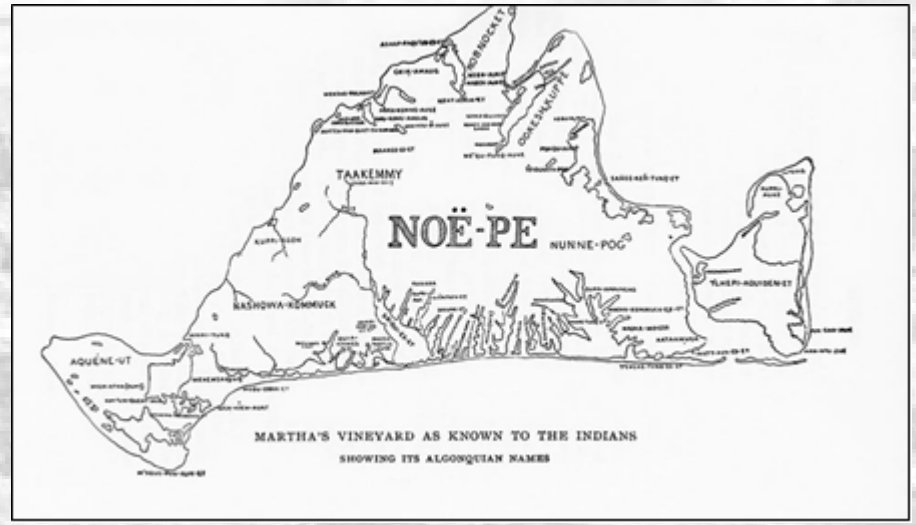
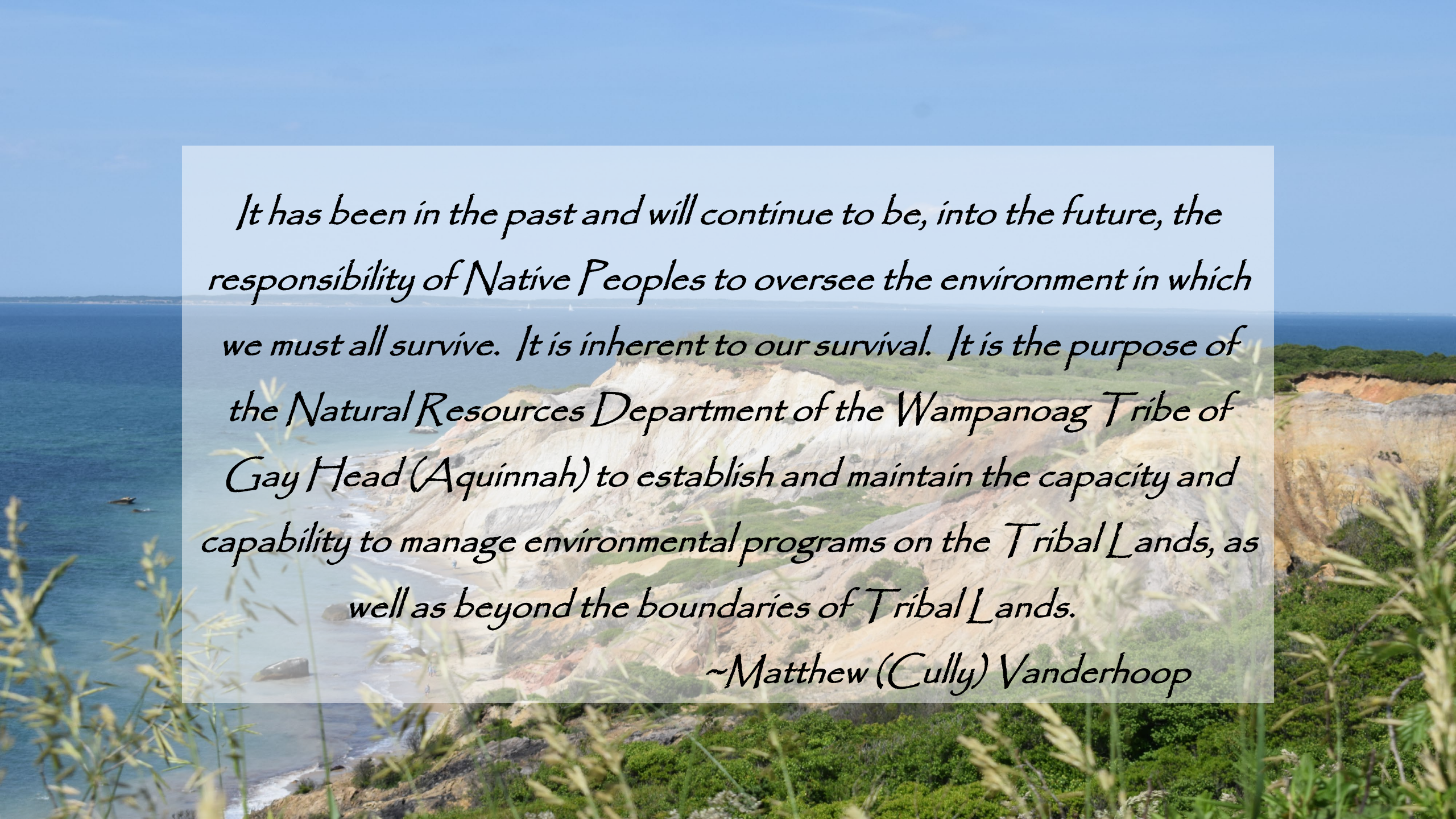
Wampanoag Tribe of Gay Head (Aquinnah)

