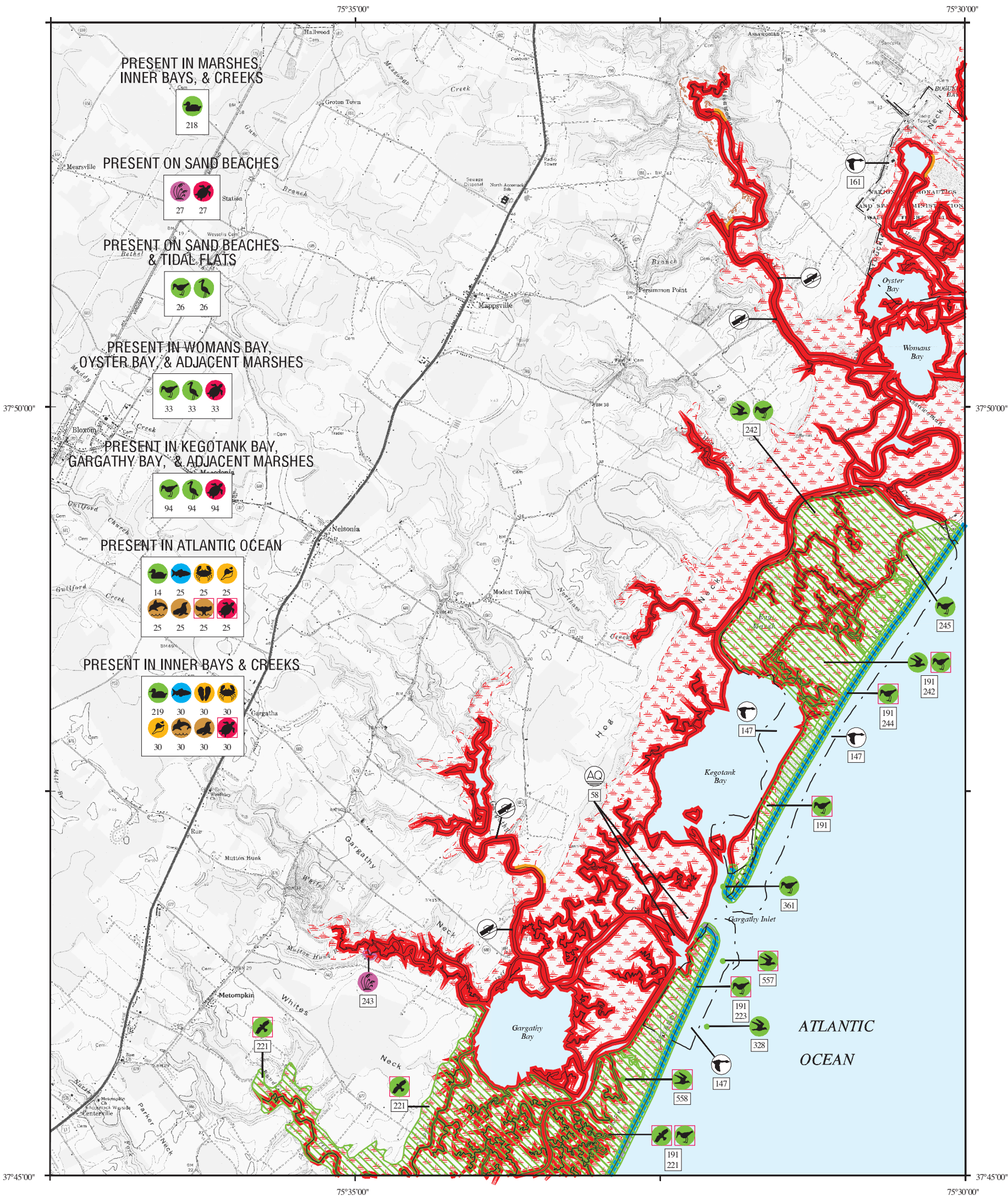


ENVIRONMENTAL SENSITIVITY INDEX MAP



**SHORELINE HABITATS (ESI)**

- 1B EXPOSED, SOLID MAN-MADE STRUCTURES
- 2A EXPOSED WAVE-CUT PLATFORMS IN CLAY  
2B EXPOSED SCARPS AND STEEP SLOPES IN CLAY
- 3A FINE-TO MEDIUM-GRAINED SAND BEACHES  
3B SCARPS AND STEEP SLOPES IN SAND
- 4 COARSE-GRAINED SAND BEACHES
- 5 MIXED SAND AND GRAVEL BEACHES
- 6A GRAVEL BEACHES
- 6B RIPRAP
- 7 EXPOSED TIDAL FLATS
- 8A SHELTERED SCARPS IN CLAY
- 8B SHELTERED, SOLID MAN-MADE STRUCTURES
- 8C SHELTERED RIPRAP
- 9A SHELTERED TIDAL FLATS
- 9B SHELTERED, VEGETATED LOW BANKS
- 10A SALT-AND BRACKISH-WATER MARSHES
- 10B FRESHWATER MARSHES
- 10C SWAMP
- 10D SCRUB-SHRUB WETLANDS

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Delaware  
Maryland  
Virginia  
North Carolina

VOLUME 1  
VOLUME 2

Virginia: ESIMAP 77

BIOLOGICAL RESOURCES:

BIRD:

RAR#	Species	S F Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Nesting	Migrating	Molting
			-	-	-	-	-	-	-	-	-	-	-	-			
14	Black scoter	HIGH	X	X	X	X							X	X	-	-	-
	Surf scoter		X	X	X	X							X	X	-	-	-
	White-winged scoter		X	X	X	X							X	X	-	-	-
26	American woodcock		X	X							X	X	X	X	-	-	-
	Black-bellied plover			X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Dunlin		X	X	X	X	X			X	X	X	X	X	-	-	-
	Greater yellowlegs			X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Killdeer						X	X	X						-	-	-
	Least sandpiper			X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Lesser yellowlegs			X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Pectoral sandpiper						X	X	X	X	X	X	X	X	-	-	-
	Red knot			X	X	X	X	X	X						-	-	-
	Ruddy turnstone			X	X	X	X	X							-	-	-
	Sanderling		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Semipalmated plover			X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Semipalmated sandpiper			X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Short-billed dowitcher		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Stilt sandpiper						X	X	X	X	X	X	X	X	-	-	-
	Western sandpiper						X	X	X	X	X	X	X	X	-	-	-
	Whimbrel			X	X	X	X	X	X						-	-	-
