

Planning for Growth and Open Space Conservation

This webinar series is sponsored by:
USDA Forest Service
State and Private Forestry - Cooperative Forestry

Organized by
Rick Pringle, Susan Stein, Sara Comas, Susan Guynn (Clemson University)
and the
Forest Service National Open Space Conservation Group



This webinar is being recorded

Audio is
Streamed Through
the Computer

Learn About the Series

Listen to past webinars!

Listen to our past webinars:

- ▶ Session #9: Private land conservation programs from the Farm Bill: Natural Resources Conservation Service, Farm Service Agency, and US Forest Service.
- ▶ Session #8: Landscape Conservation Initiatives: US Fish and Wildlife Service, Bureau of Land Management, Department of Defense, Natural Resources Conservation Service
- ▶ Session #7: Science to inform Open Space Conservation: Land use changes, forest fragmentation, and the Wildland-Urban Interface
- ▶ Session #6: Facilitating Large Landscape Conservation Efforts: Working effectively across boundaries in the Northeast and Crown of the Continent
- ▶ Session #5: Local and Regional Land Trusts: Essential partners and the tools they provide
- ▶ Session #4: The Forest Service Toolbox: Conservation easement and land acquisition programs
- ▶ Session #3: Green Infrastructure Planning: Connecting partners and greenspaces
- ▶ Session #2: YES YOU CAN! Participating in Growth Planning Beyond the Green Line
- ▶ Session #1: National Forest Management in the Face of Housing Growth

Learn about future topics!

Future Topics:

Please [register](#) in advance if you would like to attend these presentations.

- ▶ Session #11: An All Lands Approach to Ecosystem Services for Water

Submit feedback about the series!

Please submit your feedback [here](#)

Learn About the Series

Click on the session titles for more info on recordings and slide presentations



[Listen to our past webinars:](#)

▾ [Session #9: Private land conservation programs from the Farm Bill: Natural Resources Conservation Service, Farm Service Agency, and US Forest Service.](#)

- **Bruce Wight:** *NRCS Conservation Technical Assistance, EQIP, WHIP, CSP, Statewide Forest Action Plans*
- **Katina Hanson:** *FSA: Emergency Forest Restoration Program (EFRP), Conservation Reserve Program (CRP).*
- **Karl Dalla Rosa:** *USFS Forest Stewardship*

Join us for a discussion of current and future Farm Bill programs administered by the Forest Service, Natural Resource Conservation Service, and Farm Service Agency that support private landowner efforts to protect working forests and conserve open space.

[Link to video presentation](#)

[Link to pdf presentation](#)

▸ [Session #8: Landscape Conservation Initiatives: US Fish and Wildlife Service, Bureau of Land Management, Department of Defense, Natural Resources Conservation Service](#)

▸ [Session #7: Science to inform Open Space Conservation: Land use changes, forest fragmentation, and the Wildland-Urban Interface](#)

Session #11: An All Lands Approach to Ecosystem Services: Water Focus



Mary Bruce Alford
Trust for Public Land
Conservation Finance
Program



Jackie Corday
City of Missoula, Montana
Open Space Program



Don Outen, AICP
Baltimore County, Maryland
Dept. of Environmental
Protection and Sustainability

Logistics – Q&A

- **Continuing Education Credits**
 - Attend entire presentation
- **Questions for speakers – chat pod**
- **Technical difficulties – chat pod or email Susan Guynn: SGUYNN@clemson.edu**

Getting to Know You!



Mary Bruce Alford
Trust for Public Land
Conservation Finance Program



THE
TRUST
for
PUBLIC
LAND



The Conservation Almanac

April 24, 2013

What We Will Cover:

- LandVote (www.landvote.org)
- Conservation Almanac (www.conservationalmamac.org)
- National Conservation Easement Database (www.conservationeasement.us)

- *On-line database*
- *Since 1988 almost 2,400 ballot measures*

- *Custom queries*
- *Instant graphs*
- *Dynamic mapping*



www.landvote.org

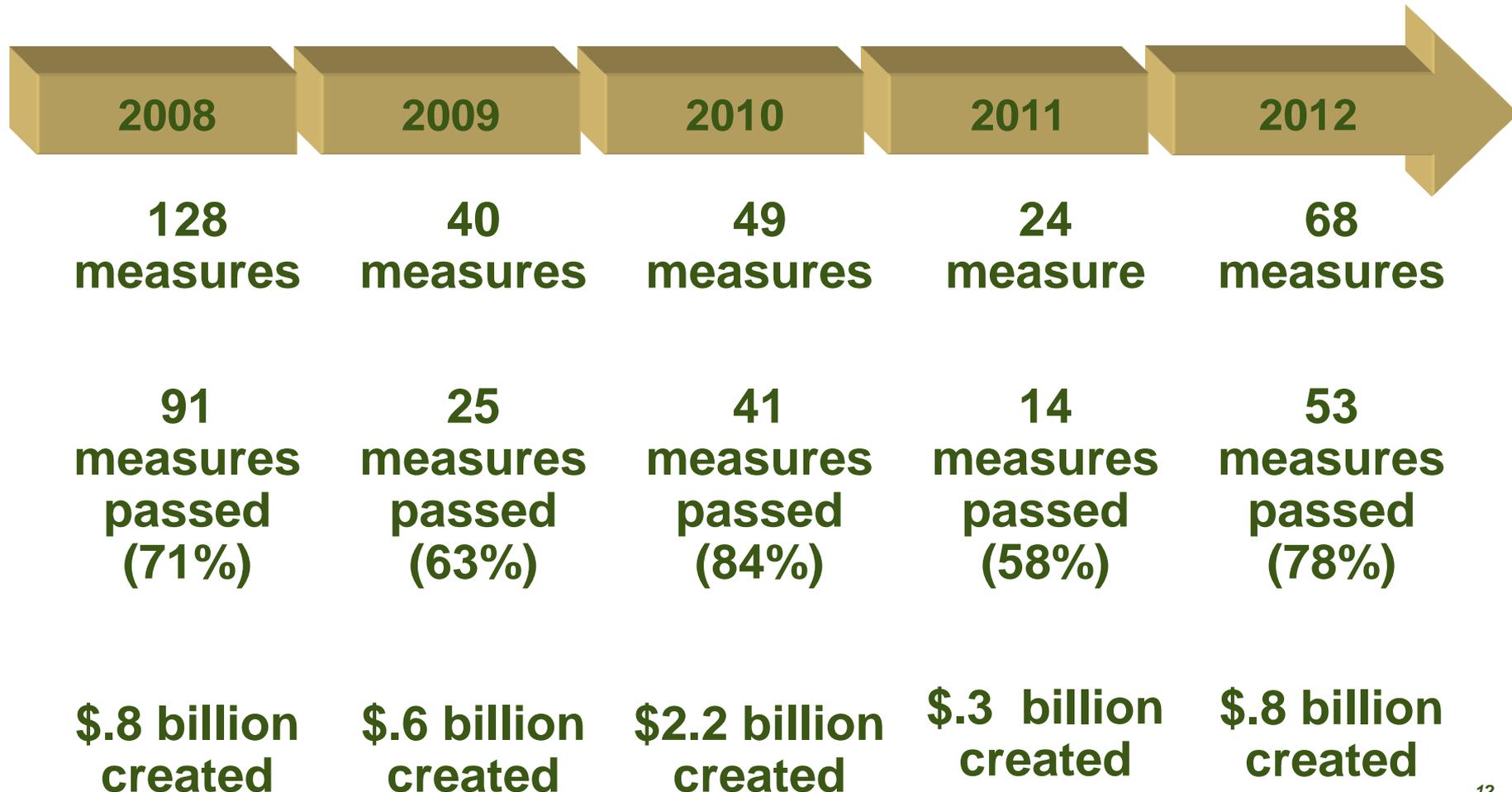


The Trust for Public Land - LandVote 2012 Ballot Measures



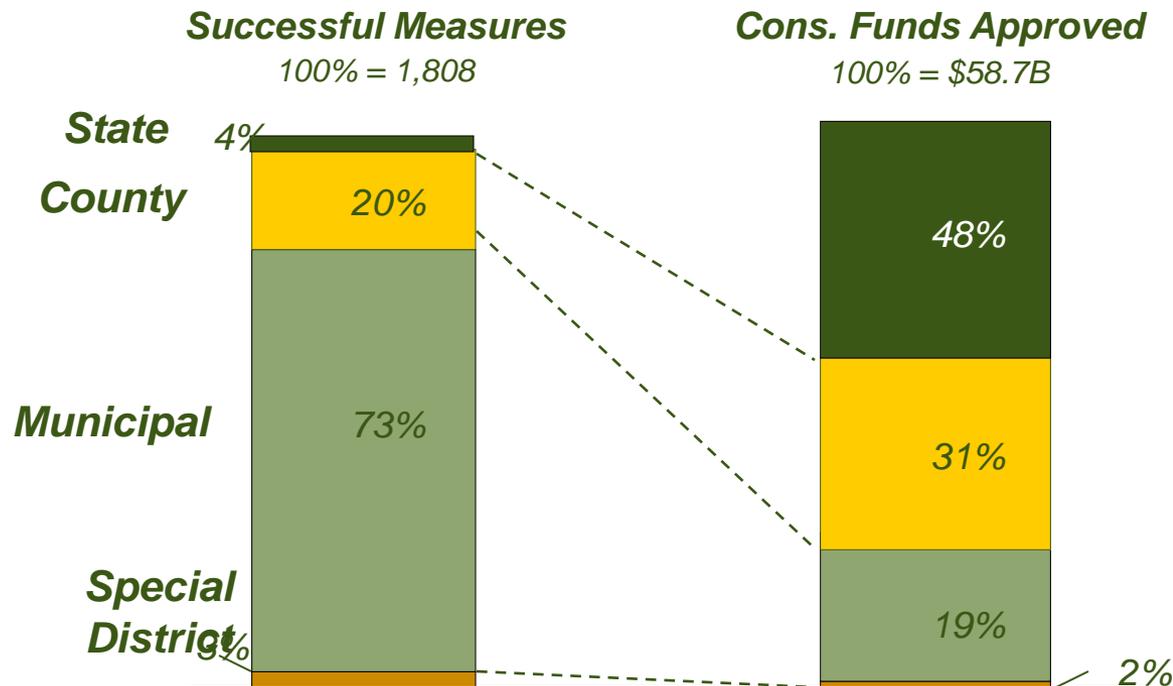
The Trust for Public Land conserves land for people to enjoy as parks, gardens, and other natural places, ensuring livable communities for generations to come.

State and Local Ballot Measures 2008–2012



Who is Creating Funding?

Since 1988, Voters Have Approved 1,808 Conservation Ballot Measures, Authorizing almost \$59 Billion in Conservation Funding



LandVote Historical Record

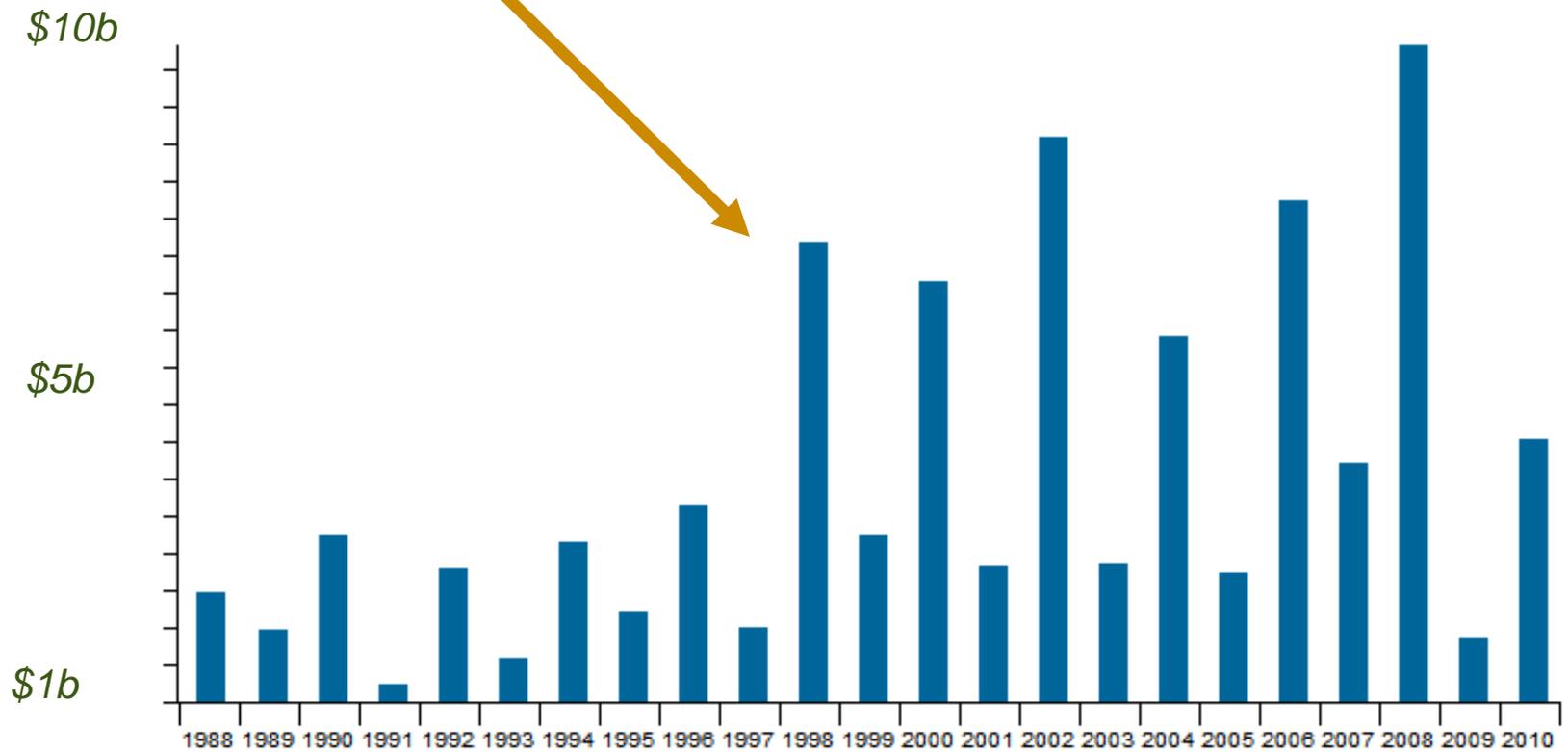
- Since 1988-2013, 1810 of 2397 conservation measures have passed- 76% passage rate
- These measure have generated nearly \$59B in new funding for land conservation
- 46 states represented
- Support from all demographics, all political persuasions

Conservation Ballot Measures 1998 - 2010





Public funding for land conservation begins to soar – starting in the late 1990s



• **Questions Were Piling Up**

- How much money is being spent in each state?
- What sources of funds are being used to protect land?
- How much protected land is there?
- What land is being protected?
- How does my state stack up with others?

www.ConservationAlmanac.org

Components of the Almanac

- State Conservation Achievements
 - Acres Acquired (fee vs. easement)
 - Dollars Spent Annually
 - Public Spending: Federal, State and Local spending (county and some municipal)
- Mapping
- Profile of State Programs and Funding Mechanisms



Components of the Almanac

- State Policy Framework
 - Federal, State, Local
- LandVote™ Data
- Private Lands (NCED Easement Layer 2012)



State Policy Framework:

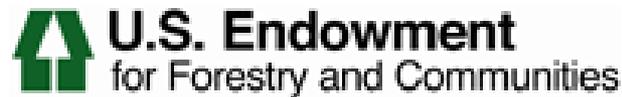
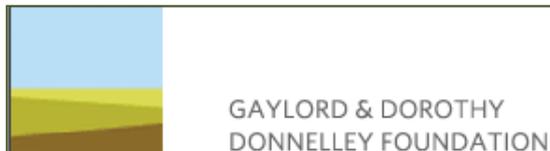
1. Substantial, Reliable State Investment
2. **Enable Local Financing via Ballot Measure**
3. State Incentives for Local Conservation

Almanac Progress and Funding

- Phase I and II
 - 1998 - 2005
- Phase III
 - By Dec 2013 over 40 states updated through 2011

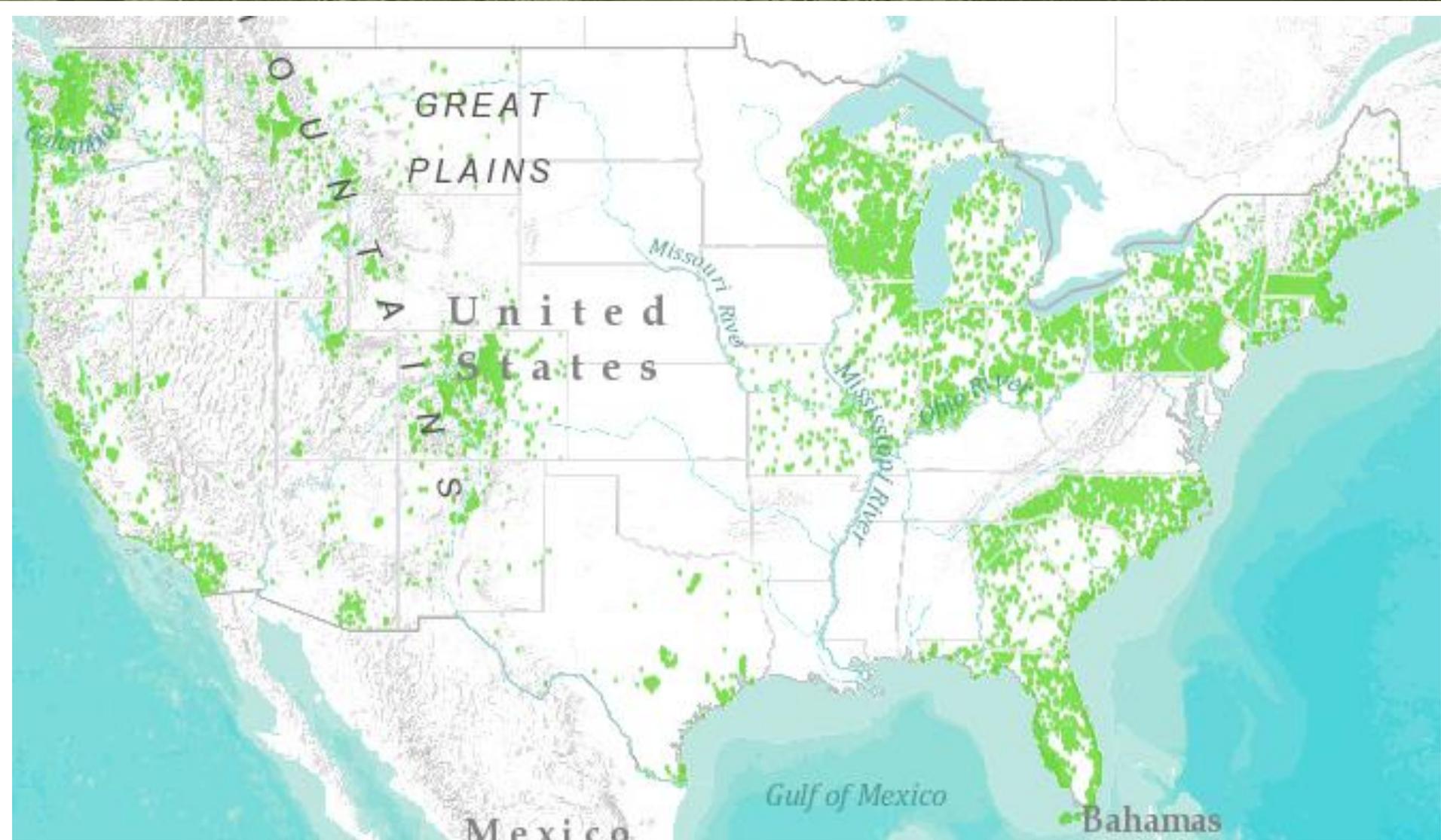


Philanthropic Support of the Almanac

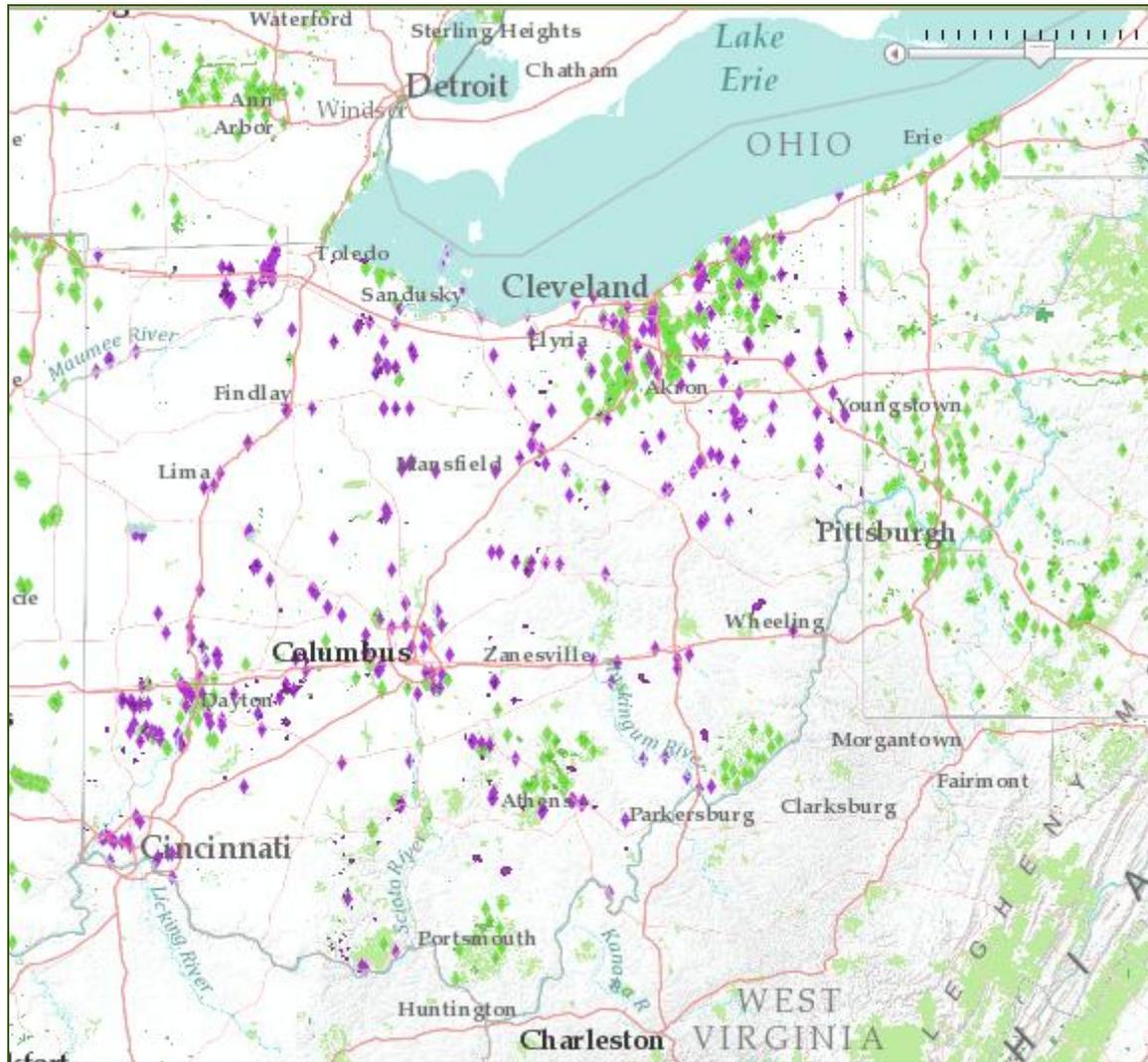




A Resource for Conservation Planning...

