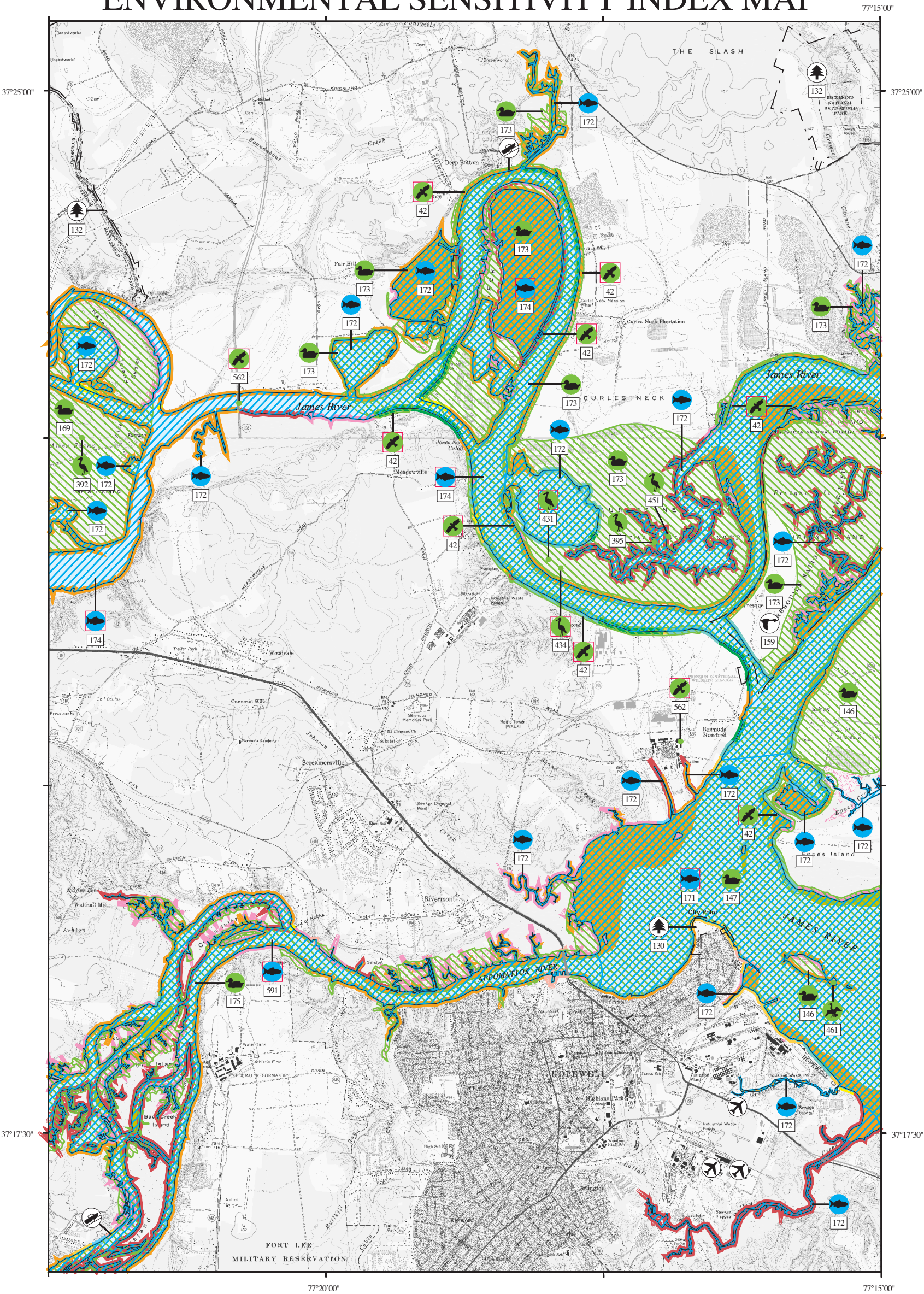
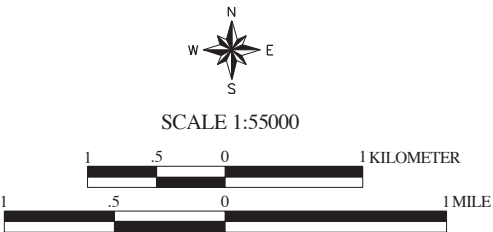