	White-rumped sandpiper			X	X	X									-	-	-
	Willet		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
33	Clapper rail	HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-
	King rail		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Sora			X	X	X				X	X	X			-	-	-
	Virginia rail		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-
	Whimbrel	HIGH		X	X	X				X	X	X			-	-	-
	Willet	HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-
94	Clapper rail	HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-
	King rail		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Sora			X	X	X				X	X	X			-	-	-
	Virginia rail		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-
	Whimbrel	HIGH		X	X	X				X	X	X			-	-	-
	Willet	HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-
191	Piping plover	T T HIGH		X	X	X	X	X	X	X					APR-SEP	-	-
	Wilson's plover	E HIGH		X	X	X	X	X	X	X					APR-SEP	-	-
218	American black duck	HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	-	-
	American wigeon		X	X	X	X					X	X	X		-	-	-
	Brant	HIGH	X	X	X	X					X	X	X		-	-	-
	Canada goose	MODERATE	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-
	Gadwall		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-
	Green-winged teal		X	X	X	X					X	X	X		-	-	-
	Mallard		X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
	Northern pintail		X	X	X	X					X	X	X		-	-	-
	Snow goose		X	X	X	X					X	X	X		-	-	-
219	Bufflehead		X	X	X	X					X	X	X		-	-	-
	Mergansers		X	X	X	X					X	X	X		-	-	-
221	Bald eagle	T T	X	X	X	X				X	X	X	X		-	-	-
223	American oystercatcher	171 ADULTS		X	X	X	X	X	X	X					MAR-JUL	-	-
242	American oystercatcher		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Laughing gull			X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
244	American oystercatcher	26 ADULTS		X	X	X	X	X	X	X					MAR-JUL	-	-
245	Black-necked stilt			X	X	X	X	X	X						MAY-JUL	-	-
328	Forster's tern	8 ADULTS		X	X	X	X	X	X	X	X				MAY-JUL	-	-
361	American oystercatcher	HIGH	X	X	X					X	X	X	X		-	-	-
557	Least tern	C 4 ADULTS		X	X	X	X	X	X	X					MAY-JUL	-	-
558	Least tern	C 7 ADULTS		X	X	X	X	X	X	X					MAY-JUL	-	-

