



Rappahannock River Fact Book

Last updated (9/1997)

Location

The origin of the Rappahannock River is at a mountain spring below Chester Gap in the Shenandoah National Park of western Virginia. It extends to eastern Virginia where its mouth lies at the Chesapeake Bay. The Rappahannock River Watershed is in between the Potomac-Shenandoah Watershed to the north and the York and James River Basins to the south.

Length

184 miles (From origin at Chester Gap to mouth of the Chesapeake Bay.)

Major Tributaries of the Rappahannock River

Hazel River, Thornton River, Mountain Run, Rapidan River, Robinson River, Cat Point Creek, Corotoman River

Area of the Rappahannock River Basin

Total: **2,715 miles²** (Approximately 6.8% of Virginia's total area)

Above Fredericksburg: **1,596 miles²** (above the USGS gauging station 01668000)

Below Fredericksburg: **1,119 miles²** (below USGS gauging station 01668000)

Counties Partially or Totally in the Rappahannock River Basin

Albemarle, Caroline, Culpeper, Essex, Fauquier, Gloucester, Greene, King and Queen, King George, Lancaster, Madison, Middlesex, Orange, Rappahannock, Richmond, Spotsylvania, Stafford and Westmoreland.

Flow

Flow Values for the Rappahannock River: 1985-1995-As Measured At USGS Gauge Near Fredericksburg (USGS 01668000)

Parameter	January-March	April-June	July-September	October-December	January-December
Mean Flow	2,349 CFS	1,874 CFS	764 CFS	1,575 CFS	1,621 CFS
Median Flow	1,490 CFS	1,070 CFS	380 CFS	816 CFS	937 CFS
Max. Flow	51,500 CFS	48,600 CFS	19,200 CFS	44,300 CFS	51,500 CFS
Min. Flow	343 CFS	160 CFS	69 CFS	80 CFS	69

Source of Data: Roger K. White, USGS, Richmond, VA.

Flow Values for the Rappahannock River: 1985-1995-As Measured At USGS Gauge Near Remington (USGS 01664000)

Parameter	January-March	April-June	July-September	October-December	January-December
Mean Flow	972 CFS	817 CFS	314 CFS	647 CFS	678 CFS
Median Flow	685 CFS	512 CFS	136 CFS	309 CFS	396 CFS
Max. Flow	27,400 CFS	21,600 CFS	14,500 CFS	20,100 CFS	27,400 CFS
Min. Flow	117 CFS	51 CFS	5.7 CFS	9.7 CFS	5.7 CFS

Source of Data: Roger K. White, USGS, Richmond, VA

Flood History

Date	Flow	Gauge Height ²
June 1889 ¹	96,000 CFS ¹	21.11 feet
May 1924	66,000 CFS	16.76 feet
April 1937	134,000 CFS	26.13 feet
October 1942	140,000 CFS	26.88 feet
June 1972	107,000 CFS	22.61 feet
March 1993	51,500 CFS	14.54 feet
September 1996	54,600 CFS	15.04 feet

¹Value estimated by the Army Corps of Engineers. ²Gauge height provided by USGS Expanded Rating Table for Rappahannock River near Fredericksburg.

Fish Species (* indicates biological indicator species)

Alewife	Appalachia Darter	Eastern Mosquitofish	Spot
Bay Anchovy	Fantail Darter	Eastern Mudminnow	Fourspine Stickleback
Largemouth Bass	Glassy Darter	Mummichog	Central Stoneroller
Rock Bass	Shield Darter	Pirate Perch	Atlantic Sturgeon
Smallmouth Bass	Stripeback Darter	White Perch	Nothern hog Sucker
Striped Bass	Tesseslated Darter	Yellow Perch	Torrent Sucker
Bluegill	American Eel	Chain Pickerel	White Sucker
Bowfin	Fallfish	Redfin Pickerel	Bluespotted Sunfish
Brown Bullhead	Flier	Northern Pike	Green Sunfish
Yellow Bullhead	Summer Flounder	Pumpkinseed	Mud Sunfish
Common Carp*	Longnose Gar	Shorthead Redhorse	Rebreast Sunfish
Blue Catfish	Blueback Herring	Banded Sculpin	Redear Sundish
Channel Catfish	Roanoke Hogsucker	Mottled Sculpin	Brook Trout
White Catfish	Banded Killifish	American Shad	Brown Trout
Bluefish	Rainwater Killifish	Gizzard Shad	Rainbow Trout
Bluehead Chub	Striped Killifish	Hickory Shad	Walleye
Creek Chub*	American brook Lamprey	Comely Shiner	Warmouth
River Chub	Least brook Lamprey	Common Shiner*	Weakfish
Creek Chubsucker	Sea Lamprey	Golden Shiner*	
Black Crappie	Margined Madtom	Rosefin Shiner	
White Crappie	Tadpole Madtom	Rosyface Shiner	
Atlantic Croaker	Atlantic Menhaden	Satinfin Shiner	
Blacknose Dace*	Bluntnose Minnow	Spottail Shiner	
Longnose Dace	Cutlips Minnow	Swallowtail Shiner	
Mountain Redbelly Dace	Eastern Silvery Minnow	Atlantic Silverside	
Rosyside Dace	Silverjaw Minnow	Inland Silverside	

