

South and Mid-Atlantic Reef Perspectives



Erik Zlokovitz, MD DNR Reef Coordinator
Dr. Bob Martore, SC DNR Reef Coordinator

States and regions reefing

South and Mid-Atlantic

- Most active Atlantic states during last 5-10 years: NJ south to GA
- Also some artificial reef projects historically and currently in MA, RI, and NY, but generally less activity north of NJ
- Reefs located in offshore Federal waters (EEZ 3 – 30+ miles out), nearshore State waters (0-3 Miles) and Bays/Estuaries (Chesapeake Bay, Sounds, and other Inland Waterways)
- Many estuarine/shallow water projects focus on oysters

Reef materials used

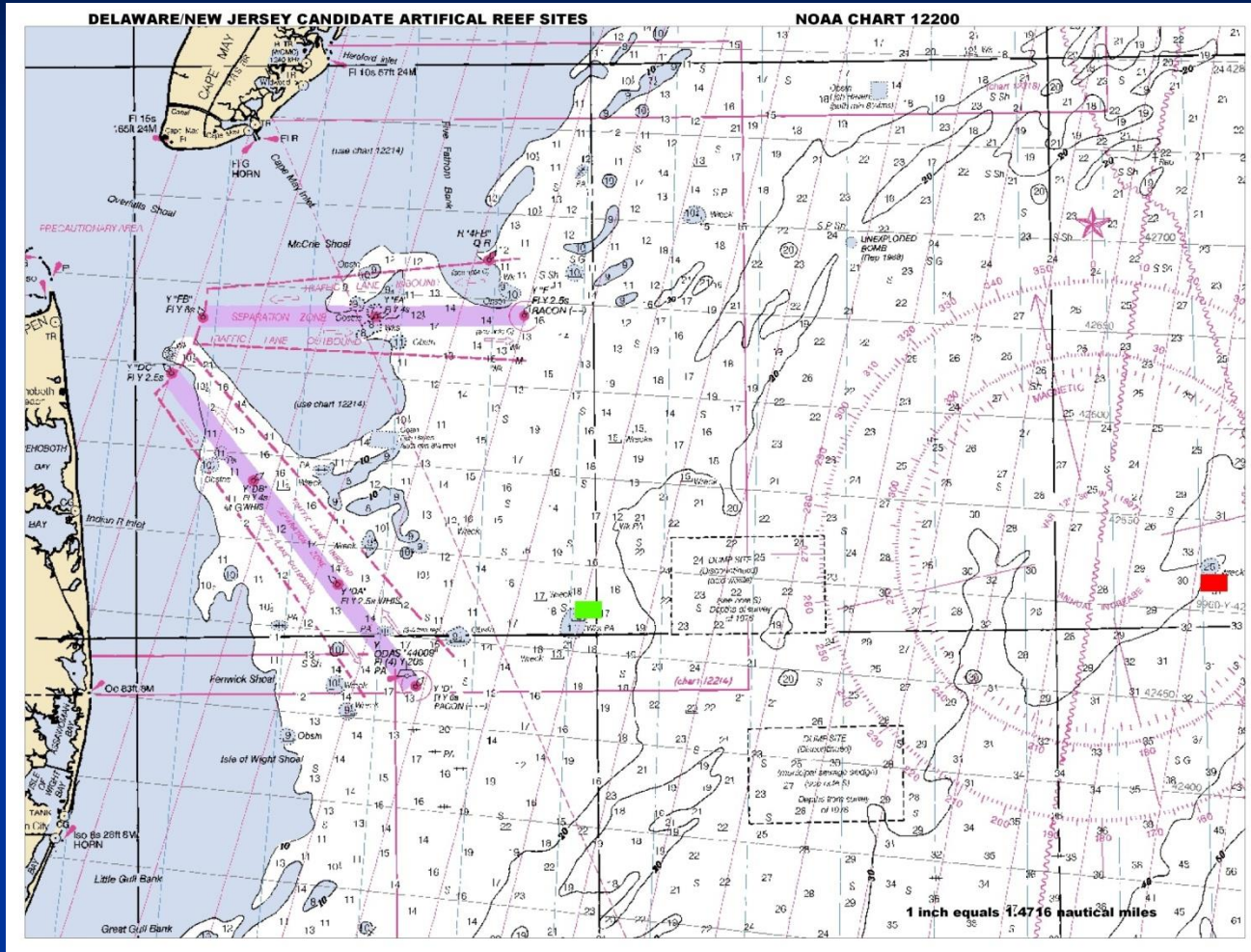
South and Mid-Atlantic

- Offshore: steel hulled ships and barges, military vehicles (tanks/tracked troop carriers), concrete pipe/slabs/blocks
- Nearshore: concrete reef balls, recycled concrete, smaller vessels, boulders
- Shallow Bay/Estuarine Fish Reefs: smaller reef balls, concrete rubble, rock, pipe
- Shallow Bay/Estuarine Oyster reefs: shell (sea clam and oyster), small crushed granite and limestone, small reef-balls

