NJ REEF NEWS

2009 Edition

Department of Environmental Protection Postpones Deployments of Stainless Steel Subway Cars

The New Jersey Department of Environmental Protection (DEP) recently announced that the state would postpone future deployments of stainless steel subway cars. During a scuba dive performed by the DEP's Division of Fish and Wildlife in November at the Atlantic City Reef, four of five subway cars surveyed exhibited significant structural damage. In light of this information, another dive was executed four weeks later at a different grouping of stainless steel subway cars within the Atlantic City Reef. Of the two stainless steel subway cars surveyed, both exhibited similar damage. The cause of damage to the stainless steel subway cars is unknown and further analysis is required.

The stainless steel subway cars were obtained free of cost from New York City Transit Authority and have been deployed as reef material on both the Atlantic City and Cape May Reefs. Since the beginning of 2008, New York City Transit Authority has made 1,625 subway cars available for use in artificial reef programs. Other participating

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New Jersey Department of Environmental Protection

Division of Fish and Wildlife

Mark N. Mauriello, Acting Commissioner *Jon S. Corzine, Governor*

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states include Delaware, Maryland, Virginia, South Carolina and Georgia. To date, a total of 119 stainless steel subway cars have been deployed off New Jersey.

To determine the extent of damage, New Jersey's Reef Program will be scheduling a high resolution side scan sonar survey at the Atlantic City Reef and additional scuba dives at the Cape May Reef to further assess the cars' condition. In addition to these surveys, New Jersey will work with other states that received subway cars to determine if they have observed similar structural damage. Previously deployed "Redbird" subway cars which were extensively monitored, did not exhibit these damage characteristics.

Objectives of the Reef Program

New Jersey's Reef Program is administered by the Department of Environmental Protection's Division of Fish & 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.

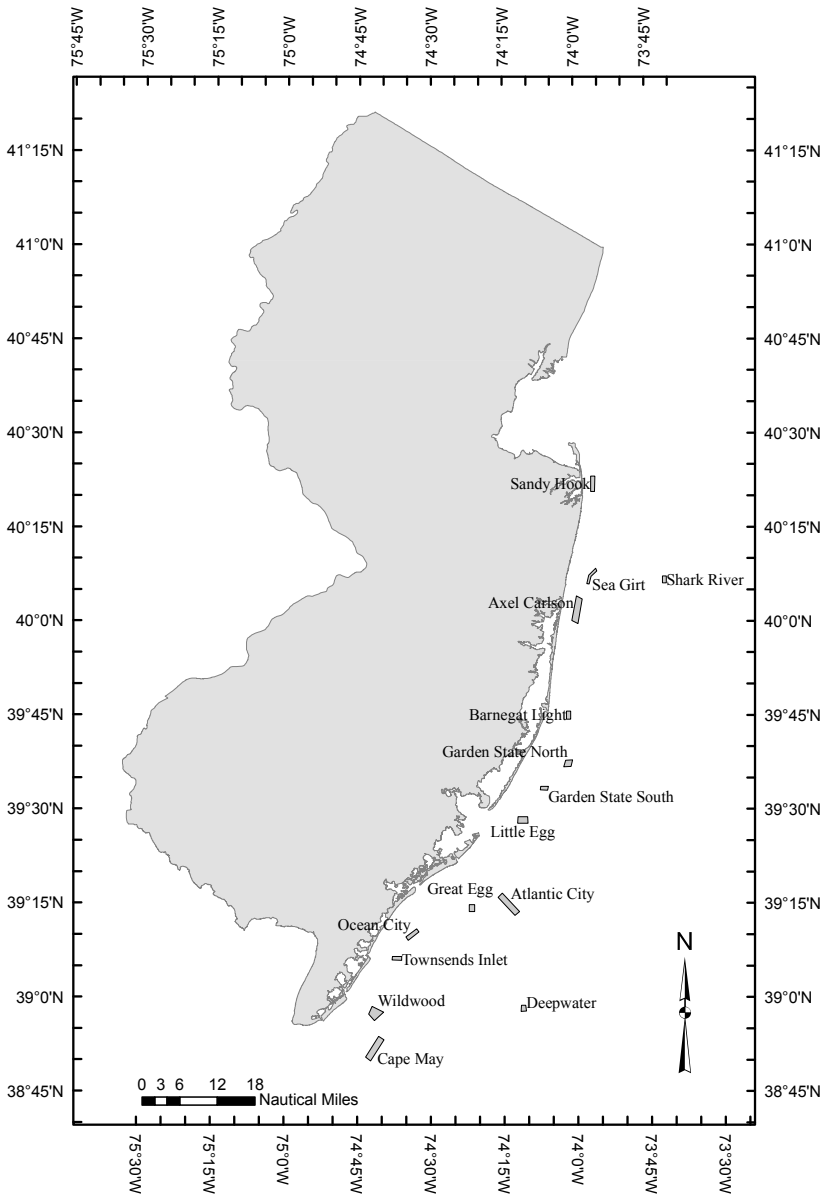
The reefs are constructed and managed to benefit as many people as possible. The intent of the program is not to change New Jersey's marine environment, but rather to enhance a small portion, less than one percent, of the sea floor, to benefit 150 species of marine life that prefer structured habitat.

