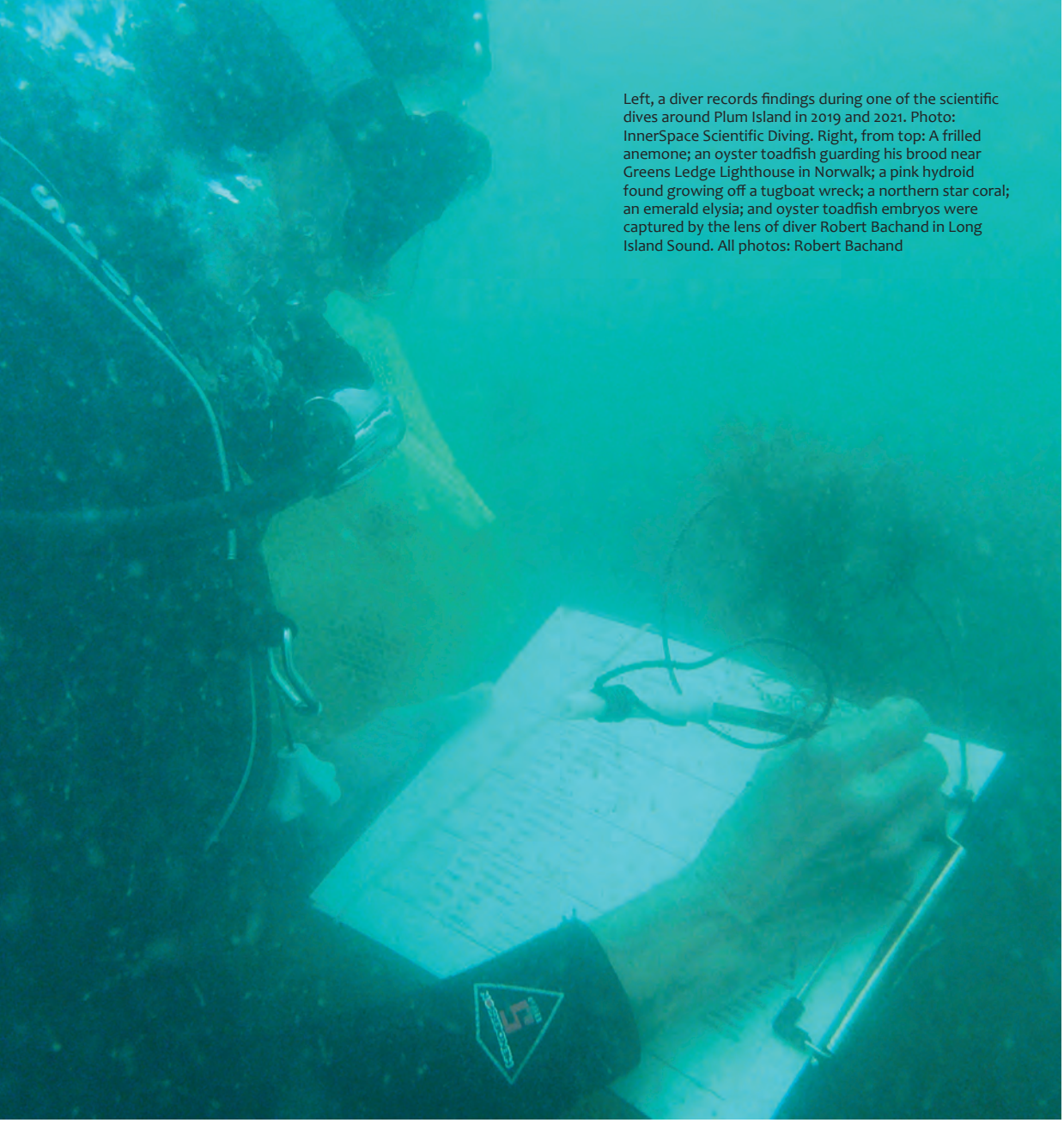

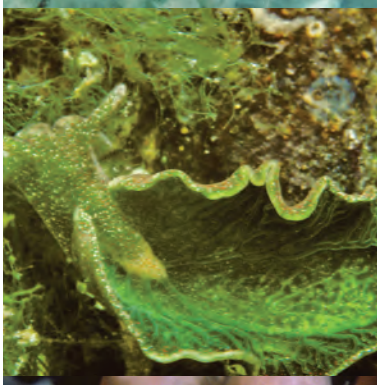

Left, a diver records findings during one of the scientific dives around Plum Island in 2019 and 2021. Photo: InnerSpace Scientific Diving. Right, from top: A frilled anemone; an oyster toadfish guarding his brood near Greens Ledge Lighthouse in Norwalk; a pink hydroid found growing off a tugboat wreck; a northern star coral; an emerald elysia; and oyster toadfish embryos were captured by the lens of diver Robert Bachand in Long Island Sound. All photos: Robert Bachand

A Scuba View of the Sound

DIVERS DOCUMENT RICH VARIETY OF MARINE LIFE AROUND PLUM ISLAND AND BEYOND

By Stephen Kurczy

If you've heard of Plum Island, you'd be forgiven for wondering if the surrounding waters of Long Island Sound teem with anthrax-belching fish and Frankensteinian creations of crossbred animal monsters.

