

NJ REEF NEWS

2005 Edition

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A decommissioned Navy tanker will be the first vessel deployed by the Department of Environmental Protection, as part of a new initiative to improve New Jersey's artificial reefs and raise awareness of the reefs' economic and environmental significance.

DEP Will Sink Ship to Enhance Artificial Reef Site for Anglers, Divers

Seeking to improve New Jersey's artificial reefs and raise awareness of their economic and environmental value, the Department of Environmental Protection will deploy a decommissioned Navy tanker on the state's Garden State North reef site off the coast of Harvey Cedars.

New Jersey is a national leader in artificial reef management, and the DEP is committed to enhancing its reef sites to benefit the environment, fishermen, divers and the state's economy," said DEP Commissioner Bradley M. Campbell.

DEP is acquiring the tanker through a \$100,000 appropriation, which also will allow the state to acquire two other decommissioned ships. The state will deploy

the other ships later this year. DEP is placing the three ships at different reefs along the Jersey coast so all residents can enjoy the benefits of these new acquisitions.

Built for the U.S. Navy in 1943, the 170-foot tanker, known as YO-153, had been stationed at Philadelphia Naval Shipyard. Before the tanker is deployed, DEP will supervise a thorough cleaning of the vessel to remove all oils, floatables and other materials that might harm the marine environment. The U.S. Coast Guard then will inspect the cleaned tanker before it is transported to the reef site.

The 1.1-square mile Garden State North Reef Site, approximately 6.5 miles offshore from Harvey Cedars in

-continued p. 4-



New Jersey Department of Environmental Protection
Division of Fish and Wildlife



Bradley M. Campbell, Commissioner Richard J. Codey, Acting Governor

Accomplishments, 1984–2002

Since the inception of the Division of Fish and Wildlife's Reef program in 1984, 3,380 patch reefs have been built on New Jersey's network of 14 ocean reef sites. A patch reef is a several-square-yard to several-acre reef created by sinking a ship or placing a barge load of other material on the sea floor. In 2004, 551 patch reefs were constructed, the most in any single year.

| Reef Material | Patch Reefs Built in 2004 | Total Patch Reefs Built 1984-2004 |
|----------------------|----------------------------------|--|
| Rock | 521 | 1,968 |
| Concrete | 2 | 225 |
| Reef Balls | 14 | 120 |
| Concrete Castings | 9 | 42 |
| Vessels | 5 | 128 |
| Army Tanks | - | 397 |
| Other | - | 500 |
| Total | 551 | 3,380 |

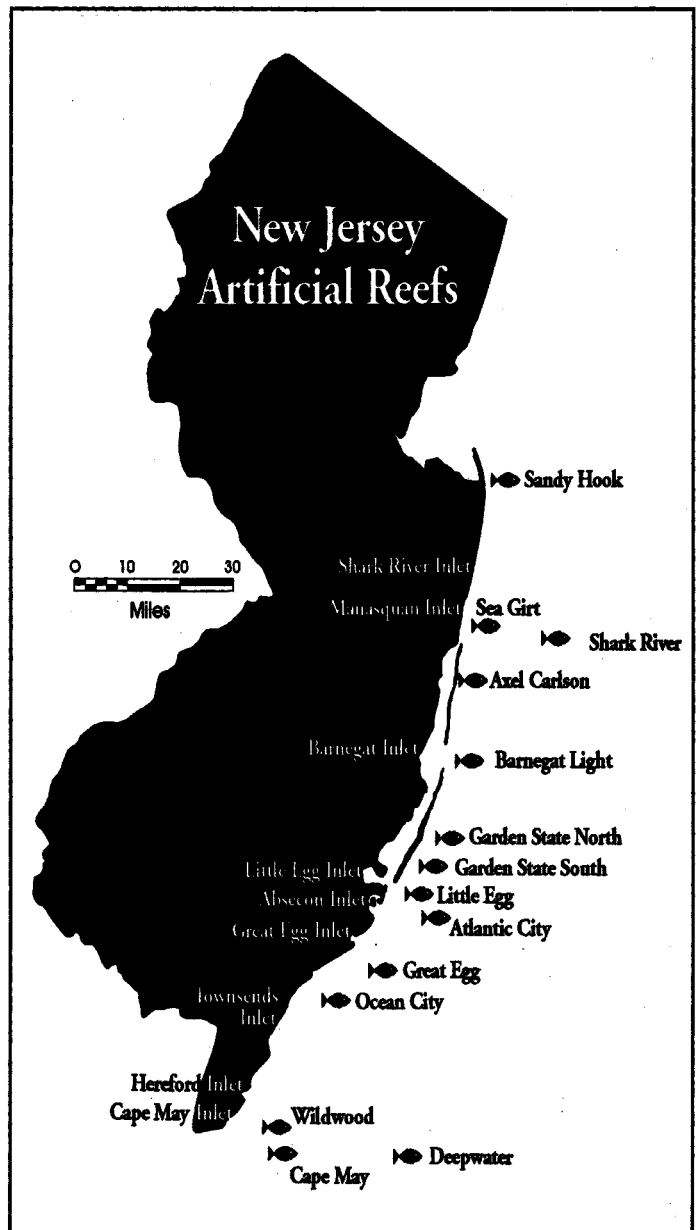
What's in store for 2005?

