Sound UPDATE
Newsletter of the Long Island Sound Study May/June 2009

Long-term monitoring tracks fish populations in Long Island Sound

By Kurt Gottschall

Most anglers are aware of the many rules and regulations for harvesting marine finfish but many are unaware of the basic information needed to formulate these regulations. In addition to "fishery-dependent" information, such as assessing marine participation or angler success, fishery scientists use "fishery-independent" data to conduct regional and coast wide stock assessments for several marine species each year. These assessments form the basis of the scientific advice provided to managers when setting conservation goals and harvest limits.

For more than 25 years, the Connecticut Department of Environmental Protection's (CTDEP) Long Island Sound Trawl Survey has been a significant source of this fishery-independent data as well as other types of information needed to manage the living marine resources of the Sound. Although originally designed with recreational fishery management information needs in mind, the survey has proven invaluable in such diverse areas as the assessment of hypoxia impacts on living resources, the lobster die-off investigation, and in the National Marine Fisheries Service's identification of essential fish habitat.

Richard Howard

Butterfish (*Peprilus triacanthus*) are counted, measured, and returned to the water during the Long Island Sound Trawl Survey.

The survey is conducted from the CTDEP's 50-foot research vessel *John Dempsey*. Trawl net tows are taken at 120 randomly selected sites each spring (April-June) and 80 sites each fall (September-October) in both New York and Connecticut waters throughout the Sound. At each site, a 50-foot-wide otter trawl net is towed along the seabed for 30 minutes at approximately 3.5 mph. Upon retrieval of the net, the contents are sorted by species, enumerated and weighed. Subsamples of selected finfish and macroinvertebrates (e.g. lobster, squid, horseshoe crabs) are measured. Scales, bones, or other hard parts are collected from scup, summer flounder, winter flounder, and tautog to determine age, which is required for fish stock assessment purposes and ultimately local and interstate fishery resource management.

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Fish and Fishing Issue

Sound Update provides readers with news about the Sound and the Long Island Sound Study.

Let's go fishing!

With over 120 species of fish in Long Island Sound, fishing opportunities exist for all ages and skill levels! This issue focuses on fish populations in the Long Island Sound watershed, the methods for managing these populations, programs that encourage watershed residents to go fishing, and simple ways you can help keep Long Island Sound and its fisheries healthy!

Regional and state fisheries management

By Peter Sattler

Fisheries management is a complex process that uses science, public consultation, and recommendations to make the best decisions to allow sustainable use of aquatic resources. Management tools, such as minimum size, bag limits, gear requirements, trip limits, and seasonal closures, are used in recreational and commercial fisheries to regulate how much catch each fisherman is allowed to harvest.

The National Marine Fisheries Service (NMFS) is the lead agency for marine fisheries management in the United States. In Connecticut and New York, the Connecticut Department of Environmental Protection and New York State Department of Environmental Conservation, respectively, are the state agencies responsible for managing marine resources in state waters, those within three miles of the shore. These state agencies work closely with federal agencies and regional councils.

Richard Howard

Trawl surveys provide fishery-independent data that are often used in fisheries management (see page 1 for more about this trawl survey).

Marine fisheries management is driven primarily by The Magnuson Fishery Conservation and Management Act of 1976 (MSA), enacted by Congress to establish a 200-mile conservation zone, later called the Exclusive Economic Zone (EEZ). MSA created eight regional councils, made up of federal and state officials, industry, and various marine stakeholders, to develop management plans for fishery resources occurring predominantly in the EEZ. Councils develop fishery management plans (FMPs), that contain management objectives and strategies for achieving them. The Councils also amend FMPs and set harvest limits within the framework of existing FMPs. In their decision making, the Councils are required to use the best scientific information available to meet the National Standards of the Magnuson-Stevens Act. Connecticut is one of five member states of the New England Fishery Management Council and New York is one of seven member states in the Mid-Atlantic Fishery Management Council (MAFMC).