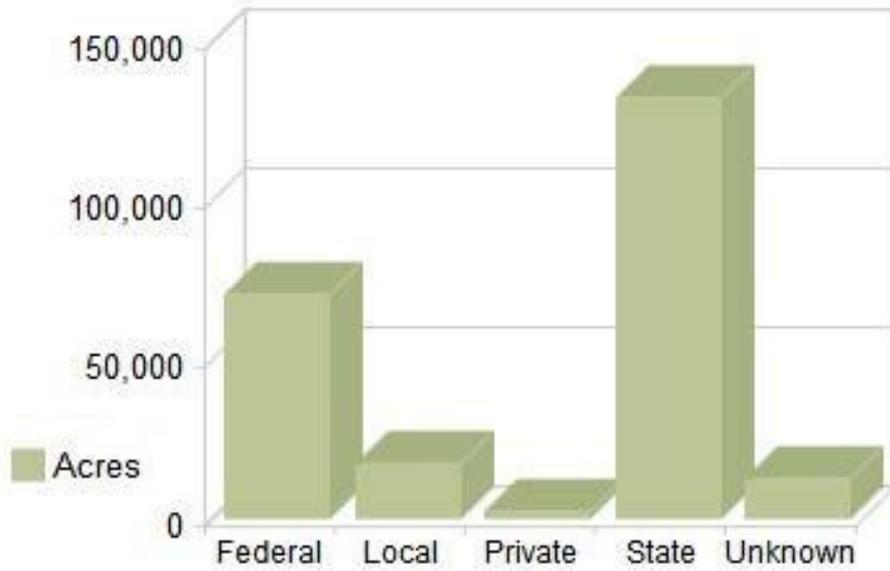


Impact of State Land Conservation

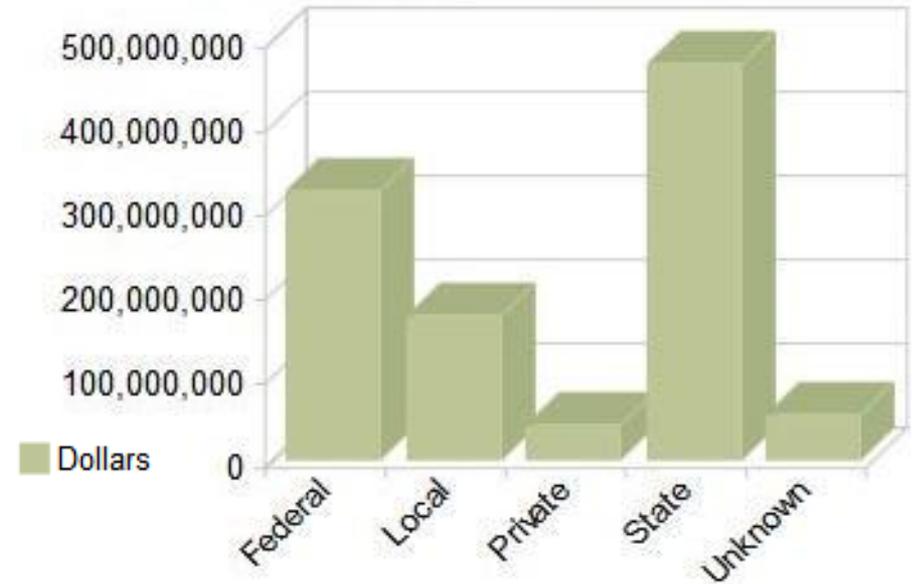


Following the Money: Ohio

Acres Protected 1998-2011



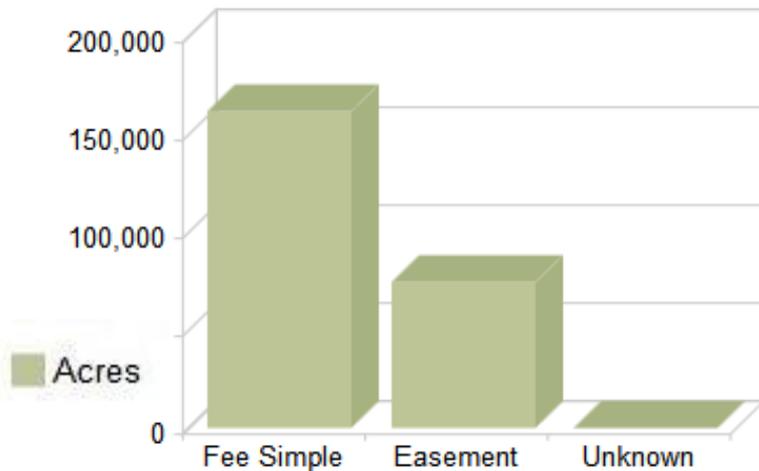
Dollars Spent 1998-2011



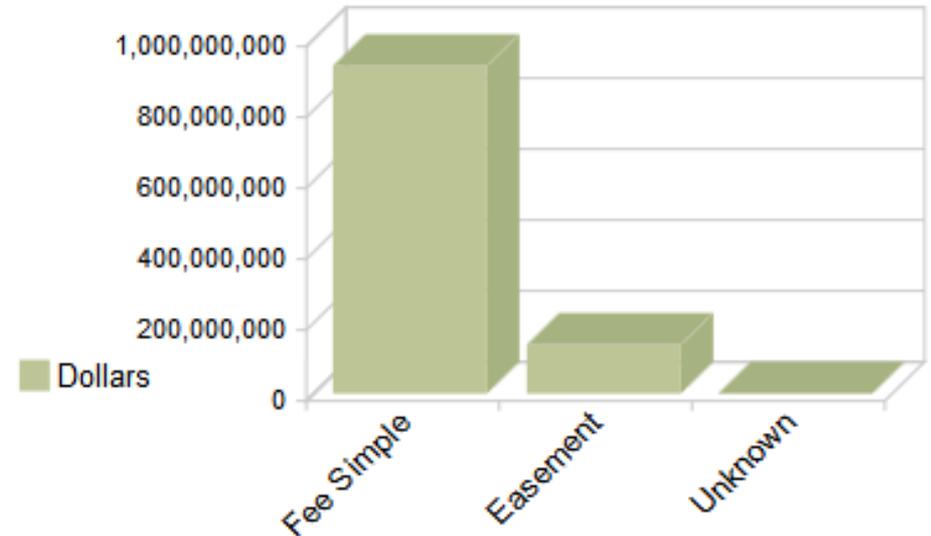
Following the Money: Ohio

By Purchase Type

Acres Protected 1998-2011



Dollars Spent 1998-2011



Measuring the Impact of a Local Ballot Measure

Missoula County, MT

Election Details

Date

11-07-2006

✓ Pass?

Status

Pass

Votes Yes

31,649

% Yes

71%

Votes No

13,225

% No

29%

Total Funds Approved

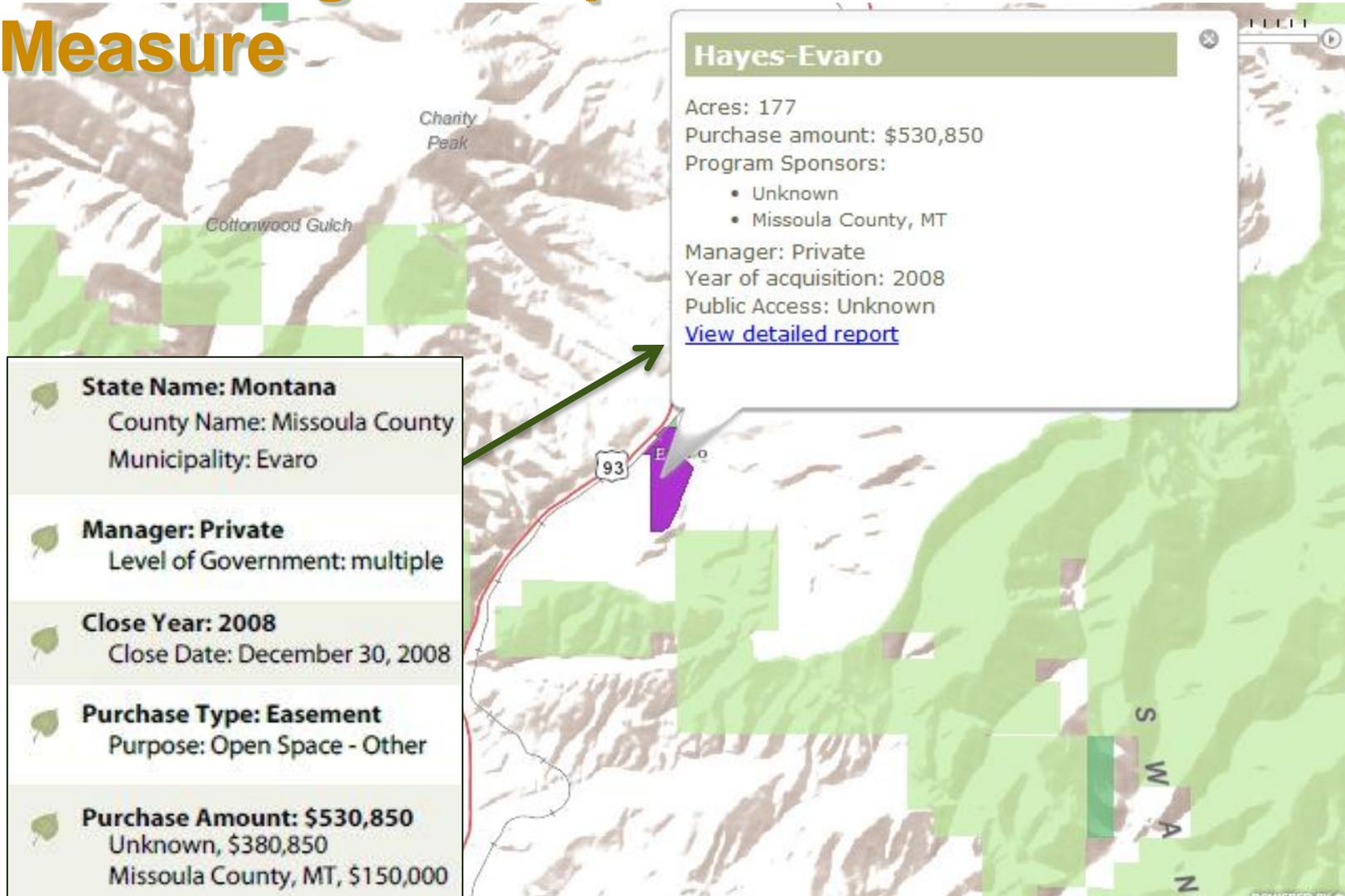
\$10,000,000

Conservation Funds Approved

\$10,000,000



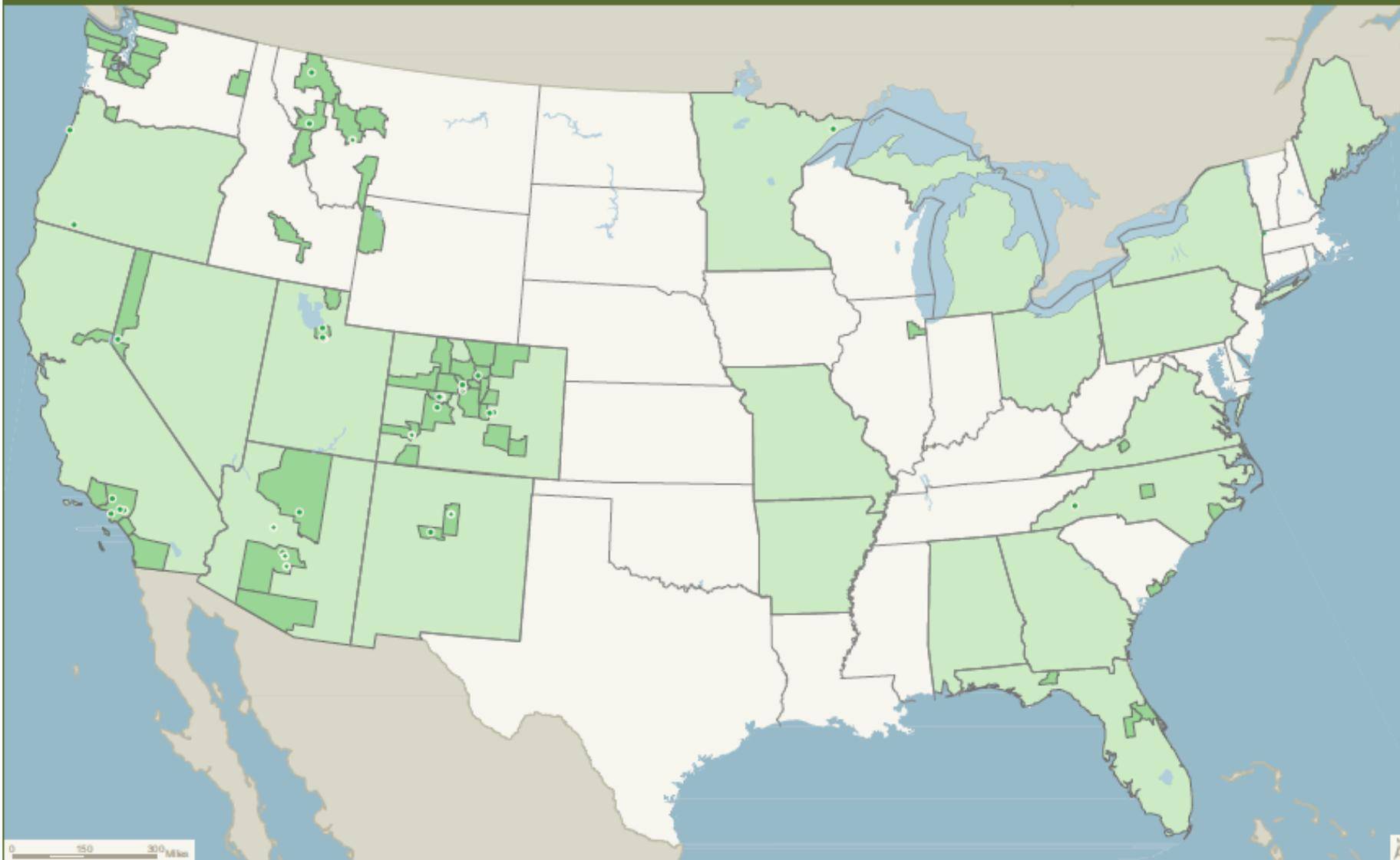
Measuring the Impact of a Local Ballot Measure





THE TRUST FOR PUBLIC LAND - LAND VOTE

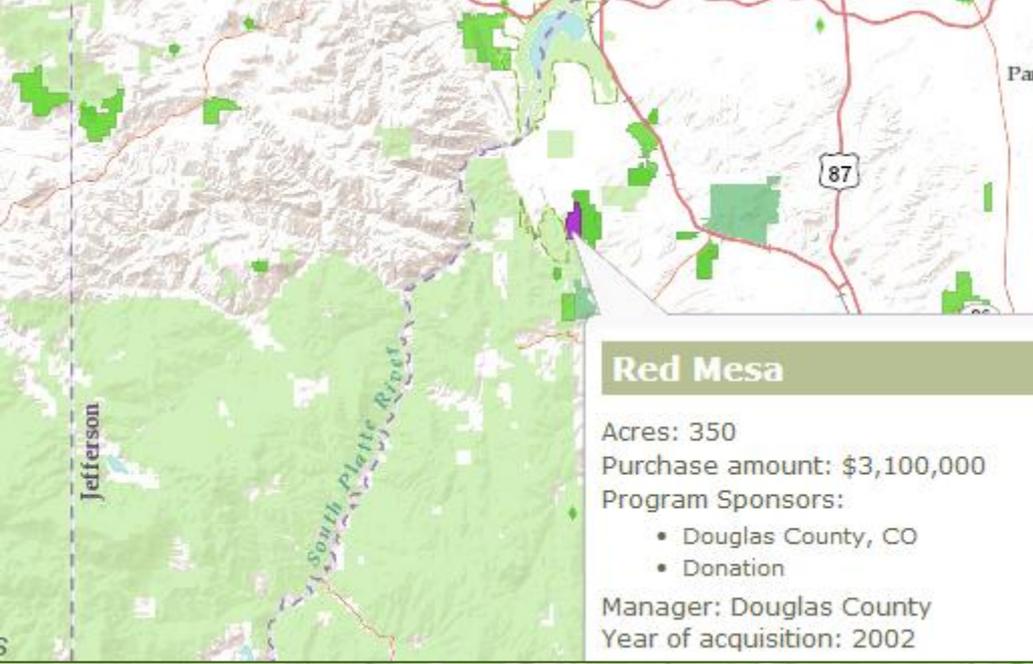
PASSED LAND CONSERVATION MEASURES THAT BORDER NATIONAL FORESTS



0 150 300 Miles

The Trust for Public Land conserves land for people to enjoy as parks, gardens, and other natural places, ensuring livable communities for generations to come.

- Municipality with Passed LandVote Measure
- County with Passed LandVote Measure
- State with Passed LandVote Measure



Red Mesa

Acres: 350
Purchase amount: \$3,100,000
Program Sponsors:

- Douglas County, CO
- Donation

Manager: Douglas County
Year of acquisition: 2002



Conservation Almanac: Accountability Tool

- Keeping track of the public funds being spent on land conservation.
- Agencies providing increased digital data
- Must ensure public trust and continued conservation funding



Conservation Almanac: Shaping Policy

What ideas should we consider to fund land conservation?

- “What are other places doing to achieve their conservation goals?”
- “Are there any benchmarks to inform our work?”
- “What policies and programs might help us make progress in reaching our conservation objectives?”