What's in store for 2009

The following materials are tentatively scheduled for deployment on New Jersey reefs in 2009:

Rock	500,000 yd^3
Reef Balls	250 - GSN
	250 - GSS
Subway Cars ???	160 - SR
	160 - GNN
	160 - DW
Vessels	1 - Surf Clam

New Jersey's Reef Network



2008 Reef Adoptions

"Michael 'Mickey' W. Sagan Memorial Reef"

A demolition debris reef sponsored by friends and family was constructed on Sea Girt Reef.

"Wasabi Reef"

Two tank reefs dedicated to family and friends were constructed by Captain Arthur and Kelly Stokes on the Axel Carlson Reef.

"Barnegat Fishin' Hole Reef #5"

A reef ball reef dedicated to the memory of Melanie Boytos (Fisher Queen) was constructed on the Barnegat Light Reef.

"Barnegat Fishin' Hole Reef #4"

Two subway car reefs dedicated to the memory of Carol Evans were constructed on the Garden State North Reef.

"5 Bitts Reef"

A tank reef sponsored by family in memory of Robert J. and Rosaline Bittle was constructed on the Little Egg Reef.

"Mark R. Stroud Memorial Reef"

Three tank reefs dedicated by family and friends were constructed on the Little Egg Reef as a lasting tribute to his love of sportfishing.

"Roy C. Titus Memorial Reef"

Two tank reefs sponsored by family and friends were constructed on the Cape May Reef.

2008 Reef News Correction

"The Alfred A. Klus Mermaid Reef"

Three tank reefs sponsored by family were constructed on the Ocean City Reef.

The Reef Programs Accomplishments
1984 - 2008

Since the inception of the Division of Fish and Wildlife's Reef Program in 1984, 4,030 patch reefs have been built on New Jersey's network of 15 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 reef material on the sea floor. In 2008, 129 patch reefs were constructed.

Reef Material	Patch Reefs Built in 2008	Total Patch Reefs Built 1984 - 2008
Rock	-	2378
Concrete	5	261
Reef Balls	4	159
Concrete Castings	-	64
Vessels	4	155
Army Tanks	-	397
*Other	116	616
Total	129	4,030

*subway cars, telecommunications cable, steel frames, tire units

New Wrecks in 2008

Trevor Dixon Memorial Reef - A 47-foot crew boat was sunk on the Sea Girt Reef on January 8, 2008 at DGPS coordinates 40° 07.931' 73° 56.373'. The Belmar Chamber of Commerce sponsored the vessel.

Ed Bogart Memorial Reef - A 51-foot NYC fire boat was sunk on the Sea Girt Reef on August 8, 2008 at DGPS coordinates 40° 07.829' 73° 56.376'. Trudy Stetter and friends sponsored the vessel.

The Gus Grafas Memorial Reef - A 100-foot deck barge was sunk on the Axel Carlson Reef on May 29, 2008 at DGPS coordinates 40° 02.970' 73° 59.372'. Larry Grafas, Jr. sponsored the vessel.

Lucky 13 Reef - A 80-foot commercial trawling boat was sunk on the Cape May Reef on January 9, 2008 at DGPS coordinates 38° 53.237' 74° 40.545'. The BASSBARN.COM sponsored the vessel.

After more than 40 years of dedicated service with the Bureau of Marine Fisheries, Carlson steers a new course

Jeff Carlson, whose institutional knowledge of New Jersey's marine fisheries goes unmatched, retired from State service in August 2008 following a 40-year career with the Division of Fish and Wildlife.

