



Contracted workers use a water cannon to blast 8,000 bushels of sea clam shell from a barge onto the one acre oyster restoration site off Good Luck Point, in Barnegat Bay, to improve shellfish habitat.

Shellfish Enhancement in Barnegat Bay

By Dr. Gustavo W. Calvo, Principal Fisheries Biologist

Oysters — A historical perspective

Eastern oysters (*Crassostrea virginica*) and hard clams (*Mercenaria mercenaria*) have been important natural resources in Barnegat Bay since pre-colonial times when Native Americans gathered shellfish for nourishment. Their importance continued when baymen began harvesting shellfish for sale and associated industries developed. At the peak of the oyster industry, from 1870 to 1930, the Barnegat Bay-Cape May area produced 20 percent of all market oysters harvested in New Jersey. By 1930 this figure declined to less than 10 percent.

Oyster harvest declined for various reasons including overharvest, disease and changes to the bay's salinity regime. According to Melbourne Carriker (1961) and Ford (1997), oyster habitat was lost due increased salinity and sedimentation resulting from alteration of Beach Haven Inlet by the storm of 1919, and by the construction of the Point Pleasant Canal in 1925. High salinity favored oyster predators and parasites, and sedimentation smothered oysters. Hard clams, which thrive in high salinity and live in the sediment, populated lost oyster habitat. The effects of severe storms on the bay's ecology gain even greater significance today in the aftermath of Hurricane Sandy.

Prominent historic oyster beds, such as the Cedar Creek grounds, extended along the western side of the bay between Cedar Creek and the town of Barnegat. According to Ernest Ingersoll (1882), these very productive grounds — which once served as a source of seed (young shellfish raised beyond the larval stage) for industry in both northern New Jersey and New York — were already being depleted in the late 1800s. In the 1960s, oyster seedbeds were delineated at the mouth of many tributaries and coves along the western side of Barnegat and Little Egg Harbor bays. The seedbed at the mouth of Toms River and off of Good Luck Point was particularly extensive.

Fish and Wildlife staff broadcasting hard clam seed by hand over a five acre restoration site within the Sedge Island Marine Conservation Zone.



Hard Clams

Hard clams are widely distributed over the bottom of New Jersey's coastal bays where water salinity approaches ocean values of 25-32 parts per thousand. In Barnegat and Little Egg Harbor bays, hard clam beds extend baywide from the area off of Cedar Creek to the Little Egg Harbor Inlet.

New Jersey hard clam harvest declined from a maximum of nearly 600,000 bushels around 1900 to a minimum of approximately 100,000 during the 1920s and from the 1970s to the 1990s, according to a 1997 publication by Susan Ford. At the peak of production between the late 1880s to the early 1900s, about one third of the statewide harvest came from southern coastal bays (Barnegat Bay and bays south to Cape May), with most coming from the area of Barnegat Inlet.

The decline in hard clam harvest has been attributed to various factors including loss of habitat due to waterfront development, closure of harvest areas due to poor water quality, increased mortality due to brown tide blooms and over-harvesting. Approximately 250 shellfishermen harvested hard clams by tonging, raking and treading in Barnegat Bay and Little Egg Harbor bays during the summer in the 1950s. The number of clam harvesters declined to only eight when hard clams were scarce between 1998 and 2002, according to McKenzie (2003). In 1985-86, there were 156 million clams in Barnegat Bay, according to a report by the New Jersey Division of Fish and Wildlife. An additional Fish and Wildlife 2001 survey of Little Egg Harbor Bay, showed a decline from 200 million clams in the 1980s to 65 million in 2001. Most recent information on hard clam abundance in Little Egg Harbor and Barnegat bays will be available shortly from Fish and Wildlife surveys respectively conducted in 2012 and 2011.

Shellfish Enhancement

Core shellfish enhancement activities involve planting seed to supplement existing stocks and planting shell to improve shellfish habitat. Shell provides a firm base for planting seed and serves as substrate upon which oyster larvae can set. Shell also enhances habitat complexity which provides refuge from predators and serves as nursery areas for shellfish and other marine species.