Don't reinvent the wheel



Conservation Almanac: Measuring Return on Investment (ROI) for Public Land Conservation Spending

- Each parcel contains one (or several) “land cover” types (ex/wetlands, riparian corridors, forested uplands, etc.)
- Each land cover type provides economic benefits (ecosystem service values) in the form of clean air, clean water, flood storage
- Tallying the benefits vs. the costs yields the ROI

RENEW GROWING GREENER

The Economic Benefits of Growing Greener

www.renewgrowinggreener.org

GROWING GREENER has done more than preserve Pennsylvania's land, water and air. It has contributed billions of dollars to the Pennsylvania economy in jobs, taxes, tourism, and other revenue. Renewing and expanding funding for Growing Greener is an essential investment in the state's long-term prosperity.

Provide Clean Water & Reduce Water Treatment Costs

Protecting drinking water sources assures the continued supply of clean drinking water at low cost and reduces or sometimes even eliminates water treatment costs. The City of Philadelphia has found that source water protection is the most viable and cost-effective means of handling present and emerging sources of pollution.

Remediating abandoned mine drainage reduces or avoids costly drinking water treatments downstream. More than \$11 million has been spent to bring clean water to residences and businesses within the West Branch Susquehanna River watershed whose drinking water has been polluted by abandoned mine drainage.¹

Reduce Local Taxes

Protecting farmland and open space saves local governments money. Development imposes costs on communities in the form of increased demand for schools, roads, water, sewer and other community services - costs that usually exceed related tax revenue. Recent experience in eight Pennsylvania townships found that on average, farmland and open space require \$0.15 in services for every \$1 paid in local taxes compared to \$1.15 in services for every \$1 paid in local taxes for the average home.

(continues...)

130 Locust Street, Suite 200, Harrisburg, PA 17101 | 717-230-8044 x 23

9-13-09

Conservation Almanac: Recent Publications

- *USFS: Recreation and Protected Land Resources in the United States, January 2013*
- Open Space Institute: *Retaining Working Forests: Eastern North Carolina, Feb 2012*
- Joint Legislative Audit and Review Commission: (Report to the Governor and General Assembly of Virginia): *Dedicated Revenue Sources for Land Conservation in Virginia, September 2012*

Coalition Building

- The Almanac has led to participation and leadership in other protected area efforts such as the National Conservation Easement Database (NCED) and the Protected Areas Database of the United States (PAD-US)
- www.conservationeasement.us
- [www.http://gapanalysis.usgs.gov/padus/](http://gapanalysis.usgs.gov/padus/)



NCED is an initiative of the U.S. Endowment for Forestry and Communities. Additional financial support has been provided by the Gaylord and Dorothy Donnelley Foundation, and the Knobloch Family Foundation.

My Workspace

Datasets

Maps

Galleries

People

Groups

Welcome Dennis Grossman

National Conservation Easement Database

Group Home

Profile

Bookmarks

Discussions

Members (14)

Supporting Documents



Dennis Grossman

Messages

New Notifications (1)

Create a Map

Import a Dataset

Create a Group

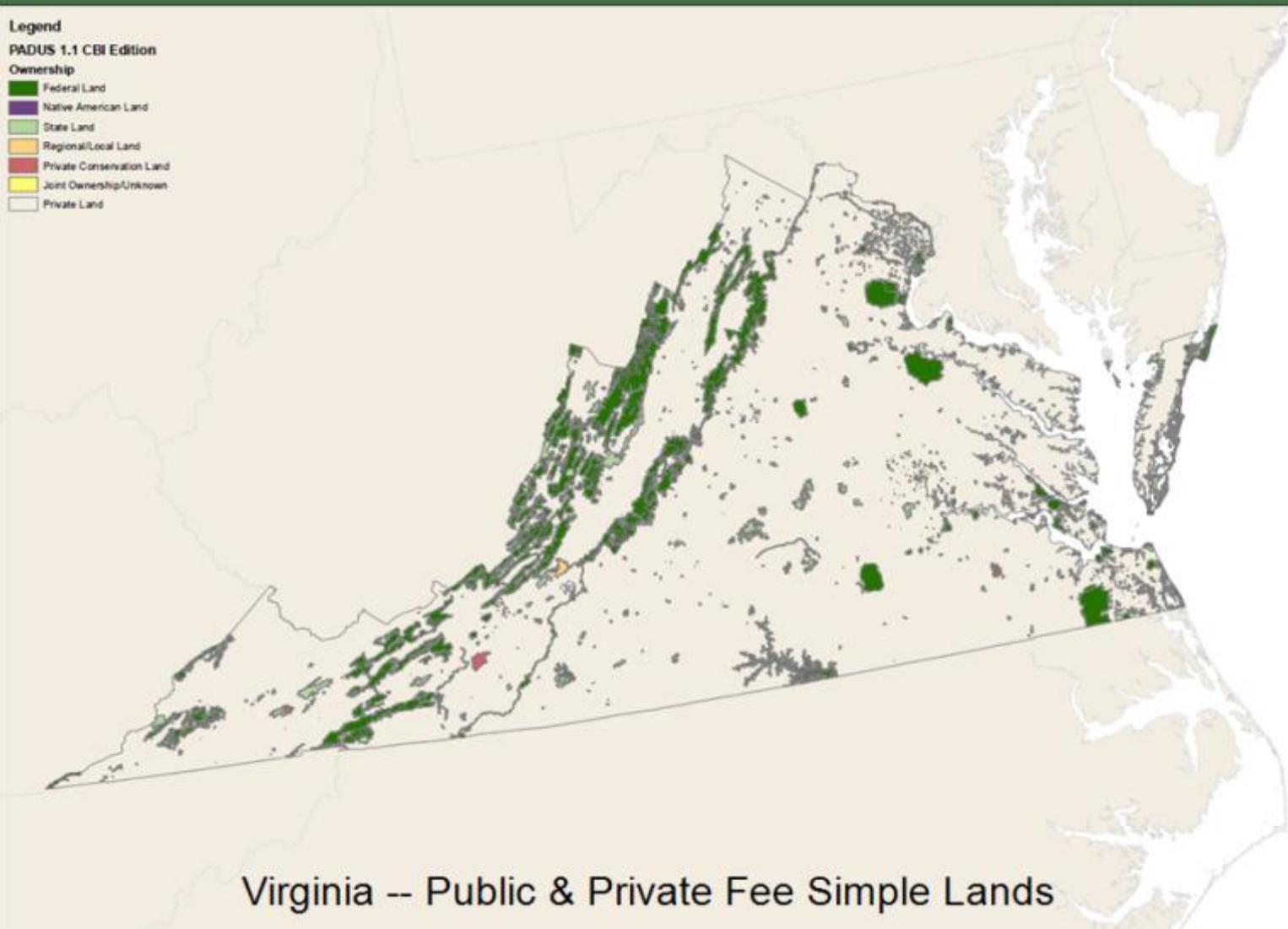
Create a Gallery

Legend

PADUS 1.1 CBI Edition

Ownership

- Federal Land
- Native American Land
- State Land
- Regional/Local Land
- Private Conservation Land
- Joint Ownership/Unknown
- Private Land



Virginia -- Public & Private Fee Simple Lands



My Workspace

Datasets

Maps

Galleries

People

Groups

Welcome Dennis Grossman

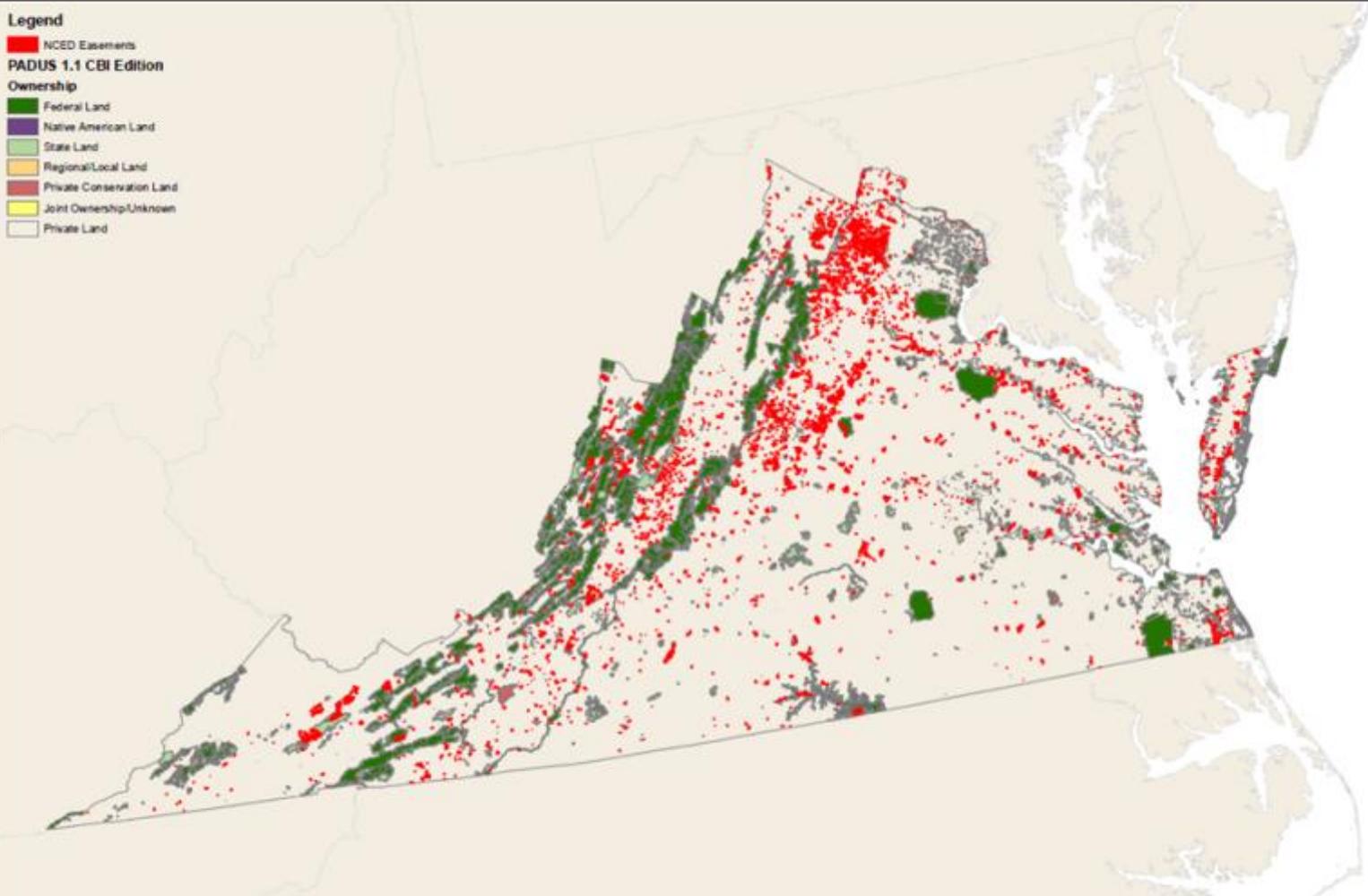
National Conservation Easement Database

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- Legend**
- NCED Easements
 - PADUS 1.1 CBI Edition**
 - Ownership**
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 - Private Conservation Land
 - Joint Ownership/Unknown
 - Private Land



Virginia -- Public & Private Fee Simple Lands & Easements

A Streamlined National Data Gathering Effort

- Centralize and standardize multiple protected lands collection efforts
- Revolutionize how public and private organizations collect and manage spending and spatial data
- Pool resources amongst other conservation groups like Ducks Unlimited, USGS to leverage philanthropic support
- GOAL: Establish a system where this data is accurately kept and reported in real time by public and private entities



Jackie Corday

City of Missoula, Montana
Open Space Program Manager



Missoula's Open Space Program: Making Missoula a Better Place

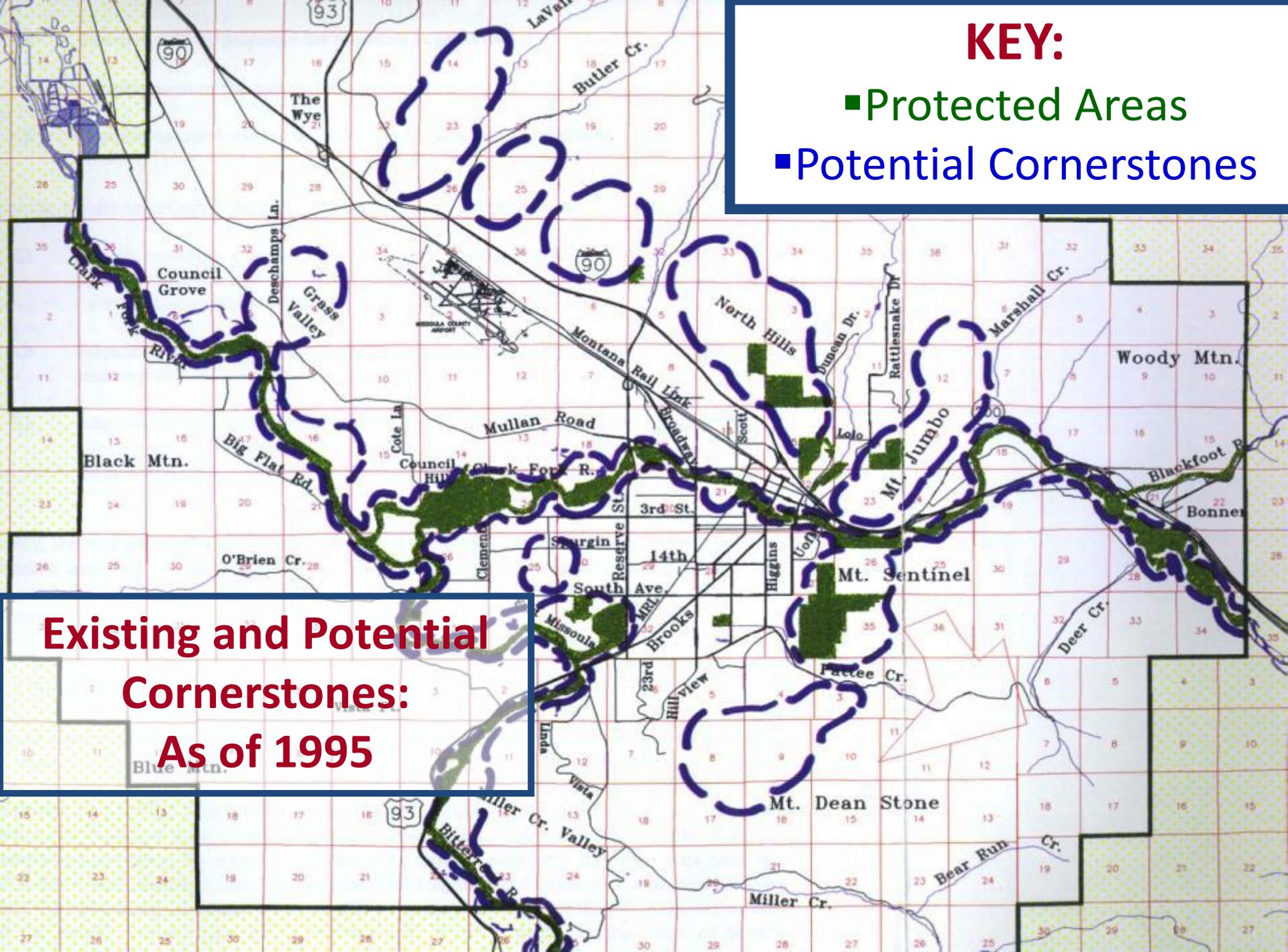
Open Space Planning

- 1995- City adopted for the 1st time the **Missoula Urban Area Open Space Plan**
- **The Vision** – “Provide open spaces within our urban core and throughout the edges, thereby **keeping us linked with nature.**”
- To “enrich our urban experience and **remind us of the natural setting** which sustains us individually and as a community.”

KEY:

- Protected Areas
- Potential Cornerstones

**Existing and Potential
Cornerstones:
As of 1995**



What does it mean for private landowners to be designated within a Cornerstone?

- That it has open space values worthy of protection
- The plan is a guideline – Cornerstone areas are not equal to zoning
- Open space will only be preserved on a **voluntary basis** – thus it is up to each individual landowner to decide .



- 1995- \$5 Million **City** Open Space Bond passed by City voters in November – **66%** voted YES (an earlier County wide bond in 1994 had failed to pass).
- This would result in about **\$15-20** extra property taxes per residence.
- Thus far, **3,252** acres of land purchased by the City; **380 acres preserved via conservation easements (~10%)**

City **Open Space Advisory Committee** – 12 citizens meet monthly to review projects. They make recommendations to expend Open Space Bond funds to City Council. At least 1, sometimes 2, USFS employees are on the committee – they make great members!



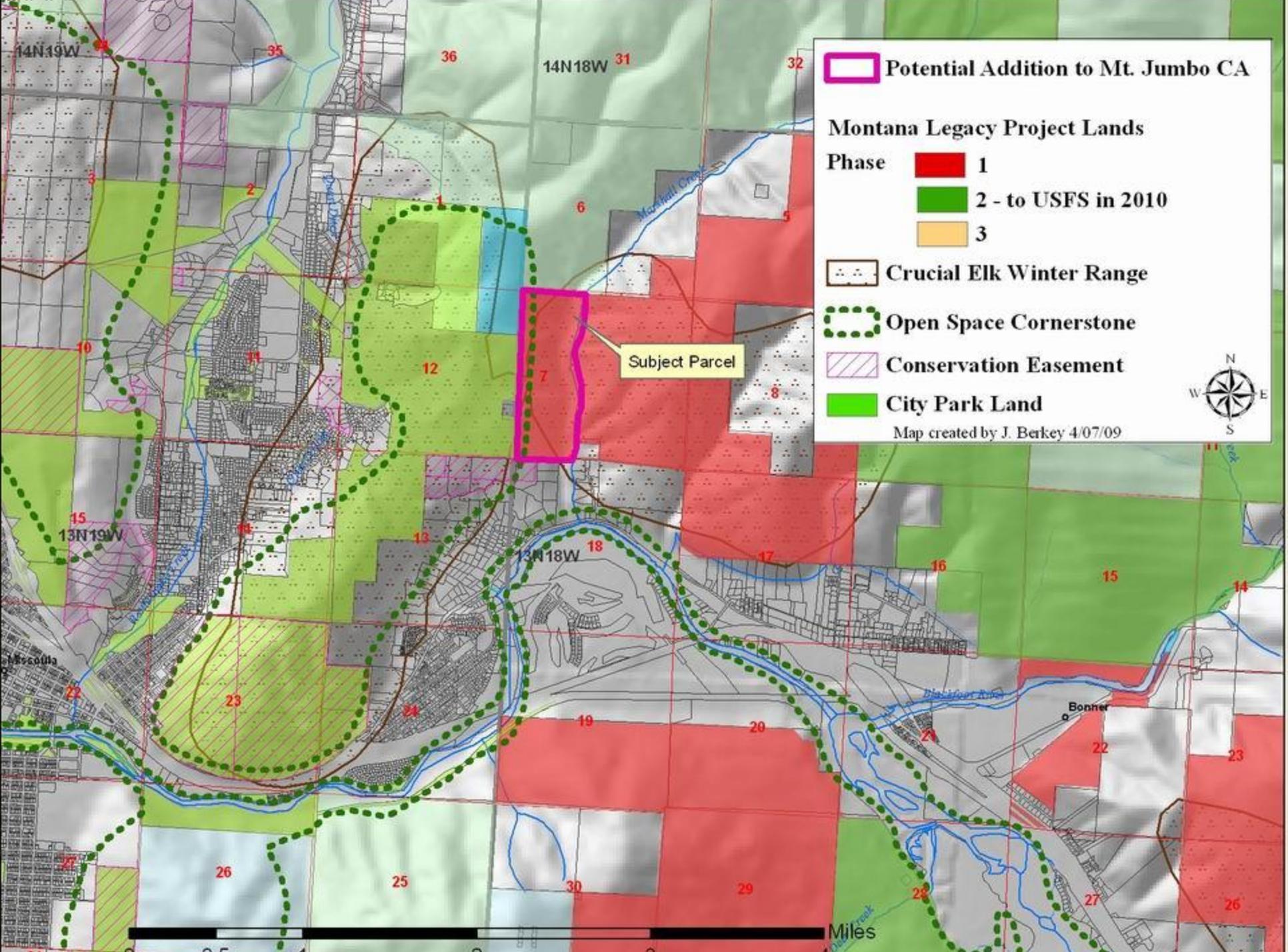
Cornerstone: Mount Jumbo

\$2 million O.S. Bond Funds & \$1.3 million raised by partners to purchase 1,465 acres

Partners – Five Valleys Land Trust, MT FWP, USFS







 Potential Addition to Mt. Jumbo CA

Montana Legacy Project Lands

- Phase  1
 2 - to USFS in 2010
 3

 Crucial Elk Winter Range

 Open Space Cornerstone

 Conservation Easement

 City Park Land

Map created by J. Berkey 4/07/09



Subject Parcel

Miles

Marshall Canyon/East Mt. Jumbo 220 acres purchased from The Nature Conservancy as part of the MT Legacy project

