NJ REEF NEWS

FREE COPY

2008 Edition

Stainless Steel Subway Cars On TRAC to New Jersey Reefs

The New Jersey Department of Environmental Protection Commissioner, Lisa P. Jackson, announced on September 17, 2007 that New Jersey would request 600 subway cars from the New York City Transit Authority for reefing. Following this announcement, the Division of Fish and Wildlife's Reef Program obtained all necessary approvals to reinstate subway cars as reef material. This change in DEP policy represents a limited revision of the 2005 Artificial Reef Management Plan for New Jersey and reinstates subway cars on the Department's Army Corps of Engineers reef construction permit. It was first proposed in the DEP Bulletin in an announcement seeking public comment.

(-*Continued on next page*)

New Jersey Department of Environmental Protection

Division of Fish and Wildlife

New Jersey Division of Fish and Wildlife

Lisa P. Jackson, Commissioner Jon S. Corzine, Governor

(*-continued from previous page*)
Commissioner Jackson agreed to the changes after reviewing comments submitted.

The reinstatement of subway cars follows extensive studies performed by the New Jersey Division of Fish and Wildlife's Reef Program, Delaware's Reef Program, South Carolina's Reef Program, and the United States Environmental Protection Agency (US EPA). In addition to these studies, information from a review of literature conducted by the Department's Division of Science and Research was considered by Commissioner Jackson in her assessment. All findings showed unequivocally that subway cars are a safe, stable and durable habitat, which provides trophic support to fishes by supporting

The inside view of a stainless steel subway car.

inveterate communities. In light of these findings, NJ DEP Policy Directive 2003-02 was rescinded by Commissioner Jackson.

The former Policy Directive identified monitoring programs for deployed redbird subway cars and outlined general standards for the structural integrity of other reef materials. Additionally, the Directive called for the formation of a technical reef advisory committee (TRAC). The TRAC was an independent scientific and technical reef advisory committee composed of regional reef ecologists and scientists from relevant interests. The goal of TRAC was to develop monitoring protocols for the deployed subway cars. Though created with good intentions, the lack of state funding prevented the committee from fulfilling its mandate. Subsequently, New Jersey's Reef Program developed its own studies when federal funding became available to investigate these important issues. The results of the Division's studies along with those from Delaware, South Carolina and the US EPA provided the information needed to adequately assess the concerns ordinally intended for review by the TRAC.

This newest round of subway cars available from NY CTA are constructed of type 301 and 302 stainless steel and will resist marine corrosion to an even greater extent than the redbird subway cars deployed during 2003. The estimated longevity of the stainless steel subway cars is 25 to 30 years compared to 15 to 25 years for the carbon steel redbirds. The stainless steel subway cars measure 60 feet in length, 10 feet in width and 10 feet in height. Each individual subway car weighs 18 tons.

The new home for the stainless steel subway cars will be the Shark River, Garden State North, Atlantic City, Deepwater and Cape May reefs. In a study performed by the Reef Program from 2003 through 2005, the mean number of reef-associated fishes counted on an individual subway car was determined to be 323 fish per subway car (Figley, 2006). If this value were extrapolated to the requested 600 stainless steel subway cars an estimated 193,800 fishes would utilize the cars as habitat.

A group of sea bass found swimming on top of a Redbird subway car.

2007 Reef Adoptions

Daniel J. Carroll Reef
A demolition debris reef sponsored by family and friends was constructed on Sandy Hook Reef.

James Frederick Family Memorial Reef
Two demolition debris reefs sponsored by Edwin F. and Wilda Rubino were constructed on the Sea Girt Reef.

The John Sofield Memorial Tribute Reef
A rock mountain reef sponsored by friends and family of John Sofield was constructed on the Axel Carlson Reef.

Barnegat Fishin' Hole Reef #2
Three army tank reefs sponsored by the Barnegat Fishin' Hole were constructed on Barnegat Light Reef.

Barnegat Fishin' Hole Reef #3
Three army tank reefs sponsored by the Barnegat Fishin' Hole were constructed on Barnegat Light Reef.

William Berndt Memorial Reef
An army tank reef was sponsored by the Manahawkin Elks Lodge 2340 on Barnegat Light Reef.

Jim Flannery and his grandson Joseph Dunn with two fluke caught on Barnegat Light Reef.

Gregory B. Shuda Reef
An army tank reef sponsored by family and friends was constructed on Barnegat Light Reef.

Debra Herrick Reef - Ed Hall Service Award
A reef ball reef sponsored by Beach Haven Marlin and Tuna Club was constructed on Little Egg Reef.

Nicole Hiller Reef - Ed Hall Service Award
A reef ball reef sponsored by Beach Haven Marlin and Tuna Club was constructed on Little Egg Reef.

