

NJ REEF NEWS

2010 Edition

Longest Vessel Ever Reefed in the Atlantic Ocean To Make a Big Splash off Cape May

New Jersey anglers and scuba divers will soon have the opportunity to catch fish and dive on one of the largest artificial reefs in the world. The former U.S. Navy warship, the U.S.S. Arthur W. Radford, is currently being cleaned and prepared to be sunk as a reef later this year at the Del-Jerseyland inshore reef, which is located 30 miles southeast of Cape May.



The Arthur W. Radford is a Spruance Class Destroyer that measures 563 feet in length, 55 feet in beam and displaces more than 9000 tons. The sinking of a vessel of this magnitude will provide immediate ecological, recreational and economic benefits. The reef supporting structure is expected to last more than 100 years, providing essential marine habitat and recreational angling and diving opportunities for generations to come.

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New Jersey Department of Environmental Protection

Division of Fish and Wildlife

Bob Martin, Commissioner Chris Christie, Governor



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The Radford Reefing Project is being accomplished through a collaborative effort between the U.S. Navy, and the states of New Jersey, Delaware and Maryland. Each participant is contributing equally toward the cost of cleaning, towing and scuttling. New Jersey's entire share is being covered by a donation made to the Reef Program by the Ann E. Clark Foundation. The Ann E. Clark Foundation has been a significant contributor toward reef construction during the past ten years. Hundreds of patch reefs throughout the reef network have been constructed with their support.

The Radford will lie in approximately 135 feet of water. The distance from the surface to the top of the vessel will be 60 feet allowing novice as well as experienced technical divers to explore, speargun hunt and catch lobsters. The massive reef is anticipated to be the premier dive attraction in the Northeast.

The immense structure of the Arthur W. Radford will provide unmatched habitat for pelagic and demersal fishes. The reef will be a great location to troll for bluefin tuna and drift for mako sharks as well as catch reef associated species such as tautog and black sea bass.



Size comparison between the U.S. Algol and a Spruance Class Destroyer

Reef Program Accomplishments 1984 - 2009		
The Division of Fish and Wildlife's Reef Program has built 4,044 patch reefs on New Jersey's network of 15 ocean reef sites since 1984. A patch reef is created by sinking a ship or placing a barge load of other reef material on the sea floor. Patch reefs vary in size from several square yards to several square acres. In 2009, 14 patch reefs were constructed.		
Reef Material	Patch Reefs Built in 2009	Total Patch Reefs Built 1984 - 2009
Rock	6	2384
Concrete	-	261
Reef Balls	8	167
Concrete Castings	-	64
Vessels	-	155
Army Tanks	-	397
*Other	-	616
Total	14	4,044
*subway cars, cable		

2009 Reef Adoptions

"Wittle Wed Wabbit Weef"

A tank reef in memory of William T. Gleason sponsored by the "Res Rats" on the Garden State South Reef.

"John Kilian Memorial Reef"

A tank reef in memory of John Killian sponsored by members of the Manahawkin Elks on the Garden State North Reef.

"John David Karpowicz Reef"

A rock mountain reef in memory of John David Karpowicz sponsored by friends and family on the Axel Carlson Reef.

Joseph A. Matuska " Never Enough"

A tank reef sponsored by the Fish Hawks Saltwater Angers on the Barnegat Light Reef.

"In Memory of Fish Hawk Saltwater Anglers Reef"

A tank reef in memory of Fish Hawks saltwater anglers on the Barnegat Light Reef.

"Captain Victor Medina's Reef"

A tank reef in memory of Captain Victor Medina Jr. by his family on the Sea Girt Reef.

"Junito's Salt Shaker Reef"

A tank reef sponsored by friends and family on the Sea Girt Reef.

"CRAGER Reef"

A reef ball reef sponsored by friends and family on the Ocean City Reef .

"James Odell Ogden Memorial Reef"

A tank reef sponsored by family on the Little Egg Reef.

"Gene White Memorial Reef"

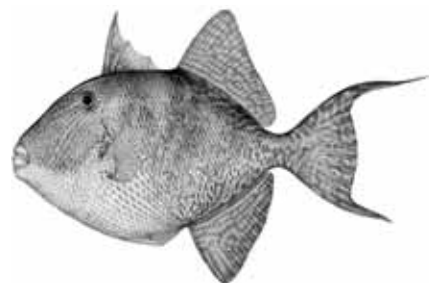
A demolition concrete reef sponsored by friends and family on the Sea Girt Reef .

"The Captain Alfred E. Crudele Jr. Memorial Reefs"

Two tank reefs in memory of Captain Alfred E. Crudele Jr. sponsored by family and friends on the Ocean City Reef.