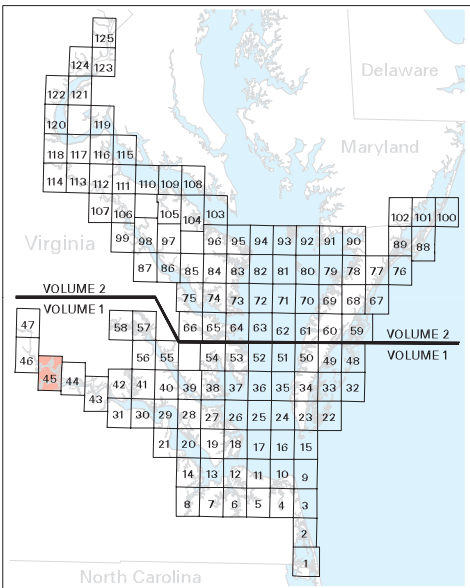
ENVIRONMENTAL SENSITIVITY INDEX MAP



- 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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Office of Response and Restoration
Hazardous Materials Response Division



Virginia: ESIMAP 45

BIOLOGICAL RESOURCES:

BIRD:

RAR#	Species	S F Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Nesting	Migrating	Molting
			-	-	-	-	-	-	-	-	-	-	-	-			
42	Bald eagle	T T HIGH	X	X	X	X	X	X	X					X	-	-	-
146	Canada goose	VERY HIGH	X	X	X	X						X	X	X	-	-	-
147	Bufflehead	MODERATE	X	X	X	X						X	X	X	-	-	-
	Canvasback	MODERATE	X	X	X	X						X	X	X	-	-	-
	Common goldeneye		X	X	X	X						X	X	X	-	-	-
	Mergansers	HIGH	X	X	X	X						X	X	X	-	-	-
	Ring-necked duck	MODERATE	X	X	X	X						X	X	X	-	-	-
	Ruddy duck	HIGH	X	X	X	X						X	X	X	-	-	-
	Scaup	HIGH	X	X	X	X						X	X	X	-	-	-
	Tundra swan	MODERATE	X	X	X	X						X	X	X	-	-	-
169	American black duck	MODERATE	X	X	X	X						X	X	X	-	-	-
	American wigeon	MODERATE	X	X	X	X						X	X	X	-	-	-
	Canada goose	VERY HIGH	X	X	X	X						X	X	X	-	-	-
	Gadwall	MODERATE	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	-	-	-
	Northern shoveler		X	X	X	X						X	X	X	-	-	-
	Snow goose		X	X	X	X						X	X	X	-	-	-
	Tundra swan	HIGH	X	X	X	X						X	X	X	-	-	-
173	American black duck	HIGH	X	X	X	X						X	X	X	-	-	-
	American wigeon		X	X	X	X						X	X	X	-	-	-
	Bufflehead		X	X	X	X						X	X	X	-	-	-
	Canada goose	HIGH	X	X	X	X						X	X	X	-	-	-
	Gadwall		X	X	X	X						X	X	X	-	-	-
	Green-winged teal		X	X	X	X						X	X	X	-	-	-
	Mallard	HIGH	X	X	X	X						X	X	X	-	-	-
	Mergansers	MODERATE	X	X	X	X						X	X	X	-	-	-
	Northern pintail		X	X	X	X						X	X	X	-	-	-
	Ring-necked duck	HIGH	X	X	X	X						X	X	X	-	-	-
	Snow goose	LOW	X	X	X	X						X	X	X	-	-	-
	Tundra swan	MODERATE	X	X	X	X						X	X	X	-	-	-
175	American black duck	MODERATE	X	X	X	X						X	X	X	-	-	-
	American wigeon	MODERATE	X	X	X	X						X	X	X	-	-	-
	Canada goose	MODERATE	X	X	X	X						X	X	X	-	-	-
	Gadwall	MODERATE	X	X	X	X						X	X	X	-	-	-
	Green-winged teal	MODERATE	X	X	X	X						X	X	X	-	-	-
	Mallard	MODERATE	X	X	X	X						X	X	X	-	-	-
	Northern pintail		X	X	X	X						X	X	X	-	-	-
	Northern shoveler		X	X	X	X						X	X	X	-	-	-
	Snow goose		X	X	X	X						X	X	X	-	-	-
	Tundra swan	MODERATE	X	X	X	X						X	X	X	-	-	-
392	Great blue heron	13 NESTS	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
395	Great blue heron	12 NESTS	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
431	Great blue heron	85 NESTS	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
	Great egret	C 5 NESTS		X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
434	Great blue heron	220 NESTS	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
	Great egret	C 5 NESTS		X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
451	Great blue heron	240 NESTS	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
461	Double-crested cormorant	267 NESTS	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
562	Peregrine falcon	T		X	X	X	X	X	X						MAR-AUG	-	-