The Alfred A. Klus Memorial Reef
A reef ball reef sponsored by family was constructed on Little Egg Reef.

Michael J. Venezia Memorial Reef
Three concrete casting reefs and two reef ball reefs sponsored by family, friends and co-workers were constructed on Townsends Inlet Reef.

Fred Snyder Memorial Fishing Reef
A reef ball reef sponsored by friends and co-workers from the New Jersey Division of Fish and Wildlife was constructed on Townsends Inlet Reef.

2007 Reef Habitat Supporters

- Joseph Galese
- Mr. & Mrs. Donald Lombardi
- Mr. & Mrs. James Ferguson

Would you like to see your photo in the '08 Reef News edition? Send us your best wreck/reef catch photo to:

Reef Program
NJ Department of Environmental Protection
Division of Fish and Wildlife
P.O. Box 418
Port Republic, NJ 08241

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

New Wrecks in ’07

TI Fluke #06 - A 77-foot trawler was sunk on the Townsends Inlet Reef on April 10, 2007 at DGPS coordinates 3906.476’ 7436.471’. The Townsends Inlet Fluke Tournament and the Ann E. Clark Foundation sponsored the vessel.

MRMTC #10 - A 74-foot trawler was sunk on the Axel Carlson Reef on April 27, 2007 at DGPS coordinates 4001.650’ 7359.747’. The Manasquan River Marlin and Tuna Club sponsored the vessel.

Smoot Reef - A 100-foot deck barge was sunk on the Ocean City Reef on May 25, 2007 at DGPS coordinates 3910.032’ 7434.008’. The Brotherhood of the Jungle Cock Fishing Club and the Ann E. Clark Foundation sponsored the vessel.

TI Fluke #07 - A 77-foot trawler was sunk on the Townsends Inlet Reef on August 13, 2007 at DGPS coordinates 3906.605’ 7436.177’. The Townsends Inlet Fluke Tournament and the Ann E. Clark Foundation sponsored the vessel.

Ex-Navy Ship Becomes “Captain Andy Applegate”

The New Jersey Artificial Reef program will re-name the tanker, located on the Atlantic City Reef, from “Jet Trader” to the “Captain Andy Applegate” in memory of one of New Jersey’s early leaders in reef construction. Captain Applegate was the fist president of the Artificial Reef Association, a non-profit group consisting of party and charter boat captains that raised money to help construct reefs off the Jersey coast.

For over five decades Captain Applegate operated his own party fishing boat out of Atlantic City. Captain Applegate’s love and knowledge of the sea guaranteed his customers would have a great day of catching fish and would bring a variety of fresh seafood home to the dinner table.

The new wreck, “Captain Andy Applegate,” will serve as a long-lasting tribute to Captain Andy as it coexists with other reef material on the Atlantic City Reef that Captain Applegate help sponsor. The wreck can be found at DGPS coordinates 39 13.85’ 74 12.51’.

If you are lucky enough to reel in a large tautog or hump head sea bass on any of this reef material, please take a moment to thank the man that helped make it happen.

Accomplishments, 1984-2007

Since the inception of the Division of Fish and Wildlife’s Reef Program in 1984, 3,710 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 material on the sea floor. In 2007, 20 patch reefs were constructed.

Reef Material	Patch Reefs Built in 2007	Total Patch Reefs Built 1984-2007
Rock	2	2187
Concrete	5	256
Reef Balls	9	155
Concrete Castings	-	64
Vessels	4	151
Army Tanks	-	397
Other	-	500
Total	20	3,710