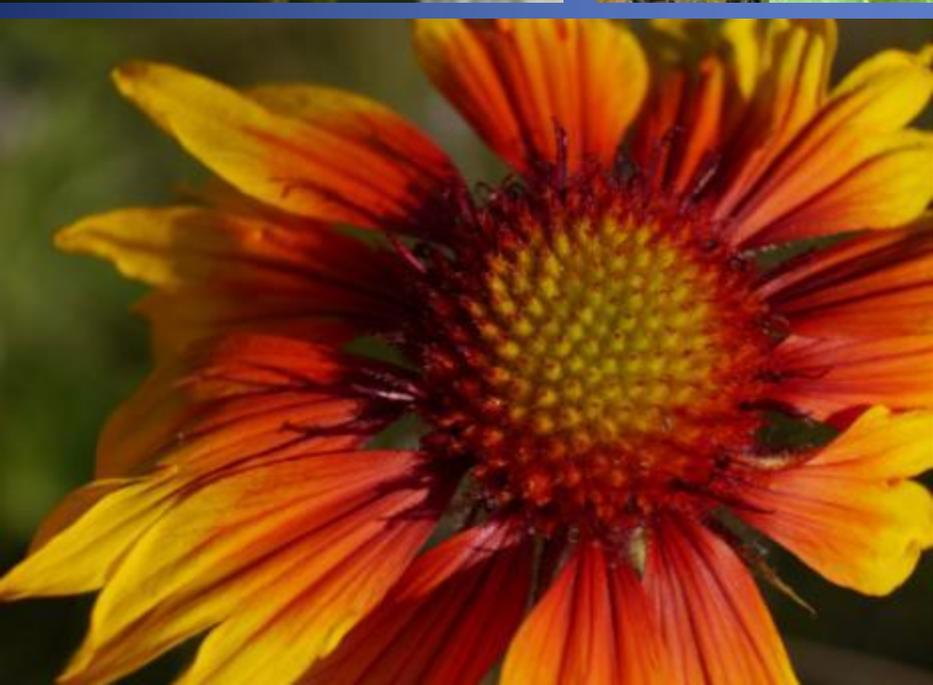




USFS













Cornerstone: Mt. Sentinel Cox Property
\$175,000 to purchase 473 acres





Mt. Sentinel Backside

- 475 Acres purchased in partnership with Five Valleys Land Trust, USFS, & Trust for Public Lands in 2003
- 35 acres deeded to City and 440 to the USFS
- \$100,000 from City Open Space Bond and \$650,000 from LWCF

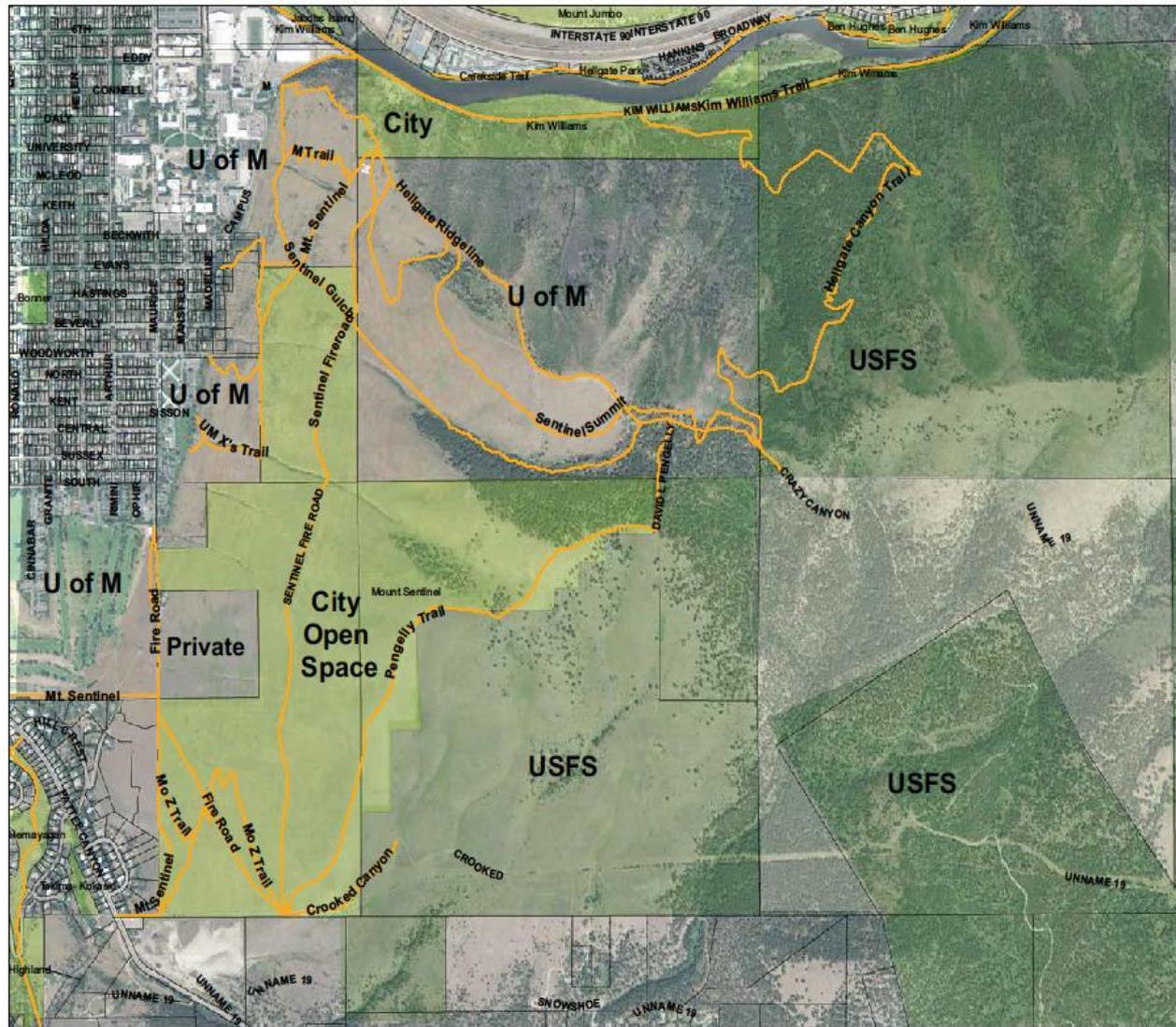


Map of Public Lands Ownership of Mt. Sentinel

Mt. Sentinel Ownership

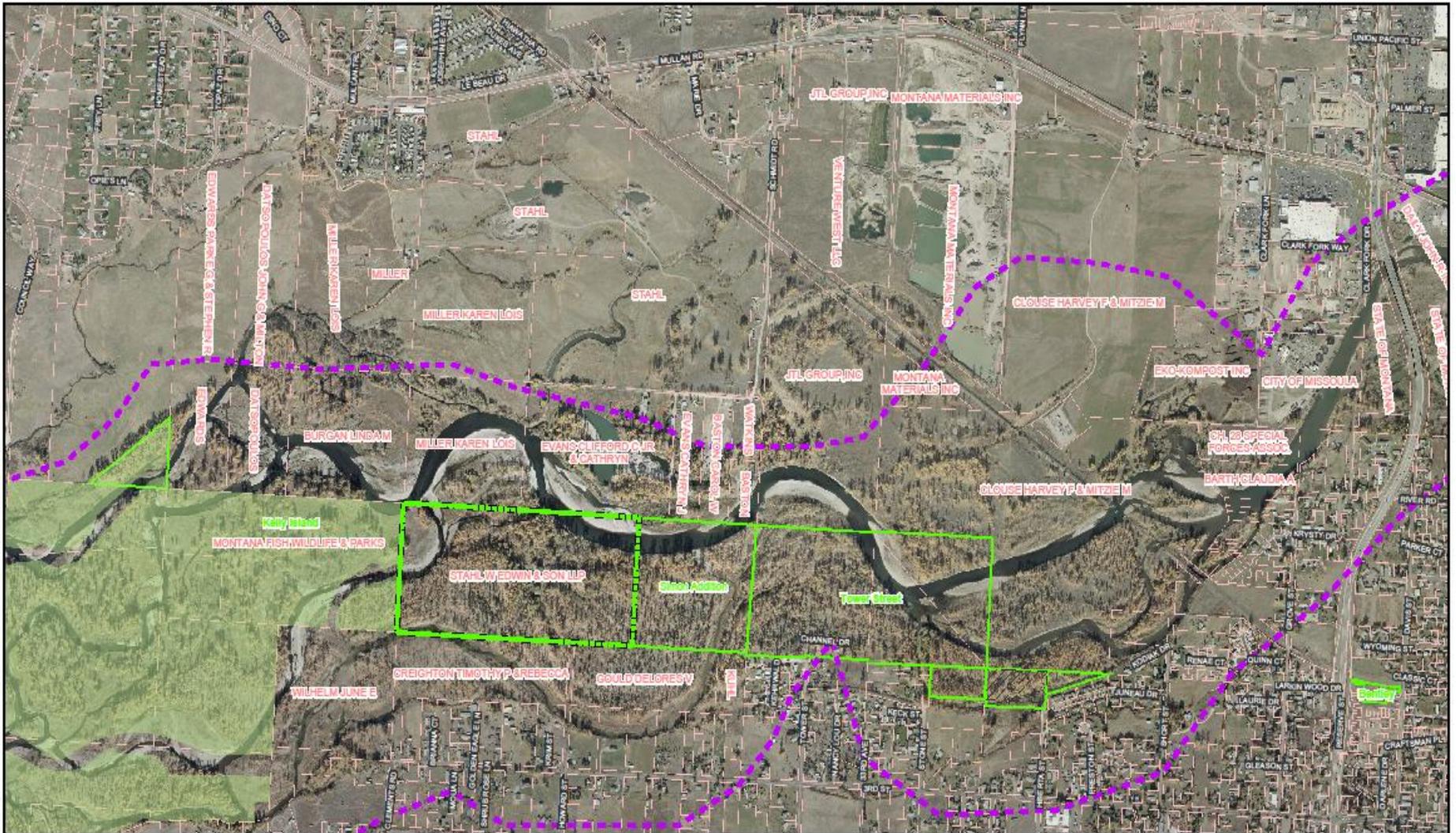


Legend	
	Non-Motorized Trail
	Pedestrian Only Trail
	City Parks
	Property Boundaries
	USFS
	State



Clark Fork River Corridor Tower Street Conservation Area

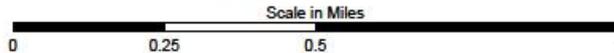




Missoula Open Space Cornerstones

The Clark Fork River: Reserve Street to Kelly Island

- Legend**
- Open Space Cornerstones
 - Montana Fish Wildlife and Parks
 - City and County Parks and Open Space
 - Parcel Boundaries
 - Conservation Easements



Sources: The Missoula County Surveyor's Office, Missoula Parks and Recreation, and The Montana State Library Natural Resource Conservation Service. Projected to NAD83, State Plane, Montana 2500

The ownership data on this map does not constitute a legal survey; inaccuracies exist with both the parcel boundaries and the ownership data; when seeking the definitive description of real property, consult the deed recorded at the local county courthouse.
Parcel data updated in October, 2005.



Cartography by Jed Little
Missoula County Weed District
December, 2005

May 2005 High Water





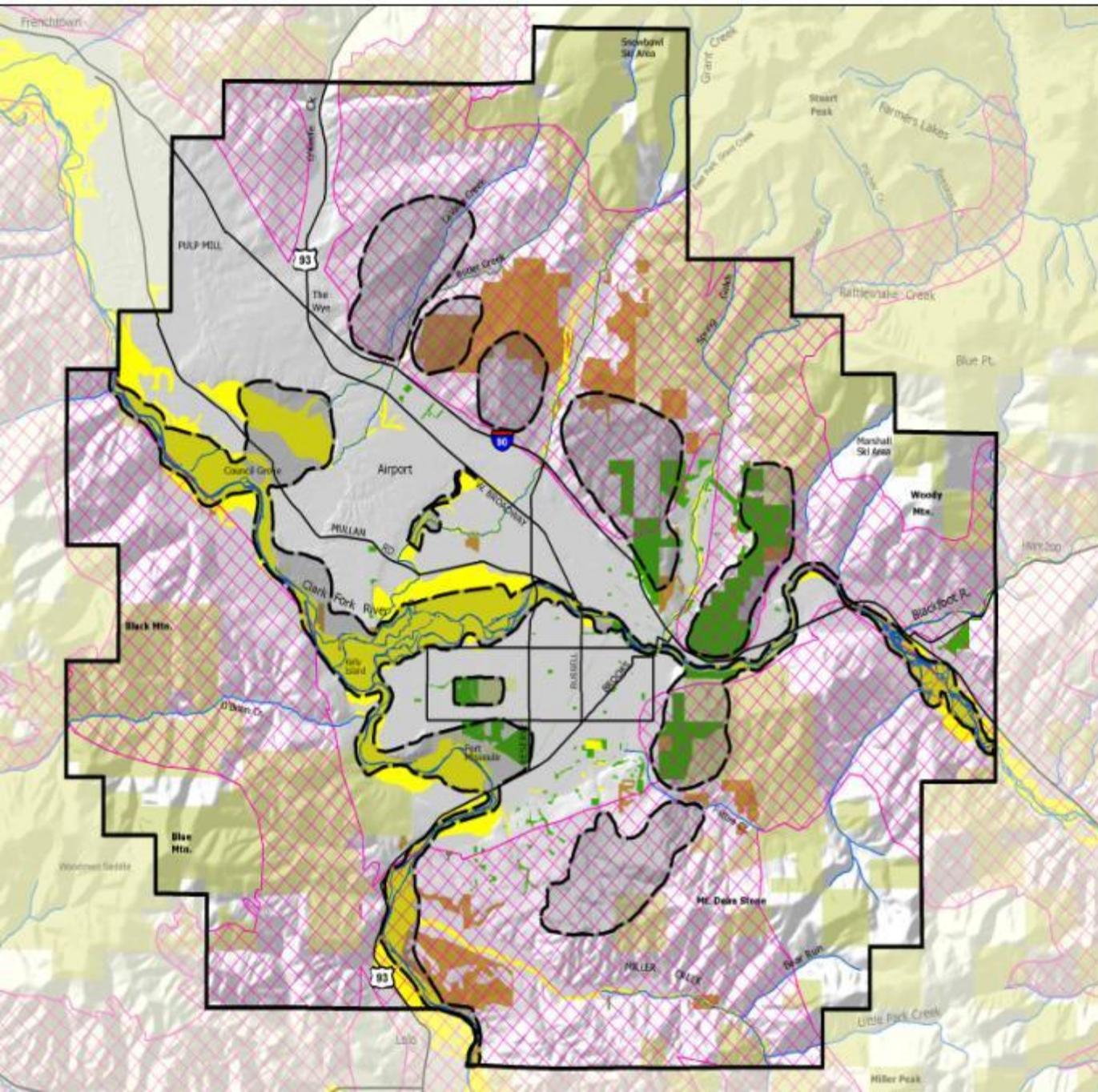
- September 2006 – **updated Open Space Plan** adopted by Council after a year-long public process



- November 2006 - \$10 Million **County** Open Space Bond passed by voters with 70% “yes” vote

COMPOSITE OF NATURAL RESOURCES

Map C



LEGEND

-  Open Space Plan Boundary
-  Open Space Cornerstones
-  Perennial Streams
-  Major Roads
-  City or County Park Land
-  State and Federal Lands
-  Conservation Easements & National Wildlife Federation
-  FEMA 100-Year Regulatory Floodplain
-  Ungulate Winter Range (Moose, Elk, Mule Deer, Big Horn Sheep & White-tailed Deer)



Scale: 1 inch represents 10,000 feet

Sources: City of Missoula Parks and Recreation, City of Missoula Engineering, Missoula Office of Planning and Grants, Montana Natural Heritage Program (NRIS), Montana Fish, Wildlife & Parks, & NRCS, 100-year Floodplain - FEMA 1988

City Open Space Acquisitions 2007-2012

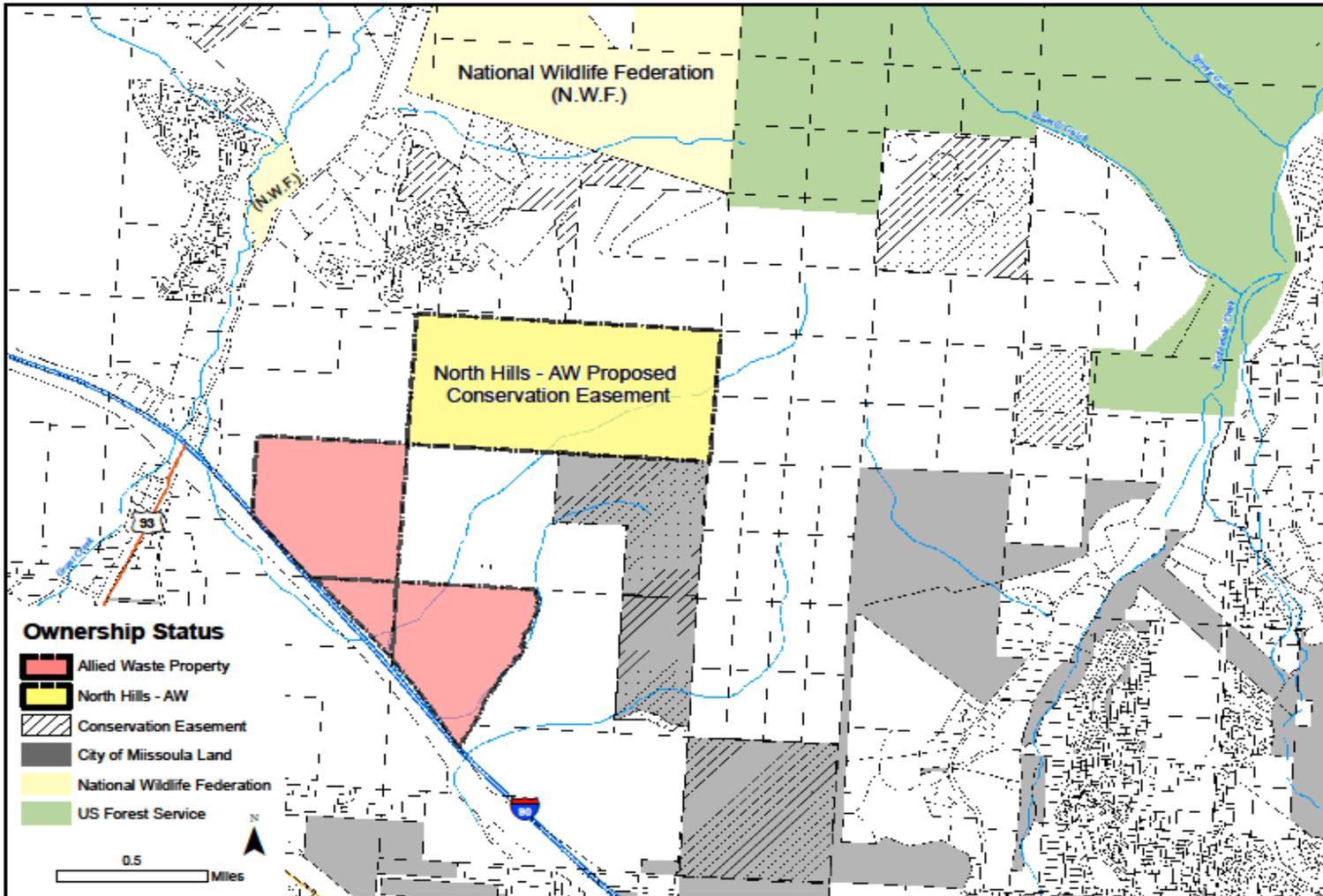
2841 acres thus far

2351 acres in conservation easement

490 acres acquired in fee title (~15%)

4 miles of bike/ped trail

\$2,641,150 spent thus far to preserve land or acquire
trail easements valued at approximately **\$9,279,000**



