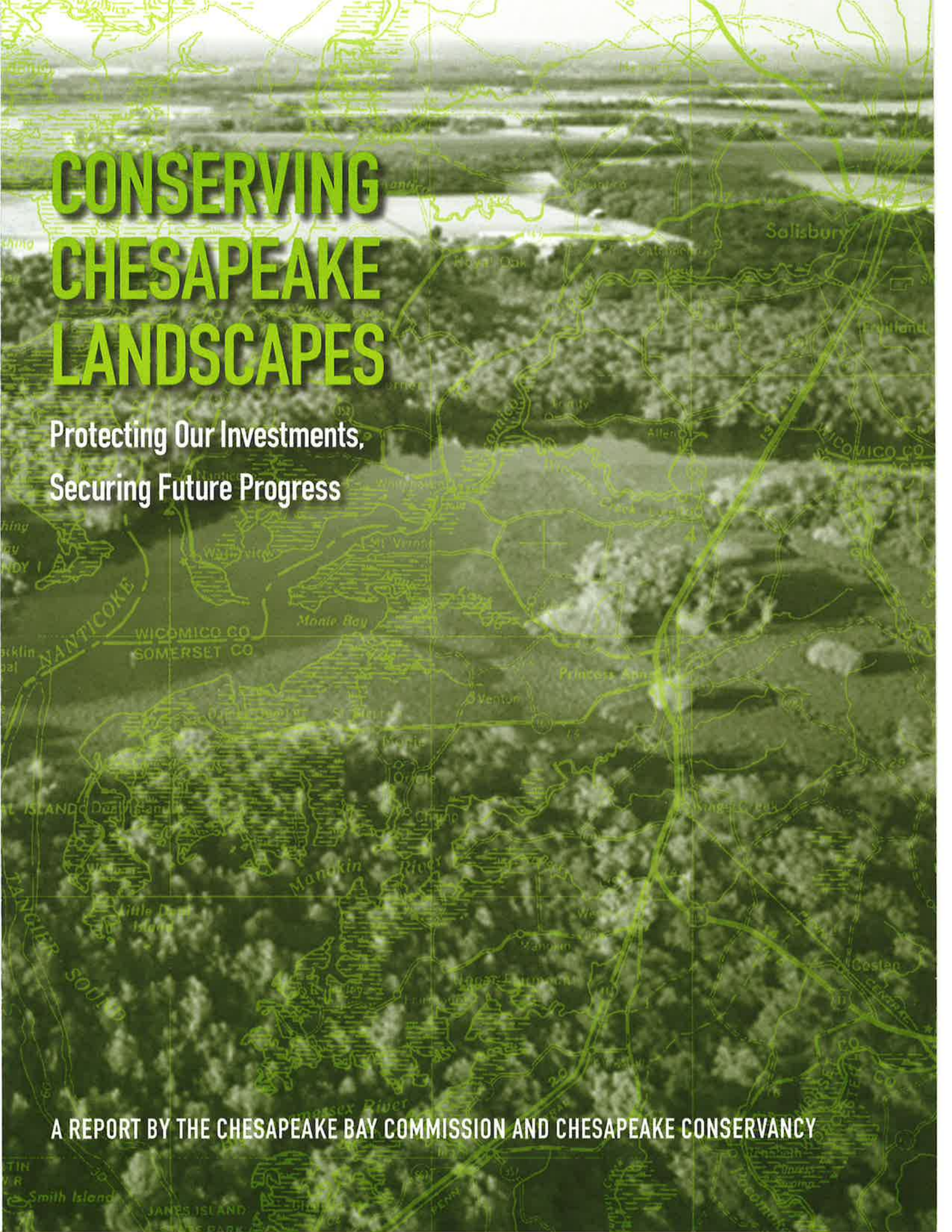




CONSERVING CHESAPEAKE LANDSCAPES

Protecting Our Investments,
Securing Future Progress

A REPORT BY THE CHESAPEAKE BAY COMMISSION AND CHESAPEAKE CONSERVANCY

"How we treat the land profoundly influences the quality of the water. Thus, land-use decisions may well be the most important factor in the success or failure of our efforts to restore and protect the Chesapeake Bay."

