

2014
STATE OF THE
NATION'S RIVER
SPOTLIGHT EDITION



RIVER FRIENDLY GROWTH

HOW WE USE THE LAND ON THE POTOMAC RIVER



"SUSTAINABLE DEVELOPMENT IS DEVELOPMENT THAT MEETS THE NEEDS OF THE PRESENT WITHOUT COMPROMISING THE ABILITY OF FUTURE GENERATIONS TO MEET THEIR OWN NEEDS."

Our Common Future: Report of the World Commission on Environment and Development, 1987

A RIVER TO CALL HOME

Starting as a trickle in the Allegheny Mountains of West Virginia, the Potomac's waters journey over **380 miles**, meandering through Virginia, Maryland, and Washington, DC before they drain into the Chesapeake Bay. Along the way, our Nation's River provides sustenance and livelihoods to the **6.9 million** people who live, work, and play in the Potomac's Watershed – the lands and streams that drain into the river basin.

The Potomac is one of the wildest urban rivers in the country and home to countless species of plants and wildlife. The river nourishes our rural and working lands, nurtures our bustling suburban neighborhoods, and sustains our lively urban communities. It provides drinking water to more than **4.5 million** people in the Washington, DC metro area.

The health and vibrancy of our community depends on clean water and a healthy Potomac. Explosive population growth and the infrastructure to support it, however, are threatening to undo decades of clean water progress.

Unsustainable sprawl, greater impervious surfaces, and harmful land use practices are increasing **polluted runoff** at an alarming rate. In fact, polluted runoff is the *only* growing source of pollution to the Potomac and Chesapeake Bay.

Meeting the needs of a diverse community is what makes the Potomac a treasured resource for our region, but it also puts great strain on the river. Expected population growth could make matters much worse.

Data source 1: U.S. Environmental Protection Agency – Bierwagen, B., D.M. Theobald, C.R. Pyke, A. Choate, P. Groth, J.V. Thomas, and P. Morefield. 2009 Land-Use Scenarios: National-Scale Housing-Density Scenarios Consistent with Climate Change Storylines. Global Change Research Program, National Center for Environmental Assessment, Washington, DC; EPA/600/R-08/076F. Map series produced by Tracy Lind, Potomac Conservancy. Population projections produced by the Metropolitan Washington Council of Governments and apportioned to the region by the Chesapeake Bay Program.

Whether you live in the rural headwaters regions, growing suburbs, or the greater Washington, DC metro area, your community will be welcoming a new wave of people and businesses in the coming years.

Population growth is likely to bring positive changes to our region including more jobs, higher home values, and a more robust local tax base. But, left unplanned, that growth could also spell disaster for the health of our lands, waterways, and drinking water sources. Added development pressure can fuel destructive sprawl and lead to harmful land use practices.

Supporting our region's growth and restoring the Potomac to full health are *not* mutually exclusive goals.

✓ WITH SMART PLANNING

Smart planning strategies foster growth and ensure the responsible protection of forests, farmland, and waterways. Communities can avoid sprawl by planning clustered areas for mixed residential and commercial use, and protecting forested lands. Cost-effective tree plantings and rain garden installations improve local water quality and beautify our communities at the same time. With foresight, we can meet growth demands and leave a legacy of clean water for future generations.

