

A vertical glass of champagne is the central focus. The top part of the glass is filled with bubbly liquid, with a small American flag visible within the foam. The stem of the glass is narrow and tapers down to a spherical base. Inside this base, a detailed image of the Earth (the globe) is visible, showing continents and oceans. The background is a clear, light blue gradient.

UNDERWATER NATURALIST

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Climate Change

And The Coast

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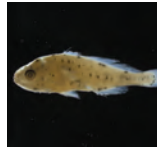
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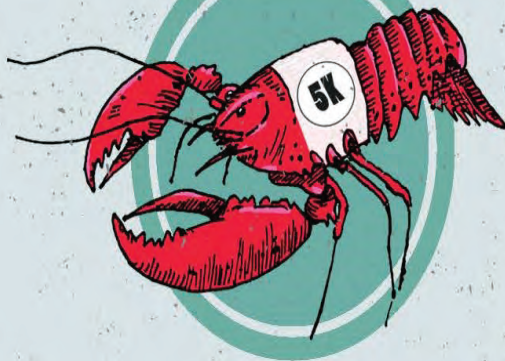


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On the Cover: Photo illustration by David Hawkins
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From the Executive Director

Climate change is the existential question of our generation.

Climate change is real, and because the evidence is overwhelming we must move past the asinine, politically motivated attempts to challenge its existence.

The impact of climate change on our coastal and ocean environment is dramatic and it should compel an unprecedented response. If climate change is not addressed it will alter the fundamental mechanics of our ocean systems and change the way our planet functions. Not only will climate change alter coastlines, change weather patterns, disrupt populations, and compromise economies, it will also do great harm to the ecosystems that provide most of the world's food and two-thirds of the air we breathe.

To prevent these outcomes we must stop adding more carbon pollution to the atmosphere and adapt to the changes that have already been put in motion.

For years the Littoral Society has been actively working to address the effects of coastal climate change with a particular emphasis on the effects of sea level rise. Sea level rise is a growing threat to coastal communities and ecosystems and to the people and marine creatures that live there.

Tide gauge data shows that in the 20th century sea level rose by 12 inches at New Jersey bedrock locations and an additional 4 inches along the Jersey Shore. Because of rising temperatures and other climate changes, sea level rise is now accelerating. In the 20th century sea levels rose globally at 0.7 inches per decade, but over the past 20 years they rose by 1.3 inches per decade. In New Jersey those rates were even higher. As of 2013, a Rutgers University study projected that the Jersey Shore will see a 1.5 foot sea level rise by 2050 and a 3.5 foot sea level rise by 2100. Those are alarming numbers.

Because of this threat and because nature knows best, the Society has been using "natural and nature based systems" to protect the coast.

In this issue of the Underwater Naturalist, we asked three experts on staff at the Society to examine projects intended to adapt to the effects of sea level rise. Northeast Chapter Director Don Riepe looks at the restoration of salt marshes in Jamaica Bay, New York, and their role in mitigating storm waves. Zack Royle writes about "living shorelines" to buffer coastal properties. And Captain Al Modjeski looks at the value of dunes as protection from ocean storms.



Also in this issue, Fish Tagging Program Director Jeff Dement gives his annual report on the society's intrepid volunteer fish taggers as they track where the fish go when they grow up. Fishermen should be very interested in Dr. Ken Able's article, which takes us to Little Egg Inlet, just north of Atlantic City, to look at climate change and its effects on the delivery of estuarine fish larvae.

The earth's climate is changing, and that change demands engagement, response and action. There is no time for any other path.

Tim Dillingham

Living Shorelines

Nature's Defenders

By Zack Royle







Located in Point Pleasant, NJ, Slade Dale Sanctuary is thirteen acres of pine-oak forest, hardwood swamp, and salt marsh that sit along the North Branch of Beaverdam Creek, a tidal tributary that flows into the larger Metedeconk River and, eventually, Barnegat Bay.

As its name implies, Slade Dale Sanctuary is a refuge, a bastion of protected wilderness in an otherwise heavily developed coastal area of New Jersey. It is also disappearing.

In the past 100 years, the shoreline of Slade Dale Sanctuary has eroded approximately 300 feet, equivalent to the length of a football field. To counteract this loss, the American Littoral

Society (Society) is working to build a breakwater in front of the property and several tree vanes at a perpendicular behind it. The goal is for these structures to buffer wave energy and trap sediment, protecting the shoreline from further erosion while allowing for the existing marsh to naturally expand. The breakwater and tree vanes will be made out of recycled Christmas trees donated by the public. Recycling Christmas trees not only reduces the cost of the project, but also reuses something that might otherwise end up in a landfill. It also provides an opportunity to increase community investment in the project.

Eighty miles away, at South Reeds Beach along the Delaware Bay, a double row of eighteen small mounds sit offshore in the intertidal zone (the area above water during low tide and below water during high tide). These mounds are clusters of mesh bags filled with the shells of knobbed whelk (*Busycon carica*), a predatory sea snail native to New Jersey.

The bodies of these particular whelk

Previous Page: The American Littoral Society's oyster reef at Moores Beach in Delaware Bay shortly after construction was completed.

Photo by Shane Godshall/American Littoral Society

This Page: Volunteers form a line to get shell bags onto the reef at Dyers Beach in Delaware Bay.

Photo by Bill Reinert



are now scungilli, the sliced conch served in Italian antipasto and pasta salad dishes, but their shells are being repurposed. Through multiple reef building events, Society staff, veteran interns, and volunteers from the public have used whelk shell to create a living reef breakwater. The shell bags that have been placed offshore now act as a kind of shock absorber, buffering incoming waves before they strike the beach, thus reducing erosion and loss of beach sand. They also create habitat for oysters (*Crassostrea virginica*), which require a hard substrate to adhere to in order to complete their lifecycle. The proliferation of oysters at the site has contributed to other species using the reef as place to live or hunt.

Both projects, the proposed Christmas tree breakwater and vanes at Slade Dale Sanctuary and the offshore oyster reef at South Reeds Beach, are examples of living shorelines.

The modern living shoreline concept is generally attributed to Dr. Edgar Garbisch Jr., a former professor

of organic chemistry at the University of Minnesota. In the early 1970's, Dr. Garbisch Jr. returned to his home state of Maryland where he became interested in marsh restoration.

Prior to that point, environmentalists had been focused on conserving existing marshes, with little thought given to restoring marshes that had been previously lost or degraded. Realizing the value of coastal wetlands, Dr. Garbisch Jr. began experimenting with different planting schemes and engineering designs in an effort to restore lost marshland. He eventually developed what we refer to today as a marsh sill. A marsh sill is essentially a low stone wall that is built within a waterbody.

Like its larger cousin the breakwater, the marsh sill serves to buffer wave energy, creating a calmer environment landward of the structure and trapping sediment. Native plant species are often planted in conjunction with sill construction. The wave attenuating and sediment trapping effects of the sill



provide time for the plants to root and grow. As the plants become established, their roots stabilize the shoreline, while their stems and leaves act to trap more sediment and buffer waves.

With its development in the mid-1970s, the marsh sill became the template for further living shoreline projects throughout the Chesapeake Bay Region. In the following years, the living shoreline concept expanded to regions throughout the United States, and to include multiple different techniques ranging from the simple planting of

native species to more advanced hybrid structures. Yet the general concept remains the same. Living shorelines protect the shoreline from erosion while also preserving, enhancing, or creating habitat.

Importantly, living shorelines maintain the connectivity between land and water, and recreate the natural functions of a shoreline ecosystem. As coastal communities face the growing threats posed by climate change, living shorelines should be an integral part of the overall strategy to improve coastal

resiliency.

Within New Jersey, the average annual temperature has risen by 2 degrees Fahrenheit since 1900. Over that same timespan, the sea level along the New Jersey coast has risen at a rate of about 1.5 inches every ten years, which is nearly twice the global average.

Future projections suggest sea level will continue to rise another two to four feet by the end of this century, with each one foot rise in sea level advancing the Jersey shoreline inward an approximate average of 120 feet. On top of this, climate change is predicted to increase precipitation in the state by about 10 to 20 percent, with more rainfall in the winter and less in the spring and summer.

Perhaps most troubling, expectations are there will be an increase in the frequency of large storms. The New Jersey Department of Environmental Protection predicts that the storms that typically would have occurred once every twenty years in the state, will occur once every five years by 2050.

All of this suggests that in the near future, New Jersey will experience increased flooding, increased erosion, and further loss of shoreline. How we respond to these threats now will greatly impact the resiliency, prosperity, health, and ecology of our coastal communities for generations to come.

Our historic response to dealing with shoreline erosion has been to armor the shoreline using “hard” structures such as bulkheads, seawalls, stone revetments, and rip rap. In the US, approximately 14 percent of the coastline (14,000 miles) has been armored with hard structures. If the current rate continues, the

National Oceanic and Atmospheric Administration (NOAA) predicts that one third of the nation’s contiguous estuarine shoreline will be hardened by 2100.

While such bulwarks can halt landward erosion and protect infrastructure (at least initially), they come at a cost. Hard structures destroy habitat, not only the habitat on which they are placed, but also any beach, marsh, or intertidal habitat water-ward of the structure. This is because as waves strike a bulkhead or seawall, the wave energy does not dissipate. Instead, it gets redirected down and backward, scouring any land in front of the structure. Not only does this result in a loss of habit, but it can also weaken the structure, leading to collapse. Hard structures also cannot adapt to changing environmental conditions and must be built to accommodate the current or projected future site environment. Additionally, all hard structures have a lifespan: on average a bulkhead will need to be replaced every twenty-five years.

Alternatively, living shorelines offer as much or more protection than bulkheads or rip rap. Importantly,

Facing Page: The Littoral Society will be constructing a living shoreline at Slade Dale Sanctuary in Point Pleasant, NJ to protect the eroding shoreline.

Photo by Zack Royle/American Littoral Society

Next Page: Kids from the Vineland Rotary Interact program make shell bags in Bivalve, NJ for the American Littoral Society’s first Delaware Bay oyster reef in 2014.

Photo by Shane Godshall/American Littoral Society

living shorelines do not have the same drawbacks as hard structures, and provide a number of additional benefits that not only improve the health of the environment, but directly benefit humans.

The coastal, wetland, and intertidal habitat associated with living shorelines is extremely productive and often supports a large, diverse suite of organisms. Studies have shown an increase in juvenile fish, crabs, and waterfowl associated with living shorelines. While creating a healthier environment in general, this can also translate into increased recreational opportunities in the form of fishing and birding. For example, a recent study by The Nature Conservancy found that the restoration of a freshwater wetland, beach, and dune in Cape May, NJ brings in about \$313 million a year from birders visiting the area.

Living shorelines can also help improve water quality through better

filtration of stormwater and the wave dissipating forces of wetland plants can help mitigate floods, thus reducing flood risk to properties. Critically, there is growing evidence that living shorelines may provide better storm protection and improved coastal resiliency than hard structures. Researchers evaluating damage in three North Carolina coastal regions following Hurricane Irene, a 2011 Category 1 storm, found that 76 percent of bulkheads sustained damaged ranging from landward erosion to complete structural collapse. No erosion was seen at marsh sites.

To this end, it is estimated that coastal wetlands provide \$23.2 billion per year in storm protection benefits (Conathan et al 2014). Living shorelines are also resilient themselves, often able to regrow following a storm event, and can be adaptable. A recent study showed that oyster reefs can grow in height as quickly as would be needed to keep pace with climate change through 2100.



Given the wide breadth of living shoreline techniques, it is not surprising that project costs can vary. The size, location, and environmental conditions of a site will all affect the design of a living shoreline, and consequently, its overall cost. Cost estimates range from \$50 per linear foot in low energy environments to up \$500 per linear foot in high energy environments where some hard structuring is required as part of a hybrid design. These cost are comparable to bulkhead installation, which can range in price from \$200-\$500 per linear foot. However, unlike bulkheads, living shorelines can often be built with the aid of volunteer labor, greatly reducing project costs.

It should be noted that living shorelines do have some limitations. The design of living shorelines is site specific, and requires a measure of technical expertise. There is no cookie cutter approach to a living shoreline. Engineers and ecologists often work together to design a shoreline that not only offers protection from erosion, but also protects or enhances the surrounding ecosystem. Also, living shorelines require maintenance, particularly early on, to ensure the living components (plants, mussels, oysters) become established. Finally, living shorelines may not be applicable in all situations. They are better suited to lower energy environments. Still, recent hybrid designs that incorporate aspects of hard structures are being used in higher energy environments.

Even where living shorelines are not an option, there are steps that can be taken to foster life. Researchers in Australia attached concrete flower pots

to existing sea walls in intertidal areas. The pots were placed so as to mimic natural tide pools. Twenty-five species not normally found on sea walls were found on sea walls with flower pots including different algae, sponges, snails, starfish, and crabs. This approach can be replicated in New Jersey at existing bulkheads and seawalls that cannot be replaced with living shorelines to improve biodiversity at these structures while providing educational opportunities for schools and the general public.

There should be no doubt that in the future New Jersey will face sea level rise, increased precipitation, and more frequent large storms due to the effects of climate change. It is essential we make smart choices now in how we deal with erosion and changing landscapes brought on by these factors.

Living shorelines provide an alternative to traditional hard structures. Their effectiveness in addressing erosion and stabilizing shorelines coupled with the ecological benefits they provide means that living shorelines must become an important component of any community's plans to improve resiliency.

Zack Royle works as a Habitat Restoration Coordinator in the American Littoral Society's Sandy Hook Office. His work involves scientific monitoring, educational outreach, permitting and assisting with the management of grants. Prior to joining the Society, Zack worked for seven years in the private sector as an environmental consultant. He has extensive experience in wetland delineations, and species and habitat monitoring.

Saltmarsh Loss and

By Don Riepe



Restoration





Saltmarshes are one of the most productive habitats on the planet, providing food and nutrients to estuaries and oceans, as well as to many species of birds, fishes and other marine life. They also protect the mainland as a buffer against coastal storms and flooding, and play an important role in reduc-

ing climate change by absorbing large quantities of carbon dioxide from the atmosphere.

Unfortunately the vast saltmarshes of the eastern U.S. coast have been eroding at a rapid rate. There are many reasons this is happening.

Sea level rise is certainly one of the culprits. New York experienced more than a foot of sea level rise from 1900 to 2000 and salt marshes that spend too much time submerged are eventually drowned.

However, a number of other factors also contributed to marsh loss. Among them, nutrient load (nitrogen from wastewater treatment plants and fertilizer run-off from lawns), coastal development (channelization, dredging, and filling), herbivory (the consumption of marsh grasses, in particular by snow, brant and Canada geese), and sediment starvation.

Previous Page: To restore Four Rulers Marsh in Jamaica Bay, NY, the American Littoral Society and a cadre of volunteers planted thousands of *Spartina* grasses on the island.

This Page: Volunteers plant grasses on a newly replenished island in Jamaica Bay.

Facing Page: Elders Point West in Jamaica Bay, NY, after having been replenished with channel dredgings, is outlined in snow fencing to protect the freshly planted grasses.

Photos by Don Riepe/American Littoral Society

As a result, in 1951 there were 2,347 acres of island marshes in New York City's Jamaica Bay. By the start of the 21st century, only about 900 acres remained. In the late 1990s the bay was losing salt marshes at the astonishing rate of 44 acres per year.

In 2001 the National Park Service (NPS), which administers the Jamaica Bay Wildlife Refuge and other Jamaica Bay locations, convened a Blue Ribbon Panel to assess the situation.

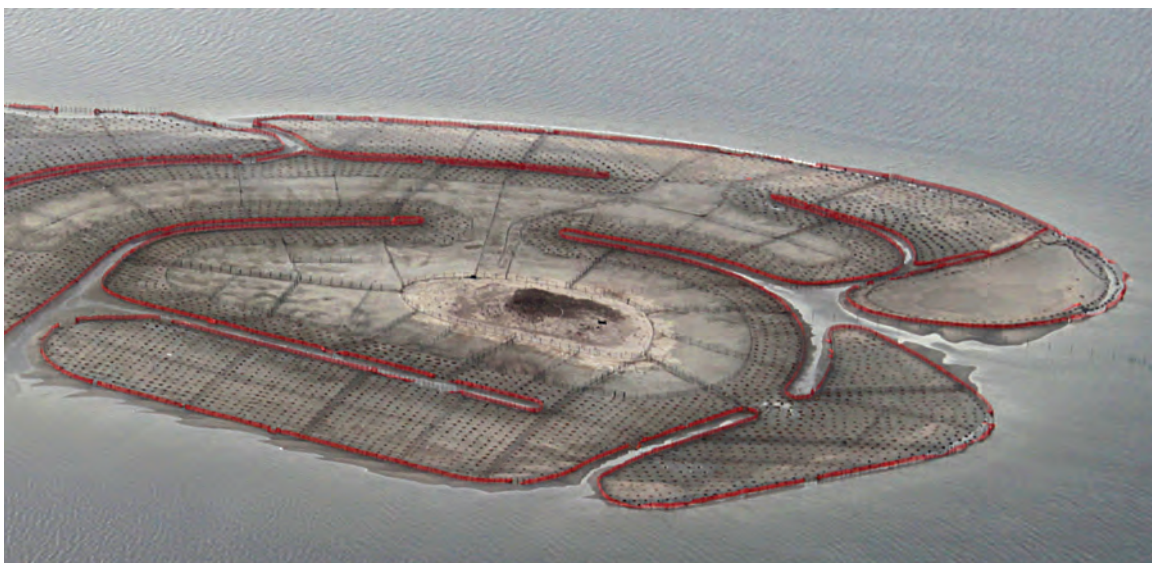
Based on the panel's assessment, the National Park Service launched a pilot project in 2002 to address the alarming loss of wetlands. Using a small dredge and a process called thin-layer marsh restoration, bay bottom sediment that had eroded into the boat channel was sprayed back onto Big Egg Marsh. Afterward, over 20,000 plugs of *Spartina alterniflora* (saltmarsh cord grass) were planted on the site. American Littoral Society volunteers assisted with the planting of those plugs.

The next year the U.S. Army Corps of Engineers (USACE) pumped thou-

sands of cubic yards of slurry (a mixture of clean sand and water) at another site, Elders Point Marsh East. The second restoration site was then planted with plugs of marsh grass. During the next few years they completed similar projects on Elders West and Yellow Bar Hassock marshes.