Terrestrial Fauna Species of the Rappahannock River Basin

(From the Virginia Fish and Wildlife Information System)

Reptiles/Amphibians

Bullfrog	Longtail Salamander	Green Treefrog	Eastern Earth Snake	Eastern Box Turtle
GreenFrog	Marbled Salamander	River Cooter	Eastern Garter Snake	Eastern Mud Turtle
Norther Cricket Frog	Midland Salamander	Mud Northern Copperhead	Eastern Hognose Snake	Eastern Painted Turtle
Pickerel Frog	North Salamander	Dusky Eastern Kingsnake	Eastern Milk Snake	Midland Painted Turtle
Southern Leopard Frog	Northern Salamander	Red Black Kingsnake	Eastern Ribbon Snake	Spotted Turtle
Upland Chorus Frog	North Salamander	Spring Mole Kingsnake	Smooth Green Snake	
Wood Forg	North Salamander	2-lined Northern Fence Lizard	Eastern Worm Snake	
Red-Spotted Newt	Redback Salamander	Northern Black Racer	Northern Brown Snake	
Northern Spring Peeper	Slimy Salamander	6-Lined Runner	Northern Red-Belly Snake	
Salamander	Spotted Salamander	Timber Rattlesnake	Northern Ringneck Snake	
Appalachian Salamander	3-Lined Salamander	Broadhead Skink	Northern Water Snake	
Blue Ridge Salamander	Eastern Spadefoot	5-Lined Skink	Queen Snake	
Jefferson Salamander	American Toad	Ground Skink	Rough Green	
Virginia Seal Salamander	Fowler's Toad	S.eastern 5-Lined Skink	Southern Ringneck Snake	
Eastern Mud Salamander	Cope's Gray Treefrog	Black Rat Snake	Stinkpot	
Four-Toed Salamander	Gray Treefrog	Corn Snake	Snapping Turtle	