"Captain Vic Galgano Memorial Reef"

A demolition concrete reef sponsored by Northeast Mako Owners 09 Club and friends and family on the Sea Girt Reef.



Nine Reefs to Receive Four Million Cubic Yards of Dredge Rock

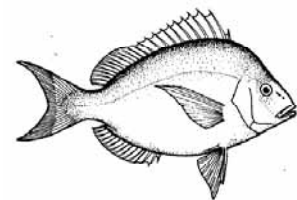
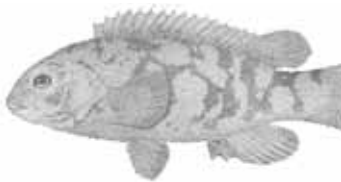
Four million cubic yards of rock generated from New York District Army Corps of Engineers dredging operations will be deployed on nine New Jersey reefs over the next three years. The shale, sandstone and granite dredge rock ranges from basketball-sized pieces to boulders. The rock will be transported from areas along the Kill Van Kull, Arthur Kill and Newark Bay via tugboats and hopper scows. The following nine reef sites will be receiving dredge rock: Shark River, Axel Carlson, Garden State North, Atlantic City, Great Egg, Townsends Inlet, Wildwood, Deep Water and Cape May.

Tugboat traffic will be continuous during rock deployments on each reef site requiring precautions from both recreational and commercial fishermen. Boaters must be constantly aware of a tug's limited maneuverability and allow them right-of-way. Commercial fishers must removed their gear during rock deployments or risk having it destroyed. For up to date information on rock deployments go to www.njfishandwildlife.com.

Adding rock to the ocean floor provides much needed hard-structure habitat for fish, lobster and other marine life. The rocky ridges and rock piles will become attachment surfaces for invertebrates such as mussels, barnacles, sponges and anemones. Additionally, the rock will provide cover for bottom dwelling species such as black sea bass, tautog and lobster. The addition of the rock will create productive fishing grounds for years to come. The rock deployments began in 2009 and will continue through 2013.



Tug and hopper scow in transit to a reef site for a dredge rock deployment.