North Hills – Allied Waste grants C.E. to FVLT on 304 acres



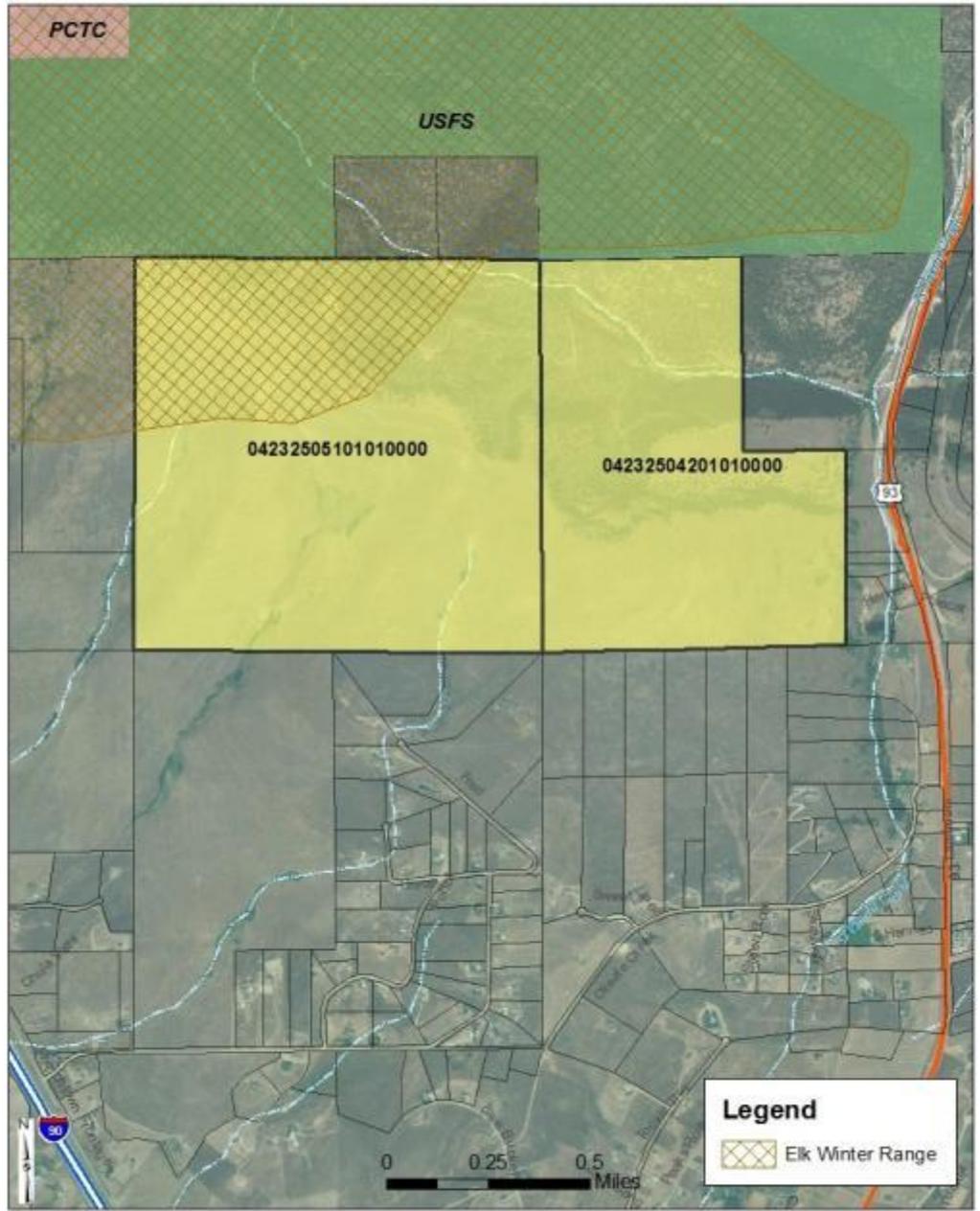








Deschamps Partnership Property Missoula County, Montana



Please Note: This map is intended as a general visual reference only. Refer to the full legal description for details.

Deschamps Ranch – Joint City/County project C.E. granted to RMEF - 1036 acres NW of WYE

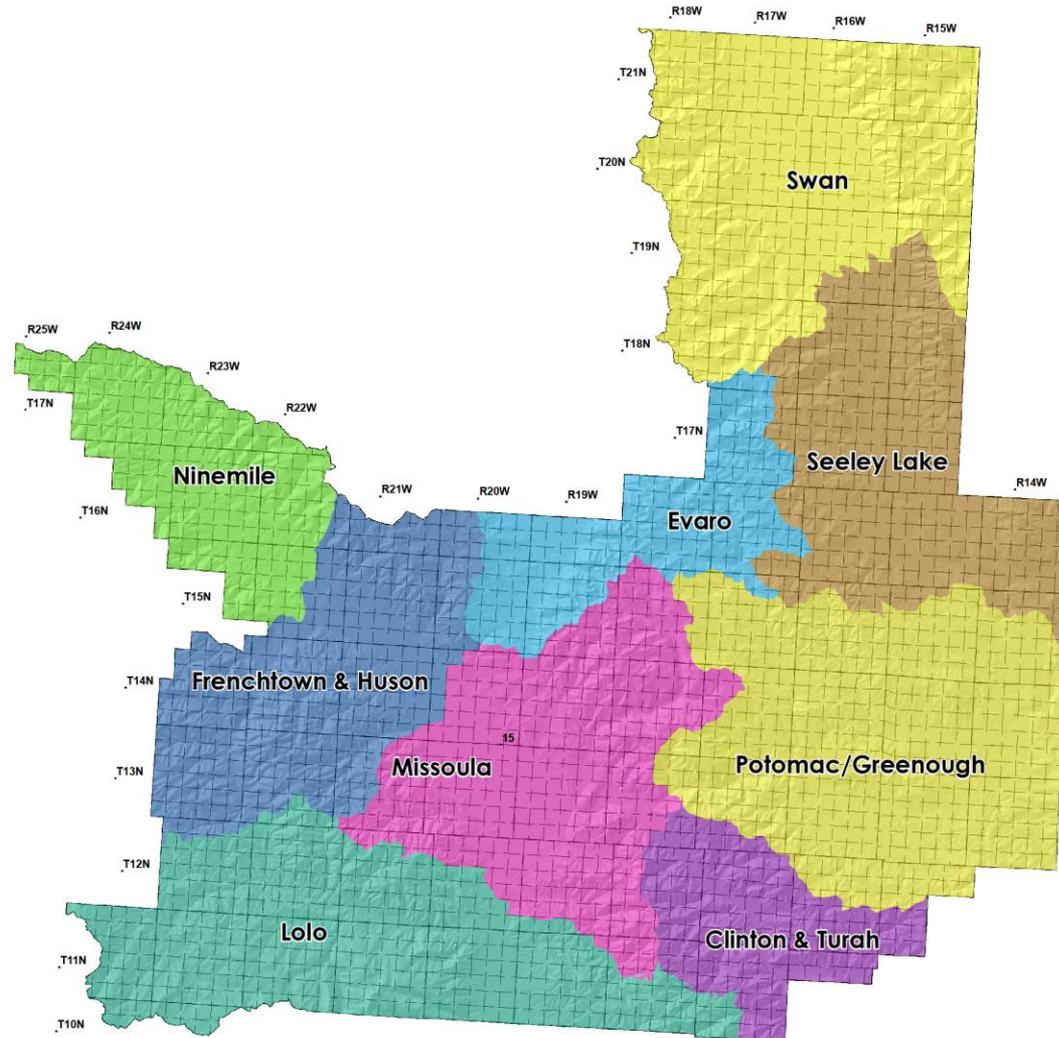








Missoula County – just under 2,600 square miles



Missoula County Planning Regions



Legend	
Planning Regions	Missoula
PLNRGN	Ninemile
	Potomac/Greenough
	Seeley Lake
	Swan
	Lolo
	Clinton & Turah
	Evaro
	Frenchtown & Huson
	Lolo
	TNRG_PNTLABEL selection



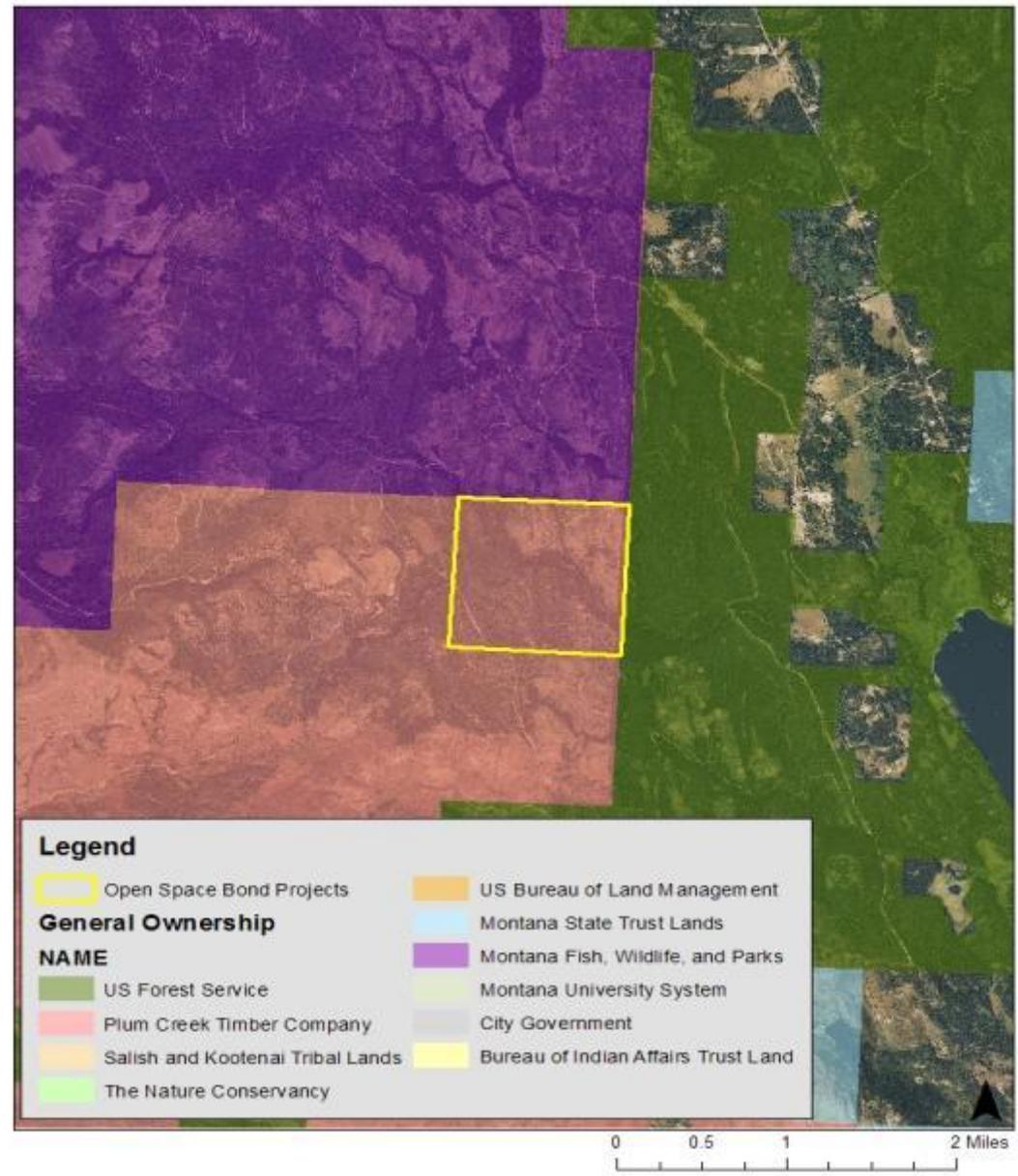
This map created by Missoula County Rural Initiative staff, June 7, 2007. All property and other boundaries are approximate. The information on this map is for reference only. No reliance should be placed on the completeness or accuracy of the information without first consulting original records and generally verifying the accuracy of any and all information displayed on this map.

640 acre parcel owned by Plum Creek Timber purchased and transferred to MT Fish Wildlife & Parks

Became part of Marshall Creek Wildlife Mgt Area

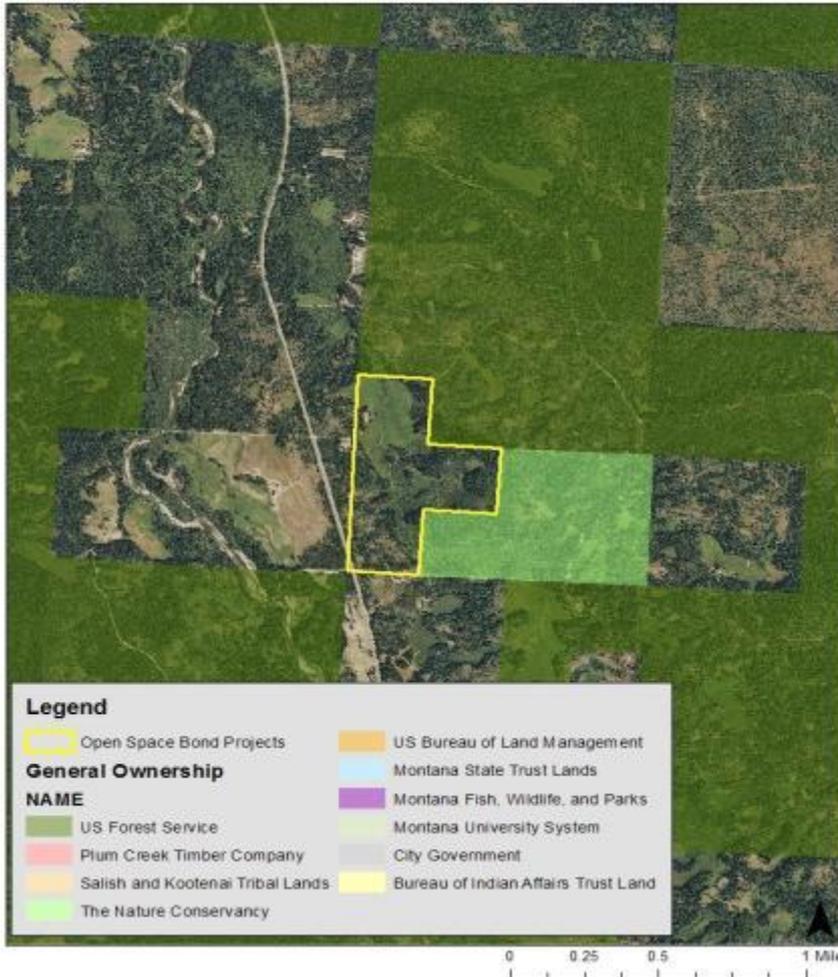
Major conservation values, including grizzly bear habitat

Map of Deer Creek Bond Project



Conservation easement granted to Vital Ground Foundation on 160 parcel in the Swan Valley

Map of Condon Creek Bond Project



Protects grizzly bear and other wildlife habitat, water quality, working land, and open and scenic landscapes



Local Open Space Planning, and O.S. bonds in particular, can have a major positive impact for federal and state public lands.

Thousands of acres of open spaces have been preserved in Missoula County that are adjacent or close to federal and state public lands.





Don Outen, AICP

Baltimore County, Maryland
Department of Environmental
Protection and Sustainability

Planning for Growth & Open Space Conservation
City & County Open Space Programs
April 24, 2013

Growth & Open Space Conservation Planning in Baltimore County, MD



Donald C. Outen, AICP

Natural Resource Manager, Sustainability

Baltimore County, MD

Dept. of Environmental Protection &
Sustainability

410-887-3981

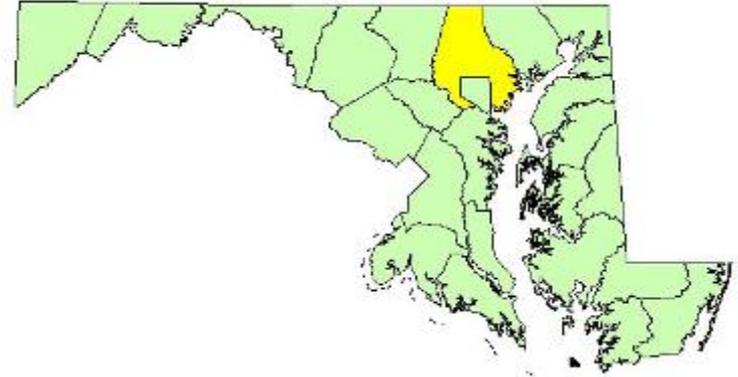
douten@baltimorecountymd.gov

**MD Sustainable Forestry Council
Roundtable on Sustainable Forests**

www.Linkedin.com/in/DonOuten

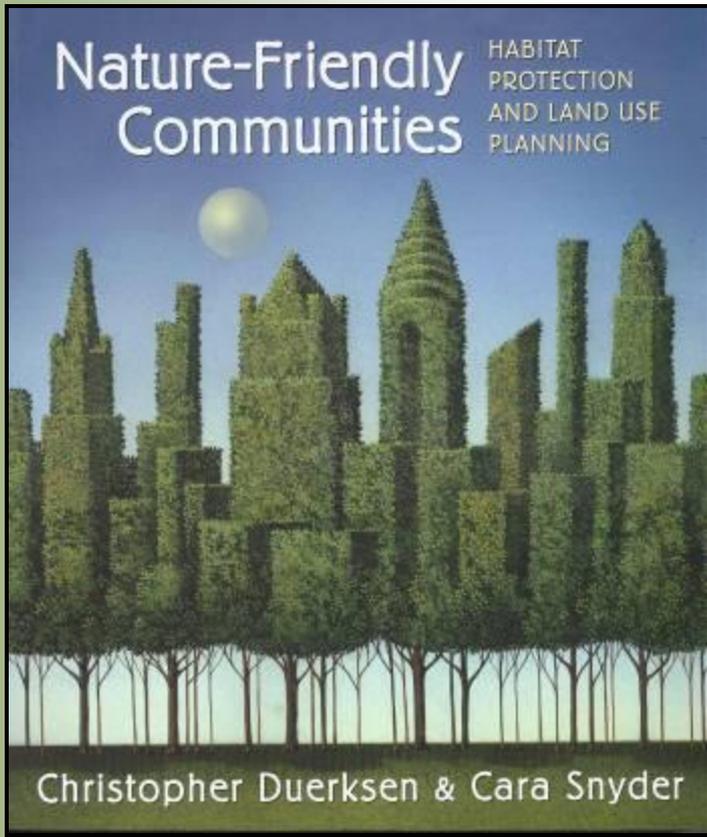


Baltimore County, MD



- Maryland's 3rd largest county:
 - 610 sq. mi.
 - 817,455 (2012 Census est.)
- No incorporated municipalities (31 Census-designated Places)
- Water & wastewater services purchased from Baltimore City
- Elected County Executive & 7 member County Council
- 4th best managed urban county in U.S. (*Governing*, 2002)

Baltimore County - what others have said...



“Baltimore County, Maryland, has one of the most ambitious and successful land management and environmental protection programs in the country. An impressive combination of tools and strategies....”

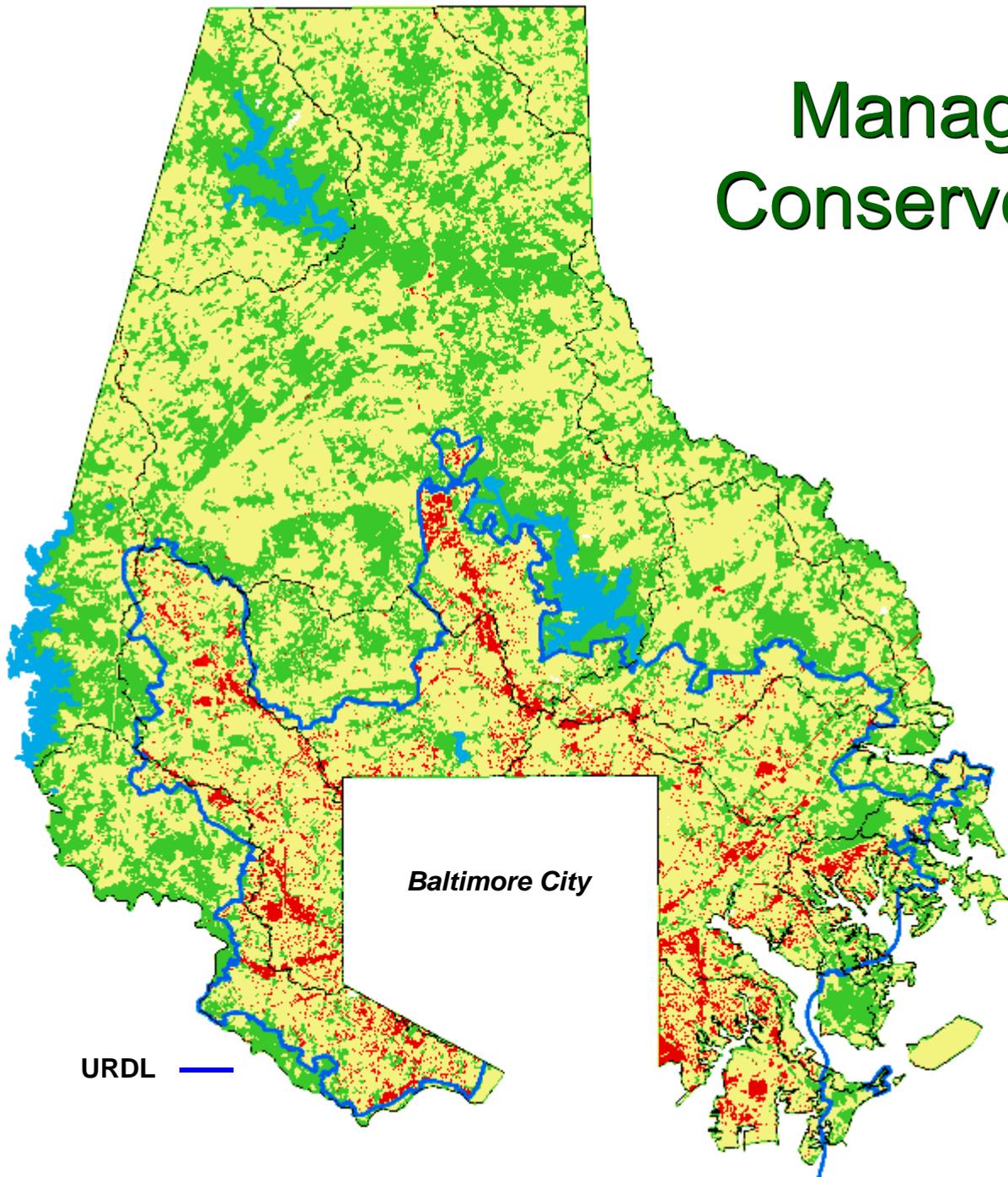
Baltimore County is in many ways a model for local governments everywhere when it comes to protecting nature and biodiversity.”