| | |
|-----------------|-----------------------|
| Earle Pier | Concrete, 18,000 cy |
| Dredge Rock | 750,000 cy |
| Reef Balls | 700 |
| Megan | 70-foot tug |
| Bay King | 110-foot tug |
| YO-153 | 170-foot tanker |
| Vane Brothers | 300-foot tanker barge |
| Research Vessel | 140 feet |
| Lollipop | 60-foot tour boat |

Objectives of the Reef Program

New Jersey's Reef program is administered by the Department of Environmental Protection's Division of Fish and Wildlife. The objectives of the program are to construct hard-substrate, reef habitat in the ocean for certain species of fish and shellfish, new fishing grounds for anglers, underwater structures for scuba divers and economic benefits to the fishing industry.

In constructing and managing reefs, the goal is to spread the benefits of reef resources to as many people as possible. The intent of the program is not to change New Jersey's marine environment, but rather to enhance a small portion, less than one percent of the sea floor, to benefit 150 species of marine life that prefer structured habitat.



New Jersey Reef Supporters Earn Recognition Awards



Mike Nitsche Reef Ball

As an instructional trade carpenter for Southern State Correctional Facility in Delmont, Mike Nitsche has led the prison's Reef Ball construction efforts for the past four years. He and a crew of 10 inmates produce 15 Reef Balls every few days. Each year, the prison fabricates 800 Reef Balls for New Jersey ocean reefs. An ardent angler, Nitsche finds his work rewarding and enjoys seeing the positive results of his efforts in the ocean.

"A lot of people don't realize what's out there and what they can do with it," Nitsche said. "Reefs are top producers for fishermen. Even during slow times, there are usually hot spots around reef structures."



Capt. Steve Nagiewicz

Since 1991, Capt. Steve Nagiewicz has supported New Jersey's Reef Program by raising funds through the local scuba industry, offering comprehensive reef information on his Web site (www.njscuba.com) and by using his dive boat, the Diversion II, during vessel sinkings at reef sites.

He believes the Reef Program helps develop habitat for marine life by augmenting the pre-existing shipwrecks and natural formations diminished over the years by dredges and storms. "Compared with the flat, relatively unproductive, sandy sea floor, reef structures are colonized by great numbers of marine species," Nagiewicz said.

He said he would like to see an even larger number and variety of ships sunk for divers. "I am working on ways to fund the acquisition and cleaning of large Navy vessels. This would really expand diving opportunities in New Jersey."



Capt. Pete Grimбилas

In 1995, the Greater Point Pleasant Charter Boat Association initiated a "ship sinking fund," according to Capt. Pete Grimбилas, chairman of the Association's Reef Building Committee. Since then, the Association has helped deploy on New Jersey's system of reef sites five vessels, 10 Army tanks, hundreds of Reef Balls, a barge load of concrete pipe and thousands of tons of dredge rock. In addition to educating the public about the benefits of reef building, the Association contributes to the state's Reef Program money from fishing tournament entry fees and fund-raising events as well as donations from corporations and individuals.

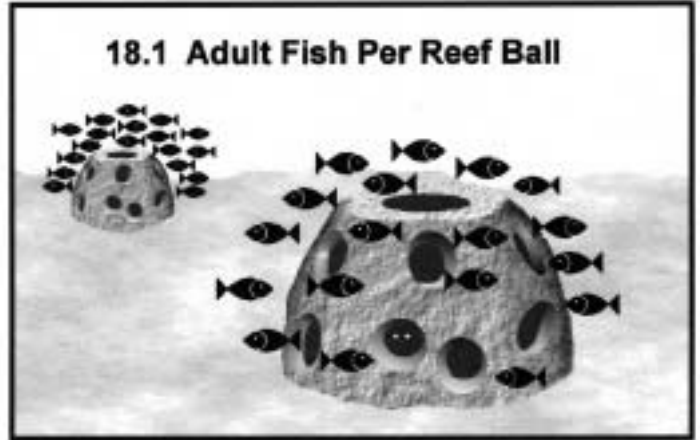
An avid fisherman since age 2, Grimбилas has run his own charter boat since 1982. He feels a responsibility to support his passion for fishing. "If fishermen just keep taking from the ocean, sooner or later, there won't be anything left to take. Reef building is a way we can all give something back," Grimбилas said. "The habitat we establish produces a haven for fish to flourish."