Shellfish enhancement activities were initiated as part of the Barnegat Bay Shellfish Restoration Program a collaborative endeavor of Fish and Wildlife along with Rutgers Cooperative Extension of Ocean County and the volunteer organization ReClam the Bay. Shellfish enhancement activities serve as a vehicle for raising environmental awareness and providing hands-on educational opportunities for students and volunteers.

Oyster enhancement activities started in the area off of Good Luck Point, at the mouth of Toms River in Berkeley Township, Ocean County. The selection criteria included knowledge of the area's

historical oyster habitat and that this location is sited within waters approved for shellfish harvesting. Provided that shell would be planted to improve bottom firmness, the area had more potential for restoration than other candidate locations which exhibited softer bottoms.

Sea clam shell was utilized to firm up the base of oyster habitat within a one-acre site. Eight thousand bushels of shell were initially placed in December 2008 and again in June 2011. Oyster seed from various sources — including wild seed collected on shell bags plus seed produced by Rutgers University or commercial hatcheries — was planted following the base shell placement. Hatchery seed was grown on nursery systems operated by the Barnegat Bay Shellfish Restoration Program and ReClam the Bay volunteers or commercial growers. Large seed, such as those grown in nursery systems, is less prone to predation than small seed directly procured from hatcheries. In 2011 nearly one million large oyster seed were planted in New Jersey's shellplanted areas.

Hard Clam Enhancement

The Sedge Island Marine Conservation Zone in Barnegat Bay was identified as the first area to commence hard clam enhancement efforts. The area is within shellfish habitat of recreational value and the water is classified as approved for shellfish harvest. Before enhancement efforts started, clam abundance was found to be low and clams were mostly chowder-sized clams, which are older clams larger than 76 mm in size. Clam seed, in the size range of 15-25 mm, was procured from commercial hatcheries and broadcasted by hand over two to five acre parcels within the area. Large-scale plantings of seed in the size range of 15-25 mm have been demonstrated to assist in the recovery and subsequent stabilization of depleted stocks in Great South Bay, New York (Monica Bricej, 2009). Since 2006, Fish and Wildlife staff planted a total of 3.2 million seed over an area of 37 acres. The seed grew and survived well; use by recreational harvesters has been high. Holders of recreational shellfish harvest licenses are allowed to take 150 shellfish per day. New Jersey's minimum hard clam harvest size is 1.5 inches.

To expand hard clam enhancement efforts beyond the Sedge Island Marine Conservation Zone, 340,000 seed were planted over an area of 9.2 acres located off of Gulf Point in Barnegat Township in October 2012. The site was located in an area where experimental plots (John Krauter, 2003) with shell planted in 1990 exhibited increased hard clam abundance after 10 years relative to adjacent plots with no shell that were examined during the same time. The area was selected after Fish and Wildlife solicited recommendations from commercial and recreational clambers for good candidate locations to target enhancement efforts. The plan is to expand enhancement efforts to new areas and increase seed planting over the next five years.

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Skillful Angler Awards Program



Fishing the Barnegat Light Reef, John Howell caught this 4.24-pound black sea bass.

The Skillful Angler Awards Program is designed to supplement the New Jersey Record Fish Program. It is comprised of three categories: Adult (for anglers age 16 and older), Junior (under age 16) and Catch and Release (based on length). A clear, side-view photo that allows accurate species identification must be included with each application. All photo entries become property of the Division of Fish and Wildlife and will not be returned. Well-composed, high resolution photos may be selected for printing in future *Digests*.

The Skillful Angler Awards program acknowledges that many anglers catch freshwater and marine fish that are not record size, but are still worthy of recognition because the size and weight of the fish sufficiently tested the angler's skill. The program is open to resident and non-resident anglers. All fish must be caught in New Jersey waters using a hook and line during legally open seasons.

Anglers qualifying for a Skillful Angler award receive a certificate and a bronze pin to adorn their fishing hat or jacket. Only one pin and certificate per species—regardless of category—will be awarded annually to each participant, but an angler may submit applications for larger fish caught even after receiving a pin.