Three Interstate Marine Fishery Commissions were established to assist states that share coastal resources to work cooperatively with the federal government, to achieve sustainable healthy coastal fishery resources within three miles of the coast. Like pollution, fish don't recognize political borders. The states felt that sustaining their healthy coastal fishery would be best accomplished by working cooperatively. The Atlantic States Marine Fisheries Commission (ASMFC) was established in 1942 by the 15 Atlantic coast states from Maine to Florida. The Commission promotes the better utilization of the fisheries resources-- marine, shellfish, and anadromous -- off the Atlantic seaboard through a joint program. The Commission prepares fishery management plans for migratory and shared fishery resources that occur in states' waters.

The Councils and the ASMFC set annual catch limits in fisheries, from which they assign commercial quotas and recreational harvest limits. If a state exceeds its commercial quota for any fishery, this excess must be deducted from the next year's allocation (i.e. "payback"). In the recreational fishery, this "payback" is achieved by adjusting regulations such as minimum size, bag limit, and season to ensure that the overage does not occur again. ASFMC must also approve the changes being proposed for fishing regulations for the next season.

Peter Sattler

Summer flounder is one of the many species managed within Long Island Sound.

Regulators have sought to find the perfect balance of fishing effort and stock recovery. However, controversy abounds with any quota system. State to state, several species may have different open/closed seasons, different minimum sizes and different bag or creel limits. For recreational fishermen that fish in interstate waters such as Long Island Sound or the NY Harbor complex, differing state regulations can lead to frustration because boats essentially fishing next to each other are not allowed the same harvest. This can result in concerns over the fairness and equity of state allocations. There has been an on-going debate in the ASMFC and the MAFMC whether implementing one set of angling regulations along the entire Atlantic coast would address these concerns. Although this approach has its own challenges it could simplify angling regulations.

Fisheries management is complex, dynamic, and it involves tremendous challenges to keep many different stakeholders happy. Nonetheless, the time spent fishing is priceless!

Sattler is the Principal Environmental Planner, Coordinator of Special Projects, and Captain of the Research Vessel Natale Colosi for the Interstate Environmental Commission.

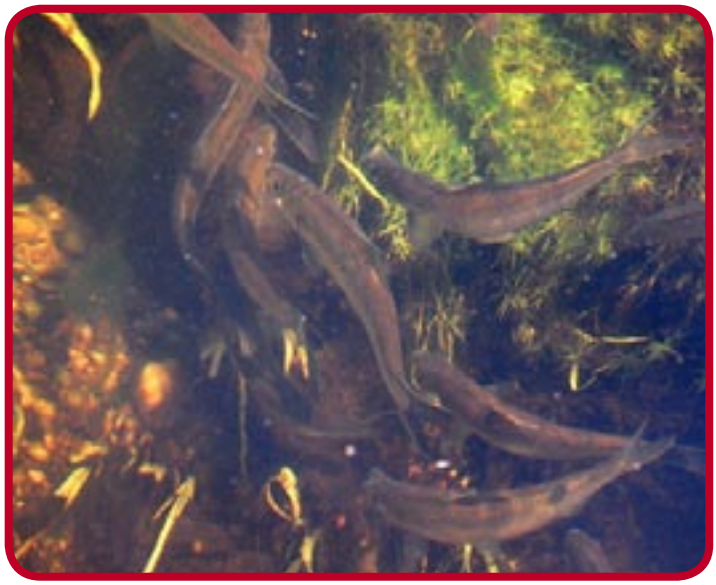
Diadromous fish: Important part-time residents of the Long Island Sound estuary

By Brian Kelder

Diadromous fish are species that split their life cycles between freshwater and marine environments, requiring high quality habitats in both in order to thrive. Most diadromous fish, such as salmon, are anadromous (spawning in freshwater and migrating to the sea), but some species, including the American eel, are catadromous (spawning in the sea and migrating to freshwater).