Duerksen and Snyder, 2005.

Nature-Friendly Communities: Habitat Protection and Land Use Planning, The Consortium on Biodiversity & Land Use. Island Press

Managed Growth, Conserved Resources

90% of the year
2000 population
lived inside the
urban growth
boundary on only
1/3 of the land



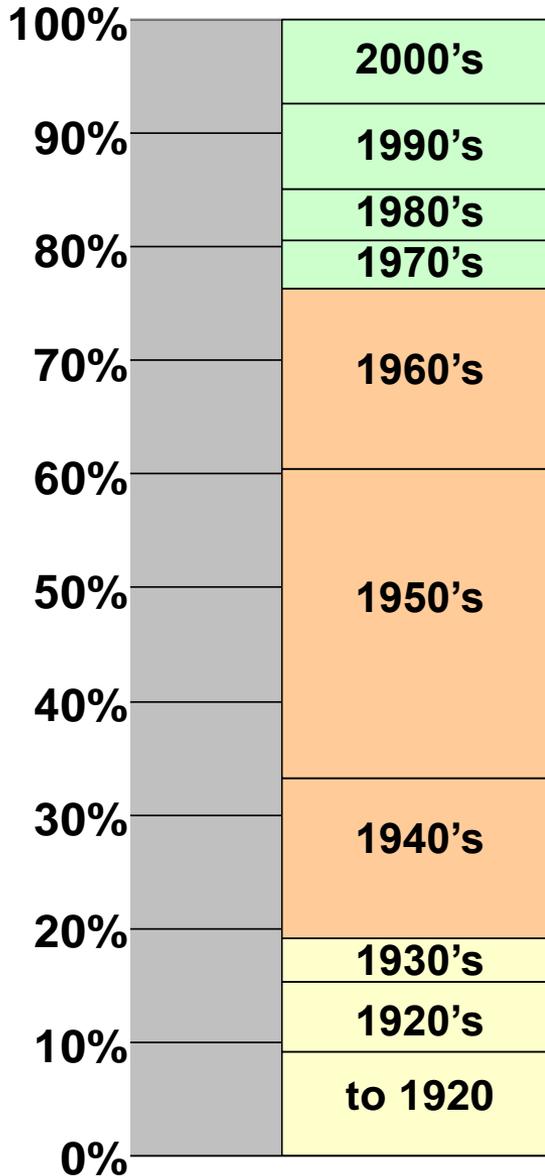
URDL —

Baltimore City

Legend

- Water and Wetlands
- Impervious
- Forest
- Fields and Lawns

Population Growth



Year	Population	Increase	% Change
2010	815,755		
2000	754,292	61,463	8.1%
1990	692,134	62,158	9.0%
1980	655,615	36,519	5.6%
1970	621,077	34,538	5.6%
1960	492,428	128,649	26.1%
1950	270,273	222,155	82.2%
1940	155,825	114,448	73.4%
1930	124,565	31,260	25.1%
1920	74,817	49,748	66.5%

1970 – 2010 Slowing growth

- Advanced planning & environmental management

1940 – 1970 Rapid suburban growth

- 57% of total growth + 465,252
- Planning to accommodate growth; no environmental programs

1920 – 1940 Early 20th Century growth

- No land use planning or environmental programs

Cumulative % of Year 2010



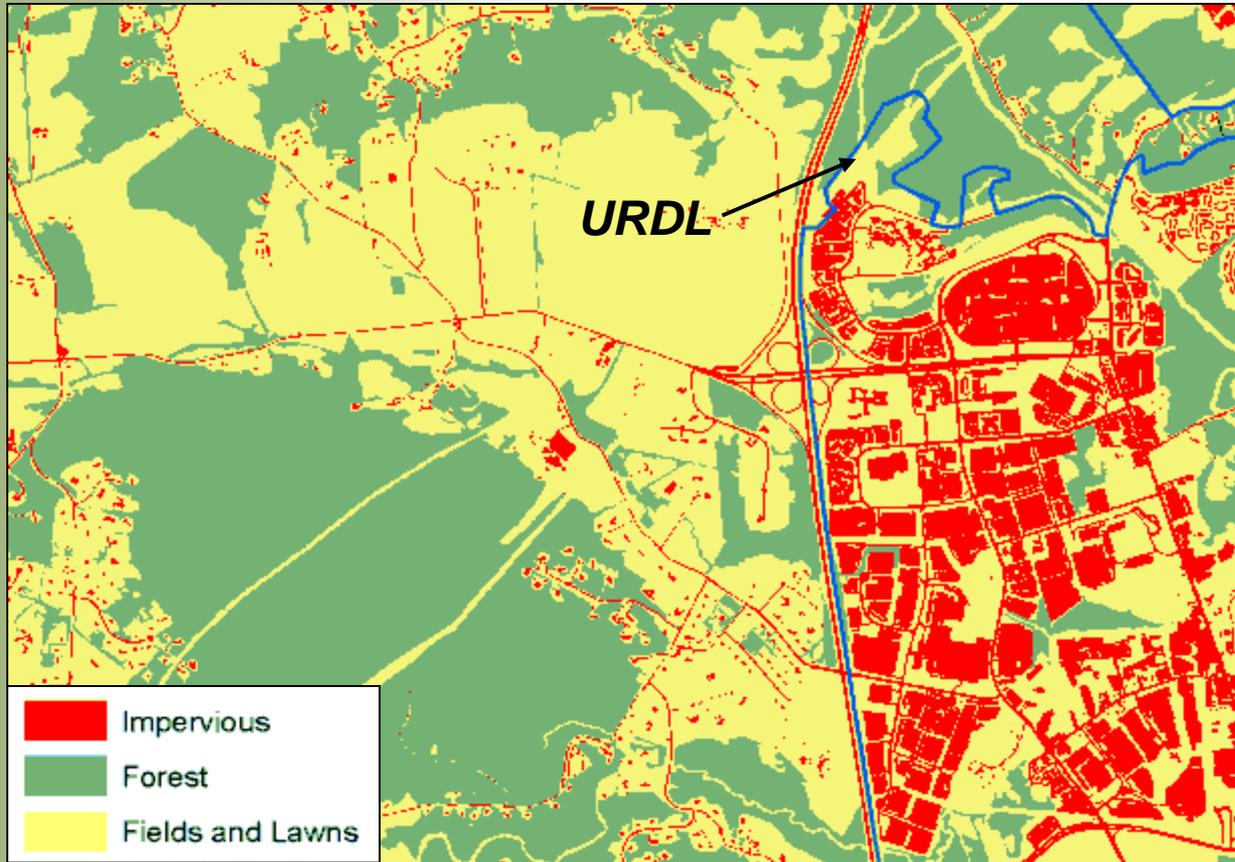
Elements of Growth & Conservation Planning

- Urban Growth Boundary
- Master Planning & Visioning
- Resource Conservation Zoning
- Land Preservation
- Development Regulations
- Planned Development
- Environmental Management

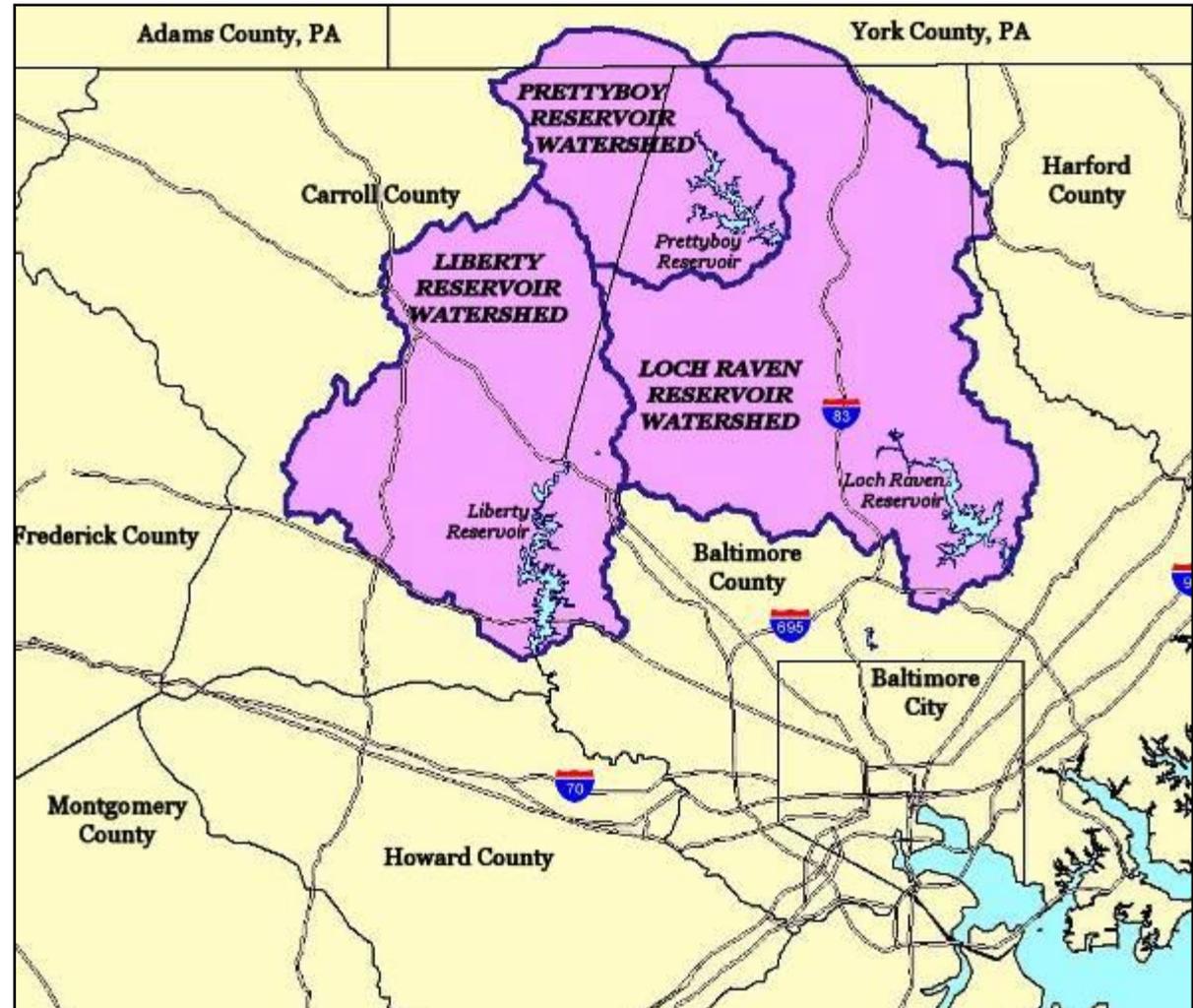


Urban Growth Boundary

Urban-Rural Demarcation Line (URDL), 1967



Protecting Drinking Water Sources

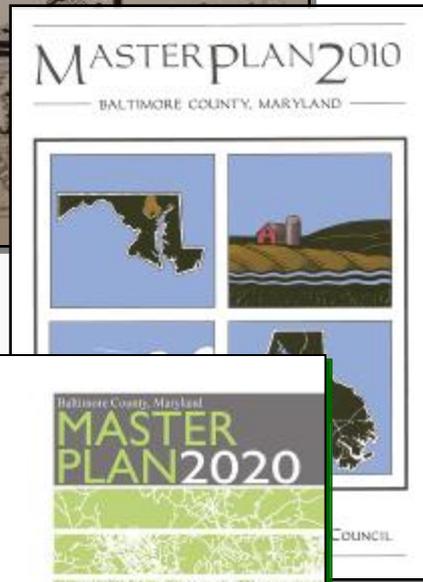
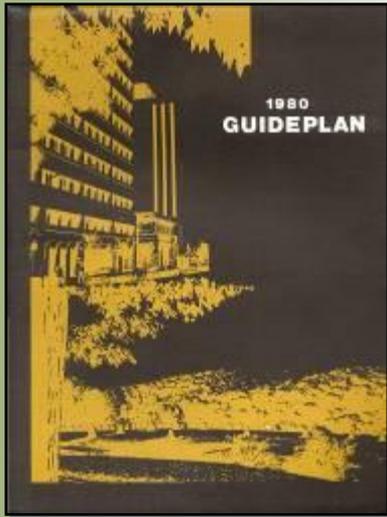


The Baltimore water supply system:

- largest public water system in MD
- serves 1.8 million (1/3 of MD's population)
- water to the City and parts of 5 counties

63% of the region's 294 sq. mi. of reservoir watersheds are in Baltimore County

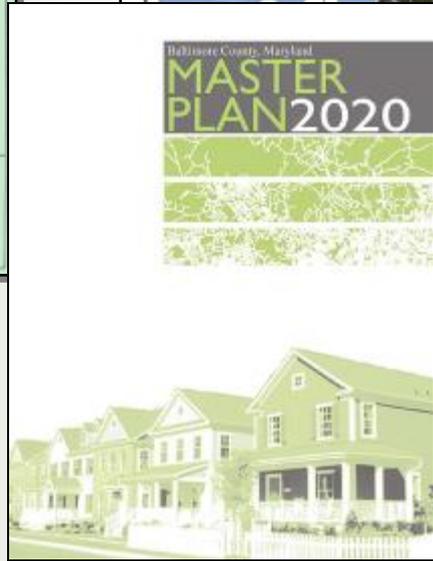
Master Planning & Visioning



“...there is certainly not any current need for urban development in the County’s rural areas. These lands are a legacy for the future....”

“The three water reservoirs ... are threatened by the prospect of development as they have never been before... It is imperative that the reservoirs’ watersheds be preserved.”

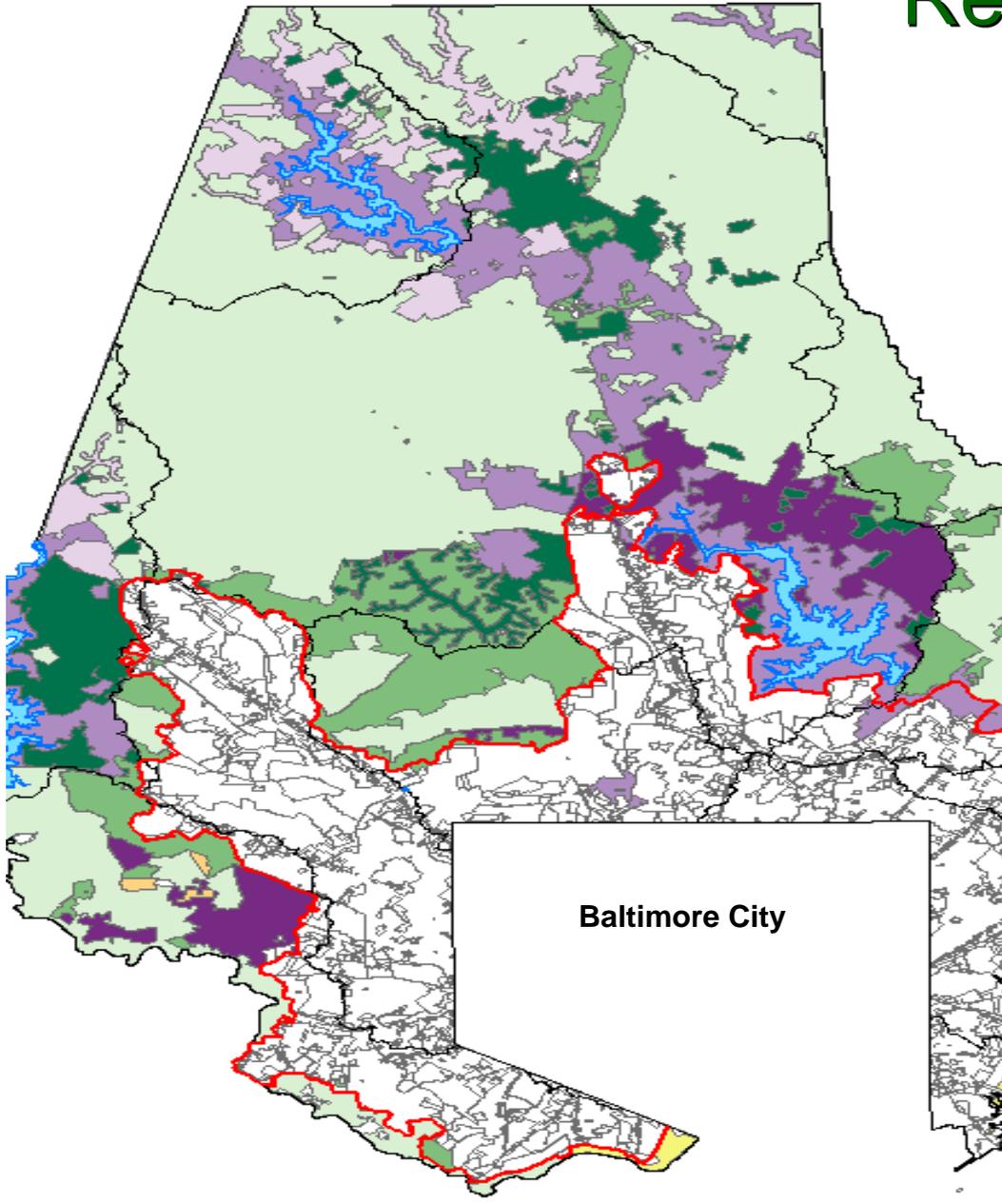
1980 Guideplan (1972)

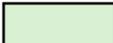
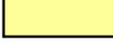


Adopted October 13, 1975
Baltimore County Planning Board

Resource Conservation (RC) Zoning

- Resource Conservation (RC) zoning, 1975
- Quadrennial *Comprehensive Zoning Map Process* (CZMP)
- RC zones cover >169,000 acres (~93%) of 182,500 acres of reservoir watersheds



	RC 2 (1 du/50 ac)
	RC 4 (1 du/5 ac)
	RC 5 (1 du/2 ac)
	RC 6 (1 du/5 ac, net)
	RC 7 (1:25 if >50 ac)
	RC 8 (1:50 >50 ac)
	Ches. Bay Critical Area
	URDL

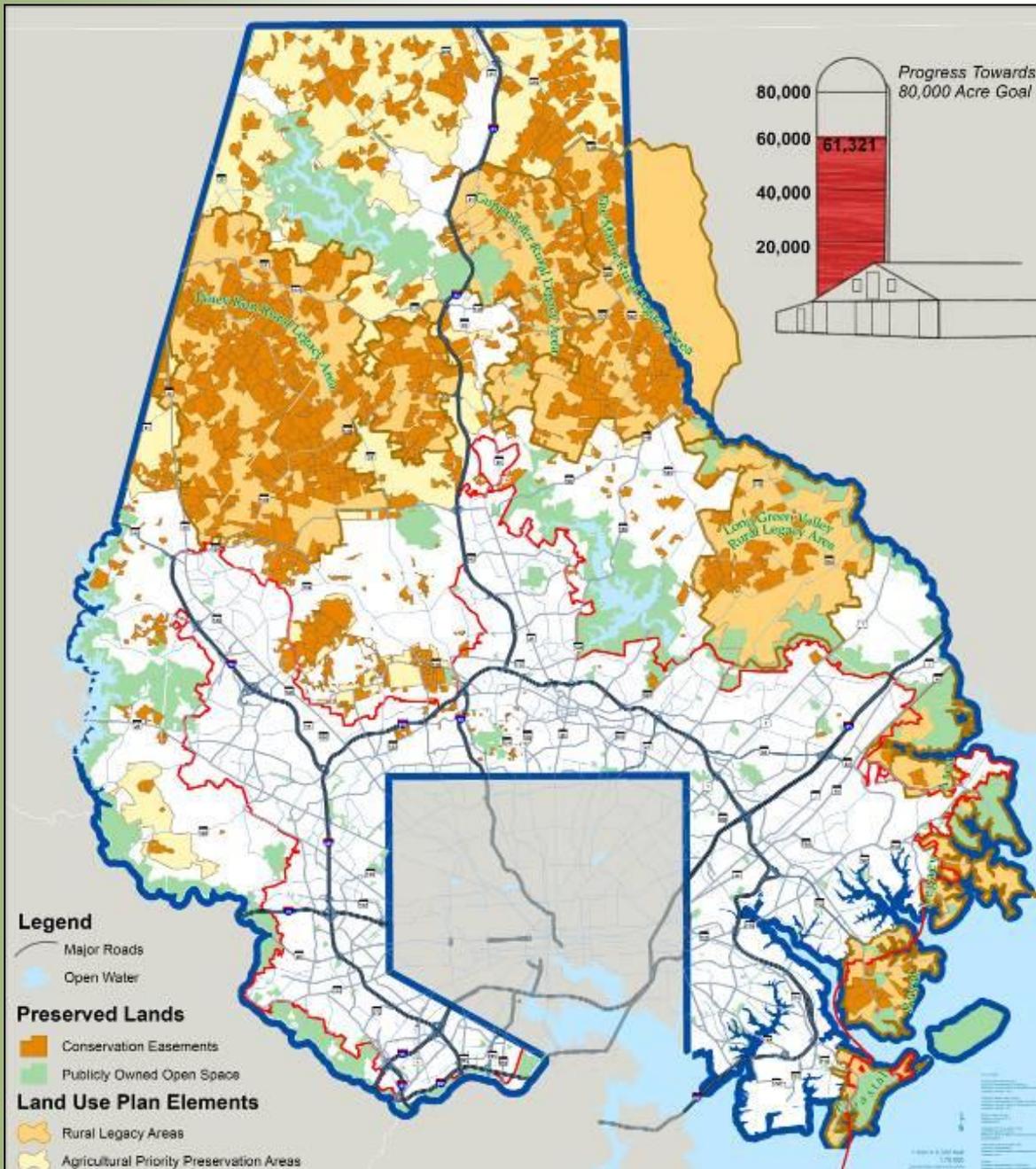
Land Preservation

because zoning can be changed

Long-term protection:

- agricultural industry
- streams & reservoirs
- forests
- biodiversity
- viewsheds and historic resources

**77% of 80,000
acre goal was met
by 2013**



Development Regulations for Streams and Forests

County Stream Buffer Regulations (1989) and the MD Forest Conservation Act (1991) have protected most non-tidal wetlands and 68% of forests on land development sites.