At the end of the year, special recognition is given to anglers who catch the largest fish in each species category. The winner of each category is sent a special certificate recognizing his or her accomplishment as the best of New Jersey's Skillful Anglers.

Fish must be measured from the tip of the nose (with mouth closed) to the tip of the tail (see *Measuring Fish* page 12). For Catch and Release categories, fish must be photographed alongside a ruler. For Adult/Junior categories, fish must be weighed and measured by fishing license agents, tackle shops or authorized Fish and Wildlife fisheries biologists.

Learn more online at NJFishandWildlife.com/skflang.htm.

Minimum Entry Requirements:

Species	Adult Weight (lbs., oz.)	Junior Weight (lbs., oz.)	Catch & Release (inches)
Black Sea Bass	4	3	20
Striped Bass	40	36	42
Black Drum	70	63	46
Bluefish	18	16	33
Cod	30	27	42
Dolphin	30	27	n/a
Winter Flounder	2	1 lb., 8 oz.	16
Fluke	8	7	27
Kingfish	1	8 oz.	13
Mako Shark	250	225	n/a
Blue Marlin	400	360	n/a
White Marlin	60	54	n/a
Pollock	25	22 lbs., 8 oz.	41
Tautog	8	7	22
Albacore Tuna	50	45	n/a
Big Eye Tuna	200	180	n/a
Bluefin Tuna	500	450	n/a
Yellowfin Tuna	120	108	n/a
Tuna (other)	250	225	n/a
Weakfish	10	9	30

The New Jersey State Record Fish Program requires a separate application and is based on weight alone. Scale certification documentation and a weighmaster's signature are necessary. Other rules apply. Visit Fish and Wildlife's Web site at NJFishandWildlife.com for a complete list of current state records. See also page 25.

New Jersey Skillful Angler Application

Name _____ Age _____

Address _____

City _____ State _____ Zip _____

Daytime Telephone Number (_____) _____

Entry Category (check only one):

Adult Junior (16 years and under)

Catch and Release (qualification based on length)

Fish Species (Angler must complete. Subject to verification by a state biologist.)

Weight _____ lb(s), _____ oz. **Length** _____ in. **Girth** _____ in.

Date Caught* ____/____/____ **Time** _____

Location _____

Caught from (check only one):

Boat Shore Surf Jetty

Other (specify) _____

Line Test Used _____ **Reel Type** _____

Rod Type _____ **Lure/Bait** _____

Certification for Adult and Junior Categories

Name of Establishment _____
(where fish was measured and weighed)

Telephone Number _____

Weighmaster's Name _____

Weighmaster's Signature _____

I certify: 1) this fish was caught in New Jersey waters in accordance with state laws and regulations; 2) the entry was weighed on a certified scale (for Adult and Junior categories only).

I have enclosed a clear, side-view photo.

Applicant's Signature _____ **Date** _____

* Application and photo must be submitted **within 30 days** of catching the fish. Applications for fish caught in December will be accepted only until January 31.

Mail to:

NJ Division of Fish and Wildlife
Skillful Angler Awards Program
Pequest Natural Resource Education Center
605 Pequest Rd.
Oxford, NJ 07863

New Jersey State Record Marine Sport Fish

New Jersey Division of Fish and Wildlife's Record Fish Program honors anglers who catch the largest of select species of freshwater and saltwater fish. Record size is based on weight alone; there are no line classes. Currently there are 61 marine species eligible for entry into the program.

Anglers are reminded that the objective of the Record Fish Program is to increase awareness of fishing opportunities for species that are regularly sought and routinely found on or off the coast of New Jersey. The original list of 72 species was pared down with that objective in mind.

Eleven species are now retired from the list of program-eligible fish, but remain on a separate list posted on Fish and Wildlife's Web site. One historical catch is also retired and posted on the list.

