

Proposed Special Management Zones

Regulatory Amendment 34 would establish Special Management Zones (SMZ) at artificial reef sites off the coasts of North Carolina and South Carolina. The framework amendment would establish 30 sites off North Carolina and four off South Carolina. The proposed actions would also prohibit the use of certain gear types in the SMZs and limit harvest to the recreational bag limit by some or all the gear. The goal is to reduce adverse effects to snapper grouper species and optimize fishing opportunities at the artificial reef sites.

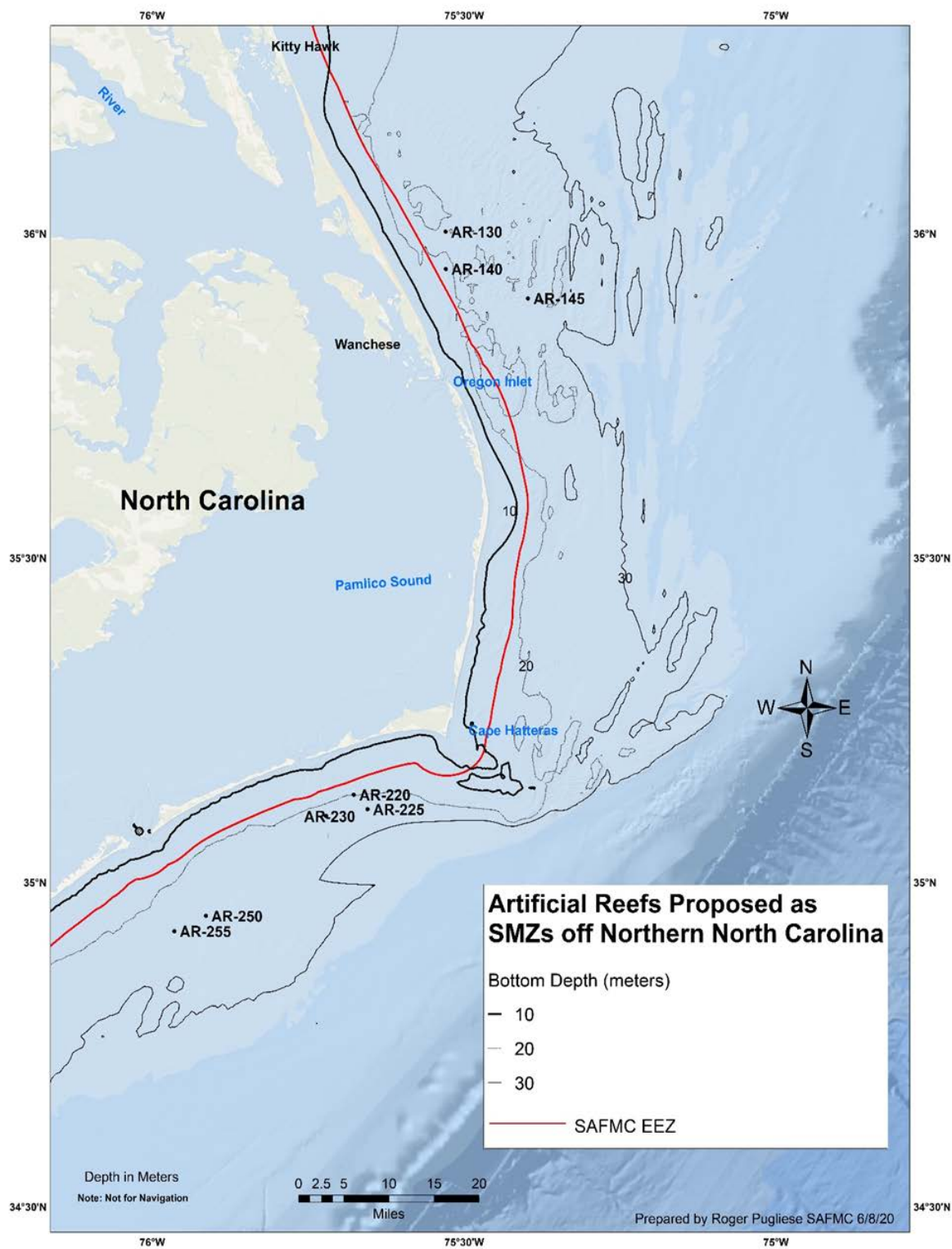


Figure 1. Proposed SMZs at permitted artificial reef sites in the EEZ off northern North Carolina. Maps of individual sites are in **Appendix D**.
Source: SAFMC.

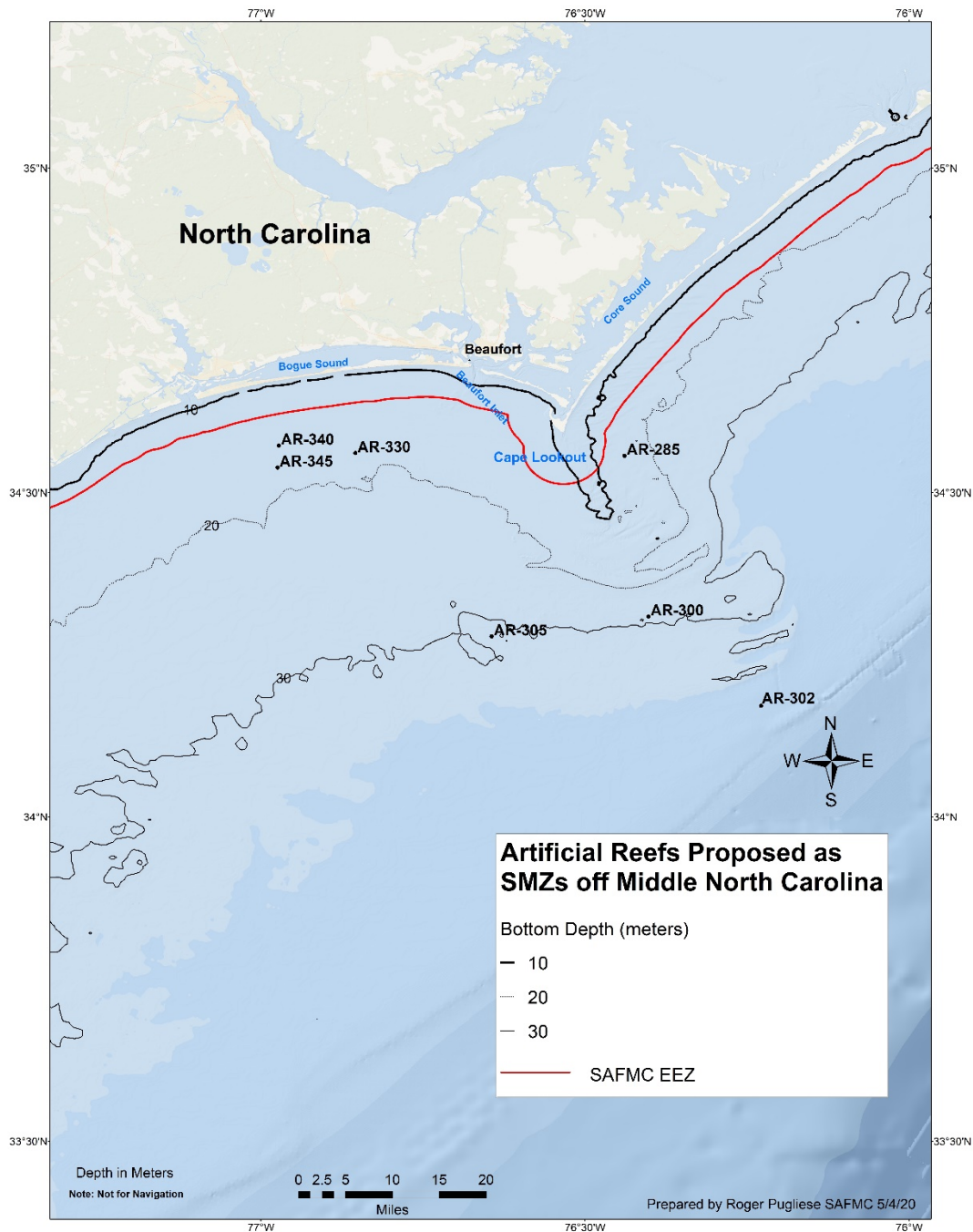


Figure 2. Proposed SMZs at permitted artificial reef sites in the EEZ off central North Carolina. Maps of individual sites are in **Appendix D**.
Source: SAFMC

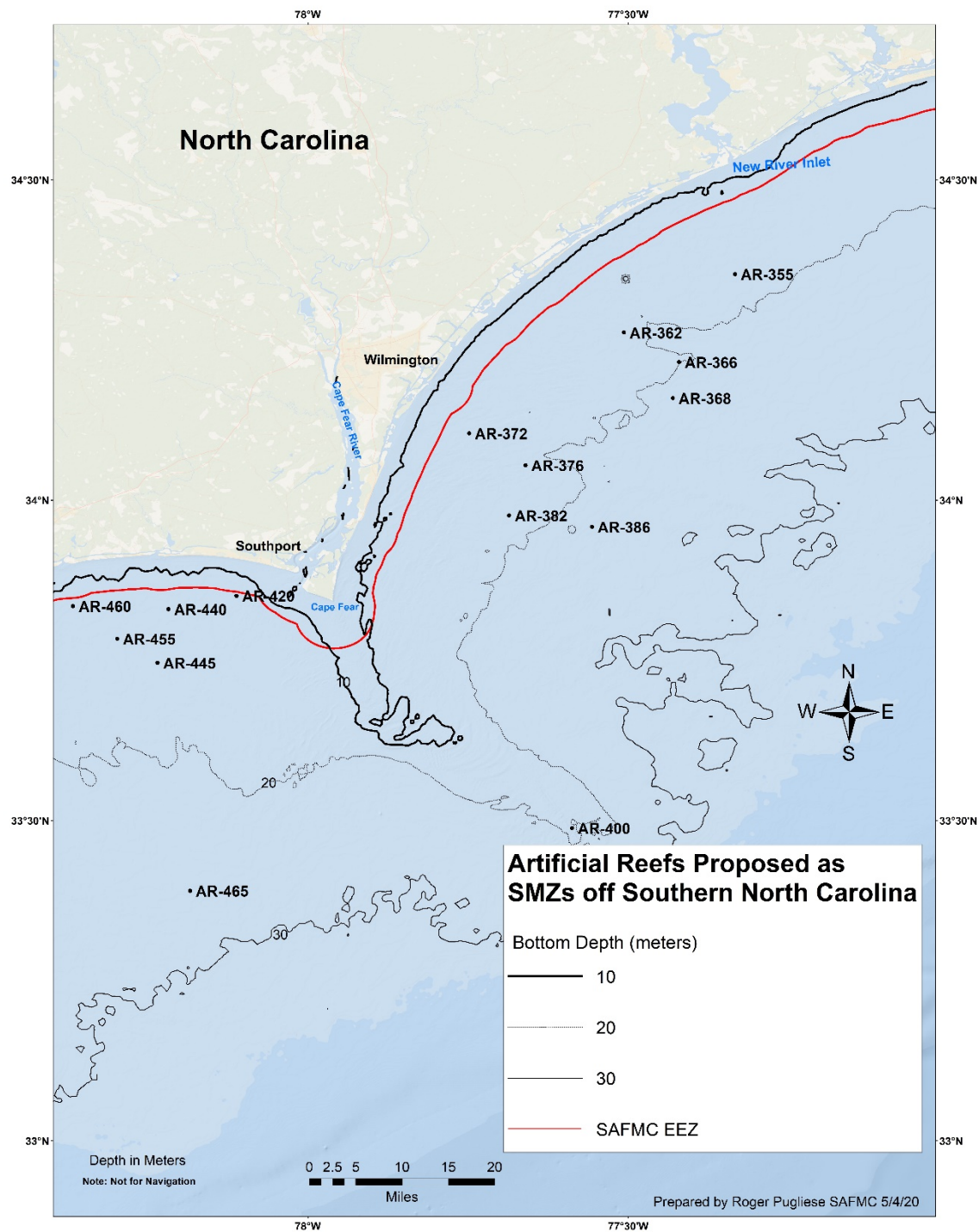


Figure 3. Proposed SMZs at permitted artificial reef sites in the EEZ off southern North Carolina. Maps of individual sites are in **Appendix D**.
Source: SAFMC.

