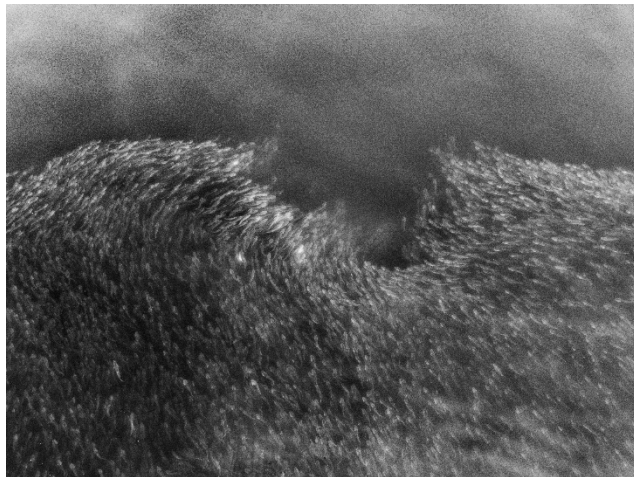


MENHADEN: INDICATORS OF A HOPEFUL FUTURE

SUTTON LYNCH*



Top to bottom: Humpback whale in menhaden school, edge of menhaden school.

I am from a relatively well-known place that is just a two-hour drive from New York City — the East End of Long Island, otherwise known as “the Hamptons.” I often refrain from mentioning this when I introduce myself because I know that it immediately incites biased opinions. Everyone has preconceived notions about the Hamptons: a “bougie,” over-the-top, superficial place where celebrities and New York City elites come to vacation in the summer months. It was odd growing up in a place with such a well-known, yet one-sided reputation, and though it has changed drastically over the past few decades,¹ it has nevertheless remained small and community-based.



Top to bottom: Menhaden school, bluefish school

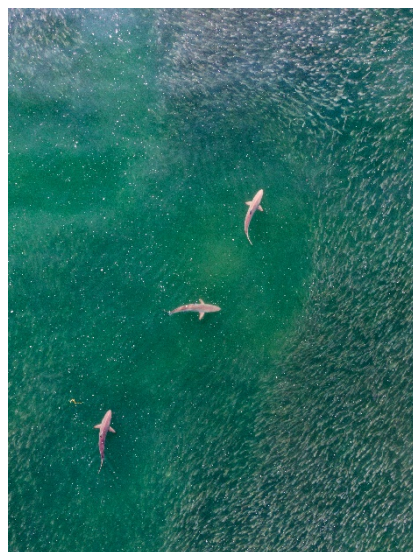
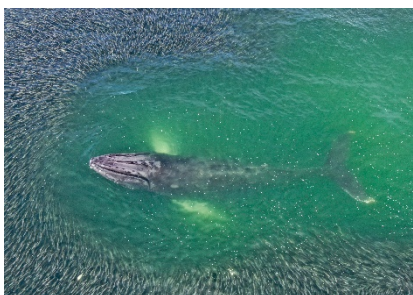
I have found the true experience of my home hard to describe. To me, home is the rolling tides, beachgrass, estuaries, and snaking creeks. Home is the changing seasons, hurricanes and blizzards, and bonfires

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1. Anne Kodé, *Are the Hamptons Still Hip?*, N.Y. TIMES (May 26, 2023), <https://www.nytimes.com/2023/05/26/realestate/hamptons-summer-housing-costs.html> (explaining that the “cyclical” nature of the Hamptons’ reputation is dependent on the new groups of people that come into the area).

under the stars. I have spent most of my time exploring the local landscapes, usually with a camera strapped to my side. This is where I grew up—between the trees and the sand.

If you have heard about the Hamptons, I doubt your mind immediately goes to whales and dolphins. There is a good reason for this. Until 2019, people rarely spotted whales, dolphins, or, for that matter, any fish from land.² Other than the occasional striped bass, bluefish school, or sunfish, I have very few childhood memories of



Top to bottom: Humpback whale in menhaden school, spinner

seeing marine life from the beach—despite spending nearly every day there in the summer. Cetaceans have long resided in the New York Bight, but generally remained far offshore, out of sight from most people.

In 2019, beachgoers on the East End of Long Island started to see humpback whales within a few hundred feet of the coast.³ Coincidentally, this was the same year I got my first drone. I was a lifeguard at the time, and so, in between shifts, I would fly my camera out to investigate. I discovered the ocean to be full of life, far more active than what could be seen from the beach. At the time, I did not know what was happening or why, and it did not seem like anyone I talked to knew either. I initially assumed that warming waters caused by anthropogenic climate change had shifted migration patterns, and consequently, had brought species farther north and closer to shore than ever before. This was partly true

2. Simon Worrall, *Whale Populations in New York Harbor Are Booming – Here’s Why*, NAT’L GEOGRAPHIC (Sept. 17, 2019), <https://www.nationalgeographic.com/animals/article/whale-populations-new-york-city-booming> (stating that there have been 377 whale sightings around New York in 2019).