Anglers should be aware of the procedure in effect for entering the Record Fish Program. First, separate applications are required for freshwater and saltwater species. Second, for saltwater entries, it is now mandatory that a marine biologist inspect any potential record fish, as identification solely by photo is not always accurate. Anglers must call Fish and Wildlife's Nacote Creek Research Station at (609) 748-2020 to make arrangements for inspection. In most instances, the fish must be transported to this office in Port Republic. However, in the case of extremely large fish (i.e., shark and tuna), a biologist should be available to travel for dockside inspection. Note that all scale certification requirements still apply, including a valid Certificate of Inspection/Test Report and current Registration Certificate issued by the County Office of Weights and Measures.

The entry deadline is now no later than one month after the date of catch. Note that the triggerfish category is now defined as gray triggerfish.

For a complete list of state record fish or to print an application with complete program rules, visit the Division of Fish and Wildlife's Web site at NJFishandWildlife.com/fishing.htm.



Fishing off of Cape May, this new state record black sea bass taken by Andrew Merendino weighed 8 lbs., 4.5 oz.

New Jersey State Record Marine Fish

Species	Lbs.	Oz.	Year	Angler	Where Caught
Amberjack, greater	85	0	1993	Edwin Metzner	Off Cape May
Bass, black sea	8	4.5	2010	Andrew A. Merendino	Off Cape May
Bluefish	27	1	1997	Roger Kastorsky	5 Fathom Bank
Bonito, Atlantic	13	8	1945	Frank Lykes, Jr.	Off Sandy Hook
Cobia	87	0	1999	John Shanchuk	Off Sea Bright
Cod	81	0	1967	Joseph Chesla	Off Brielle
Crab, blue	8 ^{3/4} " pt. to pt.		2009	Raymond Ponik	Bayonne
Croaker, Atlantic	5	8	1981	Frederick Brown	Delaware Bay
*Cunner	3	8	2012	Raul de la Prida	Off Pt. Pleasant
Dogfish, smooth	19	9	2010	Richard A. Proot, III	Mantoloking
Dogfish, spiny	15	12	1990	Jeff Pennick	Off Cape May
Dolphin	63	3	1974	Scott Smith, Jr.	Baltimore Canyon
Drum, black	109	0	2008	Nick Henry	Delaware Bay
Drum, red	55	0	1985	Daniel Yanino	Great Bay
Eel, American	9	13	1988	Warren Campbell	Atlantic City
Fluke	19	12	1953	Walter Lubin	Off Cape May
Flounder, winter	5	11	1993	Jimmy Swanson	Off Barnegat Light
Hake, white	41	7	1989	Wayne Eble	Off Barnegat Light

