

The North River, downstream of the Staunton Reservoir. Photo: Steve Krichbaum

The State of Our Water

Managing and Protecting the Drinking Water Resources of the George Washington National Forest

EXECUTIVE SUMMARY

A study conducted by Wild Virginia



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Forested lands are critical for producing clean water. A 2008 report by the National Research Council states that streamflow from forests provides two-thirds of this country's clean water supply. The U.S. Forest Service recognizes the importance of forests in providing clean water. The agency's Strategic Plan for Fiscal Years 2004-08 lists "Improve watershed condition" as one of its six major goals. This goal is consistent with the Weeks Act of 1911, which established eastern national forests "for the purpose of conserving the forests and the water supply of the States" and "for the protection of the watersheds of navigable streams."

The George Washington National Forest (GWNF) lies entirely within the Chesapeake Bay watershed. As a source of water that feeds the James and Potomac Rivers and ultimately flows through the Washington, DC, Richmond and Hampton Roads metropolitan areas, millions of people rely on these waters for a variety of purposes. Almost 4 million residents downstream of the GWNF obtain drinking water from the James and Potomac Rivers.

The GWNF and its surface waters are extremely important as a local and regional source of drinking water.

The local need for clean water is acute, as several localities rely solely on water originating in the GWNF for domestic use. Five reservoirs located within the GWNF provide drinking water to area residents, with the watersheds of these reservoirs comprising roughly 7.1% of the GWNF in Virginia. Thirteen area localities and organizations obtain drinking water from rivers whose watersheds include part of the GWNF. These thirteen watersheds represent approximately 37.4% of the GWNF in Virginia. The combined 425,874 acres within public drinking watersheds represent roughly 44.5% of all the GWNF land in Virginia. Twenty-two localities and more than 260,000 residents of western Virginia obtain drinking water from surface waters of the GWNF (see table).

There is cause for concern about water quality in the GWNF. Data from the Virginia Department of Environmental Quality in 2006 lists 6 reservoirs and 50 streams or rivers within the GWNF as impaired (though none were considered impaired as a public water supply). **Four of the six impaired reservoirs occur within drinking watersheds, with drinking water being directly drawn from two of them.** The drinking watersheds contain more miles of impaired streams than would be expected based on the land area they occupy. While many of the causes of impaired waters are beyond the control of the Forest Service, the presence of so many impaired streams, rivers and reservoirs indicates that more attention should be paid to water quality protection in the GWNF.

Management of the GWNF does not differ significantly between drinking watersheds and other areas of the forest. Of the total land area in the drinking watersheds, 34.4%

is "suitable for timber production" (per the 1993 Forest Plan for the GWNF) compared to 34.8% of the land area outside the drinking watersheds. Road and trail densities on the GWNF reveal no consistent differences or pattern when comparing drinking watersheds to the rest of the forest.

The 1993 Forest Plan does very little to address drinking water resources. The plan identifies drinking water reservoirs, but does not address the watersheds within which the reservoirs occur. No other public drinking water sources are identified or discussed. The Forest Service must do more to protect water resources in the GWNF. Merely meeting state standards and best management practices, as called for in the 1993 Forest Plan, should not be a management goal. These standards represent minimum levels of acceptable management and should be greatly exceeded. National forests should produce the cleanest, purest water possible and establish the highest of standards that other land management organizations can strive to meet.

Managing for watershed protection produces many benefits beyond drinking water protection. Reservoirs function for longer periods of time due to decreased sedimentation. Many aquatic species, terrestrial species, and natural communities benefit from sound ecological watershed management. Outdoor recreational opportunities, scenic resources, biological diversity, and other forest features are enhanced as well.

The Forest Plan for the George Washington National Forest is currently being revised. The new Plan will guide management of the national forest for the next ten to fifteen years.

This is the optimal time to assess current management strategies and adjust them to enhance and protect the many values these public lands possess. Direct, explicit management of drinking watersheds must be part of the plan.

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OUR RECOMMENDATIONS

1) The Forest Service should **FORMALLY IDENTIFY ALL THE DRINKING WATERSHEDS LYING WITHIN THE GWNF AND DESCRIBE THEM IN THE FOREST PLAN.** The rivers and streams within these watersheds should be considered a public water supply.

2) Forest management should address entire watersheds, not just riparian areas. Specific management objectives should be developed for all drinking watersheds.

3) **IMPAIRED STREAMS, RESERVOIRS, AND THEIR WATERSHEDS NEED SPECIAL ATTENTION AND SHOULD BE A PRIORITY FOR RESTORATION EFFORTS.** Ground disturbing activities such as logging and road building should not be conducted near streams that are impaired or subject to other physical stresses.