These early projects cost many millions of federal dollars. In order to save money and get the local community involved, the Society and the Jamaica Bay EcoWatchers undertook a plan to restore 30 acres on two marshes with volunteer support. The Society and the EcoWatchers enlisted volunteers from many local groups including NYC Audubon, New York City Department of Environmental Protection (NYCDEP), the New York State Department of Environmental Conservation (NYSDEC), and from the local communities around the bay. This community-based planting program approach was designed to develop support for the salt marsh restoration work as well as reduce costs.

The USACE provided planning





support as well as major funds to bring in clean sand and contractors build up the area designated for planting.

Subsequently, the NYSDEC awarded \$500,000 in mitigation funds to the Society to undertake a five-year program to establish viable saltmarshes at two additional sites in the western bay — 10 acres within Rulers Marsh and 20 acres at Black Wall Marsh.

Initially, because not enough marsh grass plugs were available, the groups had to harvest *Spartina* seeds in fall, transport them to Southern New Jersey to be cold stored for winter, then grown

in peat plugs by a nursery. In the spring, those plugs were trucked back to Broad Channel, New York, for planting. That effort required organization of a flotilla of boats to bring the plants and hundreds of volunteers out to the marsh sites.

More recently the Society has been purchasing plugs from Pinelands Nursery in South Jersey. To date, over 250,000 individual plugs of saltmarsh cord grass have been planted at the two sites with help from the Broad Channel community (where the Society has its Jamaica Bay office) and many outside organizations, including the Church of God, Mitsui Company, Bloomberg Company and Tanaka Corporation.

Grass planting is labor intensive. However, by using volunteers to provide and construct fencing the cost to

This Page: Erosion can be clearly seen in this aerial photo of Yellow Bar Hassock in Jamaica Bay, NY.
Photo by Don Riepe/American Littoral Society



purchase materials and plant the two marshes was reduced from about \$8 per square foot with contracted work, to \$1 per square foot with volunteers. This reduced the total cost of Society marsh island restorations by more than 65 percent as compared to the non-volunteer planted islands.

The restored marshes have fared well during storms and the local communities believe they helped mitigate damage to people and property.

The restored wetlands have already provided a buffer against wave action from storms, which has often caused damage to docks and houses on the edge of the bay. In addition, the restored marshland has added forage, shelter, and habitat for the numerous species of finfish and other marine life that call the

bay home. The increased biodiversity has benefited the many species of wildlife that call Jamaica Bay home, as well migratory birds which use the bay as a stopover on the Atlantic flyway.

Currently all the marsh restoration sites are being monitored by the National Park Service to assess the success and rate of native species recruitment. Early indications show the sites are attracting fiddler crabs and horseshoe crabs (especially 1-2 year old juveniles), as well as shore and wading birds. There are no signs of marsh damage from these species.

Sea levels will continue to rise, as they have for centuries. And the rate at which they will ascend seems certain to accelerate over the next few decades. This threatens to overwhelm the marshes' ability to accrue sediment and avoid being drowned. This is why the effort to restore salt marshes must continue.

In light of that, the Society is planning to undertake another two years of planting to fill in the gaps and ensure the establishment of the two restored marshes. In addition, it is hoped that the Society and partners will be able to continue this restoration initiative at other marshes in Jamaica Bay, in order to stabilize the rate of marsh loss and find solutions to this ongoing problem.

Don Riepe has been the Littoral Society's Jamaica Bay Program Director since 1985. He also patrols the bay as the Society's Jamaica Bay Guardian™. Prior to joining the Society he was a naturalist and manager at the National Park System's Jamaica Bay Wildlife Refuge where he worked for 25 years.

Dunes

Protectors from the Sea

By Captain Al Modjeski







Hurricane Sandy proved to be one of the darker chapters in the history of coastal New Jersey and New York and its impacts are still evident today. The storm, which was the largest ever recorded in the Atlantic, crashed ashore near Brigantine, New Jersey in the early hours of Oct. 29, 2012, and caused unprecedented damage to coastal communities spanning from Cape May, New Jersey to Montauk, New York.

Despite its devastation, the storm's

Previous Page: The dunes of Bradley Beach, NJ in January of 2017.

This Page: Volunteers install American Beach Grass culms on the dunes of Bradley Beach, NJ.

Photo by David Hawkins/American Littoral Society

impact restored an interest in protecting communities by using nature-based strategies. The American Littoral Society had long believed in the importance and need for natural defenses - such as dunes, maritime forests, and native vegetation - and was able to begin meeting with municipalities in Monmouth County, New Jersey to discuss options that could meet those resiliency objectives.

After the storm it was evident that while Sandy had caused tremendous damage across much of the eastern seaboard, towns in New York and New Jersey that had invested in restoring dune systems fared far better than those that had not. The towns of Bradley Beach and Mantoloking, separated by little more than 10 miles along the Jersey



Shore, provide a clear illustration of that difference.

According to the U.S. Army Corps of Engineers (USACE), the federal agency charged with maintaining the nation's coastline, about 100 miles of barrier dunes in the region were built by the corps. The rest were done by local governments.

Many of the projects were designed to withstand storms less powerful than Hurricane Sandy, according to the corps. But even in places where the surge cut through the sand, the dunes helped to soften the blow.

Richard T. Bianchi Jr., public works supervisor in New Jersey's Bradley Beach, said his town began building its 15-foot-high dune

system along the mile-long ocean-front in the 1990s by laying 25,000 feet of snow fencing in a saw-tooth pattern down the beach and later adding 20,000 recycled Christmas trees within that fencing to act as traps for drifting sand.

The fencing and trees helped gather wind-blown sand more efficiently and provided a foundation for future dune growth. Once the dunes were established, native grass was planted on the side facing the ocean to further stabilize the barrier. In subsequent years, the back dune was also planted with a variety of other native dune species.

Shortly after the back dune planting, as a resident of Bradley Beach, I worked with the town, the Bradley Beach Environmental Commission

and NJ Sea Grant on an effort to better educate residents and beach goers on the importance of Bradley Beach's dunes. The campaign, titled "How You Dune," involved placing signs at various access points to the beach. The signs described the history of dune building in Bradley Beach and the coastal communities that relied on the dune system.

"Prior to Sandy, nothing made me happier than getting complaints that our dunes were too high and that people could not see the ocean from our boardwalk," said Bradley Beach Mayor Gary Engelstad. "To me that meant that our continuous efforts to strengthen our dunes were working as they continued to grow. Those complainers were the same ones who thanked us for those dunes, because they absolutely did their job and protected our oceanfront properties during the storm."

Though the dunes were washed away in the storm, they did their job, and homes and businesses were saved. Within weeks, it was business as usual in Bradley Beach. Other communities were not so fortunate.

Further down the coast, in Mantoloking, some oceanfront residents who privately own the beach in front of their homes had resisted a five-year old USACE plan to install a dune system. Those oceanfront homeowners had been unwilling to sign public access easements in exchange for the federally funded dune project, which also included other flood prevention measures. Their resistance came at a high price, not just to themselves, but also to adjacent property owners.

Storm surge from Sandy breached Mantoloking in three places and left the town devastated. All of the town's more







than 500 structures were damaged and more than 100 buildings had to be bulldozed. Sixty homes simply disappeared without a trace, many of them having been swept into Barnegat Bay.

One home became a symbol of Sandy's effect. Ripped from its foundation by the storm surge, the two-story house

Previous Page: The town of Mantoloking, NJ was breached in three places by Hurricane Sandy in October of 2012. Hundreds of homes were damaged. Numerous homes ended up in Barnegat Bay. The town had few dunes in place before the storm.

Photo by United States Fish and Wildlife Service

This Page: Volunteers plant American Beach Grasses in Bradley Beach, NJ in 2015.

Photo by Pim Van Hemmen/American Littoral Society

was carried 200-feet west into the bay, where it sat in five feet of water until demolished by contractors hired by the state.

“We had a press conference, and we could not even have it in our town,” Mayor George C. Nebel told The Asbury Park Press soon after. “It was impossible. The borough of Mantoloking was divided into three distinct sections. In this very spot, we would have been standing in 12 feet of water. This was an inlet, bay to ocean.”

Shortly after Sandy, Bradley Beach began restoring its coastal defenses. I designed and, with the help of volunteers, planted a maritime forest on the northern end of Bradley Beach to protect a coastal lake. Partners included Bradley Beach, Monmouth County Master Gardeners, Rutgers University, and Surfrider. I also organized the first two plantings on the refurbished dunes.

The dunes were constructed in the same manner as the prior dune system, with snow fence and Christmas trees.

This new dune system contains a tree donated by NY Giants quarterback Eli Manning. That tree is rumored to reside at the Brinley Avenue beach entrance.

For the second planting the town paid for the dune grasses and the mayor drove down to Cape May to pick them up from the United States Department of Agriculture's Natural Resources Conservation Service, which showed remarkable commitment at the municipal level. Extra plants from the first planting were donated to Sea Girt for their dunes.

"There was never any question that one of our first post-Sandy projects would be the dune rebuilding process," said Mayor Engelstad. "Not only are we very proud of them but based on the throng that came out to plant dune grasses, people seem to feel they have a vested interest in the continued growth and success of our dune system".

In early 2017 a third dune grass planting was organized by the Society and Surfrider for the front of the dunes. At that planting small portions of the back dune were also planted with goldenrod, panicum, and big and little bluestem to further fortify the dunes.

Prior to the third planting, the dunes were averaging six feet in height and had already protected the community from a number of Nor'easters.

In Mantoloking the state, using federal dollars, installed a steel wall on the beach after Sandy. While that wall has managed to protect the town's buildings from any subsequent storms, the beach itself has largely disappeared -- leaving a 15-foot drop from the top of the wall

to the tide-line in some places. Efforts to replenish the beach and cover the wall have been held up over an ongoing fight over beach ownership and access.

However, most experts believe that any new sand put on the beach would quickly wash away, because hardened structures such as bulkheads and revetments tend to accelerate beach erosion.

With climate change and sea level rise, coastal storms and surges are expected to become both more powerful and more frequent. Coastal areas will continue to be extremely vulnerable to these storms and so will the communities that inhabit them.

With climate change and sea level rise, coastal storms and surges are expected to become both more powerful and more frequent.

The implementation of nature-based strategies including vegetated dunes and maritime forests, are a low cost solution that not only improve community resiliency but, as evidenced in Bradley Beach, also unite the community through volunteerism and stewardship.

Much like the change in our climate, the views of community leaders towards nature-based strategies to promote resiliency are also changing, as towns seek cost-effective ways to protect their coastlines.

Captain Al Modjeski is the American Littoral Society's Habitat Restoration Program Director. He supervises the Society's beach, dune and coastal lake restorations.

The Eff Climate Change of Estuarine



ects of on the Delivery Fish Larve



By Kenneth Able

Marine fishes are hard to study. The very nature of fish life history makes them difficult to study because fishes go through numerous stages. Typically they progress from the egg to the larval stage and then from the juvenile to the adult stage. The transitions between those stages may present bottlenecks to their survival as well. Together, these make fish even more difficult to study than birds. If you then add that some

marine fishes spend a portion of their lives in the ocean, in estuaries and other bodies of water, it becomes very challenging to study, manage, conserve and restore fish populations. This is especially true for the numerous fishes that depend on estuaries for feeding, growth, and survival. Estuaries are typically turbid, which makes direct observations difficult and that makes survival particularly difficult to estimate. These factors have



been plaguing fish and fishery biologists for centuries and we have not resolved those challenges. Now, to make it even tougher, the complexity of studying these fishes is also being compounded by a changing climate.

At the Rutgers University Marine Field Station (RUMFS) at Little Egg Inlet in southern New Jersey we have been monitoring larval fish delivery for over 28 years. Our studies clearly indicate that regardless of their geographic origin, increasing water temperatures are influencing the kinds and numbers of larval fishes being delivered to the inlet. Change in water temperature varies depending on where the measurements are made even inside the estuary, but studies indicate that water temperatures have increased 2-3 degrees Celsius over the 28 years of our study.

Little Egg Inlet is located between warm Gulf Stream waters and cold Labrador Current waters, and as a result we collect northern species and southern species as well as resident species. Much of this delivery occurs on flood tides when Atlantic Ocean water, with its accompanying larvae, moves through the inlet and into the Little Egg Harbor and

Great Bay estuaries and under a bridge over Little Sheepshead Creek.

The actual fish collection is made at that bridge with a fine mesh (one millimeter), plankton net in three consecutive one-half hour collections. The net is equipped with a flow meter to measure how much water is sampled. This collection and sorting of larvae occurs every week of the year, except when the creek is ice covered or when there is a major storm. Sampling is only done at night to reduce the larvae's ability to see and avoid the net.

Once the samples have been collected they are returned to the laboratory where they are immediately sorted by a bevy of scientists, technicians, and volunteers. This can take several hours. From 2002 – 2015, more than a 100 people have put in approximately 10,000 hours collecting and sorting these samples. Many additional hours are spent on identification, measuring, and staging the individual larvae. There is a seasonal rhythm to the sampling with the fewest larvae captured in the winter and the largest numbers being collected over the summer into the early fall. June through November is our busy season.

Opening Spread: This larval Atlantic Croaker (*Micropogonias undulatus*) was caught by the Rutgers University Marine Field Station staff at their larval fish sampling site and then photographed in the university's lab.

Previous Page: Aerial photograph of larval fish sampling location near Rutgers University Marine Field Station.

Photo by Rutgers University Marine Field Station



The sources of fish larvae collected in the inlet are varied and diverse. Larvae come from the far north, such as Georges Bank, and from as far south as Florida and the Gulf of Mexico. Those from the southern extremes include species such as crevalle jack, ladyfish and tarpon and eels from the Sargasso Sea. Those from the northern extremes include species like Atlantic herring, cod, and pollock from Georges Bank. Many of the larvae are spawned in the ocean immediately adjacent to Little Egg Inlet. This is the case with summer flounder. A very large number of larvae are spawned in the estuary itself, as is the case with winter flounder.

Those at the extremes of the range arrive by currents, or as they grow, by directed swimming. Once they get near the estuary they time the currents. They get up into the water column on flood tides and go down to the bottom on ebb tides where they maintain their position until the next flood tide can transport them into the estuary. These abilities also correspond to changes in the body. For many species, transport into the estuary occurs at the same time as changes in body shape, fin development, and sensory development. Obviously, a more developed fish has greater swimming abilities and thus can make greater progress than a less developed specimen.

This larval delivery study is intended to determine the sources of the

larvae to Little Egg Inlet and to see if those sources have changed over time, especially relative to fishing and environmental change, including climate change. Average water temperatures in the Great Bay estuary have been increasing, especially in recent years. Warming temperatures influence the biology and ecology of cold-blooded animals such as fishes. These increasing temperatures are occurring everywhere in the Mid-Atlantic Bight and they obviously favor larvae of fish that prefer warmer waters. For this study, we make a clear distinction between short-term changes in temperature (i.e. weather) relative to long-term changes (i.e. climate). For that reason we emphasize changes that have occurred over years and decades.

We focus on the early stages of life and our larval sampling provides an index of abundance. That abundance gives an indication of how many fish are going to be around at larger sizes for harvesting in commercial and recreational fisheries and for colonization of natural and restored habitats.

The choice of Little Egg Inlet for this study is due to its convenient proximity to RUMFS and because of a lengthy history of research in the region. Importantly, this estuary is exceptional because of its natural inlet, low human population density, and clean waters. It is one of the cleanest estuaries on the east coast of the U.S., which makes it a sentinel estuary.

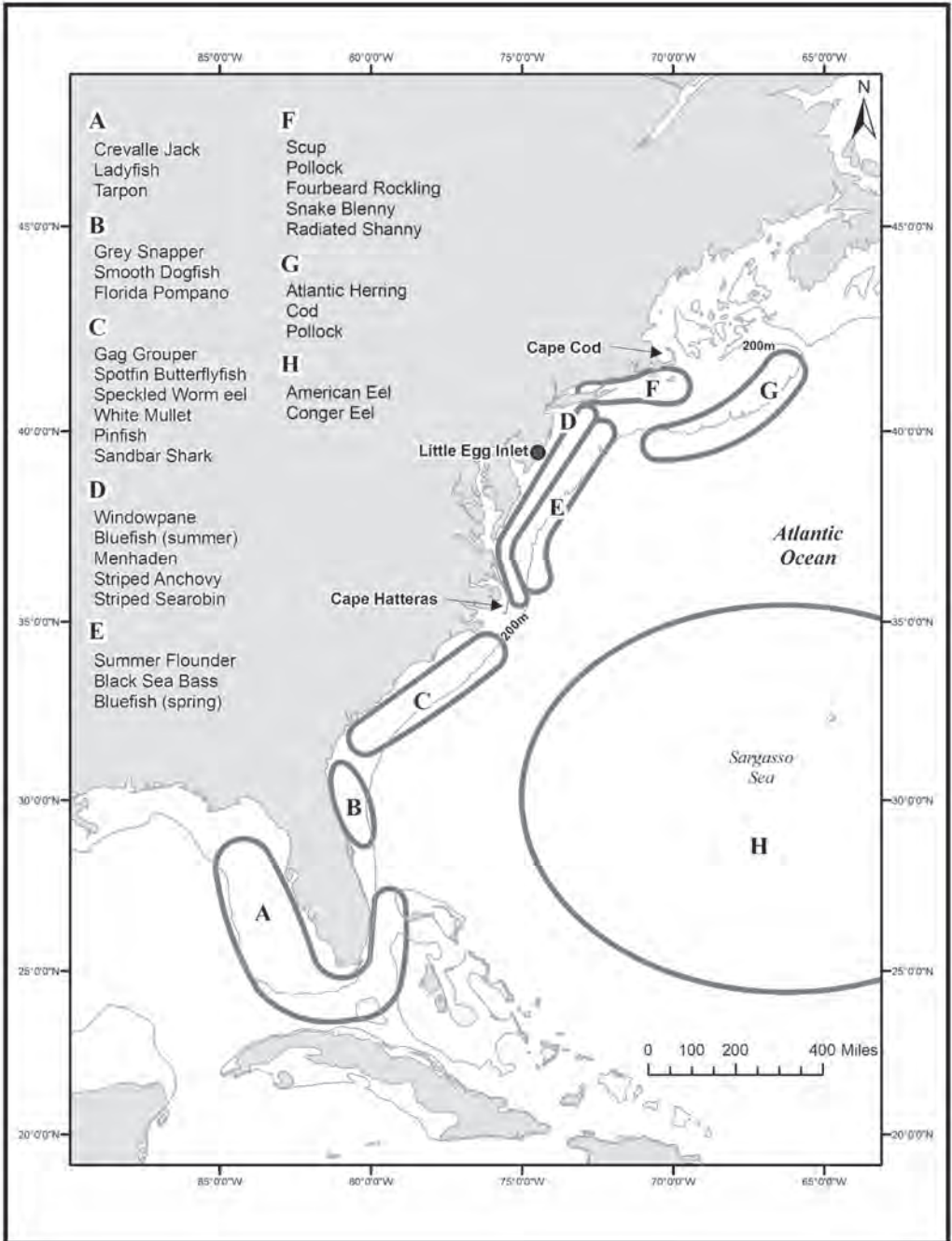
Over the past 28 years of study, the effects of climate change have brought changes in the kinds of species and also population sizes among the studied species. For example, among others, we study 13 species spawned north of Cape Cod, Massachusetts and more than 50

Facing Page: The kinds of species, from different locations, that contribute to the collections by the Rutgers University Marine Field Station staff inside Little Egg Inlet, NJ.