Species	Lbs.	Oz.	Year	Angler	Where Caught
Kingfish, Northern	2	8	2004	Chester Urbanski	Barnegat Bay
Ling (red hake)	12	13	2010	Billy Watson	Off Manasquan
Mackerel, Atlantic	4	1	1983	Abe Elkin	Manasquan Ridge
Mackerel, king	54	0	1998	Fernando Alfaiate	Off Cape May
*Mackerel, Spanish	9	12	1990	Donald Kohler	Off Cape May
Marlin, blue	1,046	0	1986	Phil Infantolino	Hudson Canyon
Marlin, white	137	8	1980	Mike Marchell	Hudson Canyon
Perch, white	2	12	1998	Michael King	Little Beach Creek
*Pollock	46	7	1975	John Holton	Off Brielle
Porgy	5	14	1976	Victor Rone	Delaware Bay
Sailfish	43	4	2006	Dr. John Tallia	Linden Kohl Canyon
Seatrout, spotted	11	2	1974	Bert Harper	Holgate Surf
Shad, American	7	0	1967	Rodger West	Great Bay
Shad, hickory				Vacant (Minimum Weight 2 lbs.)	
Shark, blue	366	0	1996	William Young, Jr.	Mud Hole
Shark, bull				Vacant (Minimum Weight 150 lbs.)	
Shark, dusky	530	0	1987	Brian Dunlevy	Off Great Egg Inlet
Shark, hammer-head	365	0	1985	Walter Thacara	Mud Hole
Shark, porbeagle				Vacant (Minimum Weight 100 lbs.)	
Shark, sandbar	168	8	1987	John Norton	Little Egg Inlet
Shark, s-fin mako	856	0	1994	Christopher Palmer	Wilmington Canyon
Shark, thresher	683	0	2009	Bennett Fogelberg	Fingers
Shark, tiger	880	0	1988	Billy DeJohn	Off Cape May
Sheepshead	17	3	2003	Paul Lowe	Manahawkin Bay
Spadefish	11	6	1998	Cliff Low	Delaware Bay
Spearfish, longbill	42	0	1989	George Algard	Poor Man's Canyon
	42	0	1997	Joseph Natoli	Hudson Canyon
Spot	0	13	2003	Robert Belsky, Jr.	Little Sheepshead Creek
*Striped Bass	78	8	1982	Al McReynolds	Atlantic City
Swordfish	530	0	1964	Edmund Levitt	Wilmington Canyon
*Tautog	25	0	1998	Anthony Monica	Off Ocean City
Tilefish, golden	63	8	2009	Dennis Muhlenforth	Linden Kohl Canyon
Tilefish, gray	18	7	2007	Joseph Sanzone	Tom's Canyon
Triggerfish, gray	5	12	2008	Ronald Pires	High Bar Harbor
Tuna, albacore	77	15	1984	Dr. S. Scannapiego	Spencer Canyon
Tuna, big-eye	364	14	1984	George Krenick	Hudson Canyon
Tuna, bluefin	1,030	6	1981	Royal Parsons	Off Pt. Pleasant
Tuna, skipjack	13	4	1999	Craig Eberbach	Wilmington Canyon
Tuna, yellowfin	290	0	1980	Wayne Brinkerhoff	Hudson Canyon
Tunny, little	24	15	1977	Mark Niemczyk	Off Sea Bright
Wahoo	123	12	1992	Robert Carr	28-Mile Wreck
Weakfish	18	8	1986	Karl Jones	Delaware Bay
Whiting (silver hake)				Vacant (Minimum Weight 2.5 lbs.)	

* Fish was previously certified by the IGFA as a world record.

For information concerning the New Jersey State Record Fish or Skillful Angler programs, visit the New Jersey Division of Fish and Wildlife's Web site at NJFishandWildlife.com.

The **Black Sea Bass** Recreational Fishery: A Management Dilemma

BY PETER HIMCHAK, SUPERVISING FISHERIES BIOLOGIST

The black sea bass is undoubtedly a highly desirable, excellent-tasting and popular sportfish—the complete package for any recreational angler. The 2012 black sea bass recreational fishery was highly successful. Good news for everyone, it would seem. Unfortunately, landings may have been too good...

Black sea bass landings were much higher than projected harvest levels based on the regulatory management strategies implemented. Is this success story actually bad news? Let's hope not. Were so many fish harvested that the stock cannot remain sustainable? Did the black sea bass stock assessment paint an accurate portrait of the biological health of the stock? Were the anglers' on-the-water observations correct that black sea bass were highly abundant and the quota was set too low? Are the higher landings a promise of better times to come, or will the bottom fall out on this resource? The questions are easy, the answers are not. What a management dilemma!

Now that your attention is focused on a potential tailspin for the black sea bass recreational fishery, let's review the background process to explain how this potential crisis developed. There is a laundry list of agencies, committees, management tools, laws and steps essential to develop the annual black sea bass recreational quota. Next we'll introduce the players.

WHO'S WHO IN ATLANTIC COAST FISHERIES MANAGEMENT?

The Mid-Atlantic Fishery Management Council manages the coastwide black sea bass resource in the federal waters of the Exclusive Economic Zone, 3–200 nautical miles offshore, under the authority of the Magnuson-Stevens Fisheries Conservation and Management Act. The Atlantic States Marine Fisheries Commission, a compact of all 15 Atlantic coastal states manages black sea bass in states' waters (0–3 nautical miles from shore) under the authority of the Atlantic Coastal Fisheries Cooperative Management Act. The Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission jointly meet in August each year to set the next year's annual specifications, i.e. quotas, size limits, possession limits, seasons, etc., for several species managed under joint fishery management plans — namely summer flounder, scup, black sea bass and bluefish. Under the above-mentioned legal authority, the states essentially get their marching orders for what they can and cannot do with these four fisheries.