Birds

American Avocet	Lesser-snow Goose	White-breasted Nuthatch	Vesper Sparrow	Prothonotary Warbler
American Bittern	Boat-tailed Grackle	Northern Oriole	White-crowned Sparrow	Worm-eating Warbler
Least Bittern	Common Grackle	Orchard Oriole	White-throated Sparrow	Yellow Warbler
Red-Winged Blackbird	Horned Grebe	Osprey	European Starling	Yellow-rumped Warbler
Eastern Bluebird	Pied-billed Grebe	Ovenbird	Bank Swallow	Yellow-throated Warbler
Bobolink	Red-necked Grebe	Barred Owl	Barn Swallow	Louisiana Waterthrush
Northern Bobwhite	Blue Grosbeak	Great horned Owl	Cliff Swallow	Cedar Waxwing
Brant	Evening Grosbeak	Short-eared Owl	N. rough wing Swallow	Whip-poor-will
Bufflehead	Pine Grosbeak	Black-capped Petrel	Tree Swallow	American Wigeon
Indigo Bunting	Rose-breasted Grosbeak	Eastern wood Peewee	Mute Swan	Eurasian Wigeon
Snow Bunting	Ruffed Grouse	Wilson's Phalarope	Tundra Swan	Willet
Canvasback	Great black-backed Gull	Red Phalarope	Chimney Swift	American Woodcock
Northern Cardinal	Herring Gull	Red-necked Phalarope	Scarlet Tanager	Downy Woodpecker
Gray Catbird	Ivory Gull	Ring-necked Pheasant	Summer Tanager	Hairy Woodpecker
Gray Catbird	Laughing Gull	Eastern Phoebe	Green-winged Teal	Pileated Woodpecker
Yellow-Breasted Chat	Ring-billed Gull	Northern Pintail	Common Tern	Red-bellied Woodpecker
Carolina Chickadee	Cooper's Hawk	Water Pipit	Royal Tern	Red-headed Woodpecker
Boreal Chickadee	Broad-Winged Hawk	Virginia Rail	Brown Thrasher	Carolina Wren
Chuck-will's-widow	Red-shouldered Hawk	King Rail	Swainson's Thrush	House Wren
American Coot	Red-tailed Hawk	Common Raven	Gray-checked Thrush	Marsh Wren
Great Cormorant	Rough-legged Hawk	Redhead	Varied Thrush	Lesser Yellowlegs
Double Crest Cormorant	Sharp-shinned hawk	American Redstart	Wood Thrush	Common Yellowthroat
Brown-headed Cowbird	Great blue Heron	American Robin	Tufted Titmouse	Prairie Warbler
American Crow	Green-backed Heron	Least Sandpiper	Rufous-sided Towhee	
Fish Crow	Ruby-thro. Hummingbird	Solitary Sandpiper	Wild Turkey	
	White Ibis	Spotted Sandpiper	Veery	
Black-billed Cuckoo	Blue Jay	White-rumped Sandpiper	Red-eyed Vireo	
Yellow-billed Cuckoo	Dark-eyed Junco	Yellow-bellied Sapsucker	Solitary Vireo	
Mourning Dove		Greater Scaup	Warbling Vireo	
	American Kestrel	Lesser Scaup	White-eyed Vireo	
Rock Dove	Killdeer	Black Scoter	Yellow-throated Vireo	
American Black Duck	Eastern Kingbird	Surf Scoter	Black Vulture	
Ruddy Duck	Western Kingbird	White-winged Scoter	Turkey Vulture	
Wood Duck	Belted Kingfisher	Eastern Screech-Owl	Canada Warbler	
Dunlin	Ruby-crowned Kinglet	Audubon's Shearwater	Cape May Warbler	
Golden Eagle	Mississippi Kite	Northern Shoveler	Kentucky Warbler	
Cattle Egret	Horned Lark	Pine Siskin	Bay-breasted Warbler	
House Finch	Common Loon	Common Snipe	Black/White Warbler	
Northern Flicker	Red-throated Loon	Sora	Black-throat Blue Warbler	
Acadian Flycatcher	Lapland Longspur		Black-throat Grn. Warbler	
Ash-throated Flycatcher		American tree Sparrow	Blackburnian Warbler	
	Mallard	Savannah Sparrow	Blackpoll Warbler	
Great crested Flycatcher	Purple Martin	chipping Sparrow	Blue-winged Warbler	
	Eastern Meadowlark	Field Sparrow	Cerulean Warbler	
Least Flycatcher	Common Merganser	Fox Sparrow	Chestnut-sided Warbler	
Scissor-tailed Flycatcher	Hooded Merganser	Grasshopper Sparrow	Hooded Warbler	
Willow Flycatcher	Red-breasted Merganser	House Sparrow	Northern parula Warbler	
Blue-gray Gnatcatcher	Northern Mockingbird	Lark Sparrow		
Common Goldeneye	Black-crown. night Heron			
American Goldfinch	Common Nighthawk	Seaside Sparrow	Palm Warbler	
Canada Goose	Brown-headed Nuthatch	Song Sparrow		
Greater Snow Goose				
Greater white-front Goose				