Map by Rutgers University Marine Field Station

species spawned south of Cape Hatteras, North Carolina. Some of those species have increased in abundance in a given location and others have de-

creased. We know for certain, that as the water temperatures on the east coast of the U.S. have changed, the number of northern larvae entering Little Egg



Inlet has decreased, and the number of larvae from southern areas has increased. Similarly, the total abundance of northern and southern larvae shows the same decrease/increase pattern. The change in both species and abundance is most evident before and after 2000, but in particular for some individual southern species. As an example, before 1996 we did not sample any thread herring larvae at Little Egg Inlet. Since then they have occurred consistently. A similar pattern is evident for green goby, which only first appeared in 2002. During the same period, a number of northern species, such as fourbeard rockling, snake blenny and radiated shanny have become less abundant. Clearly, the change in water temperature and the delivery pattern for the larvae has benefited some southern species and negatively affected northern ones.

Another apparent response to climate change is the time of year certain larvae arrive at the inlet. Several species have changed their pattern. Most notable among these is summer flounder – into the early 1990s the larvae were most abundant in the spring and fall, but since then the greatest abundance has been in the fall. Other species have changed, but in opposite directions. American eel have been arriving later while Conger eel have been arriving earlier. This change may have a real impact on the elvers of Conger eels that, based on laboratory experiments, are known to prey on the glass eels of American eels.

Unfortunately, we do not always understand why some changes occur.

For Atlantic menhaden, it is hard to separate climate effects from fishing effects. For summer flounder it appears that decreased fishing effort may be re-

sponsible, but at the same time we cannot rule out warming temperatures and expansion of the adult range of summer flounder to the north. For other species, warming temperatures may cause a change in the prevailing currents and thus also affect the delivery of larvae. There may also be a host of physiological responses, such as faster growth and therefore faster swimming speeds, which also may increase delivery of larvae. In addition, any or all of these factors may be specific to each species and thus make it even more difficult to generalize. A better understanding will only come if we continue long-term studies of these early life history stages.

Regardless, the delivery of larval fish to Little Egg Inlet has changed in response to climate change. Whether this will affect the abundance of these species and whether there will be a change in habitat use of the estuaries behind Little Egg Inlet and other estuaries remains to be seen.

Kenneth W. Able, Ph.D., is a Distinguished Professor and the longtime Director of the Rutgers University Marine Field Station at Tuckerton, NJ. Among numerous other awards he was the recipient of the Oscar Sette Award from the Marine Fisheries Section of the American Fisheries Society and also the 2014 recipient of the Dr. Nancy Foster Habitat Conservation Award from NOAA Fisheries, Office of Habitat Conservation.

Tagging Report 2015-2016

By Jeff Dement

In the past year our coastal waters from Rhode Island to Virginia saw a tremendous increase in the amount of bunker (Atlantic Menhaden, or pogies to you folks in Massachusetts). This newfound abundance is almost certainly due to recent reductions in harvest for this “most important fish in the sea.” Humpback whales, bluefish, and striped bass are all enjoying this piscatorial smorgasbord, to the delight of anglers and whale watchers alike.

Unfortunately, the future of our coastal striped bass fishery is in a state of flux. The 2015 young of the year spawning seine net surveys, indices, and stock assessments for the western Atlantic migratory population of striped bass were indeed grim. This news prompted fisheries managers to institute a coast-wide reduction in their harvest, both recreationally and commercially. For the oceanic striped bass recreational fishery, all but two states along the eastern seaboard voted to reduce harvest to one 28 inch or greater fish per angler per day. The two exceptions were New Jersey and Delaware, which voted to allow recreational fishermen to keep a second fish of at least 44 inches.

The poor condition of our striped bass stocks makes our tagging program that much more relevant and important. Tagging, among other methods, allows

fisheries scientists to monitor changes in a population of fish, and take proactive measures to stave off a population crash. Right now, your tagging data is more important than ever!

With a heavy heart, the Society’s Fish Tagging Program notes the passing of long-time tagger George Berthel, of Secaucus, NJ. George fished for striped bass in the New Jersey Meadowlands on the Hackensack River, one of the most urban estuaries in the world. To us he was, “Our Man on the Hack.” George’s tagging efforts reinforced the importance of that river to the health of Hudson River origin striped bass. His reports from a train bridge in Secaucus will be greatly missed, by us here at the Society, and by the scientific community.

Note:

FL = Fork Length

TL = Tail Length

Striped Bass on the move:

- On 06/08/2014, Staten Island Tuna Club member Guy Buono tagged a 44-inch striped bass at Sandy Hook, NJ. It was recaptured on 03/23/2015 by commercial fisherman Ray Maddox in Maryland’s Pocomoke Sound on Chesapeake Bay.
- An early spring 20-inch striped bass

was tagged on, 04/14/2015, at Graveling Point, NJ (a known spring striper hot-spot), by tagger Tom Valerio. Tom's fish was recaptured in under two months on 06/02/2015 at Mashnee Island, Bourne, MA (entrance to the Cape Cod Canal), by angler Aaron Tewell.

- A 19-inch striped bass was caught and tagged off Stamford, CT, on 11/11/2012, by long-time tagger, Fred Stunkel (aka "Mako Fred"). On 07/04/2015, angler Joel Rosen recaptured Mako Fred's fish in the Piscataqua River, at Kittery, ME, now measuring 23 inches in length.

Bluefish Banter:

- On 05/07/2015, an 18-inch bluefish was tagged by Bill Shillingford (aka Bucktail Willie"), in Ludlum Bay, NJ. On 07/24/2015, angler Jeff Chu recaptured bill's fish tag up in Nantucket Sound, MA.

- A 28-inch (FL) bluefish, also tagged by Bill Shillingford in Ludlum Bay, NJ, this time on 05/15/2012, was recaptured on 06/04/2015 by angler, Gregory Tabon, who was fishing the waters of Perth Amboy, NJ, in Western Raritan Bay. Bucktail's fish now measured 30 inches (TL)

- Tagger to tagger: On 07/26/2015, Captain Bill Young of Amy Marie Charters tagged and released a small (12" FL) bluefish off Island Beach State Park, NJ. That fall, on 11/05/2015, Captain Monty Hawkins of the Morning Star recaptured Captain Bill's fish 18 nautical miles SSE of Ocean City, MD. Both Capt. Bill and Capt. Monty are charter-boat captains and taggers for the Society.

These tales of bluefish travels are a reminder of an amusing post on a local

fishing blog. The question was asked, "Where do bluefish go for the winter?" The smart-aleck answer was "utilizing deep oceanic trenches, they travel to the very center of the Earth. There they do the devil's work and in exchange they get their teeth sharpened!"

Fluke Tales:

Commercial recaptures:

- On 07/29/2014, Tagger Tank Matraxia tagged and released a 15.5-inch fluke at Sandy Hook, NJ. On 03/19/2015, 51 nautical miles ESE of Ocean City, MD, Tank's fluke was recaptured in an otter-trawl net by the F/V Susan L. Tank's fluke was then landed and sold in Cape May, NJ.

- On 05/26/2012, Brooklyn, NY based tagger Stuart Fries caught and tagged a 13-inch fluke while fishing the waters of Rockaway Inlet, NY. Almost three years later, on 04/26/2015 commercial flounder dragger Richard Alan Moore found Stuart's fish in his net while fishing offshore waters near the Hudson Canyon. The fish measured in at 20.8 inches and was landed and sold in North Carolina.

- Howard Leemann (aka "Bucktail Howie") of the Hudson River Fishermen's Association, tagged a 24.75-inch fluke while fishing Gravesend Bay in Brooklyn, NY, on 06/19/2014. On 10/07/2015 a commercial fisherman hauled Howard's fish onboard while trawling 27 nautical miles east of Manasquan Inlet, NJ. This recapture was reported by an onboard observer from the National Marine Fisheries Service. NOTE: Howard is a unique tagger. He only tags fluke. He only tags fluke over 20 inches in length. And he usually tags over 50 fluke per season!

- On 07/25/2015, Angler Joel Stoehr tagged and released a 15.75-inch fluke, in Raritan Bay, NJ, while fishing with the Society on our annual fluke tagging trip. On 11/25/2015, Joel's fluke was reported commercially recaptured 33 nautical miles SSE of Moriches Inlet, NY, by an NMFS observer.

Sundial Saga:

Sundial (aka windowpane flounder) are not a target species for most of our taggers. However, in recent years one tagger, George Horvath of Trenton, NJ, has taken a particular interest in the species. He has tagged and released over 100 of the left-eyed flatfish. George and the tagging program have been waiting for a return on one of his sundials, given that there is very little commercial or recreational effort directed at this

species. Our database shows that since 1990, 400 windowpane flounders have been tagged and released by Society taggers, but only four of those tagged sundials have been reported as being recaptured.

- On 11/07/2014, Tagger George Horvath tagged and released an 11.5-inch windowpane flounder, while fishing at the Manasquan Inlet, NJ. On 04/12/2015, 38.5 nautical miles ESE of Barnegat Inlet, NJ, the F/V Abbie and Holly recaptured George's sundial in an otter-trawl net. His fish now measured 12.2 inches.

In closing we would like to thank all of our taggers, supporters and program volunteers. Without you, there would be no American Littoral Society Fish Tagging Program.

2015 Tagging Totals:

	<u>Tagged</u>	<u>Recaptured</u>
striped bass	3,893	217
summer flounder	3,438	198
bluefish	307	6
black sea bass	357	25
tautog	1157	69
Atlantic cod	24	0
mangrove snapper	34	0
weakfish	22	1
windowpane flounder	79	1
red drum	25	2
scup	28	2

Total tagged fish in 2015 = 9,364

Total tagged fish recaptured in 2015 = 521

2015 Recap

Species	Tag Length (FL)	Tagger	Place Tagged	Tag Date	Recapturer	Place Recaptured	Length (TL)	Recap Date
Black Sea Bass	15	S Tombs	Green Hill Beach, RI	7/4/2013	F/V Brooke C	40 NM S Montauk, NY		2/8/2015
Black Sea Bass	12	S Tombs	Nebraska Shoals, Matunuck, RI	7/8/2012	F/V C-Venture	S Of Hudson Canyon, NJ	17.8	2/13/2015
Black Sea Bass	13	F Waltzinger III	Axel Carlsen Reef, NJ	9/12/2014	M Chizik	3.75 NM E Manasquan, NJ	15	6/7/2015
Black Sea Bass	11.75	S Foster	Sea Girl Reef, NJ	8/10/2014	P Spinoso	Sea Girl Reef, NJ	13.25	6/20/2015
Black Sea Bass	9.5	N Sea Grant	5 NM E Sea Girl, NJ	6/15/2015	J Schwarz	Off Sea Bright, NJ	9.5	7/11/2015
Black Sea Bass	12.5	J Explore 2000 School	Raritan Bay, NJ	9/30/2014	A Sarra	Raritan Bay, NJ	15	8/7/2015
Black Sea Bass	11.75	L Bleiler	Sandy Hook Reef, NJ	6/13/2015	R Shapiro	Off Sea Bright, NJ	13	8/16/2015
Black Sea Bass	12	M Hawkins	9 NM E Ocean City, MD	10/5/2014	M Hawkins	9 NM E Ocean City, MD	14.5	8/26/2015
Black Sea Bass	11	A Anderson	Block Island, RI	10/14/2013	L Shapiro	Montauk, NY	15.25	8/29/2015
Black Sea Bass	12.5	R Conklin	Charles Island, Milford, CT	9/23/2014	R Jackson	Cedar Beach, NY	15.25	9/7/2015
Black Sea Bass	12.5	B Young	Barneget Light Reef, NJ	8/29/2015	P Rackley	Barneget Light Reef, NJ	12.5	9/9/2015
Black Sea Bass	14	M Hawkins	19 NM E Ocean City, MD	6/4/2014	M Hawkins	19 NM E Ocean City, MD	14.5	9/17/2015
Black Sea Bass	14	M Hawkins	19 NM E Ocean City, MD	6/4/2014	M Hawkins	19 NM East Ocean City, MD	14.5	9/17/2015
Black Sea Bass	11	S Tombs	Point Judith, RI	8/16/2014	E Thienier	1 NM S Point Judith, RI	14.25	9/19/2015
Black Sea Bass	11.25	L Bleiler	Sandy Hook Reef, NJ	6/19/2015	L Bleiler	Sandy Hook Reef, NJ	11.5	9/19/2015
Black Sea Bass	11	L Bleiler	Sandy Hook Reef, NJ	6/13/2015	L Bleiler	Sandy Hook Reef, NJ	11.75	9/19/2015
Black Sea Bass	13	A Anderson	Point Judith, RI	8/29/2015	J Grabowski	1 NM S Point Judith, RI	14	9/19/2015
Black Sea Bass	14	A Anderson	Point Judith, RI	8/29/2015	J Grabowski	1 NM S Point Judith, RI	14	9/19/2015
Black Sea Bass	15	A Schweithelm	Eatons Neck, NY	6/12/2015	J Xu	Port Jefferson, NY	15	10/7/2015
Black Sea Bass	13	S Tombs	Green Hill Beach, RI	9/5/2015	S Tombs	Nebraska Shoals, RI	13	10/11/2015
Black Sea Bass	14	S Tombs	Green Hill Beach, RI	9/27/2015	S Tombs	Nebraska Shoals, RI	14	10/11/2015
Black Sea Bass	10	N Sea Grant	5 NM E Shark River Inlet, NJ	6/15/2015	A Melck	Offshore Manasquan, NJ	12.8	10/23/2015
Black Sea Bass	11.5	R Muller Jr	Gravesend Bay, Brooklyn, NY	6/24/2015	K Isogai	11.5 NM SSE Jones Inlet, NY	12.25	10/24/2015
Black Sea Bass	11	L Bleiler	1/2 NM NE Sandy Hook Reef, NJ	8/7/2015	L Chan	10 NM E Asbury Park, NJ	12	10/24/2015
Black Sea Bass	14	A Anderson	Point Judith, RI	7/11/2015	J Kasper	4 NM S Green Hill, RI	15	11/5/2015
Bluefin tuna	41	D Gault	30 NM W Nantucket, MA	8/4/2012	G Maritime	100NM W Les Sables d'Olonne, Fr.		7/20/2015
Bluefish	16	D Omrod	Melbourne Beach, FL	3/31/2014	R Palmer	Banana River, Merritt Island, FL		4/16/2015
Bluefish	27	T Valerio	Loveladies, NJ	4/30/2015	D Didio	Carmans River, NY		5/21/2015
Bluefish	25	S Carlsen	Raritan Bay, Leonardo, NJ	4/24/2015	B Murn	Fire Island Inlet, NY		5/31/2015
Bluefish	28	B Shillingford	Ludlum Bay, NJ	5/15/2015	G Tabon	Perth Amboy, NJ	30	6/4/2015
Bluefish	18	B Shillingford	Ludlum Bay, NJ	5/7/2015	J Chu	Nantucket Sound, MA		7/24/2015
Bluefish	12	B Young	Off Island Beach State Park, NJ	7/26/2015	M Hawkins	18 NM SSE Ocean City, MD	13	11/5/2015
Fluke	17	T Valerio	Holgate, NJ	9/27/2014	F/V Elise G	South of Hudson Canyon, NJ	17	1/1/2015
Fluke	12	S Fries	Brighton Beach, Brooklyn, NY	6/20/2014	F/V Susan L	South of Hudson Canyon, NJ	15.3	1/1/2015
Fluke	17	S Fries	Marine Parkway Bridge, NY	7/3/2011	V Grasso	Off Barnegat Light, NJ	20	1/1/2015
Fluke	25	H Leemann	Gravesend Bay, Brooklyn, NY	9/17/2014	F/V Susan L	73 NM E Cape May, NJ	17	1/10/2015
Fluke	15	T Matraxia	Coney Island, Brooklyn, NY	7/11/2014	F/V Drake	E of Hudson Canyon, NJ	17.6	1/19/2015
Fluke	12	R Anderson Jr	Fire Island Inlet, NY	8/4/2013	F/V Gaston's Legacy	Offshore, Long Island, NY	14.06	1/19/2015
Fluke	16.5	M Sullivan	Montauk, NY	6/2/2014	F/V Thunder Bay	Hudson Canyon, NJ	17	1/24/2015
Fluke	16	B Russo	East Marion, NY	6/6/2014	F/V Lady Rosalyn	Hudson Canyon, NJ	2/10/2015	2/10/2015
Fluke	17	T Matraxia	Sandy Hook Channel, NJ	9/18/2014	F/V T Luis	Hudson Canyon, NJ	17.4	2/10/2015
Fluke	14	B Shillingford	Ludlum Bay, NJ	10/17/2014	F/V Apollo	Offshore, NJ	15.1	2/11/2015
Fluke	17	A Schweithelm	Monatuk, NY	7/18/2014	F/V Ocean Blue	Offshore, NJ	2/11/2015	2/11/2015
Fluke	15.5	F Truex	Manasquan River, NJ	6/16/2013	F/V T Luis	South of Hudson Canyon, NJ		2/11/2015
Fluke	16	D Evans	Manasquan River, NJ	6/29/2014	F/V Illusion	Offshore, S of Nantucket, MA	17.8	2/12/2015
Fluke	15	S Fries	Brighton Beach Brooklyn, NY	6/20/2014	F/V Elise G	Hudson Canyon, NJ	16.5	2/23/2015
Fluke	14.5	S Fries	Sheepshead Bay Ch. Brooklyn, NY	6/3/2014	F/V Thunder Bay	Hudson Canyon, NJ	14.5	2/24/2015
Fluke	15	S Fries	Ambrose Channel, NY	9/1/2014	F/V Catherine Lane	Hudson Canyon, NJ	2/24/2015	2/24/2015
Fluke	14	M Sullivan	Montauk, NY	5/26/2014	F/V Evening Star	Hudson Canyon, NJ	2/28/2015	2/28/2015
Fluke	15	M School	Raritan Bay, NJ	4/25/2014	F/V Evening Star	Hudson Canyon, NJ	2/28/2015	2/28/2015
Fluke	13	B Shillingford	Ocean City, NJ	8/6/2014	F/V Evening Star	Hudson Canyon, NJ	2/28/2015	2/28/2015
Fluke	12	B Young	Ortley Beach, NJ	8/21/2013	F/V Eva Marie	Hudson Canyon, NJ		3/3/2015
Fluke	15	S Fries	Rockaway Reef, NY	7/29/2014	F/V Maizey James	Hudson Canyon, NJ	15.2	3/5/2015
Fluke	15.5	T Matraxia	Sandy Hook, NJ	7/29/2014	F/V Susan L	51 NM ESE Ocean City, MD		3/19/2015
Fluke	15.25	T Matraxia	Sandy Hook Channel, NJ	8/20/2014	NMFS Observer	41 NM ENE Barnegat Inlet, NJ	15.4	4/15/2015
Fluke	13	S Fries	Rockaway Inlet, NY	5/26/2012	R Moore	Hudson Canyon, NJ	20.8	4/26/2015
Fluke	17.75	R Budd	Ludlum Bay, NJ	5/8/2015	K Kryszczun	ICW Sea Isle City, NJ	18	5/9/2015
Fluke	16	R Anderson Jr	Fire Island Inlet, NY	8/23/2014	R Mattausich	Shinnecock Canal, NY	18	5/18/2015
Fluke	13	F Waltzinger III	Upper Manasquan River, NJ	6/4/2011	D Furnback	Barnegat Bay, Mantoloking, NJ	17	5/18/2015
Fluke	18	J Lutz	Avalon, NJ	5/3/2015	T Adelsberger	Avalon, NJ	18	5/22/2015
Fluke	15	B Shillingford	Ludlum Bay, NJ	7/18/2014	K Scheel	Avalon, NJ	16.25	5/22/2015
Fluke	16	B Shillingford	Ludlum Bay, NJ	5/21/2014	C Bianchi	West Wildwood, NJ	18	5/22/2015
Fluke	13	C Gould Jr	North Wildwood, NJ	9/2/2013	H Panossian	Wildwood, NJ	16	5/23/2015
Fluke	13.5	S Fries	Gerritsen Inlet, Brooklyn, NY	8/3/2013	A Viggiani	Gilgo-Oak Beach, Capree, NY	17	5/23/2015
Fluke	22.5	T Leonardis	Sea Isle City, NJ	4/3/2015	A Aloï	Sea Isle City, NJ	22.5	5/23/2015
Fluke	14.5	J Hudson	Bergen Co. SW Anglers	7/20/2011	J Hudson	41 NM E Cape May, NJ	17.2	5/24/2015
Fluke	17.25	R Musto	Fort Salonga, NY	5/25/2014	A Kretschmer	Long Island Sound, NY	20	5/26/2015
Fluke	15	S Fries	Brighton Beach, Brooklyn, NY	6/29/2014	B Francis Jr.	Freeport, NY	15	5/29/2015
Fluke	20	B Shillingford	Ludlum Bay, NJ	4/20/2013	E Bryszewski	ICW Strathmere, NJ	22	5/30/2015
Fluke	17	B Shillingford	Corson Sound, NJ	9/3/2014	S Wakefield	Strathmere, NJ	17.5	5/30/2015
Fluke	14.5	S Fries	Jamaica Bay, NY	8/16/2014	R Marino	Jamaica Bay, NY	16	5/30/2015
Fluke	15.5	R Budd	Ludlum Bay, NJ	5/25/2015	F Potts	Sea Isle City, NJ	17	6/1/2015
Fluke	14	S Fries	Plumb Beach, Brooklyn, NY	6/1/2014	B Behr	Reynold's Channel, Long Beach, NY	14.75	6/2/2015
Fluke	14	A Schweithelm	Fort Salonga, NY	6/7/2014	R Mauro	Northport, NY	17.5	6/3/2015
Fluke	15	R Anderson Jr	Fire Island Inlet, NY	8/3/2014	W Kosmij	Reynolds Ch., Atlantic Beach, NY	16	6/6/2015
Fluke	15	T Matraxia	Raritan Bay, Sandy Hook, NJ	6/4/2015	G Fidicaro	Raritan Bay, Sandy Hook, NJ	15	6/6/2015
Fluke	15.5	S Fries	Rockaway Inlet, NY	5/21/2015	R Linn	Jamaica Bay, NY	16	6/6/2015
Fluke	13	B Shillingford	Ludlum Bay, NJ	3/30/2013	J Lupton	Somers Point, NJ	16.5	6/7/2015
Fluke	14	B Shillingford	Corson Sound, NJ	9/3/2014	J Moore	Shark River, NJ	16	6/14/2015
Fluke	18	J Lutz	Avalon, NJ	5/3/2015	K Raker	Avalon, NJ	19	6/16/2015
Fluke	13	C Gould Jr	North Wildwood, NJ	5/9/2014	J Burns	Townsend Inlet, NJ	16	6/17/2015
Fluke	13	S Fries	Manhattan Beach, Brooklyn, NY	7/13/2014	W Groll	Coney Island, NY	15.5	6/17/2015