Objectives of the Reef Program

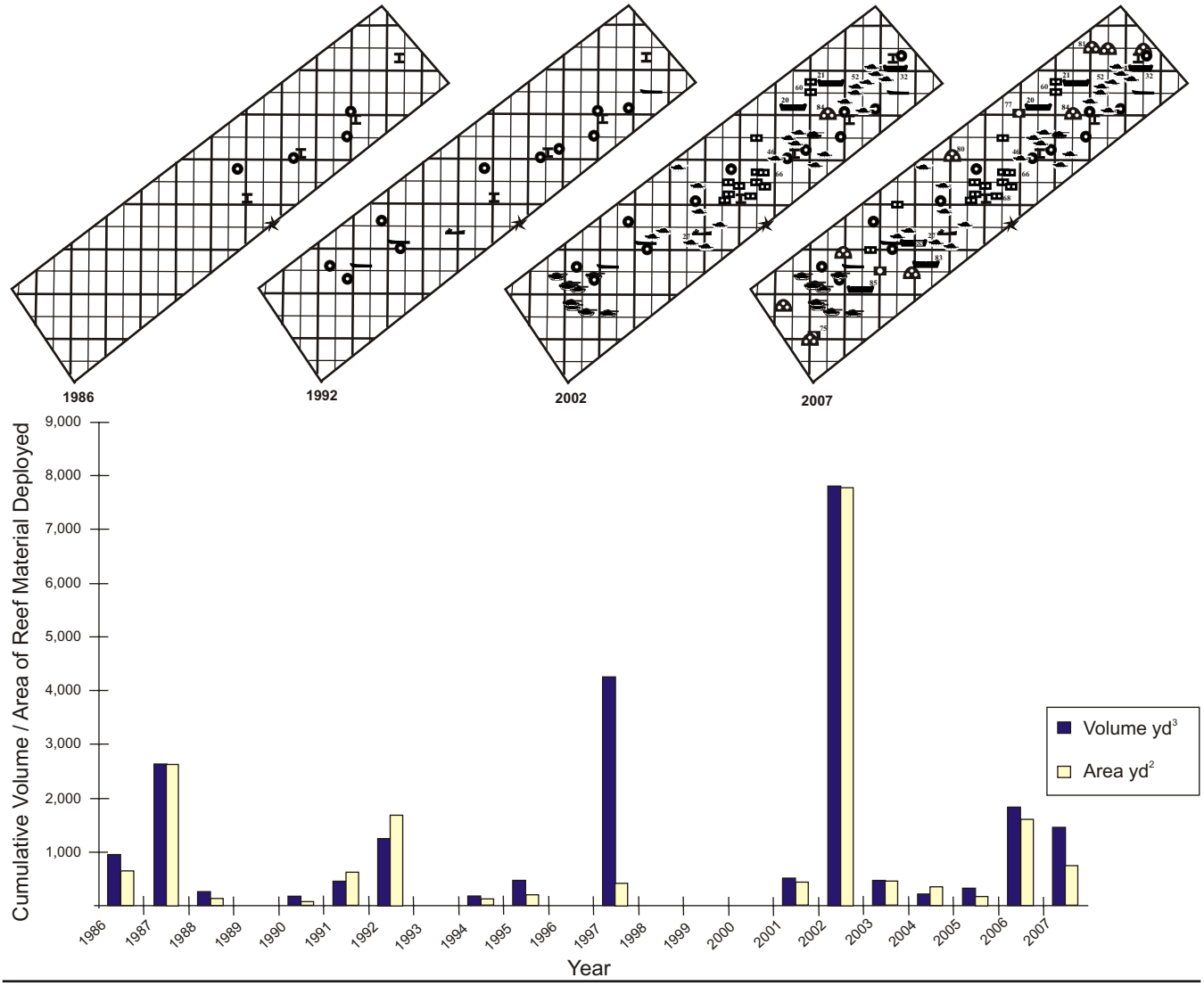
New Jersey’s Reef Program is administered by the Department of Environmental Protection’s Division of Fish and Wildlife. The objectives of the program are to construct hard-substrate, reef habitat in the ocean for certain species of fish and shellfish, new fishing grounds for anglers, underwater structures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

What’s in Store for 2008

Rock	500,000 cubic yards
Reef Balls	600 ~ GE and LE reefs
Concrete Castings	150
Subway Cars	600
Vessels	100-foot surf clam boat 77-foot trawler 70-foot trawler 51-foot fire boat 70-foot trawler

The Growth of Ocean City Reef



In 1986 the fifth reef site within New Jersey's artificial reef network was created. Steel frame towers were the first additions to the newly created Ocean City Reef. Since then the Ocean City Reef Site has grown to be a fishing ground comprised of 92 patch reefs, or 22,895 yd^3, of reef material. Most notably the reef site is home to the "Libra," a 195' deck barge. Within the past 21 years of reef construction a total of 6 deck barges, 3 Post boat molds (believed to no longer exist), a commercial fishing trawler, decommissioned army tanks and APC's, concrete rubble, as well as reef balls can be found on this reef.

Peak growth of this reef occurred during 2002 with the addition of 7,797 yd^3 of concrete rubble. Reef building on the Ocean City Reef subsided up to and including the year 2006. During 2007 the site received 253 reef ball units, more than doubling the previous number, bringing the total to 491 reef ball units.

There are many contributors that played a role in the growth of the Ocean City Reef site. They include: The Fisherman Magazine, Ocean County Road Department, Atlantic County Road Department, Ocean City Marlin and Tuna Club, Southern State Correctional Facility, Cape May Municipal Utilities Authority, Cape Island Marina, Eugene McCan, Shamrock Towing, Cape May Party and Charter Boat Association, New Jersey Army National Guard, Strathmere Fishing and Environmental Club, PECO Energy, Great Egg Harbor Marlin and Tuna Club, Hays Tug and Launch, AC Westcoat, Conoco Phillips and Weeks Marine.