3. Samantha E. Smith et al., *A Preliminary Study on Humpback Whales Lunge Feeding in the New York Bight, United States*, 9 FRONTIERS IN MARINE SCI. 1, 5–6 (2022).

for a few species,⁴ but it did not even begin to explain the entire story.

I was surprised to learn that the influx of wildlife sightings was a positive result of environmental policies implemented in 2012.⁵ After years of lobbying, the Atlantic States Marine Fisheries Commission finally voted to establish the first-ever coast-wide catch limit for a species of fish, menhaden, which had been in decline for decades.⁶ Menhaden, often called the most important fish in the sea, are small, eight to twelve inch omnivores that feed on zooplankton and phytoplankton, filtering and cleaning the water as they swim.⁷ They also serve as prey for countless larger species, including dolphins, sharks, marlin, tuna, and humpback whales.⁸ So, fewer menhaden had led to fewer predators visiting our shores.



Left to right: Humpback lunge feeding on menhaden, bluefish in menhaden school

The menhaden fishery developed in New England in the 1800s. It served as a replacement for the whale oil industry after humpbacks

4. *Climate Change Indicators: Marine Species Distribution*, EPA, <https://www.epa.gov/climate-indicators/climate-change-indicators-marine-species-distribution#:~:text=In%20waters%20off%20the%20northeastern,an%20average%20of%20137%20miles> (last visited Feb. 10, 2024) (illustrating the Northward shift in species migration patterns since the early 1970s).

5. *See The Return of the Most Important Fish in the Sea*, Nature Conservancy (Feb. 12, 2020), <https://www.nature.org/en-us/about-us/where-we-work/united-states/new-york/stories-in-new-york/menhaden-whales-return-new-york> (describing the role menhaden conservation efforts have played in returning whales and other marine species to the Atlantic Coast).

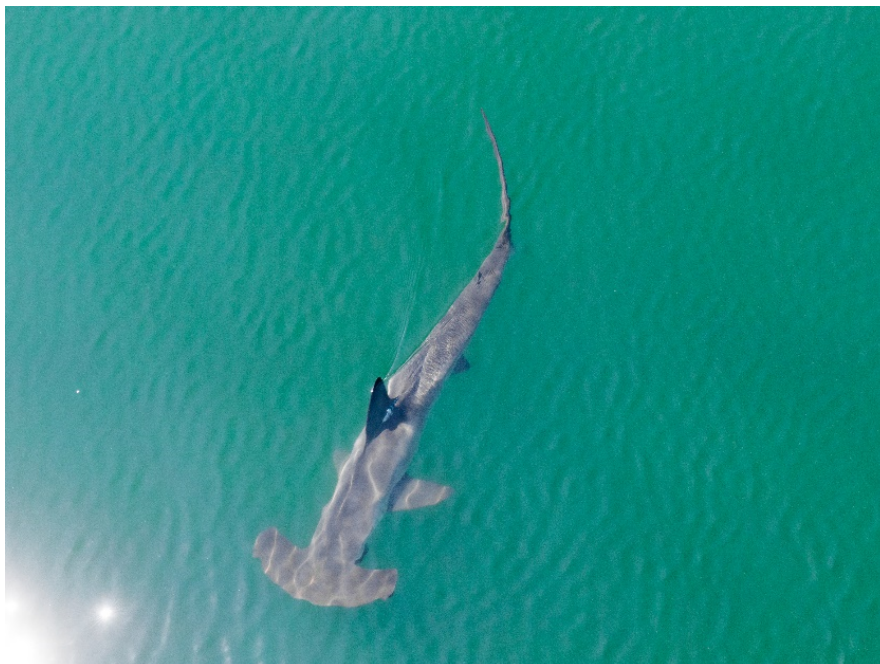
6. *See generally*, CHESAPEAKE BAY ECOLOGICAL FOUND., *Atlantic Menhaden Decline Caused by Recruitment Overfishing*, NUCLEAR REGUL. COMM'N (2006), <https://www.nrc.gov/docs/ML0932/ML093270167.pdf> (discussing the decline in the Atlantic menhaden population caused by overfishing).

7. *Atlantic Menhaden*, NOAA, <https://www.fisheries.noaa.gov/species/atlantic-menhaden> (last visited Feb. 10, 2024).

