

Delaware River

By Jennifer Pyle
Fisheries Technician 2

The shortnose sturgeon, *Acipenser brevirostrum*, and its cousin, the Atlantic sturgeon, *Acipenser oxyrinchus*, are ancient fish species that originated more than 70 million years ago. Of the seven species of sturgeon in North America, two are found in New Jersey.

Common names (mid-Atlantic region)

Shortnose sturgeon - shortnosed, little sturgeon, roundnoser and mammose

Atlantic sturgeon - sea sturgeon, common sturgeon, sharp-nosed and big sturgeon

Characteristics

Sturgeon are part of the *Acipenseridae* family, possessing a skeleton made of cartilage, not bone. These fish have flattened, elongated bodies covered with five rows of bony plates called scutes. Sturgeon tails are heterocercal, meaning the upper lobe of the tail is much longer than the lower lobe.

Shortnose sturgeon have short, blunt snouts. Their upper body is olive-yellow to gray-blue; the underside is milky white to dark yellow.

Atlantic sturgeon snouts are tapered in the young but broad as adults and noticeably upturned. Their upper body is gray to blue-black with white spines on the scutes.

Both sturgeon species have two pairs of barbels (feelers) projecting from their lower jaw and used to detect food. Sturgeon are toothless and extend their tube-like mouths to ingest prey, which then is ground in the stomach.

Size

Shortnose sturgeon is the smallest sturgeon along the East

Coast. They grow to about 56 inches and can weigh up to 15 pounds, but average closer to 10 pounds. In contrast, **Atlantic sturgeon** reach an average mature length of 10 feet, but can grow to 15 feet and 800 pounds.

New Jersey's recreational state record Atlantic sturgeon, caught off Sandy Hook in 1994, weighed 82 pounds.

Range

Along the Atlantic Ocean coastline, sturgeon are found from Hamilton Inlet in Labrador, Canada, to St. Johns River, Florida.

Habitat

Both species are considered anadromous, meaning they migrate from the ocean to fresh water only to spawn. However, unlike classic anadromous fish, shortnose sturgeon live mainly in brackish portions of rivers, estuarine waters or near-shore marine waters and migrate upstream to faster-moving fresh water to spawn.

Life History

The male **shortnose sturgeon** matures at 3 years to 5 years; the female matures between 6 years and 7 years. One year to two years after reaching maturity, the males spawn for the first time while females may not spawn until five years or more after maturity. Shortnose sturgeon live 30 years to 60 years or more.

Spawning takes place over a five-day to 17-day period from late March into May (depending on the water temperature),



Shortnose Sturgeon

Delaware River Sturgeon

when adults move to the Delaware River's non-tidal water near Scudder Falls, just north of Trenton. Females lay 40,000 eggs to 200,000 eggs, which the males then fertilize. Hatchlings emerge 13 days later. Adults leave the spawning grounds while the young remain in the upper freshwater portion of the river for up to two weeks, then drift downstream until they reach a slow flow area suitable for feeding. Gradual travel downstream continues until they reach the adult foraging area in the lower part of the river.

Unlike their shortnose relatives, **Atlantic sturgeon** males reach maturity between 5 years and 24 years; females mature at 7 years to 30 years.



Females do not spawn annually and may return to their spawning grounds only every two years to six years, laying more than two million eggs. Spawning takes place from late March or April into May when adults move to fresh water in the upper tidal portion of the river. Adult females then return to the ocean while the males may stay in the river until autumn. Once hatched, juveniles remain in the river or estuary for up to six years. During this time,

juveniles and subadults inhabit estuarine waters, eventually joining adults in coastal waters. Atlantic sturgeon may live as long as 60 years.

Feeding

Atlantic and shortnose sturgeon are bottom feeders, using their barbels to locate food on the river bottom or ocean floor. Their diets consist mostly of mollusks, worms, shrimp, snails, insect larvae and small fish.

Commercial Fishing

The commercial fishery for sturgeon began during the 1700s. Within the next century, caviar and smoked flesh became a major export. Worldwide distribution centered from the Delaware estuary. In 1890, an estimated seven million pounds of sturgeon were landed on the east coast, with the Delaware Bay accounting for about six million pounds. By the early 1900s, the fishery began to focus primarily on Atlantic sturgeon. Overfishing continued, and the fishery crashed. Increased industrialization and its accompanying dams, dredging and poor water quality led to the destruction of sturgeon habitats.

Although wild Atlantic sturgeon are protected by a moratorium along the Atlantic Coast, cultured Atlantic sturgeon still are valued for their flesh and eggs, known as caviar.

Management

The shortnose sturgeon was listed as an endangered species in 1973 under the federal Endangered Species Act. However, the Atlantic sturgeons' slow growth rate, advanced age of maturity and long periods between spawning make this species especially vulnerable to human activity.