During the first 20 years of his career, he participated in projects that focused on the physical and chemical properties of ocean and estuarine water and the restoration of striped bass stocks. However, his most outstanding accomplishments occurred when he worked exclusively for the Reef Program during the mid-1980s. During that time he organized reef deployments, canvassed dock yards for potential reefing vessels, inspected materials and wrote informative articles. He can be credited as being a major part of the Reef Program's success.

His ability to quickly analyze situations and make tough decisions made him a most valued member of the Reef Program team. On more than one occasion, his ability to think fast on his feet and remain calm prevented a bad situation from becoming worse.

In addition to these qualities, he was an excellent supervisor. Over the course of his career he supervised technicians and countless hourly and seasonal employees. Being a natural leader, his supervisory style encouraged staff to go above and beyond.

Always concerned with safety, as Captain of the Reef Program's various research vessels, there was never one recorded accident during hundreds of field excursions under his watch. He was always cognizant of his surroundings and had excellent local knowledge of the waters from Sandy Hook to Cape May.

In his retirement he plans on spending quality time with his wife Nancy, sailing, fishing, clamming and crabbing near his home on Barnegat Bay. If you see him out the bay thank him for all his good work.

Jeff Carlson will be sorely missed by the Reef Program.

What determines the location of reef material?

Have you ever asked yourself why does Sandy Hook Reef get so much dredge rock material? Or, why does Cape May Reef receive so much demolition debris? There are two main factors that determine the location of reef materials: the distance from the ports of New York and Philadelphia and the depths of the individual reef sites. Most of the dredge rock material and concrete we receive originate in the ports of New York and Philadelphia. It is cost effective for the contractors to place their material on the reef sites closest to these ports. Whereas, the depth range of a reef site and the maximum clearance dictated by our reef construction permit determines what type of material can be placed there. For example, the Little Egg (LE) Reef site has a narrow depth range of 50-60 feet and the maximum allowable clearance is only 50 feet. This means any reef material deployed on LE Reef must not exceed 10 feet in height in its deepest sections. Therefore, the only acceptable reef materials on LE reef are low-profile, such as deck barges, tanks and reef balls.

Within an individual reef site you may find an anchor section and a portion recommended for drift fishing. A drift fishing area consists of demolition debris and/or reef balls spread out on the ocean

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floor, and you will find larger vessels and tanks in the anchoring section. There are several reasons why we design a reef this way. Larger sunken vessels and tanks provide excellent diving opportunities and can accommodate larger vessels to anchor on. In a drift fishing area you can find several acres of dispersed reef material, depending on the reef site, which makes drifting over reef structure very productive for fishermen, yet potentially dangerous for divers.

Whether you are a novice or an experienced wreck fisherman or a diver looking for a lobster dinner, there are many opportunities for you within the New Jersey artificial reef network.

Where Have All the Reef Balls Gone?

During the summer of 2007, a total of 500 prefabricated reef ball units were deployed on the Ocean City (OC) and the Wildwood (WW) reefs. The designed habitats, similar to small igloos in shape, are constructed at the Southern State Correctional Facility, located in Cumberland County. Transportation from the prison to the reef sites was provided by North Star Sea Tow. Fabrication and transportation of the habitats to the reefs are funded through Federal Aid to Sportfish Restoration monies, which are acquired through a federal excise tax on sport fishing equipment, as well as donations from private individuals and fishing clubs.

Three locations on the OC Reef and four locations on the WW Reef were chosen for the reef ball deployments. The reef balls are dispersed around each location making them ideal spots for drift fishing.

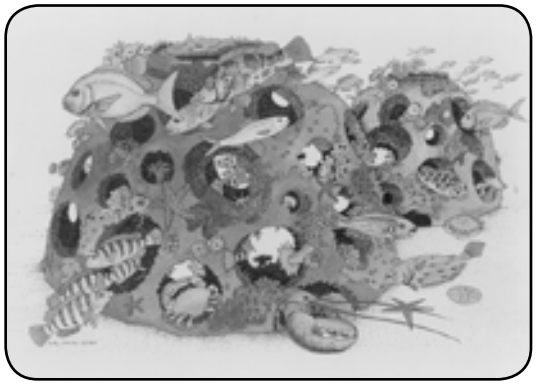
Reef ball locations on the OC Reef:

39º 09.750' 74º 34.750'
39º 10.900' 74º 32.900'
39º 10.900' 74º 32.725'

Reef ball locations on the WW Reef:

38º 57.900' 74º 40.375'
38º 57.780 74º 40.400'
38º 57.600' 74º 40.500'
38º 57.700' 74º 40.350'

During the winter of 2008, a total of 330 reef balls were deployed on the Little Egg (LE) and Great Egg (GE) reefs. The fabrication of the reef balls was postponed due to funding delays, therefore the yearly allotment of 500 reef balls was unattainable.



Two locations on both the LE and GE reefs were chosen for the reef ball deployments.

Reef ball locations on the LE Reef:

39º 28.500' 74º 10.500'
39º 28.400' 74º 10.800'

Reef ball locations on the GE Reef:

39º 14.300' 74º 21.700'
39º 14.400' 74º 21.500'

Release Some Pressure and Vent

by Jennifer Resciniti

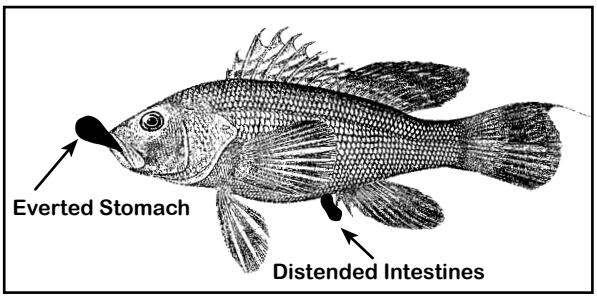
All ray-finned fishes have an organ, similar to lungs, called a gas bladder, also known as an air bladder or swim bladder. The gas bladder is a thin-walled sac that functions as a hydrostatic organ. It regulates itself accordingly to ambient pressure, allowing fish to remain neutrally buoyant, whether they ascend or descend, without having to waste any energy in swimming. The volume of gasses found in the bladder varies between depths.

When a fish swims deeper, the surrounding water pressure increases. The increased pressure compresses the gas within the bladder. The opposite is true of a fish swimming towards the surface, where the amount of gas increases and the bladder inflates due to a decrease in water pressure. In order for the fish to remain neutrally buoyant the bladder regulates the amount of gas contained within.

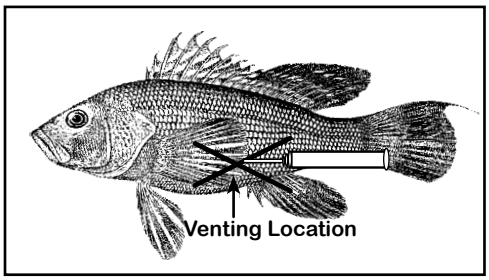
The process works smoothly until a fish is swiftly reeled from the seafloor. The gas bladder expands rapidly due to the decreased water pressure at the surface. The rapid change in pressure makes the fish unable to expel the air. Thus, the air gets trapped and prevents the fish from regaining its balance, occasionally triggering severe physiological problems.

A released fish will have a better chance at survival if it is handled quickly and returned to the water as soon as possible. It is best to place the fish back 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 should be enough to stimulate it to swim down.

A technique called venting can be used if the pressure change causes severe damage to the fish. Only a fish that appears to be bloated and is floating at the surface or a fish displaying an everted stomach or distended intestines should be vented. These conditions occur if the expansion is too great, resulting in a rupture of the gas bladder. The gases then escape into the body cavity increasing the pressure on organs. If a fish is released in this condition it will merely float away and become easy target for predators or die from exposure to the elements.



Venting releases gases from the body cavity eliminating pressure on internal organs, allowing the fish to overcome buoyancy problems and swim down to the proper depth. There are tools fishermen can buy designed specifically for venting fish, but hypodermic needles with the plunger removed or a 16-gauge hollow needle may also be used.



To release the gas hold the fish gently, but firmly, on its side. At a 45-degree angle and 1-2 inches from the base of the pectoral fin insert the needle until the gas is released. If the pressure within the body cavity is severe, apply gentle pressure on the abdomen, which will aid in the release of gas. Be careful not to insert the needle too far, as this may cause damage to other organs. Make sure to clean the venting tool with bleach between uses.