✗ WITHOUT SMART PLANNING

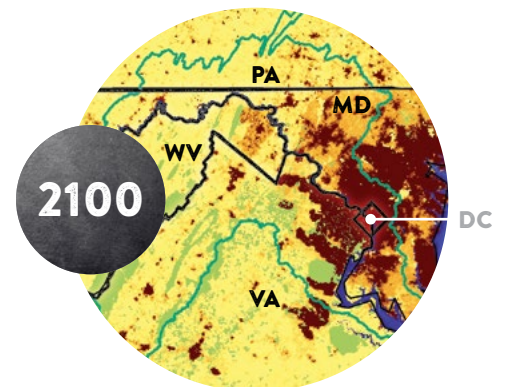
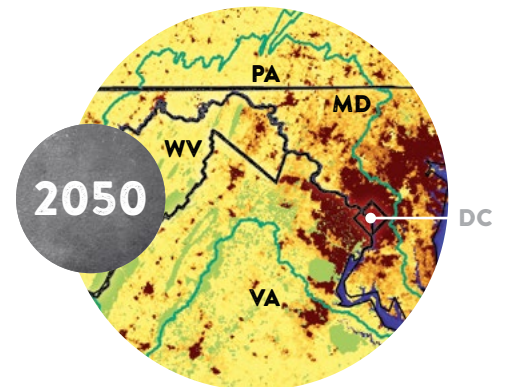
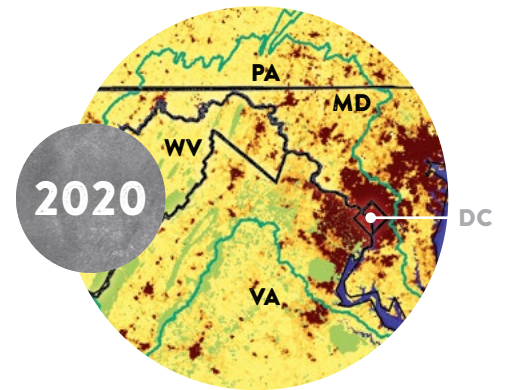
Poorly planned development can put terrible pressure on our communities' infrastructure and natural resources. If we fail to enact common-sense solutions to manage our region's growth, unsustainable sprawl will lead to shrinking forests, weakened natural flood protections, and greater pollution levels in our local streams and rivers – not to mention increased traffic, larger school classroom sizes, and higher cost of living.

Read on to learn more about growth projections, unique clean water challenges, and common-sense planning solutions in your community.



IMPERVIOUS SURFACE DENSITY¹

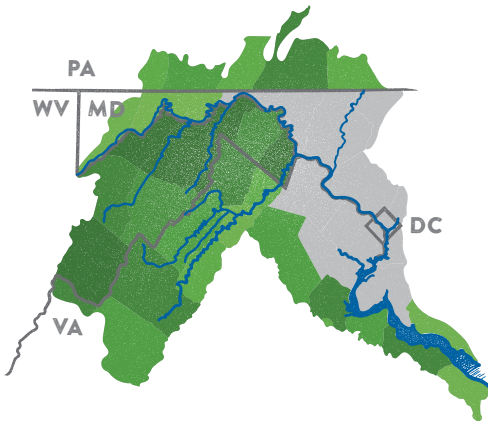
LOW MEDIUM HIGH



2.3 MILLION

The estimated number of new residents in the Potomac Watershed by 2040. That's like adding the entire population of Houston, TX to our region!

RURAL



OVERALL STREAM HEALTH



GOOD

LAND USE TYPE

- Low population density
- Largely forests and farmlands
- High growth pressure

EXAMPLES

- Allegany and Garrett Counties (MD)
- Shenandoah and Warren Counties (VA)
- Hampshire and Jefferson Counties (WV)

DEVELOPED LANDS (2010)

Up to **23%**

2010 POPULATION

1.6 million

PROJECTED POP. CHANGE (2010–2040)

737,000 (**+46%**)

TOP THREATS TO CLEAN WATER

- Agricultural fertilizers and pesticides
- Farm animal waste in waterways
- Loss of healthy forests and stream buffers
- Leaks from failing septic systems

TYPES OF POLLUTANTS

- Excess nutrients and phosphorus
- Herbicides and pesticides
- Manure and waste
- Sediment

⚠️ EMERGING CLEAN WATER THREAT

LOSS OF HEALTHY FORESTS

The western rural lands of the Potomac Watershed are home to forested Appalachian mountains, native wildlife, verdant farmland, and town-lined valleys. But, trouble lurks in our rural streams. Encroaching sprawl threatens to destroy the forests that produce the cleanest waters in our region. Forests capture and filter water, stabilize stream banks, control flooding, and provide habitat for wildlife. Development pressure propels forest loss at **100 acres per day** in the Chesapeake Bay region, and models confirm forests in Maryland, Virginia, and West Virginia are highly vulnerable to development.