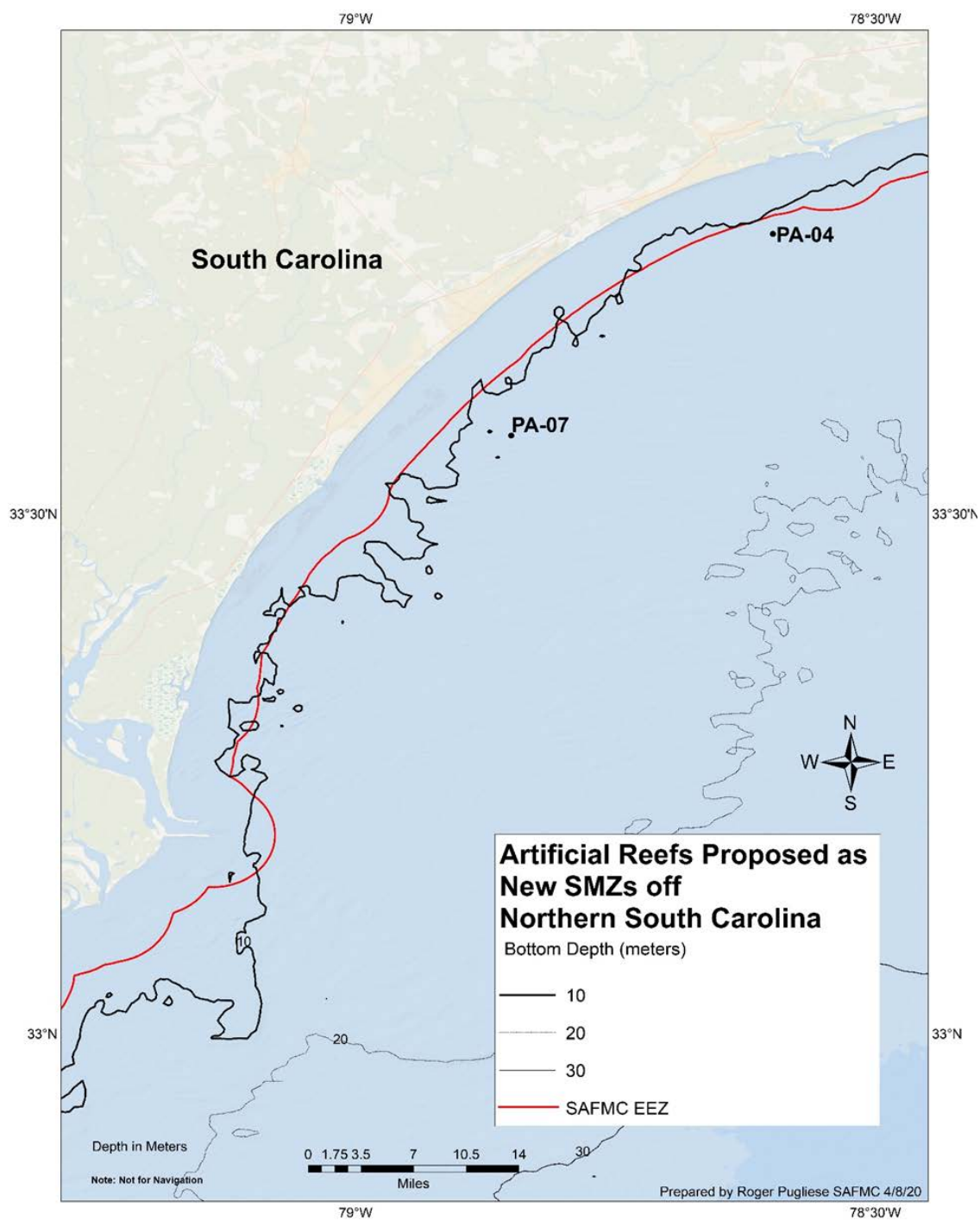


Figure 4. Proposed SMZs at permitted artificial reef sites in the EEZ off northern South Carolina. Maps of individual sites are in **Appendix E**.
Source: SAFMC.

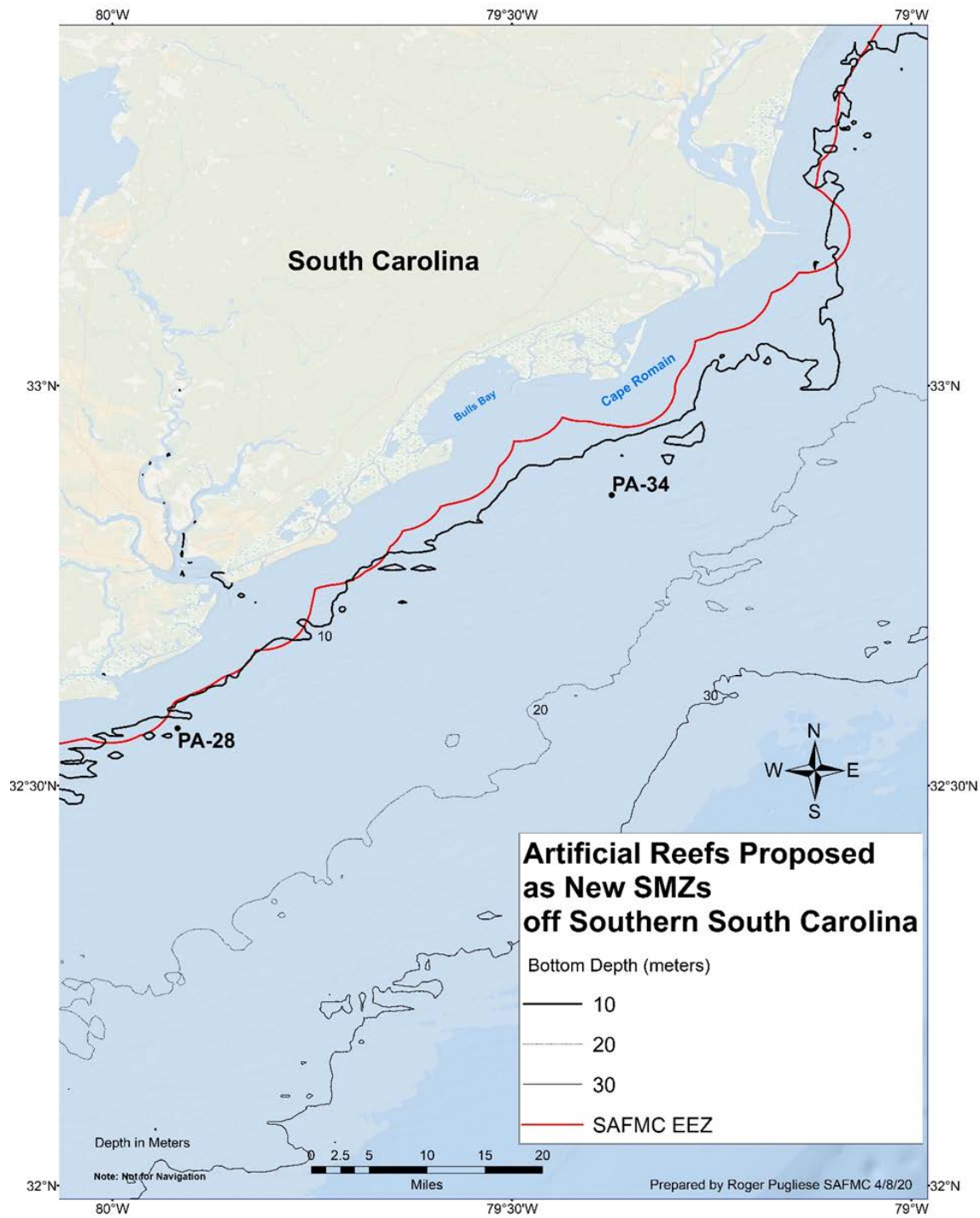


Figure 5. Proposed SMZs at permitted artificial reef sites in the EEZ off southern South Carolina. Maps of individual sites are in **Appendix E**.
Source: SAFMC.

Appendix D. Detailed maps and tables for proposed Special Management Zones off North Carolina

Table 1. North Carolina artificial reefs proposed as SMZs based on permitted locations, including centroids and radius.

Reef Name	Centroid Latitude DDM	Centroid Longitude DDM	Radius (ft)
AR-130	36° 0.296' N	75° 31.957' W	1500
AR-140	35° 56.718' N	75° 31.965' W	1500
AR-145	35° 54.017' N	75° 23.883' W	1500
AR-220	35° 8.117' N	75° 40.633' W	3000
AR-225	35° 6.768' N	75° 39.322' W	1500
AR-230	35° 6.133' N	75° 42.933' W	1500
AR-250	34° 56.900' N	75° 54.860' W	1500
AR-255	34° 55.483' N	75° 57.910' W	1500
AR-285	34° 33.383' N	76° 26.350' W	1500
AR-300	34° 18.517' N	76° 24.133' W	1500
AR-302	34° 10.265' N	76° 13.703' W	1500
AR-305	34° 16.683' N	76° 38.650' W	1500
AR-330	34° 33.634' N	76° 51.267' W	3000
AR-340	34° 34.319' N	76° 58.345' W	1500
AR-345	34° 32.266' N	76° 58.508' W	1500
AR-355	34° 21.318' N	77° 19.877' W	1500
AR-362	34° 15.657' N	77° 30.392' W	1500
AR-366	34° 12.950' N	77° 25.250' W	1500
AR-368	34° 9.514' N	77° 25.782' W	1500
AR-372	34° 6.295' N	77° 44.917' W	1500
AR-376	34° 3.283' N	77° 39.633' W	1500
AR-382	33° 58.581' N	77° 41.172' W	1500
AR-386	33° 57.517' N	77° 33.400' W	1500
AR-400	33° 29.267' N	77° 35.227' W	1500
AR-420	33° 51.050' N	78° 6.710' W	1500
AR-440	33° 49.800' N	78° 13.083' W	1500
AR-445	33° 44.783' N	78° 14.100' W	1500
AR-455	33° 47.033' N	78° 17.883' W	1500
AR-460	33° 50.089' N	78° 22.022' W	1500
AR-465	33° 23.423' N	78° 11.052' W	1500

Source: NCDMF, August 2019.

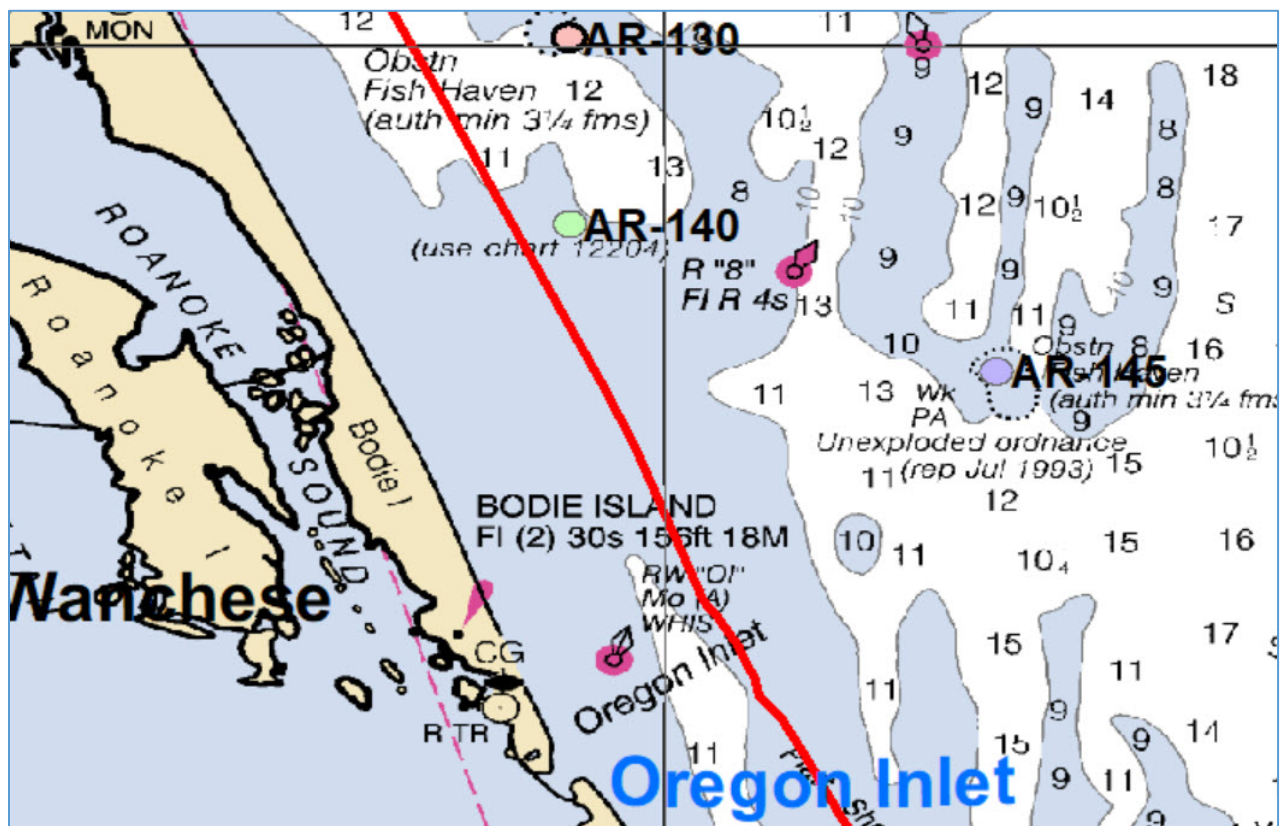


Figure 6. Artificial reefs AR-130, AR-140 and AR-145 proposed as special management zones in the exclusive economic zone off northern North Carolina.