Migration between fresh and salt water provides distinct advantages, allowing these fish to benefit from diverse ecosystems at critical stages in their development. For example, anadromous trout and salmon grow much larger than landlocked populations of the same species due to higher quality food resources in the marine environment; however, they still require freshwater areas for reproduction and rearing as juveniles. Unfortunately, this strategy also leaves these species vulnerable to a host of human-induced threats as their migration brings them through highly developed areas in estuaries and inland rivers.

There are more than a dozen diadromous fish that inhabit the waters and tributaries of Long Island Sound, including striped bass, Atlantic sturgeon, American shad, and rainbow smelt. Many of these species require large rivers and spawning populations are, therefore, naturally limited to tributaries flowing to the Sound from mainland. Historically, substantial populations of American eel, brook trout, and river herring (alewife and blueback herring) utilized the smaller watersheds such as those on the north shore of Long Island.



Byron Young

Adult alewives returning to spawn in a Long Island stream.

NEWS ALERT:

Alewife in the Bronx River for the first time since the 1600s!

This April, the New York City Department of Parks & Recreation's Natural Resources Group scientists and community partners found several mature alewife while monitoring the Bronx River--for possibly the first time since the 1600s! For more info, visit www.bronxriver.org or call 718-430-4665.

Diadromous fish provide critical links between what are often thought of as distinct, unrelated ecosystems. Large spawning runs of alewife would provide a reliable infusion of marine-derived energy and nutrients to the coastal streams each spring, precisely at a time when many species' energy stores were depleted from a long, cold winter. River herring, in particular, are extremely important to the overall food web in Long Island Sound, affecting everything from cod and stripers to seals and osprey. In fact, large populations of river herring, which seldom grow larger than 12 inches in length, were important to Native Americans and early European settlers as food and fertilizer.

River herring stocks are depressed throughout their range due to a number of factors including migration barriers, habitat degradation, poor water quality, and over fishing. Much of their historic spawning habitat is now inaccessible, lying upstream of impassable dams and poorly engineered culverts. The removal of outdated dams or the addition of fish passage devices (like the fish ladder on the Mianus River in Connecticut) can help to reconnect herring populations to lost habitat, increasing their recovery potential.

Byron Young

This fish ladder allows migratory fish access to habitat upstream of a dam on the Carmans River, Long Island, NY.

Currently, very little is known about the status of herring runs in Long Island's tributaries to the Sound. Every April and May, volunteers survey Long Island streams for returning alewives, to help focus restoration efforts by better understanding where runs remain. This study was expanded to the North shore of Long Island this year and would not be possible without strong community support. Community interest and participation in the restoration process (including support for passage projects like dam removals and fish ladders) is essential to the future of herring and other LIS diadromous fish stocks as well as the long-term health of the Sound. For more on Long Island diadromous fish restoration and the alewife survey, visit LISS's "Get Involved" web page at www.longislandsoundstudy.net/volunteer.htm and look for "Alewife Spawning Survey".

Kelder is a Fisheries Scientist and Environmental Defense Fund Puleston Fellow for Seatuck Environmental Association.

Recreational fishers: Don't throw the packing material for live bait overboard!!

By Robert Burg

On the Web...
For more information on invasive species, visit the Northeast Marine Introduced Species website at http://nemis.mit.edu.

The seaweed used to pack both sand and blood worms in bait boxes may contain invasive marine algae (both seaweeds and potentially harmful phytoplankton) and animals, which in turn may cause harm to Long Island Sound's water quality and marine life. That conclusion was reached by a team of Connecticut and New York scientists after conducting a study analyzing samples of worms purchased at local bait and tackle shops in both states in 2007 and 2008. "People might think, 'I have seen this seaweed in Long Island Sound before so there won't be a problem'," said Dr. Charles Yarish, professor of Ecology and Evolution Biology at the University of Connecticut at Stamford, and one of the principal investigators for the project. "But it could be a problem for the health of the Sound and the economy."