How Many Fish Inhabit a Reef Ball?

Reef Balls are commercially designed reef habitats that resemble igloos with lots of access holes. They are made entirely of concrete, weigh 1,600 pounds each and are relatively small, 4 feet in diameter and 3 feet high—roughly the size of a card table.

Reef Ball habitats are fabricated at New Jersey's Southern State Correctional Facility in Delmont, Cumberland County. During the past five years, the Reef Program has deployed more than 3,400 Reef Balls on nine reef sites. They are spread out on the sea floor, each one functioning like a miniature reef, supporting its own community of fish and marine life.

To find out how well they work as homes for fish, divers counted fish on 276 Reef Balls during a three-year period. The surveys were conducted on Reef Balls that had been on the sea floor (soak time) for various lengths of time, between 6 months and 50 months. The number of fish counted per ball ranged from 0 to 74 and averaged 18.1 adult fish. Sea bass were the dominant species (15.6 per ball), followed by tautog (1.0), porgy (0.8) and bergall (0.3). Ten other species were present in smaller numbers.



The divers reported that many fish swam away when approached; for this reason, the fish counts undoubtedly underestimate the actual number of fish living around an undisturbed habitat. Also, reef sites are subjected to heavy pressure from fishing. Reef Ball habitats not subjected to fishing would be expected to have much larger numbers of fish than those surveyed by the divers.

DEP Will Sink Ship *—continued from p. 1—*

Ocean County, is composed of more than 44,000 cubic yards of vessels, tanks, specially designed Reef Balls and other materials. In 2003, it was one of five artificial reefs where New Jersey deployed 250 decommissioned New York City subway cars.

The vessel will be sunk by cutting holes in the hull and opening the engine room sea valves, which will allow the ship to take on water slowly. This vessel is the 134th ship to be sunk on New Jersey's artificial reef sites.

Artificial reefs play a key role in supporting New Jersey's marine fishing and diving industries, which contribute more than \$850 million to New Jersey's economy each year.

The DEP initiated its ocean reef building program in 1984, establishing over time a network of 14 reef sites from Sandy Hook to Cape May that encompass a total of 25 square miles of sea floor. The state has made more than 3,500 deployments of various reef materials—more than any other state in the country—including ships and barges, massive undersea ridges from six million tons of rock, and thousands of fabricated concrete reef units.

For more information on New Jersey's artificial reef program, visit the DEP's Web site at www.njfishandwildlife.com.

Reef-Related Web and E-Mail Sites

njfishandwildlife.com

NJ Division of Fish and Wildlife,
Reef program information

njscuba.net and njscuba.com

Reef construction, reef studies, photos

gotosnapshot.com

Reef shipwrecks, reef structures,
underwater photos.

pegdiver@monmouth.com

Scuba diving, current events, regulations

realfish-underwater.com

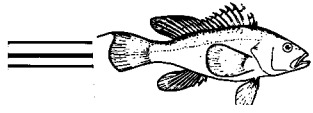
Diving, video, marine art

wreckvalle@aol.com

Diving, current events

scubanj.org

NJ Council of Dive Clubs



New Wrecks in '04



Allan R.—a 110-foot tug sunk on Cape May Reef on March 26, 2004, at GPS (Global Positioning System) coordinates 3851.475 7442.029; sponsored by the Ann E. Clark Foundation.



Guido's Tug—a 110-foot tug sunk on Cape May Reef on March 26, 2004, at GPS coordinates 3851.456 7442.016; sponsored by South Jersey Fishing Center.



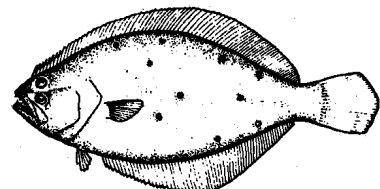
Ray Vandegrift—an 85-foot commercial fishing trawler sunk on the Wildwood Reef on March 26, 2004, at GPS coordinates 3857.71 7440.99; sponsored by family and friends.



Fallen Friends—a 40-foot deck barge sunk on the Wildwood Reef on Aug. 23, 2004, at GPS coordinates 3857.71 7440.99; sponsored by bassbarn.com and Deep Foundations.



Veronica M—a 110-foot tug sunk on the Axel Carlson Reef Site on Nov. 10, 2004, at GPS coordinates 4003.104 7359.034; sponsored by Herb Segars in honor of his wife Ronnie.



2004 Reef Adoptions

Jack Clements Reef

The Strathmere Fishing and Environmental Club sponsored a Reef Ball reef on the Ocean City Reef Site.

Alan Ballinger Reef

Family and friends of Alan Ballinger sponsored a Reef Ball reef on the Great Egg Reef Site.

