



*Payment for Watershed Services to Benefit Downstream  
Drinking Water Supplies and the Bay*

Stephanie Flack, The Nature Conservancy

Potomac Watershed Partnership, June 11, 2013

# Do you know where your drinking water comes from?

Most people don't!

Case in point:

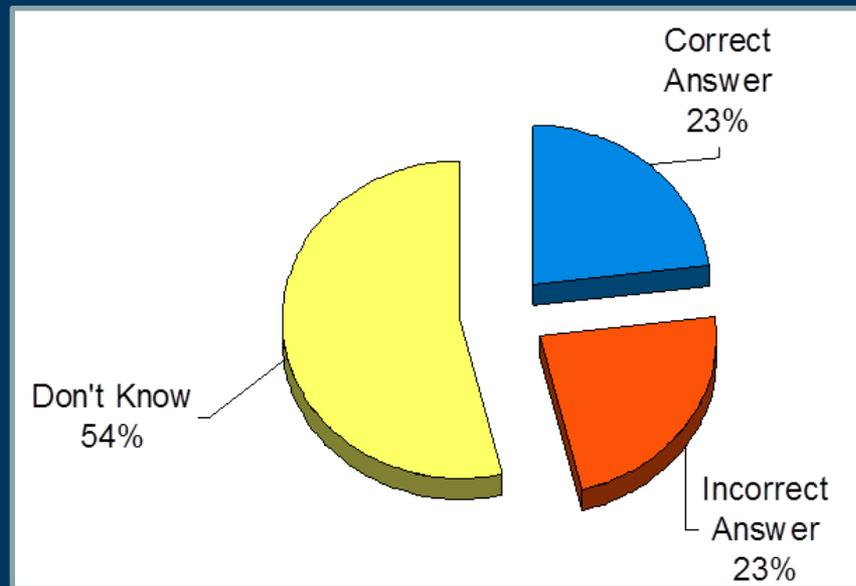


[YouTube TNC's man on the street interviews: where does your water come from?](#)

Yet, water comes from nature!

# State of public perceptions and understanding

77 percent of Americans not on well water do not know where their drinking water comes from



Source: 2011 national survey

# Yet people express greatest concern with water issues

## *Degree to Which Americans Worry About Environmental Problems*

I'm going to read you a list of environmental problems. As I read each one, please tell me if you personally worry about this problem a great deal, a fair amount, only a little, or not at all.

	<b>Great deal/ Fair amount</b>	<b>Not much/ Not at all</b>
	<b>%</b>	<b>%</b>
Contamination of soil and water by toxic waste	79	20
Pollution of rivers, lakes, and reservoirs	79	22
Pollution of drinking water	77	23
Maintenance of the nation's supply of fresh water for household needs	75	24
Air pollution	72	28
Extinction of plant and animal species	64	36
The loss of tropical rain forests	63	35
Urban sprawl and loss of open spaces	57	42
Global warming	51	48

March 3-6, 2011

March 2011 Gallup Poll

# Economic benefits of protecting healthy watersheds (EPA 2012)

Increase public understanding of natural benefits provided by healthy forested watersheds: water filtration, flow regulation, erosion control, wastewater assimilation, flood attenuation, carbon storage, etc.

FIGURE 2 Green Infrastructure Can Be Less Expensive than Gray Infrastructure (in Hanson *et al.* 2011)



\* Figures represent 2006 U.S. dollars.

Source: Kenny 2006; Wieland et al. 2009; Chesapeake Bay Commission 2004; Corps of Engineers 2003.

## “Theory of change” we would like to test in Potomac watershed

If we increase public understanding of the role of our vital natural infrastructure – our forests, wetlands, streams and rivers – in providing our critical drinking water supply...

...then people will demonstrate a willingness to pay for its protection and restoration.

# The Nature Conservancy: who we are and what we do

- Founded in 1951
- Work in all 50 states and 35 countries
- 1 million members
- Protected more than 119 million land ac
- Protected >5,000 river miles
- Working in Potomac basin > 50 years
- Evolution from land trust for biodiversity to nature for people



TNC: Working around the world to protect ecologically important lands and waters for nature and people.

WHERE WE WORK

The mission of The Nature Conservancy is to conserve the lands and waters on which all life depends. We achieve this mission through the dedicated efforts of our diverse staff located in over 30 countries on all 50 states, with the help of our many partners, from individuals and governments to local nonprofits and corporations, and by using a nonconfessional, collaborative approach. Our vision is to leave a sustainable world for future generations.

# Outline of presentation

1. Why are our Potomac basin source water areas important, and what does the future hold for them?
2. What is a Payment for Watershed Services (PWS) initiative or “Water Fund”?
3. What are the challenges and opportunities for Payments for Watershed Services in this watershed?

# Part 1: Why are our Potomac basin source water areas important, and what does the future hold for them?

# Current snapshot of the Potomac watershed

## Geography:

- 383 mile mainstem
- 14,670 sq. mi. basin
- Parts of MD, VA, PA, WV and DC

## Land use:

- 58% forested
- 32% agriculture
- 5% developed

## Population :

- 6.11 million (2010 ICPRB est.)
- 81% urban
- 19% rural
- 0.7% agricultural
- 4.35 million in DC region

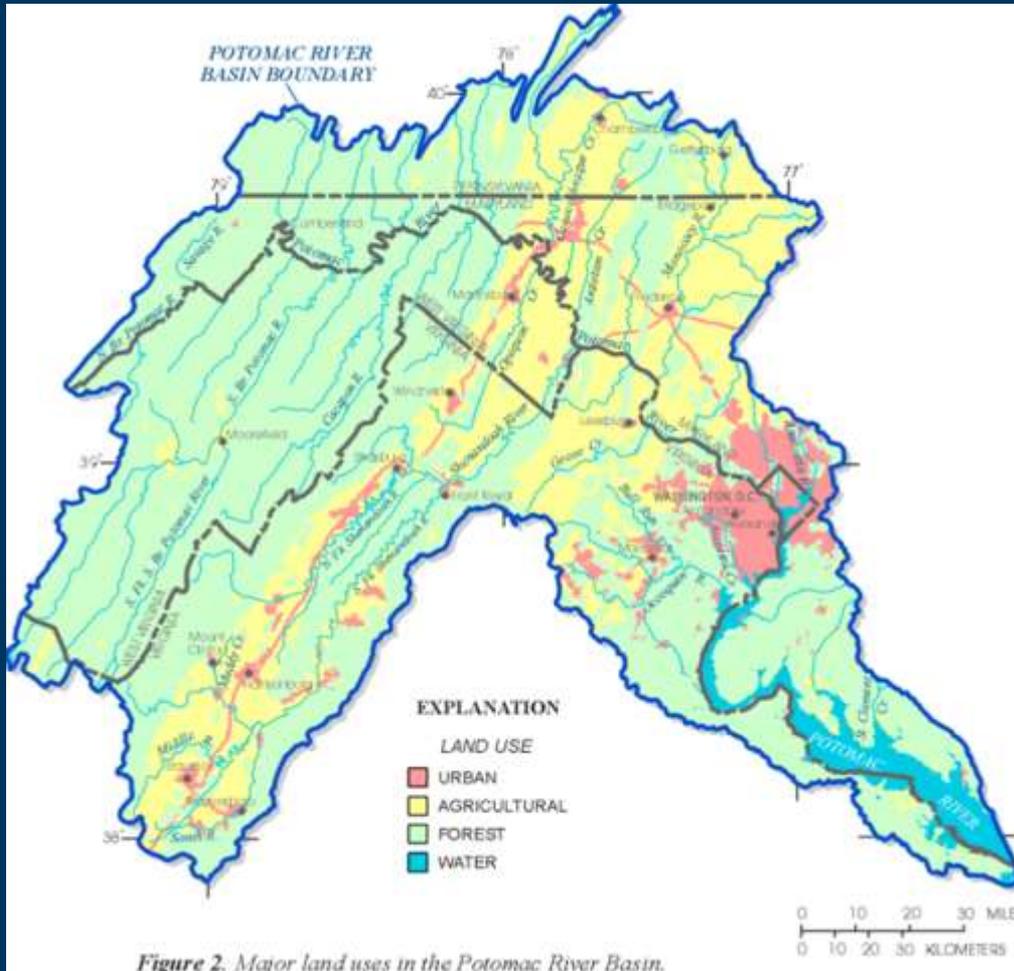


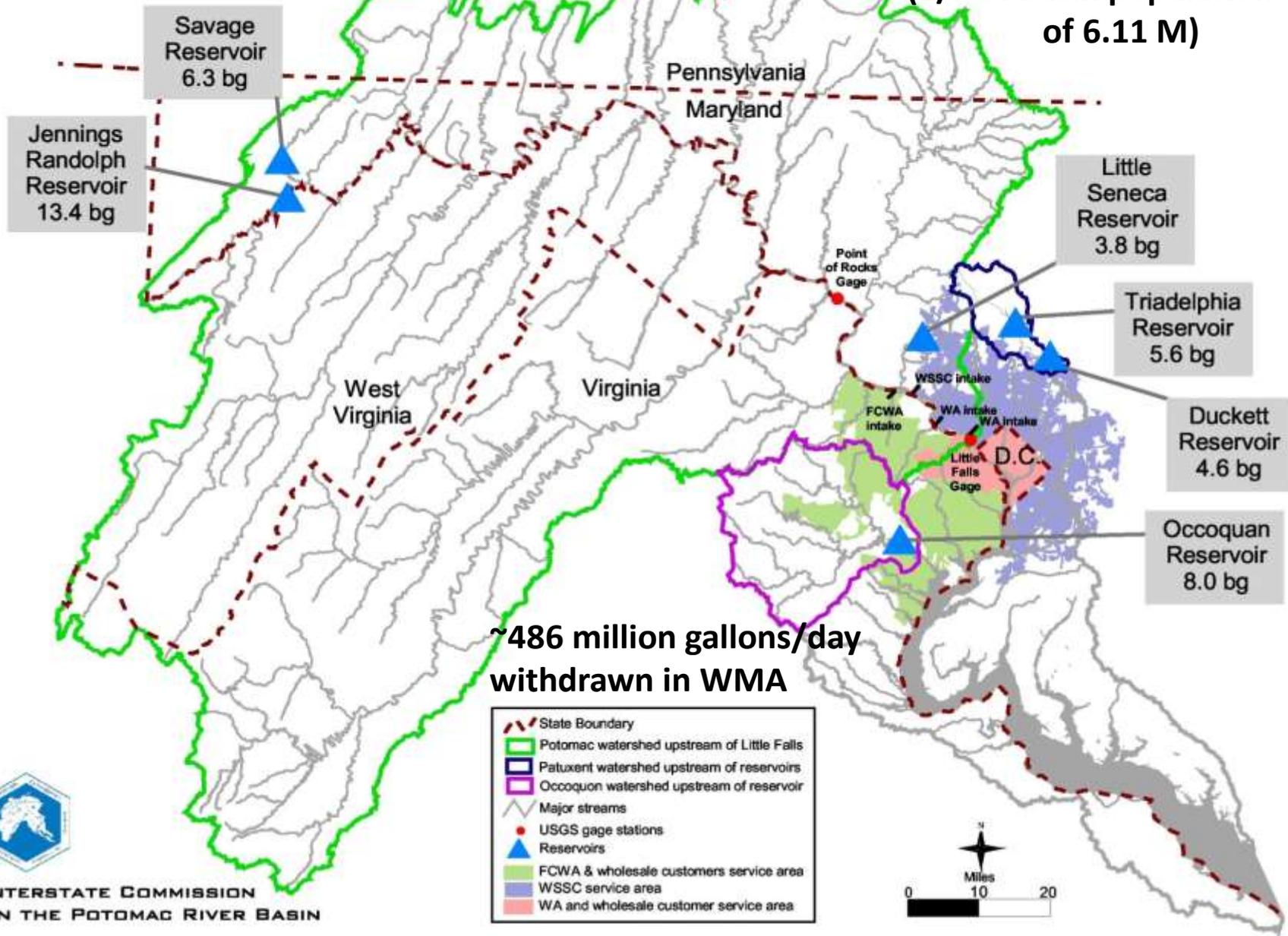
Figure 2. Major land uses in the Potomac River Basin.

Potomac watershed land uses,  
major tributaries, and place names  
(USGS 2012)

# Washington, DC Metro Region Water Supply

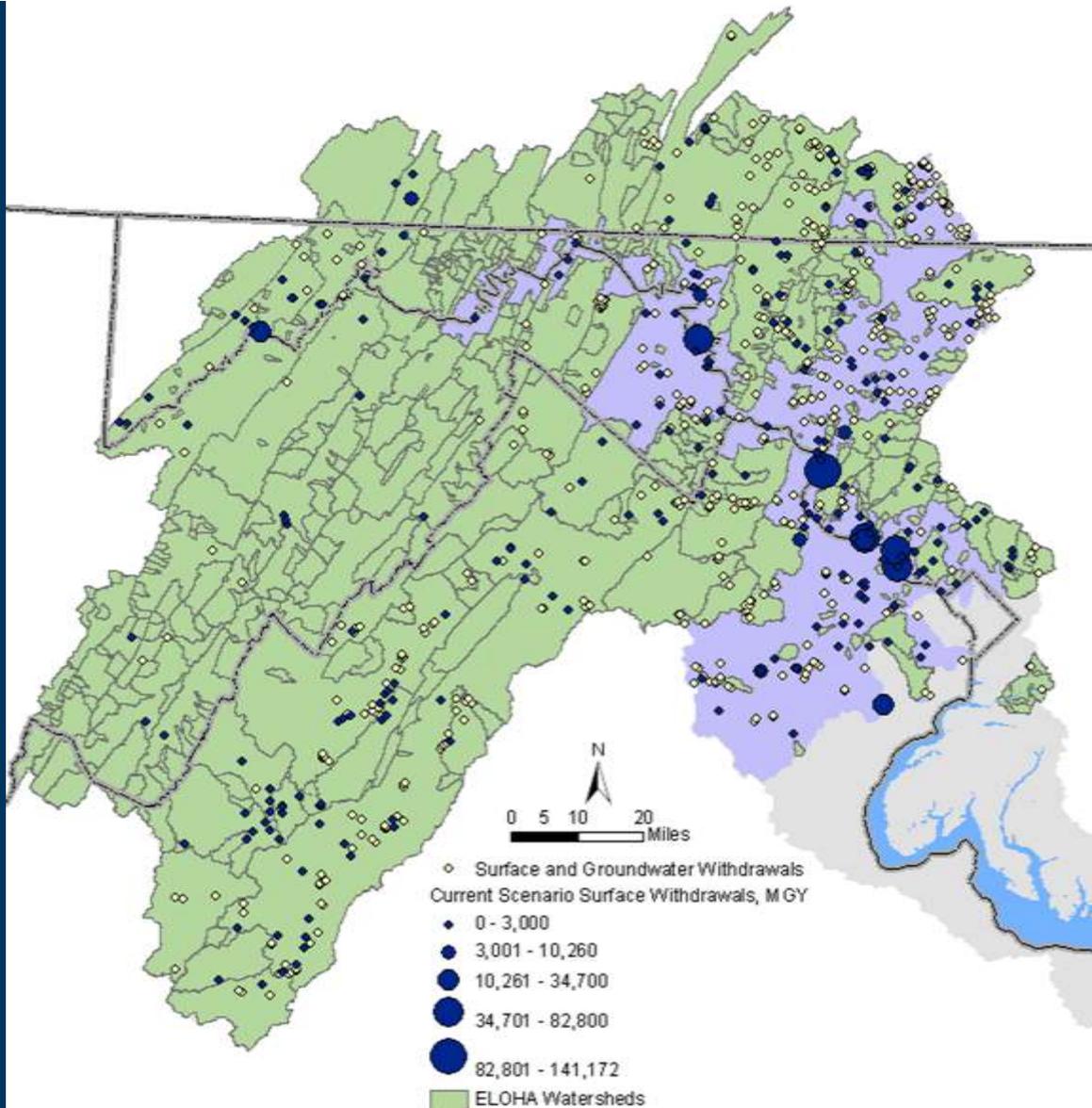
System: 4.3M served

(2/3 of basin population of 6.11 M)



INTERSTATE COMMISSION  
ON THE POTOMAC RIVER BASIN

# Surface and Groundwater Withdrawals in Potomac basin (MPRWA -- USACE, TNC, and ICPRB 2013)



Basinwide,  
86% of population gets  
drinking water from  
public water suppliers;  
13% uses well water.

# Projected trends: Potomac basin and Washington Metro Area water supply system

- Basin-wide population growth – 10% increase/decade 2000 to 2030, suburban sprawl from DC region + exurban sprawl
- Washington Metropolitan Area population up from 4.2 to 5.3 million by 2040
- Water demand – 20-30% increase in metro DC area water use by 2040
- Expected increases in consumptive use for industry and agriculture
- Land use change/increasing storm water runoff from impervious surfaces
- Climate change impacts – more or less precip (+/- 4"), reduced flows, and more extreme events (storms, floods, droughts)



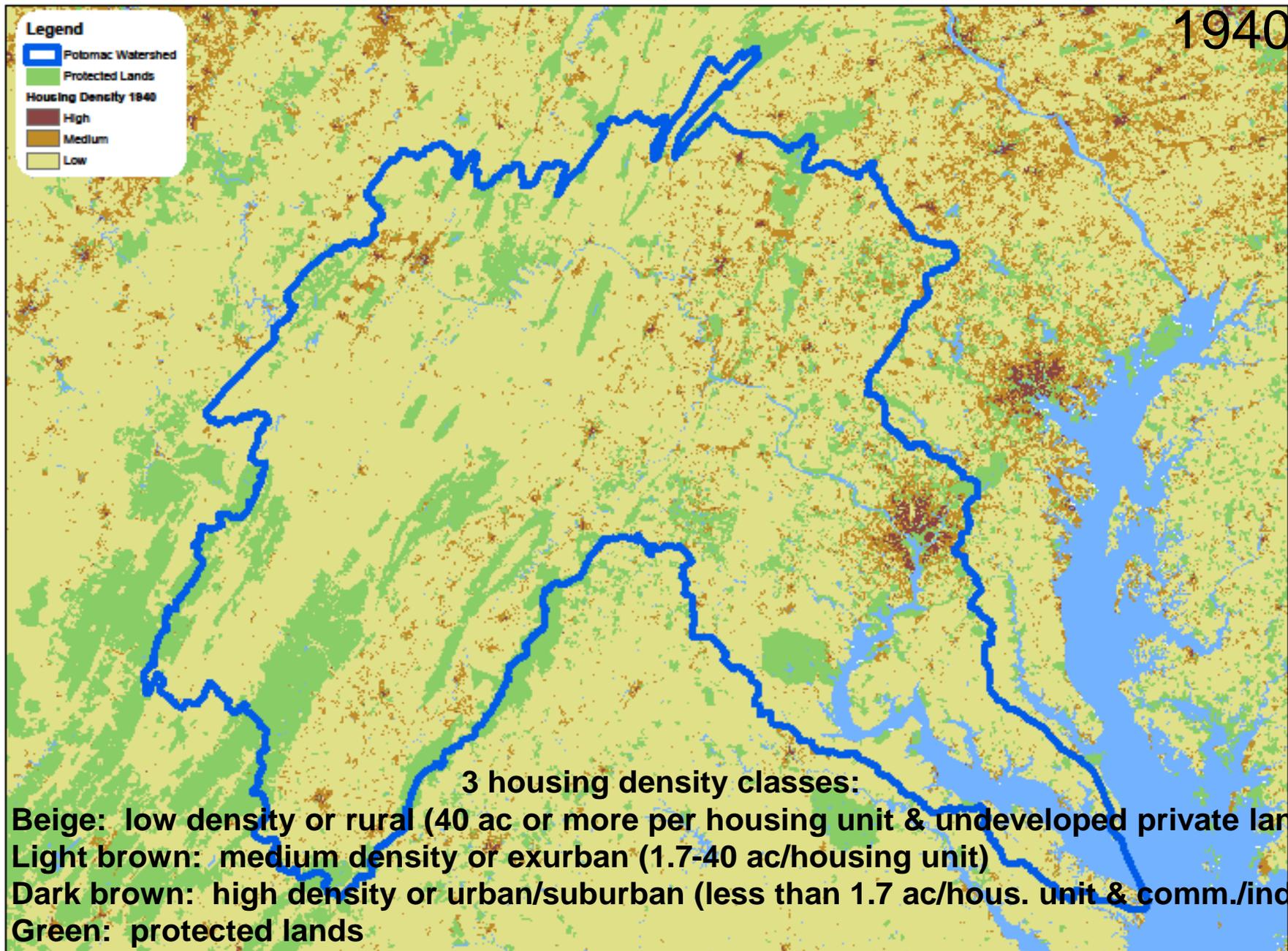
# What the future holds for the Potomac basin

## A look at 110 years of past and projected future land use change in the basin (1940-2050)



**The following map series source:** U.S. Environmental Protection Agency (EPA; 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.