Species	Tag Length (FL)	Tagger	Place Tagged	Tag Date	Recapturer	Place Recaptured	Length (TL)	Recap Date
Fluke	16	B Shillingford	Ludlam Bay, NJ	5/6/2015	T Duffy	Ludlam Bay, NJ	16.5	6/19/2015
Fluke	13.5	I Matraxia	Coney Island, Brooklyn, NY	7/1/2014	R DiToro	Sheepshead Bay, Brooklyn, NY		6/20/2015
Fluke	15.3	R Musto	Eastons Neck, NY	6/15/2015	M Cuthalis	Northport Bay, NY	15.5	6/20/2015
Fluke	12.8	T Johnson	Fire Island Inlet, NY	8/19/2014	K Glaessgen	Long Beach, NY		6/21/2015
Fluke	14	R Anderson Jr	Fire Island Inlet, NY	6/15/2014	L Joys	Robert Moses Bridge, NY	14.5	6/22/2015
Fluke	21.5	C Gould Jr	North Wildwood, NJ	5/6/2014	K Super	Townsend Inlet, Avalon, NJ	23.5	6/22/2015
Fluke	20	B Shillingford	Ludlam Bay, NJ	4/29/2015	K Jourdan	Ludlam Bay, NJ	20	6/23/2015
Fluke	12	F Young	Barnegat Bay, NJ	7/22/2013	D Mandaro	Fire Island Inlet, NY	15	6/23/2015
Fluke	15	F Waltzinger III	Mantoloking, NJ	8/3/2013	J Pilarz	2 NM E Mantoloking, NJ		6/24/2015
Fluke	15.75	R Budd	Ludlam Bay, NJ	5/29/2015	F Mullin	Sea Isle City, NJ		6/24/2015
Fluke	13	C Gould Jr	North Wildwood, NJ	5/3/2015	T Kramer	North Wildwood Bridge, NJ	13	6/25/2015
Fluke	16	S Fries	Brighton Beach, Brooklyn, NY	8/29/2014	R Barron	Long Beach, NY		6/29/2015
Fluke	12.5	S Fries	Coney Island, Brooklyn, NY	6/19/2015	M Strober	Coney Island, Brooklyn, NY	13	7/2/2015
Fluke	15	S Fries	Jamaica Bay, NY	8/16/2014	C Fardo	Marine Parkway Bridge, NY	19	7/3/2015
Fluke	15.5	S Fries	Gerritsen Inlet, NY	9/7/2014	D Ceriello	Gerritsen Inlet, NY	17	7/3/2015
Fluke	8	F Waltzinger III	Manasquan Inlet, NJ	6/12/2013	F Mullin	Shark River, NJ		7/3/2015
Fluke	15	C Gould Jr	North Wildwood, NJ	7/19/2014	R Lynch	Avalon, NJ		7/4/2015
Fluke	12	B Shillingford	ICW Strathmere, NJ	6/19/2015	D Ferguson	Strathmere Bay, NJ	12	7/5/2015
Fluke	16	NMF5	Sandy Hook Bay, NJ	9/27/2012	C Johnson	Raritan Bay, NJ	19.75	7/5/2015
Fluke	15	T Varion	Cape Beach Island, NJ	9/21/2012	R Barron	East Atlantic Beach, NY		7/6/2015
Fluke	14.5	J Beck	Cape May Point, NJ	6/25/2015	J Beck	Cape May Point, NJ	14.5	7/6/2015
Fluke	13.5	J Beck	Cape May Point, NJ	6/27/2015	J Beck	Cape May Point, NJ	14	7/7/2015
Fluke	17	F Waltzinger III	Great Bay, NJ	7/30/2014	C Camtelengo	Barnegat Light, NJ	18.75	7/7/2015
Fluke	13	C Gould Jr	North Wildwood, NJ	5/4/2015	C Smith	Grassy Sound, NJ		7/8/2015
Fluke	18	J Samyn	Hewlett Point, NY	8/16/2013	J Rende	Sands Point, NY	19.5	7/10/2015
Fluke	14.5	M Hawkins	22 NM SE Ocean City, MD	10/14/2012	M Hawkins	3 NM ESE Ocean City, MD	21.75	7/11/2015
Fluke	15.75	R Budd	Corsons Inlet, NJ	8/10/2014	E Remp	7 NM E Indian River Inlet, DE	16.5	7/11/2015
Fluke	14.5	R McEland	Raritan Bay, NJ	6/28/2014	Unknown Angler	Raritan Bay, Leonard, NJ	18.25	7/11/2015
Fluke	23.5	H Leemann	Coney Island Channel, NY	6/16/2014	K Ort	Ambrose Channel, NY	26	7/12/2015
Fluke	17	B Hansen	Wildwood, NJ	5/10/2015	T Richman	North Wildwood, NJ		7/13/2015
Fluke	15	A Anderson	Block Island, RI	8/30/2013	P Tukey	Green Hill Beach, NJ	18	7/13/2015
Fluke	16.5	S Fries	Montauk, NY	7/18/2014	S Houston	3 NM ENE Montauk, NY	18.25	7/13/2015
Fluke	16.25	T Truex	Manasquan River, NJ	7/4/2015	J Savano	Manasquan Inlet, NJ		7/14/2015
Fluke	13.1	R Musto	Fort Salonga, NY	6/24/2015	F Rossbach	Huntington, NY		7/15/2015
Fluke	15	B Russo	East Marion, NY	7/10/2015	C Tinnin	Greenport Harbor, NY	15	7/15/2015
Fluke	15	T Valerio	Holgate, NJ	9/20/2014	L Colby Jr	Wantagh, NY		7/15/2015
Fluke	13.5	B Russo	East Marion, NY	6/26/2015	M Angeli	Gardiners Bay, NY		7/17/2015
Fluke	12	S Fries	Marine Parkway Bridge, NY	8/24/2013	E Voye	Reynolds Channel, NY	17	7/17/2015
Fluke	14	S Fries	Gerritsen Inlet, Brooklyn, NY	6/21/2014	C Poytziis	Marine Parkway Bridge, NY	17.13	7/17/2015
Fluke	15	R Muller Jr	Gerritsen Inlet, Brooklyn, NY	8/3/2014	S Fries	Rockaway Reef, NY	15	7/17/2015
Fluke	19.5	T Valerio	Holgate, NJ	9/10/2013	M Korbel	Little Egg Bay, Holgate, NJ	21.5	7/18/2015
Fluke	16	S Fries	Plumb Beach, Brooklyn, NY	9/15/2013	S Fries	Gerritsen Inlet, NY	20	7/18/2015
Fluke	16	F Waltzinger III	Long Branch, NJ	7/10/2014	F Lodwig	Off Sandy Hook, NJ	17	7/19/2015
Fluke	14.5	B Klimas	Sandy Hook Channel, NJ	8/30/2014	M Calderone Sr	Raritan Bay, Keansburg, NJ	17	7/19/2015
Fluke	15	R Anderson Jr	Fire Island Inlet, NY	7/10/2015	J Pugliese	Fire Island Inlet, NY		7/20/2015
Fluke	14.75	R Musto	Fort Salonga, NY	6/13/2015	G Cohen	Huntington, NY		7/20/2015
Fluke	16	S Fries	Montauk, NY	8/11/2010	B Schaefer	Montauk Point, NY	21.5	7/20/2015
Fluke	14.5	W Kotnik	Rockaway Jetty, NY	7/21/2015	J Cortright	Rockaway Jetty, NY	14.5	7/21/2015
Fluke	14	R Anderson Jr	Fire Island Inlet, NY	7/10/2015	B Lawrence	Fire Island Inlet, NY	14	7/21/2015
Fluke	14.5	M Hawkins	22 NM SE Ocean City, MD	10/14/2012	M Hawkins	16 NM SE Ocean City, MD	16.75	7/22/2015
Fluke	14.5	R Bianchi	Deep, NJ	7/11/2015	J Czech	Asbury Park, NJ	15	7/22/2015
Fluke	16	A D'Amato	Cape May Inlet, NJ	7/15/2015	A D'Amato	Cape May Inlet, NJ	16	7/22/2015
Fluke	16	R Anderson Jr	Fire Island Inlet, NY	7/11/2015	M Rosenthal	Capelee, NY	16	7/24/2015
Fluke	15	A Schweithaim	North Rips, Montauk, NY	7/18/2014	J Shicarone	Block Island, RI	18	7/24/2015
Fluke	15	R Anderson Jr	Fire Island Inlet, NY	9/21/2014	M Shea	Fire Island Inlet, NY	15	7/24/2015
Fluke	16	B Shillingford	Corson Sound, NJ	10/5/2014	L Schneider	Little Egg Harbor, NJ		7/25/2015
Fluke	14	S Fries	Rockaway Inlet, NY	9/20/2014	P DeSantis	Plumb Beach, NY	15	7/26/2015
Fluke	20.5	H Leemann	Breezy Point, NY	8/10/2013	A Coluccio	New York Harbor, NY	24.5	7/26/2015
Fluke	13	R Budd	Ludlam Bay, NJ	7/19/2012	P Zappa	Jones Inlet, NY	18.5	7/27/2015
Fluke	16.5	L Bleiler	The Rips, Raritan Bay, NJ	5/23/2014	J Gerard	Mantoloking, NJ	17.25	7/28/2015
Fluke	12	S Fries	Rockaway Inlet, NY	8/30/2014	R Keam	Jones Inlet, NY	17	7/28/2015
Fluke	12	F Waltzinger III	1/2 NM E Manasquan Inlet, NJ	7/29/2015	F Saccente	Sea Girl Reef, NJ	12	7/29/2015
Fluke	15	S Fries	Rockaway Reef, NY	7/17/2015	J Helfrich	Rockaway Beach, NY	16	7/29/2015
Fluke	17.5	B Shillingford	Corsons Inlet, NJ	7/30/2015	G Overbeck	Corsons Inlet, NJ	17.5	7/30/2015
Fluke	14	S Fries	Plumb Beach, Brooklyn, NY	6/30/2013	H Niedziela	Jamaica Bay, NY	18.5	7/31/2015
Fluke	13	B Shillingford	Corson Sound, NJ	9/1/2014	J Mauro	Bellmore, NY		7/31/2015
Fluke	16	B Young	Barnegat Bay, NJ	7/3/2015	R Pfaff	Barnegat Bay, Oyster Cr., NJ	16	7/31/2015
Fluke	16	S Kellner	Shinnecock, NY	7/22/2014	E Decio	Shinnecock Bay, NY	19.85	8/1/2015
Fluke	17.5	J Lutz	Avalon, NJ	7/14/2015	J Lynch	Avalon, NJ	17.5	8/2/2015
Fluke	17	J Hickey Jr	Axel Carlson Reef, NJ	7/12/2015	S Stevens	Axel Carlson Reef, NJ	17.13	8/2/2015
Fluke	14	B Klimas	Sea Girl Reef, NJ	9/14/2014	R Sleezer	Brick Beach, NJ		8/2/2015
Fluke	17	F Waltzinger III	2.5 NM E Manasquan, NJ	6/26/2013	W Stanley	Seaside Heights, NJ		8/4/2015
Fluke	14.5	R Anderson Jr	Fire Island Inlet, NY	7/11/2015	R Mezzioffa	Fire Island Inlet, NY	16	8/5/2015
Fluke	15	R Anderson Jr	Fire Island Inlet, NY	7/11/2015	G Stoffer	Fire Island Inlet, NY	15	8/5/2015
Fluke	12.5	A D'Amato	Cape May Inlet, NJ	7/8/2015	A D'Amato	Cape May Inlet, NJ	13	8/5/2015
Fluke	16	S Kellner	Shinnecock Bay, NY	7/21/2015	K Carbone	Shinnecock Bay, NY		8/5/2015
Fluke	12	B Shillingford	ICW Ocean City, NJ	7/25/2014	C Kasmir	Raritan Bay, NJ	14.5	8/6/2015
Fluke	17.75	S Rudolph	Rockaway Inlet, NY	7/16/2015	L Pisano	Jamaica Bay, NY	20	8/6/2015
Fluke	15.25	S Foster	Shrewsbury Rocks, NJ	8/30/2014	G Heiser	Sandy Hook Reef, NJ	16.75	8/8/2015
Fluke	15.5	F Waltzinger III	Upper Manasquan River, NJ	6/7/2015	M Reiner	Manasquan River, NJ	15.5	8/8/2015
Fluke	16	R Anderson Jr	Fire Island Inlet, NY	7/10/2015	L Gold	Captree State Park, NY		8/10/2015
Fluke	15.5	F Waltzinger III	Axel Carlson Reef, NJ	9/7/2014	W Stanley	Off Seaside Heights, NJ	15.75	8/10/2015
Fluke	14.5	S Fries	Shinnecock Bay, NY	7/12/2015	F Kossen	Off Spring Lake, NJ		8/12/2015
Fluke	13.5	R Bianchi	Sea Girl Reef, NJ	7/25/2015	R Zala	Off Spring Lake, NJ	14	8/14/2015
Fluke	15	T Matraxia	New York Harbor, NY	7/29/2015	S Fries	Ambrose Channel, NY	16	8/15/2015
Fluke	15	C Gould Jr	North Wildwood, NJ	7/17/2015	E Barcus III	Cape May Inlet, NJ	16	8/15/2015
Fluke	14	C Downer	Sandy Hook Reef, NJ	7/11/2015	M Boyce	Sandy Hook Reef, NJ	14	8/15/2015
Fluke	17	F Waltzinger III	Elberon, NJ	6/9/2013	T Kenny	Sea Girl Reef, NJ	19	8/15/2015
Fluke	14.5	A D'Amato	Cape May Inlet, NJ	9/3/2014	L Benz	Cape May Harbor, NJ	17.5	8/15/2015
Fluke	16	B Shillingford	Ludlam Bay, NJ	10/12/2014	L Simonini	Absecon Bay, Brigantine, NJ	18.5	8/16/2015
Fluke	14	J Malanga	Raritan Bay, NJ	6/9/2013	A Dano	Sandy Hook, NJ	17.5	8/17/2015