Michael Capizola Reef

The Capizola family sponsored a Reef Ball reef on the Great Egg Reef Site in honor of Michael Capizola.

Jerry Togman Slemmer Reef

Carol and Suzanne Slemmer and family and friends sponsored a Reef Ball reef on the Great Egg Reef Site in memory of Jerry Slemmer.

Marlin and Tuna Reef

The Ocean City Marlin and Tuna Club sponsored a Reef Ball reef on the Great Egg Reef Site.

Fisherman's Reef II

The Atlantic County Fisherman's Association sponsored a Reef Ball reef on the Great Egg Reef Site.

Frank Burt Smoot Conservation Reef

Friends of Frank Smoot sponsored a Reef Ball reef on the Great Egg Reef Site.

the bassbarn.com Reef V

The bassbarn.com sponsored a Reef Ball reef on the Great Egg Reef Site.

Jim Ivins Reef

Friends of Jim Ivins sponsored a Reef Ball reef on the Great Egg Reef Site.

Robert Almeda Reef

Family and friends sponsored a Reef Ball reef on the Great Egg Reef Site.

GHMTC Reef

The Great Egg Harbor Marlin and Tuna Club sponsored a Reef Ball reef on the Ocean City Reef Site.

Marut Peak

The Marut family adopted a rock mountain on the Axel Carlson Reef Site.

2003 Adoption Omission

Marlin and Tuna Reef

The Beach Haven Marlin and Tuna Club sponsored a Reef Ball reef on the Little Egg Reef site.



Ronnie and Herb Segars in front of the Veronica M, a 110' tug that was sunk for Ronnie's belated 50th birthday present.

Divers, Anglers Can Provide Important Information about Reefs

New Jersey has a big reef network out there under the waves of the Atlantic Ocean, and marine biologists at the DEP's Division of Fish and Wildlife are asking divers and anglers to help them learn more about how reefs function.

Divers and anglers can add to biologists' knowledge of New Jersey's reefs by sharing their observations and answering the following questions:

- Have you caught a striped bass on any reef site? If so, how many and which reefs?
- Have you fished on the rock mountains on Shark River Reef Site? If so, please provide details about your fishing experiences there.
- If you have dived on the rock mountains on Shark River Reef Site, what fish and marine life have you observed?
- How does fishing success on the Ocean City Reef Site compare to other reef sites?
- On Sandy Hook Reef, is tautog fishing better on rockpiles or concrete?
- Describe structural deterioration you have observed on reef shipwrecks while diving.

To submit your responses, call (609) 746-2020 or mail them to the Division of Fish and Wildlife, P.O. Box 418, Port Republic, NJ, 08241-0418.

New Reef Site

The Townsends Inlet Reef Site is a new reef site located 3.8 nm southeast of Townsends Inlet. The site encompasses 0.5 nm² of sea floor and has a depth range of 49 feet to 66 feet. The inshore portion of the reef site will be a drift fishing area; the offshore portion will be reserved for vessels to accommodate diving.

Q and A

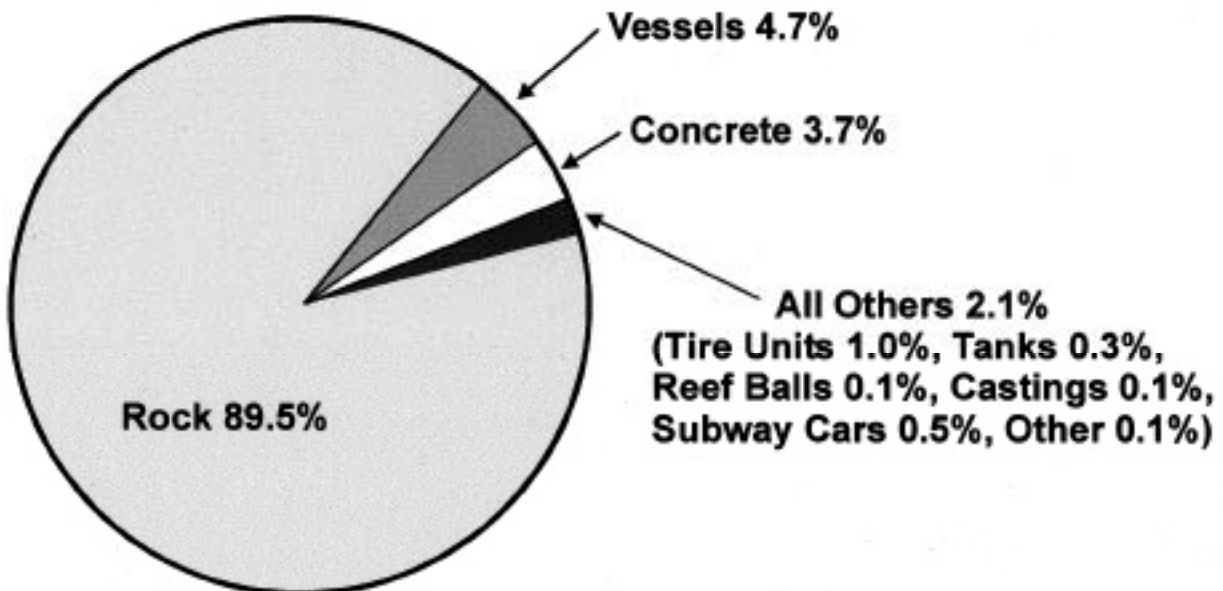
Q: How many fishing and diving reefs have been built in New Jersey?