Coastal & Sustenance Resilience

Aquinnah Tribal Lands



Dry land amid waters or land between the streams

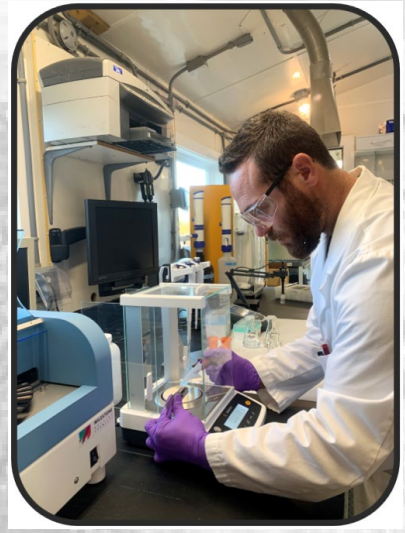


It has been in the past and will continue to be, into the future, the responsibility of Native Peoples to oversee the environment in which we must all survive. It is inherent to our survival. It is the purpose of the Natural Resources Department of the Wampanoag Tribe of Gay Head (Aquinnah) to establish and maintain the capacity and capability to manage environmental programs on the Tribal Lands, as well as beyond the boundaries of Tribal Lands.

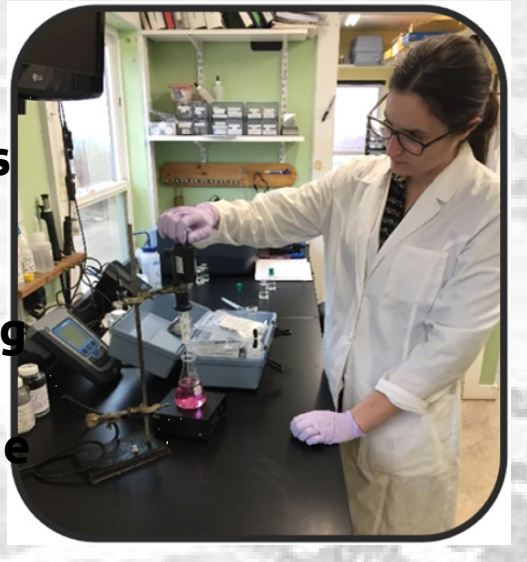
~Matthew (Cully) Vanderhoop

NRD Staff (L to R): Andrew Karlinski, Biologist; Marcella Andrews, Laboratory Analyst; Bret Stearns,Director; Andrew Jacobs, Laboratory Manager; Maria Abate, Research Biologist; Beckie Finn, Environmental Programs Coordinator.