FISH:

RAR#	Species	S F Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
			-	-	-	-	-	-	-	-	-	-	-	-					
25	Atlantic croaker					X	X	X	X	X	X	X	X	X	-	-	-	AUG-DEC	MAY-NOV
	Atlantic mackerel			X	X										-	-	-	-	MAR-APR
	Atlantic menhaden		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	MAY-OCT
	Black drum			X	X	X	X	X	X	X					-	-	-	-	APR-OCT
	Black sea bass			X	X	X	X	X	X						JUN-OCT	-	-	APR-OCT	APR-OCT
	Bluefish			X	X	X	X	X	X	X	X				-	-	-	MAY-NOV	APR-NOV
	Butterfish			X	X	X	X	X	X	X	X	X			-	-	-	JUL-NOV	MAR-NOV
	Crevalle jack		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Northern kingfish			X	X	X	X	X	X	X					MAY-AUG	-	-	-	APR-OCT
	Northern searobin			X	X	X	X	X	X	X	X				-	-	-	-	MAR-OCT
	Pollock		X	X	X	X							X		-	-	-	-	DEC-APR
	Red drum				X	X	X	X	X	X	X				JUL-NOV	-	-	-	MAY-NOV
	Red hake			X	X	X	X			X	X	X			-	-	-	FEB-MAY	FEB-MAY
																-	-	-	SEP-NOV
	Sandbar shark					X	X	X	X	X	X				-	-	-	MAY-OCT	MAY-OCT
	Scup (porgy)			X	X	X	X	X	X	X	X				-	-	-	JUN-OCT	MAR-OCT
	Silver hake		X	X	X	X					X	X	X		-	-	-	-	OCT-MAY
	Southern kingfish (whiting)			X	X	X	X	X	X	X					-	-	-	-	APR-OCT
	Spanish mackerel			X	X										-	-	-	-	APR-MAY
	Spiny dogfish		X	X	X	X					X	X			-	-	-	-	NOV-APR
	Spot		X	X	X	X	X	X	X	X	X	X	X	X	-	-	DEC-APR	MAR-NOV	MAR-NOV
	Spotted hake			X	X	X	X			X	X	X			-	-	-	MAR-JUN	MAR-JUN
																-	-	-	SEP-NOV
	Spotted seatrout				X	X	X	X	X	X	X	X			MAY-JUL	-	-	APR-NOV	APR-NOV
	Summer flounder		X	X	X	X	X	X	X	X	X	X	X	X	-	-	OCT-MAY	-	APR-OCT
	Tautog		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-	-	JAN-DEC
	Weakfish			X	X	X	X	X	X	X	X				APR-AUG	-	MAY-AUG	APR-NOV	APR-NOV
30	Alewife			X	X	X	X	X							-	-	-	-	FEB-JUN
	American eel		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	American shad			X	X	X	X								-	-	-	-	FEB-JUN
	Atlantic croaker				X	X	X	X	X	X	X	X			-	-	-	MAY-DEC	-
	Atlantic herring			X	X	X	X								-	-	-	-	FEB-JUN
	Atlantic mackerel			X	X										-	-	-	-	MAR-APR
	Atlantic menhaden				X	X	X	X	X	X	X				-	-	-	MAY-NOV	MAY-OCT
	Bay anchovy		X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	JAN-DEC	JAN-DEC
	Black drum			X	X	X	X	X	X						-	-	-	-	APR-OCT
	Black sea bass			X	X	X	X	X							-	-	-	APR-SEP	APR-SEP
	Blueback herring		X	X	X	X	X	X	X	X	X				-	-	FEB-JUN	FEB-OCT	FEB-JUN
	Bluefish			X	X	X	X	X	X						-	-	-	MAY-OCT	MAY-OCT
	Crevalle jack		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Gobies		X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-OCT	JAN-DEC	JAN-DEC
	Hickory shad			X	X	X	X								-	-	-	-	FEB-JUN
	Hogchoker		X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	MAY-SEP	MAY-SEP	JAN-DEC	JAN-DEC
	Killifish		X	X	X	X	X	X	X	X	X	X	X	X	MAR-SEP	-	-	JAN-DEC	JAN-DEC
	Minnows		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-	JAN-DEC	JAN-DEC
	Mummichog		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-	JAN-DEC	JAN-DEC
	Northern pipefish		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Northern searobin					X	X	X							-	-	-	JUN-AUG	JUN-AUG