FISH:

RAR#	Species	S F Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
			-	-	-	-	-	-	-	-	-	-	-	-					
171	Alewife			X	X	X	X	X	X	X	X	X	X	X	-	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	American eel		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	American shad		X	X	X	X	X	X	X	X	X				FEB-JUN	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Atlantic menhaden				X	X	X	X	X	X	X				-	-	-	MAY-NOV	-
	Atlantic sturgeon	C	X	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	-	-	JAN-DEC	APR-NOV
	Banded killifish		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	X					-	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Bluegill		X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	-	JAN-DEC
	Channel catfish		X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	-	-	JAN-DEC	JAN-DEC
	Gizzard shad		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Hickory shad		X	X	X	X	X	X	X	X	X				FEB-JUN	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Hogchoker		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Inland silverside		X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-	JAN-DEC	JAN-DEC
	Longnose gar		X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-	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
	Pumpkinseed		X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUN	-	-	JAN-DEC	JAN-DEC
	Quillback		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	-	-	JAN-DEC	JAN-DEC
	Shorthead redhorse		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	-	-	JAN-DEC	JAN-DEC
	Tessellated darter		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-	JAN-DEC
	Threadfin shad		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	FEB-MAY
																			SEP-NOV
	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
172	Alewife		X	X	X	X									FEB-JUN	FEB-JUN	-	-	FEB-JUN
	Blueback herring		X	X	X	X									FEB-JUN	FEB-JUN	-	-	FEB-JUN
174	Alewife		X	X	X	X	X	X	X	X					-	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	American eel		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	American shad		X	X	X	X	X	X	X	X					FEB-JUN	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Atlantic menhaden				X	X	X	X	X	X					-	-	-	MAY-NOV	-
	Atlantic sturgeon	C	X	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	-	-	JAN-DEC	APR-NOV
	Banded killifish		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	X					-	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Bluegill		X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	-	JAN-DEC
	Channel catfish		X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	-	-	JAN-DEC	JAN-DEC
	Gizzard shad		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Hickory shad		X	X	X	X	X	X	X	X					FEB-JUN	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Hogchoker		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Inland silverside		X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-	JAN-DEC	JAN-DEC
	Longnose gar		X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-	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
	Pumpkinseed		X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUN	-	-	JAN-DEC	JAN-DEC
	Quillback		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	-	-	JAN-DEC	JAN-DEC
	Shorthead redhorse		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	-	-	JAN-DEC	JAN-DEC
	Tessellated darter		X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-	JAN-DEC
	Threadfin shad		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	FEB-MAY
																			SEP-NOV
	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
591	Alewife		X	X	X	X									FEB-JUN	FEB-JUN	-	-	FEB-JUN
	American eel		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	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 45 (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
591	American shad		X	X	X	X	X	X	X	X	X				FEB-JUN	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Atlantic menhaden					X	X	X	X	X	X	X			-	-	-	MAY-NOV	-
	Atlantic sturgeon	C	X	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	-	-	JAN-DEC	APR-NOV
	Banded killifish		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								FEB-JUN	FEB-JUN	-	-	FEB-JUN
	Bluegill		X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	-	JAN-DEC
	Channel catfish		X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	-	-	JAN-DEC	JAN-DEC
	Gizzard shad		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Hickory shad		X	X	X	X	X	X	X	X	X				FEB-JUN	FEB-JUN	FEB-JUN	FEB-OCT	FEB-JUN
	Hogchoker		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Inland silverside		X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-	JAN-DEC	JAN-DEC
	Longnose gar		X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-	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
	Pumpkinseed		X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUN	-	-	JAN-DEC	JAN-DEC
	Redbreast sunfish		X	X	X	X	X	X	X	X	X	X	X	X	JUN-JUL	-	-	JAN-DEC	JAN-DEC
	Striped bass		X	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
	Threadfin shad		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	FEB-MAY
																			SEP-NOV
	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

HUMAN USE RESOURCES:

NATIONAL PARK:

HUN#	Name	Contact	Phone
130	PETERSBURG NATIONAL BATTLEFIELD PARK	NATIONAL PARK SERVICE	804/732-3531
132	RICHMOND NATIONAL BATTLEFIELD PARK	NATIONAL PARK SERVICE	804/226-1981

WILDLIFE REFUGE:

HUN#	Name	Contact	Phone
159	PRESQUILE NATIONAL WILDLIFE REFUGE	U.S. FISH AND WILDLIFE SERVICE	804/333-1470