Not sure where to go fishing this weekend?

Take a look at the chart below and set your GPS

Sandy Hook Reef ~	Latitude	Longitude
NE Corner	40 23.300’	73 55.800’
NW Corner	40 23.300’	73 56.600’
SE Corner	40 20.880’	73 55.880’
SW Corner	40 20.880’	73 56.600’

Sea Girt Reef ~	Latitude	Longitude
NE Corner	40 08.220’	73 55.520’
NW Corner	40 08.630’	73 55.730’
ME Corner	40 07.300’	73 55.670’
MW Corner	40 07.480’	73 57.150’
SE Corner	40 06.130’	73 57.120’
SW Corner	40 06.170’	73 57.570’

Axel Carlson Reef ~	Latitude	Longitude
NE Corner	40 03.720’	73 58.570’
NW Corner	40 04.180’	73 59.750’
SE Corner	39 59.830’	73 59.400’
SW Corner	40 00.350’	74 00.650’

Shark River Reef ~	Latitude	Longitude
NE Corner	40 07.330’	73 41.080’
NW Corner	40 07.330’	73 41.800’
SE Corner	40 06.200’	73 41.080’
SW Corner	40 06.200’	73 41.800’

Barnegat Light Reef ~	Latitude	Longitude
NE Corner	39 45.870’	74 01.100’
NW Corner	39 45.870’	74 01.950’
SE Corner	39 45.620’	74 01.100’
SW Corner	39 45.620’	74 01.950’

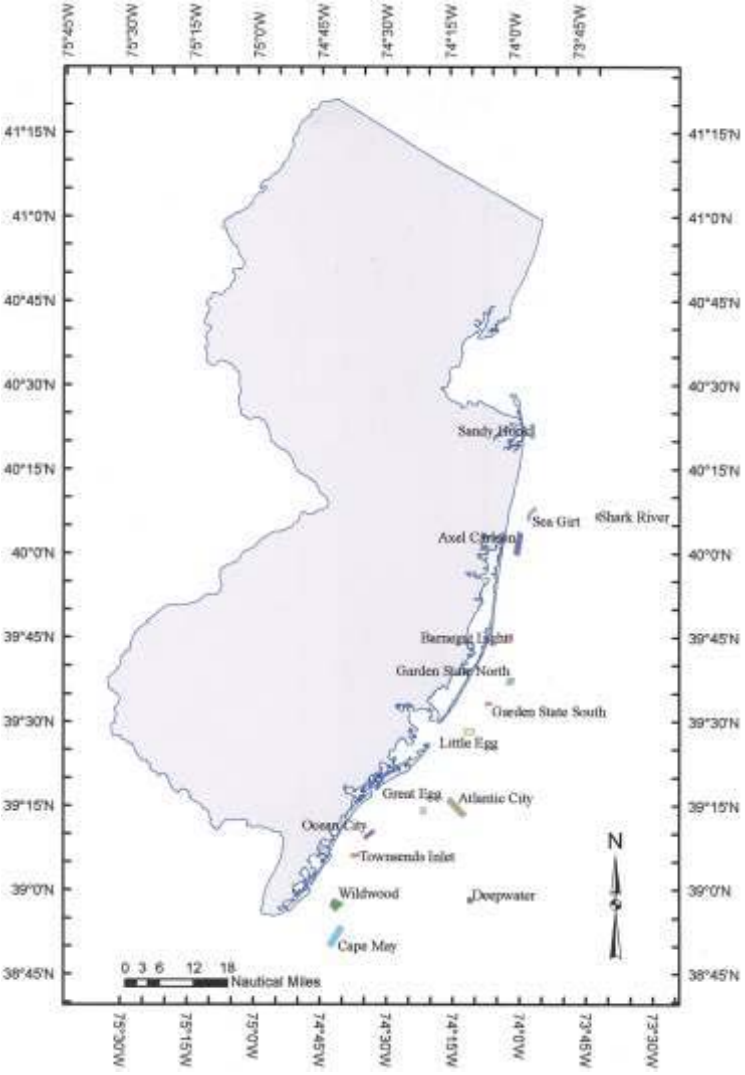
Garden State N. Reef ~	Latitude	Longitude
NE Corner	39 38.050’	74 00.700’
NW Corner	39 37.980’	74 02.200’
SE Corner	39 37.050’	74 01.000’
SW Corner	39 37.000’	74 02.500’