Home since 1954 to a high-security government lab for combating infectious livestock diseases, Plum Island is rumored to have been everything from a staging ground for bioweapons terror plots to a sinister laboratory for a Dr. Moreau-type animal breeding program, with enough intrigue to inspire an episode of the television series *Conspiracy Theory with Jesse Ventura*.

With the government now preparing to shut down the laboratory and potentially open all or part of Plum Island to the public, dive researchers have

begun documenting what exactly lives there, helping to dispel some of the conspiracies as well as shed light on a unique environment that is thriving precisely because the area has remained largely off-limits to humans. While the prohibited area officially starts at the high tide line, often those who ventured too close to the island in a kayak or small motor boat found themselves warded off by the glare of security personnel.

On a greater level, the marine diversity around the dynamic waters of Plum Island underscores the richness of aquatic life throughout Long Island Sound. More than just a murky graveyard of shipwrecks, the Sound has long excited scientific researchers and diving enthusiasts who are willing to battle strong currents, extreme swings in visibility and mischievous seals to put their own eyes underwater.

"Understanding the landscape from the point of view of individual organisms and how they're distributed and how they interact is a critically important part to understanding how the underwater world works," said Peter Auster, an emeritus professor of marine sciences at the University of Connecticut who has logged more than 2,000 dives over his career, many of them research-related in the Sound, including near Plum Island. "Making observations in nature, if you're going to work on marine life, is somehow directly or remotely putting your head underwater."

A PLUM SITE

Thirty minutes by boat from New London in New York waters of the Sound, Plum Island holds a unique place in the ecology and mythology of the estuary. As host to the U.S. Department of Homeland Security's Plum Island Animal Disease Center, considered the nation's most important lab for combating infectious animal diseases, the island is strictly off-limits to visitors—fueling some suspicion about what's *really* going on there. In a 2008 website post, Homeland Security itself noted how the island had been supposedly linked "to germ warfare, anthrax, and even a purported 'monster' found earlier this summer on a beach in nearby Montauk, N.Y." (The monster turned out to be a decaying animal carcass.)

The Disease Center is slated to close next year—it's moving to Kansas—and for more than a decade a battle has been playing out for the island's future. An initial plan to sell Plum Island rallied opposition from more than 100 organizations who called for keeping the island in public hands as an environmental resource and historical site. In 2020, then-President Donald Trump—who once expressed interest in building a luxury golf course on Plum Island—signed a bill that included a provision to halt its privatization. At the moment, it's still owned and managed by the Department of Homeland Security, while Save the Sound and other groups continue working for permanent protection.

Home to a decommissioned lighthouse and former military fort, both listed on the National Register of Historic Places, Plum Island is where the sandy coast of Long Island transitions toward the rockier shores of New England. It's also where the waters of Long Island Sound mix in a physically and biologically dynamic manner with Peconic Bay and Gardiners Bay, Block Island Sound and the Atlantic Ocean at an opening called Plum Gut. As part of assessing the island's resources, Save the Sound, the Nature Conservancy and the New York State Department of Environmental Conservation have been funding research that might inform an environmental management plan.

Matthew Schlesinger, chief zoologist for the New York Natural Heritage Program, has contributed to four biodiversity surveys of Plum Island, starting with an initial assessment in 2012. In 2015, he led a team that conducted a four-season survey of the island, discovering 215 bird species and more than 450 plant types, but delving only into the marine life of shallow eelgrass meadows. To go deeper into the aquatic environment, Schlesinger returned in 2019 and 2021 with Steven Resler, owner and principal scientific diver of Albany-based InnerSpace Scientific Diving and HydroSpace Research, to conduct some of the first underwater surveys around Plum Island.

"The biodiversity inventory work broadly that we've done on Plum Island has helped make the case for its importance as a place to protect and not sell out of federal ownership," said Schlesinger, who has been accompanied in his research by Emily S. Runnells, Gregory J. Edinger and Meaghan McCormack of the New York Natural Heritage Program.

Over nine days and a cumulative 75 hours underwater, Resler and three other scientific divers scoured the seafloor to create an inventory of marine life at depths of 10 to 30 feet. Highlights from their 2019 survey included the observation of northern star coral—the Sound's only coral species—as well as dense coverage of bryozoans, seaweed and other organisms that demonstrated a highly productive marine environment. The team's 2021 data were yet to be published at press time, but Resler didn't hold back excitement about the preliminary findings.

"I've never seen the abundance of anemones, sponges, corals and bryozoans—so many species, packed into such a relatively small area, like we did at Plum Island," said Resler, who has been diving in the Sound for a half-century. He spotted no garbage, fishing lines or other signs of human impact, aside from a couple of lobster buoys.