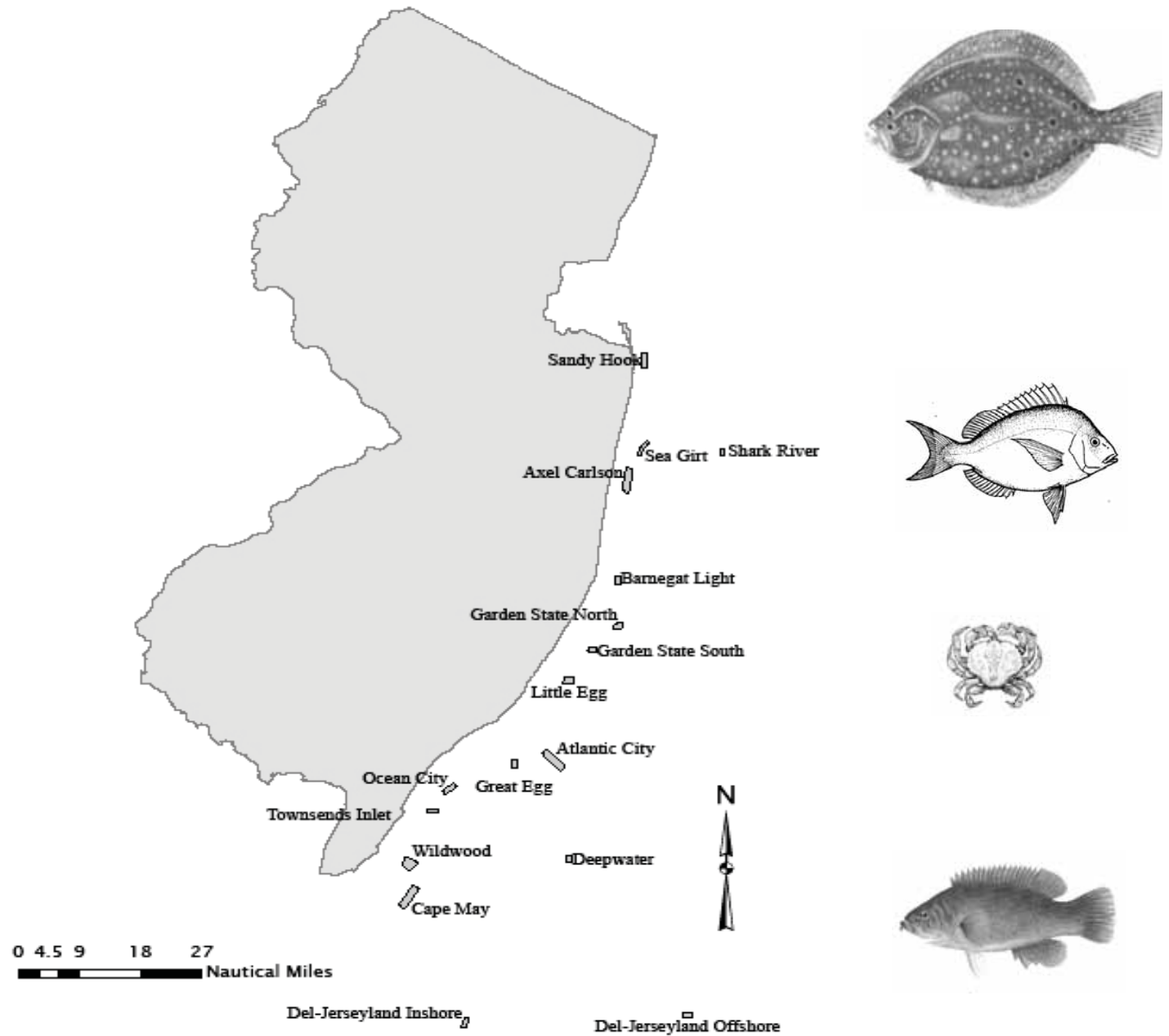


Report tagged fish



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.

New Jersey's Reef Network



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 providing new fishing grounds for anglers, underwater structures for scuba divers and economic benefits to the sport fishing industry.

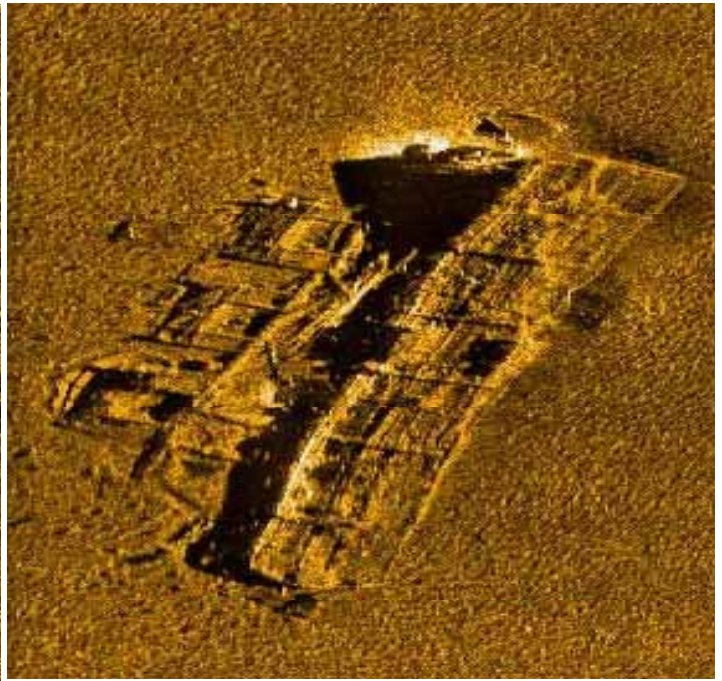
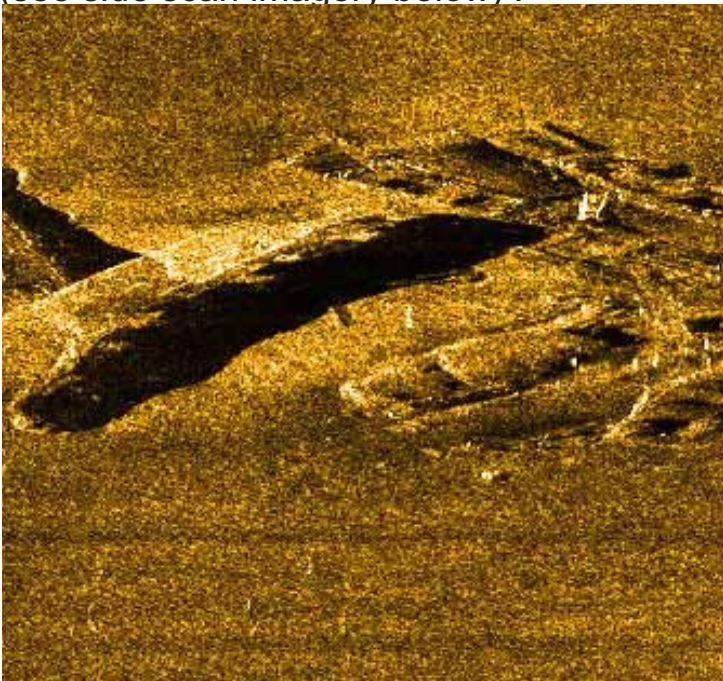
The reefs are constructed and managed to benefit as many people as possible. The intent of the program is not to change New Jersey's marine environment, but rather to enhance less than one percent of the sea floor to the benefit of more than 150 species of marine life that prefer structured habitat.