Never puncture the stomach coming out of the mouth or the intestines coming out from the anus, which can prove fatal. Proper venting increases the post-release survival of the fish. Within a few hours of venting the organs will return to their proper location.

Reef Site Statistics

Reef Site	Size (sq. Miles)	Distance Offshore (NM)	Depth Range (ft.)	Number of Patch Reefs
Sandy Hook	1.4	1.4	40-60	970
Shark River	0.7	14.0	119-128	1261
Sea Girt	1.3	3.5	57-75	124
Axel Carlson	4.0	2.1	66-82	464
Barnegat Light	0.9	3.0	46-58	151
Garden State North	1.1	6.5	66-83	157
Garden State South	0.6	5.1	57-63	88
Little Egg	1.5	3.8	48-60	75
Atlantic City	4.0	8.5	55-94	181
Great Egg	1.0	7.0	47-70	64
Ocean City	0.8	4.5	53-66	90
Deepwater	0.7	25.1	90-125	58
Townsends Inlet	0.5	3.8	45-70	21
Wildwood	2.1	4.5	40-63	66
Cape May	4.5	8.5	50-73	262

The volume (yd^3) of reef materials deployed on reef sites by material type and location, 1970-2008.

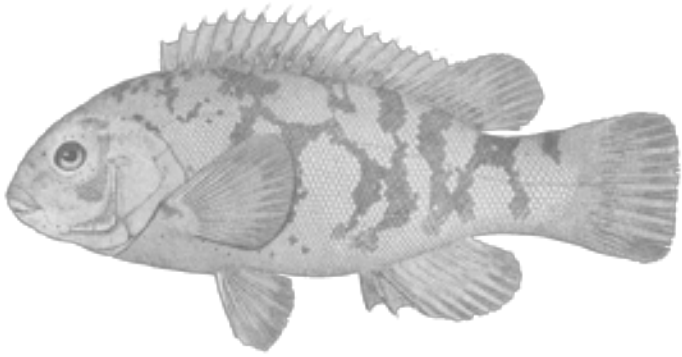
Reef Site	Rock	Demo Debris	Vessels	Tanks	Tire Units	Reef Balls	Castings	Other	Total
SH	2,066,296	116,162	751	-	-	-	-	-	2,183,206
SR	3,949,096	33,700	98,941	-	597	-	-	7,250	4,089,584
SG	5,250	72,205	50,355	1,318	-	-	-	1,500	130,628
XC	1,117,980	6,796	23,728	2,185	438	370	5,434	-	1,156,931
BL	-	-	698	2,734	2,268	596	3,632	20	9,948
GN	-	1,540	33,384	1,127	4,536	326	-	7,882	48,795
GS	-	-	5,779	1,257	4,885	439	-	-	12,360
LE	-	306	1,614	1,544	2,057	992	978	-	7,491
AC	-	80	48,929	1,460	5,281	160	-	17,969	73,879
GE	-	190	3,208	1,983	7,893	612	850	-	14,736
OC	-	9,680	5,567	1,634	4,762	398	44	416	22,901
DW	-	-	12,556	-	3,885	-	-	7,500	23,941
TI	-	-	3,534	-	-	896	3,976	-	8,406
WW	-	1,233	3,001	6,525	6,525	442	1,002	-	13,794
CM	-	32,137	45,315	19,732	19,732	280	40	21,744	120,268
TOTAL	7,138,619	274,029	337,360	62,859	62,859	5,511	16,356	64,281	7,916,868

Tautog - A Species Profile

by Jennifer Resciniti

Tautog (*Tautoga onitis*) are also known as blackfish, slippery bass or tog. Generally they are mousey colored, green or a dull black. Irregularly mottled darker colors are found more on the juveniles than on the adults, which are almost completely blackish. The coloration on their undersides is slightly lighter in color. Large specimens display a white chin. Their habitat also dictates some variation of color the fish displays. For example, their young can exhibit a mint green color, mainly due to the vegetation they use for cover.

The species range extends from the shorelines of Nova Scotia to 40 miles off the South Carolina coast. The greatest abundance of their population occurs from Cape Cod to the Chesapeake Bay. In the northern part of their range they can be found in depths to 60 feet, whereas in the southern portion of their range they can be found in depths to 120 feet. Their preferred habitat consists of hard substrates such as: rock outcroppings, shellfish beds, coastal jetties or pilings, shipwrecks as well as reefs.



