource department learning how to become a burn boss for prescribed burning.

**CONTACT:** Kta'n Paul (Kta'n.Paul@mwtribe-nsn.gov)

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## Conservation and Survey Techniques to Estimate Abundance of the Northern Diamondback Terrapin

**DESCRIPTION:** The Northern Diamondback Terrapin is a threatened turtle native to coastal marshes of eastern and southern United States. To assess the terrapin populations in the Buzzard's Bay estuaries, our research team utilized different sampling techniques started in the spring of 2024. Our three main techniques to estimate abundance in our study sites are hand captures, trapping, and visual boat surveys by kayak. The use of the kayak allows access to small upstream inlets where there are congregations during certain windows in the tide. We have established roughly 30 different survey routes spanning from Dartmouth to Onset, MA. The majority of the visual surveys are conducted during a low tide window, with some being completed during high tide to understand how tide affects their movements. We also gained data from land-based surveys completed by volunteers and New England Coastal Wildlife Alliance based in Marion, MA. We deployed baited small and large hoop traps to capture terrapins. There were three main study sites where we floated traps for four consecutive nights. Traps were ran three times at each site. Our traps contained pool noodles either on the inside or the sides to ensure they stayed afloat and were attached to a pole in the ground. Our traps caught roughly 447 terrapins and with either hand captures or trapping, we worked up the terrapin and gave it a pit tag identification if it was an initial capture or noted a recapture. To further track terrapin movement in our study system, we used acoustic telemetry. We tagged 30 female turtles and deployed a receiver array to view their movements. On the off-field season, we are continuing to analyze the data collected to estimate abundance, distribution and movement in the Buzzard's Bay estuary.

**PRESENTER:** Emma Keene-Reinhard, Northern Diamondback Terrapin Field Technician, Zoo New England

**COLLABORATORS:** Dr. Jonathan Regosin (FWE); Dr. Michael Jones (FWE); Ally Jones (Mass Wildlife); Dr. Lucas Griffin (USF)

**BIOGRAPHICAL INFORMATION:** Native to Massachusetts, I completed my undergraduate degree at Stonehill College. Working with a local vulnerable species has been an exciting opportunity and I am especially interested in conservation and management through data analysis such as Capture Mark Recapture. I am looking forward to the next field season which will be the second year of this project. I will be pursuing my Master of Science in Ecology and Evolution at the University of South Florida in the Fall of 2025 under the guidance of Dr. Lucas Griffin.

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## Discovery and Conservation of Papillose Nut-sedge (*Scleria pauciflora*) at Camp Edwards

**DESCRIPTION:** The recent discovery of a state-listed endangered sedge species at Camp Edwards, an Army Training Site at Joint Base Cape Cod, Massachusetts, presents a unique opportunity for conservation and study. Papillose Nut-sedge (*Scleria pauciflora* var. *pauciflora*) is a rhizomatous perennial associated with uplands in disturbance-dependent habitats. Its native range extends from Southeast Canada through the eastern United States, and Cuba. Since its first discovery at Camp Edwards in the fall of 2023, Papillose Nut-sedge has been identified in four separate locations, all characterized by a history of soldier training and land management including range firing, mowing, and burning. This history highlights the plant's adaptability to these unique, disturbed environments. One of these four locations accounts for over 99% (estimated 82,000 plants) of the total number of individuals counted at Camp Edwards in 2024 and is the largest population of Papillose Nut-sedge in the region. Our findings combined with an investigation of other occurrences in Massachusetts underscore the importance of early successional landscapes in the conservation of rare plant species and offer valuable insights into land use and management practices that support their persistence. This poster will present observations of habitat conditions, the plant's distribution across the base, survey methods, and management recommendations. A primary goal is to raise awareness of the ecological significance of military conservation and disturbance-dependent habitat and to propose strategies for integrating conservation practices within military training areas. An additional goal is highlighting a subtle yet fascinating species contributing to our natural heritage and the importance of sandplain grassland and related plant communities.

**PRESENTER:** Erin Hilley, Conservation Biologist, MA Army National Guard, Natural Resources and Training Lands Program

**COLLABORATORS:** Sophia Roemer, Conservation Field Specialist, and Sean Rigney, Training Lands Field Specialist, Natural Resources and Training Lands Program

**BIOGRAPHICAL INFORMATION:** With roots on Cape Cod and a lifelong passion for the natural world, I hold a B.S. in Wildlife and Fisheries Biology and a M.S. in Conservation Biology from Antioch University. My professional interests align with my work duties and include native flora, the ecological implications of non-native species, and ecological restoration.

**Contact:** Erin Hilley ([erin.hilley@mass.gov](mailto:erin.hilley@mass.gov); 339-202-9329)

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## Impacts of Baiting Practices on Catch and Bycatch in Gillnets and Design of an Effective Outreach Program to Minimize Seabird Bycatch

**DESCRIPTION:** Incidental mortality of seabird species continues in many commercial fisheries, including species impacted by the 2010 Deepwater Horizon oil spill. The Open Ocean Trustees Implementation Group is using settlement money to fund research to restore populations of birds impacted by this oil spill, including great shearwaters (*Ardenna gravis*) found in New England waters. Bycatch of great shearwaters occurs in gillnets targeting spiny dogfish (*Squalus acanthias*) in the waters off Cape Cod, MA. Based on conversations with fishery observers, scientists, and commercial fishermen, it seems likely that changing gillnet baiting practices may reduce shearwater bycatch. The shearwater bycatch spikes when fishermen toss bait directly on their gillnets while they are being deployed and near the surface. However, baiting in front of the nets (forward baiting) or after setting (after baiting) may increase dogfish catch while minimizing shearwater bycatch. This project was designed to evaluate these methods and promote alternative baiting methods to reduce seabird bycatch through collaborations between scientists, fishermen, and fishing advocacy groups. We completed the first field season during summer 2024 and conducted nine tests of forward baiting and seven tests of after baiting. No seabirds were caught during any of the fishing trials. After baiting resulted in a significant increase in dogfish catch relative to control nets with no bait. Research will continue in summer 2025, with a focus on conducting additional tests of both baiting methods and understanding how the different baiting methods impact dogfish catch and shearwater bycatch. The project outreach campaign is underway to engage the Cape Cod fishing industry in exploring solutions to reduce bycatch.

**PRESENTER:** Dr. Liese Siemann, Senior Research Biologist, Coonamessett Farm Foundation, Inc.

**COLLABORATORS:** Cape Cod Commercial Fishermen's Alliance

**BIOGRAPHICAL INFORMATION:** Liese started working at Coonamessett Farm Foundation in September 2014. Her research focuses on using innovative methods to design bycatch reduction technologies, model offshore wind impacts on marine species and habitats, and assess marine animal populations using cutting-edge technologies like machine learning. Liese has lived on Cape Cod in Falmouth since 1988.

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