Wampanoag Environmental Laboratory



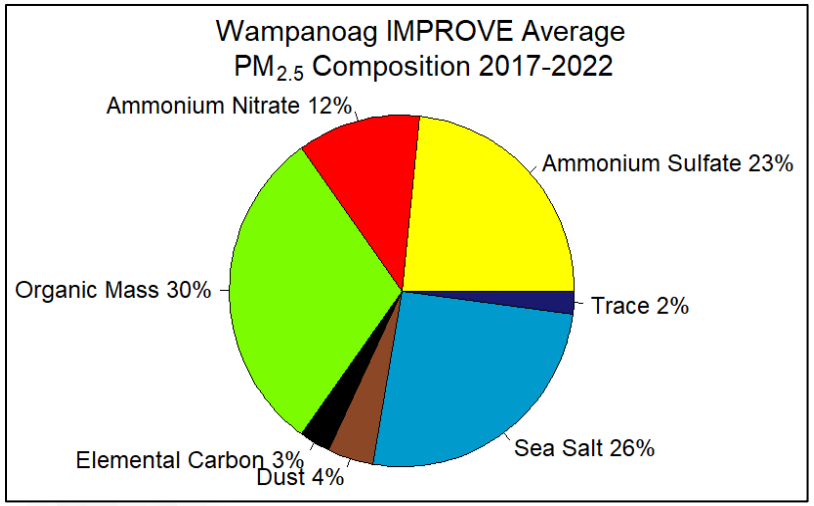
- **Fresh, salt, and brackish water quality monitoring and environmental research**
- **Monitoring the beaches of Martha's Vineyard for over 15 years**
- **Water quality testing for public, private, and environmental samples**
- **WampWeather weather station is located atop the Wampanoag Environmental Laboratory in Aquinnah, MA**
- **Monitors the air and water quality on Martha's Vineyard for the U.S. Environmental Protection Agency.**

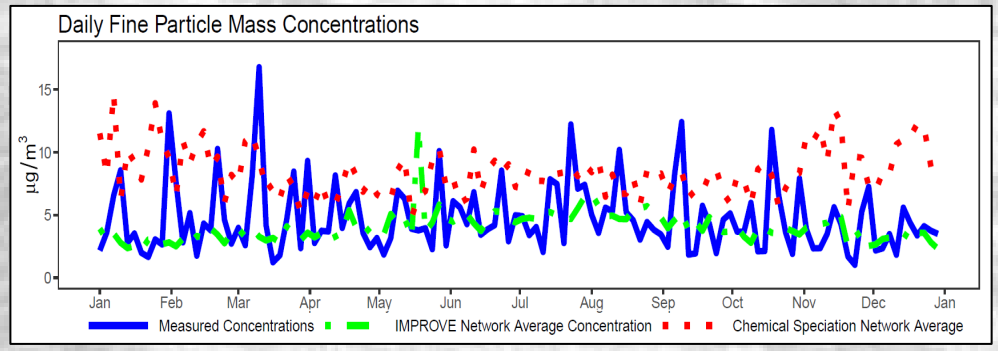


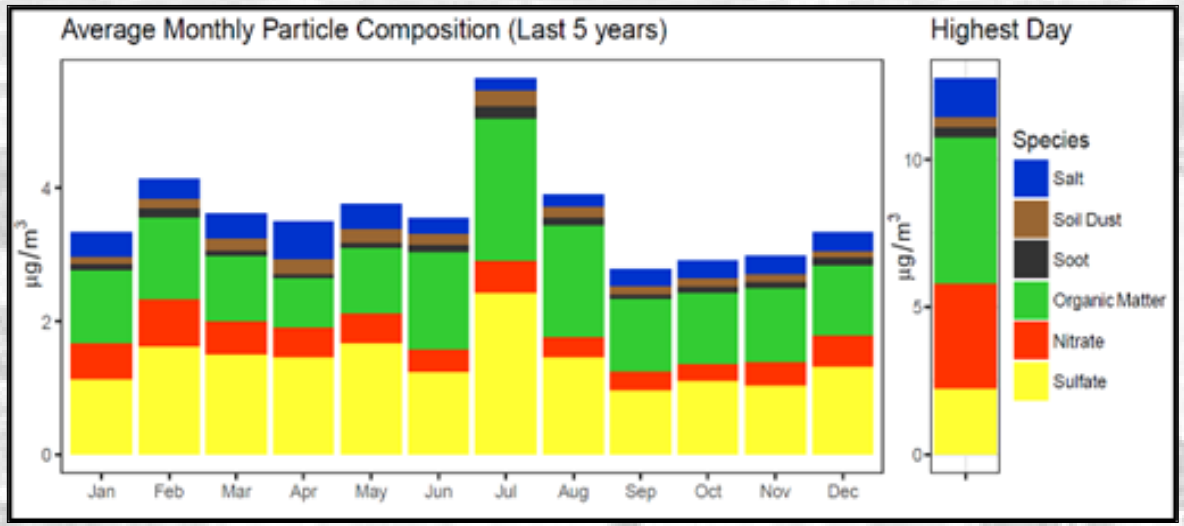
Wampanoag Environmental Laboratory
Air Quality Monitoring

Air monitoring shed at Wampanoag Lab that houses the IMPROVE PM2.5 samplers (left)

Inside one of the 4 sampling modules where particulates are collected (right)







Hurricane Sandy October 22, 2012
Restoration Projects

Hurricane Sandy devastated the Northern Shores in Aquinnah. The impacts to Lobsterville and West Basin beaches, and the dunes in what is known as the Common Lands are still clearly evident today. Since the passing of Hurricane Sandy the Natural Resources Department has been working to bolster protections for the wetlands and to try and reinforce the remaining dunes.

