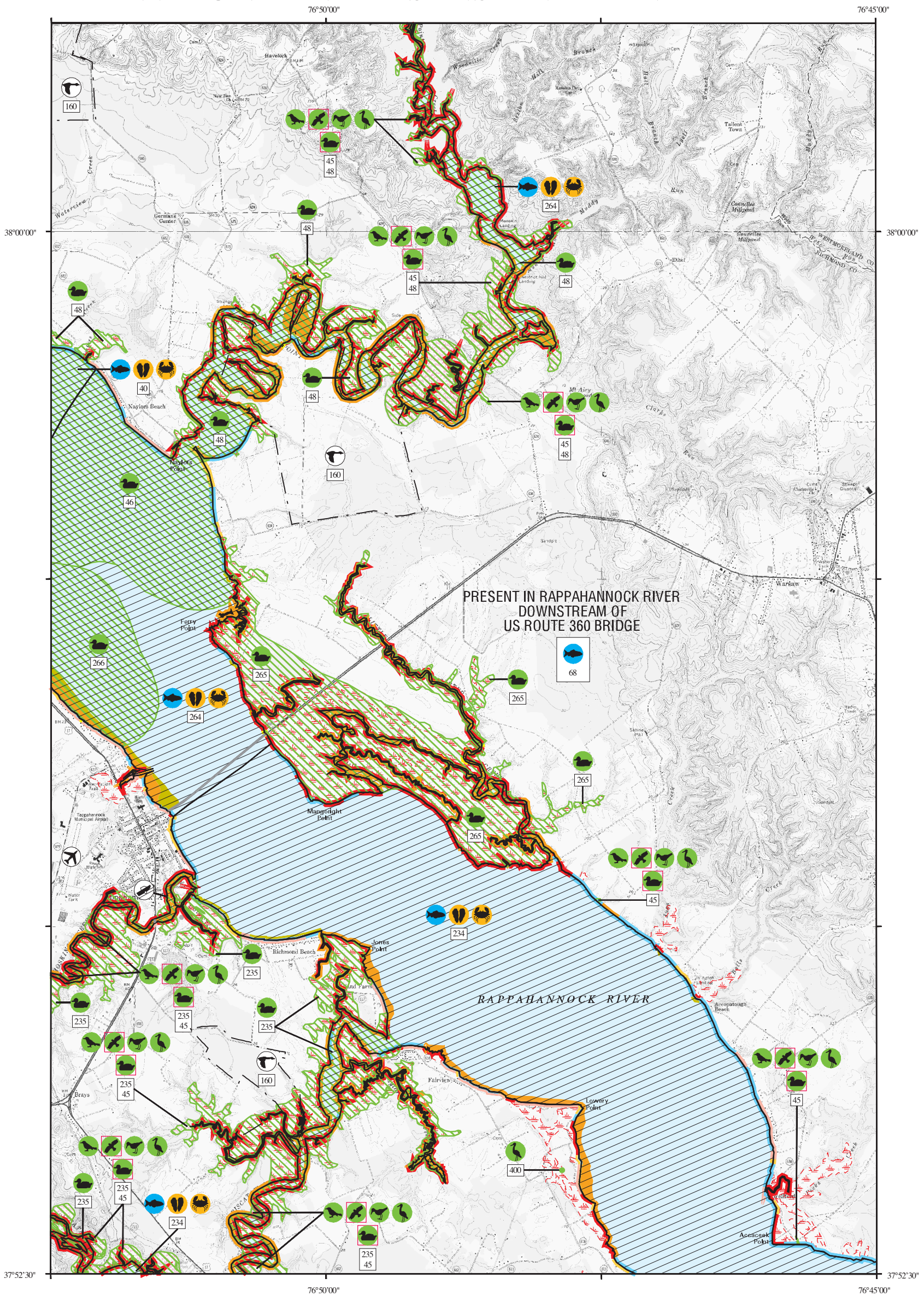





















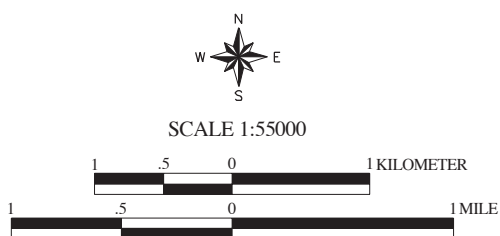


ENVIRONMENTAL SENSITIVITY INDEX MAP

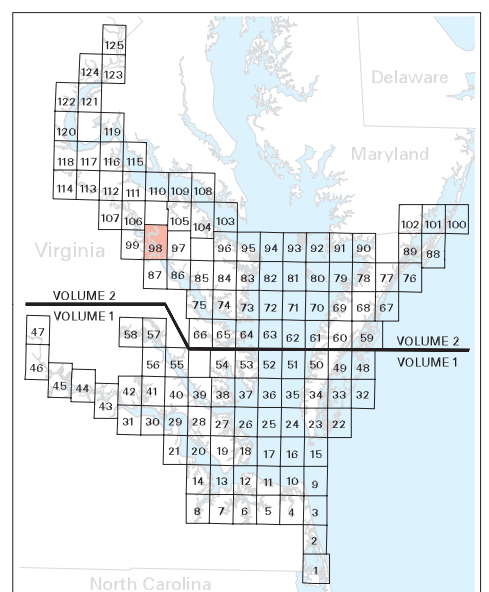


- ## SHORELINE HABITATS (ESI)
- | | |
|---|--|
|  | 1B EXPOSED, SOLID MAN-MADE STRUCTURES |
|  | 2A EXPOSED WAVE-CUT PLATFORMS IN CLAY |
|  | 2B EXPOSED SCARPS AND STEEP SLOPES IN CLAY |
|  | 3A FINE-TO MEDIUM-GRAINED SAND BEACHES |
|  | 3B SCARPS AND STEEP SLOPES IN SAND |
|  | 4 COARSE-GRAINED SAND 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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National Ocean Service
Office of Response and Restoration
Hazardous Materials Response Division



Virginia: ESIMAP 98

BIOLOGICAL RESOURCES:

BIRD:

RAR#	Species	S F Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Nesting	Migrating	Molting
45	Bald eagle	T T		X	X	X	X								-	-	-
	Common moorhen	C		X	X	X	X								-	-	-
	Great blue heron			X	X	X	X								-	-	-
	Greater yellowlegs			X	X	X	X								-	-	-
	Green heron			X	X	X	X								-	-	-
	King rail			X	X	X	X								-	-	-
	Least bittern			X	X	X	X								-	-	-
	Marsh wren			X	X	X	X								-	-	-
	Osprey			X	X	X	X	X	X						MAR-AUG	-	-
	Sora			X	X	X	X								-	-	-
	Swamp sparrow			X	X	X	X								-	-	-
	Virginia rail			X	X	X	X								-	-	-
	Wood duck		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-
46	Canada goose	VERY HIGH	X	X	X	X					X	X	X		-	-	-
48	American black duck	HIGH	X	X	X	X					X	X	X		-	-	-
	American wigeon		X	X	X	X					X	X	X		-	-	-
	Canada goose	VERY HIGH	X	X	X	X					X	X	X		-	-	-
	Gadwall		X	X	X	X					X	X	X		-	-	-
	Green-winged teal	MODERATE	X	X	X	X					X	X	X		-	-	-
	Mallard	HIGH	X	X	X	X					X	X	X		-	-	-
	Northern pintail		X	X	X	X					X	X	X		-	-	-
235	American black duck	MODERATE	X	X	X	X					X	X	X		-	-	-
	Bufflehead	MODERATE	X	X	X	X					X	X	X		-	-	-
	Canada goose	HIGH	X	X	X	X					X	X	X		-	-	-
	Green-winged teal		X	X	X	X					X	X	X		-	-	-
	Mallard	MODERATE	X	X	X	X					X	X	X		-	-	-
	Mute swan		X	X	X	X					X	X	X		-	-	-
	Ring-necked duck	MODERATE	X	X	X	X					X	X	X		-	-	-
	Tundra swan	HIGH	X	X	X	X					X	X	X		-	-	-
	Wood duck		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-
265	American black duck	HIGH	X	X	X	X					X	X	X		-	-	-
	American wigeon		X	X	X	X					X	X	X		-	-	-
	Gadwall		X	X	X	X					X	X	X		-	-	-
	Green-winged teal	MODERATE	X	X	X	X					X	X	X		-	-	-
	Mallard	HIGH	X	X	X	X					X	X	X		-	-	-
	Northern pintail		X	X	X	X					X	X	X		-	-	-
266	Canada goose	VERY HIGH	X	X	X	X					X	X	X		-	-	-
	Ruddy duck	2000	X	X	X	X					X	X	X		-	-	-
400	Great blue heron	22 NESTS	X	X	X	X	X	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
40	Alewife			X	X	X	X	X	X	X	X				-	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	American shad			X	X	X	X	X	X	X	X				-	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Atlantic menhaden					X	X	X	X	X	X				-	-	-	MAY-NOV	-
	Atlantic silverside		X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	-	-	JAN-DEC	JAN-DEC
	Banded killifish		X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	JAN-DEC	JAN-DEC
	Bay anchovy		X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	JAN-DEC	JAN-DEC
	Black crappie		X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	-	-	JAN-DEC	JAN-DEC
	Blue catfish		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	JAN-DEC	JAN-DEC
	Blueback herring			X	X	X	X	X	X	X	X				-	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Channel catfish		X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	-	-	JAN-DEC	JAN-DEC
	Hickory shad			X	X	X	X	X	X	X	X				-	FEB-JUN	FEB-JUN	FEB-OCT	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
	Inland silverside		X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-	JAN-DEC	JAN-DEC
	Largemouth bass		X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	-	-	-	JAN-DEC
	Longnose gar		X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-	JAN-DEC	JAN-DEC
	Minnnows		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
	Striped bass			X	X	X	X	X	X	X	X				FEB-JUN	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Tessellated darter		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-	JAN-DEC
	White catfish		X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-	JAN-DEC	JAN-DEC
	White perch		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	APR-JUN	APR-JUN	JAN-DEC	JAN-DEC
	Yellow perch		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	JAN-DEC	JAN-DEC