USING THE ANNUAL STOCK ASSESSMENT

The first step in the specifications process is setting the quota. Here, our discussion will be limited to the black sea bass resource. The Mid-Atlantic Fishery Management Council relies on an annual stock assessment update for black sea bass conducted at the National Marine Fisheries Service's Northeast Fisheries Science Center in Woods Hole, Massachusetts. A stock assessment is an indication of the biological

condition of the resource; the assessment then passes into the hands of the Mid-Atlantic Fishery Management Council's Scientific and Statistical Committee. This committee evaluates the quality and thoroughness of the stock assessment, placing the stock assessment in one of four tiers, with tier 1 being the highest quality.

TIER SELECTION IS A CRITICAL STEP

The Scientific and Statistical Committee's tier selection for a stock assessment is based on the probability of overfishing. The Committee must consider all scientific uncertainty to ensure overfishing doesn't occur, the very reason why the Magnuson-Stevens Fisheries Conservation and Management Act exists. Black sea bass is, unfortunately, a tier 4 stock assessment and requires more precaution when setting catch levels.

The Scientific and Statistical Committee calculates an *acceptable biological catch*, in poundage, that cannot be exceeded which also sets the stage for fisheries allocations and eventual harvest quotas. The acceptable biological catch for black sea bass is first divided between the commercial and recreational fisheries, then, discard mortality and research set-aside poundages are deducted to derive a quota for the coming year. For the black sea bass, the *recreational harvest limit* for 2012 was set at 1.32 million pounds. Not much to work with in developing black sea bass recreational fisheries from Massachusetts through North Carolina.

ARE WE OVERWEIGHT?

As recreational catch statistics came in for 2012 from the anglers' "favorite" Marine Recreational Fisheries Statistics Survey (being replaced by the improved Marine Recreational Information Program through



Captain Bobby Rice / www.FishReelDeal.com

wave 5, with wave 5 equaling the months of September and October, and waves 1 through 4 equaling the previous 8 months), the black sea bass recreational catch was estimated at 2.99 million pounds!

The National Marine Fisheries Service was required under the Magnuson-Stevens Fisheries Conservation and Management Act to enact *accountability measures* and close the Exclusive Economic Zone to recreational black sea bass fishing, effective November 1, 2012. Did the data mean too much success was threatening the sustainability of the black sea bass resource, or were there more fish available for sustainable harvest than originally estimated? With a recreational harvest limit set at 1.85 million pounds for 2013 and payback for overages from one year to the next, what does this mean for the 2013 season and years thereafter?

DECISIONS, DECISIONS

The Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission met December 14, 2012 to determine what type of black sea bass recreational fishery is possible for 2013 and succeeding years. The decisions follow:

- » The black sea bass recreational fishery in the Exclusive Economic Zone and states' waters will run from January 1 through February 28, with a 12.5-inch minimum size and a 15 fish possession limit.
- » The Mid-Atlantic Fishery Management Council will request the Scientific and Statistical Committee reconsider their black sea bass acceptable biological catch recommendation for 2013.
- » An enhanced operational assessment will be conducted for black sea bass, focusing on its current tier 4 status, which constrains the specifications-setting process.
- » The Atlantic States Marine Fisheries Commission will develop a fast track addendum for developing states' waters measures for 2013 that must meet a 32 percent reduction from 2012 levels. Fortunately, the 2013 recreational harvest limit is 1.85 million pounds.
- » If the Atlantic States Marine Fisheries Commission addendum meets the reduction schedule for 2013, the Exclusive Economic Zone coastwide measures will be a 20 fish possession limit, a 12.5 inch minimum size limit and an open season from January 1 through February 28, May 19 through October 14 and November 1 through December 31.
- » The Mid-Atlantic Fishery Management Council will develop and implement a fast track amendment to consider alternative accountability measures for the 2014 season. Current accountability measures require a pound for pound payback for exceeding recreational harvest limits. *That could mean no recreational harvest for black sea bass in 2014!*