Sonar Confirms Stainless Steel Subway Car Collapses on Atlantic City Reef Site

Stainless steel subway cars deployed on the Atlantic City Reef in the Spring of 2008 were surveyed via scuba dives in the Fall of the same year. Unexpectedly, most of the observed stainless steel subway cars exhibited significant structural damage. The observed damage prompted the Division of Fish and Wildlife (DFW) to postpone deployments of more cars until the condition of additional deployed cars could be assessed.

A high-resolution side scan sonar survey was performed in May 2009 on 44 stainless steel subway cars deployed on the Atlantic City Reef Site. In addition to the stainless steel cars, five redbird subway cars deployed during 2003 were surveyed for comparison.

Results from the side scan survey showed that more than 90 percent of the stainless steel subway cars had collapsed. The expected height of a stainless steel car if lying upright is 12 feet and 10 feet if lying on its side. Recorded heights of the stainless steel subway cars during the side scan ranged between 1.6 feet to 5.2 feet (see side scan imagery below) .



Conversely, the five redbird subway cars surveyed showed no evidence of structural degradation. While the heights of the redbirds were slightly reduced from the expected heights, none of the redbird subway cars exhibited any signs of structural damage.

Other states have confirmed damage to their deployed stainless steel subway cars similar to the damage observed in New Jersey. Following New Jersey's side scan survey and the review of structural collapse documentation from other states, DFW notified New York City Transit that it would no longer accept the currently available stainless steel subway cars as reef material.

The cause of the stainless steel subway car structural collapse is still unknown. There are several theories including galvanic corrosion caused by dissimilar metals and accelerated by the marine environment. Another theory is the stainless steel cars were simply not as structurally strong as the previously deployed redbird subway cars.

Future side scan surveys will be performed on additional stainless steel cars deployed on the Atlantic City and Cape May Reefs. A total of 119 stainless steel subway cars were deployed on the reef network before the structural collapses were first observed.



Side scan imagery of redbird subway car



The volume (yd³) of reef materials deployed on reef sites by material type and location, 1970-2009.

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	1,169,297	6,985	23,728	2,185	438	370	5,434	-	1,208,437
BL	-	-	698	2,734	2,268	596	3,632	20	9,948
GN	4,163	1,540	33,384	1,127	4,536	456	-	7,882	53,088
GS	-	-	5,779	1,257	4,885	569	-	-	12,490
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	5,805	190	3,208	1,983	7,893	612	850	-	20,541
OC	-	9,680	5,567	1,634	4,762	402	444	416	22,905
DW	-	-	12,556	-	3,885	-	-	7,500	23,941
TI	-	-	3,534	-	-	896	3,976	-	8,406
WW	-	1,233	3,001	1,591	6,525	442	1,002	-	13,794
CM	-	32,137	45,315	19,732	19,732	280	40	21,744	120,268