Recent Large Ship/Barge Sink Projects South and Mid-Atlantic

- U.S.S. Radford Destroyer, Length 563 feet overall and 50-60 feet of vertical profile
- Multi-State Project (NJ, DE, MD)
- Del-Jersey-Land reef site, 30 miles offshore, roughly equidistant from Cape May NJ, Lewes DE, and OC,MD
- Fish reported by divers and anglers within months of sinking, ranging from typical black sea bass to stray barracuda

Del-Jersey-Land reef site, 30 miles offshore, roughly equidistant from Cape May NJ, Lewes DE, and OC, MD



Recent Large Ship/Barge Sink Projects South and Mid-Atlantic

- U.S.S. Radford Destroyer, prior to preparation for reefing



Recent Large Ship/Barge Sink Projects South and Mid-Atlantic

- U.S.S. Radford Destroyer, sunk Aug 2011, after preparation at Philadelphia Navy Yard.



Recent Large Ship/Barge Sink Projects South and Mid-Atlantic

- South Carolina offshore, vertically enhanced barge sinking project in Type II MPA, allows mid-water and surface trolling for large pelagics. Amberjack spotted soon after sinking.



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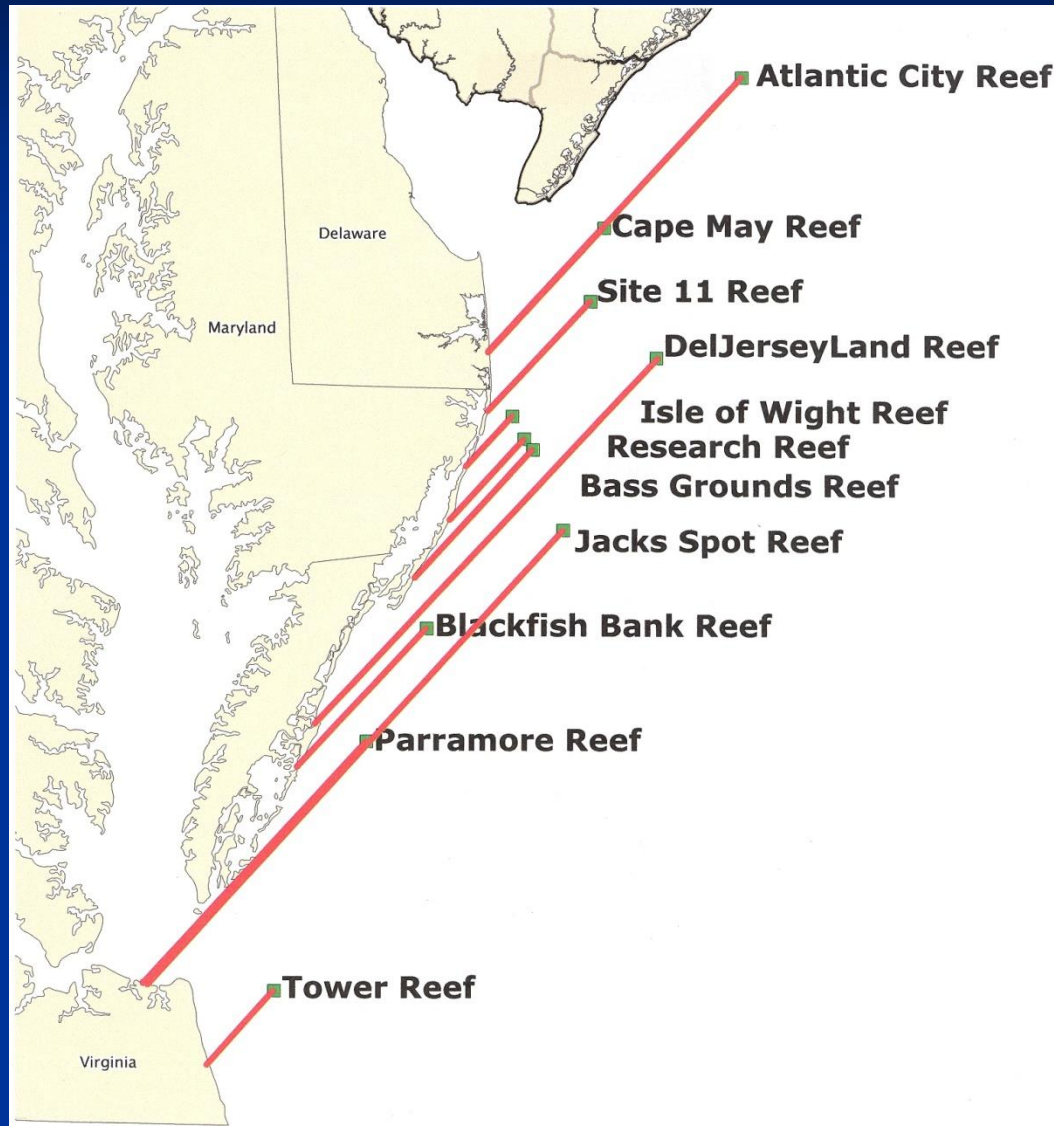
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Brief Recap and 2015 Update - Stainless Steel Subway Cars:

- 2006- New York City Transit Authority reached out to Reef Coordinators from New York to Georgia regarding availability of 1,600 stainless steel subway cars for reefing.
- This newest round of subway cars available from NYCTA were expected to be durable – They were constructed of type 301 and 302 stainless steel.
- US EPA estimated the longevity of the cars would exceed the Redbird subway cars deployed in 2003. US EPA estimated the cars would last at least 25-30 years.
- NJ, DE, MD, VA, SC and GA accepted the subway cars as reef material from NYCTA.

Mid-Atlantic Reef Sites (NJ, DE, MD, VA) and prevailing SW drift



Reef Name	State	# of Stainless Steel Subway Cars Deployed
Atlantic City Reef	New Jersey	44
Cape May Reef	New Jersey	72
Site 11 Reef	Delaware	250
Site 13 Reef (D-J-L)	Delaware	332
Isle of Wight Reef	Maryland	22
Research Reef	Maryland	22
Bass Grounds Reef	Maryland	88
Jack Spot Reef	Maryland	44
Blackfish Bank Reef	Virginia	100
Parramore Reef	Virginia	100
Tower Reef	Virginia	100

Subway Car Debris - The Situation In Maryland (Recap and Update, Jan 2015)

- During a meeting in Ocean City, MD in January, 2013, commercial fisherman reported directly to DNR-Fisheries Director, and Coastal Fisheries Program Manager that subway car debris was being caught “daily” at a distance of 10-15 miles away from original reef sites.
- Same issue was raised again one week later at the Coastal Fisheries Advisory Committee (CFAC) meeting in Ocean City.
- Majority of the debris was being caught by dragger fleet (Otter Trawl Gear).
- Number of reports of loose debris has dropped off to near zero, since latter part of 2013
- Party boats continue to report excellent catches of summer flounder, sea bass, tautog at remains of subway car reefs. Schools of bluefish and scup observed over tops of the structure with drop cameras and dive cameras.