Garden State S. Reef ~	Latitude	Longitude
NE Corner	39 33.820’	74 05.750’
NW Corner	39 33.800’	74 07.200’
SE Corner	39 33.330’	74 05.850’
SW Corner	39 33.330’	74 07.350’

Little Egg Reef ~	Latitude	Longitude
NE Corner	39 29.000’	74 10.000’
NW Corner	39 29.000’	74 12.000’
SE Corner	39 28.000’	74 10.000’
SW Corner	39 28.000’	74 12.000’

Atlantic City Reef ~	Latitude	Longitude
NE Corner	39 16.900’	74 15.280’
NW Corner	39 16.220’	74 16.180’
SE Corner	39 13.930’	74 11.800’
SW Corner	39 13.300’	74 12.700’

Great Egg Reef ~	Latitude	Longitude
NE Corner	39 15.00’	74 21.000’
NW Corner	39 15.00’	74 22.000’
SE Corner	39 14.00’	74 21.000’



Ocean City Reef ~	Latitude	Longitude
NE Corner	39 10.750’	74 32.450’
NW Corner	39 11.100’	74 32.850’
SE Corner	39 09.400’	74 34.620’
SW Corner	39 09.820’	74 34.970’

Townsends Inlet Reef ~	Latitude	Longitude
NE Corner	39 06.700’	74 36.000’
NW Corner	39 06.700’	74 37.500’
SE Corner	39 06.250’	74 36.000’
SW Corner	39 06.250’	74 37.500’

Wildwood Reef ~	Latitude	Longitude
NE Corner	38 57.850’	74 39.700’
NW Corner	38 58.800’	74 41.900’
SE Corner	38 56.580’	74 41.400’
SW Corner	38 57.550’	74 42.600’

(*-continued on next page*)

Reef Program to Receive Dredge Rock from ACOE

The U.S. Army Corps of Engineers' New York District is currently conducting channel deepening projects in the Kill Van Kull, Arthur Kill and Newark Bay and will continue into 2010. Potentially 4 million cubic yards of sandstone, shale, diabase, serpentinite and shist will be generated during these three dredging projects.


A scow loaded with dredge rock.

The Reef Program anticipates receiving 2 million cubic yards of cobble- to boulder-sized rock material. Only dredge loads consisting of greater than 80% rock material will be accepted for reefing. The remainder will be deployed at the ACOE HARS site. With the rock mountains on Sandy Hook, Shark River and Axel Carlson being such a hit, how could we pass up the opportunity to bring some of the dredge material to the southern reef sites? The potential reef sites include: Shark River, Axel Carlson, Garden State North, Atlantic City, Great Egg, Townsends Inlet, Wildwood, Cape May and Deepwater.


A scow on its way to the reef for deployment.

In 2006 the minimum clearance was reduced from 50' to 40' at mean low water at the Axel Carlson Reef. With this in mind, the Reef Program has decided to raise the current rock mountains 10'. Also, an additional eight mountain sites are currently being constructed. Please see the Navigational Advisory on page 9 for the exact locations. Information concerning the eight additional reef sites can be found on our webpage when the locations have been determined.

The reef sites in the southern portion of the artificial reef network are shallower than those located in the north, with the exception of Deepwater Reef. Therefore, we will not be able to re-create 40- to 60-foot-high mountains as in the Shark River Reef or even 20-foot-high mountains as found in the Axel Carlson Reef. Each mountain site will receive approximately 3,500 cubic yards of dredge material. The anticipated relief this will generate is about eight feet. This will not create the upwelling as seen on the Shark River Reef. What they will create is attachment surfaces for barnacles and mussels as well as other epibenthic organisms and create crevices for lobster, crabs and fish to hide in.

Be sure to check out our webpage for updates on all our reef building activities or sign up to receive periodic emails. Fill out the form on the last page if you wish to sign up to receive the Reef Updates emails.

(*-continued from previous page*)

Deepwater Reef ~	Latitude	Longitude
NE Corner	38 59.000'	74 10.500'
NW Corner	38 59.000''	74 11.500'
SE Corner	38 58.000'	74 10.500'
SW Corner	38 58.000'	74 11.500'
Cape May Reef ~	Latitude	Longitude
NE Corner	38 53.450'	74 39.430'
NW Corner	38 53.970'	74 40.620'
SE Corner	38 50.070'	74 42.250'
SW Corner	38 50.670'	74 43.250'

Just How Beneficial is Rock?

The year 2007 represented a conclusion of a 10-year study that began in 1996. This particular study looked at the various materials used to construct artificial reefs and compared them to one another. The study found no significant differences in colonization rates between the four major reef-building materials: rock, concrete, steel and rubber. Rubber is no longer considered a suitable reef-building material and is no longer used to construct reefs in New Jersey. With this in mind, we decided to study rock in further detail because it is the most commonly used reef-building material. Rock comprises 90.6%, or seven million cubic yards, of the reef material found on New Jersey's artificial reefs.