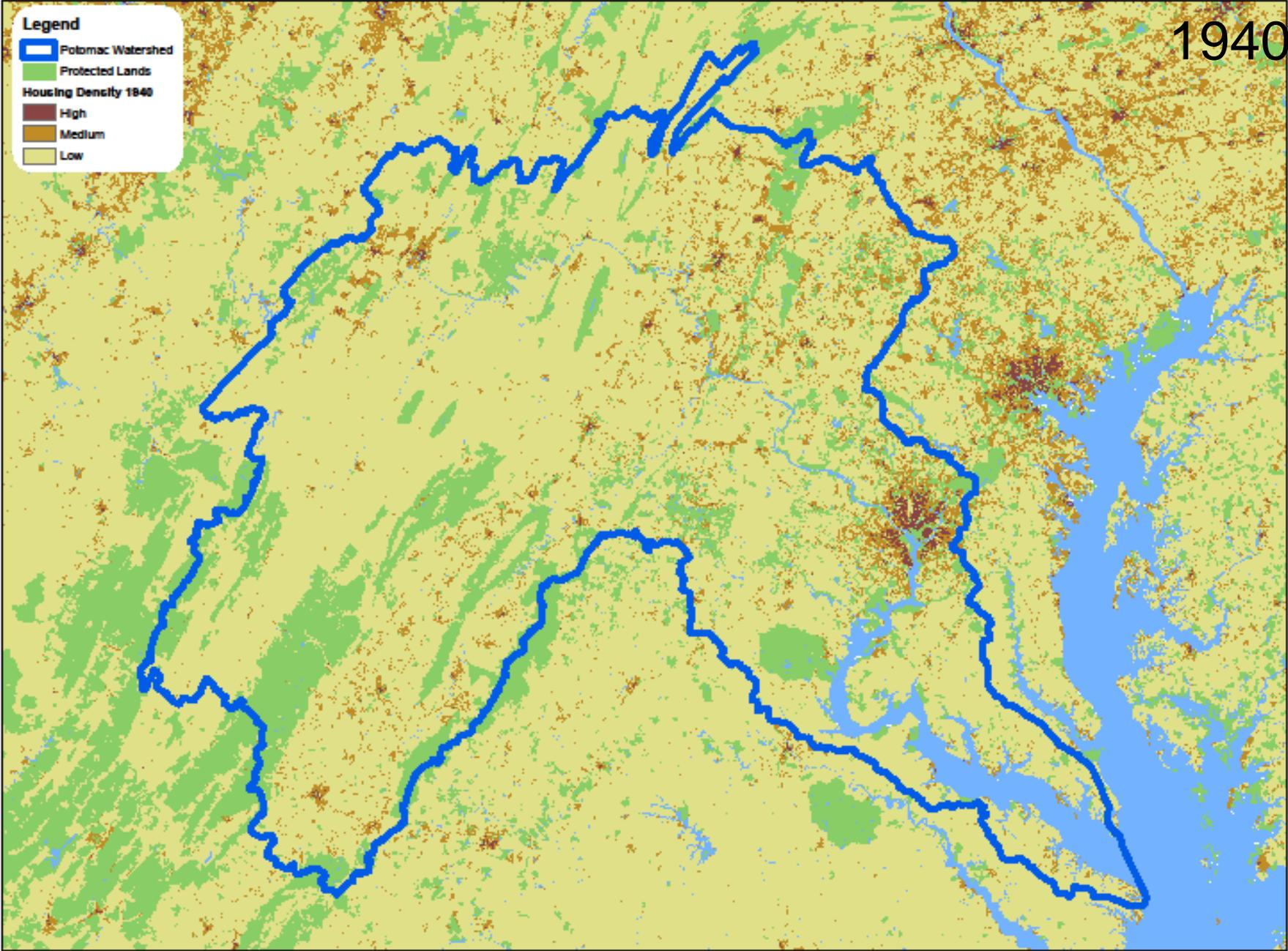
1940



1940

**Legend**

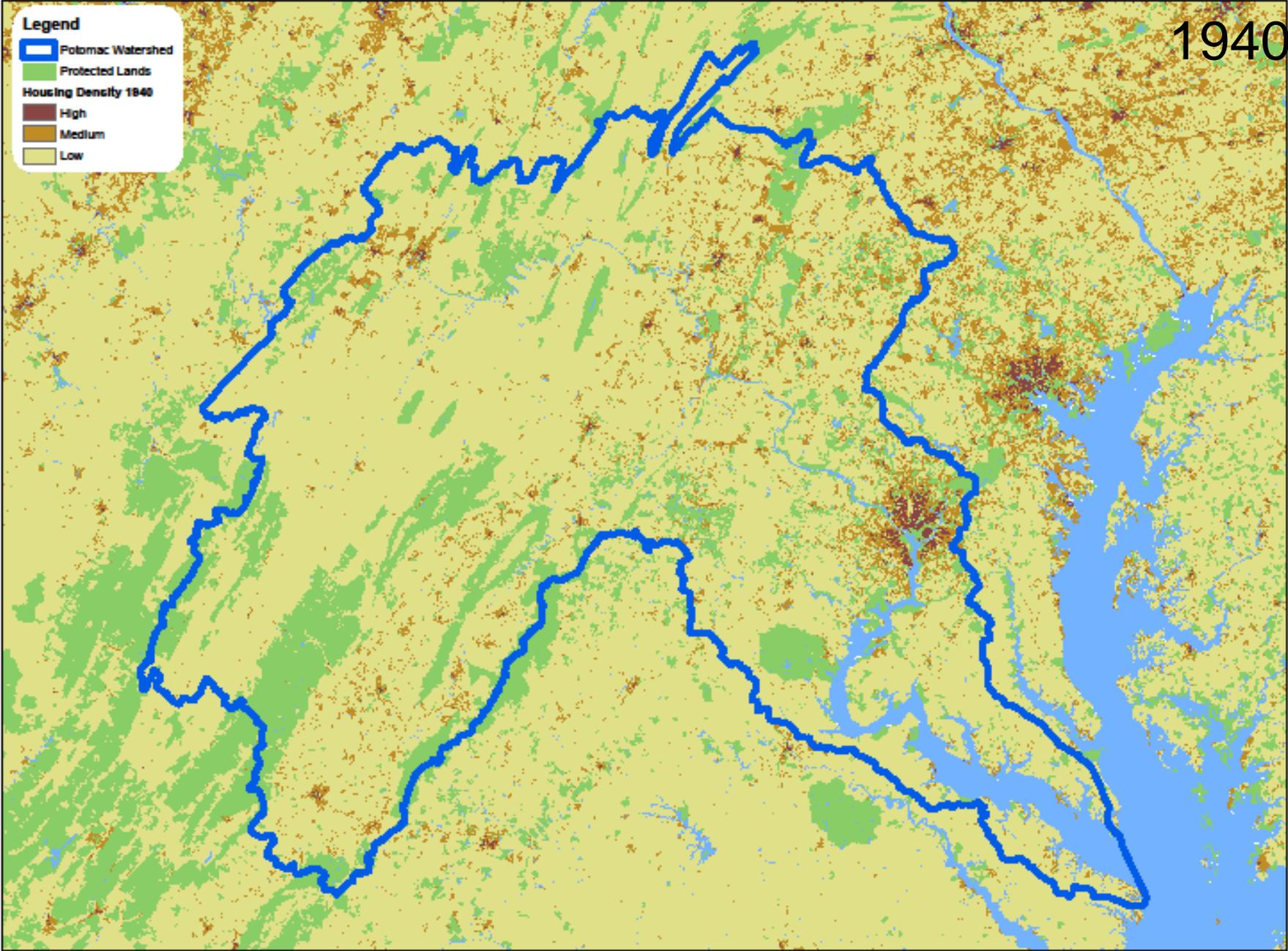
-  Potomac Watershed
-  Protected Lands
- Housing Density 1940**
  -  High
  -  Medium
  -  Low



1940

**Legend**

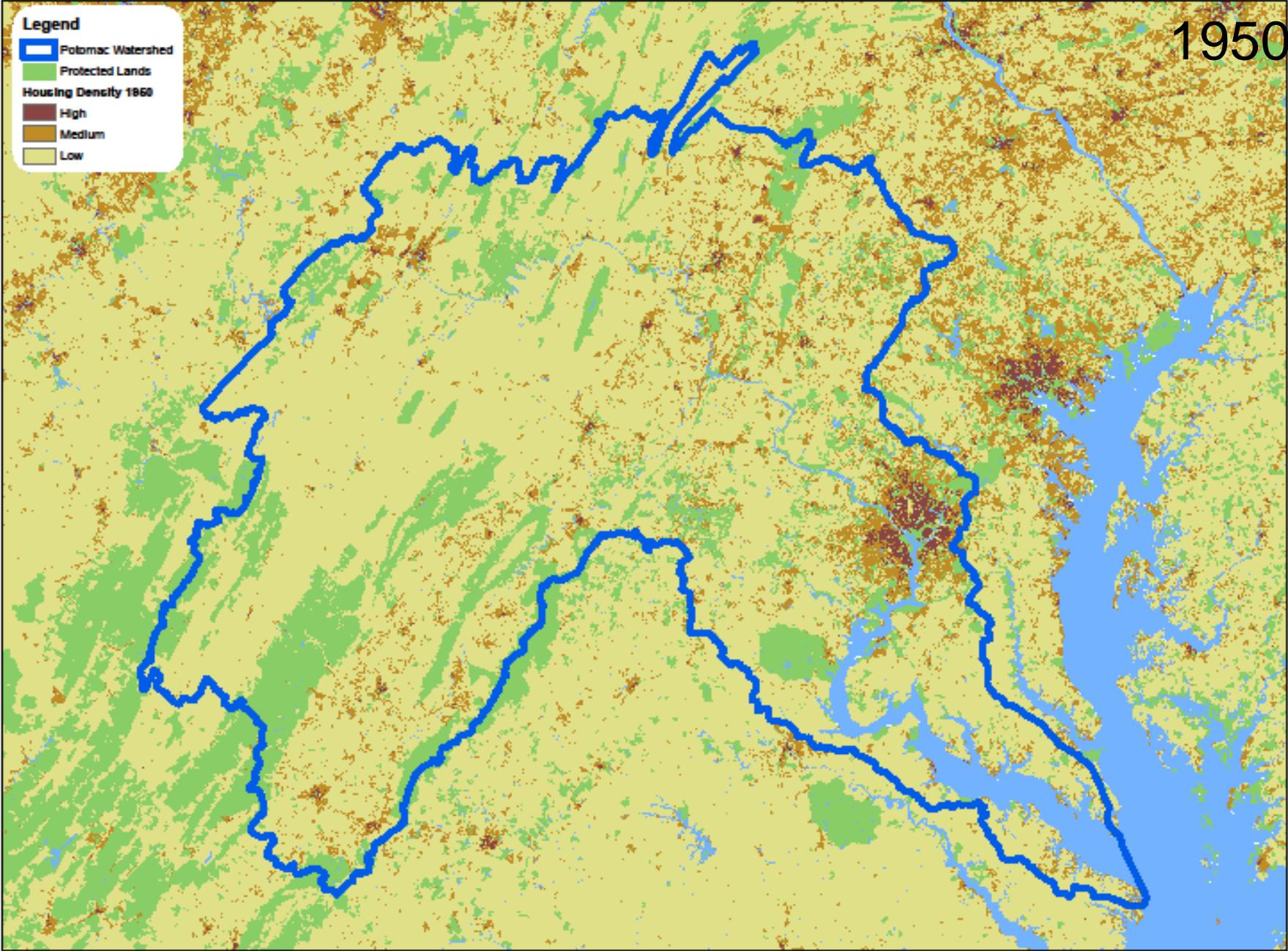
-  Potomac Watershed
-  Protected Lands
- Housing Density 1940**
  -  High
  -  Medium
  -  Low



1950

**Legend**

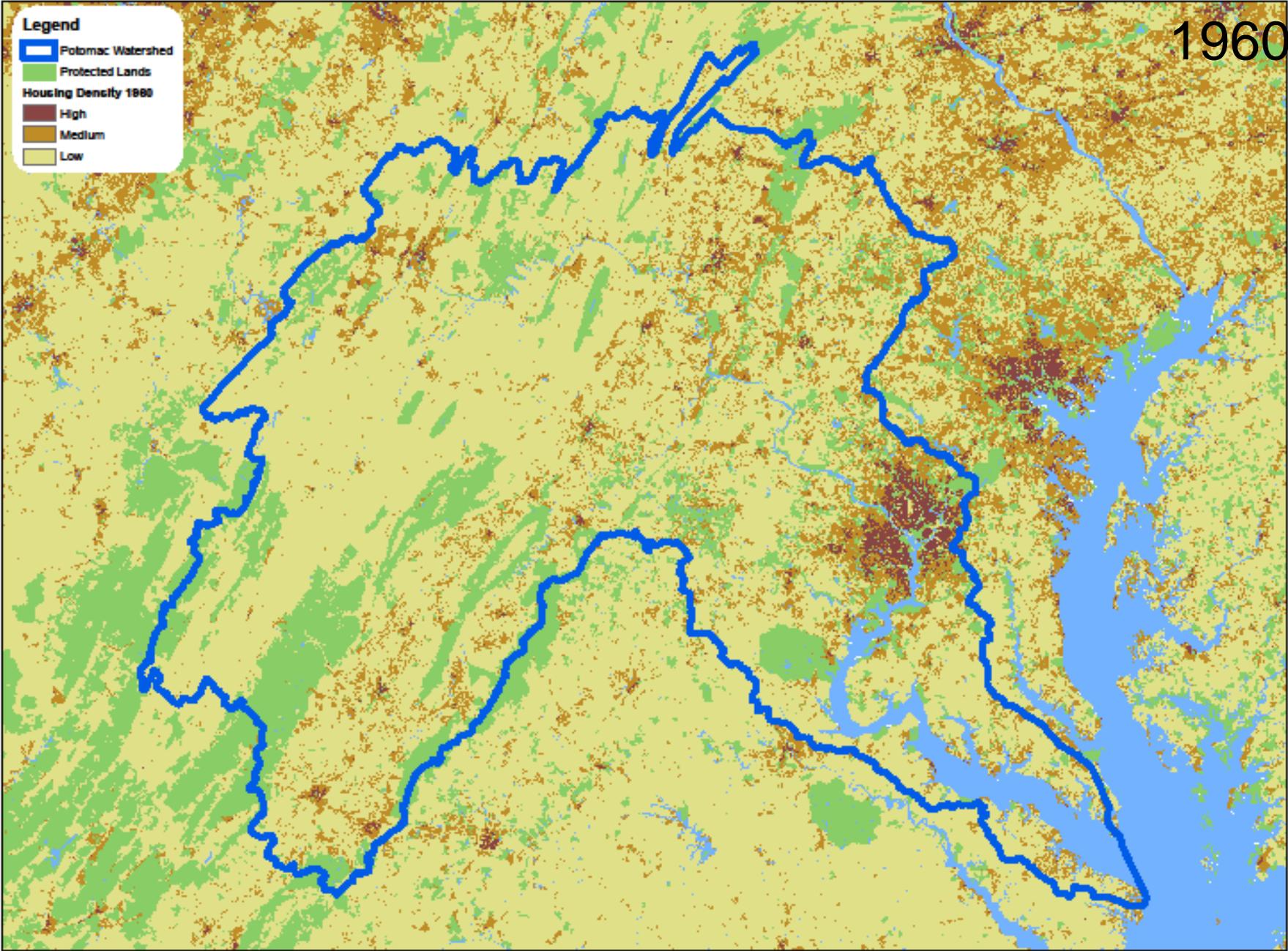
-  Potomac Watershed
-  Protected Lands
- Housing Density 1950**
-  High
-  Medium
-  Low



1960

**Legend**

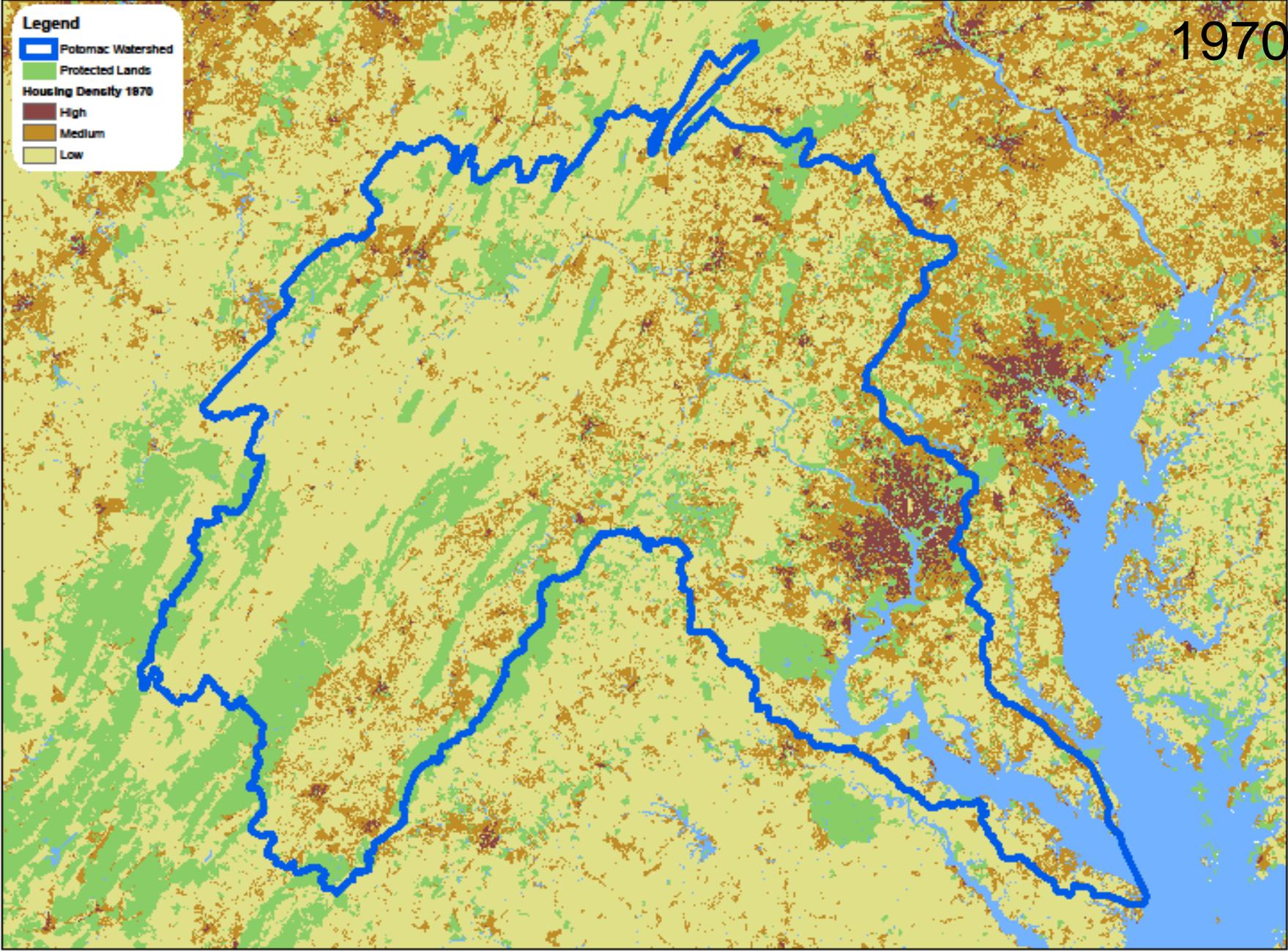
-  Potomac Watershed
-  Protected Lands
- Housing Density 1980**
-  High
-  Medium
-  Low