What's in store for 2013 and 2014 remains under development. The Scientific and Statistical Committee met in January 2013 and concluded that the original acceptable biological catch estimate was extremely conservative and recommended an increase of an additional million pounds for the next two years. The Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Management Board then met in February 2013 and —like the Mid-Atlantic Fisheries Management Council had done earlier in the month— approved the higher acceptable biological catch for black sea bass. Additionally, the Atlantic States Marine Fisheries Commission approved Addendum XXIII to the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan whereby states in the Southern Region (DE-NC) would remain status quo in 2013 but states in the Northern Region (NJ-MA) would implement recreational management measures to reduce black sea bass recreational harvest by the required 24 percent. Managers are juggling in the air many pieces of scientific data to determine the health of this stock and what future harvest it can support. Hopefully, by the time this article is published, states' waters black sea bass recreational measures will be finalized to include the 24 percent reduction with the Exclusive Economic Zone coastwide measures prevailing — and not a default to more restrictive measures.

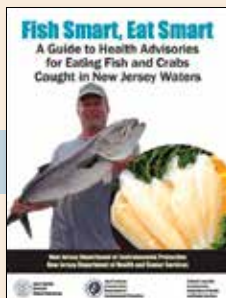
Fisheries management is complex. The setting of size, season and possession limits is a sophisticated, scientific and convoluted process. Just be sure that trying to understand the process of setting management measures does not take away any enjoyment from your recreational fishing activities.



An advertisement for "The Jessie O' Fishing & Cruising Fleet" is framed with a decorative rope border. The title "The Jessie O' Fishing & Cruising Fleet" is written in a large, red, stylized font. Below the title, the contact information is listed: "Captain Andy's Marina · (609) 412-3635" and "9317 Amherst Avenue · Margate, New Jersey". There are two small inset photos: the top one shows a white fishing boat on the water, and the bottom one shows a group of people on a boat. Below the photos, the text reads "Ocean & Bay Fishing · Private Parties · Small & Large Groups" and "Dinner Cruises · Catering & DJ Services". At the bottom, the website "JessieOfishing.com" is displayed in a red, stylized font.

Health Advisory

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Fishing provides enjoyable and relaxing recreation. Fish are an excellent source of protein and other nutrients and play a role in maintaining a healthy, well-balanced diet. Many anglers enjoy cooking and eating their own catch. However, elevated levels of potentially harmful chemical contaminants such as dioxin, polychlorinated biphenyls (PCBs), pesticides and mercury have been found in certain fish and crabs in some New Jersey waters. Fish consumption advisories have been adopted to guide citizens on safe consumption practices.

The current list of fish consumption advisories consists of state-wide, regional and water body-specific warnings for a variety of fish species and fish consumers. The New Jersey Department of Environmental Protection (DEP) and the Department of Health and Senior Services have prepared literature and a new Web site to help you make informed choices about which fish to eat and how to reduce your exposure to these harmful chemicals.

**Check online for fish consumption advisories on the local water body in which you fish!
Go to FishSmartEatSmartNJ.org**

To reduce exposure to harmful chemical contaminants when preparing and eating the fish species taken from the identified waters, it is essential to follow the guidelines provided. The DEP encourages you to consult the Fish Smart-Eat Smart Fish Advisory Guide or www.FishSmartEatSmartNJ.org when making decisions about eating recreationally caught fish and crabs.

The Fish Smart-Eat Smart Advisory Guide includes contaminant information, advisory charts, plus preparation and cooking methods to reduce contaminant levels, as well as specific guidelines, advice and prohibitions for people at high risk, such as children, pregnant women and women of child-bearing age. The Guide also includes Web site links to Pennsylvania, Delaware and New York for information about fish consumption advisories for shared waters.

For a complete list of state and federal marine fish consumption advisories visit: FishSmartEatSmartNJ.org.