Mammals

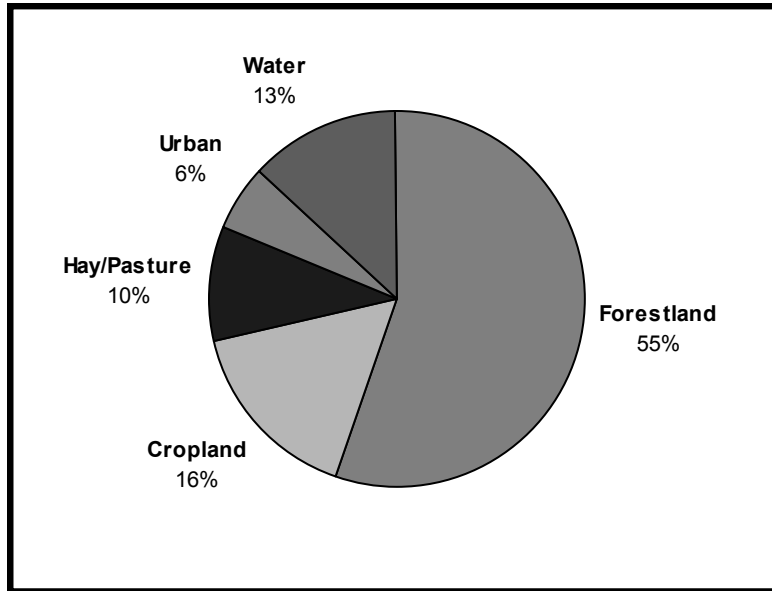
Big Brown Bat	Red Fox	House Mouse	Kirtland's Short-tail Shrew	Gray Squirrel
Hoary Bat	Stone's S. bog Lemming	Meadow Jumping Mouse	Ashen masked Shrew	Northern Gray Squirrel
Red Bat	Common Mink	N. White-footed Mouse	Least Shrew	Red Squirrel
Seminole Bat	Eastern Mole	Woodland jumpin Mouse	Masked Shrew	Southern Flying Squirrel
Black Bear	Hairy tailed Mole	Large-toothed Muskrat	N. Short-tailed Shrew	Talkative Red Squirrel
Beaver	Star-nosed Mole	Small-footed Myotis	Pygmy Shrew	Dark Meadow Vole
Bobcat	Lewis' golden Mouse	Virginia Opposum	Smokey Shrew	Meadow Vole
Fisher's East Chipmunk	Gapper red-backed Mouse	Eastern Pipistrelle	Southeastern Shrew	Pine Vole
Appalachian Cottontail	Common golden Mouse	Raccoon	S. Short-tailed Shrew	Least Weasel
Eastern Cottontail	Com. White-footed Mouse	Norway Rat	Eastern spotted Skunk	Long-tailed Weasel
White-tailed Deer	Deer Mouse	Black Rat	Striped Skunk	Woodchuck
Eastern Gray Fox	Eastern harvest Mouse	Marsh rice Rat	Fox Squirrel	Eastern Woodrat

Endangered/Threatened Animal Species

Species	Federally Endangered	State Endangered	Federally Threatened	State Threatened	Federal Candidate	State Special Concern
Appalach. Bewick's Wren		X			X	
Atlantic Pigtoe Mussel				X	X	
Atlantic Sturgeon						X
Bald Eagle			X			
Bridle Shiner						X
Brook Floater Mussel		X			X	
Brown Creeper						X
Caspian Tern						X
Carpenter Frog						X
Common Barn-Owl						X
Dickcissel						X
Dwarf Wedge Mussel	X	X				
Eastern Cougar	X	X				
Forster's Tern						X
Golden-Winged Warbler						X
Great Egret						X
Green Floater Mussel					X	X
Hermit Thrush						X
Least Tern						X
Loggerhead Shrike				X		
Mabee's Salamander				X		
Northern Harrier						X
Oak Toad						X
Peregrine Falcon	X	X				
Purple Finch						X
Red-Breasted Nuthatch						X
River Otter						X
Sharp-Tailed Sparrow						X
Sedge Wren						X
Shenandoah Salamander	X	X				
Small Star-nosed Mole						X
Small-footed Myotis					X	
Ticoloured Heron						X
Upland Sandpiper		X				
Winter Wren						X
Yellow Lance Mussel					X	X

Source: Virginia Fish and Wildlife Information System, 1997.