In six months most of the stainless steel subway cars had collapsed

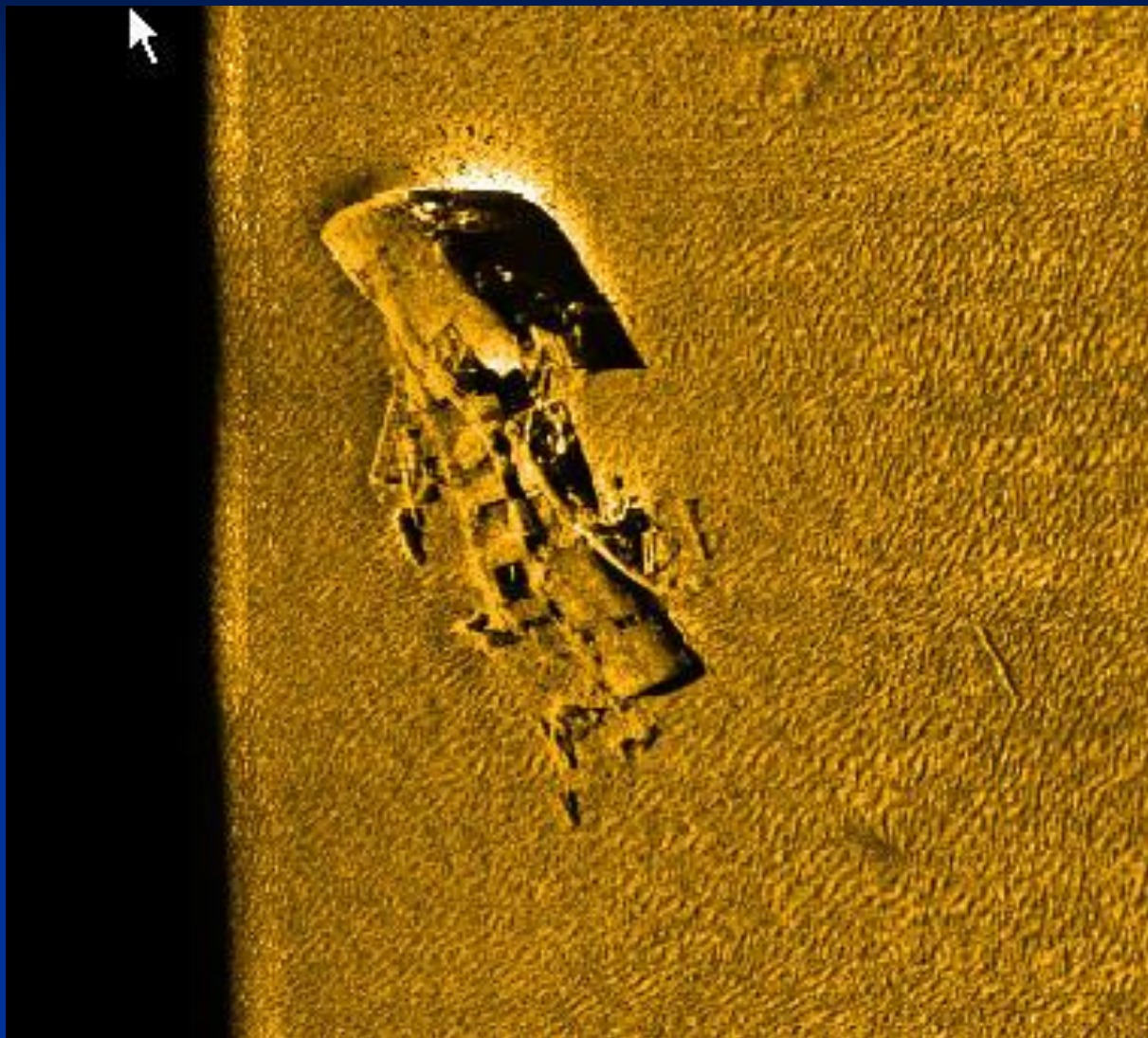


MidAtlantic-2009-0091

NY Subway Car - Jack Spot

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Side Scan Sonar Image of Collapsed Stainless Steel Subway Car



Black Sea Bass and Bluefish at Subway Car Reef Site-MD



Black Sea Bass entering interior of Subway Car Reef Site-MD



Chesapeake Oyster Reefs-The Way Things Used to Be



Oysters “lay thick as stones”

Oysters rose of the water and were a hazard to navigation

-John Smith, early 1600s



Traditional Process of Oyster Bar Restoration Chesapeake Bay

Add or aggregate shells, other
small substrate



Add spat on shell



Alternate Materials for oyster and fish reefs Chesapeake Bay (Big Stuff)

**Larger Rocks, Boulders!
(Granite/Limestone)**



Reef balls



Special Reef Regulations - DE, VA, SC

- Delaware SMZs: Currently in place in state waters. Reefs in EEZ in review process with NOAA (went through council). Rule would allow hook and line fishing (comm or rec), but not fish pots.
- VA Bay reefs, Hook and Line/Hand gear only: in VA Section of Chesapeake Bay
- SC MPAS (NOT no-take): Type II MPAs forbid bottom fishing but allow mid-water and surface trolling for billfish and tuna.
- SC Special Regulations have included restricting fishing to hand-held gear only, and restricting ALL catches on reefs (Rec OR Comm) to rec size and bag limits.
- Other States status?

Monitoring Challenges South and Mid-Atlantic

- Smaller state programs limited by staff and resources. Juggling time commitments between deployments and monitoring.
- May depend on volunteer angling and diving studies. Still requires coordination and data QA/QC.



Future Directions and Challenges

South and Mid-Atlantic

- No Rigs-To-Reefs, but maybe “Dams-to-Reefs” and Wind Towers
- Wind Towers may serve as “Defacto” artificial reefs, but what about the “security zones” surrounding structures?
- “Hybrid Reefs”, Artificial Reefs combined with shoreline projects – benefits to juvenile, younger life stages and shallow water angling
- Ongoing oyster and fish reef construction in Chesapeake Bay and other shallow water coastal waterways will require continued coordination with various user groups competing for space.
- Permit Renewals – requires coordination with multiple state and federal agencies including Historic Trusts.

Questions?

