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RAPPAHANNOCK RIVER

THREAT: Water mismanagement, lack of planning

STATES: Virginia

AT RISK: Water quality and availability for homes, businesses, and agriculture

SUMMARY

The Rappahannock River is a primary source of the growing region's water supply. But the river is at risk from a lack of water supply planning that would safeguard and ensure the future of the region's precious water resources for all beneficial users. Increasing demand for surface water, driven by population growth, expanding industries like data centers, and declining groundwater levels, pose a significant threat to the river's health and sustainability. New state regulations require regional water supply plans, but a coordinated basin-wide approach is crucial to safeguard the Rappahannock.

THE RIVER

The Rappahannock River is one of Virginia's most iconic waterways, stretching over 195 miles from the Blue Ridge Mountains to the Chesapeake Bay. The river supports a diverse array of ecosystems and provides critical habitat for fish and wildlife, including American shad and Atlantic sturgeon. The Rappahannock also plays a vital role in the region's economy, supporting agriculture (Virginia's top industry) and seafood industries, and serves as the basis for robust tourism and recreational opportunities such as fishing, paddling, boating, and waterfowl hunting.

In addition to its ecological, economic, and recreational significance, the river is a crucial source of drinking water.

THE THREAT

The increasing strain on water resources, and the absence of unified water management, threaten the river's ability to meet the needs of both people and nature. As the region continues to grow, protecting the Rappahannock's health and sustainability is more important than ever.

Unchecked development and inadequate planning threaten the Rappahannock River. Virginia is already the largest data center market in the world; the intense development in this thirsty industry, as well as continued population growth, have led to increased demand for surface water. Compounding the issue, localities east of Interstate 95 are being forced to transition from groundwater wells to surface water sources due to significant declines in the Potomac Aquifer. This shift places additional pressure on the Rappahannock River, which already faces challenges from existing surface water withdrawals, and has resulted in applications for new surface water intake permits.

Extreme weather patterns are intensifying drought conditions, increasing temperatures, and reducing river flows for extended periods of time. This volatility

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FOR MORE INFORMATION:

ADAM SCHELLHAMMER
Mid Atlantic Regional Director
American Rivers
610-424-3663
aschellhammer@americanrivers.org

BRENT HUNSINGER
Advocacy and Coastal Programs Director
Friends of the Rappahannock
804-443-3448
brent.hunsinger@riverfriends.org

TAKE ACTION:

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RAPPAHANNOCKRIVER2025](https://americanrivers.org/rappahannockriver2025)**



FRIENDS OF THE RAPPAHANNOCK

makes the Rappahannock River even more vulnerable to over-extraction. Without proper planning, increased pressure on the river risks depleting the river's flow, degrading the water quality, and threatening the ecosystems and communities that depend on it.

Virginia's Department of Environmental Quality (DEQ) has established new regulations requiring regional water supply plans. While this is a positive step, the five separate planning regions within the Rappahannock watershed currently lack a coordinated basin-wide approach. Without a comprehensive plan, the cumulative impacts of

water withdrawals on the river's health remain unaddressed. These impacts include reduced water availability for downstream users, potential harm to fish eggs and larvae, and changes in salinity levels which would negatively affect withdrawals for agricultural use.

The Caroline County permit for a new surface water intake highlights the urgency of the issue. If approved without a cumulative impact study, this permit could set a dangerous precedent for future water management decisions. A fragmented approach to water supply planning threatens to undermine the long-term sustainability of the Rappahannock River, putting both human and ecological communities at risk.

WHAT MUST BE DONE

A coordinated effort is needed to protect the Rappahannock River from the threats of water mismanagement and unchecked development. The Department of Environmental Quality, Virginia Department of Health, and other state agencies should develop and implement a comprehensive, basin-wide water supply plan. Interested parties should attend regional water supply planning meetings to voice support for integrating regional plans into a unified strategy that addresses the cumulative impacts of all water withdrawals.

Additionally, a cumulative impact study on fish egg and larvae mortality and salinity from surface water intakes in the Rappahannock — conducted by the Virginia Institute of Marine Science — would provide essential data to guide water management decisions. The DEQ could also require Caroline County to return all water withdrawn from the Rappahannock River back to the Rappahannock Basin, and not allow the proposed transfer of water to an adjacent river basin.

Policies that prioritize sustainable water management are critical to protect the Rappahannock's ecological health and ensure that the river continues to thrive and support all life that depends on it for generations to come.