DIVING CULTURE

Divers have long recognized the waters around Plum Island as diverse in marine life and with clearer visibility than the more trafficked areas of the Sound. Robert Bachand, a former president of the National Oceanic Society's Long Island Sound Task Force who dove around Plum Island through the 1980s and 1990s, recalls seeing flower-like cerianthid anemones in the soft mud, broccoli-shaped frilled anemones and mushroom-esque ghost anemones on boulders and a huge number of lentil sea spiders.

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"Scuba diving in the Sound, I feel, can be as rewarding as being in the Caribbean or any tropical sea," said Bachand, author of four books about the coastal Northeast, including his 1994 *Coastal Atlantic Sea Creatures: A Natural History* (published by The Maritime Aquarium at Norwalk). "Ten to 30 feet below the surface you can encounter some of the Sound's beautiful creatures."

Bachand conducted more than 500 dives in the Sound from 1972 until 2019, when lung cancer forced him to retire from the water. But he can still wax poetic about long tube worms swimming around ocean pilings, shell-less snails known as nudibranchs crawling on the seabed and bay scallops peering at him with their 40 baby blue eyes. He's the kind of marine enthusiast who can even love the oyster toadfish, a particularly ugly mud dweller with a venomous dorsal fin.

While diving near Greens Ledge Lighthouse near Norwalk around 1988, Bachand followed the recognizable "boat whistle" sound of a grunting toadfish and discovered a male guarding its nest beneath a rock. Bachand visited the toadfish for weeks, even bringing a clam so he could hand-feed the fish while he photographed its embryos, then its hatchlings, then its school of some 100 tiny toadfish.

Piers and lighthouses are great areas for observing marine life, as is another structure prevalent in Long Island Sound: sunken ships. In his 1987 book *Scuba Northeast*, a survey of diveable wrecks from New Jersey to Rhode Island, Bachand described going 90 feet underwater to see the remains of the SS Black Point. The freighter was torpedoed on May 5, 1945, near Point Judith by a German submarine (which itself was sunk later that day off Block Island). The stern was covered with frilled anemones, pink hydroids and bryozoans. Sea raven, large cunner, eel and lobster made a home inside.

Some wrecks can be great training areas for divers, too. Every fall Jeff Godfrey, UConn diving safety officer, brings students into the protected waters off Bluff Point to practice diving on a WWII-era P-47 Thunderbolt. About 20 feet underwater, it's still possible to see the plane's wing stubs, landing gear and engine. Missing, however, is a propeller that was removed in the early 1980s by wreck diver Bill Palmer of Connecticut. (*See sidebar on Palmer.*) Students practice conducting underwater tasks and identifying marine species, such as the black sea bass, tautog and porgy that feed around the wreckage.

"There's a strong diving culture in New England," Godfrey said. "It's more of a commitment, more challenging, and takes more time in the water to get comfortable to do the big dives here."

In support of UConn's marine research, Godfrey conducts dives for the Long Island Sound Integrated Coastal Observing System—coordinated by Marine Sciences Professor James O'Donnell—which maintains a series of buoys and sensors to measure weather, water quality and other data. Godfrey also dives on behalf of the Long Island Sound Habitat Mapping Initiative, a multiyear project led by UConn research scientist Ivar Babb to combine videos, images, sediment samples and acoustic maps to create more comprehensive maps of the Sound, including around Plum Island.

"One of the questions we're trying to answer with this project is, what were the communities like decades ago? How have they changed with regard to climate change and the overall impacts of human activities?" said Auster, who does research for the Habitat Mapping Initiative and conducts research dives with Godfrey. "By going underwater, we can see changes in sponge communities and coral communities and bivalve-dominated communities like mussels and slipper shells. Being able to put my head underwater, and I certainly encourage students to put their heads underwater, you can create your own baseline for change by seeing viscerally what's going on."

'MORE TO LEARN'

With work ongoing to assess Plum Island's environment and develop a management plan, scientific divers are on standby to continue their research.

"We're all somewhat concerned about Plum Island," said Resler, the research diver. "It hasn't had visitors in a long time, and very few people use the water around it. We would hope whoever goes out there would do so sensitively."

Resler might add that visitors should also beware of the large seal population. During one dive, a seal playfully nipped Resler's fin and yanked hard enough that he yelled aloud, startling his diving partner. Another time, Resler's survey sample bag disappeared, and he found his objects strewn about the ocean floor. When he resurfaced, he discovered a seal family waiting for him, their dark crowns popping above the water, their big eyes looking guilty.

But despite all the conspiracies around Plum Island, the researchers were never concerned about discovering more nefarious creatures.

"It gave us some amusement," said Schlesinger of the New York Natural Heritage Program. "But we were never afraid we might uncover a three-headed whatever."

Still, Schlesinger added, "There's plenty more to learn."

MORE INFORMATION:

https://www.dhs.gov/science-and-technology/plum-island-story
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