SMART PLANNING OPPORTUNITIES



PROTECT AND RESTORE stream-side tree buffers to provide natural protections against flooding and polluted runoff



PLAN clustered growth hubs, and identify conservation areas to protect healthy forests and river friendly working lands



ADOPT environmental site design requirements for new development



PROMOTE AND INCENTIVIZE river friendly Best Management Practices (BMPs) on working farmlands

LOCAL SUCCESSES

Maryland's "**Sustainable Growth and Agricultural Preservation Act of 2012**" aims to slow loss of forest and agricultural land through careful development planning.

In 2013, the **Open Space Institute** selected the South Branch River Watershed in West Virginia as one of only four priority conservation areas from Virginia to Maine. The Open Space Institute will provide **\$5.5 million in funding** for local land protection initiatives in the four priority areas. Conservation efforts will preserve habitat strongholds, foster storm resilient landscapes, and improve water quality.

The **Chesapeake Bay Program's 2014 Watershed Agreement** is a Bay-wide restoration plan. The plan commits to restoring 900 miles per year of riparian forest buffer until at least 70 percent of riparian areas are forested. Additionally, the plan seeks to protect two million acres of land in priority conservation areas, and track development's impact on the loss of forest and farmland.

URBAN



⚠️ EMERGING CLEAN WATER THREAT

AGING SEWER & STORMWATER INFRASTRUCTURE

Aging sewer and water infrastructure is a major source of pollution for today's urban waterways. In an average year, leaks from burst pipes and combined sewer overflows (CSOs) dump **600 million gallons** of diluted raw sewage into the Potomac and **1.5 billion gallons** into the Anacostia. This perennial problem exposes the river – and anyone who comes into contact with it – to dangerous pathogens and bacteria. Meeting the needs of a larger urban population will put further strain on the existing system, threatening the future health of the Potomac and Anacostia Rivers.

SMART PLANNING OPPORTUNITIES



EMBRACE affordable and effective nature-based solutions to capture and filter polluted runoff



UPGRADE stormwater and sewage infrastructure



STRONGER ENFORCEMENT against illegal littering and dumping of hazardous materials



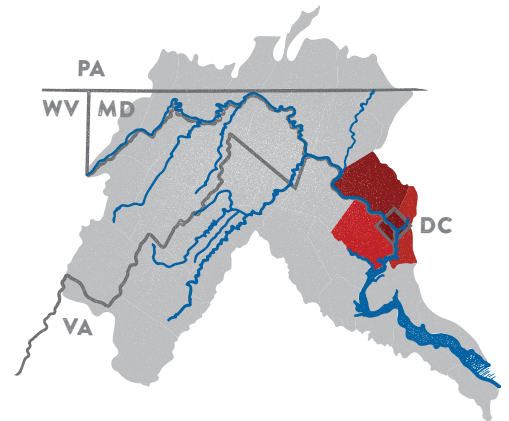
INVEST in the redevelopment of existing city centers, building up rather than out

LOCAL SUCCESSES

DC Water and Sewer Authority and the EPA have partnered in the \$2.6 billion **Clean Rivers Project** – a mandated plan to reduce nearly all CSOs in the Potomac River, Anacostia River, and Rock Creek. Improvements will upgrade wastewater and stormwater infrastructure, and invest in low-impact development and green infrastructure strategies.

Tysons in Fairfax County, VA has developed a detailed, **city-wide smart planning project**. The plans will help reduce polluted urban runoff by increasing the use of permeable pavement and rain gardens.

The District of Columbia adopted a **Sustainable DC Plan** in 2013 with the goal of making our nation's capital the, "healthiest, greenest, most livable city in the nation over the next 20 years."