A: Over 3,000.

Q: How do I find them?

A: The updated Guide to Fishing and Diving New Jersey Reefs can provide all the information any diver or angler might need. You can find an order form on page 12.

The percentage of materials by volume deployed on New Jersey's reef sites as of 2004

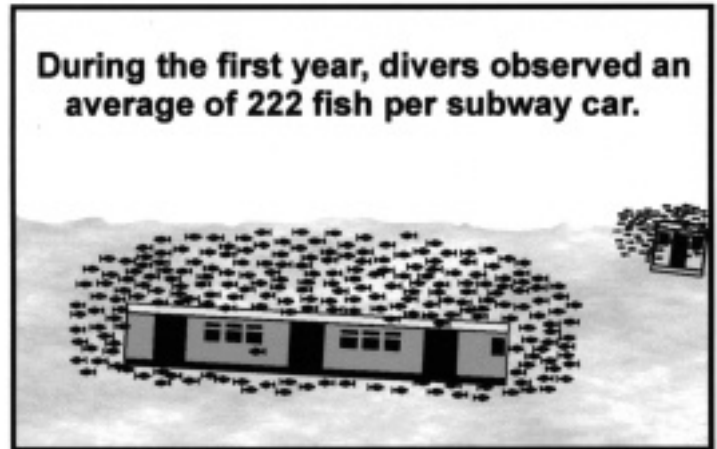


Divers Aim to Find Out How Many Fish Live on a Subway Car

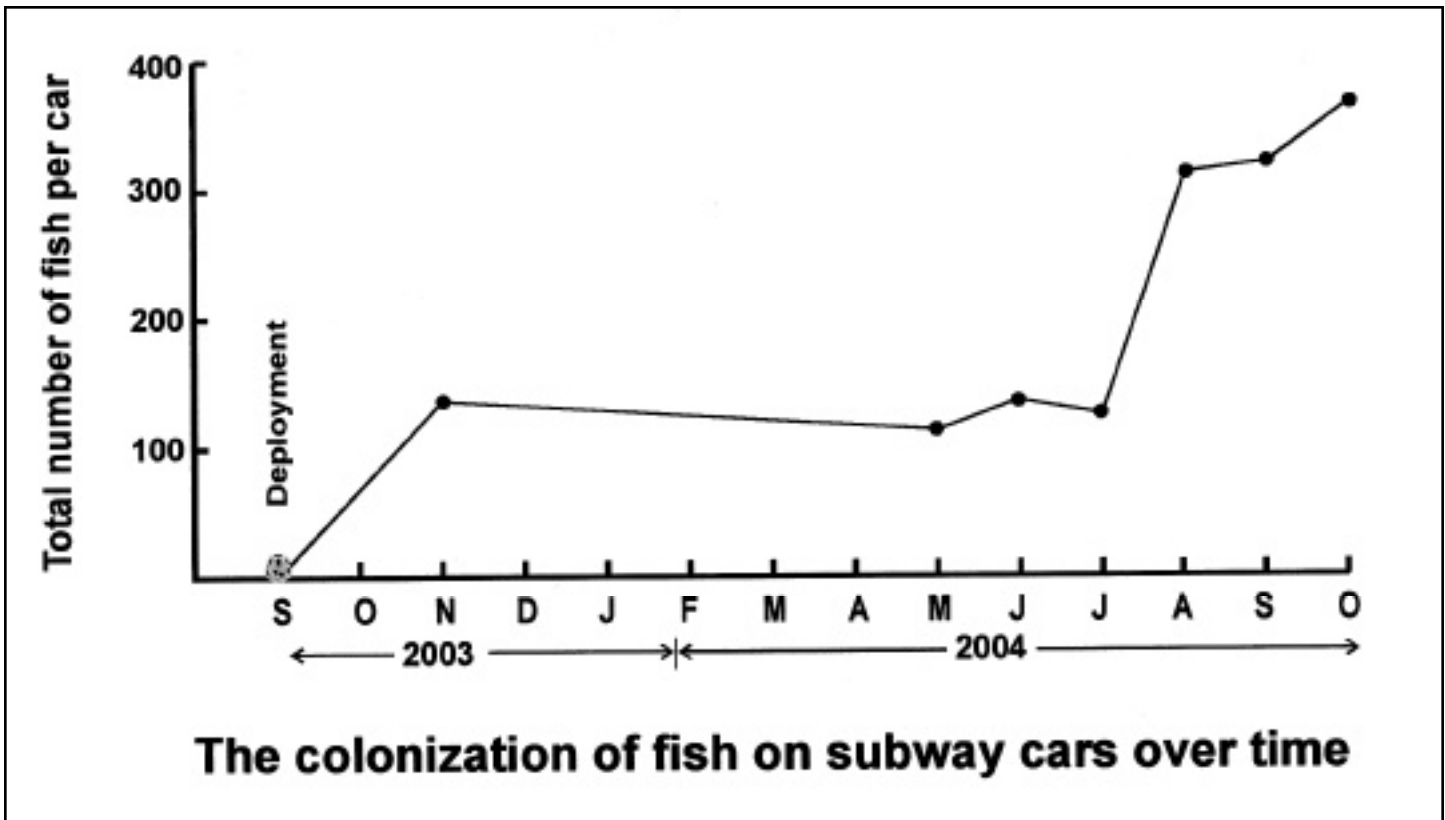
Divers are counting fish living on subway cars on the Garden State North Reef Site, near Long Beach Island. A total of 250 subway cars were deployed on five reef sites in 2003. The study is still in its preliminary phase, but so far counts have been made on 13 subway cars during the past year.