Land Use Percentages for the Rappahannock River Basin



Source: *Water-Resources Investigations Report 94-4042, USGS, 1994.*

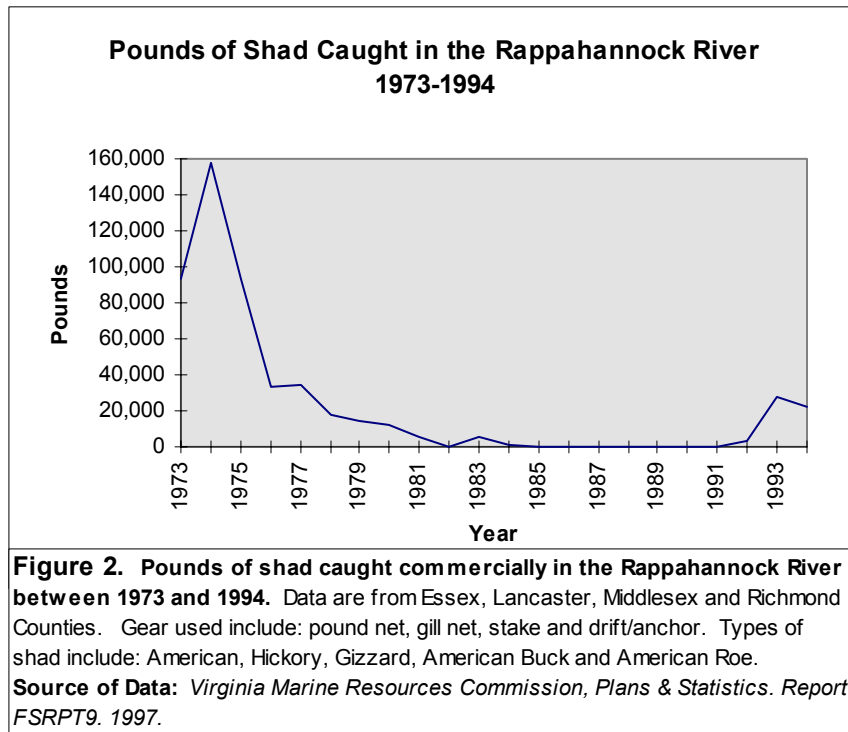
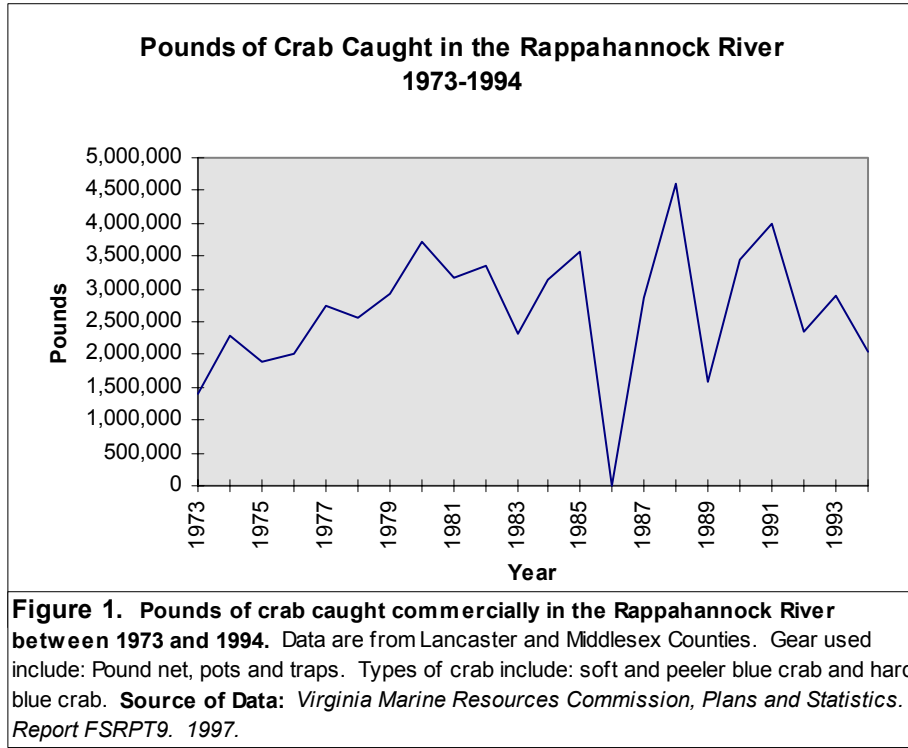
Permitted Discharges in the Rappahannock River

The Commonwealth of Virginia requires permits for any industry or municipality that discharges effluent (waste) into state waters. The Virginia Pollution Discharge Elimination System (VDPES) is responsible for issuing these permits. Each permit sets a maximum allowable discharge for its respective industry or municipality. The following table represents the percentage of the Rappahannock River that the Commonwealth of Virginia allows as discharge during each season.