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Atlantic Sturgeon

STURGEON (continued from page 17)

Then in 1990, the Atlantic States Marine Fisheries Commission adopted the Atlantic Sturgeon Fishery Management Plan, requiring states to adopt a size limit or impose a fishing moratorium. In June 1998, the plan was amended and a moratorium for Atlantic sturgeon was implemented along the Atlantic Coast. The moratorium is expected to continue for more than 40 years. Data is now being evaluated to determine the Atlantic Sturgeon's status in New Jersey waters.

For both sturgeon there is good news: Advancements in wastewater treatment have dramatically improved the Delaware River's water quality during the past several decades. Since the late 1990s, dissolved oxygen levels in the river have been higher than minimum state standards. Conditions are more favorable for the possibility of sturgeon restoration from the Delaware's remnant population.

In August 2004, proof of such restoration surfaced from the Delaware River at Oldman's Point, Salem County, during a beach seine survey conducted by the New Jersey Department of Environmental Protection's Division of Fish & Wildlife fisheries biologists. A 4.6-inch shortnose sturgeon was caught, the first such appearance during the 25-year survey and one of the few young-of-year shortnose sturgeon caught there in years.


Past Studies

Several studies have focused on the Delaware River shortnose sturgeon population. In the 1980s, sturgeon were tagged to determine population size. Estimates ranged from 6,408 adults to 14,080 adults, making the population one of the healthiest on the Atlantic coast. A study conducted from 1981-87 determined that any river alteration plans should consider the impact on shortnose sturgeon, according to published reports.

During a 1998 study, researchers using gill nets caught dozens of sturgeon per haul; one catch contained more than 500 shortnose confirming the Delaware River is a healthy system for this primitive species. The study also showed the shortnose population to be the same as it was in the 1980s. However, only a few small shortnose sturgeon were captured during 1999 surveys, including one young-of-year. The National Oceanic and Atmospheric Association is funding shortnose sturgeon surveys in the Delaware.

In 1994, State of Delaware researchers' surveys of Atlantic sturgeon fisheries in the Delaware River resulted in a catch of 500 subadults. A few years later, a similar survey netted only 20 subadult sturgeon. More recently, only five juveniles were caught. Though the Atlantic sturgeon population had relatively high numbers during the 1980s, it has since decreased. In recent years, the Delaware River has probably declined to hundreds of fish.

Current Research


The U.S. Fish and Wildlife Service's Northeast Fishery Center in Lamar, Pa., is developing fish culture techniques to be used if breeding and stocking Atlantic sturgeon becomes necessary. The Pennsylvania Fish and Boat Commission recently issued a grant to Delaware State University to study Atlantic sturgeon populations in the Delaware River. They will investigate the current status and spawning habitat needs of this species. This spring, Pennsylvania also plans to use drift nets to catch fish larger than four feet. These fish will be quantified and transmitters will be implanted surgically. 

SHELLFISH LEASES (continued from page 3)

shellfish acquired from a hatchery and cultivate them until the shellfish reach market size. To protect their investments, many shellfish harvesters use screening material to inhibit predators from feasting on the juvenile shellfish.

Shellfish leases areas seldom interfere with recreational boaters and anglers since these shellfish beds occupy only a small fraction, currently about 1.5 percent, of the total coastal bay acreage. These beds also are generally established away from navigation channels in shallow portions of New Jersey's coastal bays.

Conflicts, however, do arise. Boat propellers and fishing rigs can become entangled in the nets, resulting in costs due to equipment repairs, lost time and production loss from damaged nets.

By approaching these marked shellfish lease areas with caution, recreational boaters and anglers can avoid entanglements and foster a mutual respect between shellfish harvesters and others who use New Jersey's coastal bays. 

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photo: Lindy Barry/NJ F&W

Survey crew hard at work.

Counting the Fish in the Ocean

By **Don Byrne**,
Principal Fisheries Biologist

Nine miles off Barnegat Inlet, a timer signals 20 minutes have passed. Steve Cluett, skipper of the research vessel *Sea Wolf*, throttles back the engine, engages the winches and begins hauling back the bottom trawl from a depth of about 70 feet.

Meanwhile, in the ready room below, New Jersey Department of Environmental Protection's (DEP) Bureau of Marine Fisheries staff and Wildlife Conservation Corps volunteers respond to the changing sounds of the boat. Coffee cups, books and crossword puzzles are set aside. Sea boots, foul weather gear and gloves are picked up and pulled on.

It is a warm, sunny April afternoon, and the survey crew will soon be man-

ning the "slime line," handling all kinds of flopping, slithering fish and crawling invertebrates, many with sharp spines or teeth, on a work deck wet from running hoses and an occasional splashing wave.