What role did the Tribe play?

Menemsha Dredge/Lobsterville Restoration

The Natural Resources Department worked with the Army Corps of Engineers, towns of Chilmark and Aquinnah to alter the plan for dredge spoils and have them relocated on Lobsterville Beach. This was nearly a two and one half year negotiation. The total project included funding from the National Fish and Wildlife Federation, Environmental Protection Agency, Bureau of Indian Affairs and U.S. Fish and Wildlife Service.

In November of 2017, a contractor for the Army Corps of Engineers completed the Menemsha Channel Dredging project. 42,000 cubic yards of sand (dredge spoils) were piped onto Lobsterville Beach, resulting in a substantial restoration of beach area.

Replanting Beach Grass

- The Natural Resources Department, with funding in part from National Fish and Wildlife Foundation (NFWF) has been replanting beach grasses in the dune system to bring back structure, stabilization, and protection.
- Community outreach event where the island community is invited to assist in planting/restoration efforts
- Currently nearly 109,000 sq feet of beachgrass has been planted or over 140,000 stems of grass have been planted

Bay Scallop Restoration

The Tribe receives bay scallop "seed" each year from a hatchery for population enhancement within Menemsha Pond.

These scallops are grown in spat bags and hung from floating lines, where they provide a safe environment for the scallops to grow, out of the reach of predators.

When the scallops mature (juvenile), to about the size of a quarter, they are released into a protected sanctuary site within the pond that is prohibited to shellfishing.

Codium Removal Program

Attention Aquinnah Shell Fishermen!

The Wampanoag Tribe will **pay** you for your assistance in removing Codium. To participate, contact **Andrew Karlinsky** and provide:

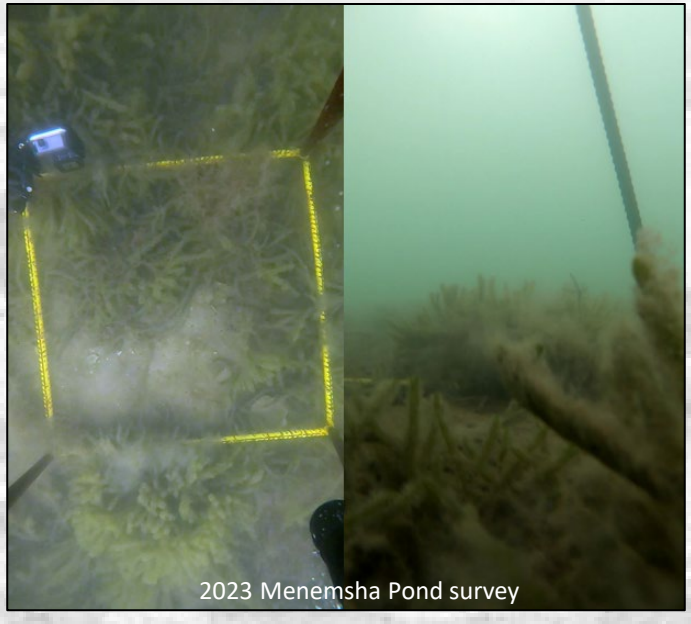
- Name, contact information, and mailing address
- Number of totes
- Picture of totes

For more information, questions, or comments please contact:

Andrew Karlinsky - (774) 563-5277

Brian (Chip) Vanderhoop - (508) 280-1177

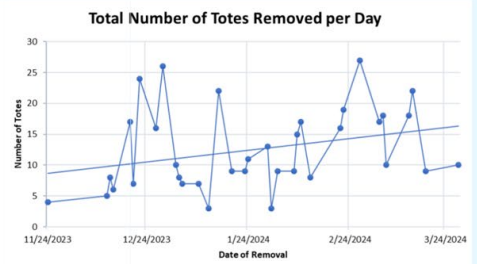
The Town of Aquinnah and Wampanoag Tribe of Gay Head (Aquinnah) are working together to remove the invasive codium in order to restore the ecological health of Menemsha Pond.



2023 Menemsha Pond survey

Codium Removal Program Review

During the shellfish season from November, 2023 to March, 2024, Aquinnah shellfishermen were compensated for their efforts in removing the invasive Codium fragile. This invasive algae will root to scallop shells and smother them which causes dredges to quickly fill up while only pulling a few scallops. In effort to offset time and resources spent dealing with codium, the Wampanoag Tribe facilitated this program to assure financial backing to shellfishermen as well as support their efforts in combatting the spread of an invasive species that is harming the ecosystem within Menemsha pond.