4) More information is necessary to adequately describe and assess watershed conditions. The Forest Service should develop a plan to monitor all existing water quality and related programs and obtain all data pertinent to water quality and watershed conditions. There is great potential for cooperative efforts with other agencies, organizations, local communities, and volunteers.

5) The Forest Service should develop a plan to increase its own efforts to **MONITOR WATER QUALITY IN THE GWNF.** Macroinvertebrate sampling is important but should be augmented with other programs. Particular attention should be paid to sedimentation in streams and rivers. Direct measures of the impact that ground disturbing activities and projects have on water quality and sedimentation are needed.

6) **THE FOREST SERVICE AND LOCALITIES THAT OBTAIN DRINKING WATER FROM GWNF MUST COMMUNICATE MORE EFFECTIVELY.** Strong working relationships and partnerships should be developed.

7) **DRINKING WATERSHEDS SHOULD BE PROTECTED AND MANAGED APPROPRIATELY.** Improving existing water quality while permanently protecting and enhancing future quality are obvious goals with which to begin. The potential impacts of timber harvesting and road construction (including temporary roads) must be fully examined. The Forest Service, local communities, and the larger public should work together to establish policies and develop management plans for the drinking watersheds.

LOCALITY	EST. POPULATION SERVED BY GWNF SOURCES	WATER OBTAINED DIRECTLY FROM RESERVOIR IN GWNF	WATER OBTAINED DIRECTLY FROM LOCAL RIVER FLOWING FROM GWNF	OBTAINS WATER FROM ANOTHER LOCALITY OR ORGANIZATION USING WATER FROM GWNF
Alleghany County	6,149			Yes
Amherst, Town of	5,000		Buffalo	
Augusta County	9,058	Coles Run Reservoir		Yes
Bedford County	17,300			Yes
Bridgewater, Town of	682		North	
Broadway, Town of	3,200		North Fork Shenandoah River	
Campbell County	269			Yes
Clifton Forge, Town of	4,679	Smith Creek Reservoir		
Covington, City of	7,300		Jackson	
Frederick County	12,649			Yes
Front Royal, Town of	12,500		South Fork Shenandoah River	
Harrisonburg, City of **	44,500	Switzer Lake	North, Dry	
Iron Gate, Town of	386			Yes
Lexington, City of	7,200		Maury	Yes
Lynchburg, City of	76,000	Pedlar Reservoir	James	
Middletown, Town of	1,120			Yes
Rockbridge County	2,764			Yes
Rockingham County <i>(city-rural customers of Harrisonburg)</i>	4,253		North, Dry	Yes
Staunton, City of	11,066	Staunton Reservoir		
Strasburg, Town of	4,500		North Fork Shenandoah River	
Winchester, City of	28,071		North Fork Shenandoah River	
Woodstock, Town of	3,952		North Fork Shenandoah River	
TOTAL	262,598			

List of Virginia localities that obtain some or all of their drinking water from resources within the George Washington National Forest (GWNF). Estimated population data is from the years 2006 through 2008.

**The City of Harrisonburg owns and manages Switzer Lake. The water intake facility on the Dry River for the City of Harrisonburg is a few miles downstream of Switzer Lake. No water is drawn directly from Switzer Lake.

REFERENCES

National Research Council. 2008. Hydrologic Effects of a Changing Forest Landscape. National Academies Press: Washington, DC. 194 pp.

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Virginia Department of Environmental Quality. 2006. Final 2006 305(b)/303(d) Water Quality Assessment Integrated Report.

ABOUT WILD VIRGINIA

Wild Virginia is a grassroots non-profit organization dedicated to preserving wild forest ecosystems in Virginia's national forests. Since 1995 we have worked to protect one of the last large wild forests remaining in eastern North America, the Shenandoah Mountain area of the George Washington National Forest (GWNF). Through education and outreach, Wild Virginia informs and mobilizes citizens about issues, threats, and opportunities for the GWNF. Wild Virginia is also a "watchdog" in the forest, monitoring all proposed projects (e.g., timber sales, road construction).

Financial support for our work comes from our members, individual donors and grants from private foundations. We are proud to acknowledge support in recent years from the Agua Fund, WestWind Foundation, Patagonia, Fund for Wild Nature, Environmental Systems Research Institute (ESRI), J&E Berkley Foundation, and an anonymous foundation.