8. *The Return of the Most Important Fish in the Sea*, Nature Conservancy (Feb. 12, 2020), <https://www.nature.org/en-us/about-us/where-we-work/united-states/new-york/stories-in-new-york/menhaden-whales-return-new-york/>.

were hunted to near extinction.⁹ Menhaden are virtually inedible, but are used for all kinds of products, including fertilizer, animal feed, and dietary supplements—the most well-known being Omega-3 oil.¹⁰ The industry peaked in the mid-twentieth century, and the town of East Hampton was home to a number of these oil- and fertilizer-producing factories.¹¹ In the late sixties, the species's population dropped and fishing menhaden became unprofitable.¹² The processing of these fish is also very pungent, which contributed to the closure of nearly all of these factories in the region.¹³

By 2019, seven years after implementing the coast-wide menhaden catch limits, the species had returned in vast numbers to inshore



Smooth hammerhead shark

9. See Richard Schiffman, *Not Just Another Stinky Fish*, N.Y. TIMES (Oct. 26, 2016), <https://www.nytimes.com/2016/10/26/opinion/not-just-another-stinky-fish.html> (stating that Menhaden oil replaced whale oil).

10. *Atlantic Menhaden*, *supra* note 7.

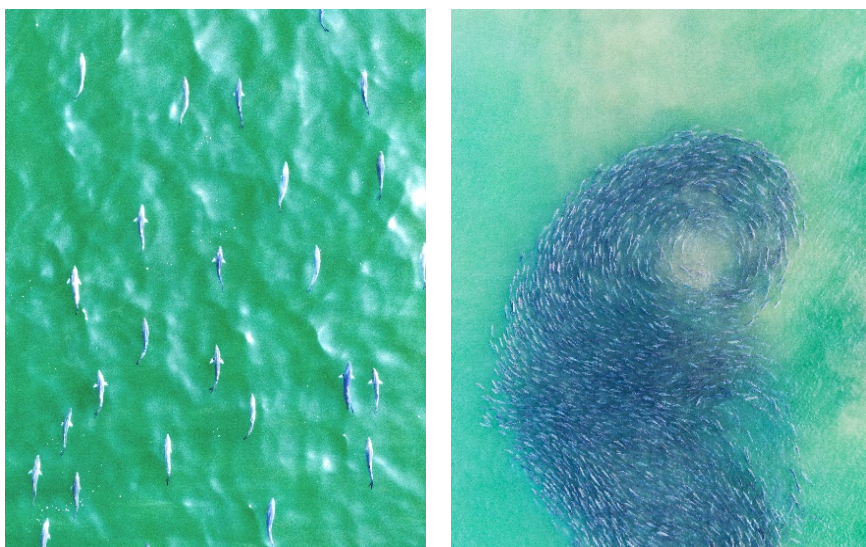
11. See JOHN FRYE, THE MEN ALL SINGING: THE STORY OF MENHADEN FISHING 102–07 (1978) (describing the historical menhaden industry in Long Island).

12. See *Atlantic Menhaden*, ATL. STATES MARINE FISHERIES COMM'N, <https://www.asafc.org/species/atlantic-menhaden> (last visited Feb. 10, 2024).

13. *Id.*

ecosystems.¹⁴ Given the scale of the depletion, this resurgence occurred in an incredibly short amount of time. People began seeing whales feed on menhaden along the beaches for the first time in generations. Humpback whales—which were protected under the Endangered Species Act of 1973¹⁵—became a common sight on the East End of Long Island.¹⁶

Community members in the Hamptons found themselves interacting with these creatures on a regular basis—but few people understood what was happening. For decades, organizations working to conserve menhaden had sought to raise awareness for their cause and instigate change. They were and continue to be successful in many ways.¹⁷ However, they had repeatedly run into the same dilemma—until recently there was little to no visual proof of menhaden’s



Left to right: Bluefish school (annual spring migration), bluefish school in August

14. See Worrall, *supra* note 2 (stating that “vast shoals of Menhaden can be seen in the New York Harbor”).

15. *Listing of Humpback Whale Under the Endangered Species Act*, NOAA (Sept. 8, 2016), <https://www.fisheries.noaa.gov/action/listing-humpback-whale-under-endangered-species-act>.

16. See generally, *NEW YORK BIGHT WHALE MONITORING: AERIAL SURVEYS, MARCH 2017 – FEBRUARY 2020*, at 23 tbl. 6, N.Y. DEPT. ENV’T. CONSERVATION, DIV. MARINE RES. (2020) (counting sightings of humpback whales near Long Island).