As the towing cables wind on the winches, the trawl eventually surfaces, is disconnected from the towlines, and wound onto a net reel. Finally, the tail end of the net appears, bulging with about 500 pounds of catch, which is released onto a sorting table that nearly overflows. The survey crew gets to work, sorting the entire catch by species and measuring the total weight of each. Length measurements of each species are also taken; every individual fish is measured if a species is not too numerous in the catch.

In this particular catch, little skate, winter skate and spiny dogfish account for most of the weight. There are a large number of sea herring, some winter flounder, a few striped bass, and ocean pout. The catch also includes a large Atlantic sturgeon, a species rarely caught, and a variety of other fishes such as sand lance, long-horn sculpin, sea raven and butterfish. Most of these fish prefer cold water and their presence is typical for the time of year; although the air temperature is 65 degrees Fahrenheit, the ocean is still wintry, only 44 degrees.

This catch represents one of 39 samples collected during the April survey, only one of five surveys conducted annually. The others take place in January, June, August and October. Each survey samples the approximately 1,800-square-mile area of Atlantic Ocean between Sandy Hook, N.J. and Cape Henlopen, Del.

All samples are collected randomly; so if the same location happens to be sampled in two different surveys, it is only by chance. The idea behind this is that every fish in the survey area has an equal chance of getting caught. When the catch data are analyzed to determine estimates of population size, this random design permits the use of robust statistical procedures that provide relatively accurate results.

This fish-counting program, known officially as the ocean stock assessment program, or trawl survey for short, began in August 1988 and continues today. And therein lies its greatest value: more than 15 years of continuous sample collecting. Throughout those years, the program used the same collecting and processing procedures for more than 75 survey cruises, enabling fisheries researchers and resource managers to examine the annual ups and downs of species abundance, knowing that any trends observed most likely reflect true population changes, rather than varying net size.

Program data contribute to the development and modification of fisheries management plans which affect everyone who handles saltwater fish, including the grocery shopper looking for flounder fillets, the angler releasing a fish too small to keep, and the commercial fisherman returning to the dock because he has caught the limit.

Meanwhile, the *Sea Wolf* has come to a dead stop in 24 feet of water off Island Beach State Park. Surf fishermen are a short distance away, casting just past the breakers. The survey crew deploys a meter to measure the water temperature at three-foot depth intervals and a water bottle to collect surface and bottom samples to determine dissolved oxygen and salinity. In a few minutes, the water sampling will be completed, and the net will be lowered into the sea to collect yet another sample. The new information gathered will be incorporated into management plans to ensure fish will provide abundant harvests for years to come.



Motor Boat Title and Registration Requirement

Boats greater than 12 feet in length, regardless of propulsion means, must be titled and registered at a NJ Motor Vehicle Commission office.

Exceptions: ship's lifeboat, canoe, kayak, inflatable, surfboard, rowing scull, racing shell, tender/dinghy used for direct transportation between a vessel and shore for no other purposes.

For more information, visit the MVC Web site at www.nj.gov/mvc/cit_title/v_title_boats.html, stop by an MVC office or call (609) 292-6500.

STATE POLICE MARINE LAW ENFORCEMENT STATIONS

Bivalve	(856) 785-1330
North Wildwood	(609) 522-0393
Atlantic City	(609) 441-3586
Burlington	(609) 387-1221
Ocean	(609) 296-5807
Point Pleasant	(732) 899-5050
Monmouth Station	(732) 842-5171
Lake Hopatcong	(973) 663-3400
Newark Bay	(973) 578-8173

ASSESSMENT (continued from page 4)