Currently only four reef sites contain rock as a reef building material. These reefs include:; Sandy Hook, Shark River, Sea Girt and Axel Carlson. The Axel Carlson reef site was chosen to be the location of the new experimental rock habitat, or habitat for short. Since late 2003 Axel Carlson reef site has received over one million cubic yards of dredge rock material from the Army Corps of Engineers (ACOE). This material has helped to create 74 rock ridges and eight new rock ridges are currently under construction.

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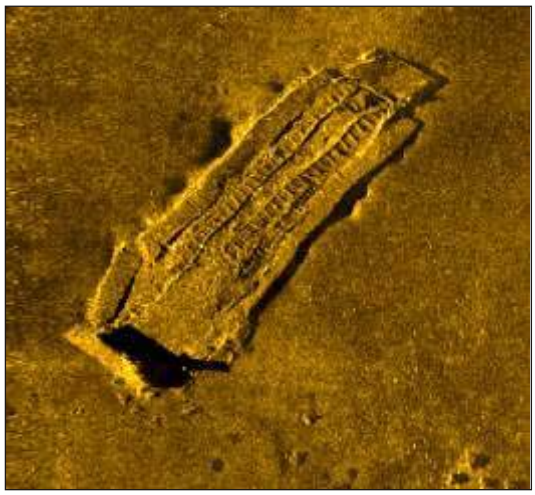


Top: A side scan image of the Nils S, a 122' commercial fishing boat on the Atlantic City Reef.
Bottom: A side scan image of the Libra, a 195' deck barge on the Ocean City Reef.
Photos Courtesy of Black Lazer Learning

Navigational Advisory

During 2008 the Axel Carlson Reef site will be receiving dredge rock material from the Army Corps of Engineers (ACOE).

This rock will be used to create eight additional rock mountains and will increase the height of the existing mountains.

All previous rock mountain locations are potential deployment sites. The coordinates for the eight new mountains are:

4002.7' 7359.7'
4002.3' 7359.6'
4002.3' 7359.5'
4002.3' 7359.3'
4002.2' 7359.3'
4002.2' 7359.2'
4002.2' 7359.1'

The tug and barges have set deployment sites. If you should find yourself in their path, please give way. They are working to make your fishing and diving experience more enjoyable.

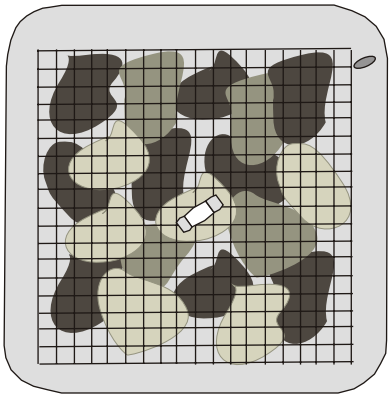
Anglers and divers can obtain a chart of the rock deployment areas by sending a self-addressed, stamped envelope to:

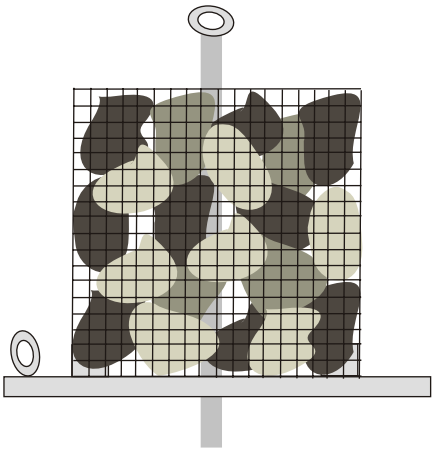
Rock Chart
NJ Division of Fish and Wildlife
P.O. Box 418
Port Republic, NJ 08241