Red Run stream buffer,
Owings Mills (Tier II waters)

Strategies for Urban Communities

Community conservation, planned town centers, redevelopment



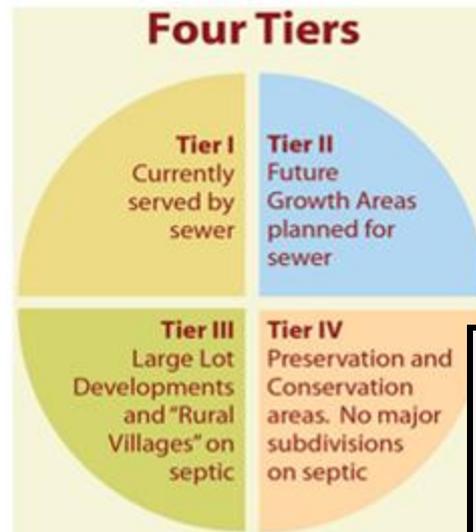
Restricting Septic Systems in Conservation Areas

Senate Bill 236 Implementation

Sustainable Growth & Agricultural Preservation Act of 2012 Implementation

[The Sustainable Growth & Agricultural Preservation Act of 2012](#) (Senate Bill 236, or SB 236) limits the spread of septic systems on large-lot residential development to reduce the last unchecked major source of nitrogen pollution into Chesapeake Bay and other waterways. By mapping future growth in "tiers," the law seeks greater accountability and predictability.

- ▶ [Implementation Guidance for SB 236 \(Version 2.0\)](#)
- ▶ [Tier IV Exemption Protocol](#)
- ▶ [Mapping Areas "Dominated by Agricultural or Forest Land"](#)
- ▶ [GIS Shapefile for Use in ArcMap Dominated by Aq/Forest shapefile](#)



Resources

Task Force on Sustainable Growth and Wastewater Disposal

SB 236 Implementation Guidance for local government

Presentation: Implementation of SB 236

Senate Bill 236

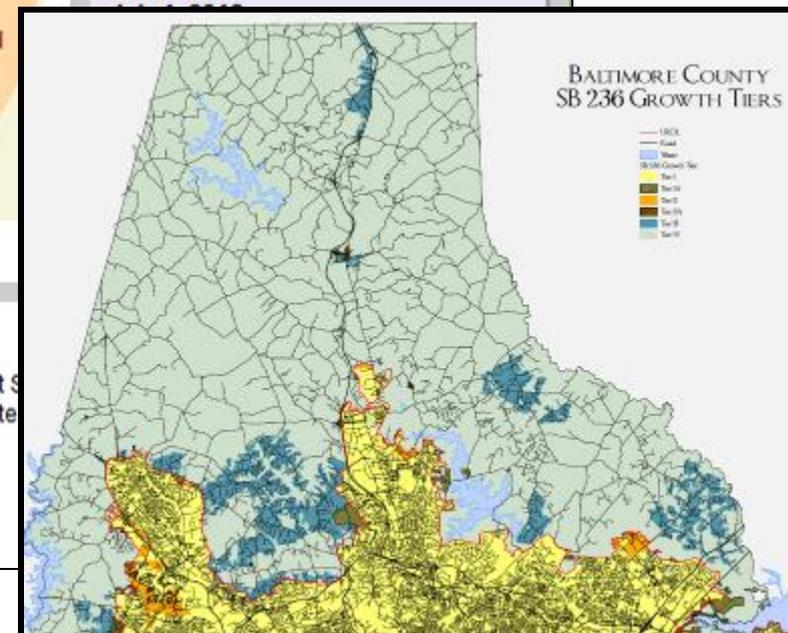
Timeline

Senate Bill 236 Implementation Guidance Map

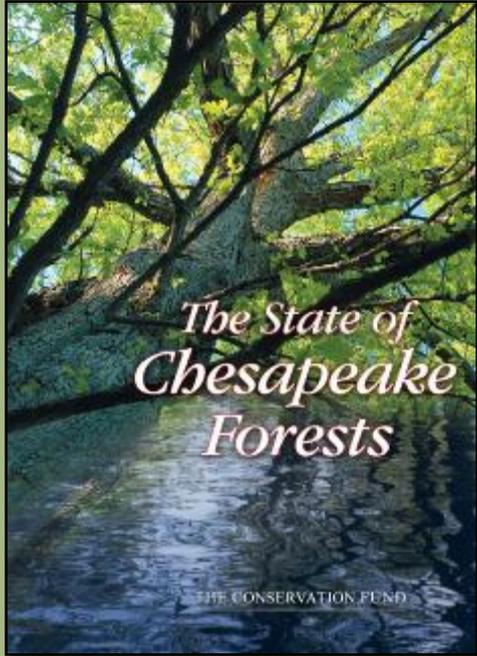
MDP is providing this web application as part of the department's technical assistance role that SB 236 describes. The web application provides the key components for local jurisdictions to create the tier map. MDP is available to help jurisdictions that might need guidance in compiling a composite Tier map from these data.

- ▶ [How to use the interactive map to identify possible growth tiers](#)

www.mdp.state.md.us



Forests: The Key to Watershed Function and Mitigation of Climate Change



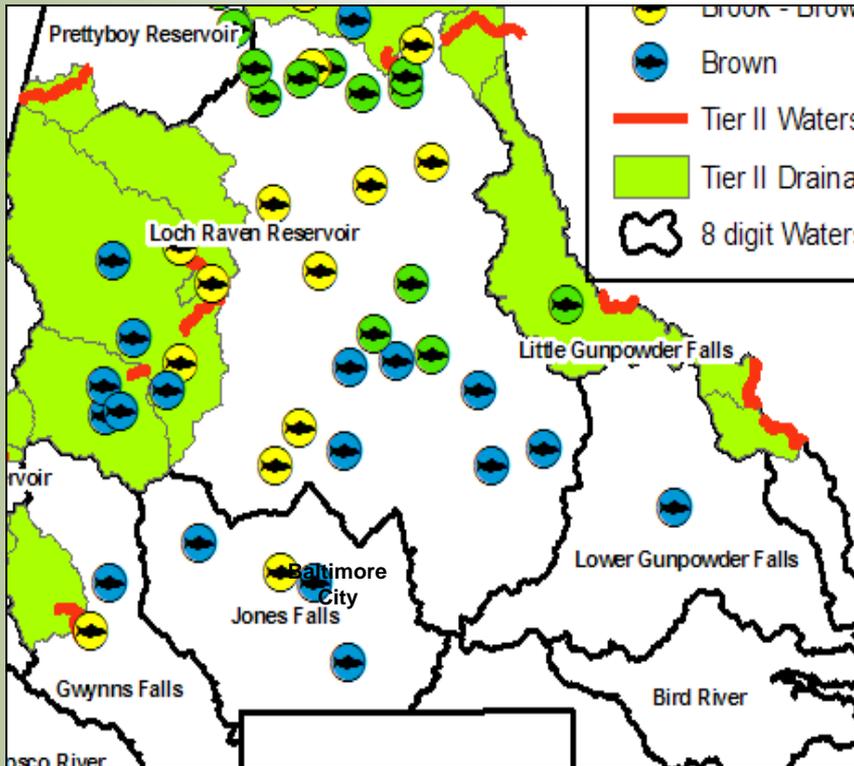
“Forests are the most beneficial land use for promoting and maintaining clean water....The health of a watershed is directly tied to the amount of forest and tree canopy cover, the quantity of intact riparian forests, and the health, condition, and distribution of its forested lands.”



“In the face of climate change, it is critical that everything possible is done to increase the amount of, and enhance the condition of forests and trees everywhere. Healthy forests and trees are our single most cost-effective tool for mitigating for climate change.”

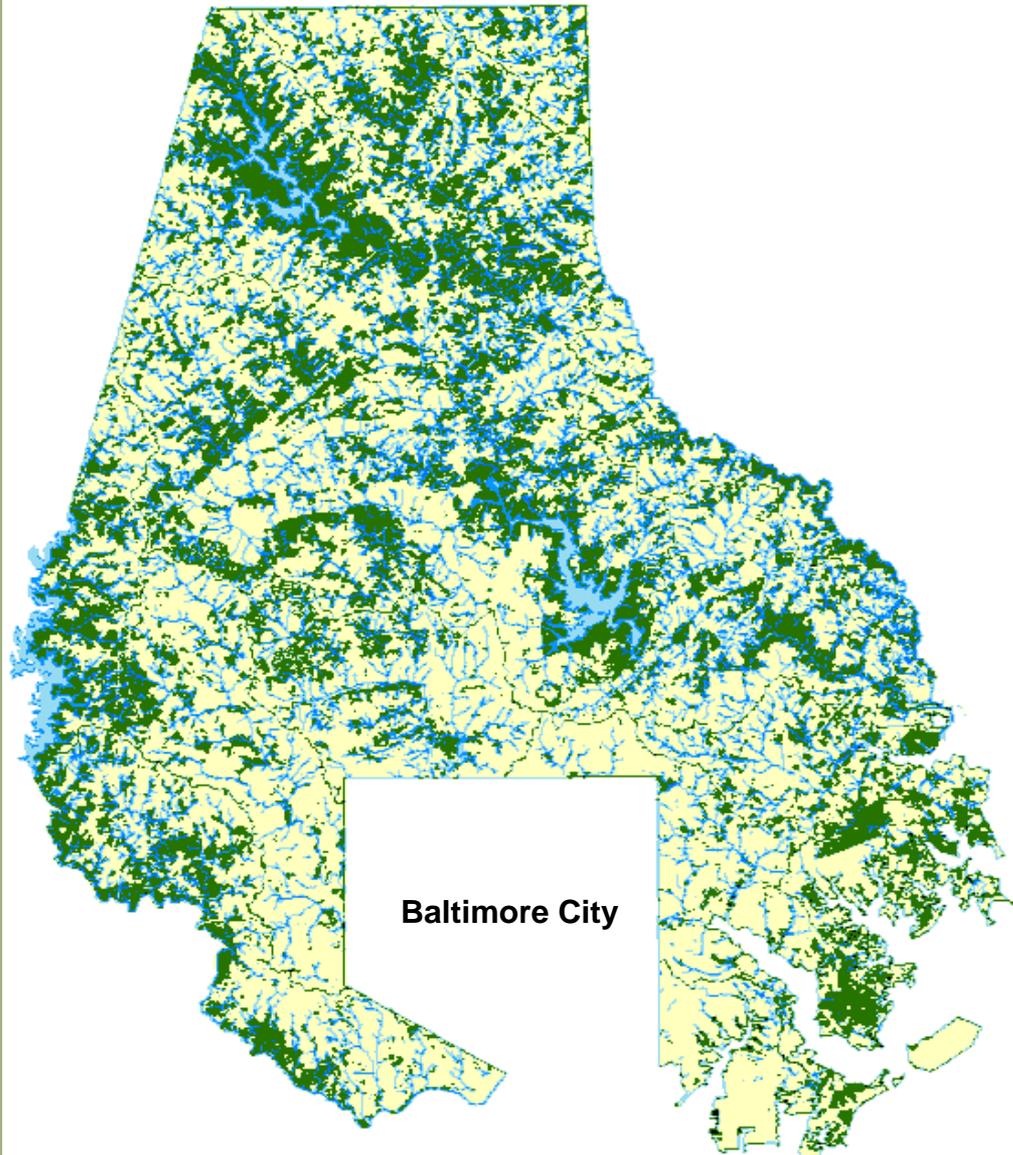
Forests and Trees: Strategic Local Tools

- NPDES MS4 Stormwater Permit (Phase I), 1995
- SSO Consent Decree, 2002
- 23 watershed TMDLs (MD 8-digit)
- Chesapeake Bay WIP II (mainstem TMDL)
- Tier II waters
- Reservoir Watershed Management Agreement, 1979



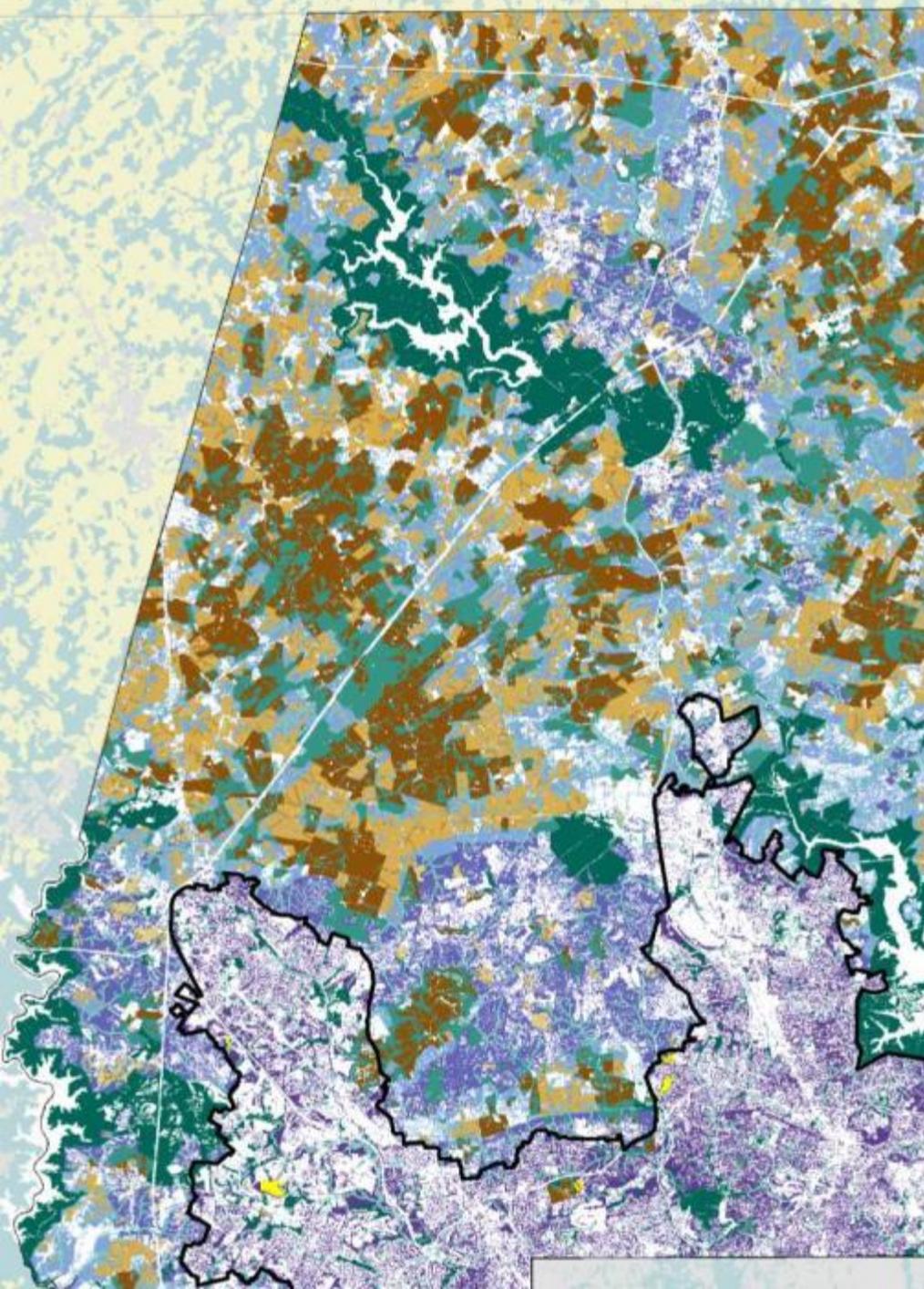
*“clean water is
rooted in forests”*

Forest Resources

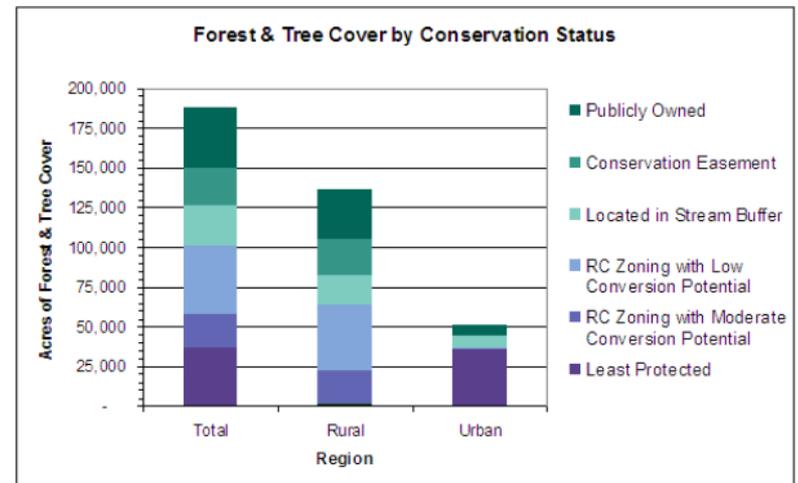


- Forest canopy covers ~49%
- 73% of canopy is outside URDL
- 75% of forests are privately-owned
- MD's Green Infrastructure areas are mostly larger publicly-owned parks
- Highly fragmented, with >9000 separate "patches"
- Mean patch size is 14.6 ac.
- 40,000+ people own forest
- Forest health threats:
 - Pests (Gypsy moth, deer)
 - Diseases
 - Invasive species
 - Inadequate regeneration

Resource Conservation Typology



Conservation Status by Natural Resource	Code	Acres	% of total land	% of resource	Cum. %
Forest Cover	1	188,106	49.1%		
Publicly Owned Forest	1.1	38,070	9.9%	20%	20%
Conservation Easement Forest	1.2	23,459	6.1%	12%	33%
Stream Buffer Forest	1.3	25,950	6.8%	14%	47%
RC Forest with Low Conversion Potential	1.4	42,451	11.1%	23%	69%
RC Forest with Moderate Conversion Potential	1.5	21,700	5.7%	12%	81%
Least Protected Forest	1.6	36,476	9.5%	19%	100%
Agricultural Land	2	68,564	17.9%		
Conservation Easement Ag. Land	2.2	30,816	8.0%	45%	45%
Stream Buffer Agriculture	2.3	4,053	1.1%	6%	51%
RC Ag. with Low Conversion Potential	2.4	29,922	7.8%	44%	94%
RC Ag. with Moderate Conversion Potential	2.5	2,951	0.8%	4%	99%
Least Protected Agriculture	2.6	822	0.2%	1%	100%
Other Lands		126,319	33.0%		
Total Land		382,989	100.0%		