Table 2. Distance and bearing to artificial reefs AR-130, AR-140 and AR-145.

Reef Site	Bearing and Distance
AR-130	345.3° magnetic - 11.6 nm from Oregon Inlet Sea Buoy
AR-140	343.4° magnetic - 8.2 nm from Oregon Inlet Sea Buoy
AR-145	35.3° magnetic - 7.7 nm from Oregon Inlet Sea Buoy

Source: NCDMF.

Table 3. Materials placed in artificial reefs AR-130, AR-140 and AR-145.

Reef Site	Material Category	Area (Sq. Ft.)	Material Details
AR-130	Train Boxcar	116	Train Boxcar
	Train Boxcar	135	Train Boxcar
	Train Boxcar	366	Train Boxcar
	Pilings	39	Bridge Piling Cutoff
	Pilings	29	2 Bridge Piling Cutoffs
	Pilings	80	Bridge Piling Cutoff
	Pilings	86	Bridge Piling Cutoff
	Pilings	17	Bridge Piling Cutoff
	Reef Balls	1,326	66 Reef Balls
AR-140	Pipe	548	1,000 Tons
	Pipe	548	1,000 Tons
	Train Boxcar	349	
AR-145	Vessels	4077	115 FT Landing Craft ""LCU 1468""
	Pipe	889	Small Load Of Concrete Pipe
	Aircraft	487	USCG HU-25 ""Falcon""
	Aircraft	575	USCG HU-25 ""Falcon""
	Pipe	18471	Large Load Of Concrete Pipe
	Concrete Rubble	1951	Washington Baum"" Bridge Rubble
	Pipe	190	Large Load Of Concrete Pipe
	Vessels	1453	185 FT USN Patrol Craft Escort ""ADVANCE II""

Source: North Carolina DMF Artificial Reef Material Shapefile 2019.



Figure 7. Artificial reefs AR-220, AR-225 and AR-230 proposed as special management zones in the exclusive economic zone off northern North Carolina.

Table 4. Distance and bearing to artificial reefs AR-220, AR-225 and AR-230.

Reef Site	Bearing and Distance
AR-220	97.5° magnetic - 4.6 nm from Hatteras Inlet Sea Buoy
AR-225	106.5° magnetic - 6.1 nm from Hatteras Inlet Sea Buoy
AR-230	133.7° magnetic - 4.2 nm from Hatteras Inlet Sea Buoy

Source: NCDMF.

Table 5. Materials placed in artificial reefs AR-220, AR-225 and AR-230.

Reef Site	Material Category	Area (Sq. Ft.)	Material Details
AR-220	Reef Balls	793	200 Reef Balls deployed over a large area.
	Reef Balls	75	200 Reef Balls deployed over a large area.
	Reef Balls	75	200 Reef Balls deployed over a large area.
	Reef Balls	63	200 Reef Balls deployed over a large area.
	Reef Balls	100	200 Reef Balls deployed over a large area.
	Pipe	314	75 Tons
	Reef Balls	38	200 Reef Balls deployed over a large area.
AR-225	Consolidated Concrete	305	105 Tons of Concrete Pieces
	Consolidated Concrete	510	105 Tons of Concrete Pieces
	Train Boxcar	971	
AR-230	Vessels	2313	75 FT Landing Craft
	Vessels	3333	105 FT Tug "Mr. J.C."
	Vessels	4116	130 FT Yard Freighter

Source: North Carolina DMF Artificial Reef Material Shapefile 2019.

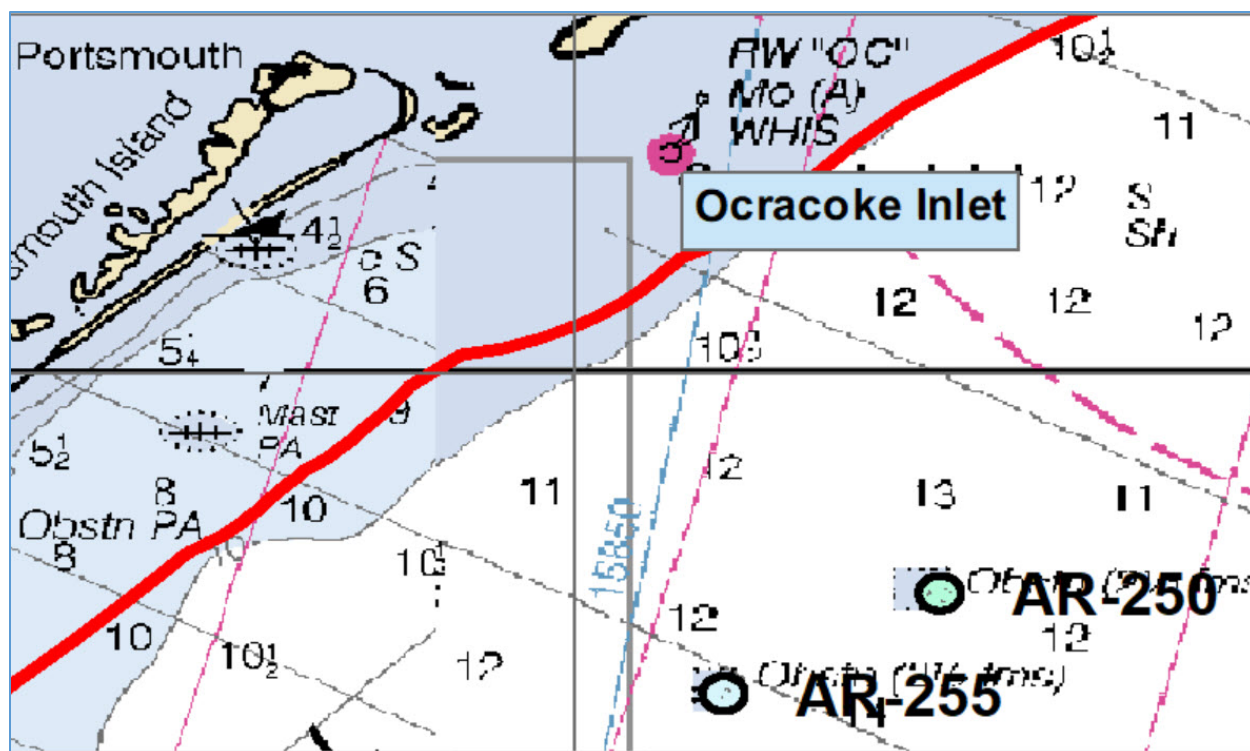


Figure 8. Artificial reefs AR-250 and AR-255 proposed as special management zones in the exclusive economic zone off northern North Carolina.

Table 6. Distance and bearing to artificial reefs AR-250 and AR-255.

Reef Site	Bearing and Distance
AR-250	146.9° magnetic - 7.1 nm from Ocracoke Inlet Sea Buoy
AR-255	167.8° magnetic - 8 nm from Ocracoke Inlet Sea Buoy

Source: NCDMF.

Table 7. Materials placed in artificial reefs AR-250 and AR-255.

Reef Site	Material Category	Area (Sq. Ft.)	Material Details
AR-250	Consolidated Concrete	2788	63 Concrete Boxes
	Bridge Frame	6996	220 FT Steel Bridge Span
	Concrete Rubble	2208	500 Tons
AR-255	Bridge Frame	3072	Old Hobucken Bridge"" steel truss span 150 FT
	Concrete Rubble	3996	80 Tons

Source: North Carolina DMF Artificial Reef Material Shapefile 2019.

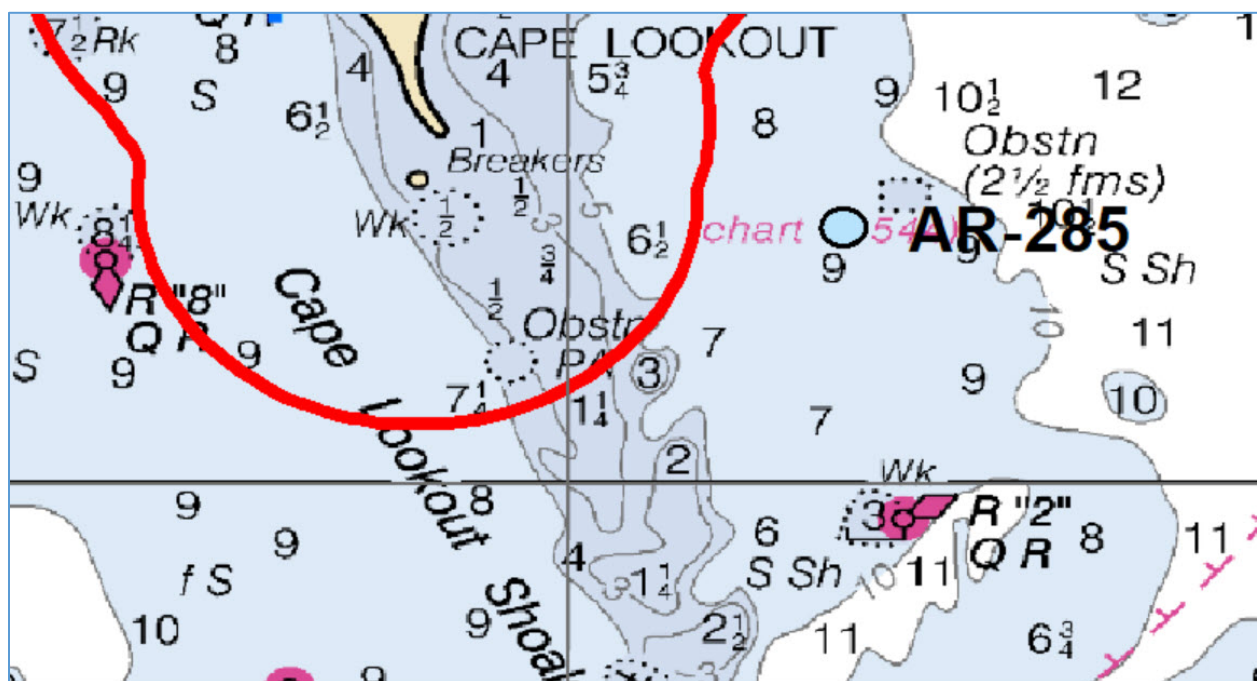


Figure 9. Artificial reefs AR-285 proposed as special management zone in the exclusive economic zone off middle North Carolina.

Table 8. Distance and Bearing to artificial reef AR-285.

Reef Site	Bearing and Distance
AR-285	341.1° magnetic - 3.9 nm from Cape Lookout Shoals Lighted Buoy #2

Source: NCDMF.

Table 9. Materials placed in artificial reef AR-285.

Reef Site	Material Category	Area (Sq. Ft.)	Material Details
AR-285	Vessels	4173	130 FT Steel Hull Fishing Vessel "NANCY LEE"
AR-285	H Units	500	2 "H" Units
AR-285	Reef Balls	3134	100 Reef Balls
AR-285	Manhole Sections	3852	Assorted Manholes & Risers
AR-285	Pipe	3200	50 Large Pieces
AR-285	Pipe	20574	605 Pieces

Source: North Carolina DMF Artificial Reef Material Shapefile 2019.