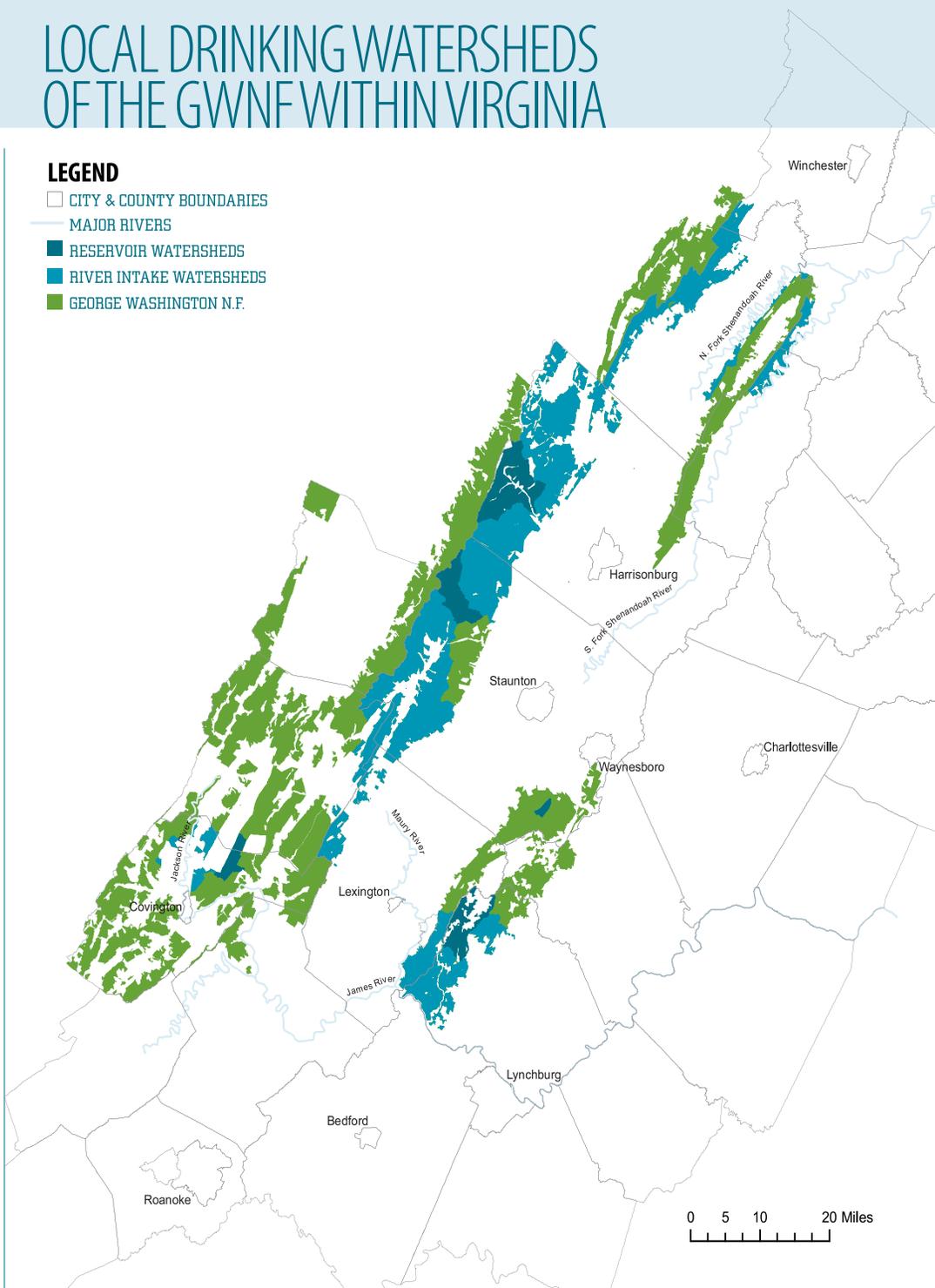
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LOCAL DRINKING WATERSHEDS OF THE GWNF WITHIN VIRGINIA

LEGEND

- CITY & COUNTY BOUNDARIES
- MAJOR RIVERS
- RESERVOIR WATERSHEDS
- RIVER INTAKE WATERSHEDS
- GEORGE WASHINGTON N.F.



Data used in this map were compiled from Va. Dept. of Health, Va. Dept. of Environmental Quality, Regional Planning District Commissions, various localities, and U.S. Forest Service for the years 2006-2008. Map created by Wild Virginia, October 2008.



Graphic Design: Alloy Workshop