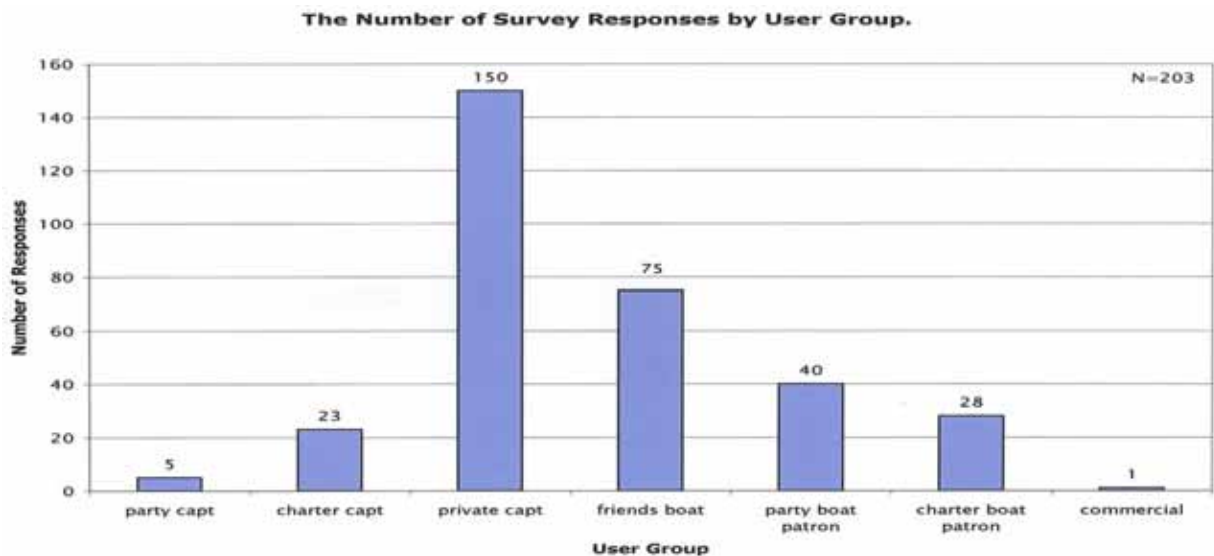
2009 Artificial Reef Survey

New Jersey's Artificial Reef Program is comprised of more than 4,044 patch reefs on 15 sites, making it one of the most impressive in the nation. The reefs are within easy boat range of 12 ocean inlets from Sandy Hook to Cape May and have provided outstanding fishing opportunities since 1984.

The reefs attract fish by providing structure and cover on a largely featureless ocean bottom. Over the years, various materials including surplus Coast Guard vessels, obsolete Army tanks, rock, tire units, concrete bridge decking and reef balls have been deployed on reefs.

The best way for managers to assess the effectiveness of reef building efforts is to survey the anglers that use them. The Reef Program included a questionnaire in the 2009 edition of the Reef News for anglers to complete and submit. The Reef News is sent to more than 7,300 anglers and is also available online at the Division's Web Site. The objectives of the survey were to assess reef building effectiveness and obtain other relevant data that would make us more efficient reef managers.

A total of 203 completed surveys were returned. Survey responses indicated the predominant user groups were individual boat owners and anglers who access reefs by fishing on a friend's boat. Party boat patrons were the third most prevalent user group (see graph below).

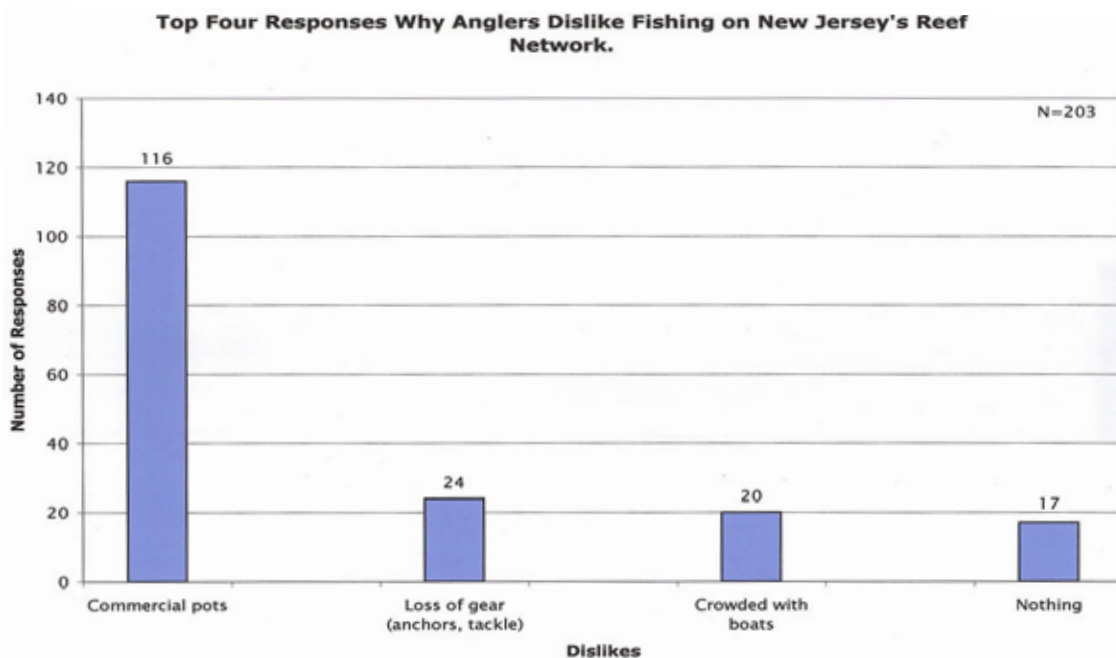


Of the ten questions in the survey, perhaps the most important to the Program was anglers rating their angling success. Of the responses received, 54% of participants categorized their success as "good" and 23% indicated it was "excellent". The remaining 23% categorized their success as "fair" to "poor" (19% fair, 4% poor).