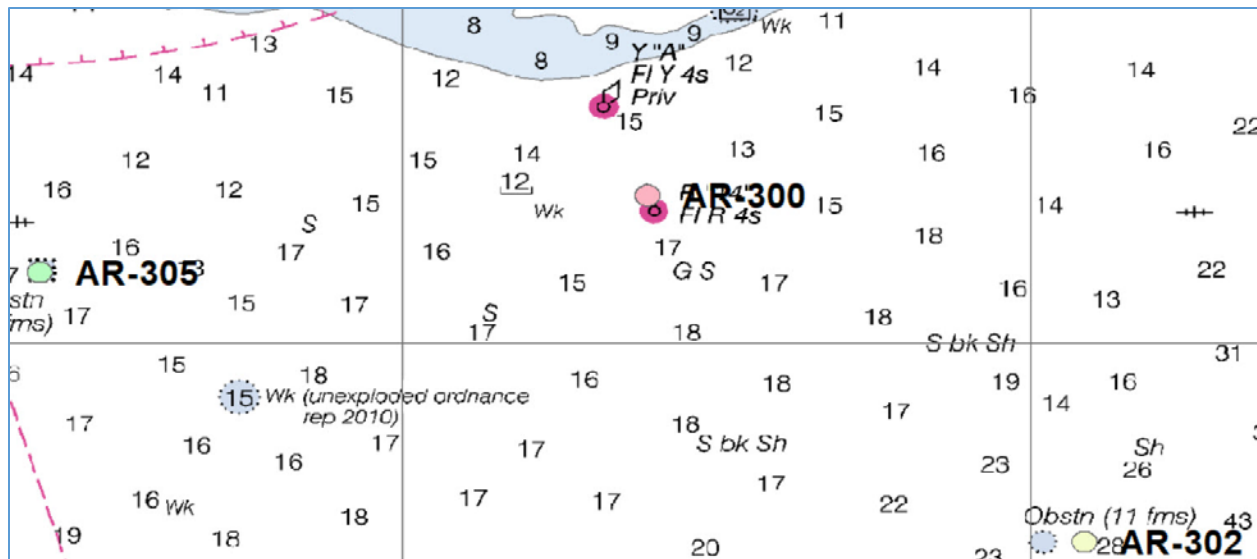


Figure 10. Artificial reefs AR-300, AR-302 and AR-305 proposed as special management zones in the exclusive economic zone off middle North Carolina.

Table 10. Distance and bearing to artificial reefs AR-300, AR-303 and AR-305.

Reef Site	Bearing and Distance
AR-300	163.6° magnetic - 11.1 nm from Cape Lookout Shoals Lighted Buoy #2 or 128.1° magnetic - 11.8 nm from Cape Lookout Shoals Lighted Buoy #6
AR-302	126.8° magnetic - 33.7 nm from Beaufort Inlet Sea Buoy or 142.9° magnetic - 21.7 nm from Cape Lookout Shoals Lighted Buoy #2
AR-305	162.5° magnetic - 18.3 nm from Beaufort Inlet Sea Buoy

Source: NCDMF.

Table 11. Materials placed in artificial reefs AR-300, AR-302, and AR-305.

Reef Site	Material Category	Area (Sq. Ft.)	Material Details
AR-300	Pipe	7181	1,000 Pieces of 48" x 8'
	Pipe	7329	1,000 Pieces of 48" x 8'
	Pipe	3216	500 Pieces 48" x 8'
	Vessels	4540	174 FT Yard Oiler "FS-26"
	Pipe	1077	500 Pieces of 48" x 8'
AR-302	Vessels	30266	YANCEY" 459 FT Assault Transport Ship
	Pipe	10742	830 Pieces
	Pipe	3760	830 Pieces
AR-305	Vessels	4596	183 FT USCG Buoy Tender "SPAR"
	Vessels	12762	439 FT USN Cable Layer "AEOLUS"

Source: North Carolina DMF Artificial Reef Material Shapefile 2019.

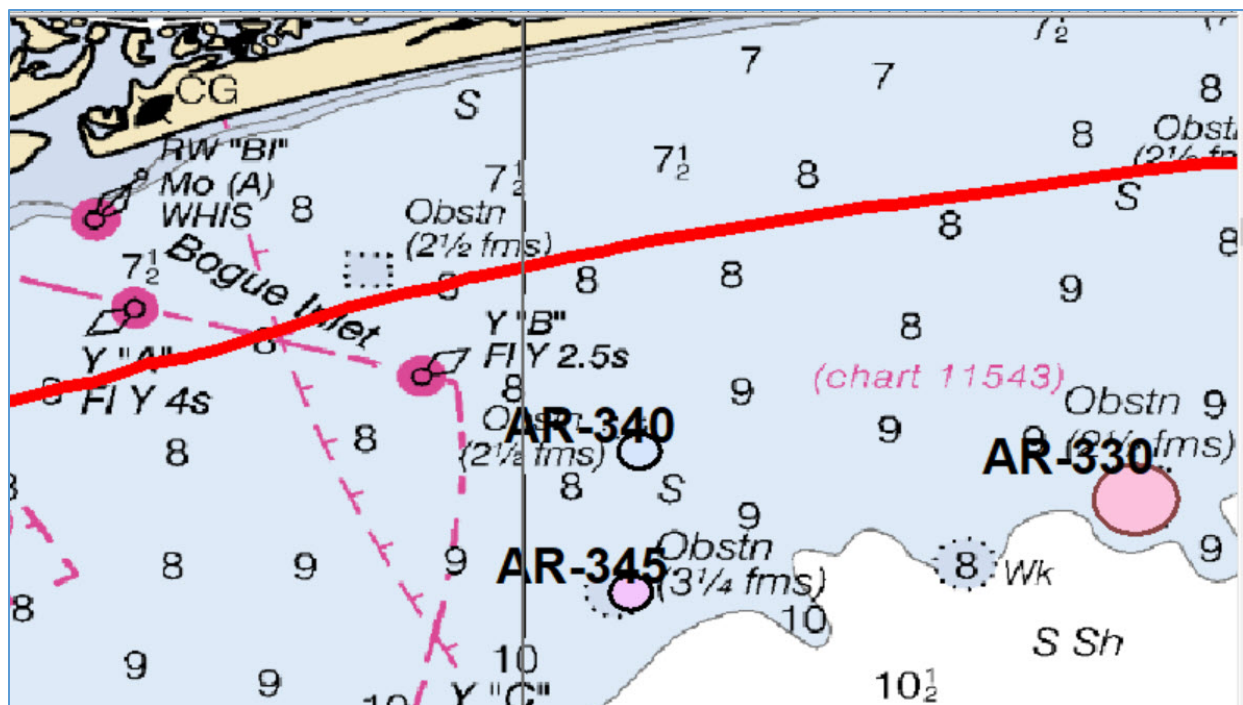


Figure 11. Artificial reefs AR-330, AR-340 and AR-345 proposed as special management zones in the exclusive economic zone off middle North Carolina.

Table 12. Distance and bearing to artificial reefs AR-330, AR-340 and AR-345.

Reef Site	Bearing and Distance
AR-330	251.6° magnetic - 8.1 nm from Beaufort Inlet Sea Buoy or 217.8° magnetic - 11.9 nm from Beaufort Inlet at Fort Macon Jetty
AR-340	106.7° magnetic - 7.2 nm from Bogue Inlet Sea Buoy or 258.1° magnetic - 13.8 nm from Beaufort Inlet Sea Buoy
AR-345	120° magnetic - 8.2 nm from Bogue Inlet Sea Buoy or 249.8° magnetic - 14.2 nm from Beaufort Inlet Sea Buoy

Source: NCDMF.

Table 13. Materials placed in artificial reefs AR-330, AR-340, and AR-345.

Reef Site	Material Category	Area (Sq. Ft.)	Material Details
AR-330	Pipe	35841	822 Tons Concrete Pipe
	Pipe	32314	411 Tons Concrete Pipe
	Pipe	28695	548 Tons Concrete Pipe
	Pipe	22235	274 Tons Concrete Pipe
	Pipe	13004	137 Tons Concrete Pipe
	Pipe	31600	685 Tons Concrete Pipe
	H ^{'''} Units	3641	45 ^{'''} H ^{'''} Units
	H ^{'''} Units	1521	43 ^{'''} H-Units ^{'''}
	Pipe	36689	600 Tons Concrete Pipe
	Reef Balls	3287	45 Reef Balls
	Pipe	3860	201 Pieces Concrete Pipe
	Fiberglass Domes	420	3 Pre-Fabricated Fiberglass Domes
	Aircraft	176	2 C-130 Aircraft
	Reef Balls	8059	45 Reef Balls
	Vessels	13377	320 FT Landing Craft Repair Ship ^{'''} INDRA ^{'''}
	Vessels	421	55 FT Steel Sailboat ^{'''} NEPOMUK ^{'''}
	Vessels	112	49 FT Ferro-Cement Sailboat ^{'''} HARD ROCK ^{'''}
	Vessels	673	45 FT Ferro-Cement Sailboat ^{'''} CEMENT LADY ^{'''}
	Vessels	3776	200 FT Deck Barge TBM IX
	Vessels	3662	107 ft. Tugboat "James J. Francesconi"
	Vessels	1384	67 ft. Tugboat "The Tramp"
AR-340	Reef Balls	7726	71 Reef Balls
	Pipe	28821	42 ^{'''} X 8' Concrete Pipe
	Pipe	88538	Concrete Pipe - 1000 Tons / 500 Pieces
	Consolidated Concrete	18442	137 Pieces Concrete Panels, Headers, Dock Panels, Roof Panels, & Pipe
	Train Boxcar	1424	4 Train Boxcars
	Boat Mold	6311	5 Hatteras Boat Molds
	Manhole Sections	4732	46 Manhole Sections
	Boat Mold	1259	2 Hatteras Boat Molds
AR-345	Reef Balls	14375	75 Reef Balls
	Reef Balls	8030	20 Reef Balls in 4 groups of 5
	Reef Balls	5282	50 Ultra Reef Balls & 1 Reef Ball
	Consolidated Concrete	81583	Consolidated Concrete: 750 Pieces Concrete Pipe, 1500 Tons Manhole Sections
	Pipe	4543	Concrete Pipe
	Pipe	10526	170 Pieces Concrete Pipe
	Vessels	2631	116 FT Tug Boat ^{'''} TITAN ^{'''}
	Train Boxcar	1699	10 Train Boxcars (In multiple pieces)

Source: North Carolina DMF Artificial Reef Material Shapefile 2019.

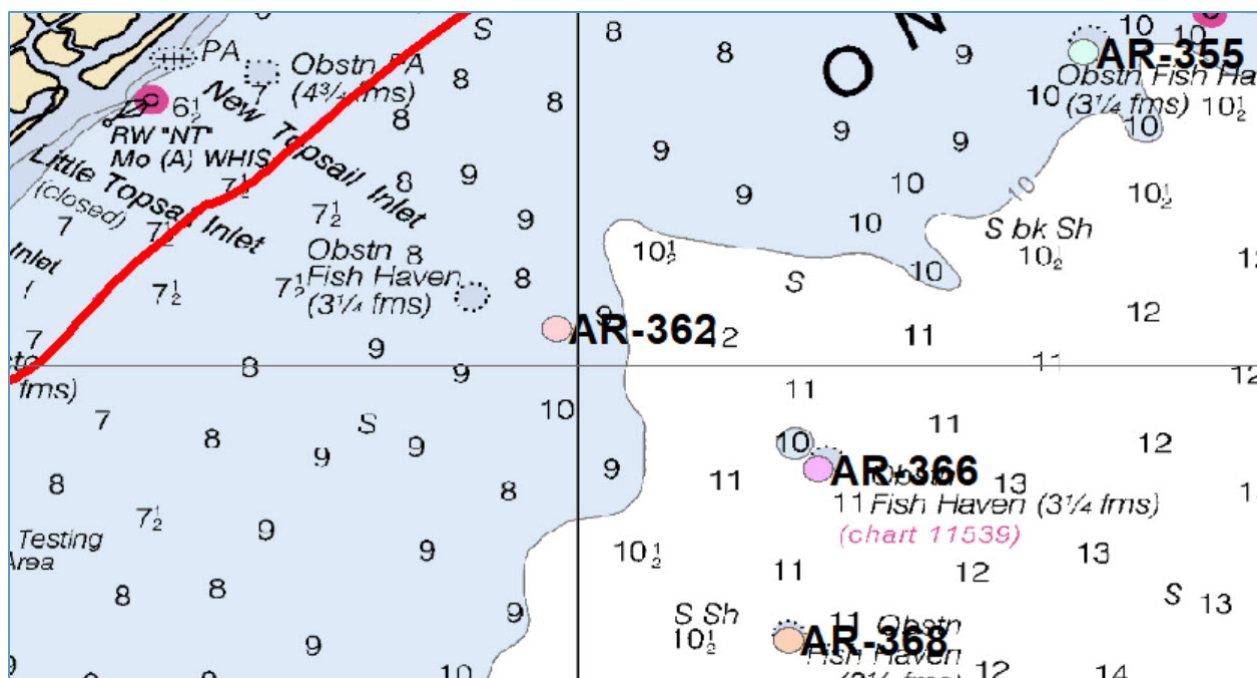


Figure 12. Artificial reefs AR-355, AR-362, AR-366 and AR-368 proposed as special management zones in the exclusive economic zone off southern North Carolina.