1970

**Legend**

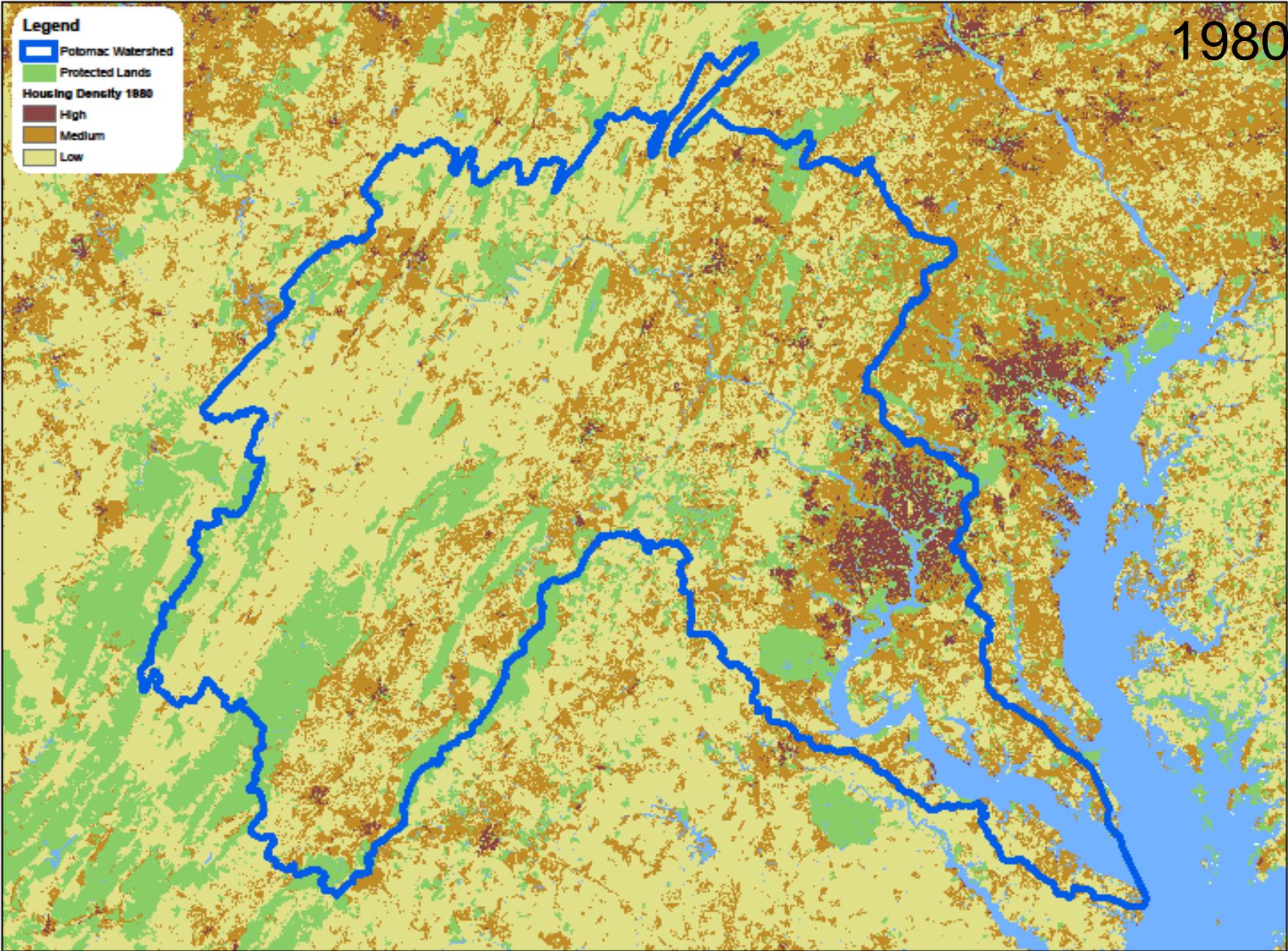
- Potomac Watershed
- Protected Lands
- Housing Density 1970
  - High
  - Medium
  - Low



1980

**Legend**

-  Potomac Watershed
-  Protected Lands
- Housing Density 1980**
  -  High
  -  Medium
  -  Low



1990

**Legend**

- Potomac Watershed
- Protected Lands
- Housing Density 1990
  - High
  - Medium
  - Low



2000

**Legend**

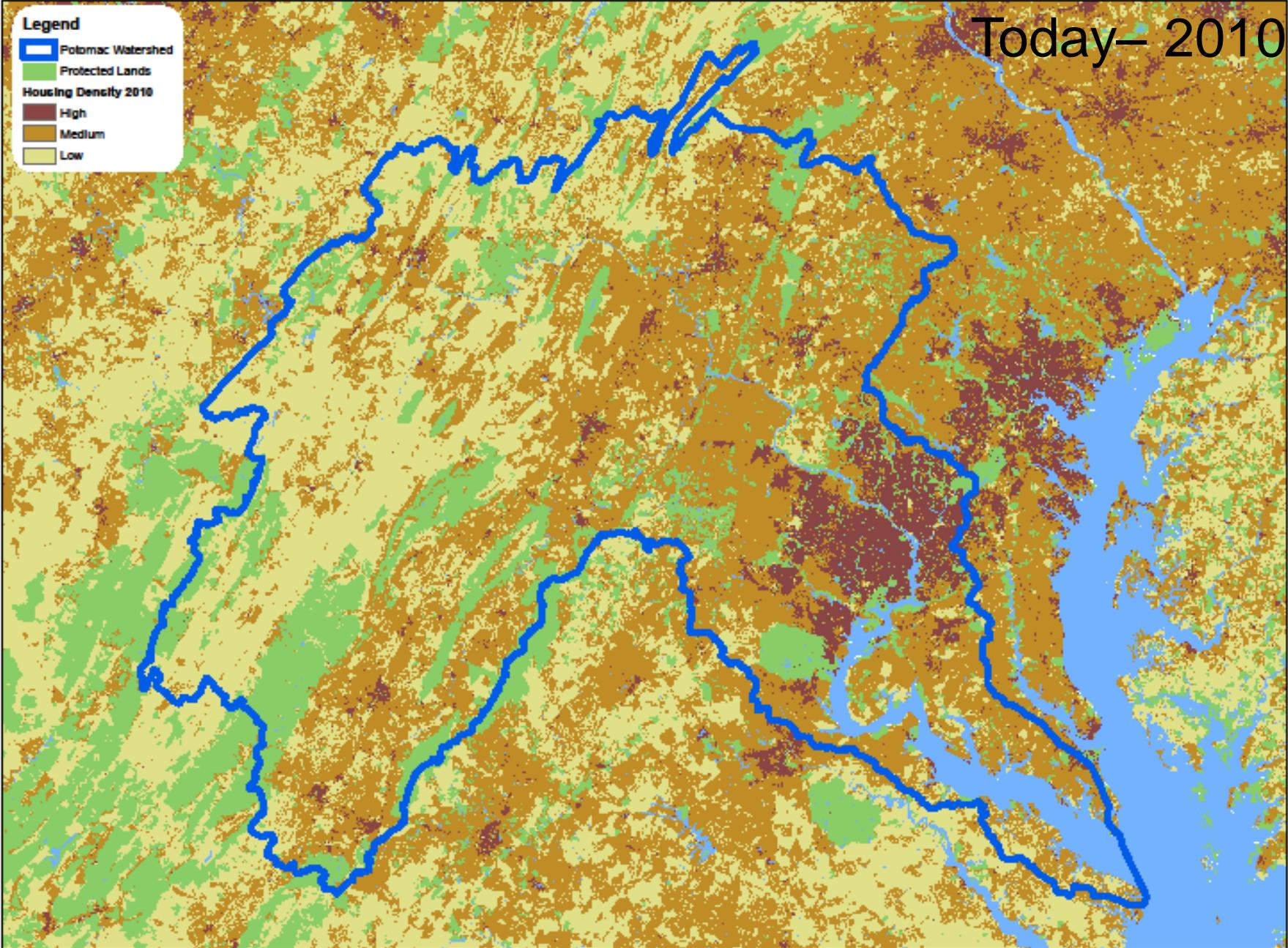
- Potomac Watershed
- Protected Lands
- Housing Density 2000**
  - High
  - Medium
  - Low



Today— 2010

**Legend**

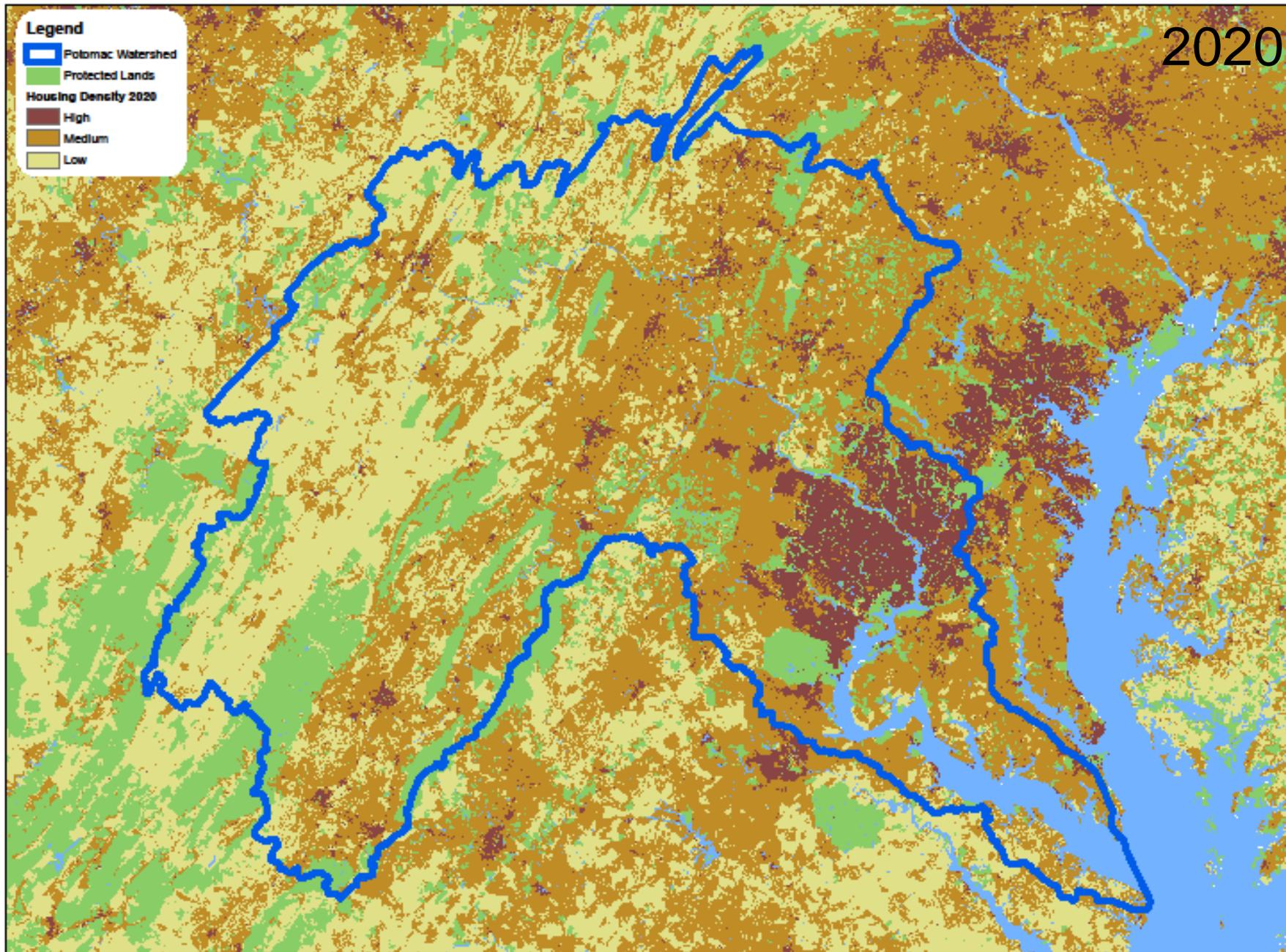
-  Potomac Watershed
-  Protected Lands
- Housing Density 2010**
  -  High
  -  Medium
  -  Low



2020

**Legend**

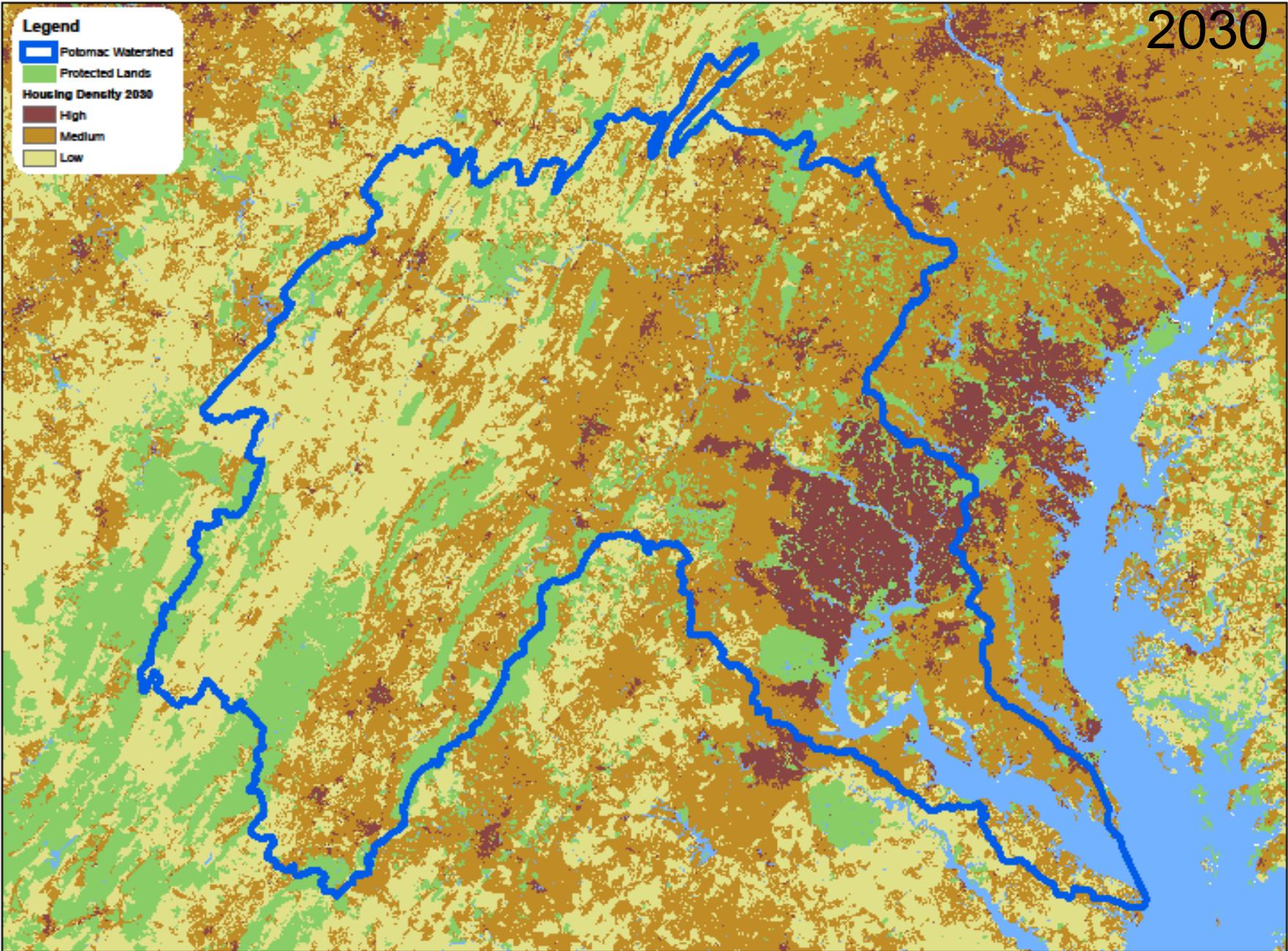
-  Potomac Watershed
-  Protected Lands
- Housing Density 2020**
  -  High
  -  Medium
  -  Low