Yarish conceived this research project a few years ago when he was fishing on his boat, the *Sound Dancer,* off Norwalk Harbor. He was taking the last worm out of his bait box when he wondered if the seaweed used as packing material might be harboring invasive microorganisms, since the bait he purchased at a local bait and tackle shop was packaged elsewhere. He wondered whether seaweed could be another transport delivery system, like the ballast water from boats, that could bring potentially harmful nuisance species to the Sound.

The research team's findings validated Dr. Yarish's concerns. Many of the seaweed samples contained cells of the microalgae, *Alexandrium fundyense*, known to produce a neurotoxin that causes paralytic shellfish poisoning (PSP). In extreme cases, PSP can be fatal in humans who consume shellfish contaminated with the toxin. The research team also detected two other microscopic algae linked to harmful algae blooms and not known to exist in Long Island Sound: *Pfiesteria shumwayae*, which may play a role in large fish kills, and *Pseudo-nitschia*, another microscopic alga that can produce a neurotoxin that when concentrated by filtering shellfish can cause amnesic shellfish poisoning in humans who consume the shellfish. These are problematic harmful algae known from the Gulf of Maine and other regions of the world.

The project was funded with a Long Island Sound Study Research Grant, which also provided funds for the scientists to lead workshops in New York and Connecticut to educate residents about the potential dangers of dumping the seaweed packing material. The scientists have also been working with Connecticut Sea Grant, which has received its own funding from NOAA to launch a "Don't Dump Bait Campaign" in harbors throughout the northeast. Their findings could have national implications, since the bait purchased at stores in Long Island Sound was packaged in Maine, the center of the bait industry, and shipped throughout North America.

Burg works for the New England Interstate Water Pollution Control Commission and is the Communications Coordinator for the LISS.

Diving into research: Exploring artificial reefs

By Jocie Fifield

Sandy Fifield

High school student Jocie Fifield prepares for a dive to collect data for her research project.

Artificial reefs are important to marine life because they can provide habitats and substrates for marine animals. When placed on a sandy sea-floor, these objects attract marine animals and plants by providing a substrate on which they can live, hide, and potentially flourish. Artificial reefs can also be utilized for economic uses, such as diving and fishing, or scientific uses, such as studying the ecosystem impacts and benefits of creating new habitats.

Artificial reefs are made from a variety of materials including jetty stone, steel boat hulls, deck barges, and concrete buoy anchors. The majority of reefs found in Long Island Sound are composed of steel or concrete.

My project explores the abundance and type of invertebrate life on different artificial reefs in Long Island Sound and how they are affected by environmental conditions and reef materials. I recorded the number of individuals of each invertebrate species within quadrats, taking five readings during each dive. My results were not very conclusive because of the time constraints and difficulties associated with collecting data underwater. However, vertically oriented artificial reefs seemed to attract much more sea life than horizontal reefs possibly because of underwater currents.

In the future, I hope to continue diving on artificial reefs and exploring the ways in which they can be used to benefit marine life. Artificial reefs can be used in extraordinary ways, but a solid understand of their impact is essential before their benefits can be capitalized.

Fifield is a senior at Staples High School in Westport, CT and conducted her project for a three-year science research class.

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Some of the most commonly caught species by recreational anglers in Long Island Sound have responded favorably to fishery management efforts. For example, striped bass abundance increased considerably in the years after the U.S. Congress passed the Atlantic Striped Bass Conservation Act in 1984. Tight restrictions on harvest (e.g., number harvested and size limits) coast wide were imposed and in 1995 the Atlantic coastal striped bass stocks were declared fully recovered. Summer flounder (or fluke) abundance has also increased in recent years due to increasing protection on juvenile fish and enacting measures to increase the spawning stock. The most recent summer flounder stock assessment indicates overfishing is no longer occurring and the stock is nearly rebuilt. Similarly, the most recent scup assessment (fall 2008) concluded that overfishing is no longer occurring and the resource is fully rebuilt. Bluefish abundance in Long Island Sound has also increased since 1999 and the stock is considered in good shape.

On the Web...

For more pictures from the Long Island Sound Trawl Survey, check out the slide show on our website under multimedia publications!