Table 14. Distance and bearing to artificial reefs AR-355, AR-362, AR-366 and AR-368.

Reef Site	Bearing and Distance
AR-355	172.1° magnetic - 9.9 nm from New River Inlet Sea Buoy or 76.2° magnetic - 15.3 nm from New Topsail Inlet Sea Buoy
AR-362	114.1° magnetic - 8 nm from New Topsail Inlet Sea Buoy
AR-366	113.5° magnetic - 13.1 nm from New Topsail Inlet Sea Buoy
AR-368	125.5° magnetic - 14.9 nm from New Topsail Inlet Sea Buoy or 82.5° magnetic - 18.3 nm from Masonboro Inlet Sea Buoy

Source: NCDMF.

Table 15. Materials placed in artificial reefs AR-355, AR-362, AR-366 and AR-368.

Reef Site	Material Category	Area (Sq. Ft.)	Material Details
AR-355	Train Boxcar	2250	7 Train Boxcars
	Concrete Rubble	11965	Hwy. 172 Bridge Rubble 10 Barge Loads of Pilings and Rails
	Concrete Rubble	8320	Hwy. 172 Bridge Rubble 10 Barge Loads of Pilings and Rails
	Concrete Rubble	11296	Hwy. 172 Bridge Rubble 10 Barge Loads of Pilings and Rails
	Concrete Rubble	5888	Hwy. 172 Bridge Rubble 10 Barge Loads of Pilings and Rails
AR-362	Pipe	8812	130 Tons Concrete Pipe
	Pipe	51537	850 Pieces of 48" X 8' Concrete Pipe
	Train Boxcar	1434	5 Train Boxcars
AR-366	Train Boxcar	8542	
	Pipe	10905	260 tons of Concrete Pipe
	Pipe	75440	850 pieces of 48" x 8' Concrete Pipe
	Manhole Sections	17310	61 pieces
	Consolidated Concrete	15701	28 pieces of Manhole Sections and Concrete Risers / 66 Concrete Culvert Box
	Train Boxcar	4466	
AR-368	Train Boxcar	3118	4 Train Boxcars
	Vessels	9210	241 FT Loa Barge "LC-16"
	Pipe	3091	130 Tons Concrete Pipe - Topsail Beach Offshore Fishing Club

Source: North Carolina DMF Artificial Reef Material Shapefile 2019.

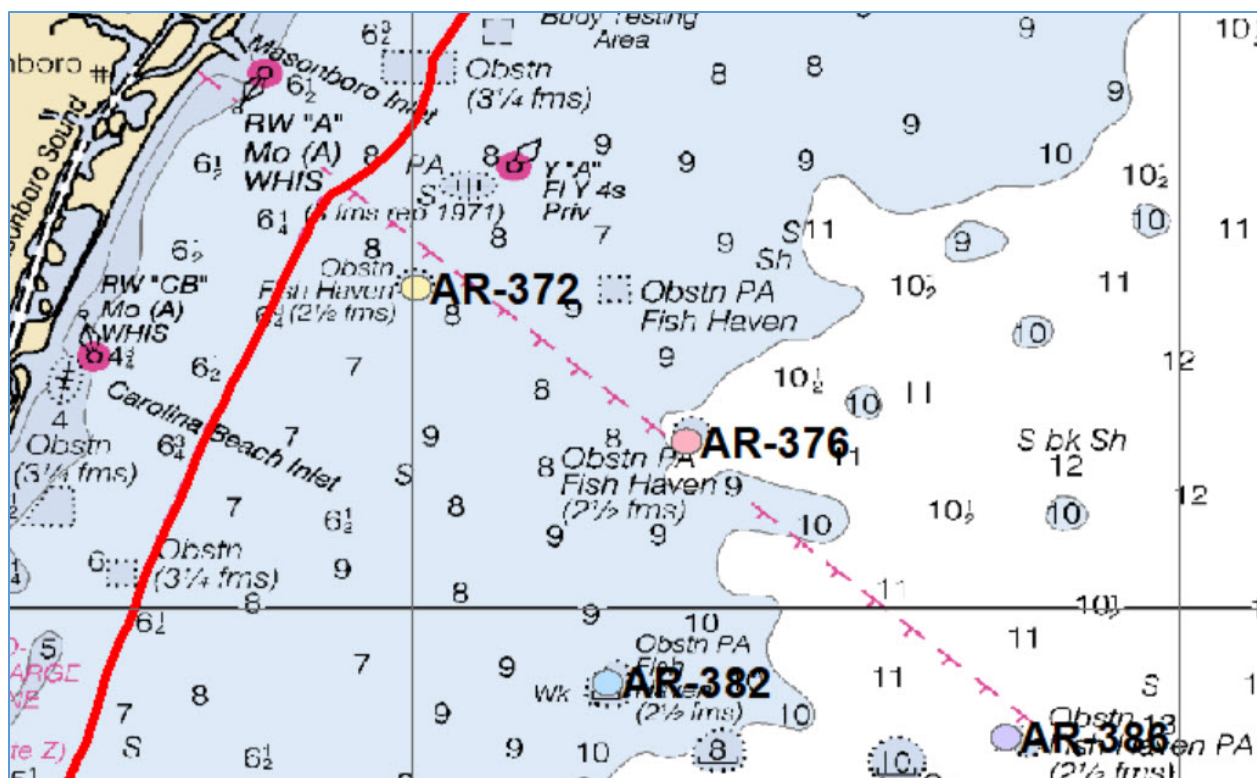


Figure 13. Artificial reefs AR-372, AR-376, AR-382 and AR-386 proposed as special management zones in the exclusive economic zone off southern North Carolina.

Table 16. Distance and bearing to artificial reefs AR-372, AR-376, AR-382 and AR-386.

Reef Site	Bearing and Distance
AR-372	140.1° magnetic - 4.8 nm from Masonboro Inlet Sea Buoy or 65.7° magnetic - 5.3 nm from Carolina Beach Inlet Sea Buoy
AR-376	126.3° magnetic - 9.9 nm from Masonboro Inlet Sea Buoy or 89.5° magnetic - 9.7 nm from Carolina Beach Inlet Sea Buoy
AR-382	117.5° magnetic - 10.4 nm from Carolina Beach Inlet Sea Buoy
AR-386	127.1° magnetic - 17.6 nm from Masonboro Inlet Sea Buoy

Source: NCDMF.

Table 17. Materials placed in artificial reefs AR-372, AR-376, AR-382 and AR-386.

Reef Site	Material Category	Area (Sq. Ft.)	Material Details
AR-372	Vessels	5449	220 FT Barge
	Vessels	8959	220 FT Barge
	Reef Balls	11484	128 Reef Balls
	Train Boxcar	6109	Train Boxcars - In Multiple Pieces
	Pipe	29080	Concrete Pipe 265.2 Tons
	Pipe	23324	Concrete Pipe 252.1 Tons
	Pipe	30275	Concrete Pipe 253.4 Tons
	Pipe	25212	Concrete Pipe 236.6 Tons
	Atlantic Pods	13816	50 Pieces
AR-376	Pipe	69271	850 Pieces of 60" X 8' Concrete Pipe
	Waffle-Crete	226	2 Pieces Waffle Crete
	Train Boxcar	624	Train Boxcars - In Multiple Pieces
AR-382	Reef Balls	916	100 Reef Balls Deployed in this area.
	Reef Balls	1263	100 Reef Balls Deployed in this area.
	Reef Balls	574	100 Reef Balls Deployed in this area.
	Reef Balls	517	100 Reef Balls Deployed in this area.
	Vessels	2415	105 FT Tug "POCHAHONTAS"
	Vessels	1463	86 Ft Tug "R.R. STONE"
	Vessels	6276	Dredge "PLAYA" - Marine Casualty
AR-386	Vessels	10750	150 FT YTT Barge "ALTON LENNON"
	Vessels	9240	215 FT USACOE Dredge "HYDE"
	Vessels	13042	320 FT USACOE Dredge "MARKHAM"
	Train Boxcar	2693	Train Boxcars - In Multiple Pieces

Source: North Carolina DMF Artificial Reef Material Shapefile 2019.

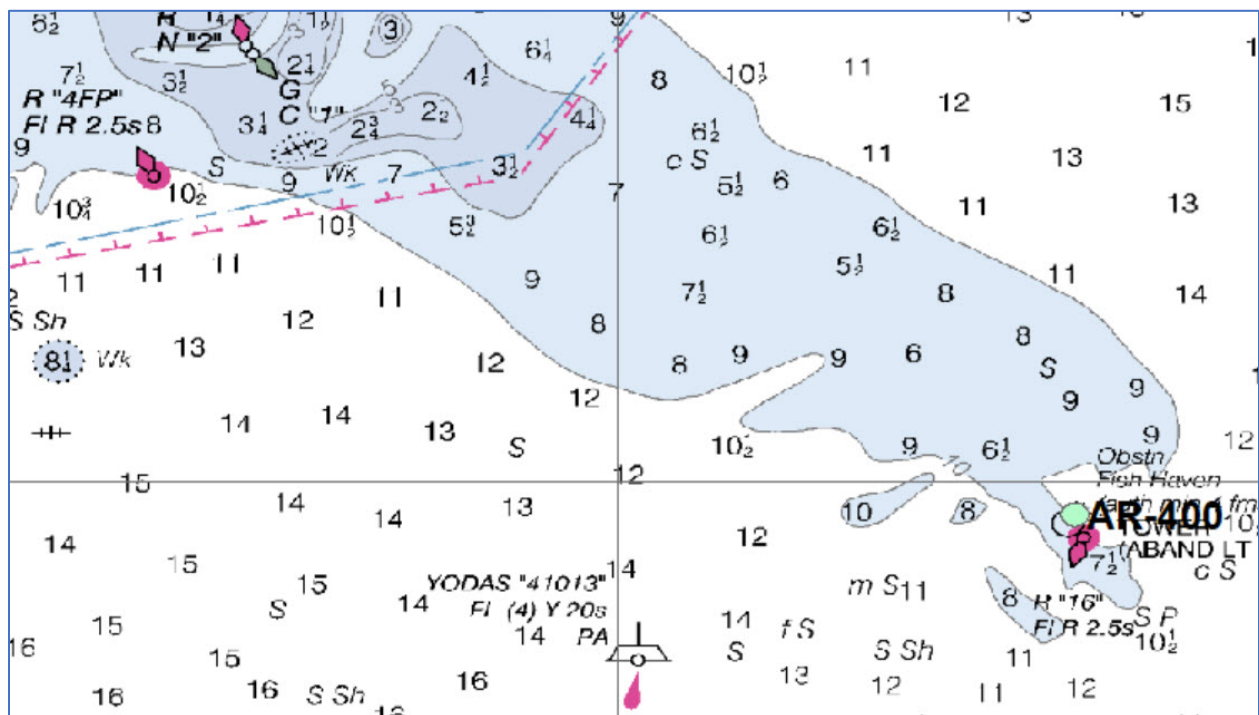


Figure 14. Artificial reef AR-400 proposed as special management zone in the exclusive economic zone off southern North Carolina.

Table 18. Distance and bearing to artificial reef AR-400.

Reef Site	Bearing and Distance
AR-400	329.4° magnetic - 0.7 nm from Frying Pan Tower

Source: NCDMF.

Table 19. Materials placed in artificial reef AR-400.

Reef Site	Material Category	Area Sq. Ft.	Material Details
AR-400	Vessels	5609	Capt. Greg MicKey"" Menhaden Vessel

Source: North Carolina DMF Artificial Reef Material Shapefile 2019.