2030

**Legend**

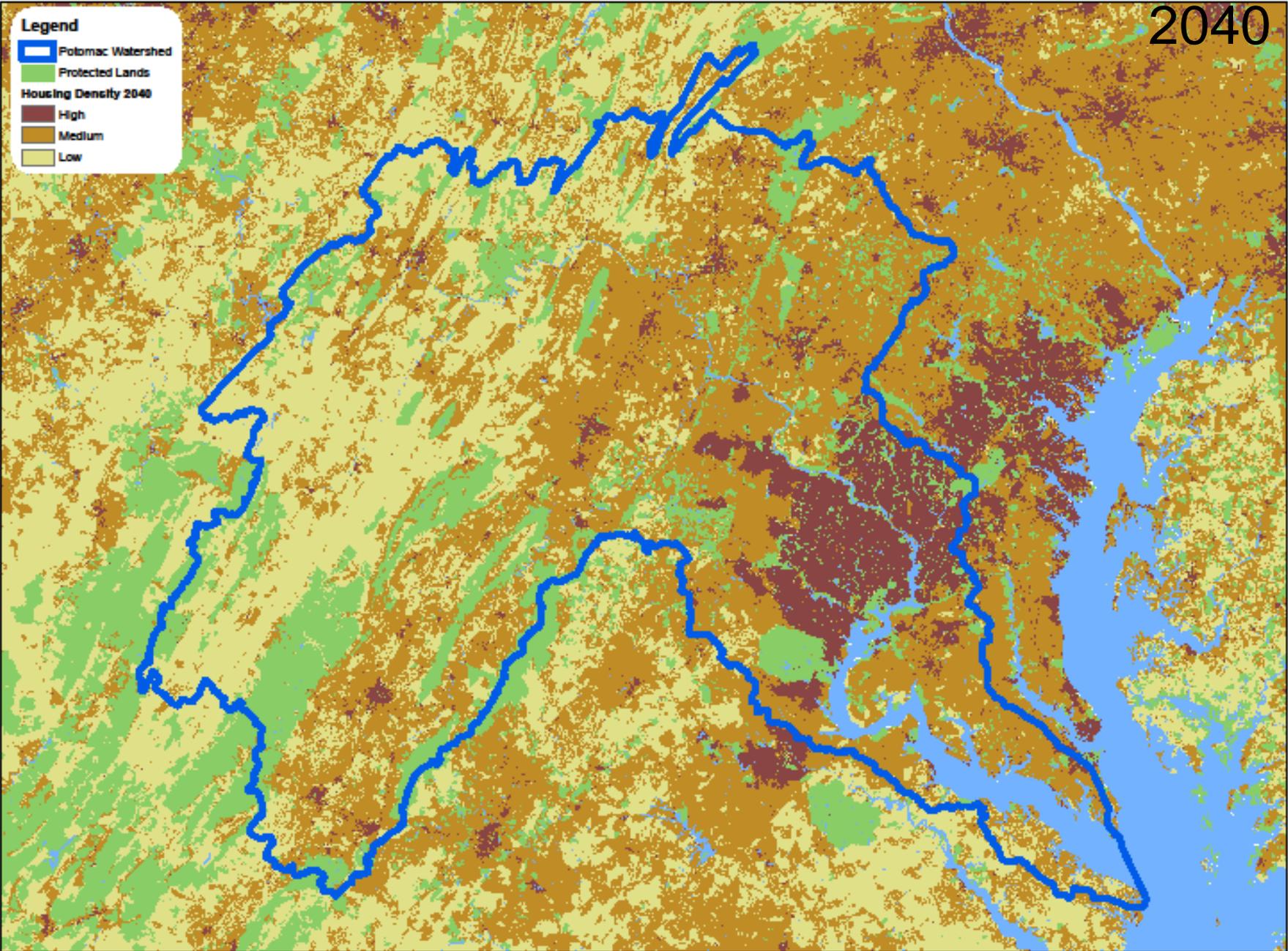
- Potomac Watershed
- Protected Lands
- Housing Density 2030**
  - High
  - Medium
  - Low



2040

**Legend**

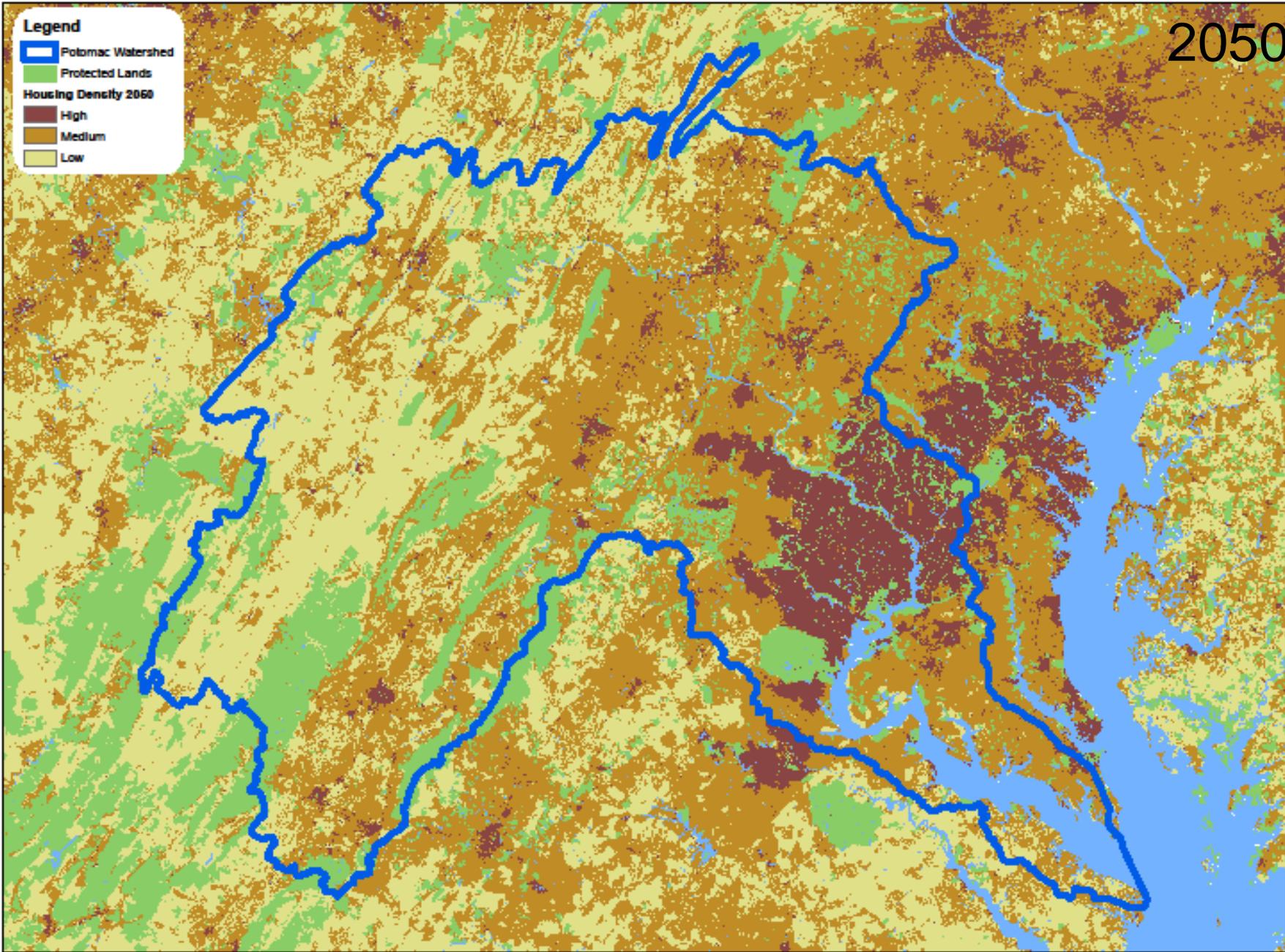
- Potomac Watershed
- Protected Lands
- Housing Density 2040**
  - High
  - Medium
  - Low



2050

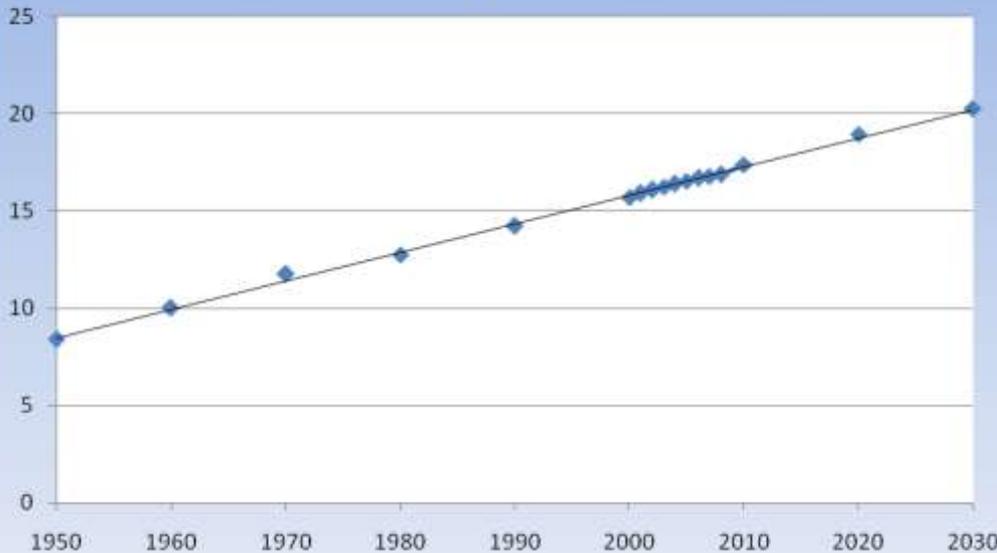
**Legend**

-  Potomac Watershed
-  Protected Lands
- Housing Density 2050**
-  High
-  Medium
-  Low



# What this looks like Bay-watershed wide: Population growth -- 17M today to 20M by 2030

## Population Projections (Millions)

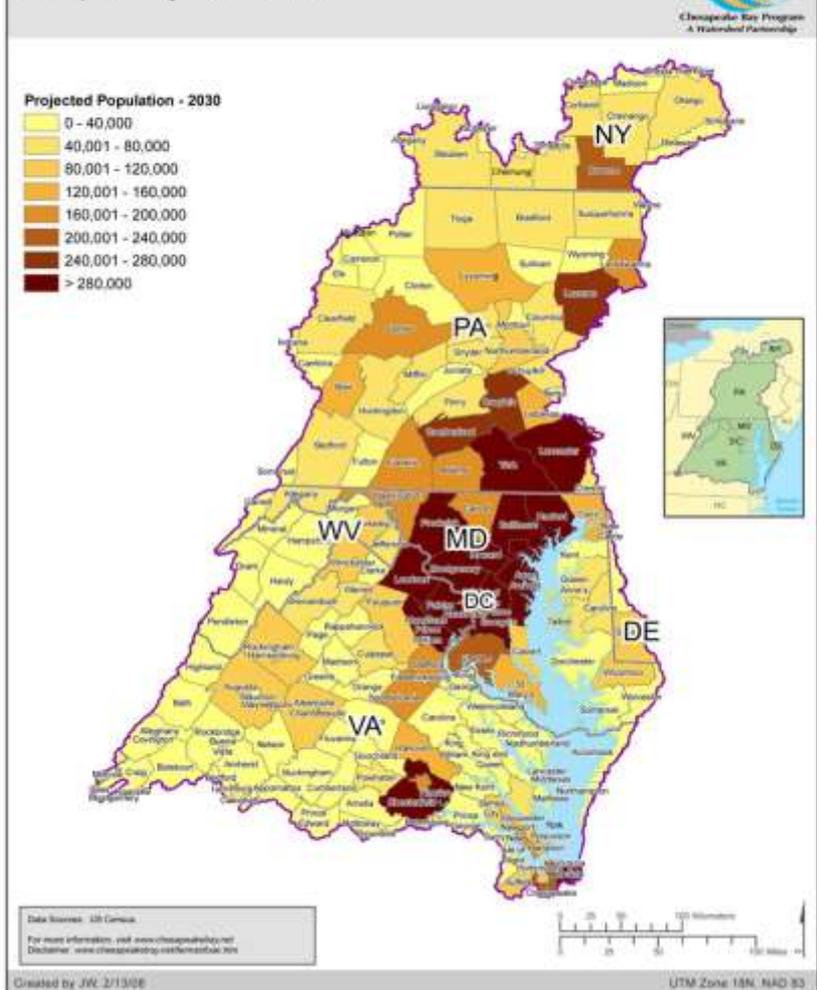


Source: CBP Office Bay Barometer 2009

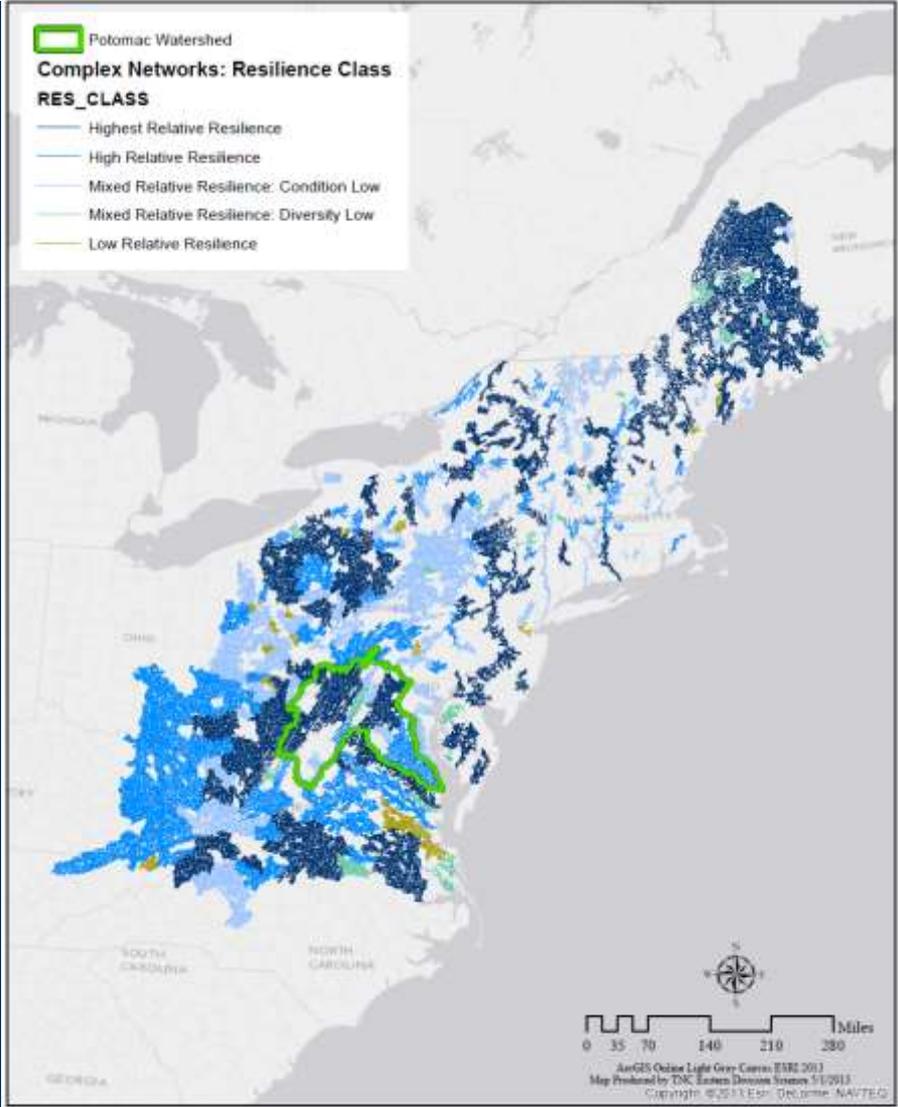
Bay TMDL Figure 2-4. Reported and projected human population growth in the Chesapeake Bay watershed 1950–2030

## Projected Population (2030)

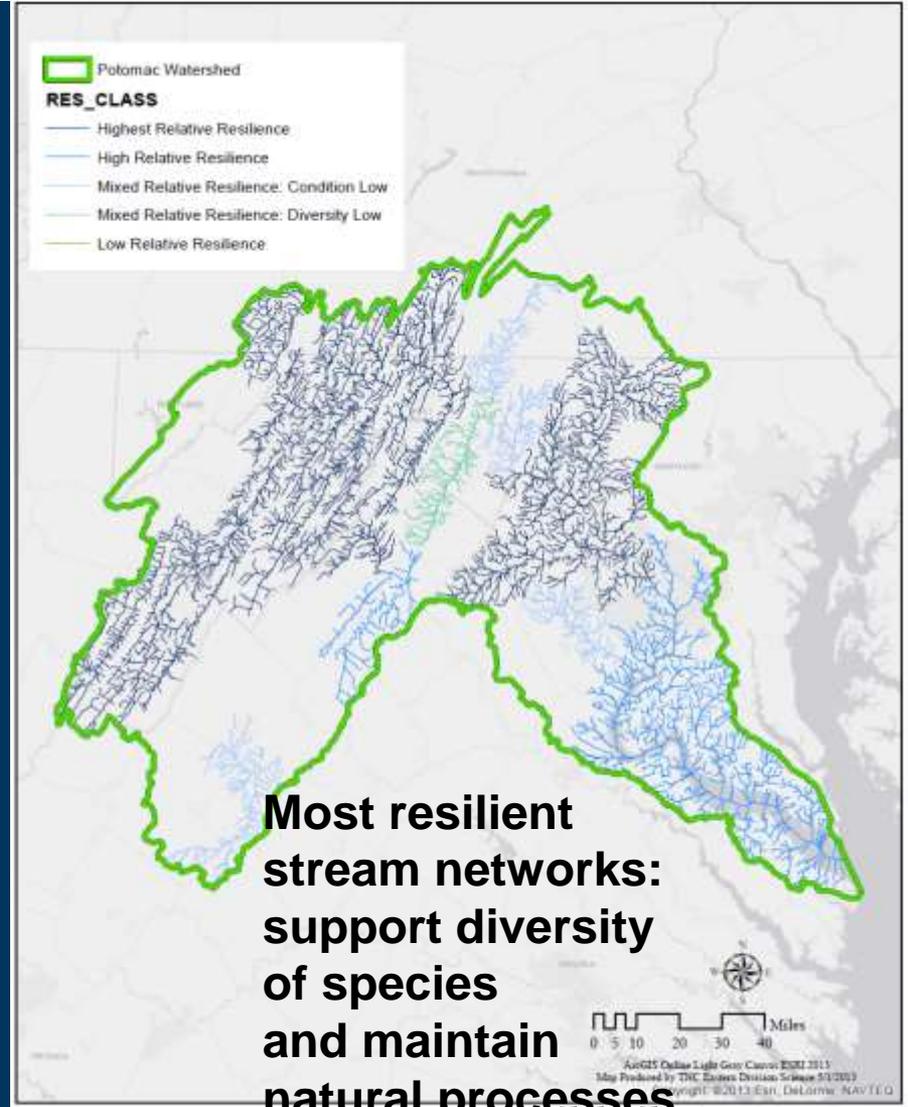
Chesapeake Bay Watershed Counties



# Watershed lands and resilience, adaptation to climate change



Regional Freshwater Resilience Analysis  
Stratified by Fish Region and Freshwater Ecoregion



**Most resilient stream networks: support diversity of species and maintain natural processes**

Regional Freshwater Resilience Analysis  
Stratified by Fish Region and Freshwater Ecoregion

## What is the value of healthy watersheds to our drinking water supply?

- 2/3 of nation's freshwater resources originate in forests
- Maintaining or restoring healthy forested source water areas ultimately reduces drinking water treatment and storage costs
- Maintaining healthy watersheds is most cost-effective way to provide clean, abundant water
- Need for societal investment in “public good” provided by intact forested watersheds, which is enjoyed by many beneficiaries yet paid for by few.