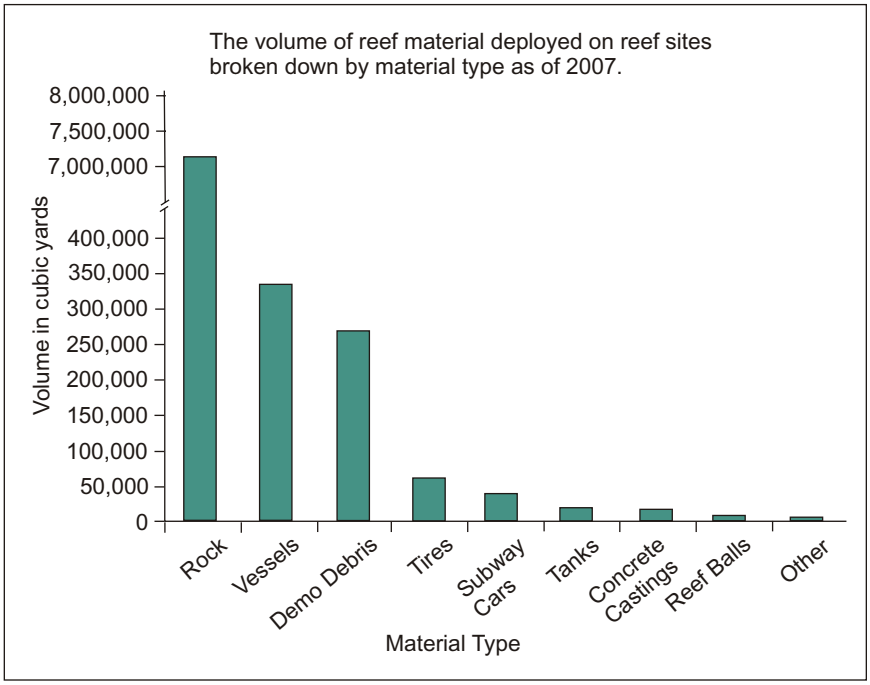
(*-continued from previous page*)

The design of the habitat is simple. We want to mimic the rock ridges and study their benefit to the marine ecosystem. The habitat is an 18" x 18" x 12", plastic-coated 1" wire mesh cage with a 30" x 30" stainless steel plate base used for stability. The mesh cage is affixed to the bottom plate with starboard strips on either side of the cage bottom. Inside the cage is the study material, rock. Ten inches above the top of the cage and extending 3" through the stainless steel plate is a stainless steel rod. This rod will serve two purposes. The top side of the rod will have an bolt welded on it. This bolt will enable divers to tie a line to the habitat for retrieval. The 3" rod extending through the bottom of the habitat will help ensure the placement of the habitat atop the ridge remains stable. Welded to the plate on the exterior of the cage is a bolt. This bolt will allow divers to connect the habitats together with a cable once they have been deployed.

The deployment of the 30 habitats is expected to take place early this spring. Retrieval of the first habitats will not be until fall 2009. Deployment early in the springtime and retrieval in the fall will allow a full season's worth of growth to be observed. By studying the most commonly used reef material we will be able to better estimate how productive our reef-building efforts are.