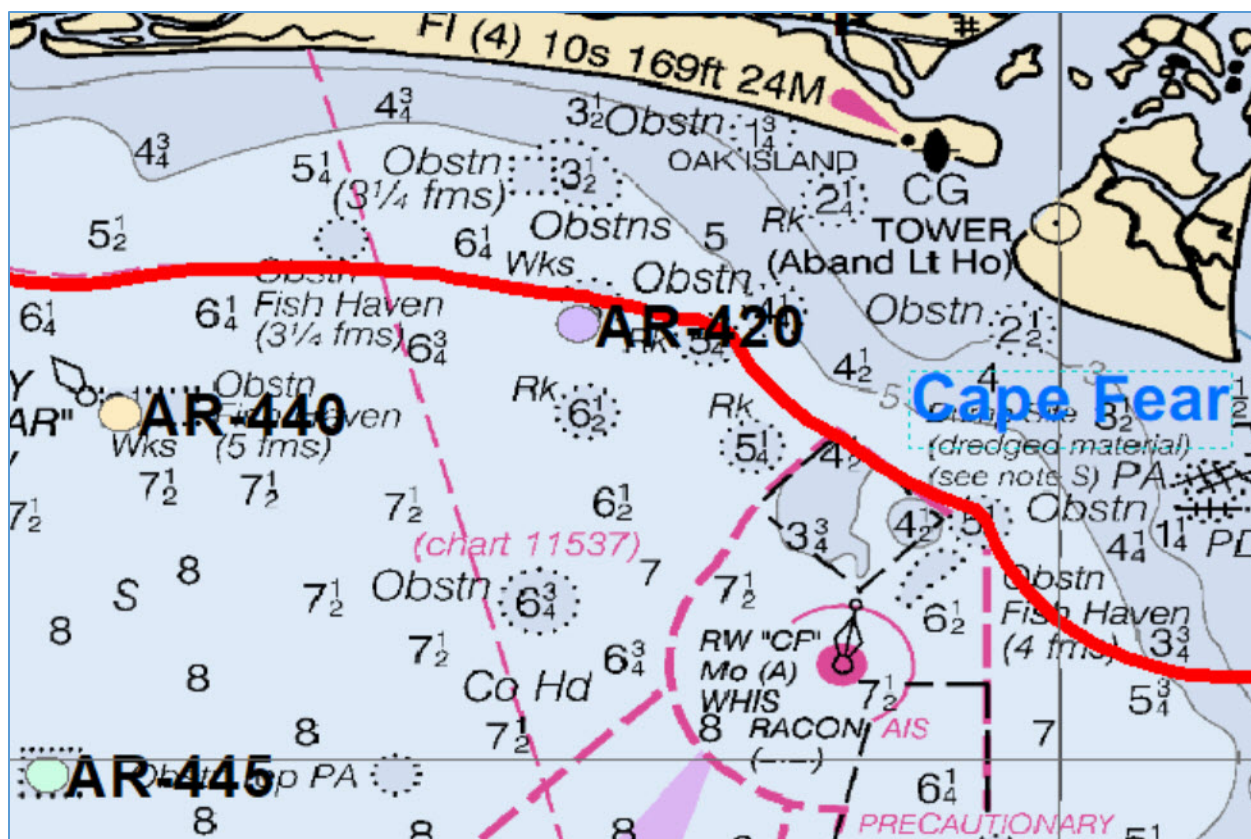


Figure 15. Artificial reefs AR-420, AR-440 and AR-445 proposed as special management zones in the exclusive economic zone off southern North Carolina.

Table 20. Distance and bearing to artificial reefs AR-420, AR-440 and AR-445.

Reef Site	Bearing and Distance
AR-420	317.3° magnetic - 5.7 nm from Cape Fear River Sea Buoy, 226.7° magnetic - 4.6 nm from Oak Island Light, or 104.3° magnetic - 6.7 nm from Lockwood's Folly Sea Buoy
AR-440	282.9° magnetic - 9.1 nm from Cape Fear River Sea Buoy, 237.6° magnetic - 9.9 nm from Oak Island Light, or 158.1° magnetic - 4.1 nm from Lockwood's Folly Inlet Sea Buoy
AR-445	250.8° magnetic - 9.3 nm from Cape Fear River Sea Buoy, 218.7° magnetic - 13.3 nm from Oak Island Light, or 170° magnetic - 9.1 nm from Lockwood's Folly Inlet Sea Buoy

Source: NCDMF.

Table 21. Materials placed in artificial reef AR-420.

Reef Site	Material Category	Area (Sq. Ft.)	Material Details
AR-420	Vessels	4141	110 FT Water Barge YC-794 ""POTTER BARGE""
	Bridge Frame	3679	230 FT Bridge Span
	Consolidated Concrete	30837	Consolidated Concrete: 354 Misc Concrete Pieces and 600 Tons Manhole Sections
	Manhole Sections	14526	
	Pipe	15410	Concrete Pipe: 123 (36"X8'), 15 (18"X8'), 265 (15"X8')
	Consolidated Concrete	8486	Consolidated Concrete: 309 Tons Pipe and Manhole Sections
	Consolidated Concrete	6037	Concrete Pipe and Manhole Sections
	Reef Balls	1477	50 Reef Balls, 100 deployed in 4 groups of 25
	Reef Balls	1631	50 Reef Balls, 100 deployed in 4 groups of 25
	Reef Balls	2275	50 Reef Balls
	Vessels	4715	180 FT Barge HT-85
	Pipe	21716	464 Pieces of 24"" Concrete Pipe
	Consolidated Concrete	2263	Consolidated Concrete: Pipe (162), Pilings (3), Parking Dividers (62) & Various Material (65+).
	Manhole Sections	17191	

Source: North Carolina DMF Artificial Reef Material Shapefile 2019.

Table 22. Materials placed in artificial reefs AR-440 and AR-445.

Reef Site	Material Category	Area (Sq. Ft.)	Material Details
AR-440	Vessels	1785	65 FT Tug ""COOPEDGE""
	Vessels	976	65 FT Tug ""A.T.PINER""
	Pipe	21593	500 Pieces Concrete Pipe
	Consolidated Concrete	3405	Consolidated Concrete: Assorted Concrete Items
	Boiler Pieces	1229	6 Boiler Pieces
	Train Boxcar	747	
	Pipe	7119	151 Pieces of 24"" X 8' Concrete Pipe
	Pipe	11736	500 Tons High Density Concrete Pipe
	Pipe	36213	500 Tons Low Density Concrete Pipe
	Pipe	32645	414 Pieces Concrete Pipe
	Pipe	215	Outlying Individual Concrete Pipe - Unknown Deployment Date
	Reef Balls	8469	50 Reef Balls
	Boiler Pieces	271	1 Boiler Piece (Donated By Phiser)
	Pipe	6515	150 Pieces Concrete Pipe
	Consolidated Concrete	265	60 Tons Consolidated Concrete
	Consolidated Concrete	177	60 Tons Consolidated Concrete
	Consolidated Concrete	35	60 Tons Consolidated Concrete
	Consolidated Concrete	145	60 Tons Consolidated Concrete
AR-445	Vessels	3702	174 FT Vessel ""JELL II"
	Vessels	715	55 FT Tug ""ADMIRAL CHARLIE""
	Pipe	30192	140 Pieces and 617 Tons Concrete Pipe
	Concrete Rubble	5240	Concrete Rubble: Scrap Concrete & Scrap Reef Balls
	Manhole Sections	10728	160 Tons Manhole Sections
	Pipe	24215	317 Pieces Concrete Pipe
	Pipe	22842	250 Pieces Concrete Pipe
	Reef Balls	3669	33 Reef Balls
	Reef Balls	1833	33 Reef Balls
	Reef Balls	3217	34 Reef Balls
	Boat Mold	517	Fiberglass and Steel Boat Molds
	Boat Mold	328	Fiberglass and Steel Boat Molds

Source: North Carolina DMF Artificial Reef Material Shapefile 2019.

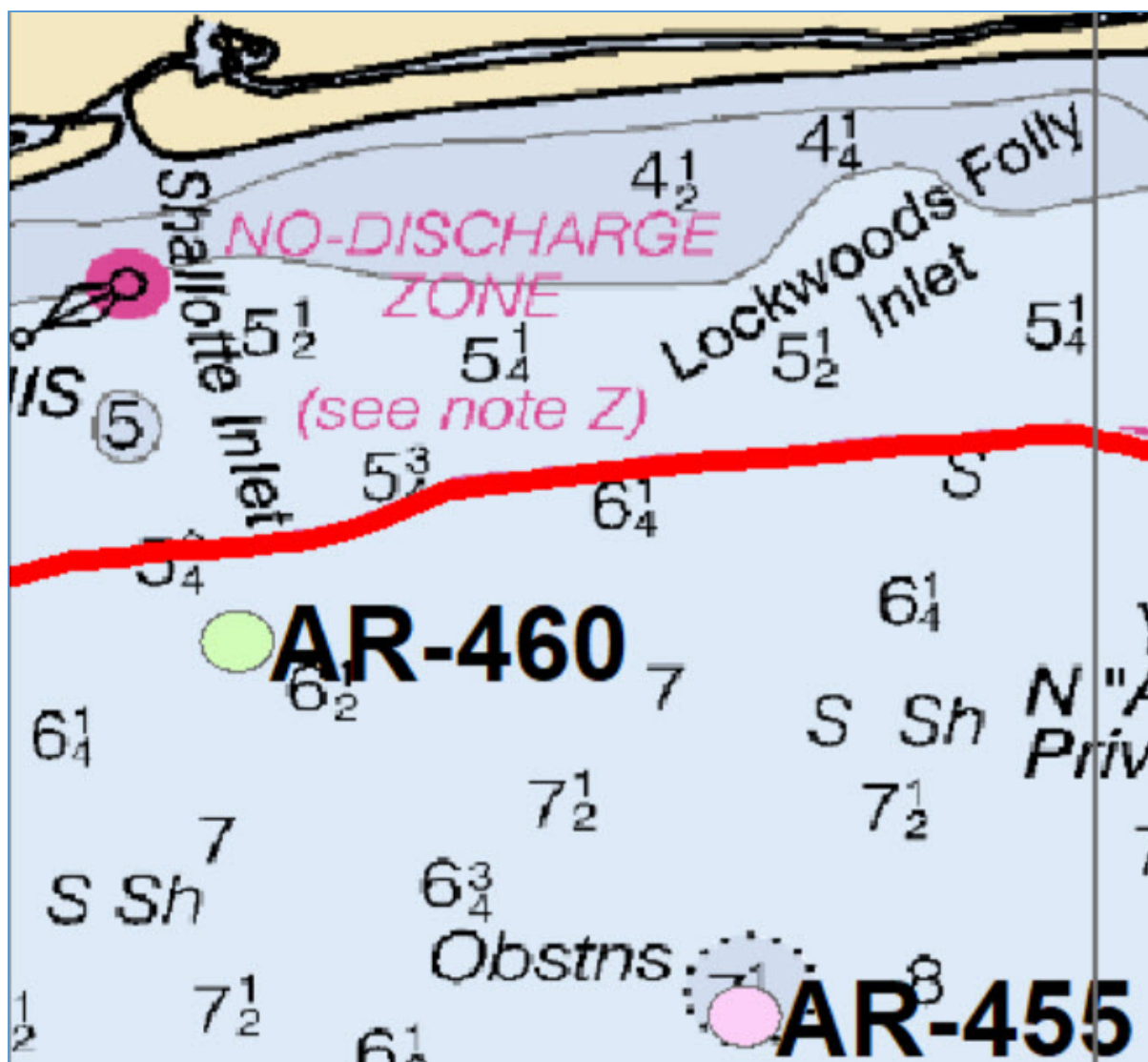


Figure 16. Artificial reefs AR-455 and AR-460 proposed as special management zones in the exclusive economic zone off southern North Carolina.

Table 23. Distance and bearing to artificial reefs AR-455 and AR-460.

Reef Site	Bearing and Distance
AR-455	263.6° magnetic - 12.4 nm from Cape Fear River Sea Buoy or 194.8° magnetic - 7.5 nm from Lockwood's Folly Inlet Sea Buoy
AR-460	155.4° magnetic - 2.8 nm from Shallotte Inlet Sea Buoy or 231.3° magnetic - 7.5 nm from Lockwood's Folly Inlet Sea Buoy

Source: NCDMF.

Table 24. Materials placed in artificial reefs AR-455 and AR-460.