17. *Timeline of Menhaden Conservation*, CHESAPEAKE BAY FOUNDATION, <https://www.cbf.org/about-the-bay/chesapeake-wildlife/menhaden/timeline-of-menhaden-conservation.html> (last visited Apr. 16, 2024) (featuring a timeline of menhaden conservation efforts by the Chesapeake Bay Foundation).

significance to the local ecosystem.¹⁸ I found that many people were disinterested in the science because of its often blunt and dry presentation, making it feel detached from everyday experiences. While I have immense respect for scientific research and acknowledge its indispensable role in society and within my work, I also recognize its limitations.

I began sharing my wildlife research by posting regularly on Instagram about the marine life I was seeing. As my social media following grew, I realized that I had the opportunity to use my art to educate others. Once I understood how the resurgence in marine life sightings in the New York Bight was due to the protection of a single species of fish, menhaden, I began to take more meaningful action to protect it. I hoped my followers would echo this behavior, so I aimed to create an informative and engaging platform focused on helping the East End community understand their connection to the environment.

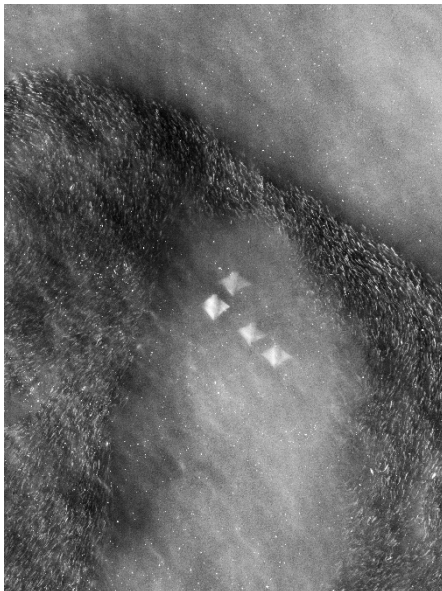


Striped bass school

My following has become surprisingly diverse, from young kids to

18. See Kate King, *Whale Watching in New York Grows More Common*, WALL ST. J. (Dec. 10, 2020), <https://www.wsj.com/articles/whale-watching-in-new-york-grows-more-common-11607618694> (describing how whale sightings were once a rare occurrence and have become increasingly common in recent years).

grandparents, academics, fishermen, politicians, and chefs. Through this, I have realized that everyone has a different relationship with nature. Whether it is fishing, paddleboarding, walking your dog, or engaging in a morning coffee routine, a shared reverence for the environment remains a constant thread. Given how little formal scientific expertise I have, I often struggle with the influence that comes with my position. As a result, I always welcome criticism, corrections, and personal stories and experiences from my followers. We must value the collective knowledge that can come from people of different backgrounds. I contribute the most accurate data I can find, but I still leave room for conversation. As my support has grown, I have begun to see my page as a subtle way to create grassroots change. If people are passionate about the world around them and understand how and why things are happening—like how passing legislation on menhaden catch limits or how the enactment of the Endangered Species Act can drastically improve quality of life—then they are more inclined to do something about it.



Cownose rays in school of menhaden

Over the last decade, our increased interconnectedness through smartphones and social media has created a crisis. The first element of this crisis is that social media algorithms decide what gets seen and by whom, what videos go viral, and what ultimately appears to be important.¹⁹ This has caused society to become increasingly polarized,²⁰ and so early on in my career, I decided to exclude radical politics from my work on social media. I worry that even the mention of anthropogenic climate change on my Instagram will cause some people to question the integrity of my work because of

19. Julia Angwin, *What if You Knew What You Were Missing on Social Media*, N.Y. Times (Aug. 17, 2023), <https://www.nytimes.com/2023/08/17/opinion/social-media-algorithm-choice.html>.

20. Kiran Garimella, *Polarization on Social Media* 9 (Jan. 22, 2018) (Ph.D. dissertation, Aalto University) (on file with Aalto University Library).

how politically charged the topic has become.²¹ The second element of this crisis is the media's sensationalized depiction of climate disasters.²² We have become so used to seeing hurricanes, wildfires, heatwaves, and flooding on the news cycle that we are no longer fazed by them and believe our efforts will not make a difference.²³ But these videos get more of a reaction, and thus drive-up engagement, so the cycle continues.

The slow and subtle effects of climate change can have as much—if not more—of an impact on the planet and its inhabitants, as the more imminent effects of climate change, such as increased hurricanes and wildfires.

Desertification, rising sea levels, and warming oceanic and atmospheric temperatures are all much less immediately noticeable.²⁴ As a result, they are rarely shared on social media, as they're more difficult to document in a single photograph or video.²⁵



Top to bottom: Atlantic bluefin tuna, cownose rays and menhaden school.