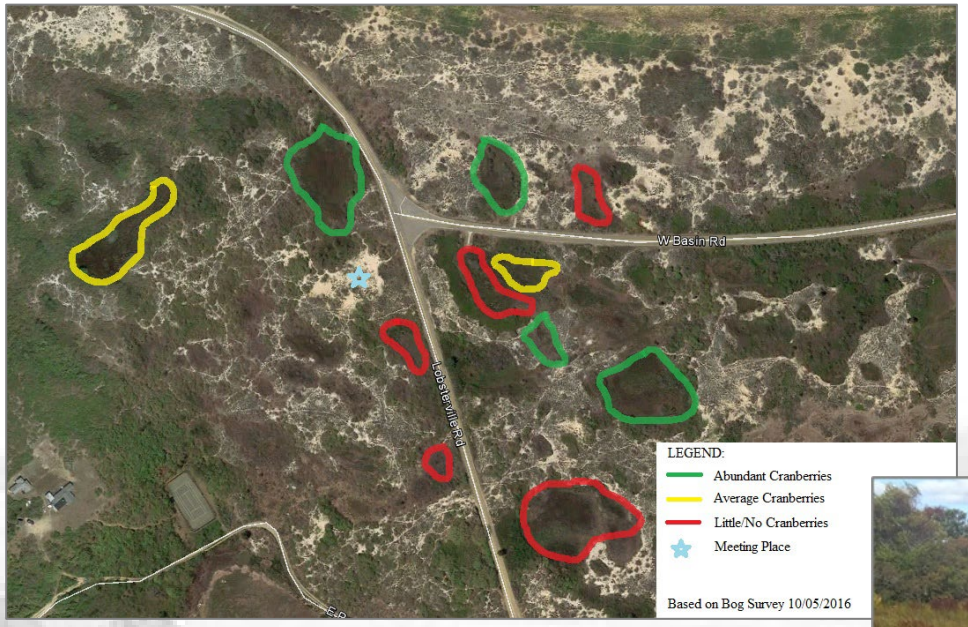


439 totes removed = 52,680 lbs or 26.34 tons

Minimal activity, quick success in reaching limits, and trips cut short due to weather, gear issues, or personal reasons could be the reason for low number of totes. High number of totes is most likely due to multiple shellfishermen on the water as well as more time spent on water. The overall increase in totes per day over the course of the season could be the result of multiple factors. Increase in temperatures means more days available for shellfishing and more time spent on the water during trips. Scallop availability decreasing over the season meaning more dredging resulting in more codium being hauled. Whatever the reason, the average amount of totes being brought nearly doubled by the end of the season. This program was far more successful than previously anticipated. While the amount of codium removed seems like a lot, it's unfortunately only a fraction of what is still at the bottom of Menemsha Pond. We hope to replicate this same success next season while also improving the program.

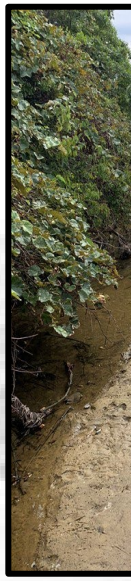
Aquinnah Wampanoag Natural Resources Department
PROTECT. ENHANCE. PRESERVE.