Species	Tag Length (FL)	Tagger	Place Tagged	Tag Date	Recapturer	Place Recaptured	Length (TL)	Recap Date
Fluke	11.75	R Budd	Ludlam Bay, NJ	7/31/2015	A Cook	Margate, NJ	13	8/17/2015
Fluke	15	B Klimas	3 NM E Manasquan, NJ	8/17/2014	S Saloom	Axel Carlson Reef, NJ		8/18/2015
Fluke	15	A D'Amato	Cape May Inlet, NJ	8/6/2015	A D'Amato	Cape May Inlet, NJ	15	8/19/2015
Fluke	11	A D'Amato	Cape May Inlet, NJ	7/22/2015	A D'Amato	Cape May Inlet, NJ	11	8/20/2015
Fluke	11	A D'Amato	Cape May Inlet, NJ	8/5/2015	A D'Amato	Cape May Inlet, NJ	11	8/20/2015
Fluke	12	B Shillingford	Ludlam Bay, NJ	10/17/2014	J Nuel	Mantoloking, NJ	15.75	8/22/2015
Fluke	15.75	T Marburger	Shinnecock Inlet, NY	7/29/2014	R Santee	Sandy Hook Channel, NJ	18.13	8/22/2015
Fluke	14	F Waltzinger III	2.5 NM E Manasquan, NJ	7/19/2015	C Doerr	Sea Girl Lumps, NJ		8/24/2015
Fluke	14.5	R Bianchi	Axel Carlson Reef, NJ	8/2/2015	J Hansen	Axel Carlson Reef, NJ	15	8/26/2015
Fluke	15.5	J Stoehr	Raritan Bay, NJ	7/25/2015	D McDermott	Raritan Bay, Flynn's Knoll, NJ	15.5	8/26/2015
Fluke	17.5	F Waltzinger III	3 NM E Mantoloking, NJ	8/27/2014	R Griswold	Garden State South Reef, NJ		8/27/2015
Fluke	15.5	R Anderson Jr	Fire Island Inlet, NY	8/2/2015	W Kessinger	Fire Island Inlet, NY	16.5	8/27/2015
Fluke	14.5	J Beck	Cape May Point, NJ	6/25/2015	J Beck	Cape May Point, NJ	15	8/28/2015
Fluke	14.5	R Bianchi	Sea Girl Reef, NJ	7/26/2015	R Plasket	Sea Girl Reef, NJ	15	8/28/2015
Fluke	15	F Waltzinger III	Klondike Bank, NJ	7/31/2015	P Pelligra	Sea Girl Reef, NJ	16	8/31/2015
Fluke	19.75	H Willemssen	Raritan Bay, NJ	7/25/2015	N Conte	Mud Buoy, Sea Bright, NJ		9/2/2015
Fluke	13	R Anderson Jr	Fire Island Inlet, NY	7/2/2015	D Poland	Fire Island, NY		9/2/2015
Fluke	17	F Waltzinger III	2.5 NM E Manasquan, NJ	7/19/2015	T Sherwood	Sea Girl Reef, NJ	17	9/2/2015
Fluke	14.5	R Anderson Jr	Fire Island Inlet, NY	7/29/2015	D Poland	Fire Island, NY		9/2/2015
Fluke	17	S Kellner	Moriches Bay, NY	7/13/2015	J Meehan	Moriches Inlet, NY	18	9/2/2015
Fluke	13	B Young	Barnegat Bay, NJ	8/22/2013	K Gadsby	Axel Carlson Reef, NJ	17	9/3/2015
Fluke	14	B Young	Barnegat Bay, NJ	8/17/2015	G Kay	Barnegat Bay, Barnegat Light, NJ		9/6/2015
Fluke	15	F Waltzinger III	Axel Carlson Reef, NJ	8/8/2013	W Stanley	2.5 NM E Seaside, NJ	16	9/7/2015
Fluke	11	A D'Amato	Cape May Inlet, NJ	7/22/2015	D Slugan	Cape May Inlet, NJ	13	9/7/2015
Fluke	16.5	R Anderson Jr	Fire Island Inlet, NY	8/23/2014	V Spedale	Fire Island Inlet, NY	13	9/8/2015
Fluke	15	B Young	2.5 NM E Seaside State Park, NJ	7/26/2015	W Stanley	2.5 NM E Seaside, NJ	16.1	9/8/2015
Fluke	21.75	H Leemann	Bayridge Flats, Brooklyn, NY	5/11/2014	D Haffner	Shrewsbury Rocks, NJ	23	9/9/2015
Fluke	12	S Fries	Brighton Beach, Brooklyn, NY	8/29/2013	P Unangst	Nantucket Sound, MA	19	9/10/2015
Fluke	16.5	F Waltzinger III	Elkhorn, NJ	8/10/2014	J Sandier	Shrewsbury Rocks, NJ	18	9/11/2015
Fluke	13	J Beck	Cape May Point, NJ	8/9/2015	J Beck	Cape May Point, NJ	13	9/11/2015
Fluke	13	J Beck	Cape May Point, NJ	8/7/2015	J Beck	Cape May Point, NJ	13	9/11/2015
Fluke	15	T Valerio	Holgate, NJ	9/4/2014	M Nelson	Black Point, Niantic, CT	18	9/12/2015
Fluke	15	S Kellner	Shinnecock Bay, NY	8/20/2013	J Faye	Shinnecock, NY	19	9/12/2015
Fluke	14	T Valerio	Holgate, NJ	9/17/2014	G Robertson	Shinnecock Bay, NY	14.5	9/13/2015
Fluke	10	F Waltzinger III	2.5 NM E Manasquan Inlet, NJ	6/15/2015	D Zoller	Manasquan Inlet, NJ	19.5	9/15/2015
Fluke	13	B Young	Barnegat Light Reef, NJ	8/11/2013	NMFS Observer	30 NM SSE Fire Island Inlet, NY	17.3	9/16/2015
Fluke	9	G Horvath	Manasquan Inlet, NJ	6/16/2015	B Bruno	Manasquan Inlet, NJ		9/16/2015
Fluke	10	A D'Amato	Cape May Inlet, NJ	7/22/2015	A D'Amato	Cape May Inlet, NJ	12	9/16/2015
Fluke	16	F Trues	Manasquan River, NJ	9/13/2015	R Hyldahl	Manasquan River, NJ	16	9/17/2015
Fluke	16	B Young	Barnegat Bay, NJ	7/19/2014	J Giordano	Barnegat Bay, Bay Head, NJ		9/19/2015
Fluke	16	S Kellner	Mattituck, NY	6/19/2014	R Sustello	Point Judith, RI	20	9/19/2015
Fluke	13	F Waltzinger III	2.5 NM E Spring Lake, NJ	6/17/2015	A Liscio	Axel Carlson Reef, NJ		9/19/2015
Fluke	20.75	H Leemann	Breezy Point, NY	8/7/2014	B Vincent	Breezy Point, NY	22.25	9/19/2015
Fluke	16	B Shillingford	Corsos's Inlet, NJ	7/25/2015	M Pasciullo	Corson's Inlet, NJ	16.5	9/20/2015
Fluke	16	B Russo	Gronpoint, NY	7/21/2015	NMFS Observer	7 NM ESE Montauk Point, NY	17.7	9/23/2015
Fluke	14	C Waltzinger III	2.5 NM E Manasquan, NJ	7/19/2015	S North V.M.D.	Sea Girl Reef, NJ	15	9/24/2015
Fluke	14	R Gould Jr	North Wildwood, NJ	7/18/2014	K Beauchamp	West Haven, CT		9/28/2015
Fluke	13	R Schnyderite	Shrewsbury River, Highlands, NJ	9/17/2015	W Conway	Raritan Bay, Sandy Hook, NJ	13	10/5/2015
Fluke	24.75	H Leemann	Grassend Bay, NY	6/19/2014	NMFS Observer	27 NM E Manasquan Inlet, NJ	20.9	10/7/2015
Fluke	18.5	T Valerio	Holgate, NJ	9/27/2014	J Gregg	4 NM SSE Little Egg Inlet, NJ	13	10/20/2015
Fluke	13	F Waltzinger III	Sea Bright, NJ	8/28/2013	K Thomsen	Ocean City Reef, NJ		10/22/2015
Fluke	14	T Valerio	Holgate, NJ	9/19/2014	C Martin	Holgate, NJ	15	11/1/2015
Fluke	22.5	H Leemann	North Point, Brooklyn, NY	8/6/2013	F/N Shelia Rae	Off Point Pleasant, NJ	26	11/2/2015
Fluke	15.75	J Stoehr	Raritan Bay, NJ	7/25/2015	NMFS Observer	33 NM SSE Moriches Inlet, NY	15	11/2/2015
Fluke	16	S Kellner	Shinnecock, NY	8/19/2015	FVN T. Luis	Offshore, Long Island, NY	17.05	11/30/2015
Fluke	27	M Sullivan	Montauk Lake, NY	8/13/2015	G Lee	30 NM E Toms River, NJ	27	12/2/2015
Red Drum	14.5	A Schweithelm	Georgetown, SC	6/15/2013	J Archambault	Winyah Bay, Georgetown, SC	15	1/21/2015
Red Drum	13	D Omrod	Indian R. Mel. Beach, FL	10/2/2014	T Lamielle	Indian R. Mel. Beach, FL	16.5	1/22/2015
Red Grouper	21	C Miller	Key Colony Beach, Marathon, FL	2/12/2015	C Miller	Key Colony Beach, Marathon, FL	21	3/23/2015
Red Grouper	24	B Russo	Rodriguez Key, FL	3/6/2015	M Clawson	Rodriguez Key, FL	24	3/29/2015
Red Grouper	12.5	B Russo	Rodriguez Key, Key Largo, FL	11/10/2015	B Russo	Rodriguez Key, Key Largo, FL	12.5	12/2/2015
Scup	12	A Schweithelm	Eatons Neck, NY	8/28/2014	K Almstrom	Eatons Neck, NY	13.5	10/12/2015
Scup	11.5	A Schweithelm	Eatons Neck, NY	7/3/2015	J Mowen	Shark River Reef Site, NJ	12	12/31/2015
Striped Bass	38	D Kelly	Ches. Bay, Calvert Cliffs, MD	8/17/2011	R Rogers	24 NM E Mouth of Ches. Bay, VA	42.8	1/22/2015
Striped Bass	44	G Buono	Sandy Hook, NJ	6/8/2014	R Maddox	Ches. Bay, Pocomoke Sound, MD		3/23/2015
Striped Bass	16	D Kelly	Roanoke River, Plymouth, NC	2/12/2015	Tar Pam Guide Service	Scuppernon River, Columbia, NC		3/25/2015
Striped Bass	14	R Labrozzi	Sag Harbor, NY	6/17/2014	D Kelly	Sag Harbor, NY	16	3/27/2015
Striped Bass	15	R Labrozzi	Sag Harbor, NY	6/18/2014	D Kelly	Sag Harbor, NY	17	3/27/2015
Striped Bass	17	R Labrozzi	Sag Harbor, NY	11/4/2014	D Kelly	Sag Harbor, NY	17	3/27/2015
Striped Bass	15	R Labrozzi	Sag Harbor, NY	6/5/2014	D Kelly	Sag Harbor, NY	17	3/27/2015
Striped Bass	16	S Tombs	Point Judith Pond, RI	5/19/2014	K Cleary	Housatonic River, Shelton, CT	19	3/29/2015
Striped Bass	16	D Kelly	Sag Harbor, NY	6/7/2014	R Labrozzi	Sag Harbor, NY	18	3/31/2015
Striped Bass	18	D Kelly	Roanoke River, Plymouth, NC	2/12/2015	Hongstad	Roanoke River, NC	19.5	4/1/2015
Striped Bass	16	D Kelly	Sag Harbor, NY	11/7/2014	R Labrozzi	Sag Harbor, NY	16	4/6/2015
Striped Bass	21	J Francesconi	Hudson River, Piermont, NY	4/3/2013	D Damiano	Hudson River, Croton Bay, NY	24	4/8/2015
Striped Bass	17	R Klykar	Norwalk, CT	10/3/2014	Z Sanca	Hudson River, Bear Mt., NY		4/9/2015
Striped Bass	16	A Messina MD	Cold Spring Harbor, NJ	6/29/2013	J Francesconi	Hudson River, Piermont, NY	18.5	4/10/2015
Striped Bass	15	D Kelly	Chesapeake Bay, Honga, MD	10/9/2014	R Maddox	Ches. Bay, Pocomoke Sound, MD		4/14/2015
Striped Bass	16	D Kelly	Roanoke River, Plymouth, NC	2/12/2015	J Matthews	Roanoke River, Williamston, NC	17.5	4/15/2015
Striped Bass	13	T Valerio	Long Beach Island, NJ	3/27/2012	B Mlymar	Housatonic River, CT	22.5	4/15/2015
Striped Bass	15	D Kelly	Roanoke River, Weldon, NC	4/14/2015	D Kelly	Roanoke River, CT	15	4/15/2015
Striped Bass	16	R Labrozzi	Sag Harbor, NY	6/23/2014	K Carroll	Sag Harbor, NY	17	4/16/2015
Striped Bass	15	D Kelly	Roanoke River, Plymouth, NC	2/12/2015	C Jones	Roanoke River, Weldon, NC	17.75	4/17/2015
Striped Bass	16	D Kelly	Roanoke River, Weldon, NC	4/15/2015	J Partlow	Roanoke River, Halifax, NC		4/17/2015
Striped Bass	17	D Kelly	Sag Harbor, NY	6/6/2014	G Mattioli	Raritan Bay, Belford, NJ	15	4/17/2015
Striped Bass	18	D Kelly	Kennebec River, Bath, ME	9/17/2014	E Pandolfi	Housatonic River, Derby, CT	22	4/18/2015
Striped Bass	17	D Kelly	Roanoke River, Plymouth, NC	2/12/2015	S Blandi	Roanoke River, Jamesville, NC	17.5	4/21/2015