OVERALL STREAM HEALTH



POOR

LAND USE TYPE

- Densely populated
- High impervious surface cover
- Industrial and commercial development

EXAMPLES

- Washington, DC
- Montgomery County (MD)
- Fairfax County (VA)

DEVELOPED LANDS (2010)

Up to **98%**

2010 POPULATION

3.9 million

PROJECTED POP. CHANGE (2010–2040)

937,000 (**+23.7%**)

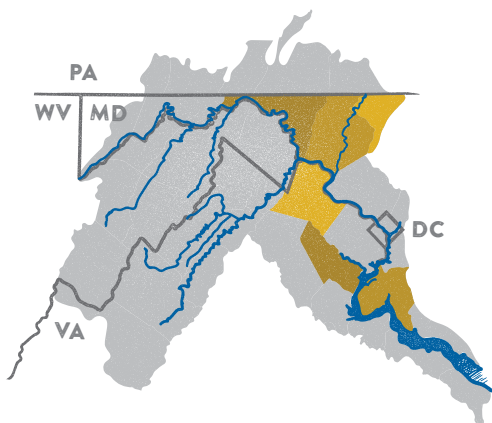
TOP THREATS TO CLEAN WATER

- Impervious surfaces
- Aging water infrastructure
- Dumping and other waste

TYPES OF POLLUTANTS

- Toxins, chemicals and heavy metals from urban runoff
- Pathogens and bacteria
- Waste chemicals
- Litter

SUBURBAN



OVERALL STREAM HEALTH



MODERATE

LAND USE TYPE

- Moderate population density
- Increasing impervious surface cover
- Mix of developed, forested, and agricultural lands
- High growth pressure

EXAMPLES

- Frederick and Charles Counties (MD)
- Loudoun County (VA)

DEVELOPED LANDS (2010)

Up to **38%**

2010 POPULATION

1.4 million

PROJECTED POP. CHANGE (2010–2040)

625,500 (**+44.4%**)

TOP THREATS TO CLEAN WATER

- Increasing impervious surface cover
- Rapid loss of forests and productive farmland
- Runoff from lawns and croplands

TYPES OF POLLUTANTS

- Toxins, chemicals and heavy metals from urban runoff
- Excess nutrients and phosphorus
- Sediment

⚠️ EMERGING CLEAN WATER THREAT

SPRAWL & IMPERVIOUS SURFACES

A patchwork of forests, farmland, town centers, and neighborhoods blanket our suburban communities. Population growth moving out from the Washington, DC metro area is rapidly increasing the area's impervious surface cover. New office buildings, subdivisions, streets, and parking lots eat away forest and cropland, weakening the capacity of the land to absorb rainwater and purify local waters. In turn, streams and rivers are increasingly overwhelmed by polluted runoff – excess rainwater that carries toxins, chemicals, and sediment into waterways. As suburban areas welcome a swell of new residents in the coming years, local planning is needed to avoid sprawl, create lively town centers, and protect important forested lands.

SMART PLANNING OPPORTUNITIES



EMBRACE affordable and effective nature-based solutions to capture and filter polluted runoff



INVEST in the redevelopment of existing city centers, building up rather than out



UPGRADE stormwater and sewage infrastructure



ADOPT environmental site design requirements for new and existing development



PLAN clustered growth hubs and identify conservation areas to protect healthy forests, stream-side tree buffers, and river friendly working lands



PROMOTE and incentivize river friendly Best Management Practices (BMPs) on working farmlands

LOCAL SUCCESSES

Frederick County (MD) has created an innovative **Green Homes Challenge** program that helps residents make a difference for clean water. The Challenge supports at-home conservation projects that include rain barrel installation, rain garden planting, and river friendly lawn maintenance.

The development of the **Silver Metro Line** in Northern Virginia provides accessible public transportation for suburban commuters and offers potential benefits to land conservation and water quality. The Silver Line promotes growth in existing developed areas, thereby easing the pressure to build new development in forested and rural areas.