(Source: US Endowment for Forestry and Communities)

## How does forest loss affect water quality and quantity?

- Can have increased streamflow in short term, but short-lived as forests regenerate
- Can degrade water quality (increase sedimentation, water temperature)
- Increase flooding vulnerability



# Effects of urbanization and imperviousness on water quality and quantity

Increased peak flows during storms from increased imperviousness

Reduced rate of infiltration to groundwater

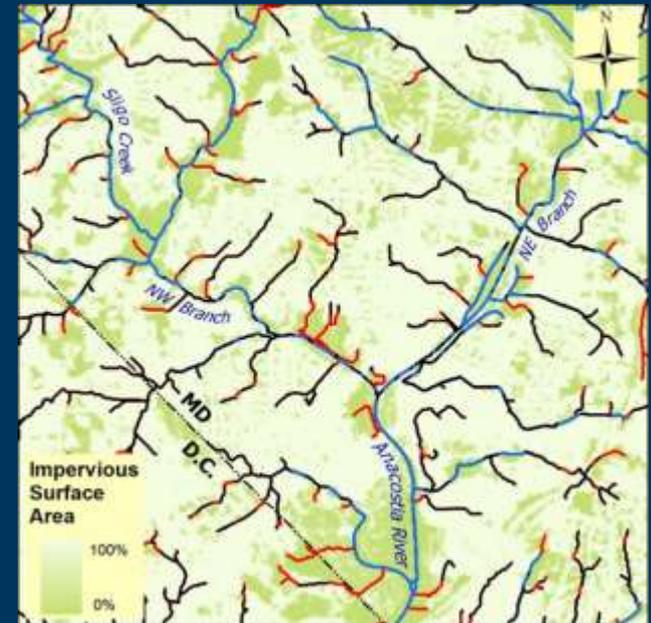
With less water infiltrated and slowly released from subsurface soils, summer baseflows in developed areas declined.

Buried streams lose natural denitrification

- Loss of contact with soil microbes
- Loss of contact with groundwater

Loss of riparian forests reduces buffering effects

At landscape scale, reduced exchanges between river, floodplain, and shallow groundwater-influenced soils increase nutrient and pollutant transport.



Black lines are Anacostia buried streams (in Bay Journal 2012)

# Federal regulatory framework for source water protection

## Clean Water Act and Safe Drinking Water Act

### Safe Drinking Water Act:

- 1996 Amendments required state development of Source Water Assessment Programs and source water assessments for all public water supplies.
- Not required to *implement* source water protection plans

### “Source Water Protection Roadmap,” Water Research Fndn 2012:

- CWA and SDWA regulatory framework does not effectively protect water supplies.
- Need improved integration of CWA regulation and source water protection, and to identify ways CWA can better protect high quality drinking water sources

## Nationwide GIS model and analysis of:

- land areas most important to surface drinking water,
- role forests play in protecting these areas,
- extent to which these forests are threatened by development, insects and disease, and fire.

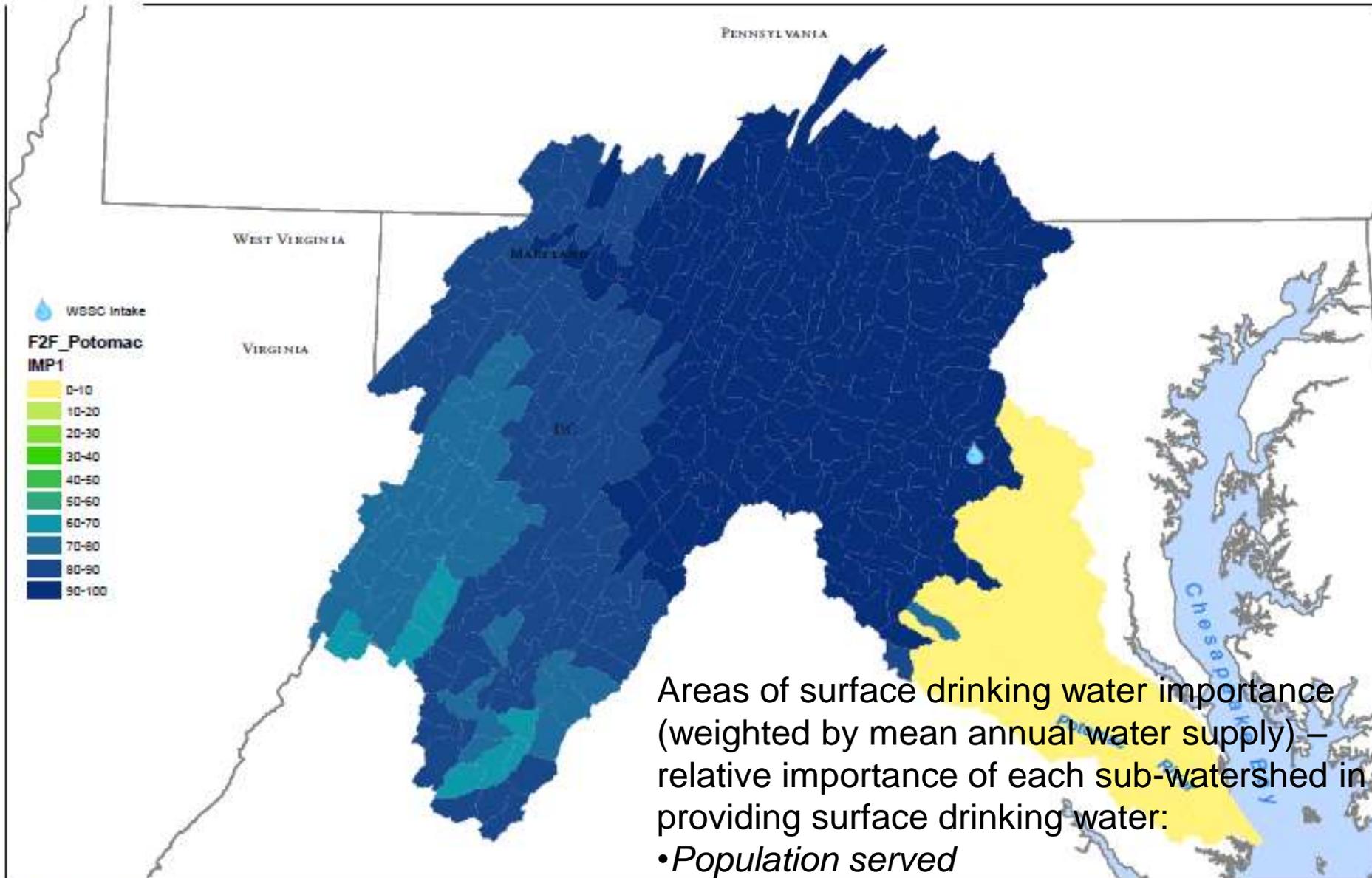
For 2011 methods paper, see [http://www.fs.fed.us/ecosystemservices/pdf/forests2faucets/F2F\\_Methods\\_Final.pdf](http://www.fs.fed.us/ecosystemservices/pdf/forests2faucets/F2F_Methods_Final.pdf)

Analysis done at scale of

8-digit HUCs (n >5,000 ) avg. size = 1500 mi<sup>2</sup>

12-digit HUC, (n > 88,000 ), avg. size = 35 mi<sup>2</sup>

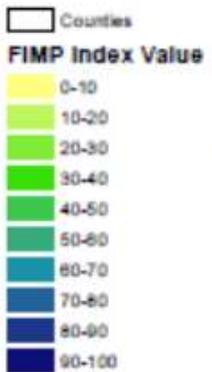
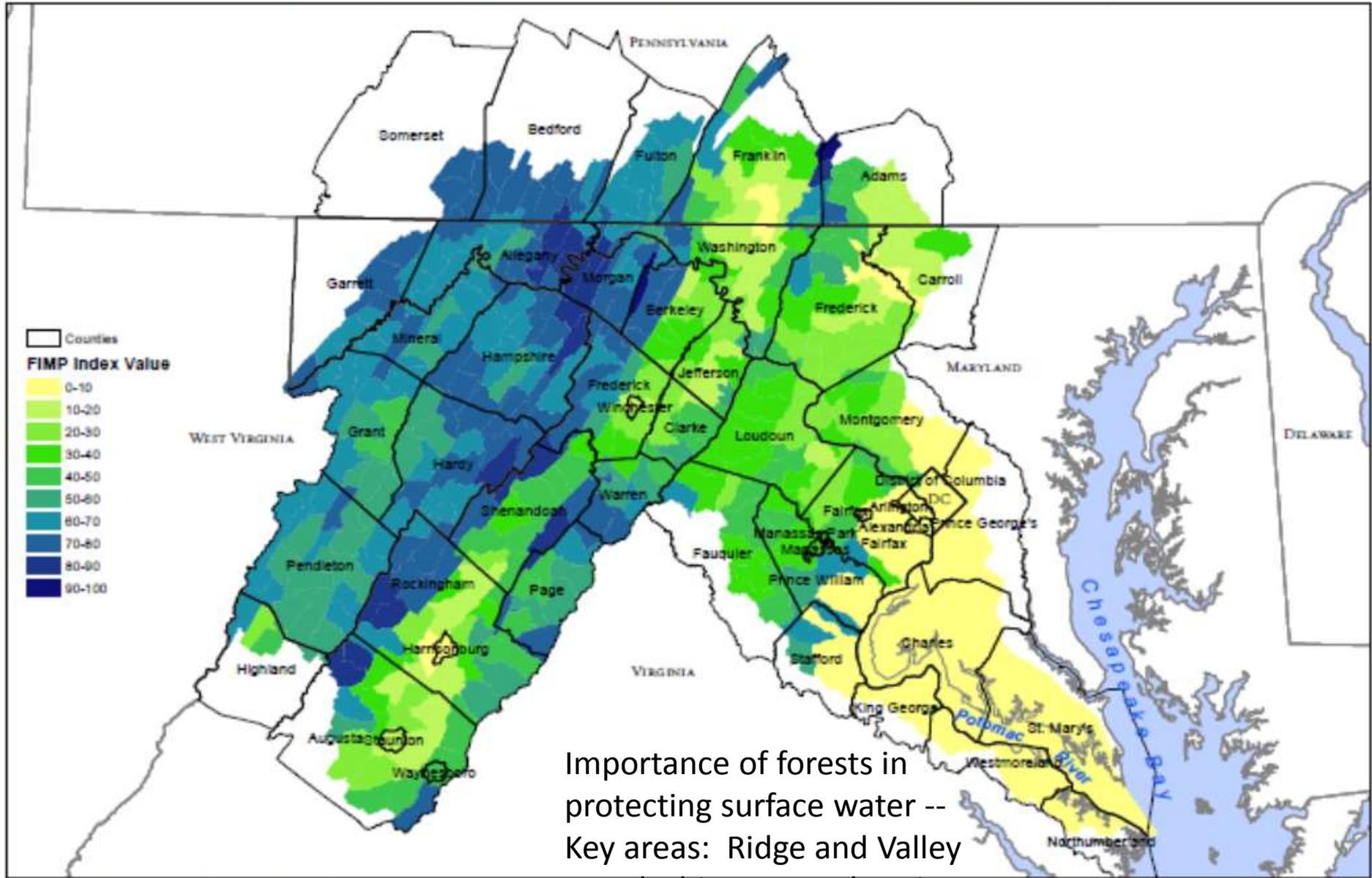
POTOMAC RIVER WATERSHED  
FORESTS TO FAUCETS: INDEX OF IMPORTANCE TO SURFACE DRINKING WATER (IMP)



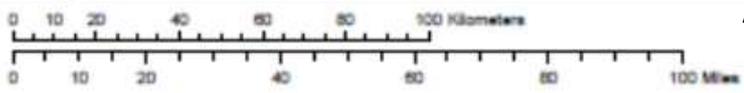
Areas of surface drinking water importance (weighted by mean annual water supply) – relative importance of each sub-watershed in providing surface drinking water:

- *Population served*
- *Distance to intake*
- *Water yield/supply*

POTOMAC RIVER WATERSHED  
 FORESTS TO FAUCETS: INDEX OF FOREST IMPORTANCE TO SURFACE DRINKING WATER (FIMP)

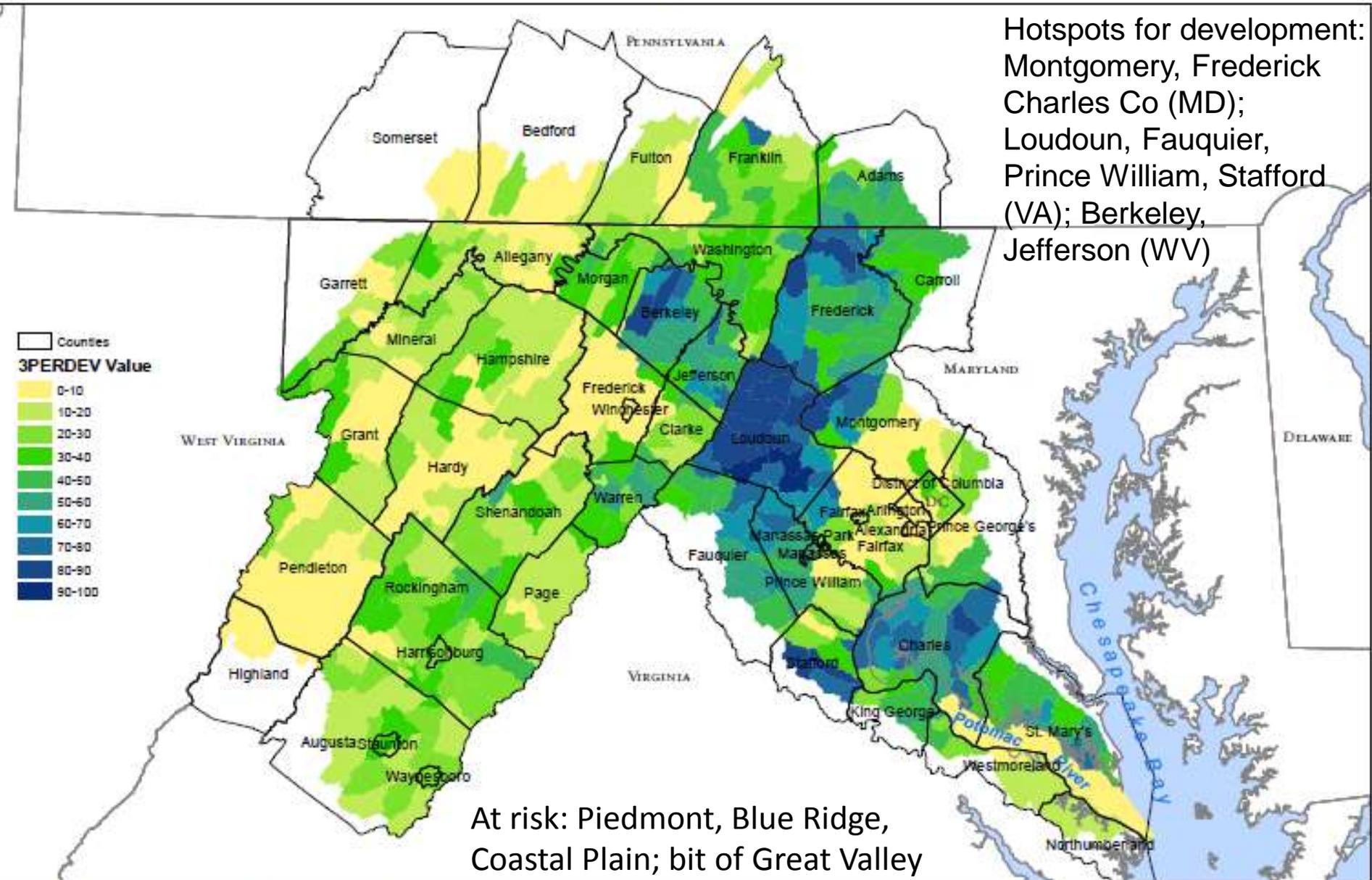
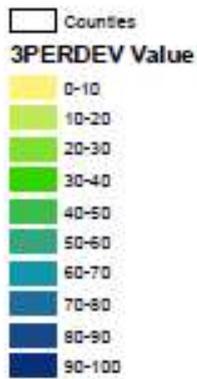


Importance of forests in protecting surface water -- Key areas: Ridge and Valley Appalachians, + pockets in Blue Ridge, Piedmont

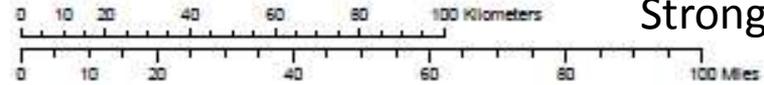


POTOMAC RIVER WATERSHED  
 FORESTS TO FAUCETS: PERCENT OF HUC HIGHLY THREATENED BY DEVELOPMENT (3PERDEV)

Hotspots for development:  
 Montgomery, Frederick  
 Charles Co (MD);  
 Loudoun, Fauquier,  
 Prince William, Stafford  
 (VA); Berkeley,  
 Jefferson (WV)



At risk: Piedmont, Blue Ridge,  
 Coastal Plain; bit of Great Valley  
 Strongholds: R&V, Appalachians

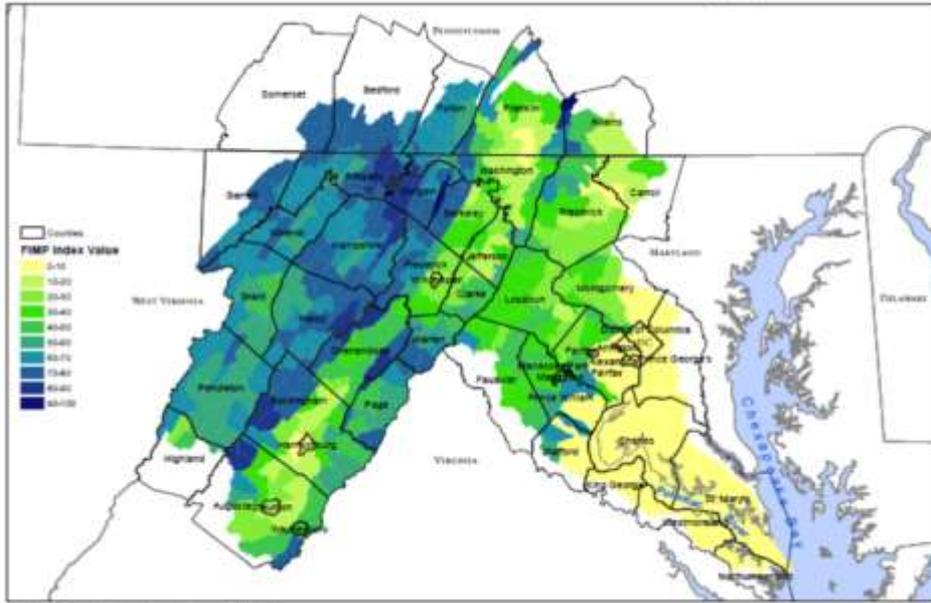


# Forest to Faucets: Side-by-side comparisons

Index of forest areas of importance

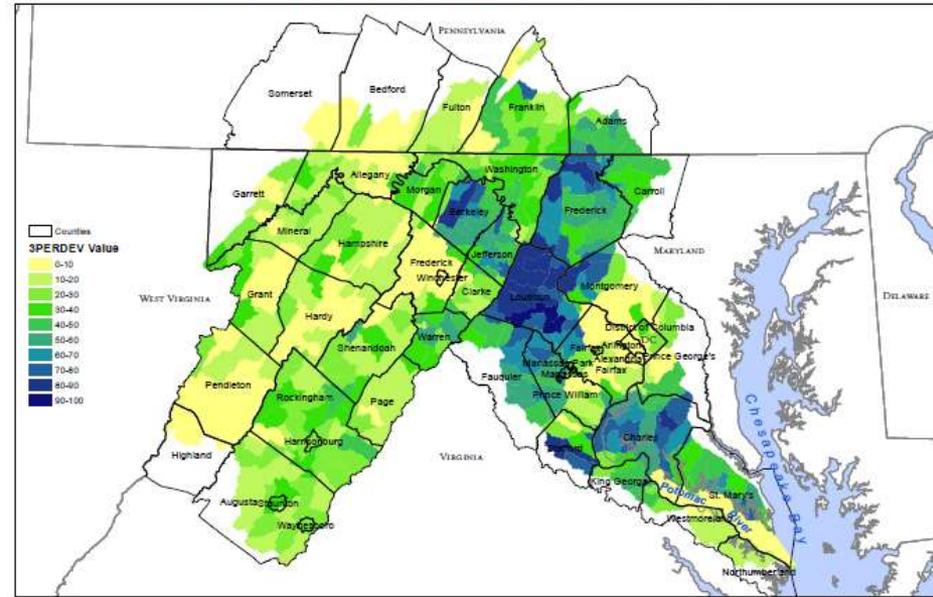
% of HUCs highly threatened by development