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Program managers are interested in both the positive and the negative aspects of artificial reef use and management. Survey participants indicated their strongest dislike (116 responses) pertaining to angling on the reef network is the presence of commercial fishing gear. These results are consistent with the volume of commercial fishing gear complaints the Program has received over the past three years. Loss of gear (24 responses) and crowds (20 responses) were the only other negatives reported by participants (see graph below).

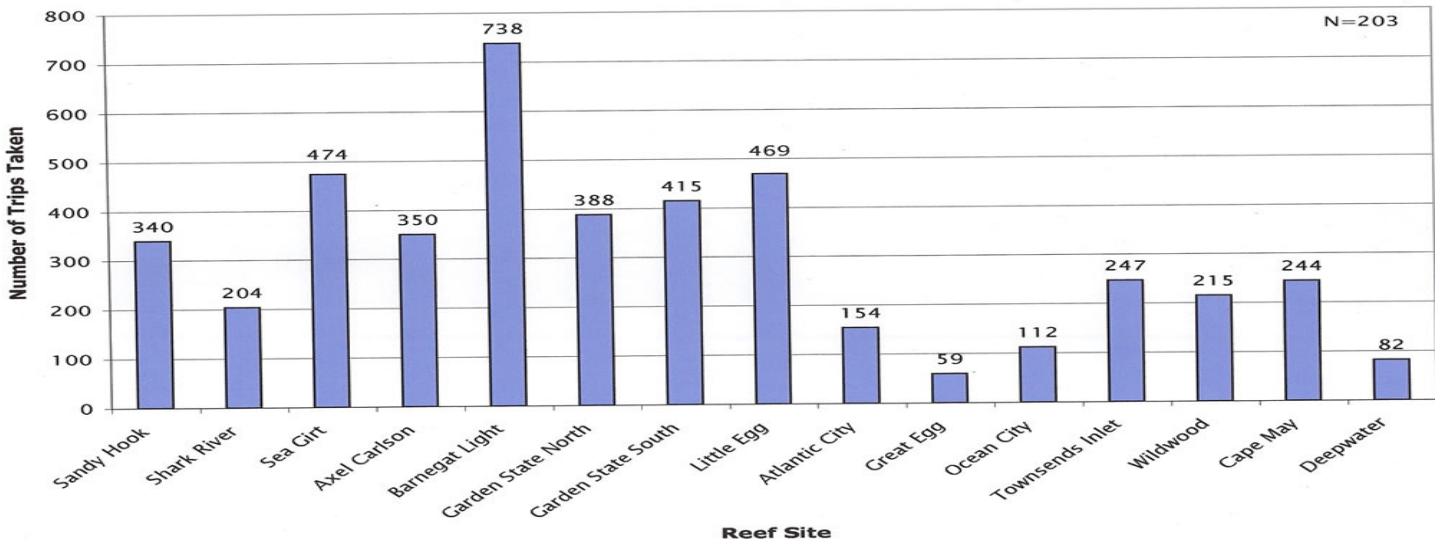


Survey participants were asked to quantify the number of fishing trips made to specific reefs. Barnegat Light Reef had the highest number of trips and the Great Egg Reef had the least. Surprisingly, the Townsends Inlet Reef, the newest reef within the network, had the highest recorded fishing trips of reef sites off Cape May County (see number of fishing trips by reef site graph on page 10).