BATTLEGROUND LOUDOUN *and* FREDERICK

Sitting alongside opposite banks of the Potomac, Loudoun (VA) and Frederick (MD) counties are each experiencing explosive population growth and rapid urbanization. In fact, Loudoun is one of the fastest growing counties in the country. Growth pressure radiating out from the Washington, DC metro area is giving rise to new subdivisions, parking lots, and commercial plazas in once-rural areas. The loss of forest and working lands leaves local streams and rivers susceptible to flooding and increased pollution from urban runoff, sediment, and lawn and crop chemicals. Growing suburban communities, like Loudoun and Frederick counties, play a significant role in the health of the Potomac and our local waterways. These communities can (un)pave the way for river friendly growth by investing in compact, mixed-use city centers and committing to thoughtful conservation of forests and rural lands.



TAKE ACTION!

Learn how you can support river friendly growth and local clean water protections.

www.potomac.org/take-action

LOUDOUN, VA

FREDERICK, MD

Miles From Washington, DC	26 miles	34 miles
Local Stream Health Avg. 2000-2010	Fair	Poor
Population 2013	349,679 Fastest growing county in the watershed	241,409 3rd fastest growing county in Maryland
Projected Population Growth 2010-2040	+55.3%	+43.6%
Developed Lands (2010)	25%	20%
County building guidelines that consider water quality protections	42% (2012)	68% (2013)
Projected Impervious Surface Change 2006-2040, in acres		

RECENT THREATS TO CLEAN WATER

Trump National Golf Course

legally clear-cut 1.5 miles of shoreline, or 400+ trees along Potomac (2011).

Push for Bi-county "Outer Beltway"

by the VA Dept. of Transportation would add sprawl in Loudoun and Prince William counties and irreversibly destroy parkland, open space, and rural areas.

Declining Water Quality

There has been a steady decline in local stream health over the last two decades, and a 2009 study confirmed that 78% of stream miles in Loudoun were in stress, including 42% in severe stress.

Weakened Stream Buffer Protections

on Lake Linganore, Frederick City's water supply (2013).

County Ignores State Anti-Sprawl Law

County allows new subdivisions in forested and farmland areas that should be protected under the 2012 Sustainable Growth and Agricultural Preservation Act.

Troubled Waters

A 2013 survey confirms that 50% of stream miles in the county are degraded. The state lists the Monocacy River as impaired from high levels of nutrients and sediment.

PLANNING FOR

VIBRANT COMMUNITIES, HEALTHY LANDS, AND A CLEAN POTOMAC

With millions of new residents arriving in the coming years and decades, now is the perfect time to focus on building long-term sustainable communities.

We can create a shared vision for our growing towns and cities using common-sense planning at the local and county levels.

Thoughtful development considerations can offer affordable and proven solutions to meet population demands, fuel growth, and protect our natural resources.

With a smart planning approach, our growing rural, suburban, and urban communities will become beacons for sustainable, livable, and vibrant communities.

PRESERVED FORESTS & EASY ACCESS TO PARK LANDS



RIVER FRIENDLY FARMLAND



TREE-LINED SIDEWALKS & STREETS



CLEAN STREAMS & SAFE DRINKING WATER



www.potomac.org

ABOUT POTOMAC CONSERVANCY

Founded in 1993, [Potomac Conservancy](http://www.potomac.org) is a member-supported nonprofit that works to ensure the Potomac River boasts clean water, healthy lands, and vibrant communities. The Conservancy fights for improved water quality through conservation and advocacy, and empowers local landowners, volunteers, activists, members, and partners to lead the charge for clean streams and safe drinking water sources.



Visit www.potomac.org to discover how you can support river friendly growth!

- ✓ Tell local leaders that clean water is a priority
- ✓ Stay informed on the latest clean water news
- ✓ Donate time & resources to local water protection efforts

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