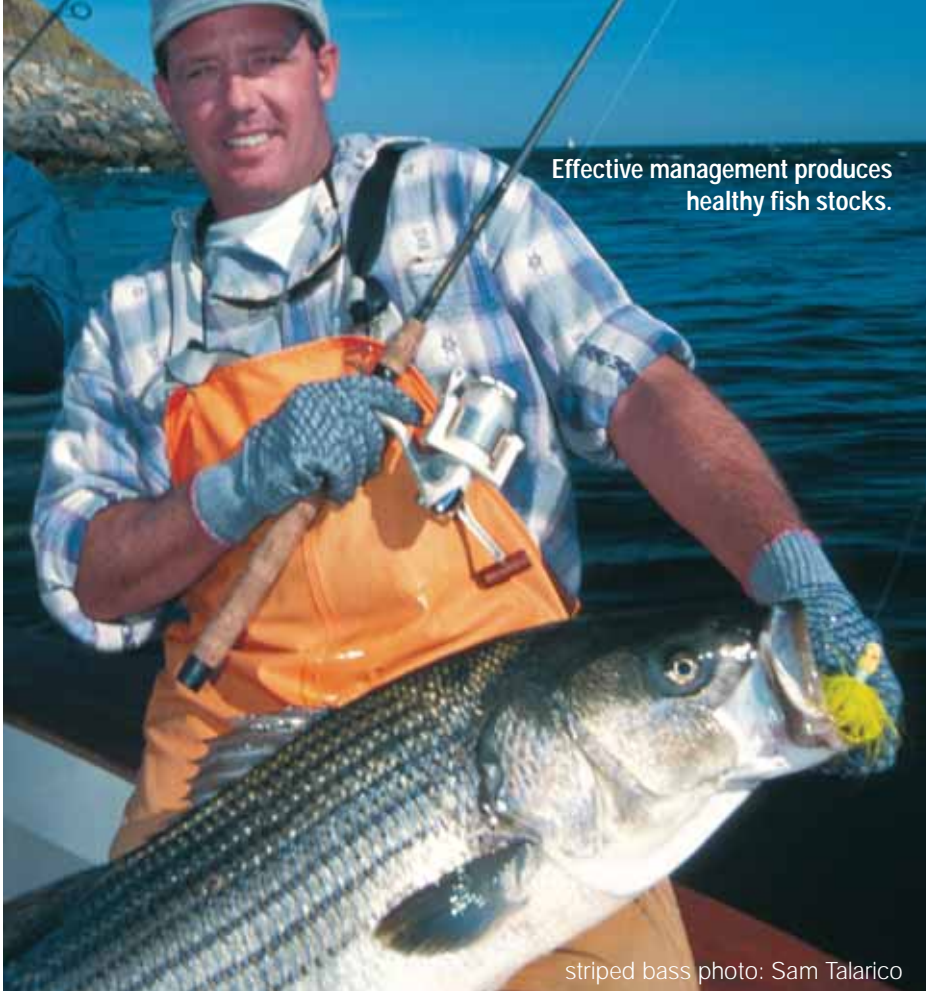
year. Abundance data examples include an estimate of the number or weight of all fish in the population. Fishery activity data could include the number or weight of fish in each age class that are harvested and discarded, for example.

The second step in stock assessment is to standardize the data because different states use different collection techniques. For example, New Jersey and Delaware both conduct trawl surveys in the Delaware Bay, but use different nets and sampling methods. Before the data can be compared, it must be converted to a standard unit of measure. In other instances, the number of samples collected from a state might be insufficient, so fishery survey data from adjoining states must be added to fill the gaps. This procedure is common with age and length samples from recreational and commercial fisheries.

Another standardization technique is to combine fishery data from different sources. For example, lengths and ages collected in numerous trawl surveys can be combined to determine the average length of fish at a given age. This age-length key could then be applied to a sample of lengths from the recreational and/or commercial fishery to estimate the number of fish harvested at each age. These calculations require an understanding of the data collection methods used and the type of assessment or computer model to be performed.

After the data is compiled and standardized, biologists conduct the actual stock assessment. A stock assessment can be as simple as analyzing trends in abundance and landings or as complex as running an intricate mathematical model with dozens of input sources such as trawl surveys, commercial sampling surveys and various life history information. The assessment can analyze the stock as a whole or divide it into different sectors (such as age classes) and analyze each sector separately. The type of computer model that is run will depend on the types and amount of data available and how the fishery is usually managed, either through a harvest quota or a specified fishing mortality.

(continued on page 22)



Effective management produces healthy fish stocks.

striped bass photo: Sam Talarico

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ASSESSMENT (continued from page 21)

Once the model has been run, assessment biologists interpret the results; it is a complex task. Generally, the same model is run several times with slightly different input data. This method allows the scientists to evaluate how different data can influence results, helping to ensure the model is performing correctly and is appropriate for the species being assessed. Often, a second type of model is computed and compared with the main assessment model to see if they achieve similar results; if they differ, the goal is to determine why.

Finally, the assessment results are used to determine the stock status, which is based on two criteria: 1.) the number of fish removed from the stock through fishing activities and 2.) the number of fish in the population, particularly the mature females. For both criteria management reference points which define a healthy stock are established, such as maximum sustainable yield or fishing effort. Biologists compare the assessment results to these reference points and make determinations on stock status, which managers then use to formulate management strategies and regulations for the future.