Unfortunately, a couple of species that are popular with anglers in Long Island Sound have not responded as well to management measures. In the Sound, winter flounder have experienced a precipitous decline since abundance peaked in 1990. Many people blame overfishing as the main cause of the decline; however managers also realize that environmental and predatory causes may play a larger role than once thought. Tautog (or blackfish), also commonly sought after by recreational anglers in the Sound, have similarly experienced a sharp decline since the mid-1980's. Strict harvest seasons as well as size and creel (or number harvested) limits continue to be imposed on this species yet population levels remain at low levels. Despite restrictions, the tautog's own biological characteristics--notably its slow growth and reproduction--have challenged management efforts to rebuild this stock quickly.

The Long Island Sound Trawl Survey continues to supply critical information and data for finfish assessments as well as provide a means of understanding the Sound and its living marine resources. In addition, with today's interest in climate change and the effect on ecosystems, a long–term monitoring program like Long Island Sound Trawl Survey will prove to be an invaluable tool for detecting potential changes in species assemblages.

Gottschall is a Marine Fisheries Biologist for the Connecticut Department of Environmental Protection.

Fishing to change the world: Connecticut Aquatic Resources Education

By George Babey

Fishing is a great way to bring people together. Novices want to learn it. Anglers love to teach it. Connecticut Aquatic Resources Education (CARE) combines the two, based on the 4-H Youth Development train-the-trainer model. Over 1,500 volunteers have taught nearly 140,000 students over the last 23 years. In the process, they've contributed the equivalent of $2.5 million to the Connecticut Department of Environmental Protection (CTDEP)!

Even so, angling is not as popular as it once was. A faster-paced society and busier lives leave less time for fishing. The National Academy of Sciences reports that TV, internet, and video games are big reasons behind this drop in recreational angling. Richard Louve's 2006 book, *Last Child in the Woods*, focused attention on nature-deficit disorder, and promoted efforts to help a generation that is out of touch with the natural world. In response, CTDEP Commissioner Gina McCarthy started the "No Child Left Inside" (NCLI) initiative to encourage Connecticut families and visitors to enjoy all the recreational resources and outdoor activities available in Connecticut. CARE became and remains a cornerstone in the effort.

Justin Wiggins

CARE *Summer Fishing* staff member, Martin Vito, uses interactive games to teach fish ecology, adaptations and identification to students.

CARE's goal is to promote fluency in the language of the natural world and angling skills to Connecticut students. The program educates students about the habitat needs of fish, predator-prey relationships, bioaccumulation of contaminants, and invasive species. Another goal is for families to continue fishing after they participate in the courses--safely, successfully, ethically, and with knowledge of the rules. Volunteer instructors and staff take families fishing--many of whom participate in multiple CARE events.

CARE offers *Family Fishing* Courses that insert environmental and ecological information into a fun, fishing package that combines classroom

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activities with a fishing trip. Curriculum materials revolve around our *Water, Fish and Fishing* DVD. Courses focus largely on freshwaters, but highlight connections to Long Island Sound and marine fish that reside there. *Summer Fishing* classes are also taught to youth in summer camps on coastal beaches, piers, and parks. Instructors use interactive games to teach marine ecology, fish identification, safety, pollution, knot-tying, and casting and conclude with a fishing trip on the Sound.

CARE's mission of conserving and enhancing fish populations and enhancing recreational fishing opportunities might not resonate with people. However, helping families catch fish around their hometown, understand the right fish to eat, and enjoy positive and life-long recreation surely does! Fishing gets families interested in fish, water, and conservation and helps people understand their effects on the natural world. This assigns a value to the resources that people treasure and also develops a constituency that can support environmental causes in difficult financial times.

In my opinion, fishing in Connecticut has never been as good as it is today. While the number of angling families is down from a generation ago, the positive effects of CARE, NCLI and other CTDEP activities are working to reverse the trend.

Babey is a Supervising Fisheries Biologist for the Connecticut Department of Environmental Protection.