Wild Cranberries and a Changing Bog Structure

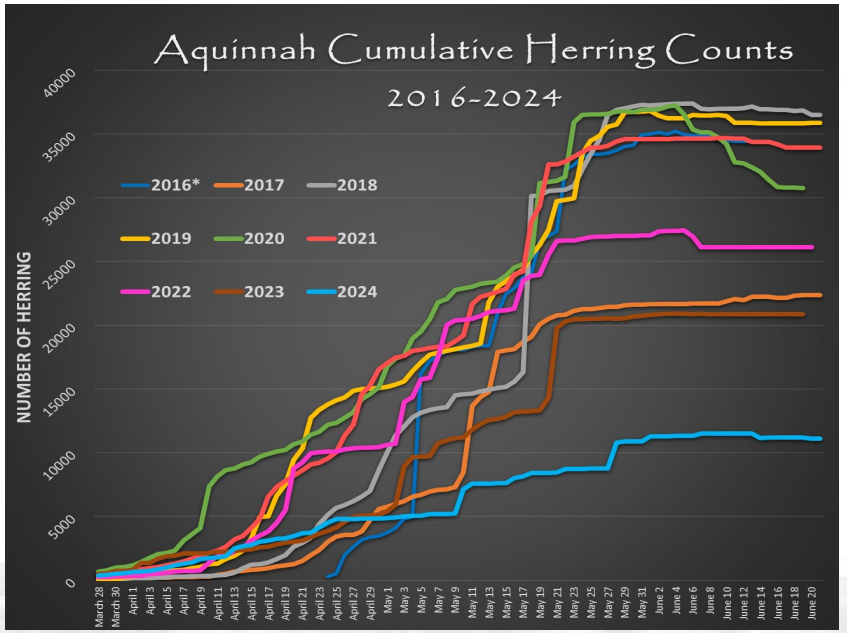


Aquinnah Herring Monitoring and Restoration

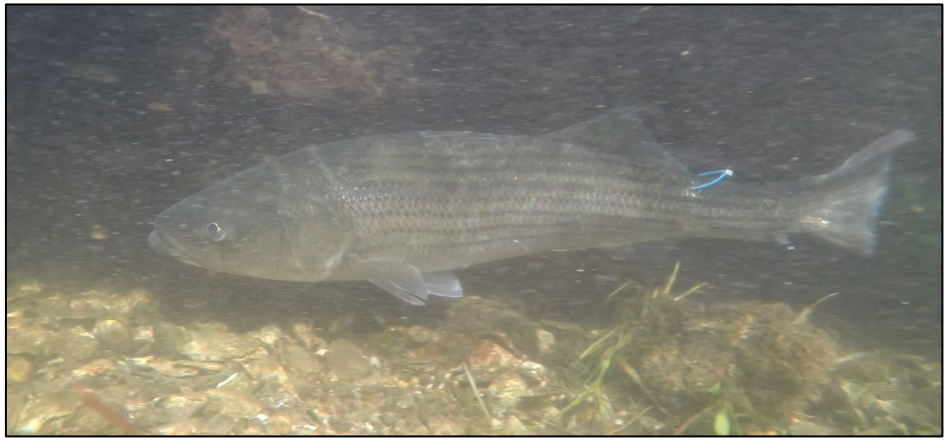
Dredging of the Herring Creek

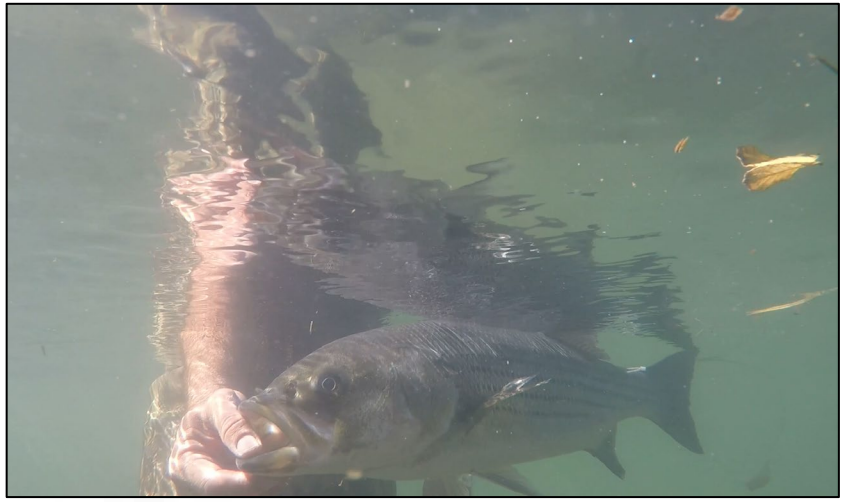


River Herring Monitoring Program



Striped Bass Monitoring Program





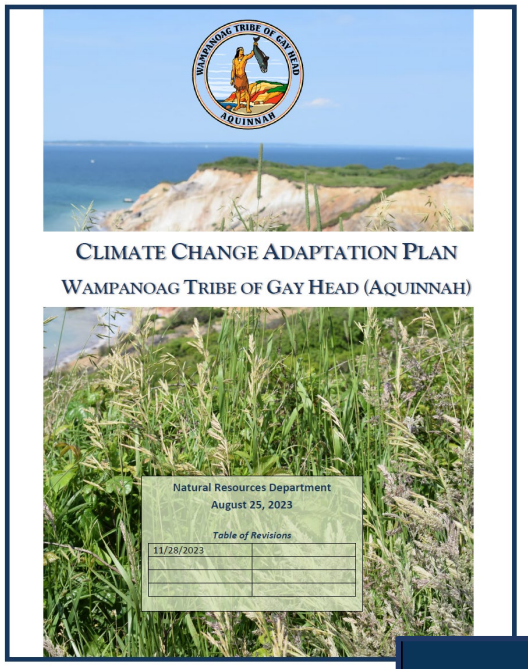
Net Zero New Construction in Tribal Housing