Species	Tag Length (FL)	Tagger	Place Tagged	Tag Date	Recapturer	Place Recaptured	Length (TL)	Recap Date
Striped Bass	23	J Samyn	Manhasset Bay, NY	5/6/2013	J Romatowski	Raritan Bay, NJ	38	4/22/2015
Striped Bass	17	R Labrozzi	Sag Harbor, NY	3/29/2015	D Loos	Sag Harbor, NY	15	4/23/2015
Striped Bass	18	A Messina MD	Cold Spring Harbor, NY	11/26/2014	W Lanese	Housatonic River, Shelton, CT	20	4/25/2015
Striped Bass	27	D Kelly	Sag Harbor, NY	6/11/2012	D Beck	Raritan Bay, NJ	35	4/25/2015
Striped Bass	15	D Kelly	Roanoke River, Weldon, NC	4/25/2015	M Marsh	Roanoke River, Hamilton, NC	18	4/25/2015
Striped Bass	19	D Kelly	Roanoke River, Jamesville, NC	3/12/2015	S Ambler	Roanoke River, Halifax, NC	19.5	4/25/2015
Striped Bass	25	A Anderson	Point Judith, RI	10/15/2014	D Cels	Raritan Bay, Keansburg, NJ	25	4/25/2015
Striped Bass	23	J Samyn	Manhasset Bay, NY	5/6/2013	D Martino	Manhasset Bay, NY	27	4/25/2015
Striped Bass	15	D Kelly	Roanoke River, Weldon, NC	4/15/2015	B Drewett	Roanoke River, Halifax, NC		4/26/2015
Striped Bass	19	D Kelly	Roanoke River, Weldon, NC	3/12/2015	S Rice	Roanoke River, NC	21.5	4/27/2015
Striped Bass	16	D Kelly	Roanoke River, Jamesville, NC	4/15/2015	R Terry	Roanoke Rapids, Weldon, NC		4/28/2015
Striped Bass	17	D Kelly	Sag Harbor, NY	5/26/2014	J Johnson	Raritan Bay, Keansburg, NJ	19.75	4/28/2015
Striped Bass	14	D Kelly	Sag Harbor, NY	11/10/2014	R Labrozzi	Sag Harbor, NY	15	4/28/2015
Striped Bass	17	A Anderson	Thames R., CT	11/23/2007	T Gorczyca	Raritan Bay, NJ	34	4/28/2015
Striped Bass	21	A Schweithelm	Eatons Neck, NY	6/27/2010	L Merlino	Hudson River, Newburgh, NY	24	4/28/2015
Striped Bass	21	R Leja	Bridgeport, CT	5/28/2013	R Pianelli	Hudson River, Saugerties, NY		4/29/2015
Striped Bass	20	L Duffy Jr	Thames River, Norwich, CT	12/5/2008	D Grippo	Hudson River, Piermont, NY	34.5	4/29/2015
Striped Bass	37	T Valerio	Long Beach Island, NJ	4/28/2012	G Davis Jr.	Lower Alloway, NJ	42	4/29/2015
Striped Bass	16	T Shaheen	Shrewsbury River, Sea Bright, NJ	10/18/2014	B Hyland	Hudson River, Hamburg, NY	16	5/1/2015
Striped Bass	22	G Kerghan	Sea Bright, NJ	11/3/2009	J Neidhardt	Hudson River, Kingstons, NY	26	5/2/2015
Striped Bass	17	A Anderson	Narrow River, Narragansett, RI	4/29/2013	K Ireland	Housatonic River, Stratford, CT	26	5/2/2015
Striped Bass	17.5	R Kyker	Housatonic River, Shelton, CT	12/29/2014	A Winters	Hudson River, Kingstons, NY	18.5	5/2/2015
Striped Bass	16	D Omrod	ICW Ocean City, Shelton, CT	8/7/2014	M Chafetz	Delaware River, Oldmans Creek, NJ	18	5/3/2015
Striped Bass	25	G Ottavio	Cape May, NJ	5/2/2015	M Miller	Whale Beach, Strathmere, NJ	25.5	5/3/2015
Striped Bass	16	D Kelly	Roanoke River, Plymouth, NC	2/12/2015	T Koehler	Roanoke River, NC		5/4/2015
Striped Bass	16	D Kelly	Roanoke River, Jamesville, NC	3/12/2015	S Burkhart	Roanoke River, Weldon, NC	16	5/6/2015
Striped Bass	25	A Anderson	Block Island, RI	7/21/2013	D Krivohlav	Tobay Beach, NJ	26	5/7/2015
Striped Bass	13	D Kelly	Ches. Bay, S. Marsh Is. MD	10/16/2014	P Dalberg	Ches. Bay, Calvert Cliffs, MD		5/7/2015
Striped Bass	17	D Kelly	Roanoke River, Jamesville, NC	3/12/2015	M Blake	Roanoke River, Weldon, NC	17	5/8/2015
Striped Bass	14.5	R Kyker	Norwalk, CT	10/8/2013	M Jokajytis	Manhasset Bay, NY		5/9/2015
Striped Bass	23	S Tombs	Point Judith, RI	7/27/2013	M Konarski	Connecticut R., Old Saybrook, CT	26	5/9/2015
Striped Bass	17	A Messina MD	Cold Spring Harbor, NJ	10/28/2014	A Hudson	Hudson River, Newburgh, NY		5/9/2015
Striped Bass	21	T Valerio	Graveling Point, NJ	4/19/2015	M Vescovi	Metedeconk River, NJ	22	5/12/2015
Striped Bass	14	A Messina MD	Cold Spring Harbor, NY	10/28/2011	B Taylor	Hudson River, Kingstons, NY	22.75	5/12/2015
Striped Bass	15	D Kelly	Sag Harbor, NY	6/16/2014	J Sabatelli	Great South Bay, Amityville, NY		5/13/2015
Striped Bass	16	D Kelly	Roanoke River, Plymouth, NC	2/12/2015	S Johnson	Roanoke River, Hamilton, NC	16.5	5/13/2015
Striped Bass	16	A Messina MD	Cold Spring Harbor, NY	6/29/2013	P Malquist Jr.	Oyster Bay, NY	22	5/16/2015
Striped Bass	18	P Gallagher	Hempstead Harbor, NY	9/13/2014	P Malquist Jr.	Oyster Bay, NY	18	5/16/2015
Striped Bass	16	D Kelly	Roanoke River, Plymouth, NC	2/12/2015	D Cort	Roanoke River, Weldon, NC	16	5/16/2015
Striped Bass	28	R Stroz	Sandy Hook, NJ	10/30/2014	A Fontes	Mount Hope Bay, Bristol, RI	31.5	5/16/2015
Striped Bass	18	D Omrod	ICW Strathmere, NJ	7/17/2014	T Duffy	Ocean City, NJ		5/17/2015
Striped Bass	22	L Quinn	New Haven Harbor, CT	5/12/2012	M Pantalone	New Haven, CT	29	5/17/2015
Striped Bass	22	T Shaheen	Shrewsbury River, Sea Bright, NJ	5/3/2015	C Kerstetter	Vanavank River, Middletown, NJ		5/18/2015
Striped Bass	19	A Anderson	Point Judith, RI	5/6/2015	M Fleury	Ninigret Pond, Charlestown, RI		5/19/2015
Striped Bass	19	A Anderson	Point Judith, RI	5/6/2015	M Monaghan	Point Judith, RI		5/19/2015
Striped Bass	16	G Kerghan	Cape Cod Bay, North Truro, MA	5/23/2012	L Bellemore	Bransford Reef, CT	24	5/20/2015
Striped Bass	33	M Sullivan	Montauk Point, NY	9/20/2013	S Black	Inland River Inlet, DE	35	5/20/2015
Striped Bass	33	T Shaheen	Shrewsbury River, Sea Bright, NJ	5/25/2014	F Chaves	Navesink River, NJ		5/20/2015
Striped Bass	17	D Kelly	Sag Harbor, NY	5/13/2011	C Low	Sag Harbor, NY	26	5/23/2015
Striped Bass	17	D Kelly	Kennebunk River, ME	9/25/2013	J Garland	Saco River, Saco, ME	24	5/23/2015
Striped Bass	26.5	T Matraxia	Raritan Bay, Round Shoal, NY	4/29/2015	R Spallone	Montauk Point, NY	27	5/24/2015
Striped Bass	19	R Busch	Merrimack River, MA	7/9/2014	R Trenz	Hudson River, Newburgh, NY	22	5/25/2015
Striped Bass	13	G Ottavio	Cape May, NJ	8/1/2013	J Beck	Cape May, NJ	19.5	5/28/2015
Striped Bass	15	R Kyker	Norwalk, CT	11/18/2012	B Rice	Race Point, Provincetown, MA	25	5/29/2015
Striped Bass	16	S Tombs	Point Judith Pond, RI	5/16/2014	A Taganov	Connecticut River Mouth, CT		5/29/2015
Striped Bass	17	P Gallagher	Housatonic River, CT	12/21/2014	T Mazur	Charlestown Breachway, RI		5/30/2015
Striped Bass	19	A Messina	Cold Spring Harbor, NY	11/13/2014	K Tickell	Bourne Pond, Falmouth, MA		6/2/2015
Striped Bass	20	T Valerio	Graveling Point, NJ	4/14/2015	A Tewell	Mashpee Island, Bourne, MA	20	6/2/2015
Striped Bass	18	F Ruczyński	Delaware River, Elnsboro, NJ	4/9/2015	M Zellweger	Kittery Point, ME	28	6/3/2015
Striped Bass	23	T Valerio	Long Beach Island, NJ	4/18/2013	B Hirdinger Jr.	Raritan Bay, Leonardo, NJ	28.5	6/4/2015
Striped Bass	19	B Shillingford	Cannon Sound, NJ	10/10/2011	R Harbina	Sea Bright, NJ	28	6/5/2015
Striped Bass	23	A Messina MD	Cold Spring Harbor, NJ	11/6/2014	C Niace	Cold Spring Harbor, NY	24.5	6/5/2015
Striped Bass	24	D Sweet	Narragansett Beach, RI	10/10/2011	D Parente	Colt State Park, Bristol, RI	30	6/5/2015
Striped Bass	23	D Omrod	ICW Strathmere, NJ	9/6/2013	R Hedrich	Sea Isle City, NJ		6/6/2015
Striped Bass	24	T Valerio	Graveling Point, NJ	4/11/2015	B Chaffee	Six-Mile Reef, Clinton, CT	26	6/6/2015
Striped Bass	20	R Leja	Stratford, CT	10/29/2014	R Moreau	Porter River, Danvers, MA	26	6/6/2015
Striped Bass	15	D Kelly	Ches. Bay, Bloodsworth Is., MD	10/1/2013	K Justice	Ches. Bay, Tangier Sound, MD	21	6/6/2015
Striped Bass	20	P Mogleinicki	Quonochontaug, RI	5/15/2015	A Inguili	Quonochontaug Pond, RI	22	6/7/2015
Striped Bass	18	R Pearson Jr	Hudson River, Croton Bay, NY	4/20/2014	J Matzinger	Wantaug, NY	18	6/8/2015
Striped Bass	19	D Kelly	Kennebec River, Bath, ME	9/17/2014	C Warren	Monomoy, MA		6/8/2015
Striped Bass	15	D Kelly	Roanoke River, Plymouth, NC	2/12/2015	F McCall	Roanoke River, Jamesville, NC		6/9/2015
Striped Bass	22	T Shaheen	Shrewsbury R., Sea Bright, NJ	6/3/2014	B Meoli	Bransford, CT	28	6/10/2015
Striped Bass	20	R Leja	Stratford, CT	4/22/2014	J Chmelar	Quinnipiac River, CT		6/11/2015
Striped Bass	22	A Anderson	North Rip, Block Island, RI	6/14/2009	D Mantovani	Moriches Inlet, NY	28	6/13/2015
Striped Bass	20.5	S Fries	Rockaway, NY	10/30/2013	B Bissessar	Riverhead, NY		6/13/2015
Striped Bass	15.5	J Tomaski	Chesapeake Bay, Breezy Pt., MD	5/30/2013	M Dentler	Miles River, MD	20.5	6/13/2015
Striped Bass	15	A Anderson	Point Judith, RI	6/8/2015	J Maudier	Pt. Judith Pond, Narragansett, RI		6/14/2015
Striped Bass	36	F Tellefsen	Raritan Bay, NY	10/14/2014	D Dallaire	Cape Cod Canal, Sandwich, MA	37	6/14/2015
Striped Bass	13	A Messina MD	Cold Spring Harbor, NY	11/16/2012	A Messina	Cold Spring Harbor, NY	20	6/14/2015
Striped Bass	22.5	F Jessier II	Wethampton Beach, NY	9/18/2014	D Mantovani	Moriches Inlet, NY	25	6/14/2015
Striped Bass	18	G Ottavio	Cape May, NJ	7/28/2011	D Nelson	Race Point, Provincetown, MA	25	6/14/2015
Striped Bass	17	G Ottavio	Cape May, NJ	10/4/2013	J Moore IV	Cape May Harbor, NJ	22	6/16/2015
Striped Bass	22	A Anderson	Point Judith, RI	6/13/2013	R Scott	Connecticut River, CT	29.5	6/16/2015
Striped Bass	17	D Tholen	Manassquan River, NJ	10/20/2013	P Piraino	Merrimack River, Salisbury, MA	22	6/17/2015
Striped Bass	23	J Howell	Rivers Ledge, RI	7/6/2013	R Strzo	Sea Bright, NJ	24	6/17/2015
Striped Bass	23	T Shaheen	Shrewsbury River, Sea Bright, NJ	5/17/2015	R Artus	L Sound, "The Race", NY	21	6/17/2015
Striped Bass	19	R Labrozzi	Sag Harbor, NY	5/7/2015	T Brykczynski	Sag Harbor, NY	21	6/18/2015
Striped Bass	26	J Newson	Merrimack River, MA	6/9/2015	R Noy	Merrimack River, Newburyport, MA	27	6/21/2015
Striped Bass	29	J Newson	Point O' Woods, Fire Island, NY	10/20/2013	F/V James & Matthew	Narragansett, RI	30.5	6/24/2015
Striped Bass	17	H Sweet	Warren River, Warren, RI	5/20/2009	E Fleming	Merrimack River, Salisbury, MA	31	6/26/2015
Striped Bass	15	J Fitzpatrick	Moriches Inlet, NY	9/26/2007	M McElhoney	Moriches Bay, NY	35	6/26/2015