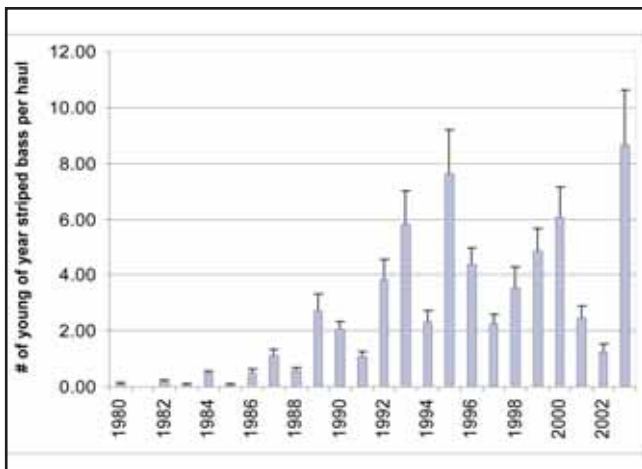



Figure 1. *The average number of striped bass less than one year old caught per seine net haul (each time the net is set) in the Delaware River. Stock assessment biologists use this type of information to help estimate the size of future populations of striped bass.*

Fisheries managers set regulations to ensure the stock size remains at or above a level that allows the stock to maintain itself year after year. If stock size falls below that level, the stock will get smaller every year unless action is taken to reverse the decline. When the stock is not overharvested, the fishery should remain relatively stable from year to year, allowing recreational and commercial anglers and others to enjoy the resource without causing its collapse.

New Jersey has a strong record of collecting relevant fisheries data for important recreational and commercial species. That success is being enhanced with the addition of two biologists dedicated to conducting and analyzing fisheries stock assessments. Because many important species in New Jersey are managed in collaboration with other Atlantic coastal states and the federal government, the interests of New Jersey anglers now will be well represented in the development and interpretation of stock assessments. As data collection expands, New Jersey's stock assessment capabilities will continue to improve and possibly lead to more flexible fisheries management measures such as the recreational striped bass regulations set in last year.

New Jersey's commitment to enhanced stock assessment strengthens its goal of balancing and protecting the fisheries while maintaining healthy recreational and commercial harvest levels. 

SEA RUN BROWN TROUT



The New Jersey Division of Fish and Wildlife has stocked brown trout in the lower Manasquan River. Anglers are asked to report all catches of brown trout that exhibit characteristics of a sea run. These fish tend to develop a more silvery coloration, masking most of the body spots, after an extended time in salt water.

The future of this program depends on these fish being caught and reported.

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**WE NEED YOUR
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Health Advisories For Eating Fish And Crabs Caught In New Jersey Waters


Important Health Information

Fishing provides enjoyable and relaxing recreation. Fish are an excellent source of protein, minerals and vitamins, and play a role in maintaining a healthy, well-balanced diet. Many people enjoy cooking and eating their own catch. However, since 1982, when research began to show elevated levels of potentially harmful contaminants in certain fish and crabs in some New Jersey waters, state officials adopted

Chemical contaminants, such as dioxin, PCBs and chlordane are classified by the U.S. Environmental Protection Agency as probable cancer-causing substances in humans, while elevated levels of mercury can pose health risks to the human nervous system, particularly to developing fetuses.

The current list of fish consumption advisories consists of statewide, regional and waterbody-specific warnings for a variety of fish species. Considering the large volume of information available, the New Jersey Department of Environmental Protection (DEP) and the Department of Health and Senior Services prepared a Fish Advisory Guide to help you make informed choices about consuming fish and ways to reduce your exposure to harmful chemical contaminants.

The Fish Advisory Guide includes contaminant information, advisory charts, and preparation and cooking methods to reduce contaminant levels in the fish you catch. The booklet also features guidelines, advice and prohibitions for people at high risk for illness such as children, pregnant women and women of child-bearing age. The guide now includes Web sites for Pennsylvania, Delaware and New York for information on consumption advisories for shared boundary waters. The fish consumption advisories and Fish Advisory Guide have been updated and expanded following a new round of sampling and analysis. Advisory information is available through the agencies and Web sites (see blue box).

To reduce exposure to harmful chemical contaminants when preparing and eating fish species taken from identified waters, it is very important to follow the information provided. The DEP encourages you to consult the Fish Advisory Guide when deciding about eating fish and crabs caught during recreational fishing. 

The Fish Advisory Guide is available by contacting the following:

New Jersey Department of Environmental Protection
Public Access Center—(609) 777-DEP4 or www.state.nj.us.dep

Division of Science, Research and Technology
(609) 984-6070 or www.state.nj.us.dep/dsr/

Division of Fish and Wildlife
(609) 748-2020 or www.state.nj.us.dep/dfw/

New Jersey Department of Health and Senior Services
www.state.nj.us/health

Consumer and Environmental Health
(609) 588-3123 or (609) 777-3373 or
www.state.nj.us/health/eoh/foodweb/fishguid.htm

advisories to guide citizens on safe consumption practices.

Fish consumption advisories are developed through a scientific process that includes collecting samples of fish from waters throughout the state and analyzing them for various chemical contaminants, such as dioxin, polychlorinated biphenyls (PCBs), chlordane and mercury. The contaminant levels in the fish are then evaluated using federal guidelines developed for protecting human health.