POTOMAC RIVER WATERSHED  
FORESTS TO FAUCETS: INDEX OF FOREST IMPORTANCE TO SURFACE DRINKING WATER (FIMP)



Data Source: USDA Forest Service, 2011  
The Nature Conservancy 1/18/2013 forests\_to\_faucets.mxd

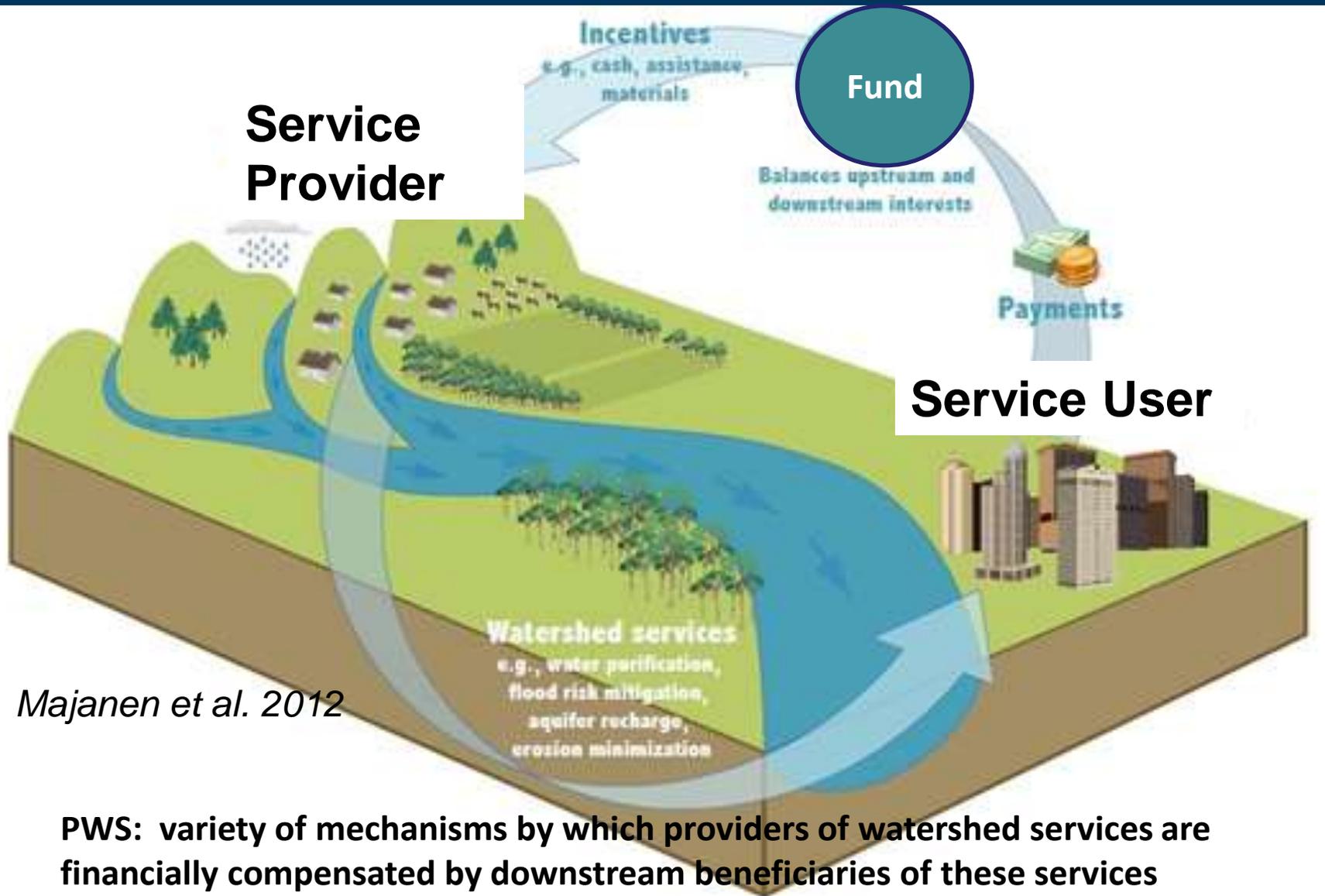
POTOMAC RIVER WATERSHED  
FORESTS TO FAUCETS: PERCENT OF HUC HIGHLY THREATENED BY DEVELOPMENT (3PERDEV)



Data Source: USDA Forest Service, 2011  
The Nature Conservancy 1/18/2013 forests\_to\_faucets.mxd

## Part 2: What is a Payment for Watershed Services (PWS) initiative or “Water Fund”?

# Basic Concept for Water Funds and Payment for Watershed Services (PWS)



**PWS: variety of mechanisms by which providers of watershed services are financially compensated by downstream beneficiaries of these services**

# Payment for Watershed Services defined (Hanson *et al.* 2011)

1. Business-driven transactions with voluntary payments by downstream entities to upstream landowners to reduce downstream entity's cost of doing business or to enhance economic opportunities associated with improved water quantity, quality, or flow
  - e.g. beverage companies, power generators, manufacturers, real estate developers, wastewater treatment plants, local governments, drinking water utilities, etc.
2. Regulatory-driven transactions that consist of payments made to minimize an entity's cost of meeting a water quality regulation or offsetting future development impacts
  - e.g. municipalities buying stormwater reduction credits; WWTPs with N or P limits purchasing credits to meet regulatory requirements; WTPs with option of investing in forest conservation for filtration waivers.
3. Payments made to generate public benefits associated with improved water quality, flow, or watershed condition.
  - e.g. payments by public entities to secure public goods, benefits enjoyed by all but not paid for by all, which are often under-provided due to market inefficiencies. Public goods include watershed protection, wetland restoration, etc.

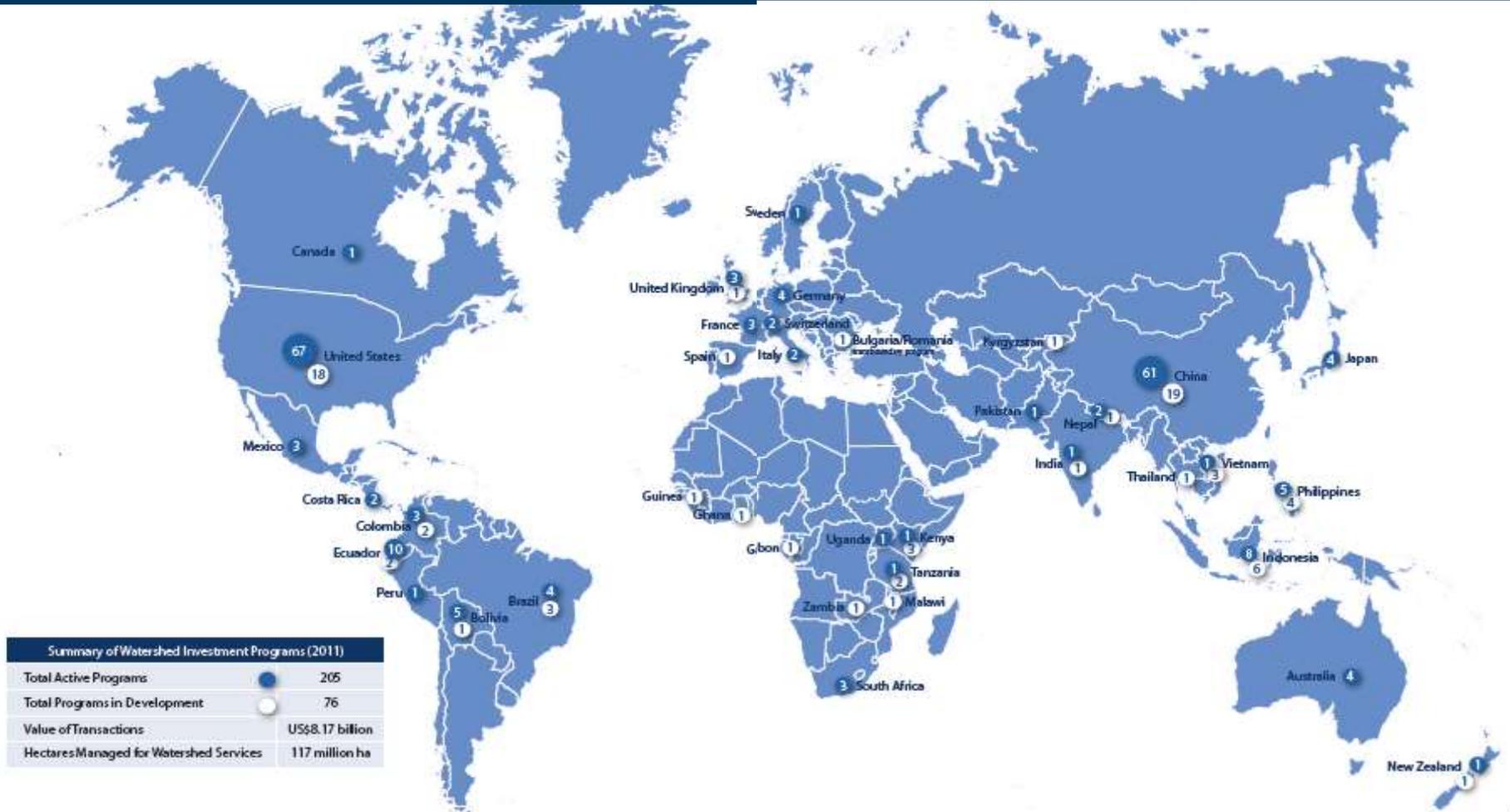
# Catskills and NYC Water Supply

(stats as of 2011, per Ecosystem Marketplace)

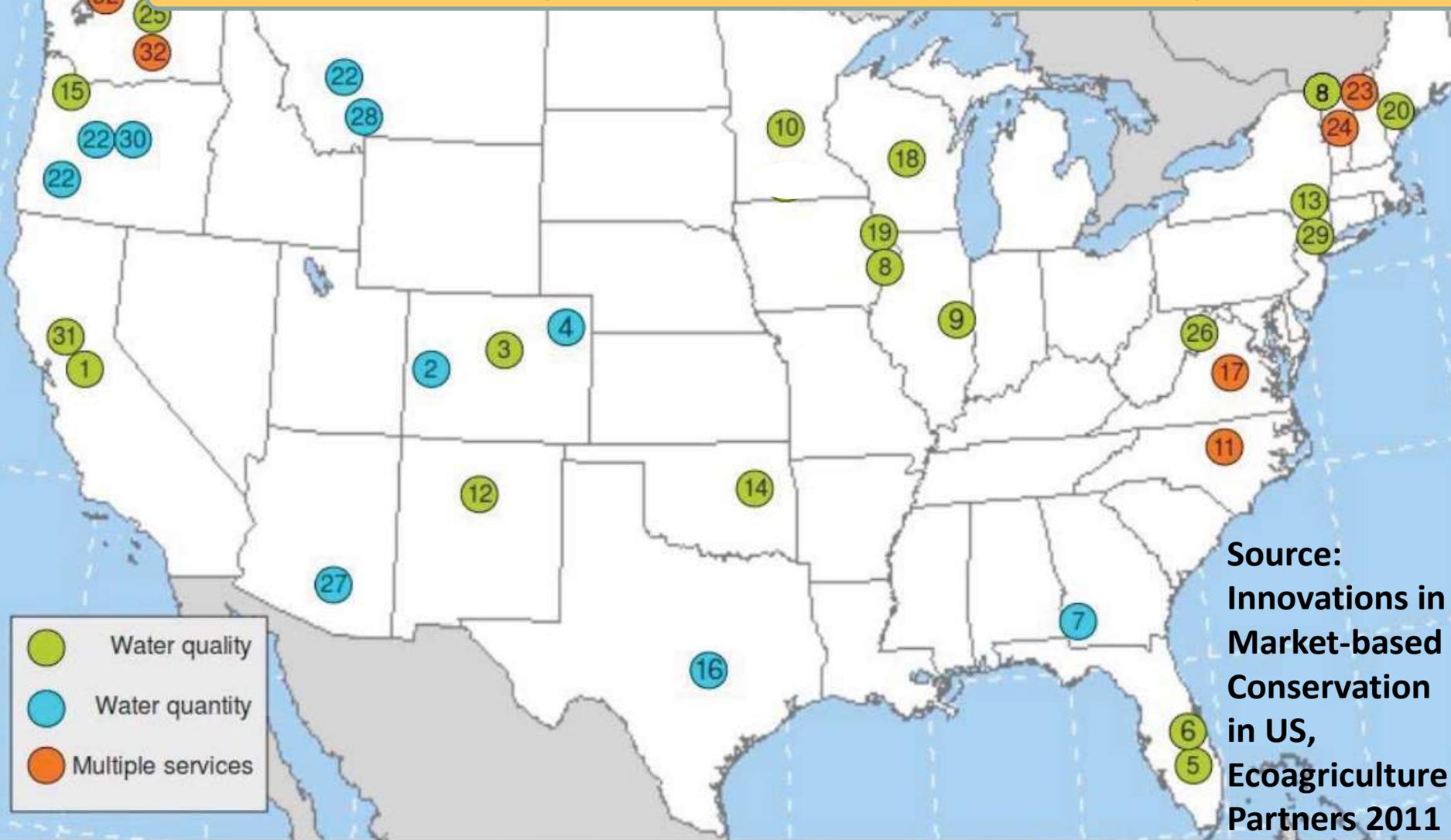
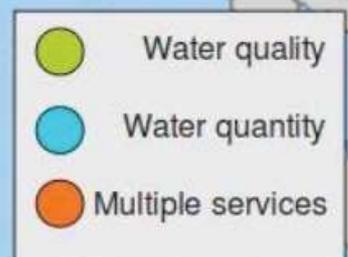
- \$1.5B invested since 1997
- Avoid/defer \$8-10B WTP
- construction and O/M costs
- 510,745 ha protected/restore
- Source: city, state, Fed funds



# Global Extent of PWS efforts (2012 State of PWS, Ecosystem Marketplace)



# 32 US “Payment for Watershed Services” plans



**Source:**  
**Innovations in**  
**Market-based**  
**Conservation**  
**in US,**  
**Ecoagriculture**  
**Partners 2011**

- 1. Mokelumne Watershed Project
- 2. Colorado River Water Bank
- 3. Denver Water Forest to Faucet Partnership
- 4. Republican River Project
- 5. Florida Ranchlands Ecosystem Services Project
- 6. Northern Everglades PES Program
- 7. Flint River Basin Project

- 12. Santa Fe Watershed Management Plan
- 13. New York City Source Water Protection
- 14. City of Tulsa Source Water Protection
- 15. Clean Water Services Thermal Loading Offsets
- 16. Edwards Aquifer Protection Program
- 17. Virginia Forest to Faucet Program
- 18. Phosphorus Reductions Incentives Program

- 23. Upper Connecticut River Basin Project
- 24. White River Partnership Landscape Auction
- 25. Entiat River Habitat Farming
- 26. Cullers Run Watershed Project
- 27. Conserve to Enhance Program
- 28. Montana Water Project
- 29. Common Waters Fund

## WV – Cullers Run Watershed, Farmers as producers of clean water project

Experimental study of farmers' willingness and ability to respond to performance-based conservation payments.

Motivation: Nitrogen pollution leading to impaired waterways

Ecosystem Service: Water quality for wildlife habitat and human use

Description: Priority land parcels targeted for payments and tech assistance for management practices to reduce N runoff

Buyer of watershed services: Cacapon Institute

Seller of watershed services: Farmers



For more information, see Neil Gillies + <http://www.cacaponinstitute.org/wvunri.htm>

# VA – Forests to Faucets, Rivanna basin forest landowner initiative

Motivation: Loss of forest cover leading to sedimentation impairing drinking water quality



Ecosystem Service: Water quality for human use

Description: Compensation covers riparian planting, site stabilization, and other management practices by forest landowners

Buyer of watershed services: VA Department of Forestry

Seller of watershed services: Forest landowners

For more information, see <http://foreststofaucets.info/>

Motivation: High land development rates and sedimentation levels threaten drinking water quality

Ecosystem Service: Water quality for human use

Description: Forest owners compensated through purchase of working lands conservation easements

Buyer of watershed services: Land Trusts

Seller of watershed services: Forest landowners

For more information: <http://www.ctnc.org/land-trusts/statewide-land-protection-programs/upper-neuse-clean-water-initiative/>

# Part 3: What are the challenges and opportunities for Payments for Watershed Services in the Potomac watershed?

## Priority and role of source water protection given Bay restoration mandate?

- Primary WQ driver: 2010 Bay TMDL
- Pollution reduction “diet” with allocations by jurisdiction
- States and counties have produced Ph I and Ph II WIPs
- Local pushback to new state laws, regs, and fees
- Challenge of stormwater as growing pollution sector

### Opportunities for Source Water Protection:

- add F2F overlay to WIP BMP prioritization
- explore “credits” for healthy watershed protection and water pollution-reducing land use policies and planning
- tap into new markets for N trading, growth offsets, etc.

## Challenges to PWS concept in Potomac basin

Polluter pays v. beneficiary pays – hard to make polluter pay for unregulated pollution, hard to make beneficiaries pay for public goods they get for free

Scale of watershed – hard to demonstrate WQ benefits at whole-basin scale

Sunk costs in WTP – investment in treatment infrastructure in place, challenging to show reductions in treatment costs at WMA supplier scale; incentive missing to avoid massive costs of new infrastructure

WS utility priorities: SDWA compliance, dealing with aging infrastructure, ~ \$1 trillion nationwide over a 25-yr period, per AWWA 2012 study.

Difficult economic climate: state budget shortfalls, pushback on Bay cleanup mandates, resistance to new/more fees

Potential for resistance to protecting key source water lands if seen as taking land out of tax base – balance with recreation, tourism, other benefits

Lack of political will outside crisis situation – need long-term perspective beyond election cycles, budget cycles, and economic cycles

No basin-scale regulatory authority – any multi-state effort would require federal action or coordinated multiple jurisdiction involvement?

# Role of water supply utilities?

Water supply utilities' fundamental commitment to “polluter pays” principle.

Vision stated in Source Water Protection Roadmap, Water Res. Fndn 2012

*“Source water protection is essential for providing a reliable supply of high quality drinking water. By 2025, every public community water supply will be protected by an active source water protection program.”*

1. **Raise Awareness** – There is the need to *raise awareness* of the importance and value of source water protection.
2. **Enhance Coordination** – Address conflicting, redundant, or unfocused programs, efforts, and regulations affecting source water protection for drinking water.
3. **Provide Support** – Need for support by peers, funding support, municipal official support and enabling environment, customer support through water rates.
4. **Increase Public Recognition** – Public recognition for source water protection successes to date, and regulator recognition of inconsistencies and shortcomings of existing legal and regulatory framework.