Reef Site	Material Category	Area (Sq. Ft.)	Material Details
AR-455	Manhole Sections	32426	Manhole Sections (Part 2 of 2 of a 150 Deployment)
	Pipe	882	6 Pieces Concrete Pipe
	Consolidated Concrete	15904	Consolidated Concrete: Ultra Reef Balls, Dale Ward Reef Ball, Manhole Sections, Pipe
	Pipe	10673	600 Tons Concrete Pipe
	Vessels	2457	104 FT Navy Tug ""PAWTUCKET""
	Pipe	313	3 Pieces of Pipe
	Consolidated Concrete	25861	Consolidated Concrete: 800 Tons Concrete Pipe and Manhole Sections
	Pipe	22645	369 Pieces Concrete Pipe
	Manhole Sections	17666	Manhole Sections (Part 1 of 2 of a 150 Deployment)
	Pipe	904	5 Pieces Concrete Pipe
	Reef Balls	1931	34 Reef Balls
	Reef Balls	8415	100 Reef Balls (4 groups of 25)
	Reef Balls	5392	66 Reef Balls in 2 Groups of ~33
	Reef Balls	72	3 Outlier Reef Balls
AR-460	Pipe	17105	500 Tons, Low Density Concrete Pipe
	Pipe	20969	406 Pieces Concrete Pipe
	Pipe	23746	231+ Pieces Concrete Pipe
	Reef Balls	17182	100 Reef Balls (4 groups of 25)
	Pipe	32076	500 Tons, High Density Concrete Pipe
	Train Boxcar	1068	2 Train Boxcars
	Train Boxcar	811	2 Train Boxcars
	Train Boxcar	3412	5 Train Boxcars
	Vessels	1352	40 FT USCG Launch
	Vessels	8250	330 FT Barge
	Reef Balls	5433	100 Reef Balls (4 groups of 25)
	Reef Balls	5355	100 Reef Balls (2 groups of 50)
	Manhole Sections	10343	Approx. 360 Tons Manhole Sections

Source: North Carolina DMF Artificial Reef Material Shapefile 2019.

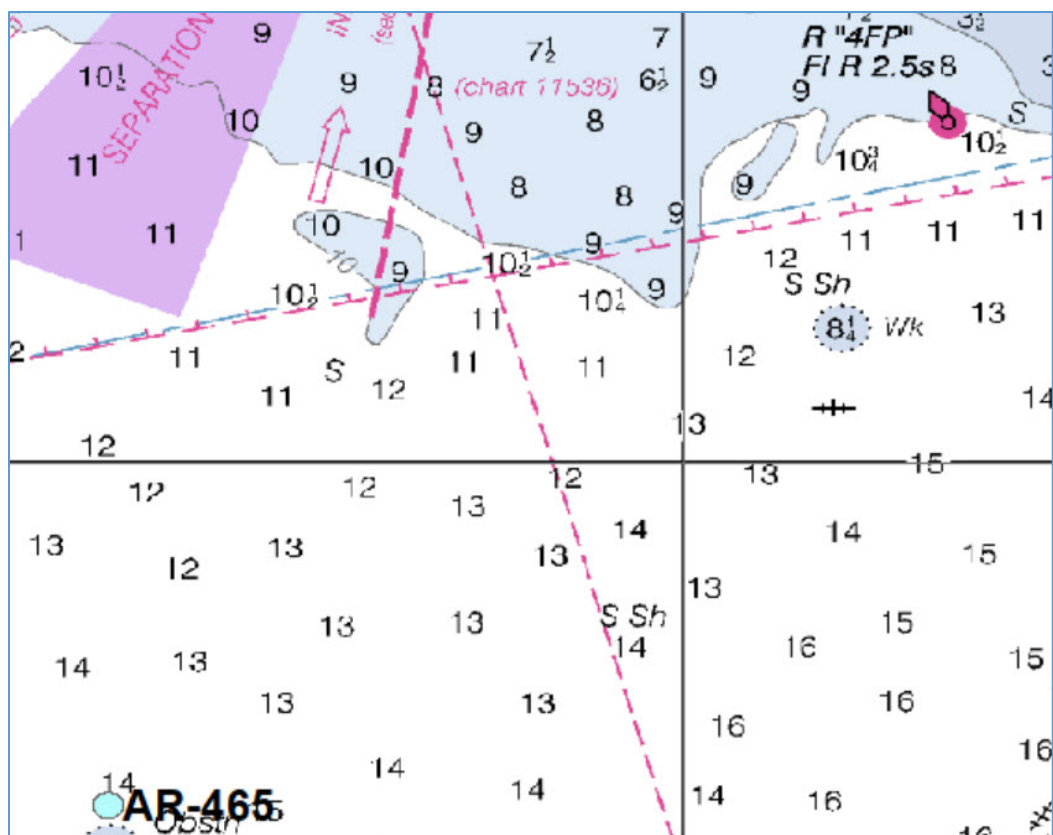


Figure 17. Artificial reef AR-465 proposed as special management zone in the exclusive economic zone off southern North Carolina.

Table 25. Distance and bearing to artificial reef AR-465.

Reef Site	Bearing and Distance
AR-465	186.3° magnetic - 23.8 nm from Cape Fear River Sea Buoy River Inlet, 165.2° magnetic - 30.5 nm from Lockwood's Folly Inlet Sea Buoy, or 151.5° magnetic - 31.2 nm from Shallotte Inlet Sea Buoy

Source: NCDMF.

Table 26. Materials placed in artificial reef AR-465.

Reef Site	Material Category	Area (Sq. Ft.)	Material Details
AR-465	Reef Balls	13013	100 Ultra Reef Balls
	Pipe	33773	925 Tons of Concrete Pipe
	Reef Balls	2229	100 Reef Balls
	Manhole Sections	4679	
	Vessels	3724	180 FT ""Mance Lassiter""
	Pipe	16670	Concentration of Concrete Pipe

Source: North Carolina DMF Artificial Reef Material Shapefile 2019.

Appendix E. Detailed maps and tables for proposed Special Management Zones off South Carolina

Table 27. South Carolina artificial reefs proposed as special management zones based on permitted locations including three with centroids and radius and one with corner coordinates in Degrees Decimal Minutes.

Reef Name	Centroid Latitude DDM	Centroid Longitude DDM	Radius (yards)	Area (square miles)
PA-07- Pop Nash Reef	33° 34.510' N	78° 51.000' W	200	0.041
PA-28- Lowcountry Anglers Reef	32° 34.300' N	79° 55.100' W	200	0.041
PA-34- CCA-McClellanville Reef	32° 51.800' N	79° 22.500' W	200	0.041

Reef Name	Corner	Latitude	Longitude	Area (square miles)
PA-04 - Ron McManus Memorial Reef	NW	33° 46.400' N	78° 36.200' W	0.33
	SW	33° 45.900' N	78° 36.200' W	
	NE	33° 46.400' N	78° 35.600' W	
	SE	33° 45.900' N	78° 35.600' W	

Source: SCDNR August 2019.

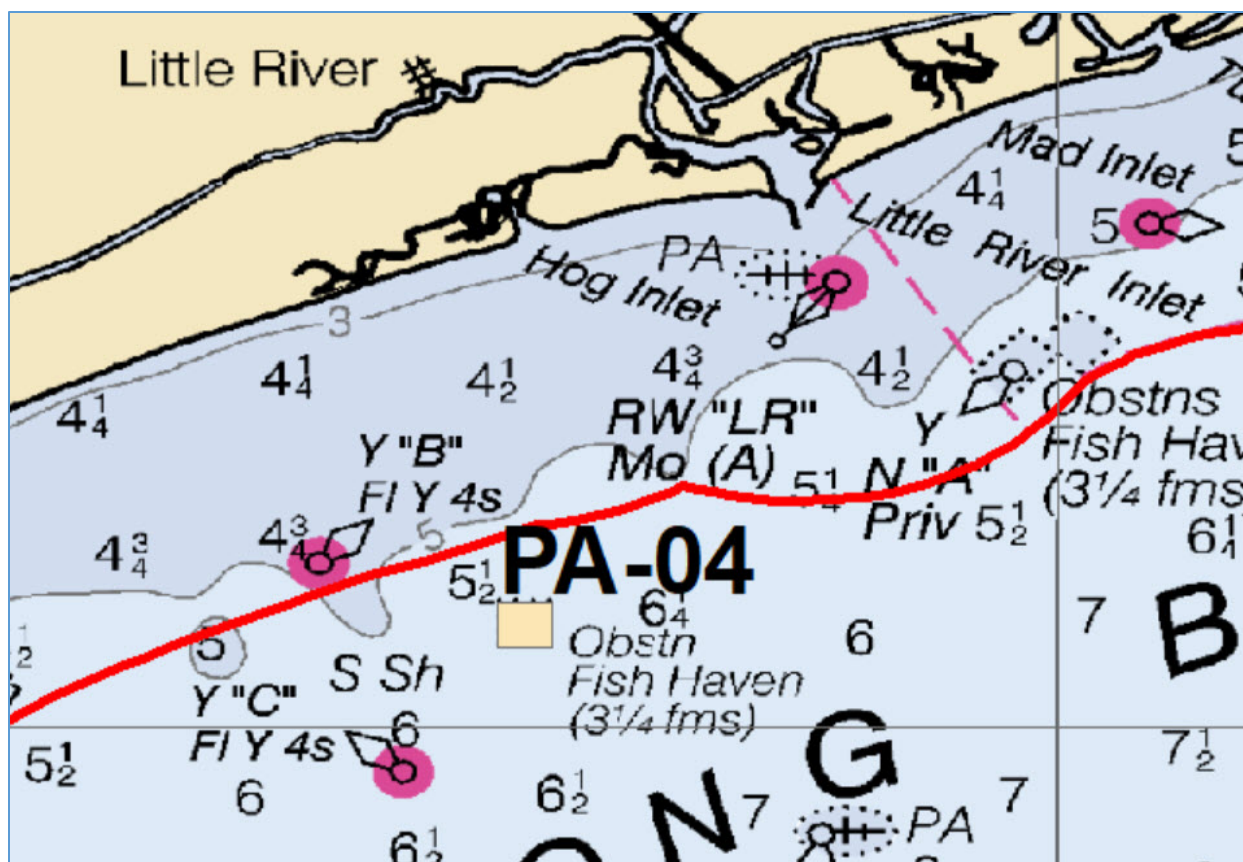


Figure 18. Artificial reef PA-04 proposed as special management zone in the exclusive economic zone off northern South Carolina.

Table 28. Distance and bearing to artificial reef PA-04.

Reef Site	Bearing and Distance
PA-04	211° magnetic - 5 nm from south jetty at Little River Inlet - water depth 35'

Source: SCDNR.

Table 29. Materials placed and location in artificial reef PA-04.

Reef Site	Material Details	Location	
		Latitude	Longitude
PA-04	Shrimp Trawler section	33° 46.168' N	78° 35.893' W
	Shrimp Trawler section	33° 46.181' N	78° 35.912' W
	Shrimp Trawler section	33° 46.184' N	78° 35.891' W
	Concrete Boxes & Cones	33° 46.128' N	78° 35.887' W
	Concrete Boxes & Cones	33° 46.129' N	78° 35.862' W
	Concrete Boxes & cones	33° 46.139' N	78° 35.878' W
	Concrete Boxes & cones	33° 46.144' N	78° 35.874' W
	Concrete Boxes & cones	33° 46.148' N	78° 35.855' W
	Concrete Boxes & cones	33° 46.157' N	78° 35.853' W

Source: SCDNR.