Species	Tag Length (FL)	Tagger	Place Tagged	Tag Date	Recapturer	Place Recaptured	Length (TL)	Recap Date
Striped Bass	15	A Anderson	Point Judith, RI	5/9/2015	A Anderson	Point Judith, RI	15	6/26/2015
Striped Bass	20	J Francesconi	Hudson River, Piermont, NY	3/4/2013	D Tessar	Fire Island, NY		6/26/2015
Striped Bass	24	T Valerio	Graveling Point, NJ	4/3/2015	J Sabach	Fox Island, Phippsburg, ME		6/26/2015
Striped Bass	29	A Anderson	Block Island, RI	7/21/2013	M Saksian	Connecticut River, Old Saybrook, CT	32	6/27/2015
Striped Bass	20	R Kyker	Norwalk, CT	11/18/2012	J Dunn	Greenwich, CT		6/27/2015
Striped Bass	22	G Katz	Merrimack River, MA	6/9/2015	M Wick	Merrimack River, Newburyport, MA		6/27/2015
Striped Bass	23	J Newson	Barnegat Inlet, NJ	10/21/2014	G Wlad	York, ME	25	6/27/2015
Striped Bass	18	G Ottavio	Cape May, NJ	9/24/2014	A Williams	Cape May, NJ		6/28/2015
Striped Bass	18	R Busch	Merrimack River, MA	8/4/2014	S Simmons	Merrimack River, MA	22.5	6/29/2015
Striped Bass	26	A Anderson	Point Judith, RI	7/6/2013	D Haczynski	Providence River, Providence, RI	30	6/29/2015
Striped Bass	20	J Matzinger	Wantagh, NY	6/13/2015	J Matzinger	Wantagh, NY	21	6/30/2015
Striped Bass	24	D Brodeur	Housatonic River, Milford, CT	5/4/2014	N McCormick	Shinnecock Bay, NY		7/2/2015
Striped Bass	26	A Anderson	Block Island, RI	6/16/2013	Z Sokolowski	Shinnecock Inlet, NY		7/2/2015
Striped Bass	15	R Labrozzi	Sag Harbor, NY	4/17/2012	J Matzinger	Wantagh, NY	24	7/3/2015
Striped Bass	30.5	S Bringer	Rye, NY	6/29/2014	J Ceruzzi	Manursing Island, Rye, NY	34	7/4/2015
Striped Bass	19	F Stunkel	Stamford, CT	11/11/2012	J Rosen	Piscataque River, Kittery, ME	23	7/4/2015
Striped Bass	20	R Leja	Bridgeport, CT	10/14/2013	J Micinillo DVM	Housatonic River Mouth, CT	24.5	7/6/2015
Striped Bass	20	R Labrozzi	Sag Harbor, NY	4/30/2015	D Rand	Mousam River, ME	23.5	7/8/2015
Striped Bass	14	D Kelly	Sag Harbor, NY	5/10/2015	R Labrozzi	Sag Harbor, NY	16	7/8/2015
Striped Bass	23	T Valerio	Sage Ledge Point, NJ	4/11/2015	P DeFranco	Sage Ledge Is., Barnegat Bay, NJ		7/10/2015
Striped Bass	21.5	T Valerio	Graveling Point, NJ	3/31/2015	T Largy	Essex River, Essex, MA	22	7/11/2015
Striped Bass	15	J Francesconi	Hudson River, Piermont, NY	4/4/2010	S Hargett	Schuate, MA	30	7/13/2015
Striped Bass	17	R Labrozzi	Sag Harbor, NY	6/6/2014	T Anagnos	Orient Point, NY	21	7/14/2015
Striped Bass	18	D Brodeur	Cape Cod Bay, Milford, CT	6/6/2015	G Cavalieri	Long Sands Beach, York, ME	21	7/20/2015
Striped Bass	20	R Leja	Bridgeport, CT	4/24/2013	P Ziob	Bridgeport, CT	25	7/25/2015
Striped Bass	17	A Messina MD	Cold Spring Harbor, NY	7/1/2014	S Hartmann	Eatons Neck, NY		7/25/2015
Striped Bass	19	R Rech	Avalon, NJ	9/6/2014	B Aullar	Saunders Point, MD		7/30/2015
Striped Bass	B Aguilar	Saunders Point, MD	7/30/2015	E Welch	Chesapeake Bay, Matapeake, MD	19.5	7/31/2015	
Striped Bass	A Anderson	Point Judith, RI	6/8/2015	R Stevens	Point Judith Salt Pond, RI	19	8/1/2015	
Striped Bass	A Anderson	Point Judith, RI	6/4/2015	K Fawcett	Weekapaug Point, Westerly, RI		8/1/2015	
Striped Bass	15	T Valerio	Graveling Point, NJ	4/8/2015	F Hannum	Mullica Bay, NY	16.5	8/1/2015
Striped Bass	15	T Matraxia	Tin Can Grounds, NY	6/16/2015	J Gautier	Jamaica Bay, NY	17	8/4/2015
Striped Bass	25	M Traina	Raritan Bay, Keansburg, NJ	4/21/2013	P Kazura	Monatuk Point, NY	32.5	8/5/2015
Striped Bass	15	D Kelly	Chesapeake Bay, Honga, MD	10/28/2014	J Gill	Chesapeake Bay, Poplar Is., MD		8/6/2015
Striped Bass	27	R Busch	Merrimack River, MA	7/5/2015	C Flinkman	Salisbury Beach, MA	28.75	8/7/2015
Striped Bass	16	D Kelly	Chesapeake Bay, S. Marsh Is., MD	10/16/2014	J Cincotta	Margate, NJ	18.5	8/9/2015
Striped Bass	15	B Shillingford	Corson Sound, NJ	6/30/2014	C Greenwood	Corson Sound, NJ		8/9/2015
Striped Bass	12	R Dunning	Asteteague Island, VA	5/20/2014	D Miller	Ferow Island, DE		8/9/2015
Striped Bass	21	M Strober	Coney Island, Brooklyn, NY	12/14/2011	J Meacham	Plum Hill, RI	30	8/10/2015
Striped Bass	25	M Drouin MD	Merrimack R., Salisbury, MA	7/14/2015	W Husband	Wachusett Island, Newburyport, MA		8/14/2015
Striped Bass	14	Z Visconti	Elsinboro, NJ	3/27/2015	W Hitchner	Husted's Landing, Bridgeton, NJ		8/15/2015
Striped Bass	24	S Fries	Kennebunk River, ME	8/3/2015	K Kochan	Kennebunk River, ME	24.75	8/19/2015
Striped Bass	44	T Matraxia	Ambrose Channel, ME	6/9/2014	M Nordlinger	3 NM E Monatuk Point, NY	45	8/20/2015
Striped Bass	24	J Matzinger	Wantagh, NY	6/26/2015	R Uria	Wantagh Bridge, NY	27	8/27/2015
Striped Bass	14	D Omrod	ICW Ocean City, NJ	7/26/2014	C Borsall	Great Egg Harbor Bay, NJ		8/27/2015
Striped Bass	12.5	R Rech	Avalon, NJ	8/7/2013	C Borsall	Great Egg Harbor Bay, NJ	18	8/29/2015
Striped Bass	22	B Shillingford	Strathmere, NJ	11/16/2013	M Reiner	Point Pleasant Canal, NJ	27.5	8/29/2015
Striped Bass	24	S Tombs	Point Judith, RI	8/18/2013	R Curiale	Hortons Point, Southold, NY		8/30/2015
Striped Bass	21	T Valerio	Graveling Point, NJ	4/10/2015	M Pomeroy	Barnstable, MA	14	8/30/2015
Striped Bass	12	D Kelly	Chesapeake Bay, Honga, MD	5/2/2014	V Guglielmo	Choaptank River, Oxford, MD		9/9/2015
Striped Bass	36.5	B Penados	Arthur Kill, Woodbridge, NJ	4/25/2015	M Telesca	Sandwich, MA	36.5	9/15/2015
Striped Bass	44	T Matraxia	Chesapeake Bay, Honga, MD	6/23/2014	T Lafazia	Block Island, RI		9/17/2015
Striped Bass	14	D Kelly	Chesapeake Bay, Honga, MD	10/28/2014	J Heisel Sr.	Bear Creek, Dundalk, MD	16	9/17/2015
Striped Bass	12	A Anderson	Point Judith, RI	6/26/2015	J Grabowski	1 NM S Point Judith, RI	15	9/19/2015
Striped Bass	22	A Messina MD	Cold Spring Harbor, NY	11/16/2014	D Lee	Cove Island, Stamford, CT	25	9/27/2015
Striped Bass	25	A Schweithelm	Eaton Neck, NY	9/16/2014	L Wang	Huntington, NY	28	9/29/2015
Striped Bass	27	A Anderson	Block Island, RI	7/21/2013	M Nordlinger	25 NM East Monatuk Point, NY	30	10/5/2015
Striped Bass	24	S Tombs	Matunuck, RI	8/30/2015	M Ragusa	Point o' Woods, Fire Island, NY		10/5/2015
Striped Bass	14	D Kelly	Roanoke River, Jamesville, NC	3/12/2015	J Harris Sr.	Curruck Sound, Kitty Hawk, NC	17	10/9/2015
Striped Bass	23	D Kelly	Kennebec River, Bath, ME	9/1/2014	J Murphy	Cape Cod Canal, Bourne, MA	27.5	10/12/2015
Striped Bass	23	G Ottavio	Delaware R., National Park, NJ	9/27/2011	L Flansburg	Deleware River, Port Jervis, NY	32	10/13/2015
Striped Bass	15	J MacDonald	Hudson River, Croton Bay, NY	4/6/2012	J Pike	Chesapeake Bay, Selby Bay, MD	17	10/15/2015
Striped Bass	20	R Pearson Jr	Hudson River, Croton Bay, NY	4/20/2014	K Deaner	Chesapeake Bay, Selby Bay, MD		10/15/2015
Striped Bass	13.5	J Beck	Cape May Canal, NJ	10/16/2012	D Sutton	Maurice River, NJ	23.5	10/18/2015
Striped Bass	21	B Shillingford	Strathmere, NJ	10/25/2013	J McLaughlin	Strathmere, NJ	29	10/22/2015
Striped Bass	17.5	F Ruczynski	Strathmere, NJ	10/27/2013	R Rech	Corsons Inlet, NJ	20.5	10/24/2015
Striped Bass	19	F Stunkel	Stamford, CT	11/20/2012	R Medleo	Stamford, CT	23.5	10/27/2015
Striped Bass	40	M Pachico	Block Island, RI	7/25/2015	J Guardabasso	Barnegat Inlet, NJ	44	10/30/2015
Striped Bass	15	J Francesconi	Hudson River, West Point, NY	8/19/2013	M Strober	New York Harbor, NY	23	10/31/2015
Striped Bass	24	R Busch	Merrimack River, MA	7/1/2015	D Arsenal	Salem Harbor, MA	26	11/1/2015
Striped Bass	21	B Shillingford	Strathmere, NJ	10/25/2013	D Mitchell	Strathmere, NJ	23.5	11/7/2015
Striped Bass	24	T Matraxia	Raritan Bay, NJ	11/21/2013	R Blidenhofer	Wantagh, NY	29	11/8/2015
Striped Bass	16	B Shillingford	ICW Ocean City, NJ	11/16/2013	M Hall	Great Egg Harbor Bay, NJ		11/11/2015
Striped Bass	23	J Matzinger	Wantagh, NY	7/13/2015	M Farrell	Point Pleasant Bay, NJ	26	11/15/2015
Striped Bass	17	J Francesconi	Hudson River, Piermont, NY	3/14/2012	A Kondas	Point Pleasant Beach, NJ	24.25	11/15/2015
Striped Bass	19	T Valerio	Graveling Point, NJ	4/14/2015	T Anagnos	Orient Point, NY	21	11/21/2015
Striped Bass	33	K Kyker	Stamford, CT	7/12/2014	M Ferrigno	East River, NYC, NY	38	11/21/2015
Striped Bass	21	J Matzinger	Wantagh, NY	7/13/2015	D Connett	Raritan Reach, Raritan Bay, NJ	22.5	11/22/2015
Striped Bass	15	T Shaheen	Navesink River, Rumson, NJ	6/12/2013	E Kosinski	Sandy Hook, NJ	23	11/25/2015
Striped Bass	21	C Bellinzoni	Jones Inlet, NY	5/15/2015	B Iacozza	Housatonic River, Milford, CT		11/26/2015
Striped Bass	26.5	D Brodeur	Charles Island, Milford, CT	6/5/2015	J Czuczup	2 NM E Sea Isle City, NJ	29	11/26/2015
Striped Bass	18	A Messina MD	Cold Spring Harbor, NY	5/21/2014	S Purzy	Sea Girt, NJ		11/26/2015
Striped Bass	17	J Francesconi	Hudson River, Piermont, NY	4/5/2013	M Surguladze	Breezy Point, Queens, NY	25	11/26/2015
Striped Bass	18	R Pearson Jr	Hudson River, Croton Bay, NY	4/20/2014	M Mason	Housatonic River, CT		11/27/2015
Striped Bass	38	K Kyker	Eatons Neck, NY	7/12/2015	R McDonough	Ocean City, NJ	39.5	11/27/2015
Striped Bass	21	S Tombs	Point Judith Pond, RI	5/22/2014	S Weber	Highlands, NJ	26	11/28/2015
Striped Bass	21	T Matraxia	Old Orchard, Raritan Bay, NY	11/18/2015	R Anderson	Beach Haven, NJ	24	11/30/2015
Striped Bass	18.5	M Tomaski	Paug Harbor, MD	10/7/2015	T Nelson	Pautuxent River, MD	19.5	12/2/2015
Striped Bass	14	D Kelly	Sag Harbor, NY	6/26/2015	R Labrozzi	Sag Harbor, NY	16	12/3/2015
Striped Bass	21	R Leja	Bridgeport, CT	8/27/2015	G Smith	Island Beach State Park, NJ		12/5/2015
Striped Bass	13	D Kelly	Roanoke River, Weldon, NC	4/15/2015	B Games	Newbugun Creek, Pasquotank R., NC	18.5	12/10/2015

Species	Tag Length (FL)	Tagger	Place Tagged	Tag Date	Recapturer	Place Recaptured	Length (TL)	Recap Date
Striped Bass	19.75	F Ruczynski	Margate, NJ	12/2/2015	F Ruczynski	Margate, NJ	20.5	12/11/2015
Striped Bass	13	D Kelly	Sag Harbor, NY	6/30/2015	D Kelly	Sag Harbor, NY	17	12/13/2015
Striped Bass	23.5	F Jessup II	West Hampton Dunes, NY	10/17/2015	F Ruczynski	Margate, NJ	24.5	12/13/2015
Striped Bass	19.5	J Beck	Cape May Harbor, NJ	5/2/2015	R Rogers	Indian River, Power Plant, DE	20	12/15/2015
Striped Bass	19	A Anderson	Point Judith, RI	10/19/2013	S Perna	Island Beach State Park, NJ	23	12/16/2015
Striped Bass	24	T Shaheen	Shrawsbury River, Sea Bright, NJ	5/18/2015	J Craddock	Cape May, NJ	26	12/16/2015
Striped Bass	25	G O Driscoll	Brick, NJ	11/30/2015	S Szoldafits	Cape May, NJ	26	12/17/2015
Striped Bass	17	D Kelly	Roanoke River, Weldon, NC	4/15/2015	J Parsons	Sea Bright, NJ	20	12/20/2015
Striped Bass	22	A Papadopoulos	Ches. Bay, Crisfield, MD	9/25/2014	B Butler	Albemarle Sound, NC	26	12/20/2015
Striped Bass	24	T Valerio	Little Haven, NJ	4/23/2015	R VanSchier	Chesapeake Bay, Tangier Island, VA	23	12/20/2015
Striped Bass	21	P Gallagher	Beach Haven, NY	4/26/2015	J Sze	Island Beach State Park, NJ	25.4	12/30/2015
							23	12/31/2015
Tautog	16	M Hawkins	18 NM ESE Ocean City, MD	1/28/2012	M Hawkins	18 NM ESE Ocean City, MD	19	1/2/2015
Tautog	14	M Hawkins	18 NM ESE Ocean City, MD	6/13/2014	M Hawkins	18 NM ESE Ocean City, MD	15.13	1/2/2015
Tautog	15.5	M Hawkins	9 NM E Ocean City, MD	1/22/2015	M Hawkins	9 NM E Ocean City, MD	16.75	5/8/2015
Tautog	15.25	M Hawkins	12 NM SSE Ocean City, MD	1/5/2014	C Bounds	12 NM SSE Ocean City, MD	16.5	5/8/2015
Tautog	12.25	M Hawkins	9 NM E Ocean City, MD	1/1/2014	M Hawkins	9 NM E Ocean City, MD	13.5	5/9/2015
Tautog	15	U Tautoggers	Housatonic River, Milford, CT	7/2/2015	U Tautoggers	Housatonic River, Milford, CT	15	7/2/2015
Tautog	19	M Hawkins	30 NM SE Ocean City, MD	3/5/2013	M Hawkins	30 NM ESE Ocean City, MD	21.75	7/11/2015
Tautog	16	U Tautoggers	Housatonic River, Milford, CT	6/21/2015	G DelGais	Housatonic River, Stratford, CT	16.75	7/31/2015
Tautog	15	U Tautoggers	Housatonic River, Milford, CT	6/17/2015	G DelGais	Housatonic River, Stratford, CT	16.75	8/24/2015
Tautog	15.75	U Tautoggers	Clinton, CT	6/22/2015	B Fiorella	Clinton, CT	17	10/10/2015
Tautog	11.5	A Schweithelm	Eatons Neck, NY	11/8/2014	R Roth	Eatons Neck, NY	10	10/1/2015
Tautog	11	U Tautoggers	Salt Island, Westbrook, CT	7/6/2015	R Buyak	Westbrook, CT	11	10/13/2015
Tautog	10.25	R Musto	Eatons Neck, NY	11/23/2014	M LaBella	Off Eatons Neck, NY	12.5	10/4/2015
Tautog	11	A Schweithelm	Eatons Neck, NY	11/8/2014	M LaBella	Off Eatons Neck, NY	12	10/14/2015
Tautog	13.25	R Musto	Eatons Neck, NY	11/27/2014	M LaBella	Off Eatons Neck, NY	12	10/15/2015
Tautog	11	A Schweithelm	Eatons Neck, NY	11/8/2014	M LaBella	Off Eatons Neck, NY	14	10/15/2015
Tautog	11	A Schweithelm	Eatons Neck, NY	11/8/2014	M LaBella	Off Eatons Neck, NY	12	10/15/2015
Tautog	16	U Tautoggers	Housatonic River, Milford, CT	6/7/2015	R Nickle	Stratford, CT	17	10/17/2015
Tautog	10.5	A Schweithelm	Eatons Neck, NY	11/16/2014	C Lamer	Eatons Neck, NY	12.75	10/20/2015
Tautog	12	A D'Amato	Cape May Inlet, NJ	10/21/2015	A D'Amato	Cape May Inlet, NJ	12	10/22/2015
Tautog	10.4	R Musto	Eatons Neck, NY	11/23/2014	R Musto	Eatons Neck, NY	11	10/24/2015
Tautog	12	A Schweithelm	Eatons Neck, NY	11/8/2014	M Roefs	Eatons Neck, NY	11.5	10/25/2015
Tautog	11	A Schweithelm	Eatons Neck, NY	11/16/2014	A Schweithelm	Eatons Neck, NY	12.5	10/31/2015
Tautog	11.5	B Roth	Eatons Neck, NY	10/11/2015	C Lobue	Eatons Neck, NY	11.5	10/31/2015
Tautog	13.5	A Schweithelm	Eatons Neck, NY	6/19/2014	P Catalano	Marshal's Field, Huntington, NY	17	10/31/2015
Tautog	17	U Tautoggers	Outer SW Reef, Clinton, CT	11/2/2015	T Sefari	Outer SW Reef, Clinton, CT	17	11/2/2015
Tautog	14.5	A Schweithelm	Eatons Neck, NY	11/8/2014	C Viemeister	Eatons Neck, NY	18.75	11/2/2015
Tautog	13.5	M Hawkins	4 NM SE Ocean City, MD	11/10/2013	M Hawkins	4 NM SE Ocean City, MD	17	11/3/2015
Tautog	13.5	M Hawkins	4.5 NM SE Ocean City, MD	5/3/2015	M Hawkins	4 NM SE Ocean City, MD	14.75	11/3/2015
Tautog	16.5	U Tautoggers	Kelsey Point, Clinton, CT	10/21/2015	R Curiale	The Race, Southold, NY	17	11/3/2015
Tautog	14	U Tautoggers	Kelsey Point, Clinton, CT	10/21/2015	T Samal	3.5 NM S Westbrook, NY	17.25	11/3/2015
Tautog	14	A D'Amato	Cape May Inlet, NJ	10/22/2015	C Kennedy	Cape May Inlet, NJ	14	11/4/2015
Tautog	13.6	A D'Amato	Cape May Inlet, NJ	10/22/2015	C Kennedy	Cape May Inlet, NJ	13	11/4/2015
Tautog	12	R Musto	Eatons Neck, NY	11/23/2014	B Steiner	Eatons Neck, NY	17	11/7/2015
Tautog	15	U Tautoggers	Housatonic River, Milford, CT	7/2/2015	H LaFrance	New Haven, CT	15.75	11/7/2015
Tautog	8.75	R Musto	Eatons Neck, NY	11/23/2014	R Musto	Eatons Neck, NY	9.5	11/7/2015
Tautog	10	R Musto	Eatons Neck, NY	11/1/2015	J Modzelewski	Long Island Sound, NY	15	11/9/2015
Tautog	13.5	A Schweithelm	Eatons Neck, NY	10/31/2015	L Zai	Eatons Neck, NY	13.5	11/9/2015
Tautog	18	U Tautoggers	Housatonic River, Milford, CT	6/21/2015	J Blackall	3 NM S Clinton, CT	20.5	11/9/2015
Tautog	11.25	R Musto	Eatons Neck, NY	11/1/2015	S Hartmann	Eatons Neck, NY	10	11/10/2015
Tautog	14.75	A Schweithelm	Eatons Neck, NY	10/31/2015	S Hartmann	Eatons Neck, NY	11	11/10/2015
Tautog	14	A Schweithelm	Eatons Neck, NY	11/16/2014	S Hartmann	Eatons Neck, NY	10	11/10/2015
Tautog	15.5	M Hawkins	4.5 NM SE Ocean City, MD	5/3/2015	K Bounds	4.5 NM SE Ocean City, MD	16.5	11/12/2015
Tautog	15.5	M Hawkins	4.5 NM SE Ocean City, MD	5/3/2015	K Bounds	4.5 NM SE Ocean City, MD	17	11/12/2015
Tautog	18.5	M Hawkins	4 NM SE Ocean City, MD	11/4/2015	K Bounds	4 NM SE Ocean City, MD	19.25	11/12/2015
Tautog	13.5	M Hawkins	4 NM SE Ocean City, MD	11/10/2013	M Hawkins	4 NM SE Ocean City, MD -Female	13.5	11/13/2015
Tautog	15.5	U Tautoggers	3 NM SSE Willard Island, CT	10/30/2015	J Blackall	3 NM SSE Willard Island, CT	15.5	11/18/2015
Tautog	10.45	R Musto	Eatons Neck, NY	10/24/2015	R Musto	Eatons Neck, NY	10.45	11/21/2015
Tautog	13	A Schweithelm	Eatons Neck, NY	10/30/2015	R Musto	3 NM SSE Willard Island, CT	13	11/21/2015
Tautog	14	U Tautoggers	3 NM SSE Willard Island, CT	10/31/2015	A Cannelli	3 NM SSE Willard Island, CT	14	11/22/2015
Tautog	8.75	R Musto	Eatons Neck, NY	11/23/2014	C Viviano	Eatons Neck, NY	10	11/22/2015
Tautog	9.9	R Musto	Eatons Neck, NY	11/1/2015	R Musto	Eatons Neck, NY	9.9	11/22/2015
Tautog	9.8	R Musto	Eatons Neck, NY	11/7/2015	C Viviano	Eatons Neck, NY	10	11/22/2015
Tautog	11.5	R Musto	Eatons Neck, NY	11/21/2015	R Musto	Eatons Neck, NY	11.5	11/22/2015
Tautog	9.1	R Musto	Eatons Neck, NY	11/15/2015	R Musto	Eatons Neck, NY	9.1	11/22/2015
Tautog	12.4	R Musto	Eatons Neck, NY	11/1/2015	R Musto	Eatons Neck, NY	12.6	11/22/2015
Tautog	13.9	R Musto	Eatons Neck, NY	11/1/2015	R Musto	Eatons Neck, NY	13.9	11/22/2015
Tautog	9.6	R Musto	Eatons Neck, NY	11/1/2015	R Musto	Eatons Neck, NY	9.6	11/22/2015
Tautog	9.8	R Musto	Eatons Neck, NY	10/24/2015	R Musto	Eatons Neck, NY	9.8	11/22/2015
Tautog	10.5	R Musto	Eatons Neck, NY	11/1/2015	R Musto	Eatons Neck, NY	10.5	11/26/2015
Tautog	9.1	R Musto	Eatons Neck, NY	11/1/2015	R Musto	Eatons Neck, NY	9.1	11/26/2015
Tautog	10.4	R Musto	Eatons Neck, NY	11/1/2015	R Musto	Eatons Neck, NY	10.4	11/26/2015
Tautog	10.4	R Musto	Eatons Neck, NY	11/27/2014	R Musto	Eatons Neck, NY	11	11/26/2015
Tautog	12	R Musto	Eatons Neck, NY	11/1/2015	R Musto	Eatons Neck, NY	12	11/26/2015
Tautog	10.8	R Musto	Eatons Neck, NY	11/26/2015	R Musto	Eatons Neck, NY	10.8	11/27/2015
Tautog	13	R Musto	Eatons Neck, NY	11/1/2015	W Cardone	Eatons Neck, NY	13	11/28/2015
Tautog	12.25	J Rainey	Ocean City, NJ	9/22/2014	D Weeks	Ocean City, NJ	15	11/30/2015
Triggerfish	11	M Hawkins	10 NM E Ocean City, MD	7/5/2015	K Bounds	9 NM E Ocean City, MD	13	8/23/2015
Triggerfish	9.5	M Hawkins	9 NM E Ocean City, MD	7/6/2015	M Hawkins	9 NM E Ocean City, MD	12.5	9/7/2015
Triggerfish	11.5	M Hawkins	9 nm E Ocean City, MD	7/5/2015	M Hawkins	9 NM E Ocean City, MD	14.5	9/7/2015
Weakfish	16	J Tyrell	North Cape May, NJ	6/13/2015	D Slater	Cape May, NJ	16	6/20/2015
Windowpane Flounder	11.5	G Horvath	Manasquan Inlet, NJ	11/7/2014	F/V Abbie & Holly	38.5 NM ESE Barnegat Inlet, NJ	12.2	4/12/2015