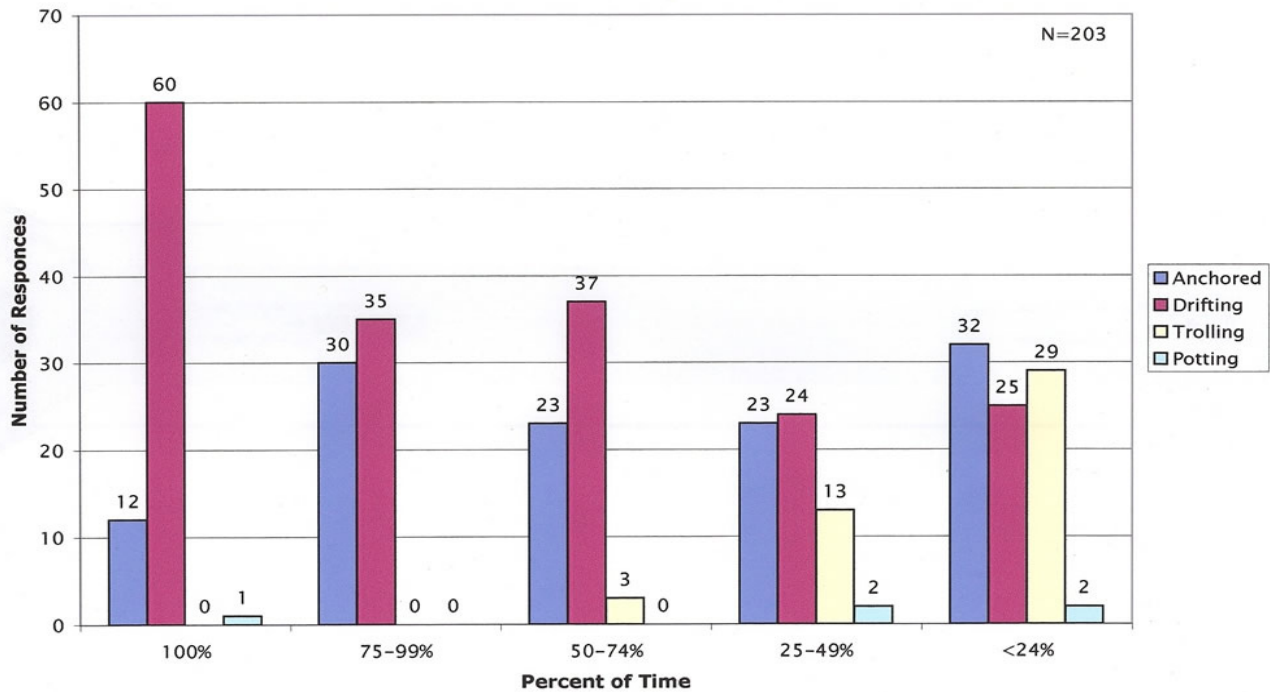
Reef anglers utilize different methods to catch fish, including drifting, trolling and anchoring over structure. The exact method utilized is largely dependent on the targeted fish species, angler preference and experience level. Responses from the survey indicated the predominant method utilized by anglers is drift fishing (see methods of fishing graph). Drift fishing is the least labor intensive and can be an extremely effective technique to catch summer flounder and black sea bass.

When participants were asked to rank reef-associated fishes by order of importance, summer flounder and black sea bass topped the list (146 responses each), followed by blackfish (102 responses). See fishes of high importance graph.

Number of Fishing Trips by reef site.