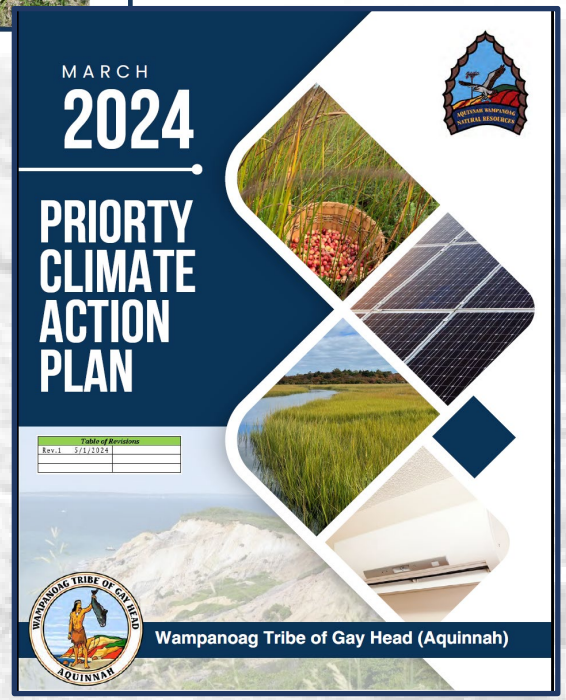
ENERGY SOVERIGNTY is a current goal of the Tribe. A plan has been developed to add considerable solar arrays to the Housing Authority homes as well as administrative buildings. Funding applications to meet this goal will be created and submitted until the vision is accomplished.

Planning for Climate Resilience

Reports and assessments used to consider and determine community actions and clearly demonstrate the extent of the need for the Tribe to address these issues vital to the survival of the Tribe:

- An Assessment of Natural Resources of Concern to the Wampanoag Tribe of Gay Head, Aquinnah
- Hazard Mitigation Plan Update for the Wampanoag Tribe of Gay Head (Aquinnah)
- Wampanoag Tribe of Gay Head (Aquinnah) USEPA 319 Nonpoint Source Assessment Report
- Wampanoag Tribe of Gay Head (Aquinnah) Nonpoint Source Management Program Plan
- Aquinnah Climate Change Context 2020
- The Vineyard Way Climate Action Plan
- The Tribal Climate Adaptation Plan
- Priority Climate Action Plan
- Comprehensive Climate Action Plan (Pending)





Planning for Climate Resilience

Relocation, Managed Retreat, and Protect-in-Place Planning

Through Department of the Interior, Bureau of Indian Affairs, Bipartisan Infrastructure Law and Annual Awards Program, we were awarded a $314,595 grant Support Tribal Climate Resilience and Ocean and Coastal Management Planning for Federally Recognized Tribes and Authorized Tribal Organizations. This funding supports the work of a Relocation, Managed Retreat, and Protect-in-Place (RMP) Coordinator for a 3-year period.

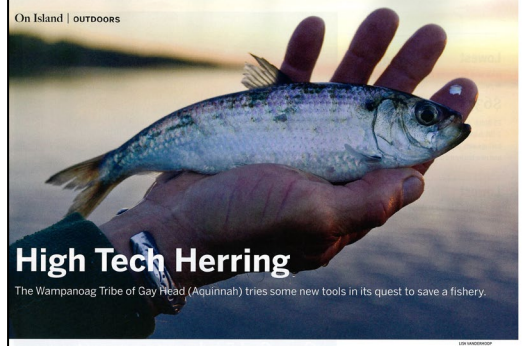
Outreach and Community Engagement

To preserve traditions, Indigenous tribe on Martha's Vineyard seeks to preserve herring

By Gal Tziperman Lotan Globe Staff, Updated August 29, 2021, 4:59 p.m.

Bret Stearns, the director of Natural Resources Department, checked a trap for eels at Herring Creek in Aquinnah. CHRISTIANA BOTIC FOR THE BOSTON GLOBE

When Kristina Hook was a child, river herring were so abundant in the Squibnocket Pond watershed on Martha's Vineyard that she and her brothers would grab the small silver fish with their hands from the herring



High Tech Herring

The Wampanoag Tribe of Gay Head (Aquinnah) tries some new tools in its quest to save a fishery.