NJ's record tog weighs in at twenty-five pounds.

Tautog do not migrate north and south along the Atlantic Coast. Rather, they move between inshore and offshore waters. During the late spring when water temperatures reach 48 degrees, tautog migrate inshore to spawn. They will return to the same spawning locations in hetero pairs or in small groups of a single female and several males. When the water temperatures dip below 52 degrees, tog will school up, and migrate to their offshore wintering grounds. They can be found in depths of 80-150 feet, where they generally remain inactive.

They are a slow-growing fish that can reach an age of 30 years and a maximum length of three feet. Growth rate occurs at a faster pace during the first few years of life, and mature males grow at a faster rate than mature females. While the average weight is generally 2 to 4 pounds, the record size tog in New Jersey, caught off Ocean City, weighed in at 25 pounds, and is currently the IGFA world record.

Tautog do not eat where they sleep. When they are not feeding they can be found resting in a hole, often lying on their side, with several individuals crowded together. From the time the sun rises until the sun begins to set they can be found on their feeding grounds. Daily peaks in feeding occur during the slack tide in the early morning or late afternoon.

They are opportunistic sight feeders, with a preference for mollusks, especially mussels, as well as rock crabs, among others. They can also be found eating barnacles, sand dollars, shrimp, lobster, scallops and even fish. They tear off barnacles with their canine teeth. Smaller food items can be swallowed whole and larger morsels must be cracked with their crushing pharyngeal teeth. No species is known to have a preference for preying on tautog.

Report tagged fish

The Reef Program has tagged thousands of tog and sea bass over the years. Please call the phone number listed on the tag to report your tagged fish. Make sure you have the following information ready: Species, size, location, date caught and if you kept the fish.

Get Reef Updates Via E-mail

Do you want to be the first person to know what the Reef Program has been working on? If yes, then sign up to be on the Reef Updates E-mail list. Updates include current reef building activities, drop locations and pictures. All you have to do is fill out the form below and mail it to:

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

PLEASE PRINT CLEARLY

NAME: _____

PHONE: _____

E-MAIL ADDRESS: _____

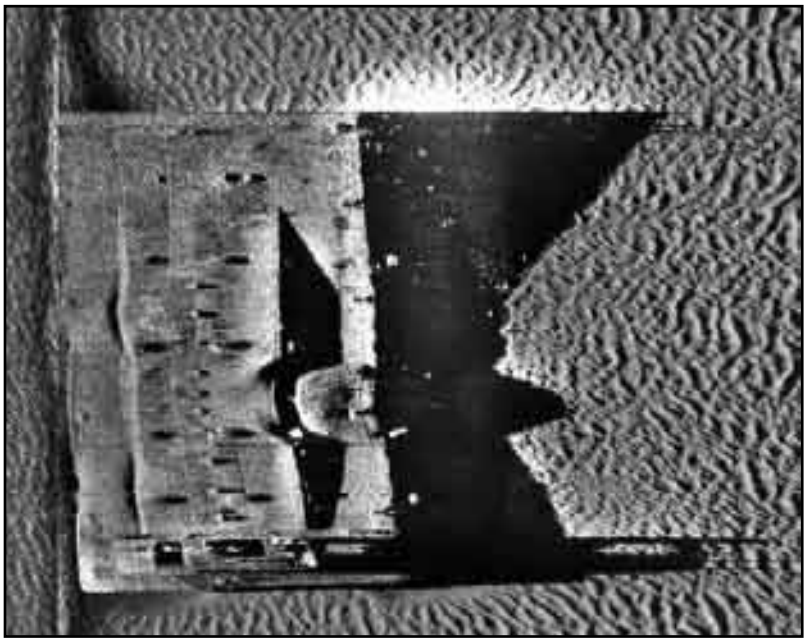
I am an (check all that apply):

- ☐ angler
- ☐ party boat capt.
- ☐ commercial fisherman
- ☐ marine researcher
- ☐ diver
- ☐ charter boat captain
- ☐ marine industry

Help Us Correct Mistakes!

The Reef Program is currently working on updating the *Guide to Fishing and Diving New Jersey's Reefs*. Errors happen, and you can help to correct them. Please call and inform us of any coordinates we may have listed incorrectly in second edition. Help us help others to make their next trip out to the reefs more enjoyable. The reef program staff can be reached at 609.748.2020.