68	Alewife			X	X	X	X								-	-	-	-	FEB-JUN
	American shad			X	X	X	X								-	-	-	-	FEB-JUN
	Blueback herring			X	X	X	X								-	-	-	-	FEB-JUN
	Hickory shad			X	X	X	X								-	-	-	-	FEB-JUN
	Striped bass		X	X	X	X	X					X	X	X	-	-	-	-	OCT-JUN
234	Atlantic croaker		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	MAY-NOV
	Atlantic menhaden					X	X	X	X	X	X				-	-	-	MAY-NOV	-
	Atlantic silverside		X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	-	-	JAN-DEC	JAN-DEC
	Bay anchovy		X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	JAN-DEC	JAN-DEC
	Blue catfish		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Channel catfish		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Hogchoker		X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	MAY-SEP	MAY-SEP	JAN-DEC	JAN-DEC
	Mummichog		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-	JAN-DEC	JAN-DEC
	Silver perch		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Spot		X	X	X	X	X	X	X	X	X	X	X	X	-	-	DEC-APR	APR-NOV	-
	Striped bass			X	X	X	X	X	X	X					-	-	-	MAY-OCT	-
	Weakfish		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	White catfish		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	White perch		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
264	Alewife			X	X	X	X	X	X	X					-	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	American shad			X	X	X	X	X	X	X					-	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Atlantic croaker		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	MAY-NOV
	Atlantic menhaden					X	X	X	X	X	X				-	-	-	MAY-NOV	-
	Atlantic silverside		X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	-	-	JAN-DEC	JAN-DEC
	Banded killifish		X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	JAN-DEC	JAN-DEC
	Bay anchovy		X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	JAN-DEC	JAN-DEC
	Blue catfish		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	JAN-DEC	JAN-DEC
	Blueback herring			X	X	X	X	X	X	X					-	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Channel catfish		X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	-	-	JAN-DEC	JAN-DEC
	Hickory shad			X	X	X	X	X	X	X					-	FEB-JUN	FEB-JUN	FEB-OCT	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
	Largemouth bass		X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	-	-	-	JAN-DEC
	Minnnows		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
	Silver perch		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Spot		X	X	X	X	X	X	X	X	X	X	X	X	-	-	DEC-APR	APR-NOV	-
	Striped bass			X	X	X	X	X	X	X					FEB-JUN	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Weakfish		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	White catfish		X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-	JAN-DEC	JAN-DEC
	White perch		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC

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 98 (cont.)
BIOLOGICAL RESOURCES: (cont.)

INVERTEBRATE:

RAR#	Species	S F Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
40	Blue crab		X	X	X	X	X	X	X	X	X	X	X	X	-	-	MAY-NOV	JAN-DEC	JAN-DEC
	Eastern oyster		X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-SEP	JUN-SEP	JAN-DEC	JAN-DEC
234	Blue crab		X	X	X	X	X	X	X	X	X	X	X	X	-	-	MAY-NOV	JAN-DEC	JAN-DEC
	Eastern oyster		X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-SEP	JUN-SEP	JAN-DEC	JAN-DEC
264	Blue crab		X	X	X	X	X	X	X	X	X	X	X	X	-	-	MAY-NOV	JAN-DEC	JAN-DEC
	Eastern oyster		X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-SEP	JUN-SEP	JAN-DEC	JAN-DEC

HUMAN USE RESOURCES:

WILDLIFE REFUGE:

HUN#	Name	Contact	Phone
160	RAPPAHANNOCK RIVER VALLEY NWR	U.S. FISH AND WILDLIFE SERVICE	804/333-1470