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Federal Marine Fisheries Contacts

NOAA National Marine Fisheries Service
www.nmfs.noaa.gov/index.html
Customer Service Center: (888) 872-8862

Atlantic Coast
Recreational Fisheries Coordinator: (301) 713-9505 x178

Fisheries Law Enforcement
Field Offices Brielle: (732) 528-3315 Marmora: (609) 390-8303



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New Jersey Skillful Angler Application

Name _____ Age _____

Address _____

City _____ State _____ Zip _____

Daytime Telephone (_____) _____

Category (check only one):

Adult Junior (under 16 years)

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).

Applicant's Signature

_____ Date _____

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

Mail to: NJ Division of Fish and Wildlife
Skillful Angler Awards Program
P.O. Box 400
Trenton, NJ 08625-0400

Skillful Angler Awards Program

The Skillful Angler Awards Program, designed to supplement the New Jersey State Record Fish Program, now includes two new categories and a photo requirement.

Since January 2004, the angler awards have included a *Catch and Release* category based on length and a *Junior* category for anglers under 16 years old. Also, the awards program now requires that all entries be submitted with a clear, color, side-view photo that allows accurate identification of the species caught. All photo entries become property of the Division of Fish and Wildlife and cannot be returned.

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 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 receives a special commemorative gift 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. For *Adult* and *Junior* categories, fish must be weighed and measured by fishing license agents, tackle shops or authorized Fish and Wildlife fisheries biologists.

The minimum requirements for each saltwater species are listed as follows:

	Adult Weight (lbs.)	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
n/a - not applicable			

Note: The New Jersey State Record Fish Program requires a different application and is based on weight alone. Scale certification documentation and a weighmaster's signature are required. Other rules apply. Visit Fish and Wildlife's Web site at www.njfishandwildlife.com for a complete list of current state records.



New Jersey State Record Marine Sport Fish

Species	Lbs.	Oz.	Year	Angler	Where Caught
Amberjack, greater	85	0	1993	Edwin Metzner	Off Cape May
Barracuda	27	8	1991	Gary Szilagyi	Off Cape May
Bass, black sea	8	2	1992	Tony Cunha	Inshore Wreck
	8	2	1994	John Geddes	Off Pt. Pleasant
Blowfish, N. puffer	1	14	1987	Virginia Patten	Delaware Bay
Blowfish (other)	9	10	1992	Kevin Steward	Delaware Bay
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 1/2"	pt. to pt.	1995	William Dool	Manahawkin
*Crab, blue	9"		1980	Frank Springfield	Delaware Bay
Craker, Atlantic	5	8	1981	Frederick Brown	Delaware Bay
Cunner	1	14	2002	Kevin Mathiasen	80 Mi. SE of Brielle
Cutlass fish	6	11	2002	Mike Green	Mud Hole
Dogfish, smooth	19	8	2000	Michael LaTorre	Pleasantville
Dogfish, spiny	15	12	1990	Jeff Pennick	Off Cape May
Dolphin	63	3	1974	Scott Smith, Jr.	Baltimore Canyon
Drum, black	105	0	1995	George Newett	Slaughter's Beach
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
Kingfish, Northern	2	8	2004	Chester Urbanski	Barnegat Bay
*Kingfish, Northern	2	5	1969	Robert Morton	Off Cape May
Ling (red hake)	11	1	2002	Natalie Jones	Off Brielle
Lobster, American	15	3	2003	William Sharp	Almirante Wreck
Mackerel, Atlantic	4	1	1983	Abe Elkin	Manasquan Ridge
Mackerel, chub	1	9	2002	Kathleen Leso	Off Spring Lake
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	41	0	1984	Stephen Fanelli	Wilmington 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	Albert Jewitt	Mud Hole
Shark, bull	**Vacant**	(Minimum Weight 150 Lbs.)			
Shark, dusky	530	0	1987	Brian Dunlevy	Off Great Egg Inlet
Shark, hammerhead	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, sand tiger	246	0	1989	Richard Brown	Delaware Bay
Shark, s-fin mako	856	0	1994	Christopher Palmer	Wilmington Canyon
Shark, thresher	617	0	2004	Chris Chalmers	Off Cape May
Shark, tiger	880	0	1988	Billy DeJohn	Off Cape May
Shark, white	759	0	1988	Jim Kneipp	Off Pt. Pleasant
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	13	2003	Robert Belsky, Jr.	Little Sheepshead Creek	
Stargazer, Northern	13	0	2000	Jim Ludt	Off Cape May
**Striped Bass	78	8	1982	Al McReynolds	Atlantic City
Striped Bass, hybrid	13	2	2004	James Fowler	Off Brigantine
Sturgeon, Atlantic	82	0	1994	Glen Lasco	Sandy Hook
Swordfish	530	0	1964	Edmund Levitt	Wilmington Canyon
Tarpon	53	0	1982	Jim Klaczekiewicz	Off Sea Bright
**Tautog	25	0	1998	Anthony Monica	Off Ocean City
Tilefish, golden	51	2	2003	Paul Brady	Wilmington Canyon
**Tilefish, gray	10	9	2001	Jim Zigarelli	Sea Girl Reef
Triggerfish	4	10	2004	Paul Kaessler	Shrewsbury Rocks
Tuna, albacore	77	15	1984	Dr. S. Scannapielo	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.)			