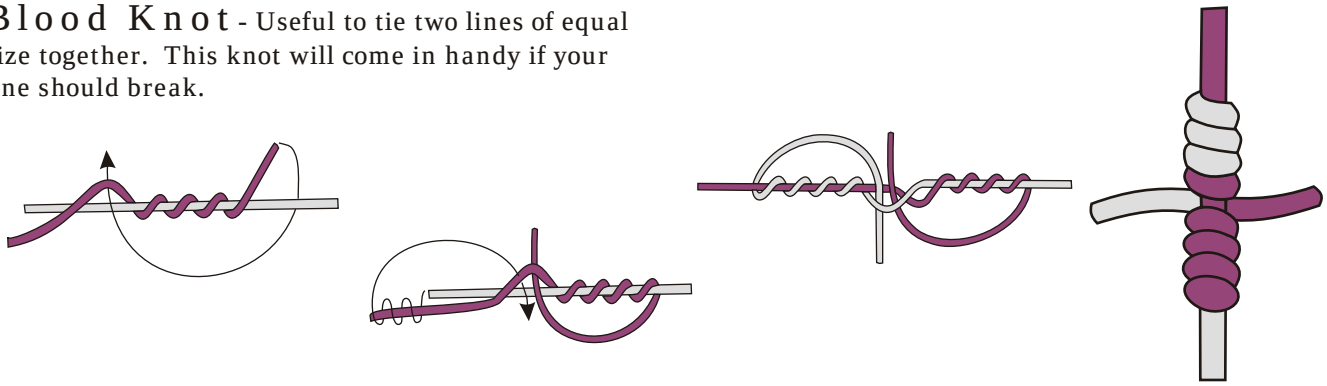




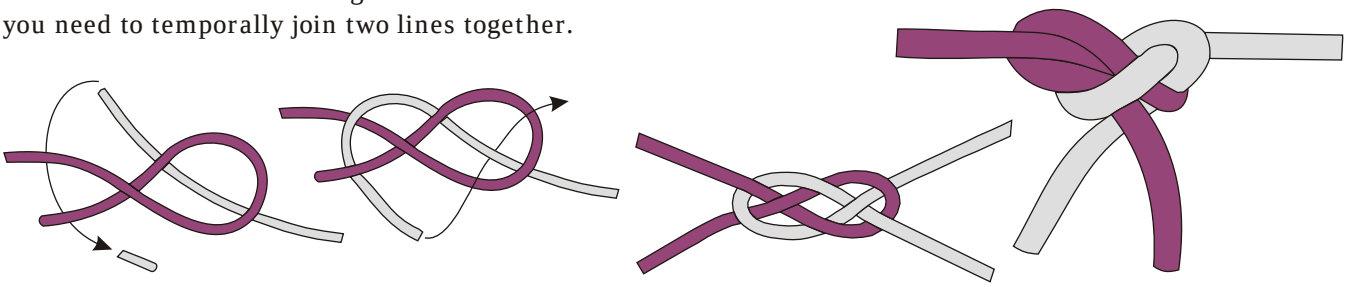
Top Left: View of habitat from the top
Bottom Left: View of habitat from the side
Above: Summary of reef materials

Knots you may find helpful during your next fishing trip

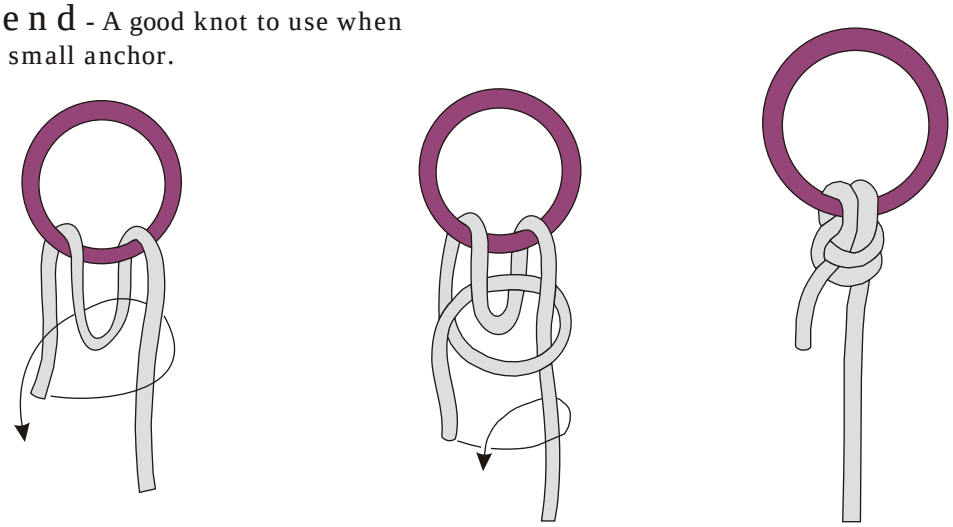
Blood Knot - Useful to tie two lines of equal size together. This knot will come in handy if your line should break.



Carrick Bend - A good knot to use when you need to temporally join two lines together.



Anchor Bend - A good knot to use when tying rope onto a small anchor.



Report tagged fish

Help Us Save a Stamp

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Division of Fish & Wildlife
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Reef-Related Web and E-Mail Sites

njfishandwildlife.com
NJ Division of Fish and Wildlife,
Reef program information

njscuba.net
Reef construction, reef studies, photos

gotosnapshot.com
Reef shipwrecks, reef structures,
underwater photos

realfish-underwater.com
Diving, video, marine art

wreckvalle@aol.com
Diving, current events

Scubanj.org
NJ Council of Dive Clubs

Get Reef Updates Via E-Mail

If you would like to receive periodic updates about New Jersey's reef-building activities, including photos and coordinates, send us your e-mail address.

PLEASE PRINT CLEARLY

NAME: _____

PHONE:_____

E-mail: _____

I am an (check all that apply):

☐ angler ☐ diver ☐ charter captain
☐ party boat captain ☐ commercial fisherman
☐ Researcher ☐ marine industry representative

Mail to: Reef Program, Division of Fish and Wildlife, P.O. Box 418, Port Republic, NJ 08241

Do you host a website that contains educational or reference information related to fishing, diving, history or biology of New Jersey reefs? Would you like your website included in next year's Reef News? If so, please complete the following questionnaire and mail to:

Artificial Reef Program
Division of Fish & Wildlife
PO Box 418
Port Republic, NJ 08241

Commercial websites for promoting or selling products or services will not be published.

Your Name: _____

Full Address: _____

_____

Phone Number:_____

Website Address:_____

Type of information provided (check all that apply):

___Fishing ___Diagrams
___Diving ___Biology
___Photography ___Locations
___History ___Charts
___Legislative ___Political
___Other _____

REEF PROGRAM
NEW JERSEY DEPARTMENT OF
ENVIRONMENTAL PROTECTION
DIVISION OF FISH AND WILDLIFE
P.O. BOX 418
PORT REPUBLIC, NJ 08241