Calendar of Events

- Wednesday, March 29, 1 p.m. – 3 p.m.** – Eco-Tour Aboard the Carefree Learner, Lemon Bay Park, Sarasota County, FL
- Friday, March 31, 10 a.m. – 1 p.m.** – Kayak Trip, Little Sarasota Bay / Palmer Pt Beach, FL
- Saturday, April 1, 10 a.m. – 1 p.m.** – Early Spring Bird Walk, Jamaica Bay, NY
- Sunday, April 2, 10 a.m. – 1:30 p.m.** – Kayak Trip, Don Pedro Island State Park / Lemon Bay, FL
- Tuesday, April 4, 10 a.m. – 1:30 p.m.** – Kayak Trip, Don Pedro Island State Park / Lemon Bay, FL
- Thursday, April 6, 6 p.m. – 8:30 p.m.** – Sunset / Little Sarasota Bay Paddle, FL
- Thursday, April 6, 1 p.m. – 3 p.m.** – Eco-Tour Aboard the Carefree Learner, Lemon Bay Park, Sarasota County, FL
- Saturday, April 8, 10 a.m. – 12:30 p.m.** – Kayak Trip, Deer Prairie Creek/North Port, FL
- Saturday, April 8, 9:30 a.m. – 11:30 a.m.** – Seining Trip, Lemon Bay Park, Sarasota County, FL
- Saturday, April 8, 12:30 p.m. – 4:30 p.m.** – Third Annual Shell-A-Bration, Delaware Bay, NJ
- Sunday, April 9, 10 a.m. – 1:30 p.m.** – Kayak Trip, Don Pedro Island State Park / Lemon Bay, FL
- Tuesday, April 11, 10 a.m. – 2 p.m.** – Kayak Trip, Little Manatee River State Park, FL
- Wednesday, April 12, 1 p.m. – 3 p.m.** – Eco-Tour Aboard the Carefree Learner, Lemon Bay Park, Sarasota County, FL
- Friday, April 14, 10 a.m. – 1 p.m.** – Kayak Trip, Little Manatee River State Park, FL
- Friday, April 14, 4 p.m. – 6 p.m.** – (Arbor Day) Holly Forest Walk, Sandy Hook, NJ
- Saturday, April 15, 10 a.m. – 12:30 p.m.** – Kayak Trip, Deer Prairie Creek / North Port, FL
- Saturday, April 15, 8 a.m. – 1 p.m.** – Spring Surf Fishing Clinic, Sandy Hook, NJ
- Saturday, April 15, 9 a.m. – 1 p.m.** – Lobster Run – 5K Walk/Run to Care for the Coast, Asbury Park, NJ
- Sunday, April 16, 10 a.m. – 1:30 p.m.** – Kayak Trip, Don Pedro Island State Park / Lemon Bay, FL
- Tuesday, April 18, 10 a.m. – 1:30 p.m.** – Kayak Trip, Alifia Banks/Tampa Bay Bird Rookery, FL
- Thursday, April 20, 10 a.m. – 1 p.m.** – Kayak Trip, Caspersen Beach Park / Lemon Bay, FL
- Saturday, April 22, 1 p.m. – 5 p.m.** – Honor Your Mother Art Show, Sandy Hook, NJ
- Sunday, April 23, 10 a.m. – 12:30 p.m.** – A Springtime Hike at Breezy Point, NY
- Thursday, April 27, 10 a.m. – 2 p.m.** – Kayak Trip, Palma Sola Bay / Robinson Preserve, FL
- Thursday, April 27, 6:30 p.m. – 8:30 p.m.** – Sandy Hook Stars and Satellites, Sandy Hook, NJ
- Thursday, April 27, 9 a.m. – Sunday, April 30, 6 p.m.** – Assateague/Chincoteague Weekend, Virginia/Maryland Coast
- Friday, April 28, 4 p.m. – 6 p.m.** – (Arbor Day) Holly Forest Walk, Sandy Hook, NJ
- Saturday, April 29, 10 a.m. – 1 p.m.** – Kayak Trip, Little Sarasota Bay / Palmer Pt Beach, FL

Sunday, April 30, 10 a.m. – 1:30 p.m. – Kayak Trip, Don Pedro Island State Park / Lemon Bay, FL

Saturday, May 6, 9 a.m. – 5 p.m. – Sterling Forest Warblers, Tuxedo, NY

Sunday, May 7, 10 a.m. – 12 p.m. – Celebrate Beach Plum Blossom, Plum Beach, Brooklyn, NY

Monday, May 8, 6:30 p.m. – 8:30 p.m. – Full Moon Walk, Sandy Hook, NJ

Sunday, May 14, 10 a.m. – 1 p.m. – Jamaica Bay Bird Walk, NY

Wednesday, May 24, 6 p.m. – 8 p.m. – Horseshoe Crab Walk, Sandy Hook, NJ

Friday, May 26, 6:30 p.m. – 8:30 p.m. – Sandy Hook Stars and Satellites, Sandy Hook, NJ

Saturday, May 27, 8:30 a.m. – 3 p.m. – Horseshoe Crab Festival, Jamaica Bay, NY

Sunday, May 28, 5 p.m. – 8 p.m. – Jamaica Bay Sunset Ecology Cruise, NY

Friday, June 2, 3 p.m. – Sunday June 4, 4 p.m. – Montauk Spring Weekend, Montauk, NY

Sunday, June 4, 9 a.m. – Barnegat Bay Day – Island Heights, NJ

Friday, June 9, 6 p.m. – 8 p.m. – Horseshoe Crab Walk, Sandy Hook, NJ

Saturday, June 10, 11 a.m. – 5 p.m. – Members Day, Sandy Hook, NJ

Wednesday, June 21, 6 p.m. – 8 p.m. – Summer Solstice Walk, Sandy Hook, NJ

Friday, June 23, 9:30 a.m. – 12 p.m. – Pine Barrens Canoe Trip, Chatsworth, NJ

Saturday, June 24, 10:30 a.m. – 1:30 p.m. – Fossil Hunt, Big rook, Middletown, NJ

Sunday, June 25, 1:30 p.m. – 4 p.m. – Dead Horse Bay, NY

Wednesday, July 12, 6 p.m. – 8 p.m. – Sunset Seining, Horseshoe Cove, Sandy Hook, NJ

Wednesday, July 26, 6 p.m. – 8 p.m. – Sunset Seining, Horseshoe Cove, Sandy Hook, NJ

Friday, July 28, 9 a.m. – Parade of Boats, Ocean Gate, NJ

Friday, August 4, 9 a.m. – Coast Guard Day, Ft Wadsworth, Staten Island, NY

Wednesday, August 9, 6 p.m. – 8 p.m. – Sunset Seining, Horseshoe Cove, Sandy Hook, NJ

Thursday, August 10, 3 p.m. – Sunday August 13, 4 p.m. – Cape Ann Whale Watch, Cape Ann, MA

Saturday, August 12, 7 a.m. – 2 p.m. – Annual Fluke Tagging Trip, Sandy Hook, NJ

Wednesday, August 23, 6 p.m. – 8 p.m. – Sunset Seining, Horseshoe Cove, Sandy Hook, NJ

Saturday, August 26, 7:30 a.m. – 5 p.m. – Annual Jamaica Bay Shorebird Festival, Broad Channel, NY

Saturday, August 26, 9 a.m. – 12 p.m. – Shore Birds and Wild Edibles, Sandy Hook, NJ

Friday, September 8, 6:30 p.m. – 11:30 p.m. – End of Summer Party – North Beach, Sandy Hook, NJ

Sunday, September 10, 9 a.m. – Beach Plum Festival – IBSP

Monday, September 11, 9 a.m. – Veteran’s Day On The Bay – Delaware Bay, NJ

Sunday, September 17, 9 a.m. – Paddle the Navesink, Red Bank, NJ

Friday, September 22, 6 p.m. – 8 p.m. – Fall Equinox Walk, Sandy Hook, NJ

Saturday, September 23, 4 p.m. – 7 p.m. – Jamaica Bay Sunset Ecology Cruise, NY

Sunday, September 24, 10 a.m. – 6 p.m. – Red Bank Oyster Festival, Red Bank, NJ

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The American Littoral Society promotes the study and conservation of marine life and habitat, defends the coast from harm, and empowers others to do the same.

Caring for the Coast Since 1961

The Underwater Naturalist welcomes contributions from its members, the scientific community and readers-at-large.

To submit an article, a letter to the editor, or to propose a story for publication, please contact Pim Van Hemmen at pim@littoralsociety.org.

www.littoralsociety.org



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If you are enjoying this issue of the Underwater Naturalist chances are you are already a member or supporter of the American Littoral Society (or perhaps you found it in a friend's restroom 😊).

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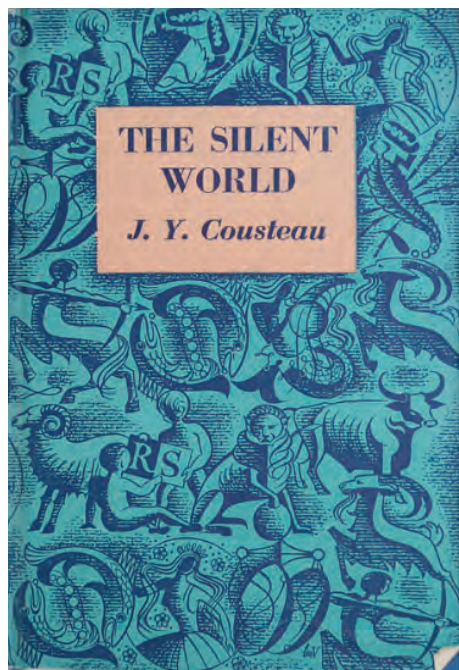
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The American Littoral Society promotes the study and conservation of marine life and habitat, protects the coast from harm, and empowers others to do the same. Caring for the coast since 1961.

The Silent World



By Captain J. Y. Cousteau with Frédéric Dumas

Reviewed by Pim Van Hemmen,
Assistant Director, American Littoral
Society

Editor's Note:

Recently, Dave Nass, a Littoral Society volunteer organized the Society's library book collection. Among the gems in the Society's library is a 1953, first edition of The Silent World by Captain Jacques-Yves Cousteau. This copy belonged to former and longtime Society executive director Dery Bennett who was a US Navy frogman in the 1950s. It was recently autographed by Jacques Cousteau's grandson, Philippe Cousteau Jr.

The Silent World was an instant bestseller when it was first published in 1953. The book started the phenomenon that eventually made Jacques Cousteau a household name and one of the world's most famous conservationists.

This book, written with Frédéric "Didi" Dumas, a fellow diver who is prominently featured in the book, revealed how Cousteau co-invented the Aqua-lung and subsequently, with Dumas and other divers, developed what is now popularly known as scuba diving.

In creating and then using the Aqua-lung, Cousteau and his cohorts used what limited knowledge was available from helmet diving and its inherent dangers, to find the limits of compressed air diving. Much of that knowledge was

acquired through trial and error.

Intentionally and unintentionally, they exposed themselves to various dangers, including: great depths (too deep for one of their fellow divers who dies more than 300 feet below the surface); a near fatal carbon monoxide poisoning due to a flawed air compressor; and the effects of nitrogen narcosis (a feeling of well being along the lines of drunkenness that is experienced beyond a certain depth).

Much of Cousteau's early diving research was done under the auspices of the French Navy, which provided them with vessels, men and diving equipment (Cousteau had joined the French Navy in the 1930s). There too, Cousteau and his divers took great risks, albeit,

under controlled circumstances. One of those gambles involved underwater photography of a torpedo as it was fired from a submarine only 50 feet away. Another hazard involved laying of underwater mines as they were released from the same sub.

Obviously, scuba divers should find *The Silent World* of particular interest, but not just because Cousteau helped invent scuba diving. They will recognize many of the practices Cousteau and his divers instituted for French Navy divers in the late 1940s. Cousteau and his team determined that 130 feet was the maximum safe depth for amateur divers (that depth is still considered the Professional Association of Diving Instructors' maximum), created a four dive check-out routine that is very similar to today's check-out requirements, and instituted a buddy system when they realized solo diving was too dangerous.

Today Cousteau is considered by many to be a father of the modern environmental movement. *The Silent World*, however, revealed that prior to 1953, Cousteau was not particularly concerned with environmentalism. In the book, he and his divers harpoon and kill porpoises and a whale, as well as capture an already endangered Mediterranean monk seal. The seal was given to the Marseille zoo after the divers realized that they could not return it to the sea. *The Silent World* led to a 1956 movie by the same name, which gained Cousteau major recognition, but also got him in trouble with conservationists for some of the same environmentally questionable

practices he writes about in the book.

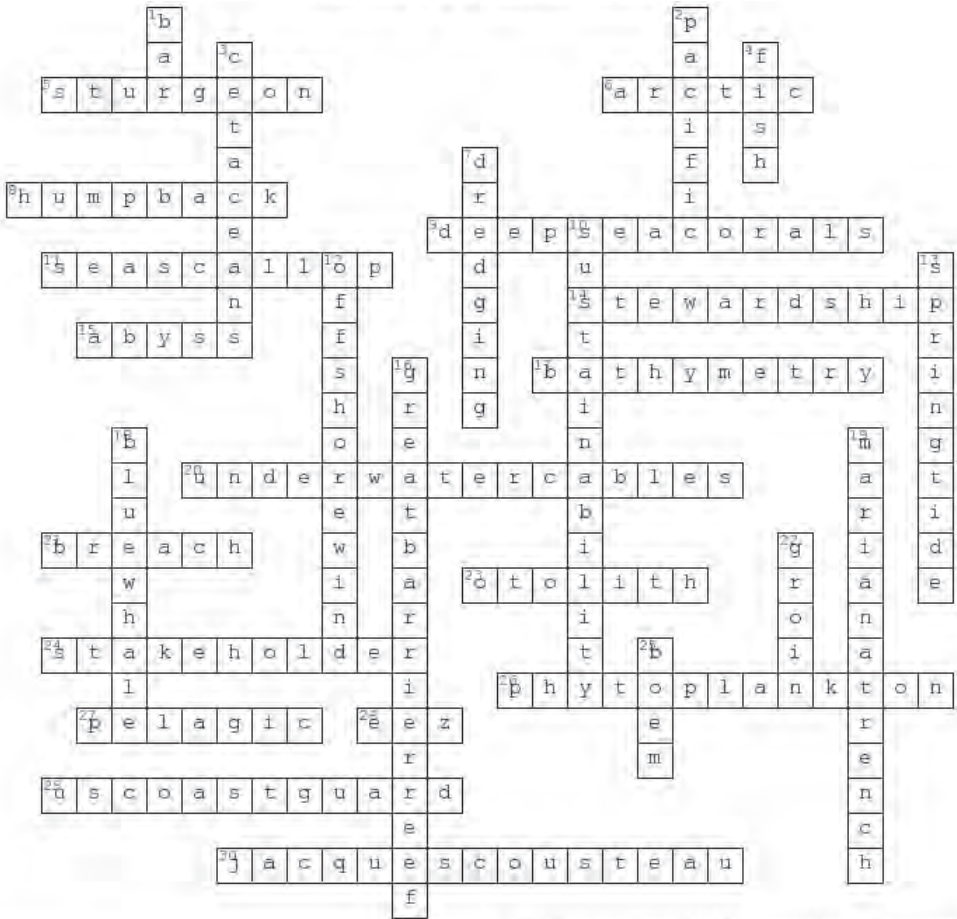
Although some of Cousteau's methods were crude, his love for the underwater world was evident in his writing. Moreover, the book gave first-person insight that helped dispel ancient notions about some feared creatures of the deep. After swimming with barracudas, octopi, moray eels and sharks, Cousteau declared them all (with a few shark exceptions) pretty harmless.

That direct experience also allowed Cousteau to see the damage man could do. He observed how a fishing net destroyed everything in its path as it was dragged across the ocean floor. In the epilogue, Cousteau predicted that man will go deeper into the sea to harvest its "great cornucopia," including "flesh and vegetables" as well as "minerals and chemical resources."

The Silent World is now 64 years old. It is an informative and good read for anyone, not just scuba divers. Even today with its flowery language (and its common use of the word littoral) it holds up to critical scrutiny as both a manual of technical innovation and memoir of exploration.

Cousteau liked to call himself an "oceanographic technician." Some say he was more a showman, a teacher and nature lover. Regardless, his invention of the Aqualung allowed millions of people to freely explore the oceans, and many millions more came to love and support protection of the marine environment as the result of his films and books, including *The Silent World*.

The Ocean Crossword Solution



This is the solution to the Summer 2016 Ocean Crossword Puzzle.

The crossword puzzle has been discontinued.



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