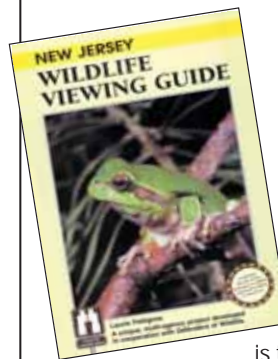
* Historical record
 ** Denotes fish has been certified by the IGFA as a world record

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 www.njfishandwildlife.com.

New Jersey's

FREE Freshwater Fishing Days are Saturday and Sunday, June 11 and 12, 2005.

On these two days, residents and non-residents may fish New Jersey's public fresh waters without a license or trout stamp. All other regulations including size and daily catch limits, remain in effect.



New Jersey Wildlife Viewing Guide

New Jersey Department of Environmental Protection's Division of Fish and Wildlife is proud to offer the New Jersey Wildlife Viewing Guide. The publication of the guide

is the culmination of a two-year project coordinated by the DEP's Endangered and Nongame Species Program to establish a network of viewing sites throughout the state.

The guide beautifully illustrates the rich natural treasures that few people realize exist in the state. Experience the amazing diversity of New Jersey's wildlife and habitats at 87 of the state's best Wildlife Viewing Areas. The 165-page guide is full of color photos and illustrations and provides directions to each site and information on site facilities, best viewing seasons and which animals and habitats can be seen.

Unique to the New Jersey guide is the addition of Wildlife Diversity Tours. In four regions, expanded information is provided on five sites in each region that when experienced through a two to three day trip provide a deeper understanding and appreciation of the ecosystems and wildlife found in the region.

Order yours today.

The creation of the Wildlife Viewing Guide and the development of a Watchable Wildlife Program for New Jersey was made possible in part through grants from the EPA, US Fish and Wildlife Service, National Park Service and Department of Defense. Major funding has been provided through proceeds from the sale of "Conserve Wildlife" license plates.

WILDLIFE VIEWING GUIDE ORDER FORM

Name _____
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Send Check or Money Order for \$10.95 Plus \$3.95 S/H to:

New Jersey Department of Environmental Protection,
 Division of Fish and Wildlife
 Wildlife Viewing Guide
 P.O. Box 400 • Trenton, NJ 08625-0400



Outdoor Skills Workshop for Women

New Jersey's "Becoming an Outdoors-Woman" (BOW) Program is part of a nationwide effort to help women overcome barriers to participation in outdoor recreation by providing opportunities to try new activities. Since it began at the University of Wisconsin in 1991, the program has exploded in popularity. BOW can be found in 44 states and eight Canadian Provinces across North America. New Jersey Division of Fish and Wildlife has been offering BOW workshops since 1995.

Although BOW workshops are designed for women, they offer anyone 18 years old and over opportunities to try new outdoor activities, improve existing skills, and meet other outdoor enthusiasts. The three-day BOW and one-day "Beyond BOW" workshops offer hands-on instruction in hunting, angling, and related outdoor pursuits in a relaxed, non-competitive atmosphere.

All of our instructors have many years of experience afield. They were chosen for their ability to share their knowledge and their belief in encouraging anyone who has an interest to get involved in the outdoors.

To find out more about the BOW program, log on to our Web site at www.njfishandwildlife.com or mail in the coupon below. Those with an e-mail access can sign up to receive the BOW listserv (electronic mail service) announcements. The BOW listserv will send automatic updates about the BOW program and workshop availability. It's simple to subscribe. On the Division's Web site at www.njfishandwildlife.com go to 'Education' on the left side of the homepage. Click on 'Becoming an Outdoors-Woman,' then click 'BOW E-mail list'. Fill out the electronic form and click submit. That's it! A confirmation message will ask you to return an authorization code. Then you'll be set to receive automatic updates about New Jersey Division of Fish and Wildlife's BOW Program.