The fish consumption advisories and Fish Smart-Eat Smart Web site are updated periodically and are available online or from the Office of Science at (609) 984-6070 and through the Department of Health and Senior Services at (609) 826-4935.

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Cody Griglak (left) and his first bluefish held by his father Keith.

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| Kayaking | Hunting/Trapping Instruction | Orienteering |
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| Rock Climbing | Outdoor Supply Flea Market | Trap/22 Rifle Shooting |

And much more FREE family fun!
For more information visit WildOutdoorExpo.com



ACCESSIBILITY ■

Accessible Fishing Sites



For people with disabilities, visit:
www.NJfishandWildlife.com/sites.htm

An Accessible Fishing Sites list is available to assist anglers whose mobility is impaired. All sites are wheelchair-accessible except for the Musconetcong River in Morris County, where vehicle access is to the shoreline.

ATTENTION BOATERS

Keep Our Water Clean -

USE PUMPOUTS

for boat holding tanks and portable toilets.

Visit marina pumpout facilities or contact one of the pumpout boats, ready to serve boaters.

- Head Mistress – Serving Raritan/Sandy Hook Bays
- Royal Flush – Serving Navesink/Shrewsbury rivers and Sandy Hook Bay
- Bay Saver – Serving northern Barnegat Bay
- Water Warrior – Serving the Silver Bay Area
- Circle of Life – Serving central Barnegat Bay/Tices Shoal
- Bay Sweeper – Serving southern Barnegat Bay/Little Egg Harbor Bay
- Waste Watcher – Serving Little Egg Harbor area



Pumpout boats operate from Memorial Day through September.

Contact pumpout boats on VHF Channel 9 to arrange for a FREE pumpout.

For more information visit NJBoating.org

To report a malfunctioning pumpout station or other problems, contact the Marine Trades Association of New Jersey at (732) 292-1051 or info@mtanj.org



Keep Our Water Clean -
Use Pumpouts

NOTICE: Due to Superstorm Sandy, boaters should contact marinas in advance of their first visit to confirm the pumpout facility is operational for the season.





If you care about:

- Wise management of fish and wildlife populations
- Protection and enhancement of natural lands and waters
- Preservation of traditional outdoor sports

Then get involved!

- Stay informed on issues affecting NJ sportsmen and sportswomen
- Make an impact on outdoor issues
- Meet others who share similar sporting interests
- Have fun and participate in Federation-sponsored activities: jamborees, clay target shoots, tournaments, dinners, conventions, and more!

Membership:

- ___ \$35 Includes monthly newspaper and \$1 million excess liability insurance covering your sporting activities throughout the U.S. and Canada
- ___ \$20 Monthly newspaper only

Name _____
County _____ Phone _____
Address _____
City _____ State _____ Zip _____
E-mail _____
Do have homeowner's/renter's insurance? (circle one) Y / N
Insurance Company: _____
Policy #: _____

Send with your check or money order to:
NJSFSC • PO Box: 10173 • Trenton, NJ 08650
Join online at

www.njsfsc.org

▶▶ WARNING: WILDLIFE HAZARD

Please properly dispose of all fishing line. Plastic debris can endanger aquatic life and snare propellers.



Could this be *your* line?

Shyam Menon

REPORT ABUSE OF OUR OUTDOOR HERITAGE OPERATION GAME THIEF 1-855-0GT-TIPS

24 HOURS A DAY, SEVEN DAYS A WEEK

It's Free—It's Confidential—You may be eligible for reward

The person who poaches, pollutes habitat and abuses public land tarnishes the image of sportsmen and robs us of our fish and wildlife as well as tax and license dollars.

You can make a difference...Call OGT to report:

- Negligent use of firearms
- Over the limits for game and fish
- Commercial exploitation of fish and wildlife
- Pollution of habitat, dumping on state land
- Destruction of signs and state property
- Illegal killing, taking or possession of any wildlife



*Funded by the New Jersey State Federation of Sportsmen's Clubs
Designed to encourage sportsmen to report poaching and wildlife crimes*