On the Web...
To learn more about CARE, visit www.ct.gov/dep and search for "fishing".
To learn more about I FISH NY, visit www.ifishnewyork.org or call 631-444-0283.

I FISH NY—do you?

By Malynda Nichol

New York State is home to some of the best fishing resources in the country, with a great diversity of fresh and salt water species. However, despite having more than 7,500 lakes and ponds, 50,000 miles of rivers and streams, and over 1,500 miles of coastline, the number of people fishing in the state has steadily declined over the past eight years. In response to this, the New York State Department of Environmental Conservation (NYSDEC) created an outreach program called I FISH NY.

The program, first initiated in 2000 in New York City and on Long Island, strives to ensure that anyone that has a desire to fish will have the resources and knowledge necessary to have a successful and safe fishing experience and to build public awareness and understanding of the aquatic resources of the State of New York, fostering an increased stewardship ethic.

To help implement the program, NYSDEC partnered with New York Sea Grant in 2005. Moreover in 2007, four new positions were created to further extend the reach of the program to new areas of the state: Westchester, Albany, Cortland, and Buffalo regions.

To attain its goals, I FISH NY offers both in-class programs and out-of-classroom events throughout the year. Classroom programs begin with an in-class visit and are followed by a fishing trip to a local water body at a later date. I FISH NY supplies loaner rods, bait, tackle, and instruction free of charge. The classroom program is appropriate for grades 3-12, and focuses on topics such as fish anatomy and adaptations and food web interactions for younger students, and fish population studies and invasive species for older students. Stewardship and conservation practices are addressed throughout the lesson. Specifically on Long Island, the I FISH NY program has partnered with local Board of Cooperative Educational Services (BOCES) to augment existing party boat fishing trip offerings in both the Long Island Sound and South Shore waters. I FISH NY staff visit schools before the scheduled party boat fishing trip, and also provide an on-boat education station, such as a fish dissection.

Henry Doll

I FISH NY participants get ready to catch some fish during an event.

Out-of-class events consist of fishing clinics or fishing festivals offered from April through October. Clinics are small-scaled events, either freshwater or saltwater (where available) ranging from 12 to 150 people, which begin with hands-on education stations and follows with open fishing. Education stations cover topics such as fishing techniques, local fish identification, aquatic ecology, and stewardship practices. Again, I FISH NY supplies loaner rods, bait, tackle, and instruction free of charge. Clinics are either open public events or non-public events arranged with community and youth groups, such as Boy or Girl Scouts. Fishing festivals are larger public events, freshwater only, with no set education activities. Attendance ranges from the high hundreds to 5,000. Loaner rods, bait and tackle are also provided free of charge. This type of event is more of an introductory experience than anything else.

Nichol is a Recreational Fisheries Specialist for New York Sea Grant.

A note from Senator Kirsten Gillibrand

Position: U.S. Senator for New York
Party: Democrat
First appointed: 2009
Now serving: 1st term
Education: UCLA School of Law
Birthplace: Albany, New York

Senator Gillibrand's office

The Long Island Sound is a natural treasure – it makes New York a great place to work, play, and raise a family.

With more than 8 million people living within the watershed, the Sound is critical to New York's environment and economy. Boating, commercial and sport fishing, swimming, and beach going generate billions for New York every year. During these tough economic times, the Sound provides an opportunity to promote economic growth in New York. As a member of the Senate Environment and Public Works Committee, I am committed to investing in projects in New York that create jobs, cut pollution, and take key steps to improve the health of the Sound.

Unfortunately, dozens of sewage treatment plants pump more than one billion gallons of treated wastewater into the Sound every day. As a result, nitrogen enters the Sound causing excessive algae growth, red tides, and other harmful blooms, which have been linked to fish kills. We must stop this pollution. I am working hard to ensure Long Island gets its fair share of federal dollars to update failing water infrastructure without raising property taxes.