Biological information shown on the maps represents known concentration areas or occurrences, but does not necessarily represent the full distribution or range of each species. This is particularly important to recognize when considering potential impacts to protected species.

Virginia: ESIMAP 77 (cont.)

BIOLOGICAL RESOURCES: (cont.)

FISH: (cont.)

RAR#	Species	S F Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
30	Pollock		X	X	X	X								X	-	-	-	-	DEC-APR
	Red drum						X	X	X	X	X	X	X		JUL-NOV	-	-	AUG-SEP	MAY-NOV
	Red hake		X	X	X	X				X	X	X			-	-	-	FEB-MAY	FEB-MAY SEP-NOV
	Sandbar shark						X	X	X	X	X	X			-	-	-	MAY-OCT	MAY-OCT
	Scup (porgy)				X	X	X	X	X	X	X	X			-	-	-	JUN-OCT	MAR-OCT
	Silver hake		X	X	X	X	X					X	X	X	-	-	-	-	OCT-MAY
	Silver perch		X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	APR-MAY	APR-JUN	JAN-DEC	JAN-DEC
	Silversides		X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAR-JUL	APR-SEP	JAN-DEC	JAN-DEC
	Spanish mackerel				X	X									-	-	-	-	APR-MAY
	Spot				X	X	X	X	X	X	X				-	-	-	APR-OCT	JUL-SEP
	Spotted hake		X	X	X	X						X	X	X	-	-	-	OCT-APR	-
	Spotted seatrout				X	X	X	X	X	X	X	X			MAY-JUL	-	-	APR-NOV	APR-NOV
	Striped anchovy				X	X	X	X	X	X	X	X			APR-SEP	-	-	APR-NOV	APR-NOV
	Summer flounder				X	X	X	X	X	X	X	X			-	-	-	APR-NOV	APR-NOV
	Tautog		X	X	X	X					X	X	X		-	-	-	-	OCT-APR
	Weakfish				X	X	X	X	X	X	X	X			APR-AUG	-	-	MAR-OCT	APR-OCT
	White hake				X	X	X				X	X	X		-	-	-	-	MAR-MAY SEP-NOV
	White perch		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	APR-JUN	APR-JUN	JAN-DEC	JAN-DEC
	Winter flounder		X	X	X	X	X	X	X				X		-	-	-	DEC-JUL	DEC-MAY

HABITAT:

RAR#	Species	S F Conc.	J	F	M	A	M	J	J	A	S	O	N	D
27	Maritime dune scrub		X	X	X	X	X	X	X	X	X	X	X	X
	Native coastal strand vegetation		X	X	X	X	X	X	X	X	X	X	X	X
	Sea-beach knotweed		X	X	X	X	X	X	X	X	X	X	X	X
	Southern beach spurge		X	X	X	X	X	X	X	X	X	X	X	X
243	Sea level fen		X	X	X	X	X	X	X	X	X	X	X	X

INVERTEBRATE:

RAR#	Species	S F Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
25	Blue crab		X	X	X	X	X	X	X	X	X	X	X	X	-	-	MAY-NOV	JAN-DEC	JAN-DEC
	Channeled whelk		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
30	Blue crab		X	X	X	X	X	X	X	X	X	X	X	X	-	MAY-SEP	MAY-NOV	JAN-DEC	JAN-DEC
	Channeled whelk		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Northern quahog (hard clam)		X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT	MAY-OCT	JAN-DEC	JAN-DEC

MARINE MAMMAL:

RAR#	Species	S F Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Mating	Calving	Pupping	Molting
25	Bottlenose dolphin						X	X	X	X	X	X	X		-	-	-	-
	Common dolphin						X	X	X	X	X	X	X		-	-	-	-
	Harbor porpoise		X	X	X	X	X							X	-	-	-	-
	Harbor seal		X	X							X	X	X		-	-	-	-
	Humpback whale	E E	X	X	X	X	X	X	X	X	X	X	X	X	-	JAN-DEC	-	-
30	Bottlenose dolphin						X	X	X	X	X	X	X		-	-	-	-
	Harbor porpoise		X	X	X	X	X						X		-	-	-	-
	Harbor seal		X	X							X	X	X		-	-	-	-

REPTILE:

RAR#	Species	S F Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Nesting	Hatching	Interesting	Juveniles	Adults
25	Green sea turtle	T T					X	X	X	X	X	X	X		-	-	-	MAY-NOV	-
	Kemp's ridley sea turtle	E E					X	X	X	X	X	X	X		-	-	-	MAY-NOV	MAY-NOV
	Leatherback sea turtle	E E					X	X	X	X	X	X	X		-	-	-	-	MAY-NOV
	Loggerhead sea turtle	T T					X	X	X	X	X	X	X		-	-	-	MAY-NOV	MAY-NOV
27	Diamondback terrapin		X	X	X	X	X	X	X	X	X	X			MAY-JUL	-	-	MAR-NOV	MAR-NOV
30	Green sea turtle	T T					X	X	X	X	X	X	X		-	-	-	MAY-NOV	-
	Kemp's ridley sea turtle	E E					X	X	X	X	X	X	X		-	-	-	MAY-NOV	MAY-NOV
	Leatherback sea turtle	E E					X	X	X	X	X	X	X		-	-	-	-	MAY-NOV
	Loggerhead sea turtle	T T					X	X	X	X	X	X	X		-	-	-	MAY-NOV	MAY-NOV
33	Diamondback terrapin		X	X	X	X	X	X	X	X	X	X	X		-	-	-	MAR-NOV	MAR-NOV
94	Diamondback terrapin	VERY HIGH	X	X	X	X	X	X	X	X	X	X	X		-	-	-	MAR-NOV	MAR-NOV

HUMAN USE RESOURCES:

AQUACULTURE:

HUN#	Name	Contact	Phone
58	AQUACULTURE: OYSTERS		

WILDLIFE REFUGE:

HUN#	Name	Contact	Phone
147	CHINCOTEAGUE ISLAND NWR	U.S. FISH AND WILDLIFE SERVICE	757/336-6122
161	WALLOPS ISLAND NATIONAL WILDLIFE REFUGE	U.S. FISH AND WILDLIFE SERVICE	757/336-6122