21. See Max Falkenberg et al., *Growing Polarization Around Climate Change on Social Media*, 12 NATURE CLIMATE CHANGE 1114, 1120 (2022) (discussing the politicization of climate action and right-wing climate skepticism).

22. See Ailise Bulfin, *Popular Culture and the “New Human Condition”: Catastrophe Narratives and Climate Change*, 156 GLOBAL AND PLANETARY CHANGE 140, 144 (2017) (“[F]ilms continue to present climate change in unhelpful ways, recycling the tropes of spectacular immediate catastrophe . . .”).

23. See David Gelles, *Climate Disasters Daily? Welcome to the ‘New Normal.’*, N.Y. TIMES (July 10, 2023), <https://www.nytimes.com/2023/07/10/climate/climate-change-extreme-weather.html> (“As climate disasters become more commonplace, they may be losing their shock value.”).

24. See Diego Arguedas Ortiz, *One Simple Reason We Aren’t Acting Faster on Climate Change?*, BBC (Nov. 18, 2018), <https://www.bbc.com/future/article/20181115-why-climate-change-photography-needs-a-new-look> (describing how many aspects of climate change are difficult to visualize).

25. Maxwell T. Boykoff, *WHO SPEAKS FOR THE CLIMATE?* 16 (Cambridge U. Press 2011).



Bluefish school

Ultimately, it becomes difficult to persuade people that these effects even exist due to their less dramatic nature. It is one thing to convince someone that, over the past ten, twenty, or thirty years, marine migration patterns have shifted a few miles. But how do you convince someone that though this might not seem consequential, it can, in truth, be ecologically devastating?²⁶ I hope to continue sharing the optimistic story of the menhaden conservation efforts, and how this fishery and others respond to a changing climate. And rather than telling people that “the water is warming” or “species are losing their habitats,” I’ll be able to show them. All the while, I hope to help them better understand the species involved and make them feel that they are a part of a community—no matter their backgrounds or political beliefs. We are not going to fix these issues if we do not come together.

In a way, my method feels a bit idealistic. I trust that with time, my followers, regardless of their beliefs or backgrounds, will discern the subtle environmental shifts evident in my work, eventually leading their perspectives and behaviors to evolve, often without conscious awareness.

26. Jess Melbourne-Thomas et al., *Poleward Bound: Adapting to Climate-Drive Species Redistribution*, 32 REV. FISH BIOLOGY AND FISHERIES 231, 232 (2021).

The reality is that climate change and the way it is reported have triggered an overwhelming level of anxiety, grief, and stress about the planet's health—especially among younger generations.²⁷ I know that this is true for myself and many of my friends. As much as I am driven to contribute the most I can to address the planet's issues, my mental and emotional resources are approaching their limits.

People often feel like their endeavors are pointless and have no impact on making things better. If all we see on social media is hurricanes and wildfires, why would it seem like anything can be done at this point? However, because of my work documenting and researching the effects of menhaden conservation, I have come to understand that sharing positive narratives that inspire hope can cast a new perspective on the crisis. The key to getting people to embrace change rests on reviving society's bond with the environment and igniting people's passion and curiosity about matters that are already significant to them.

We do not have time to debate climate change much longer, so finding common ground across all ages and political spheres is our best option. I want to use my work and the power that social media grants me to show people that it is not too late. We cannot give up. We can make a difference so long as we all start caring right now. The story of menhaden is certainly proof this is possible.

I aspire to maintain an inclusive platform that brings people together, helps others better understand the world around them and their connection to it, and gives hope for a healthier, more equitable, and sustainable future. I strive to disseminate unprejudiced information, create space for open conversation, and become a bridge connecting the scientific community with the public, facilitating a dynamic and engaging exchange of knowledge and insight.

27. Irida Tseveni et al., *Generation Z Worries, Suffers and Acts Against Climate Crisis—The Potential of Sensing Children's and Young People's Eco-Anxiety: A Critical Analysis Based on an Integrative Review*, 11 CLIMATE 1, 8 (2023).



Top to bottom: Bottlenose dolphins near shore, striped bass school in shallow water

I used to be embarrassed to say that I am from “the Hamptons.” Because of my recent work, that has changed. Now, I talk about the whales and dolphins, bluefish and sharks, and the alignment of the seasons with migration patterns. Home has become noticing and studying the land and sea as it reshapes itself, and shedding light on a part of this place that has returned after decades of dormancy. As far as these animals travel, even after years of detachment, they know to come back home. My work has already transformed the way a lot of people see the Hamptons, and I hope that it will grow into something much larger than my small town.