Desired outcome: mobilize significant, sustainable funding for most strategic investments for water quality and quantity to benefit drinking source waters, the Potomac, and the Bay

- How should \$ be spent?
- What activities?
- Who & where?
- How to demonstrate measurable outcomes/  
Return on Investment (ROI)?
- How much is enough?

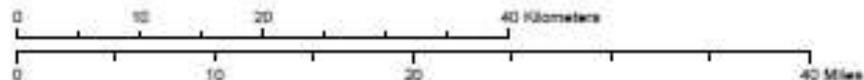
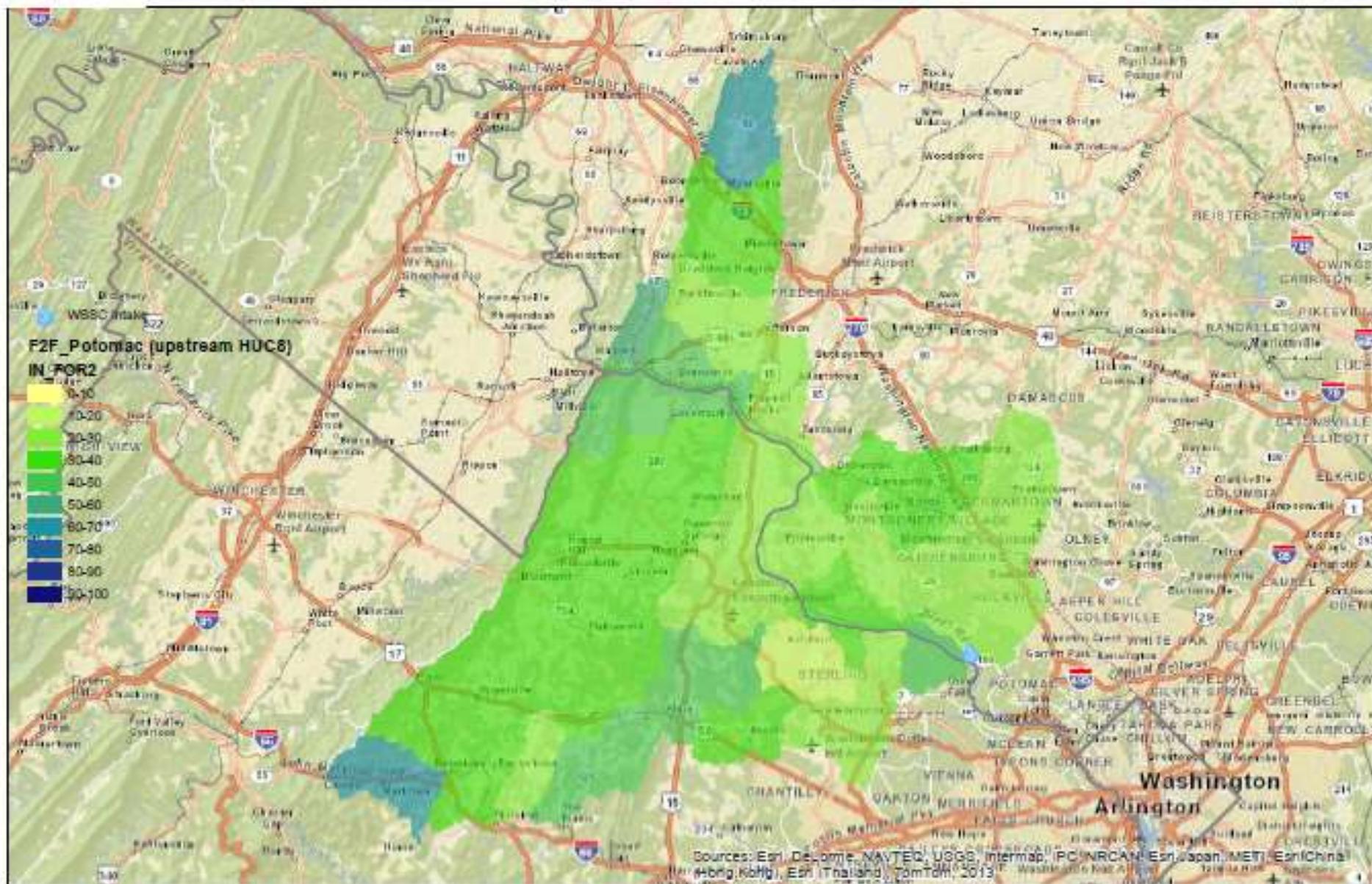
Analytical tools available: InVEST, RIOS

Focus investments on whole basin priority sourcewater areas? Explore potential for healthy watershed protection credits under Bay TMDL? Development of public-private partnerships and private investment?

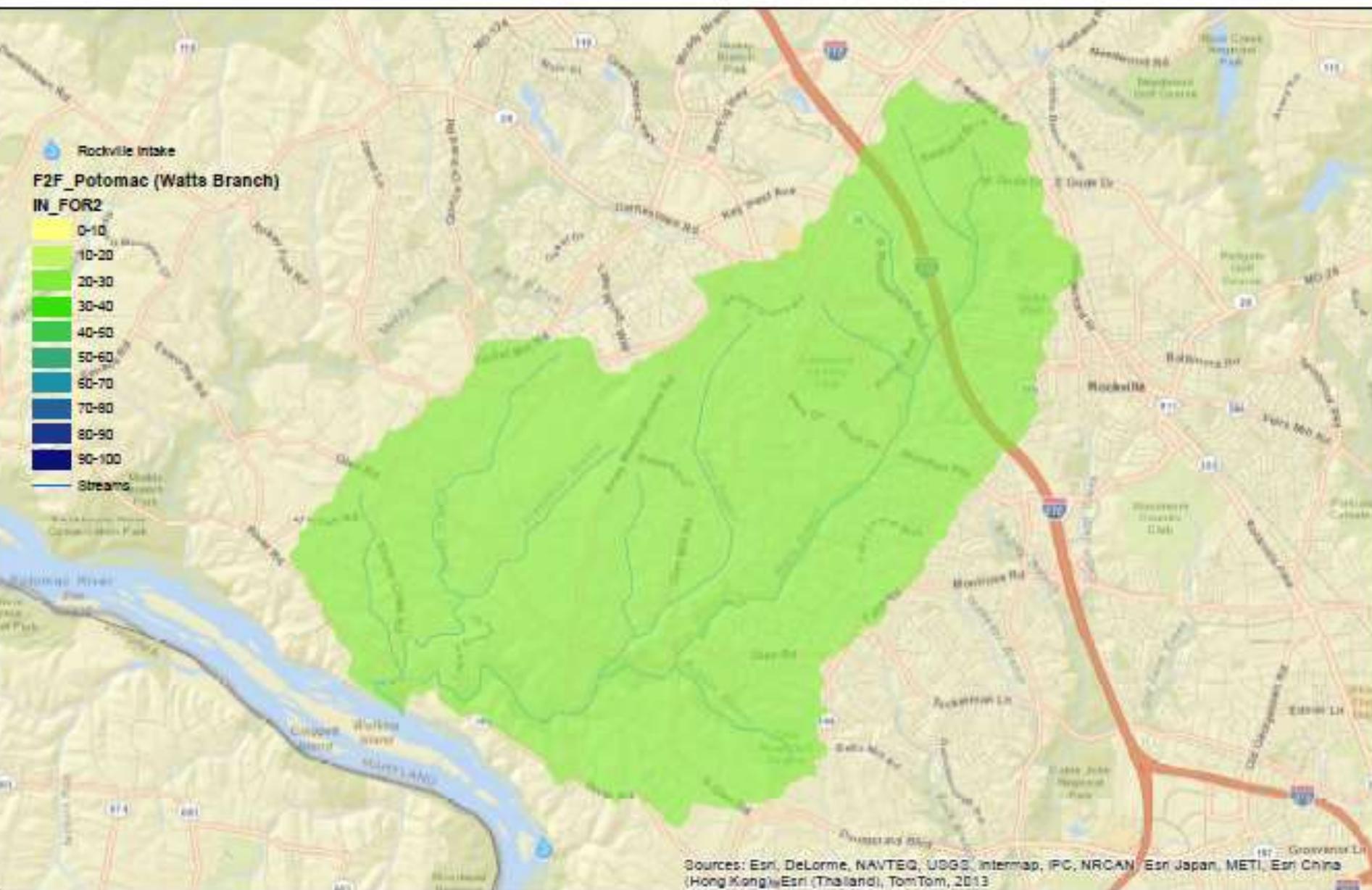
Focus investments on sub-basins with closer travel time to local intakes and greater overlap with utility service areas and customer base?

-Demo projects: Watts Branch, Sugarland Run, other smaller regional water supply utilities

## HUC8 WATERSHED UPSTREAM OF WSSC INTAKE FORESTS TO FAUCETS: INDEX OF FOREST IMPORTANCE TO SURFACE DRINKING WATER (FIMP)

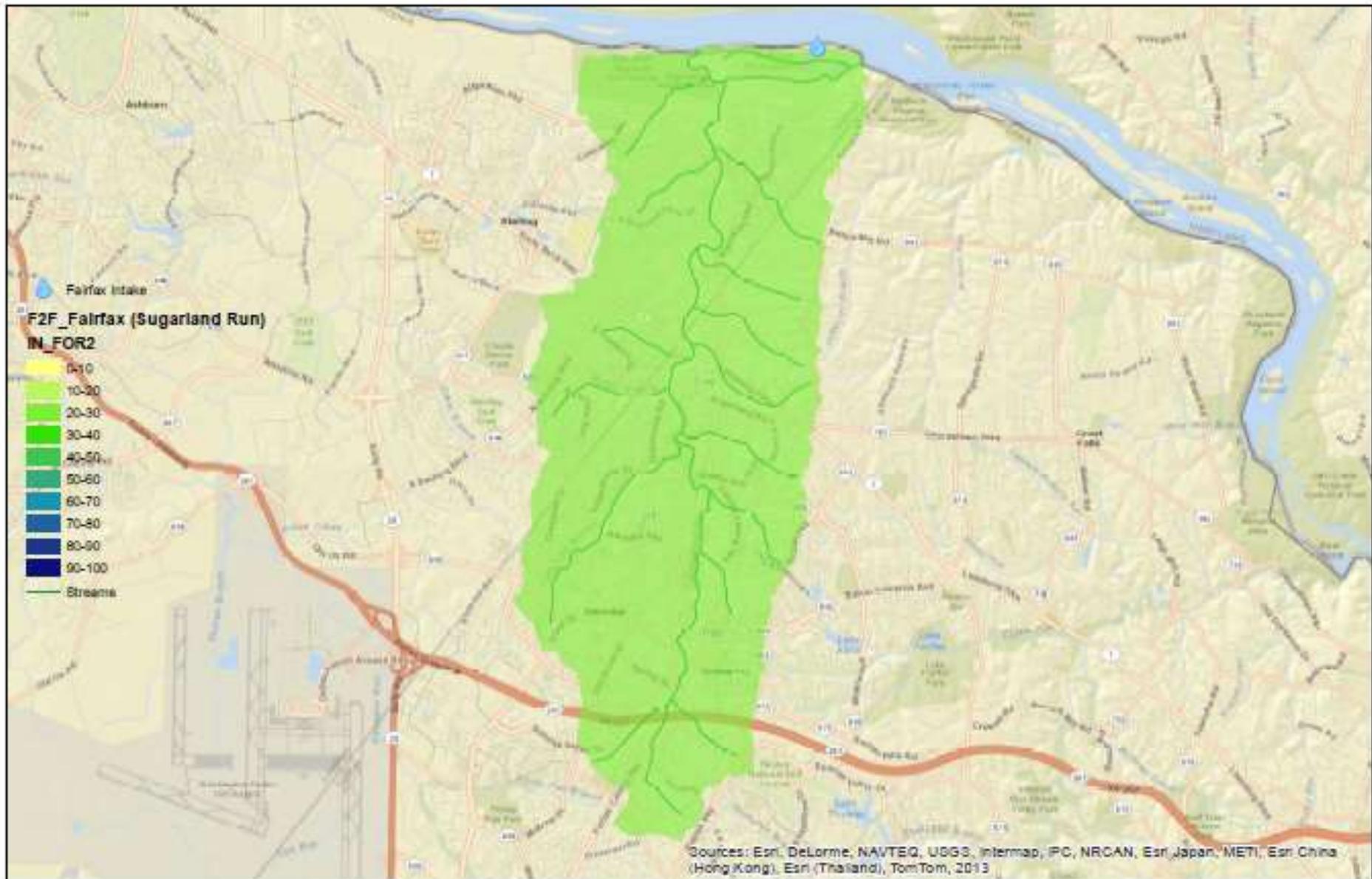


# WATTS BRANCH WATERSHEDS UPSTREAM OF ROCKVILLE INTAKE FORESTS TO FAUCETS: INDEX OF FOREST IMPORTANCE TO SURFACE DRINKING WATER (FIMP)



0 2.5 5 Kilometers

SUGARLAND RUN WATERSHED UPSTREAM OF FAIRFAX INTAKE  
 FORESTS TO FAUCETS: INDEX OF FOREST IMPORTANCE TO SURFACE DRINKING WATER (FIMP)



0 5 10 Kilometers

0 5 10 Miles

Educate people – “Protect our Potomac” campaign

Survey people – determine WTP for source water protection

Evaluate alternative future scenarios – InVest and RIOS tools

Strengthen Potomac Drinking Water Source Protection

Partnership – go from info exchange to on-ground protection

Do sub-basin tests of concept – Watts Branch, Sugarland Run

Investigate potential for avoided costs or getting ahead of future regulation – upgrades that could be avoided by proactive sourcewater investment?

Incorporate sourcewater protection in Bay TMDL

implementation – F2F layer, emerging markets for nutrient trading and offsets, carbon sequestration streams of revenue

Tap into stormwater innovative finance opportunities – P3s, etc.

Scope feasibility of state or county-level public fund campaigns

# Options for funding sources and financing mechanisms

Dedicated sales tax increases

Bond issues

Real estate transfer taxes

State Clean Water Revolving Fund loans

Municipal operating budget allocations

Voluntary license plate programs, voluntary tax bill check-offs

State, Federal, and philanthropic grants

Water bill mandatory watershed protection fees

Voluntary water bill “round up” contributions

Large water user fees, Consumptive use fees

Lotteries

Public-private partnerships

Bottle tax (like bag tax?)

## Existing clean water or open space funds (MD)

Bay restoration fund (“Flush tax”) -- \$60/year on water/sewer bill to upgrade WWTPs. On septic, fee paid with property tax + funds septic system upgrades in Critical Area and cover crops on ag lands. Created 2004.

Chesapeake and Atlantic Coastal Bays Trust Fund – motor fuel + rental car tax funds on-the-ground BMP implementation. Will provide \$50M/year. Created 2007.

Stormwater utility fees – 10 PhI MS4s required to create.

MD Program Open Space – portion of real estate transfer tax funds open space protection. Created 1969.

Central Arkansas Water – Watershed protection fee since 2009, \$5.40-\$8.16 per ratepayer per year, funds used for source water protection

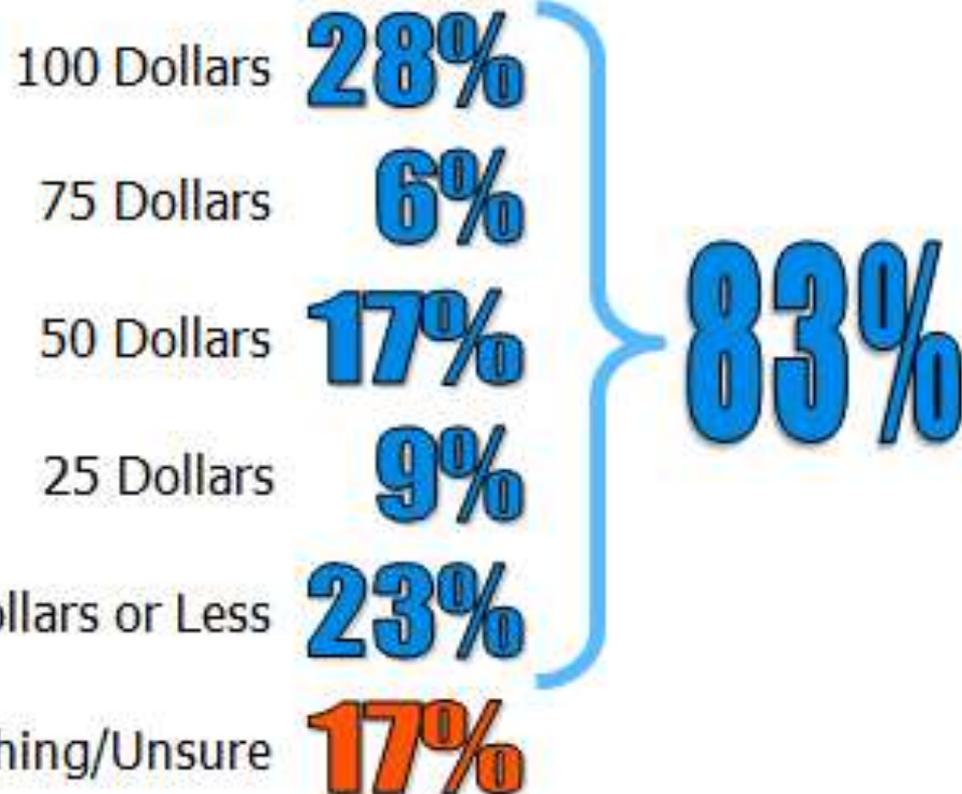
City of Raleigh, NC – Watershed Protection fee since 2005, ~\$5.40/ratepayer per year, used for nutrient monitoring and cleanup and maintenance and restoration of utility-owned land.

City of Bellingham, WA – Rate varies by metered v. unmetered, in city v. outside city, implemented in 2001 and used for nutrient monitoring and cleanup and maintenance and restoration of utility-owned land.