	Jan.-March	April-June	July-Sept.	Oct.-December
Median Flow	1490 CFS	1070 CFS	380 CFS	816 CFS
Permitted Discharge	56.85 CFS	56.85 CFS	56.85 CFS	56.85 CFS
Percentage of River	3.8%	5.3%	14.9%	6.9%

Median flow based on above USGS flow data for the Rappahannock. Permitted Discharge is the maximum allowable discharge permitted by the Department of Environmental Quality

Commercial Fishing in the Lower Rappahannock River



**Pounds of Oysters Caught in the Rappahannock River
1973-1994**

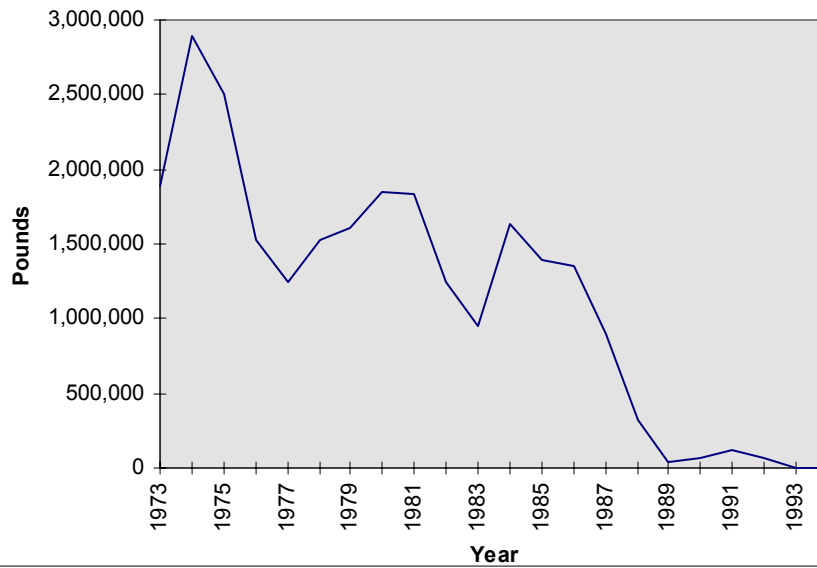


Figure 3. Pounds of oysters caught commercially in the Rappahannock River between 1973 and 1994. Data are from Lancaster, Middlesex and Richmond Counties. Gear used include: tongs, grabs and dredge. **Source of Data:** Virginia Marine Resources Commission, Plans and Statistics. Report FSRPT9. 1997.

**Pounds of Striped Bass Caught in the Rappahannock
River 1973-1994**

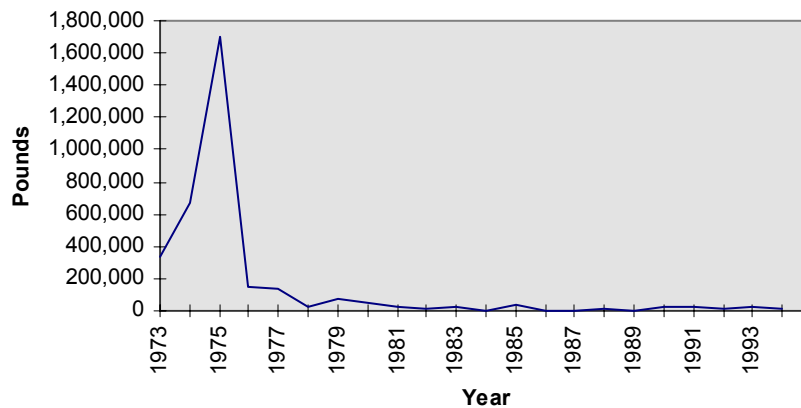


Figure 4. Pounds of striped bass caught commercially in the Rappahannock River between 1973 and 1994. Data are from Essex, Lancaster, Middlesex and Richmond Counties. Gear used include: Gill net, stake, pound net, drift/anchor and fyke net. **Source of Data:** Virginia Marine Resources Commission, Plans and Statistics. Report FSRPT9. 1997.