To be placed on the BOW contact list, complete the coupon at right and send to: New Jersey Fish & Wildlife, 26 Rt. 173W., Hampton, NJ 08827. 



photo: Carolyn Solitys

BOW Outdoor Skills Workshop

Name _____

Address _____

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State _____ Zip _____

E-mail: _____



Sportfish Restoration Program


You probably don't have to be told what fishing means to you. You know how much you value time spent in the great outdoors, time with family and friends on the water, the thrill of battling a trophy.

But, you may not realize how much you mean to fishing. You see, your dollars go directly to help make fishing and boating better in the United States. Without the support of anglers and boaters, there would be a lot less opportunity to enjoy these activities.

And it's as simple as filling your boat with gas, buying your child a new rod, or stocking up on lures before your next trip. You support the Sport Fish Restoration Program through the tax you pay on recreational fishing equipment and boat fuel. Simply by purchasing the things you need for fishing, you are contributing to a partnership which has created one of the most successful conservation programs in the world; a program which has restored fisheries, improved habitat and created fishing and boating access.

Manufacturers pay the tax on the equipment before you purchase it, so you may not have realized your important role in these programs. The bottom line is, every time you buy fishing tackle or boating equipment, you are—in essence—improving fishing and boating.

For more information go to the U.S. Fish and Wildlife Service's Federal Aid in Sportfish Restoration page at: <http://fa.r9.fws.gov/sfr/fasfr.html#A>.

New Jersey anglers can be proud of the contribution they make to the enhancement and conservation of both our own and the nation's sportfish populations. 

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New Jersey State Federation of Sportsmen's Clubs, Inc.

WE WORK TO...

- **PROTECT YOUR INTEREST IN RESPONSIBLE MANAGEMENT OF FISH AND WILDLIFE**
- **PROMOTE CONSERVATION OF NEW JERSEY'S NATURAL RESOURCES**

WE ARE...

"THE FEDERATION"

It's a coalition of hunters, anglers, trappers, recreational shooters and others who have an interest in enjoying—and preserving—the great outdoor opportunities available in New Jersey.

It's an alliance that includes individual sportsmen, local fishing/hunting clubs, statewide groups and chapters of large, well-known sportsmen/conservation organizations.

The members of the Federation have an official say in all policies, recommendations and proposals that the Federation advances.

The members of the Federation have a direct impact on fish and wildlife policies of New Jersey. By LAW the Federation fills six of the 11 seats on the Fish and Game Council.

Visit us at www.NJSFSC.org

The Division of Fish and Wildlife (DFW) in the NJ Department of Environmental Protection (DEP) is the state agency charged with managing all fish, game and wildlife programs in the state. The NJ Fish and Game Council was created by law and empowered to adopt the Fish and Game Code and advise the DEP Commissioner and the DFW on the management of fish, wildlife and habitat. Sportsmen appointees enact wildlife-related law and influence wildlife policy. Each of the Fish and Game Council members selected by the Federation maintains close contact with us to keep us informed and to understand our positions on various issues.

Involvement from interested sportsmen—JUST LIKE YOU—has made a real difference, and will continue to do so.

If you care about

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



If you want to

- Meet others who share similar interests
- Keep informed on current issues affecting NJ sportsmen
- Have fun and participate in Federation-sponsored activities: dinners, conventions, clay target shoots, jamborees, tournaments, etc.

Then get involved!

NJSFSC Membership provides one million dollars of sportsmen liability insurance. Covers hunting, fishing, target shooting anywhere in the U.S or Canada.

Memberships: ___ \$30 Includes monthly newspaper and insurance

___ \$18 Monthly newspaper only

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County _____

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City _____ State _____ Zip _____

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Send with check or money order to:
NJSFSC • P.O. Box 742
Newfoundland, NJ 07435-0742

GET ON THE LISTS!

The Marine Fisheries and Shellfish e-mail lists, that is. This free service will provide you with the latest information about Fish & Wildlife events, public hearings and other matters related to marine resources. And there are six other lists to help you get the most out of New Jersey's fish and wildlife resources. To learn more, visit Fish and Wildlife's Web site at:

www.njfishandwildlife.com/lstsub.htm

New Jersey's 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.

PUBLICATIONS AVAILABLE

The following publications are available by writing:

Nacote Creek

Research Station Publications

P.O. Box 418, Port Republic, NJ 08241

• **Shellfish Growing Waters Classification Charts.** This publication is available free at any shellfish license agent and on-line at www.state.nj.us/dep/watershedmgt/bmw/index.htm

• **NJ Reef News*** leaflet is available free. Send a self-addressed stamped #10 envelope (3 oz. postage) to address above.

• **Party and Charter Boat Directory*** is available on-line only.

• **New Jersey Pumpout Station Directory — 2003–2004 Boating Season Guide.*** Send a self-addressed stamped #10 envelope (2 oz. postage) to address above.

* Also available on Fish and Wildlife's Web site at www.njfishandwildlife.com