In their first count in November 2003, divers discovered 134 fish had already colonized a subway car deployed fewer than two months earlier. Throughout the spring and early summer, fish numbers remained at that same level. But in August, the population grew to more than 300, reaching a peak of 367 by October (see graph). Subway-car fish populations are expected to increase during the next couple of years, until a full community of invertebrates—such as mussels, barnacles, coral, anemones and 150 other species—colonizes the surfaces of the cars.

In October 2004, black sea bass comprised 72 percent of the subway-car population, followed by tautog at 16 percent and scup at 7 percent. During



the year, a dozen species of fish were observed on the subway cars. Both sea bass and tautog prefer ledge and cavern habitats. The internal spaces of subway cars provide such habitat, with easy access through doors and windows.





Nathan Figley displays double-header triggerfish from a sunken tank.



Capt. Jim Scott lifts a sea bass over the rail.

Results are in from Sea Bass Tagging Study

Between 1995 and 2003, the DEP's Division of Fish and Wildlife tagged 16,476 black sea bass along the New Jersey coast. Approximately half the fish, which included all sizes, were tagged from a research vessel; the other half were throwbacks under the legal size limit supplied by anglers on party boats. The plastic tags resemble a small strand of colored spaghetti; they are inserted just below the dorsal fin.

As of December 2003, 1,086 fish were recaptured and reported. More than 95 percent of the sea bass tag returns came from rod-and-reel anglers; less than five percent came from commercial fishermen.

Where did the fish go?

Almost 81 percent of the reported sea bass were recaptured within 10 nautical miles of their tagging location. Even for fish at large for 601 to 1,000 days, more than 52 percent were still within 10 nautical miles of where they were tagged. Since sea bass head for offshore waters in the winter and migrate inshore during the summer, these data indicate that many fish return to the same general area. Between

201 and 400 days after tagging, 10 percent of the tag returns were beyond 50 nautical miles and by 601 to 1,000 days, 14 percent of the returns traveled more than 50 nautical miles. During the study, only 10 recaptured fish, or one percent, traveled more than 100 nautical miles.

Of 20 fish reported outside waters off New Jersey, eight were caught to the north (New York and Rhode Island) and 12 were caught to the south (Maryland, Virginia and North Carolina). Nine fish were recaptured in deep, offshore waters, all during the cold-water months from January to April.

What was the tag return rate?

During the study, the overall tag return rate, which is the number of recaptured fish divided by the number tagged, for all sizes of fish and all time periods was 6.6 percent. The return rate declined rapidly over time as follows:

| | |
|-----------------|-------------|
| Same year | 5.0 percent |
| One year later | 1.6 percent |
| Two years later | 0.3 percent |

—continued p. 10—

Tagging *(continued)*

The tag return rate also depended on the size of the fish tagged, as the following data show:

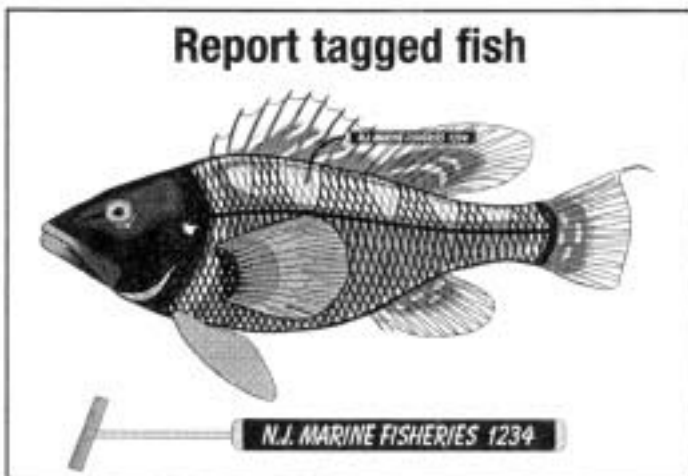
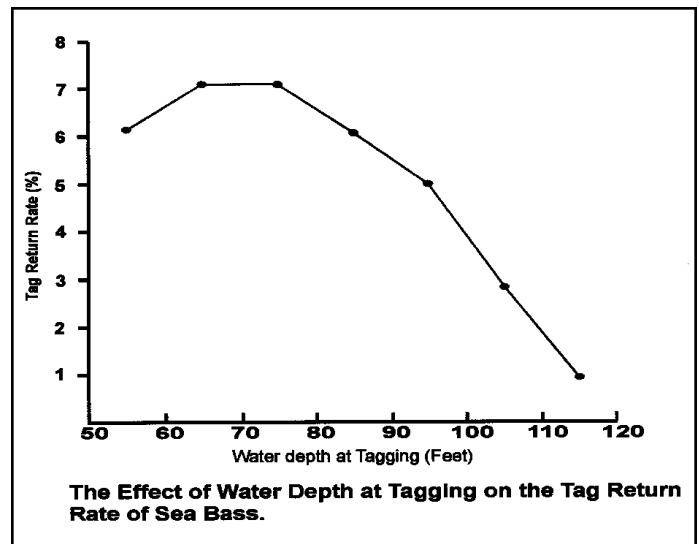
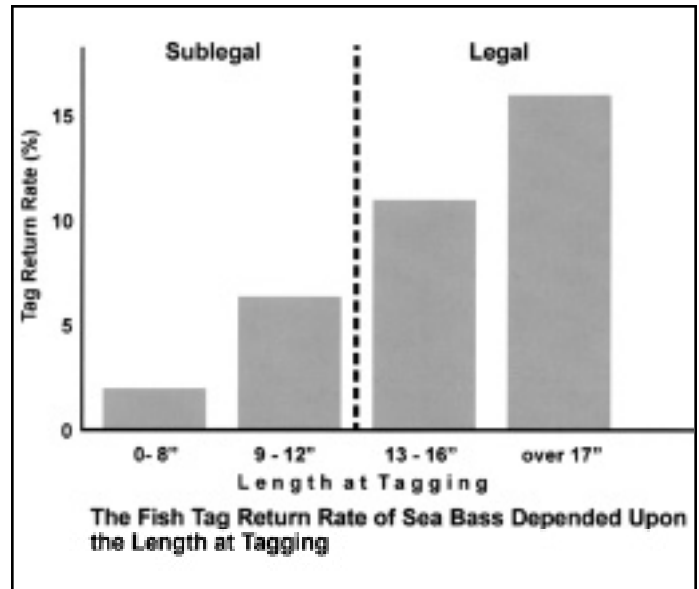
| | |
|---------------------|--------------|
| Less than 8 inches | 2.0 percent |
| 9 to 12 inches | 6.3 percent |
| 13 to 16 inches | 11.0 percent |
| More than 17 inches | 15.9 percent |

The differential could be attributed to a higher natural mortality of small fish and anglers' reluctance to record and report the tag numbers of small fish that had to be released. Many fishermen likely did not report the tagged fish they caught, so it is possible that the actual rate of recapture is much higher than the tag return rate recorded.

How does depth affect the survival of released fish?

Sea bass have an air bladder, which enables them to maintain stability and proper buoyancy at any depth. However, when a fish is reeled up from the bottom, the air bladder cannot adjust to drastic changes in water pressure quickly enough. As the fish is reeled to the surface, the decrease in water pressure causes the air bladder to inflate far beyond its proper size, triggering severe physiological problems for the fish. As water depth increases, decompression raises the fish's stress levels, making it more difficult for the fish to submerge after it is released.

Tag return data indicate that problems begin at fishing depths around 90 feet and accelerate as depth increases. The slope of the graph (right) suggests that hook-and-release mortality may be quite high at greater depths.



To improve the chance of survival, fish should be handled quickly and returned to the water as fast as possible. A fish should be dropped into the water with its head facing down. If the fish floats on the surface, a few nudges with the tip of a fishing rod often stimulate it to swim down. However, tagging records show that some fish which float away do recover eventually and survive.