In the Water Infrastructure Financing Act that just passed out of my Committee, I helped secure $20 billion nationwide for the Clean Water Revolving Fund – New York could see $244 million next year, an increase of more than $168 million. These federal dollars will go a long way to finance expensive drinking water and wastewater infrastructure projects and prevent an increase in local property taxes to finance these projects.

As a supporter of President Obama's American Recovery and Reinvestment Act, our Congressional Delegation secured federal dollars for projects, including for the Village of Greenport to install state-of-the-art modifications to their wastewater treatment facility to reduce pollution of the Sound. I am working with our Congressional Delegation to make sure more of this money comes to New York.

New York has the talent, workforce, and quality of life that make it prime for the green economic revolution. We have the potential to be a significant producer of clean, alternative energy from wind, solar, hydropower, geothermal, fuel cells, biofuel, and waste-to-energy systems. I will continue to create the long-term economic opportunities New York needs to preserve the Sound.

- Senator Kirsten Gillibrand

Sign up for Sound BYTES!

The Long Island Sound Study is now producing Sound BYTES, an electronic newsletter that highlights upcoming events and current projects. Sign up for Sound BYTES under the heading "E-newsletter" on our website at: www.longislandsoundstudy.net.

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www.ct.gov/dep
www.dec.ny.gov

"What Can I Do?" Simple ways to keep Long Island Sound and its marine animals healthy!

1 Obey fishery regulations. Regulations are set using the best science available to ensure the preservation of fish populations for many years to come. For state fishing regulations, please contact the New York State Department of Environmental Conservation at 631-444-0430 or visit www.dec.ny.gov or the Connecticut Department of Environmental Protection at 860- 424-3000 or visit www.ct.gov/dep.

2 Handle with care. If you are planning to catch and release fish, minimize out-of-water time and handle the fish as little as possible. If you have to handle them, hold them with moist hands to protect the layer of slime that keeps the fish healthy. Use a "dehooker" to quickly unhook the fish or cut the line if a fish is deeply hooked.

3 Be a responsible boater. Never throw your trash overboard, always use a pump out station for your holding tank, use biodegradable cleaning agents, don't top off tanks when fueling, and be sure to mop up fuel spills. Visit www.ct.gov/dep/boating for more responsible boating tips.

Henry Doll

Long Island Sound offers many recreational opportunities, such as fishing, boating, birdwatching, and going to the beach. Learn how you can help protect the Sound and its marine animals!

4 Stop aquatic invaders. Invasive species displace native species, disrupt ecosystems, and harm recreational activities. You can help reduce the spread of invasives by never transporting fish from one body of water to another and never dumping unused bait or fish carcasses into Long Island Sound or any other water body. Also, be sure to remove all mud and aquatic plants from gear, boats, motors, and trailers and to drain all water from bilges, live wells, and bait tanks before leaving an access site.

5 Keep chemicals out of the Sound. Hazardous chemicals, personal care products, and pharmaceuticals have been shown to have a negative effect on some marine fishes. You can help by properly disposing of these and other chemicals. Visit www.earth911.com for disposal and recycling sites near you.

Recycle or pass on to a friend!

6 If it goes on the ground, it goes in the Sound. Even if you don't live close to Long Island Sound, your actions affect it. Rainwater mixes with pollutants and flows into storm drains, carrying polluted runoff into Long Island Sound! Keep your lawn, driveway, and neighborhood clean by picking up trash, reducing pesticide and fertilizer use, and checking your car for leaks.

7 Get involved. There are many ways that you can help keep Long Island Sound's marine animals healthy. Why not volunteer for a beach cleanup, help monitor fish populations, or tag horseshoe crabs? Visit our "Get Involved" website at: www.longislandsoundstudy.net/volunteer.htm for an opportunity near you!

8 Get outside and enjoy Long Island Sound! Whether you like to fish, boat, bird watch, or swim at the beach, Long Island Sound has many fun recreational opportunities for all ages to enjoy! Visit www.lisrc.uconn.edu/coastalaccess (CT) and www.dec.ny.gov/62.html (NY) for outdoor recreation ideas.

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