When the guide becomes available we will post ordering information on our Website, www.njfishandwildlife.com.
We will also send an announcement through e-mail. Fill out the form to the left if you are not already signed up to receive Reef News Updates via e-mail.



A side scan image of the Rothenback II. The 165' tanker barge can be found on the Great Egg Reef at 3914.498' 7421.483'

Would you like to see your photo in the '10 Reef News edition? Send us your best wreck/reef catch photo to:

Reef Program
NJ Division of Fish & Wildlife
P.O. Box 418
Port Republic, NJ 08241

Please include a **SASE** if you would like your photo returned.

Help Us Save a Stamp

Do you no longer wish to receive the Reef News mailing? If so, please cut out the address label on the last page, write remove on it and mail to:

Reef Program
NJ Division of Fish & Wildlife
P.O. Box 418
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ARTIFICIAL REEF FISHING SURVEY

The best way for reef managers to determine the effectiveness of their reef building activities is to survey the fishermen who utilize the artificial reefs. Now is the chance for you to tell us what you think. We welcome all responses, positive or negative. Please fill out this survey and return it to us.

1. I fish on NJ's artificial reefs as a: (check all that apply)

☐ Party boat captain ☐ party boat fisherman
☐ Charter boat captain ☐ charter boat fisherman
☐ Private boat captain ☐ commercial fisherman
☐ Fisherman on a friend's boat

2. During 2008, I fished on NJ artificial reefs as follows: (estimate number of trips that year per reef)

Reef Site	Number of trips	Reef Site	Number of trips
Sandy Hook	_____	Atlantic City	_____
Shark River	_____	Great Egg	_____
Sea Girt	_____	Ocean City	_____
Axel Carlson	_____	Townsends Inlet	_____
Barnegat Light	_____	Wildwood	_____
Garden State N	_____	Cape May	_____
Garden State S	_____	Deepwater	_____
Little Egg	_____		

3. During 2008, what methods of fishing did you use on NJ artificial reefs? (Estimate percentage of time per method)

Method	Percent of Time
Anchored over structure	_____
Drifting over structure	_____
Trolling over structure	_____
Fish/lobster potting	_____

4. While fishing on artificial reefs, rank the importance of the species you are trying to catch: (3 = high importance, 2 = moderate, 1 = low, 0 = no importance)

Species	Rank	Species	Rank
Blackfish	_____	Bluefish	_____
Sea Bass	_____	Bonito	_____
Porgy	_____	Dogfish Shark	_____
Ling	_____	Jacks	_____
Pollock	_____	Triggerfish	_____
Flounder	_____	Codfish	_____

5. In terms of your effort and preference while fishing on NJ artificial reefs, rank the importance of the reef structures: (3 = high importance, 2 = moderate, 1 = low, 0 = no importance)

Reef Structure	Rank	Reef Structure	Rank
Shipwrecks	_____	Tire Units	_____
Rock	_____	Army Tanks	_____
Concrete	_____	Subway Cars	_____

6. Considering all the types of saltwater fishing you do, how important is fishing on NJ artificial reefs?

☐ Very Important
☐ Moderately Important
☐ Low Importance
☐ No Importance

7. Understanding fishing has its good days and bad days, how would you rate your overall success on NJ reefs?

☐ Excellent
☐ Good
☐ Fair
☐ Poor

8. Considering things that affect your fishing activities (such as reef location, depth, accessibility, types and configuration of reef structures, numbers of fish, other reef users, etc.) What do you ***like*** about fishing NJ artificial reefs?

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REEF FISHING SURVEY
NJ DIVISION OF FISH & WILDLIFE
P.O. BOX 418
PORT REPUBLIC, NJ 08241

REEF FISHING SURVEY continued -

9. What do you ***dislike*** about fishing NJ artificial reefs?

_____
_____
_____
_____
_____
_____
_____

10. During 2008, how many fishing trips in general did you make?

	Number of Trips
Artificial Reef	_____
Natural Wreck Structure	_____
Non Artificial Reef/Wreck	_____

11. Do you have any other comments about specific ***NJ reef sites*** or the reef program in general?

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REEF PROGRAM
NJ DIVISION OF FISH & WILDLIFE
P.O. BOX 418
PORT REPUBLIC, NJ 08241