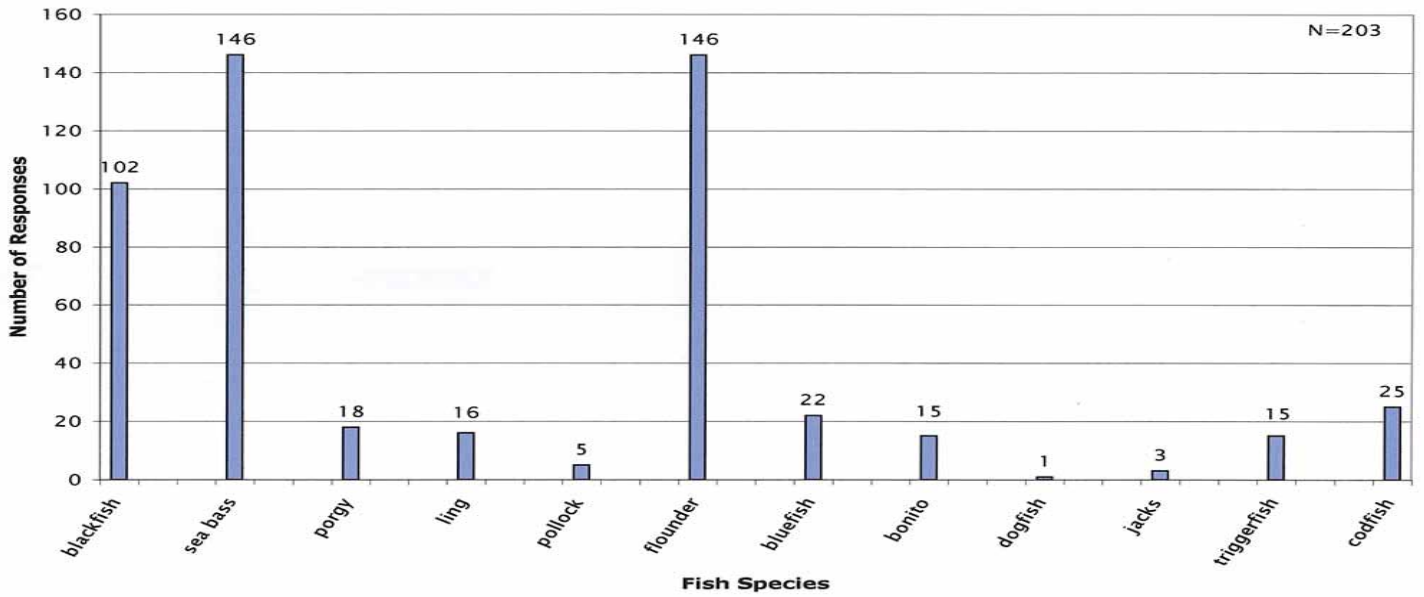
Methods of Fishing



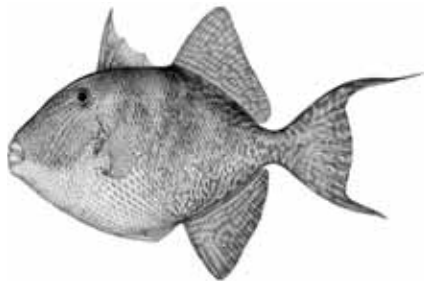
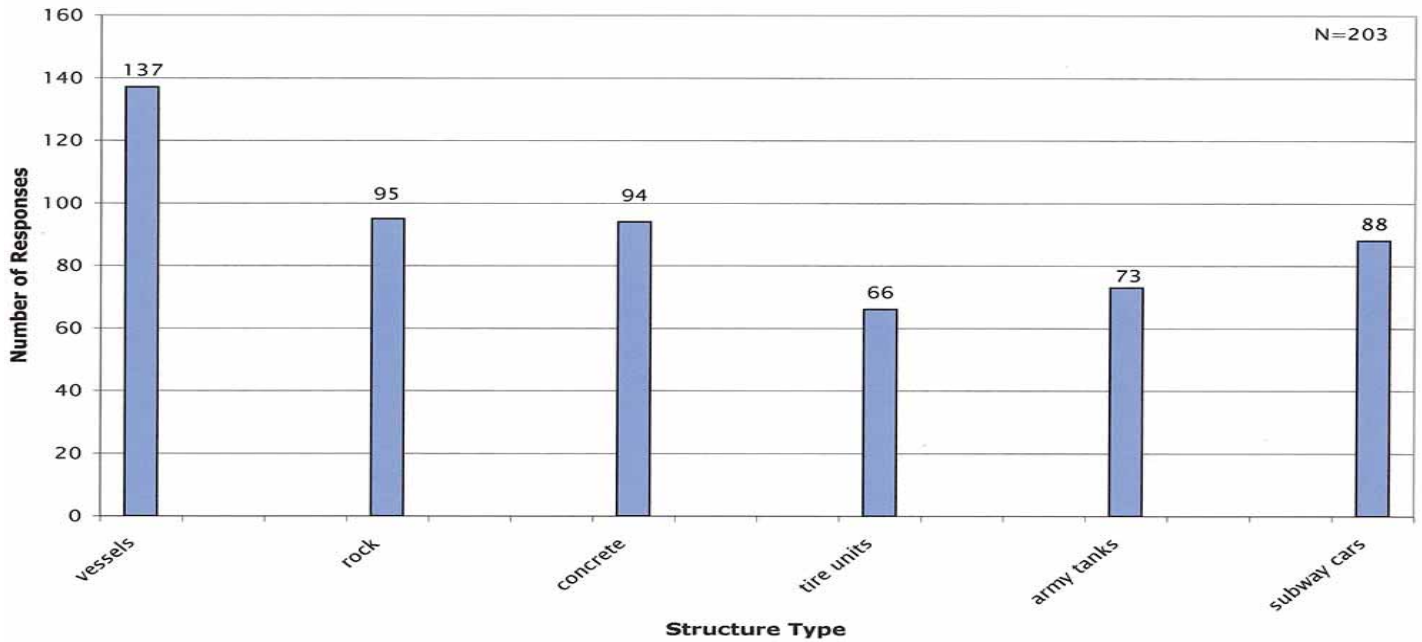
Participants were also asked to rank reef structure by order of importance. Vessels, rock and concrete were determined to be the most important structures eliciting 137, 95 and 94 responses respectively (see reef structure of high importance graph).

The Artificial Reef Program staff would like to thank all the anglers who took the time and effort to participate in the Artificial Reef Survey. The results and comments submitted will figure prominently in reef management efforts. Future surveys are planned to gain additional information on reef user opinions and concerns.

Fishes of High Importance to Reef Anglers.



Reef Structure of High Importance to Anglers.



Get Reef Updates Via E-mail

Do you want to be among the first to know what the Reef Program has been working on? If yes, sign up to be on the Reef Updates E-mail list. Updates include current reef building activities, drop locations and pictures. Simply 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 updating the *Guide to Fishing and Diving New Jersey's Reefs*. Please call and inform us of any coordinates that may have been listed incorrectly in this third edition. Help us help others make their next reef trip more enjoyable. The reef program staff can be reached at (609) 748-2020.