The only fishing method that is guaranteed to work year after year is catch and release.

— The Wise Old Angler

2004 Reef Habitat Sponsors



Friends of Dennis Kane sponsored the Dennis Kane Reef.

Barbara Newins sponsored the Joseph Rue Reef in his memory.

Richard and Angela Roth sponsored the Ricky Roth Reef.

Bill Stoppel sponsored Stoppel's Reef.

Edward Stevenson sponsored Big Ed Reef.

Capitol City Dive Club sponsored the Capitol City Reef.

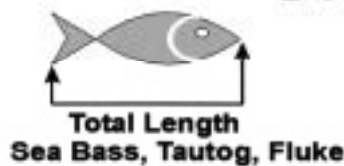
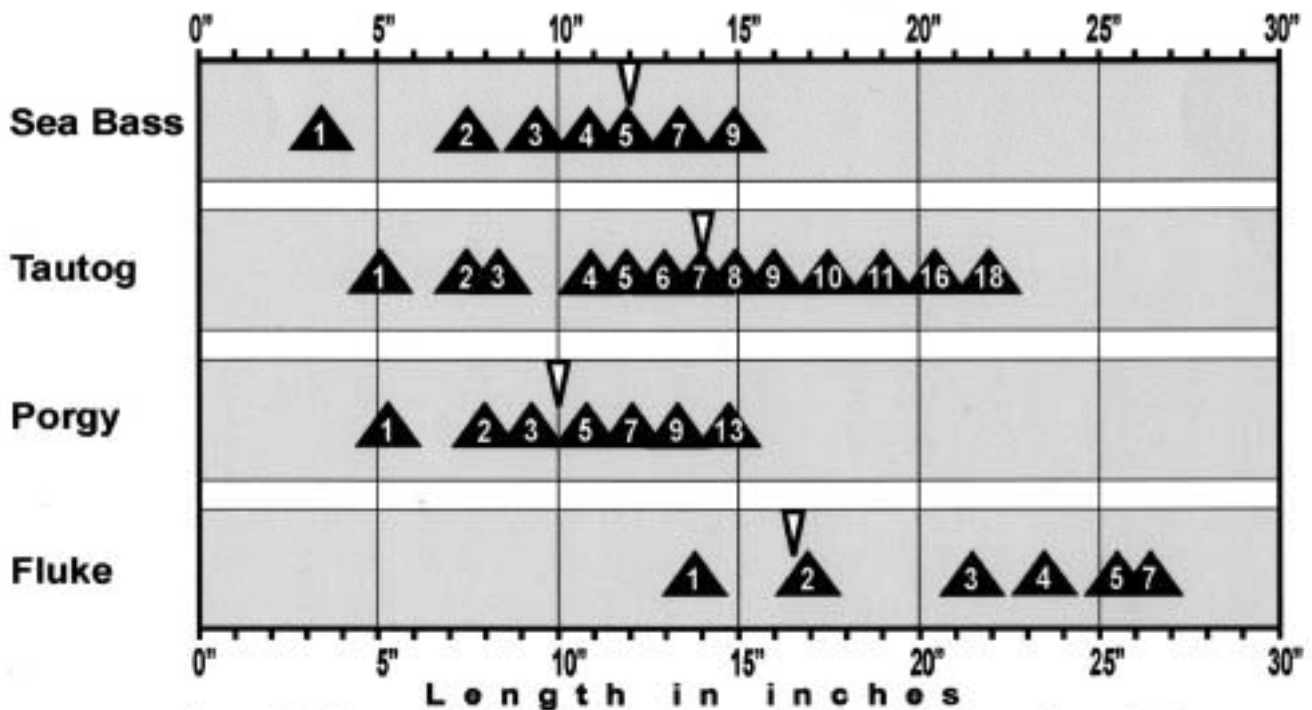
Ted Groesbeck sponsored the Teddy G Reef.

Robert Casale sponsored the Ralph Casale Reef.

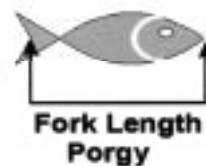


Bill Kleimenhagen displays a monster porgy from the Barnegat Light Reef.

How Old Is that Fish I Caught on the Reef?



2005 Legal Size = ▽
Age in Years = ▲



Updated 2nd Edition Now Available

The New Jersey Reef Program's Official Guide to Fishing and Diving New Jersey Reefs

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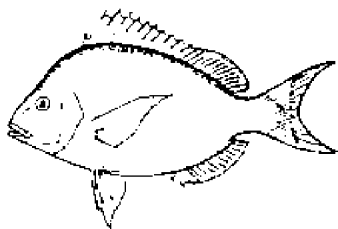
Enclose check or money order for \$24.65 per book
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