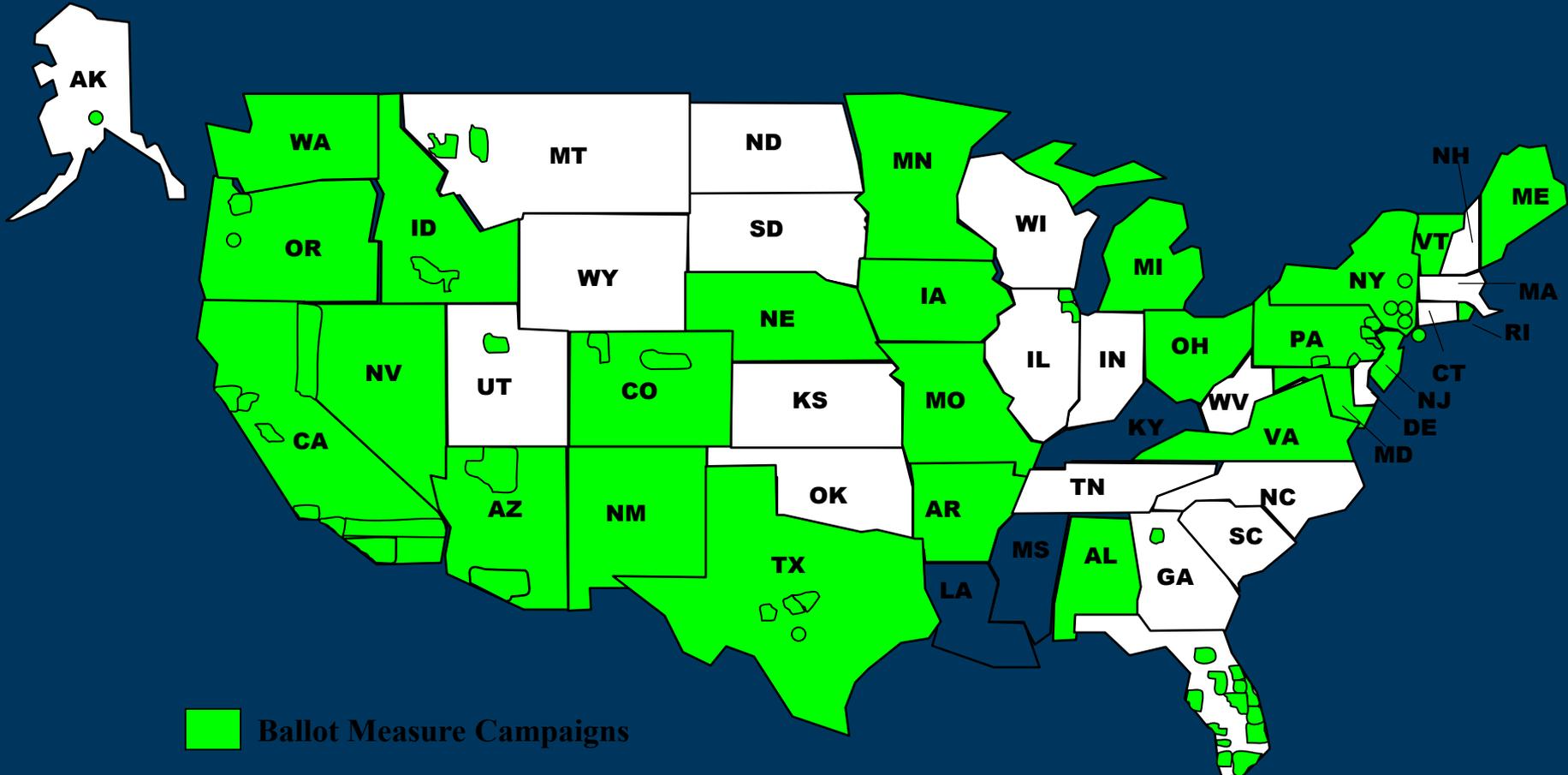
# What is public willingness to pay for source water protection? Need to ask to find out!

## More than half of voters surveyed willing to pay at least \$50 per year for water quality & open space

*"How much would you be willing to pay in taxes to fund water quality; natural areas; lakes, rivers, or beaches; neighborhood parks; and wildlife habitat in your area per year?"*



# TNC conservation campaign ballot measures over 25 years (1986-2011)



Over 26 years (1986-2012), 189 public conservation funding measures won in 23 states = \$49.8 billion dollars. Success rate is ~ 91%.

Drinking water quality or quantity is #1 reason why voters approve ballot measures.

**VOTE YES**



**FOR WATER & WILDLIFE**

**PROTECT FOREVER WILD**



**Yes on 3**

*Land for Maine's Future*

**LMF**



**Save Maine's Heritage**

**vote YES!**

**land, water & wildlife**



**Vote Yes For Clean Water & Open Lands**



**Vote YES for Adams**



**WATER and LAND**

**VOTE YES**



**PROTECT THE MINNESOTA YOU LOVE**



**YES PROP. 2**

**CLEAN WATER OPEN SPACE & PARKS**

**VOTE YES**

**PUBLIC QUESTION #1**

TUES. NOV. 3rd

*Clean Water • Green Acres • Farmland Preservation*

[www.NJKeepItGreen.org](http://www.NJKeepItGreen.org)

**YES ON 40**

**CLEAN WATER • CLEAN AIR • SAFE PARKS • COASTAL PROTECTION**



**IOWA'S WATER & LAND LEGACY**

**CONTINUE Clean Ohio**

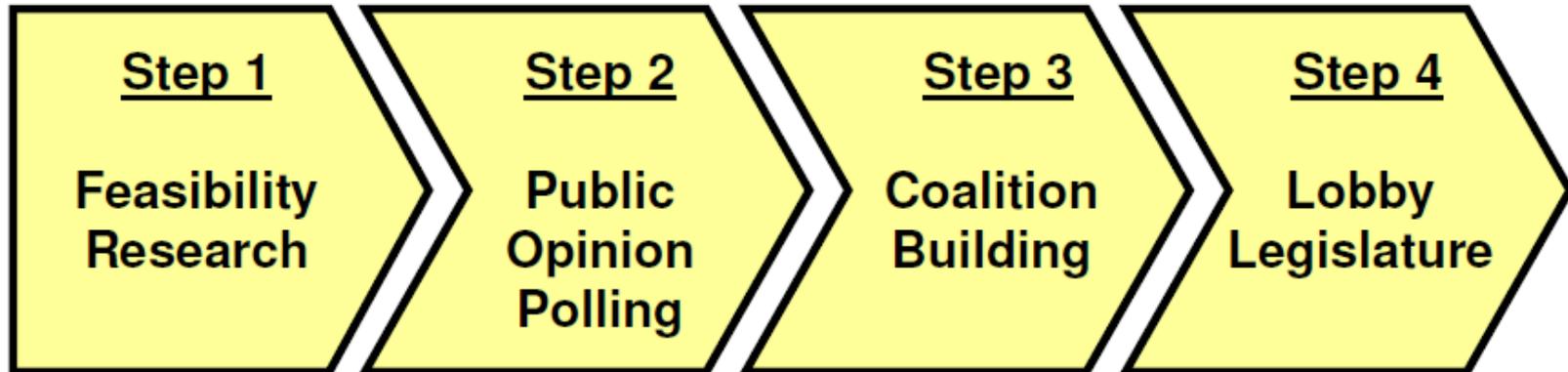


**VOTE YES FOR ISSUE 2**

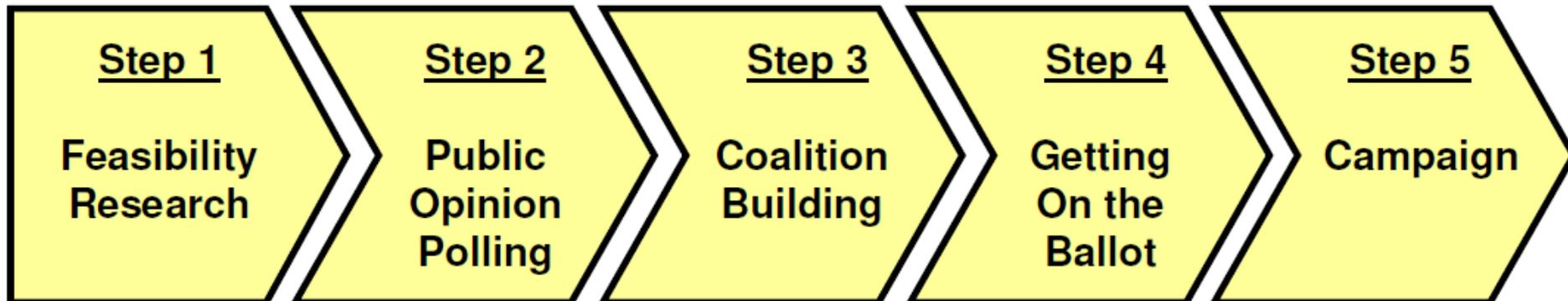
**ISSUE 2 WILL NOT RAISE TAXES**

# Approach to winning conservation campaigns

## Legislative Lobbying Campaign



## Ballot Measure Campaign



NON-RESIDENTS  
OF PIKE COUNTY  
MAY VOTE  
ON THIS BOND  
ON NOVEMBER 8TH

Authorizing the sale of bonds in the amount of \$10,000,000 for the purpose of financing the construction of water treatment plants in Pike County, Tennessee.

For \$2.42 a month,  
we'll always drink  
the benefits.



## Vote YES for Pike County's Scenic Rural Character Preservation Bond.



Some people pay top dollar for clean drinking water. Here in Pike County, we could bottle the stuff that comes right out of our faucets at home. We have what so many other people want—sparkling clear water. That's part of why Pike has been the state's fastest growing county for more than two decades. But within the next 20 to 30 years, our population is expected to triple. There's no way our natural resources can keep up and stay clean without our help.

Voting Yes for Pike County's Scenic Rural Character Preservation Bond is the best way to protect all that we value in Pike County. It will allow for more careful municipal planning so that our crystal clear lakes, streams and rivers remain for future generations. And at only \$2.42 per month per average homeowner, it saves us money in the end. That's why many of your neighbors support this measure.

**Beat traffic, keep taxes low and preserve our way of life.**

Vote YES on Pike County's Scenic Rural Character Preservation Bond on November 8th.  
[www.votekeeppikegreen.com](http://www.votekeeppikegreen.com)

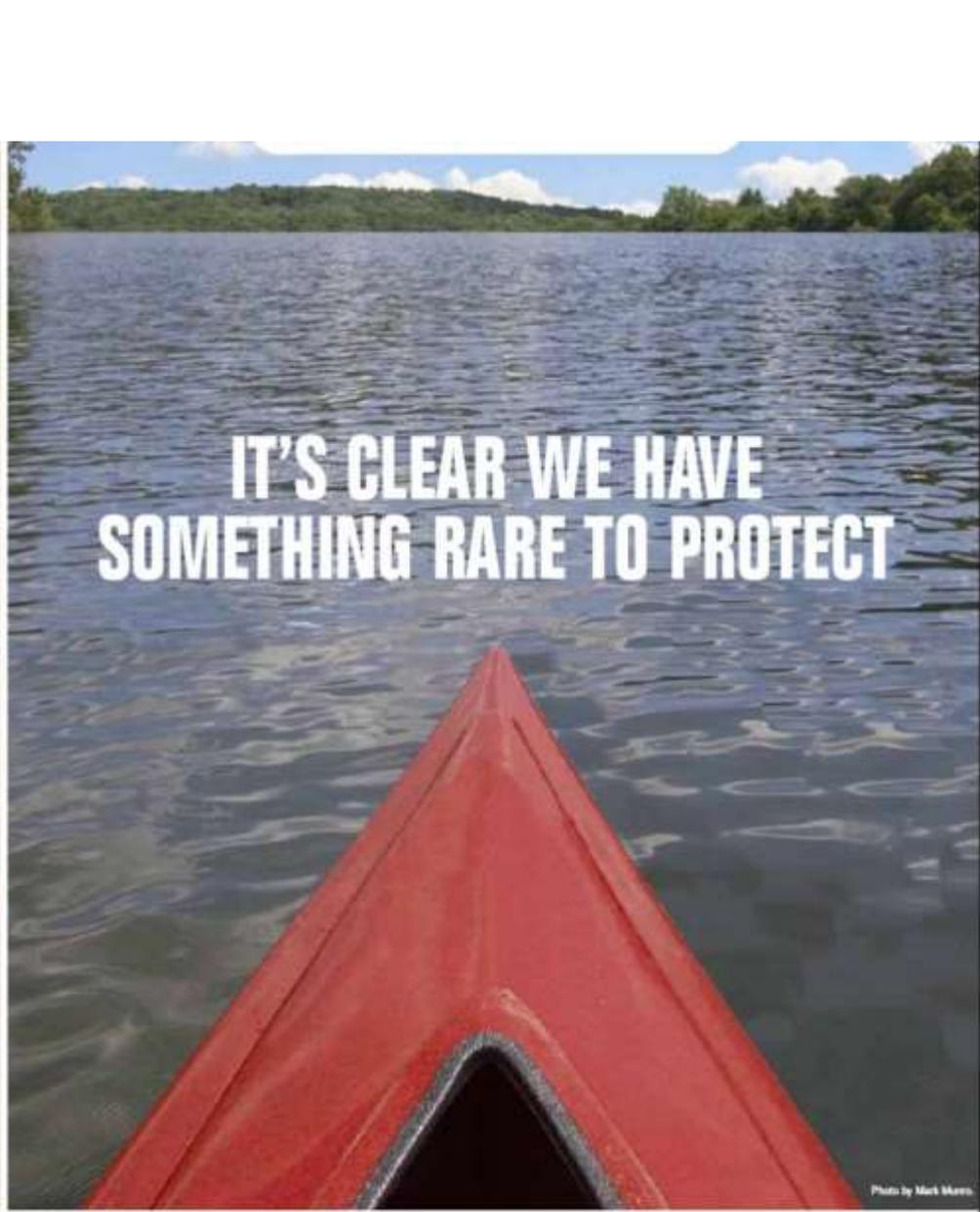


# SPRAWLING DEVELOPMENT THREATENS OUR LAKES, STREAMS, RIVERS AND DRINKING WATER

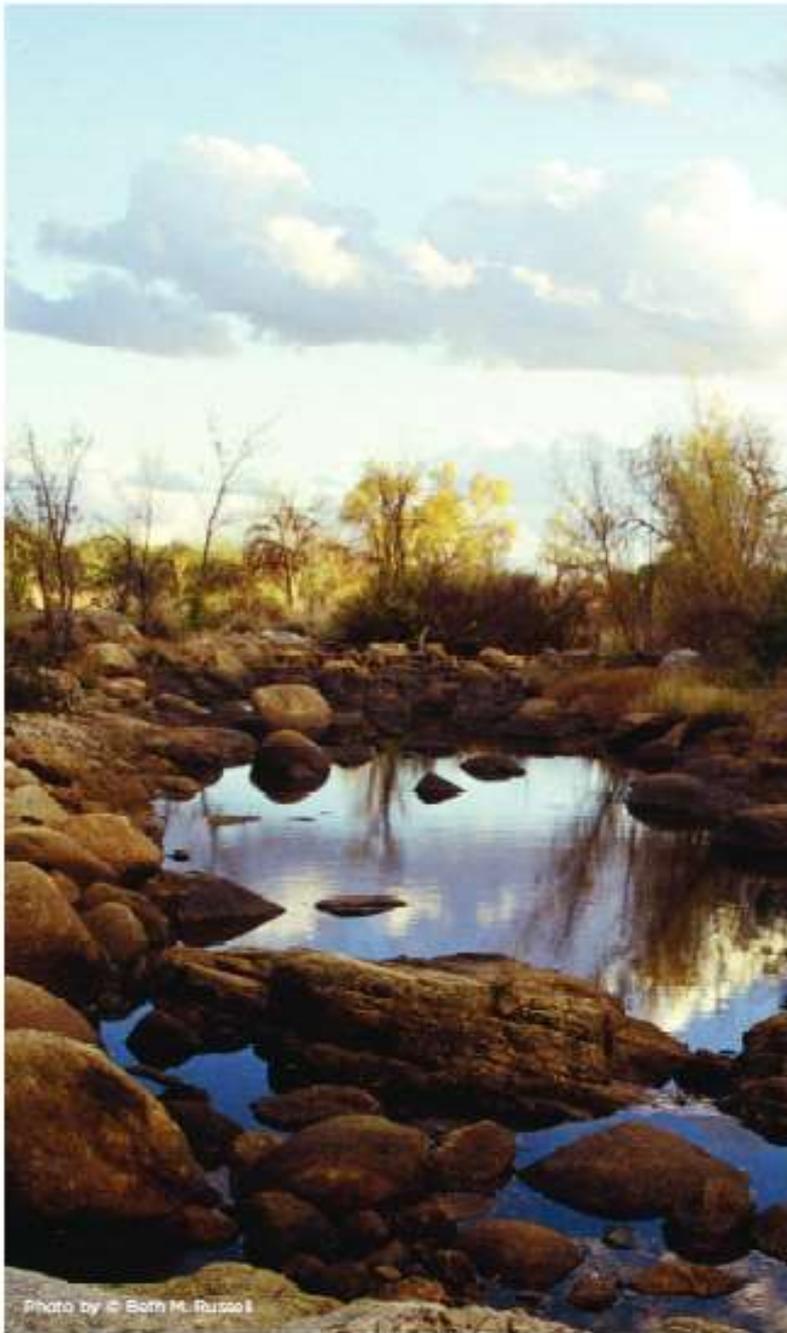
**PIKE COUNTY'S WATER COULD BE IN DANGER.** There aren't very many places left that have what we have—beautiful lakes, streams and rivers filled with crystal clear water. It's part of what makes Pike County so special. But at the rate we're growing, that natural resource could be in jeopardy. Pike County is the fastest growing county in Pennsylvania and our population is expected to triple in the next 25 years. Without careful planning and preservation, the things we love about Pike County—lakes, streams, rivers and clean water—will be lost forever to sprawling overdevelopment.

**PROTECT PIKE COUNTY'S WATER. VISIT [WWW.KEEPPIKEGREEN.ORG](http://WWW.KEEPPIKEGREEN.ORG) TODAY.** Learn more about the threat to our water, and the steps you can take to protect it. Careful planning is the key to preserving our scenic and rural character.

**LOVE WHERE YOU LIVE. PRESERVE PIKE COUNTY.  
VISIT [WWW.KEEPPIKEGREEN.ORG](http://WWW.KEEPPIKEGREEN.ORG)**



# IT'S CLEAR WE HAVE SOMETHING RARE TO PROTECT



# Protect our drinking water.

**VOTE YES ON QUESTION #1:  
SONORAN DESERT OPEN SPACE AND HABITAT  
PROTECTION; PREVENTING URBAN ENCROACHMENT  
OF DAVIS-MONTHAN AIR FORCE BASE**

**QUESTION #1 HELPS US PROTECT OUR MOST PRECIOUS RESOURCE—WATER.** Pima County is growing at a rate more than double the national average. The more we grow, the more we need to protect open space and natural areas from overdevelopment.

**QUESTION #1 PROTECTS THE OPEN SPACE THAT PROTECTS OUR WATER.** Paving over more and more of our desert will pollute our water. Question #1 raises \$174 million to protect the natural areas, washes, streams and rivers that are crucial to the quality and quantity of our drinking water.

**QUESTION #1 IS A WISE INVESTMENT FOR OUR FUTURE.** Independent financial and program audits will be made public on a regular basis to ensure that your money is spent wisely to protect open space and water quality. Voting YES on Question #1 is a watershed moment to protect our quality of life.

**VOTE NOW BY EARLY BALLOT, OR IN PERSON ON MAY 18TH.  
FOR MORE INFORMATION CALL 520-321-1900.  
PROTECT OUR OPEN SPACE. PRESERVE OUR WAY OF LIFE.**

## Restating the case: Why invest in Potomac source water protection?

1. Potomac River is primary water source for 4.3M people in WMA.
2. Potomac watershed currently around 60% forested. Healthy forests important for water quality -- for drinking water, river and Bay.
3. Population growth and land use change are causing loss of forested watersheds, reducing water quality and health of river and Bay.
4. Increasing demand for water + projected increase in extreme weather events with climate change could reduce flows by 35%.
5. Potomac lands important for climate change resilience, adaptation.
6. Water suppliers can't treat for *everything*, safer to have a multi-barrier approach to water quality including source water protection.
7. Protection of intact, functional, healthy watershed lands more cost- and ecologically effective than restoration of degraded systems.
8. Opportunity today to secure our freshwater quality and quantity. Leaders and citizens should have foresight to invest today in protection of healthy watershed lands for drinking water, river, & Bay

The Nature  
Conservancy



Protecting nature. Preserving life.™



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Conservancy  
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301-897-8570 x208