LISA VANDERHOOP

Ancient practices are meeting modern technology at the herring creek. There, the Wampanoag Tribe of Gay Head (Aquinnah) and a team of researchers is embarked on a two-year project that utilizes tagging technology to study the natural conditions that affect river herring in the Squibnocket Pond watershed. The goal is to develop restoration strategies to stem the precipitous decline of a fish embroidered into tribal culture and tradition.

Alewives and blueback herring, collectively known as river herring, are anadromous fish, meaning that they are born in fresh water but spend most of their adult lives at sea. Juvenile herring depart the pond in the fall imprinted with the map they will follow when it is their time to play their part in the ancient cycle of procreation. They return in three to five years to spawn.

Historically, river herring spawned in most rivers and tributaries along the Atlantic coast. Since colonial times, the blockage of spawning rivers by dams and other impediments, combined with habitat degradation and overfishing, have severely depleted river herring populations. In 2005, following a particularly dramatic decline in returning river herring along the East Coast, fisheries managers imposed significant harvest restrictions as part of a broad-based restoration effort. Massachusetts imposed a moratorium on the harvest and sale of herring, which remains in effect.

However, members of federally recognized tribes are allowed to take herring for sustenance, and the Island's Wampanoag Tribe has taken a leading role in attempts to restore the stocks. As part of that, on a chilly evening in early May, members of the Wampanoag Natural Resources Department and project leader Asha Ajmani, a doctoral student at the University of Massachusetts at Amherst, demonstrated the work underway for a gathering of tribal elders and Islanders.

Working quickly, Abigail Archer, a fisheries and aquaculture specialist, removed a herring from a rectangular holding tank. In a sprinkle of reflective scales, she held the squirming fish down on a board with an inset ruler. After its size and sex were recorded, Ajmani made a small incision with a scalpel. She inserted a passive integrated transponder (PIT) tag, the size of a vitamin capsule, into the herring's body cavity. Archer then gave the incision area a gentle rub, and tribal laboratory manager Andrew Jacobs carried the fish back to the creek where it would continue its journey to its natal fresh waters in Squibnocket Pond.

The PIT tag works in a similar way to the vehicle transponders used to assess tolls. Antennas placed in twelve locations in the Squibnocket watershed track the herring's movements and allow researchers to identify their preferred spawning habitat. They'll also be able to determine when and if individual herring return to the sea and will provide information on annual returns. By the end of the May evening, the team had tagged ninety-three herring. In all, they have tagged about 500 fish.

A Northeast Climate Adaptation Science Center fellow, Ajmani said the knowledge gained would allow the Tribe and its partners to improve the spawning habitat in the watershed. A long-term goal is to restore a sustainable fishery for tribal members.

Wampanoags have harvested river herring for food, bait, and fertilizer for millennia from the Island's once numerous runs. The annual spring migration signaled the end of a long winter and was an eagerly awaited event in Native American and later colonial culture.

"It may be difficult to think about lean times with our supermarkets and shipments of food, but herring meant the bountiful time has begun," said Bettina Washington, the Tribe's Historic Preservation officer. "There was a time when all the town would be speaking of the herring; nearly every home smelled of herring. There was a deep appreciation for the herring and recognition of the short time it was here."

Bret Stearns, the Tribe's Natural Resources Department director, said the tagging program, funded by the Bureau of Indian Affairs, is a natural outgrowth of the ongoing restoration and research effort. In 2016, the Tribe installed a video camera and counter to monitor species traveling through the run. In early spring, the Tribe completed a dredging project begun last year to remove silt and sand that had built up in the creek over decades.

The Tribe hopes to learn if herring are spawning successfully, if there's enough space to spawn, and if water quality is sufficient for the spawning event. Based on that information, Stearns said, the Tribe can work with other landowners and partners to improve habitat.

Stearns said that annually over the last five years, approximately 37,500 fish returned. "That's not a big number considering that at one point this pond held about one million fish easily," he said. "Our job is to ensure that we have this resource into the future." ◆

– NELSON SIGELMAN

bluedotliving AT HOME ON EARTH MARTHA'S VINEYARD

September 5, 2024

'We Need Our Fish Back'

AUTHOR: Lucas Thors

CATEGORY: Features

From left: Andrew Karlinsky, Bret Stearns, Maria Abate, Marcella Andrews, and Andrew Jacobs of the Wampanoag Environmental Laboratory in Aquinnah. – Courtesy of Wampanoag Environmental Laboratory

What will it take for the river herring to return to Aquinnah?

Many Thanks for the Help and Support!
We can't do this without you!