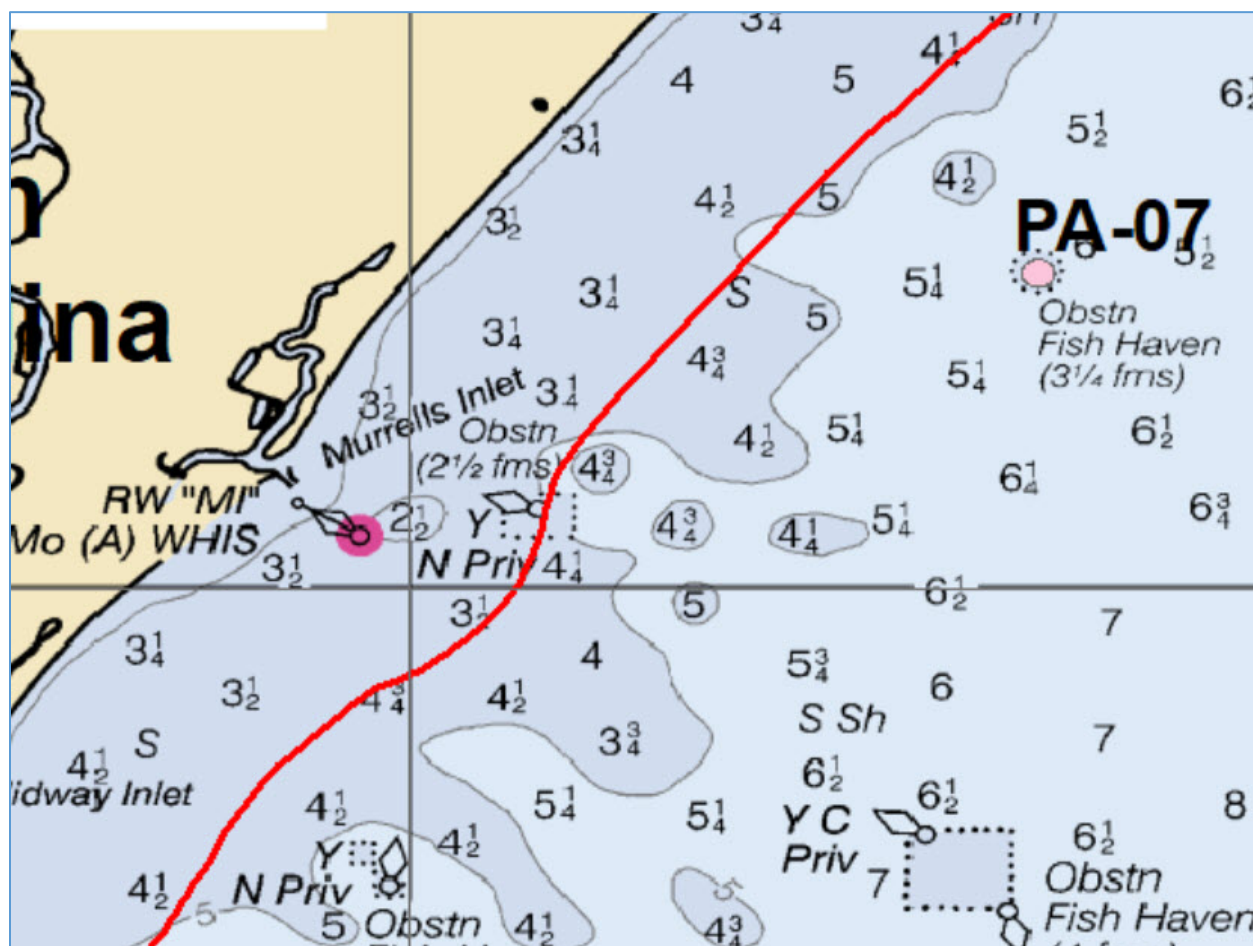


Figure 19 Artificial reef PA-07 proposed as special management zone in the exclusive economic zone off northern South Carolina.

Table 30. Distance and bearing to artificial reef PA-07.

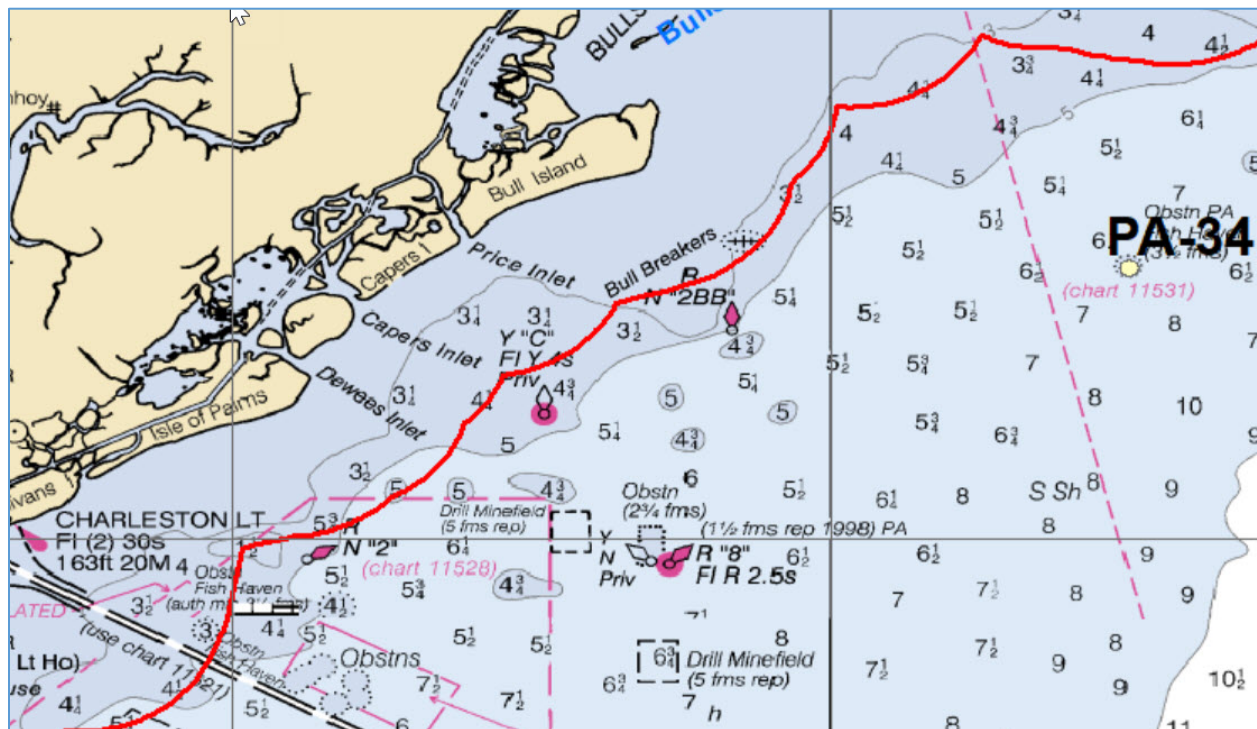
Reef Site	Bearing and Distance
PA-07	72° magnetic - 9.3 nm from the north jetty at Murrells Inlet, off Surfside Beach - water depth 35'

Source: SCDNR.

Table 31. Materials placed in artificial reef PA-07.

Reef Site	Material Details
PA-07	Concrete Culvert Pipe
	Concrete Junction Boxes
	Concrete Catch Basins

Source: SCDNR.

**Figure 20.** Artificial reef PA-34 proposed as special management zone in the exclusive economic zone off southern South Carolina.**Table 32.** Distance and bearing to artificial reef PA-34.

Reef Site	Bearing and Distance
PA-34	138° magnetic - 9 nm from Sandy Point channel buoy R"2" - water depth 47'

Source: SCDNR.

Table 33. Materials placed and location in artificial reef PA-34.

Reef Site	Material Details	Location	
		Latitude	Longitude
PA-34	Concrete & steel rubble	32° 51.833' N	79° 22.538' W
	Concrete & steel rubble	32° 51.803' N	79° 22.517' W
	Concrete & steel rubble	32° 51.798' N	79° 22.514' W
	105' Tugboat (Capt Morgan)	32° 51.807' N	79° 22.484' W
	Cooper River Bridge rubble	32° 51.750' N	79° 22.440' W
	Cooper River Bridge rubble	32° 51.750' N	79° 22.480' W
	Cooper River Bridge rubble	32° 51.737' N	79° 22.536' W
	Cooper River Bridge rubble	32° 51.790' N	79° 22.450' W
	50 concrete culvert pipes	32° 51.780' N	79° 22.500' W
	45' Tugboat (Duane Merritt)	32° 51.844' N	79° 22.480' W
	85 concrete culvert pipes	32° 51.840' N	79° 22.465' W

Source: SCDNR.

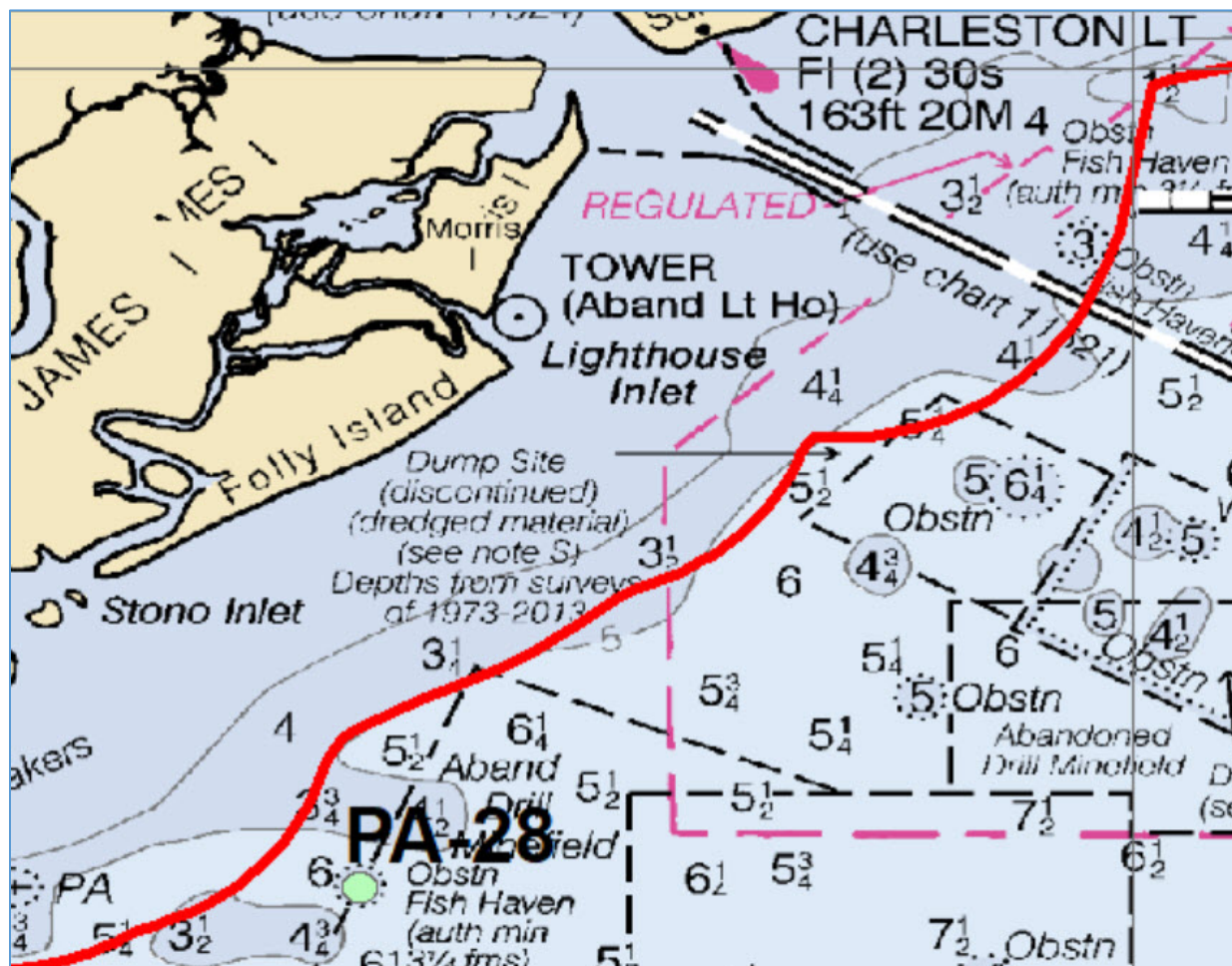


Figure 21. Artificial reef PA-28 proposed as special management zone in the exclusive economic zone off southern South Carolina.

Table 34. Distance and bearing to artificial reef PA-28.

Reef Site	Bearing and Distance
PA-28	131° magnetic - 2.4 nm from Stono Inlet buoy '1S' - water depth 40'

Source: SCDNR.

Table 35. Materials placed and location in artificial reef PA-28.

Reef Site	Material Details	Location	
		Latitude	Longitude
PA-28	Concrete pyramids	32° 34.262' N	79° 55.145' W
	Concrete pyramids	32° 34.279' N	79° 55.135' W
	Concrete pyramids	32° 34.254' N	79° 55.120' W
	CAFB runway rubble	32° 34.268' N	79° 55.173' W
	CAFB runway rubble	32° 34.260' N	79° 55.162' W
	CAFB runway rubble	32° 34.234' N	79° 55.171' W
	50' Houseboat	32° 34.449' N	79° 55.114' W
	CPW concrete	32° 34.300' N	79° 55.100' W
	Limehouse bridge rubble	32° 34.330' N	79° 55.070' W
	Cooper River Bridge rubble	32° 34.345' N	79° 55.153' W
	Cooper River Bridge rubble	32° 34.240' N	79° 55.065' W
	Cooper River Bridge rubble	32° 34.265' N	79° 55.200' W
	Cooper River Bridge rubble	32° 34.340' N	79° 55.130' W
	Cooper River Bridge rubble	32° 34.360' N	79° 55.100' W
	Concrete rubble	32° 34.285' N	79° 55.180' W
	Concrete rubble	32° 34.305' N	79° 55.144' W
	Concrete culvert pipe	32° 34.252' N	79° 55.156' W
	Concrete blocks & slabs	32° 34.290' N	79° 55.080' W

Source: SCDNR.