Analysis is the Sensitive Area Protection Element of Master Plan 2020



Priority Forest Strategy

- Reduce forest **conversion** (“keep forest as forest”)
- Strategically **re-forest** stream buffers, areas adjacent to existing forests, and urban areas
- Restore and maintain forest **health & habitat**
- Provide **stewardship** education and incentives for private landowners who control 75% of total forest cover (“public benefits from private land”)

Changing Forest Management Frameworks

Montreal Process Criteria

1. Conservation of Biological Diversity
2. Maintenance of Productive Capacity of Forest Ecosystems
3. Maintenance of Forest Ecosystem Health and Vitality
4. Conservation & Maintenance of Soil and Water Resources
5. Maintenance of Forest Contribution to Global Carbon Cycles
6. Maintenance & Enhancement of Long-term Multiple Socio-Economic Benefits to Meet the Needs of Societies
7. Legal, Institutional, & Economic Framework for Forest Conservation and Sustainable Management

- From “benign neglect” to sustainable forest management
- *“Linking Communities to the MPC&I”* – U.S. case study
- C&I provide a management framework: Criteria are local management goals
- Adopted the **Roundtable on Sustainable Forests** framework: **“Better Data – Better Dialogues – Better Decisions”**
- Partnership w US Forest Service and MD DNR Forest Service

Sustainable Forest Management

Linking Communities to Montreal Process Criteria



Better Data

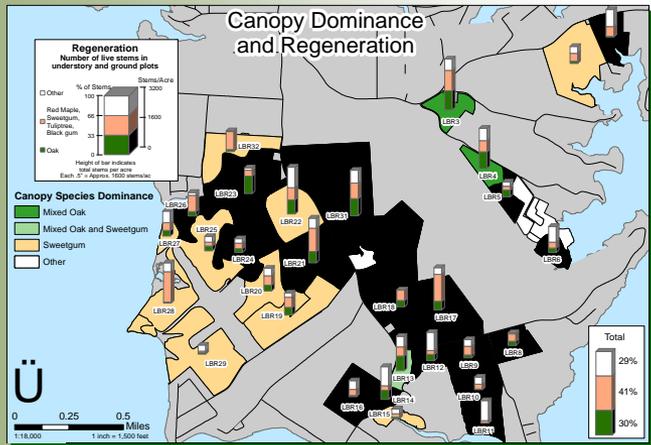
- GIS forest distribution and ownership analyses
- GIS typologies for water quality and conservation
- Forest health assessments for 6 County parks (NED model)
- Urban Forest Effects (UFORE) model
- Urban Tree Canopy mapping and analysis (UVM & USFS)
- Forest carbon estimation for GHG emissions reduction

Better Dialogue

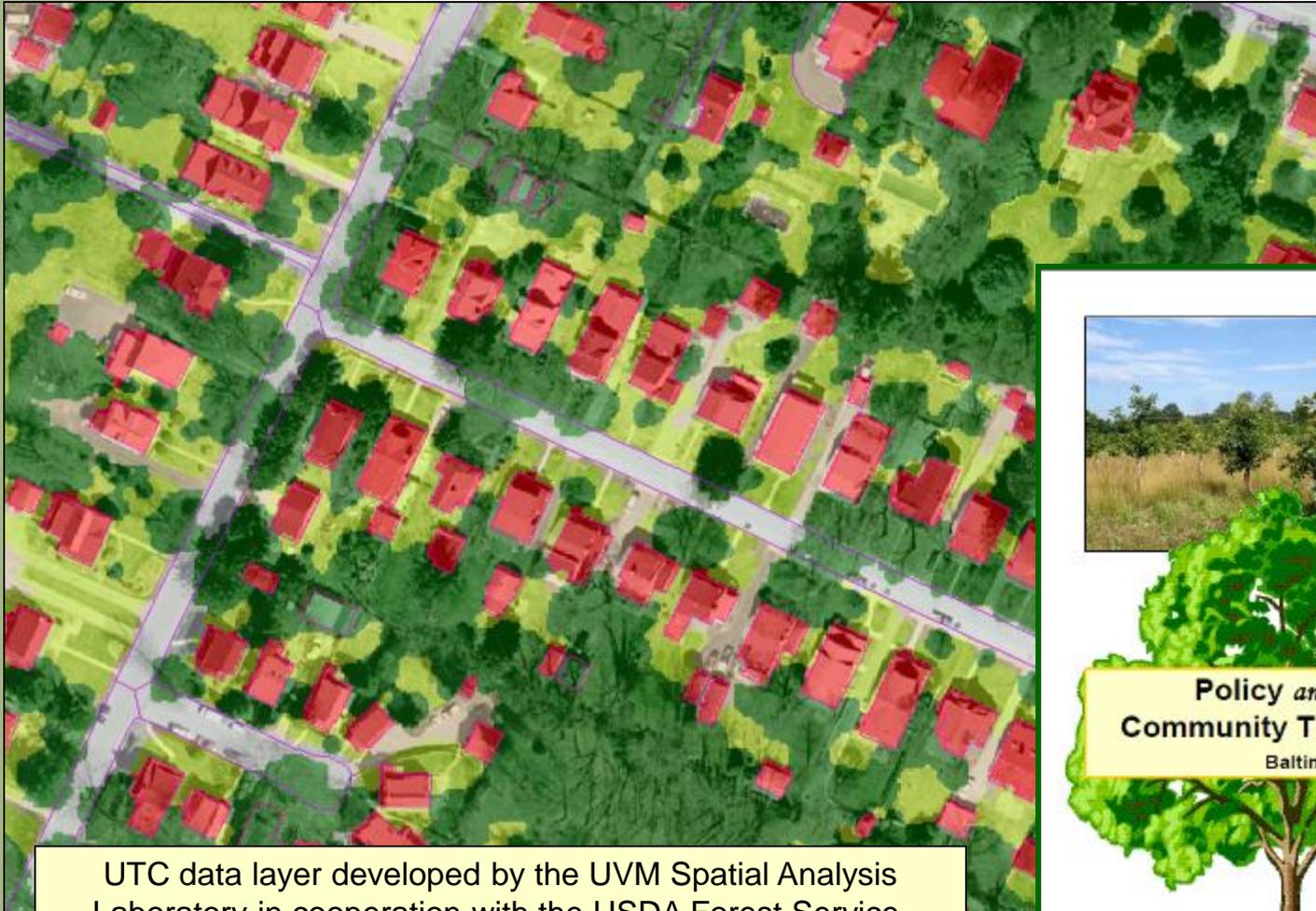
- Stakeholder Forest Sustainability Steering Committee
- 4 Forest Forums and Workshops
- Roundtable on Sustainable Forests
- MD Sustainable Forestry Council

Better Decisions

- Forest programs for water quality mandates
- Implementation of management plans for County forestlands
- “Cool Trees” for public buildings (DoE Energy grant)
- Wood waste utilization - biomass energy feasibility study
- On-call Licensed Forester
- Rural residential reforestation (“turf to trees”) projects
- Multi-owner patch assessment pilot projects
- BigTrees sales
- Cooperative deer herd management
- Gypsy moth and invasives suppression cost-share



Urban Tree Canopy in Baltimore County



UTC data layer developed by the UVM Spatial Analysis Laboratory in cooperation with the USDA Forest Service, using 2007 1-meter high resolution orthophotography from the National Agricultural Imagery Project (NAIP) and 2005 LiDAR from Baltimore County.

**Policy and Guidelines for
Community Tree Planting Projects**
Baltimore County, MD

August 2012

Forest Health Assessment and Forest Management Plans



OREGON RIDGE PARK

FOREST HEALTH ASSESSMENT AND
FOREST MANAGEMENT PLAN

Prepared By:

Mar-Len Environmental
275 Barnhart Road
Westonville, MD 21158-1305
410-957-2322
mar_len@comcast.net

For:

Baltimore County, MD
Department of Environmental Protection & Resource Management
Towson, MD 21286

April 2007



- Areas Assessed (>2,600 ac.) in 6 County-owned parks and forested parcels
- Overstory, understory, and groundlayer structure and species composition for distinct forest stands, using NED model
- Tree data collected on overstory plots using 10-factor prism points
- Woody understory data collected on 0.01 ac. plots
- Data collected on basal area, relative density, regeneration, Undesirable Growing Stock (UGS), and dozens of other measures



Restoring Oak Dominance and FIDS

MD and DC Breeding Bird Atlas Surveys Documented Species and Activities for the Lower Back River Peninsula Forest

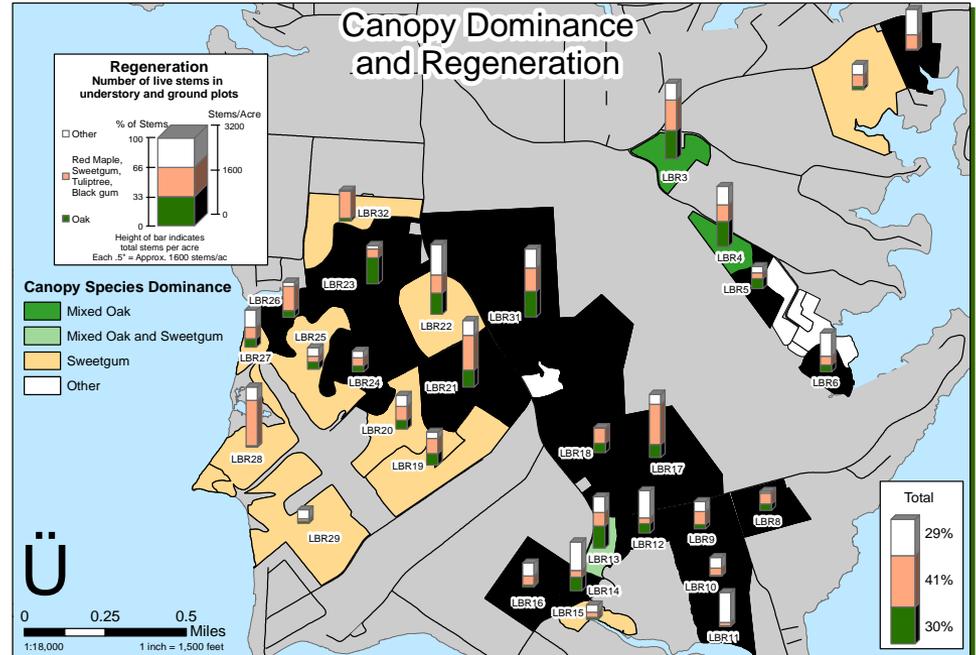
Middle River Quad Map:

2002 - 2006 Period			1983 - 1987 Period		
Block	Breeding Activity		Breeding Activity		
	Confirmed	Probable	Confirmed	Probable	
SE	1	3	4	5	
SW	0	2	3	1	
CE	0	2	1	1	

Tree Species Ranked by Ability to Support the Caterpillars of Forest Moth Species

Common Name	# of Species Supported
Oak	534
Willow	456
Cherry, plum	456
Birch	413
Poplar, cottonwood	368
Maple	285
Elm	213
Hickory	200
Ash	150
Basswood, linden	150
Walnut, butternut	130
Beech	126
Chestnut	125

Source: Adapted from Tallamy, 2007



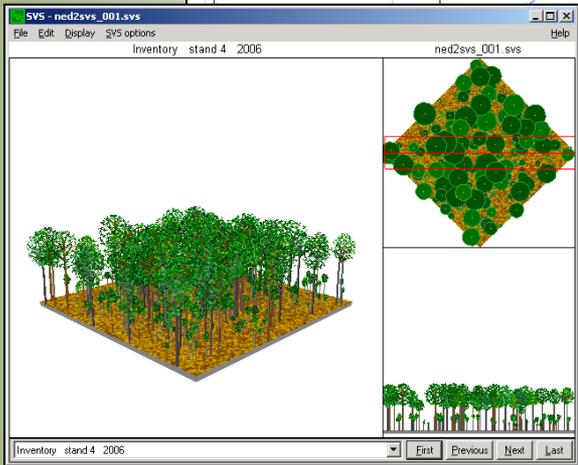
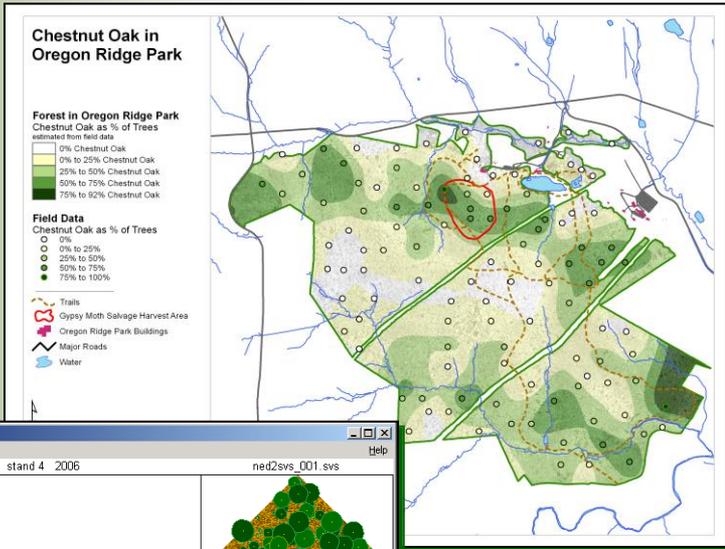
- historical documentation for oak dominance in MD coastal plain
- largest/oldest trees at Lower Back River Peninsula are oaks
- oaks are most supportive of FIDS food source - moth caterpillars
- documented decline in FIDS

Canopy Thinning

Selective thinning of a forest stand at the County's Oregon Ridge Park where the NED assessment found a very high basal area, lack of regeneration, loss of oak dominance, and high percentage of poor quality trees.



Integrated Forestland Management



- Forest Health Assessments and Management Plans (NED model)
- Invasive species control
- Pest suppression (Gypsy moth)
- Deer herd management
- Salvage harvests, reforestation
- Regeneration assessment – acorn surveys/crop trees
- Competition stress assessment and control
- Selection harvests to stimulate regeneration
- Old Growth management

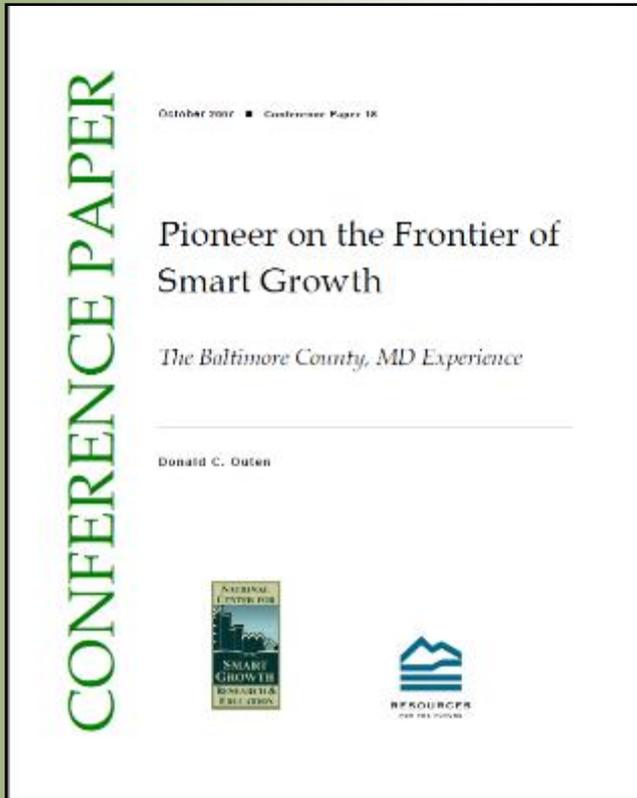
All values are at risk without forest health!

Main Take-home Messages



- Open space/resource conservation is a long-term effort
- There will never be enough funds to purchase all the important conservation lands, so good urban planning can help to manage development pressures
- Once areas are conserved, their long-term function and health need to be addressed

Read More About It



http://www.rff.org/rff/events/upload/30224_1.pdf

Pioneer on the Frontier of Smart Growth: The Baltimore County, MD, Experience

Conference Paper 18, Maryland Smart Growth @ 10 Conference, October 2007.

Restoring Green Infrastructure: Rural Reforestation and Forest Stewardship Initiatives in Baltimore County

The Conservation Fund. *In* Burke, DG and JE Dunn, 2010. *A Sustainable Chesapeake: Better Models for Conservation*, Pp. 99-106.

PAS QuickNotes: Green Infrastructure

PAS QuickNotes No. 27, American Planning Association, August 2010.

A Green Infrastructure Element in a Comprehensive Plan

In PAS Report #555. Schwab, JC (ed). 2009. *Planning the Urban Forest: Ecology, Economy, and Community Development*, Appendix A, Pp. 125-129.

www.Linkedin.com/in/DonOuten

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 > I'm Looking For... Resident, Visitor, or Business info
 > I Need to Contact... An Agency, My Rep, An Employee

BALTIMORE COUNTY MARYLAND

IN THIS SECTION

- EPS Overview
- Alerts & Advisories
- Directions
- Building Process
- Education
- Forest & Trees
- Preservation
- Regulations
- Report Pollution
- Streams & Water
- Variations
- Well & Septic

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- View Job Listings
- Download Trash Schedule
- Locate County Facilities
- Search Crime Stats
- Find Recreation Activities
- Volunteer Today

More >>>

ENVIRONMENTAL PROTECTION AND SUSTAINABILITY

Home > Agency Directory > Environmental Protection and Sustainability > Forests and Trees > Overview

Forests and Trees

Forests and trees provide many critical environmental benefits for communities and wildlife. Forests reduce flooding and soil erosion during storms, which stabilizes watersheds that provide clean water to streams and reservoirs. They provide opportunities for nature-based recreation and education about the needs and habits of birds and other wildlife. Forest and urban trees remove and store atmospheric carbon, helping to reduce greenhouse gases and to cool the environment. They provide forestry employment, timber and other forest products. Urban trees also shade and cool buildings, lessen the heat reflection from paved areas, and enhance the quality of life in urban areas with aesthetic natural beauty.

RELATED TOPICS

- Environmental Impact Review
- Sustainability
- Watershed Planning & Monitoring

Priority Forest Management Goals:

- Conversion - Reduce the rate of forest loss (keep forest as forest)
- Reforestation - Strategically re-forest stream buffers, areas adjacent to existing forests, and urban areas
- Forest Health - Restore and maintain forest and tree health
- Stewardship - Provide stewardship education for private citizens who collectively own 75 percent of total forest cover.

Forest Sustainability Program

This program is all about working for healthy forests, woods, trees, and conservation landscapes for today and tomorrow. Find information about:

- [Big Trees Sales](#)
- [Tree-Mendous Maryland and Marylanders Plant Trees Programs](#)
- [Forest Sustainability Program Background](#)
- [Forest Conditions and Trends Data](#)
- [Forest Forums and Workshops](#)
- [Forest and Tree Resources for Citizens](#)
- [Community Tree Planting Policy and Guidelines](#)
- [Community Reforestation Program](#)
- [Conservation Landscapes](#)
- ["Cool Trees" Project for Energy Conservation](#)
- [Community Urban Tree Canopy Maps and Data](#)
- [Forest Health Assessments and Management for County-owned Lands](#)
- [Deer Herd Management](#)

Find More Information about Baltimore County's Forest Sustainability Program

www.baltimorecountymd.gov/forestsandtrees

Questions and Answers

Ask questions through the chat pod

Session #14 -

Forest Legacy and Protecting Private Lands: Monitoring and Enforcement of Conservation Easements

Wednesday, May 27 at 2:00 pm Eastern

Miranda Hutton

US Forest Service, Cooperative Forestry – Washington D.C.

Leslie Ratley-Beach

Land trust Alliance, Conservation Defense

Dick Peterson

Minnesota DNR Forest Legacy Program Manager



Future Webinar Topics

- **June** - Open Space and All Lands in National Forest Revision Planning with the New Planning Rule
- **July** - Strategic Conservation Planning
- **August** - More Conservation Planning Tools
- **September** – Climate Change Adaptation
- **October** – Collaborative Forest Landscape Restoration
- **November** – Community Wildfire Protection Planning
- **December** – Planning for Urban Forests

Give us your feedback!

www.fs.fed.us/openspace/webinars

Or Contact

Susan Stein – sstein@fs.fed.us

Sara Comas - scomas@fs.fed.us

Rick Pringle – rpringle@fs.fed.us