KEEPING OUR COMMITMENT: PRESERVING LAND IN THE CHESAPEAKE WATERSHED, FEBRUARY 2001

CONSERVING CHESAPEAKE LANDSCAPES

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Securing Future Progress**

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CHESAPEAKE BAY COMMISSION

CHESAPEAKE CONSERVANCY

DECEMBER 2010

INTRODUCTION

Lands of the Chesapeake Watershed

Few words in the lexicon of American geography paint as many pictures as "Chesapeake." Grand Canyon, Big Sur and Everglades all evoke certain images, but in general they are limited to their spectacular beauty. The pictures painted by Chesapeake include not just images of the Bay's many waters, but of the great expanse of surrounding lands and the rich tapestry of history, traditions and cultures contained therein.

Watermen unload bushels of crabs from boats docked in small fishing villages; Amish farmers steer buggies onto stone bridges over streams that wind through carefully kept and productive farms; fly fishermen cast in expansive rivers that start as countless creeks in far-away forested hollows; hikers traverse mountain landscapes that include the world's largest stands of mature mixed hardwoods; farmers work landscapes of rolling meadows, pastures, and croplands dotted with barns and tall, narrow farmhouses; sailors trim white sails while kayakers and other boaters enjoy the shimmering waters; forests, marshes and long sweeps of undeveloped shorelines remind visitors of rich Native American cultures that flourished long ago, while tourists explore an abundance of hallowed historic battlefields scattered across



the region. These are among the many images conjured up by the place we call Chesapeake.

The lands of the Chesapeake hold the key to the environmental health and economic well-being of our region. The Bay's land-to-water ratio — 2,800 square meters of land to every one cubic meter of water — is the largest of any coastal body in the world. How we use and protect these lands is the single most profound factor affecting the Bay's water quality, the 110,000 miles of creeks and rivers flowing into it, the myriad of living resources that depend on it, and the quality of life of the 17 million people who live around it.

The purpose of this report is to promote and accelerate the progress we are making in conserving the Bay's lands. It builds on the 2001 Commission Report *Keeping Our Commitment: Preserving Land in the Chesapeake Watershed*, originally published to help meet the goal of the 2000 Chesapeake Bay Agreement to permanently preserve from development 20 percent of the land area in the watershed by 2010. Federal, state and local governments, private landowners and non-profit organizations rallied over the past decade to achieve the 2000 Agreement conservation acreage goal, setting the stage for new land conservation goals.

This report examines the status of current land conservation programs and policies, and sets

✓ The Process

Conserving Chesapeake Landscapes was prepared by the Chesapeake Bay Commission (CBC) in partnership with the Chesapeake Conservancy. Together, these two organizations pooled their financial resources, networks and knowledge to craft the recommendations and actions offered in this report.

Land conservation is increasingly complex, requiring a multitude of partners operating from various vantage points to be successful. The report required the full expertise of a diverse Advisory Panel who, in turn, created three focus groups of subject matter experts to further inform the report and fill knowledge gaps. We have listed below all those who advised our effort.

In particular, we wish to thank our project advisors, Bill Matuszeski and David Burke. Both men brought an extraordinary depth of knowledge to the table. We also must thank the National Park Service, the Keith Campbell Foundation, the National Fish and Wildlife Foundation and the Chesapeake Bay Trust, whose financial support helped to make this project both doable and timely.

PHOTO: Shenandoah Valley, Va., by Jillian Chilson



forth a series of specific recommendations for achieving new Chesapeake land conservation goals. The recommendations flow from three critical approaches for the watershed. They are:

1. Maintain State Conservation Programs with the Federal Government Investing More. States should attempt to maintain their land conservation pace, while the federal government should invest more in Chesapeake land conservation. The states should attempt to maintain the same pace of permanently protecting land as in the last 10 years, especially large contiguous working landscapes. This will require a renewal of funding levels to at least their historic levels as the economy improves. This may necessitate a strategy where funding levels remain depressed for a short period due to the fiscal climate, and then accelerate to higher than historic levels in order to make up for the slow initial pace. In addition, the federal government must substantially expand its overall commitment to land conservation in the Chesapeake region by increasing the amount of funding it provides through various programs and better coordinating federal conservation programs with land conservation goals in the Chesapeake.

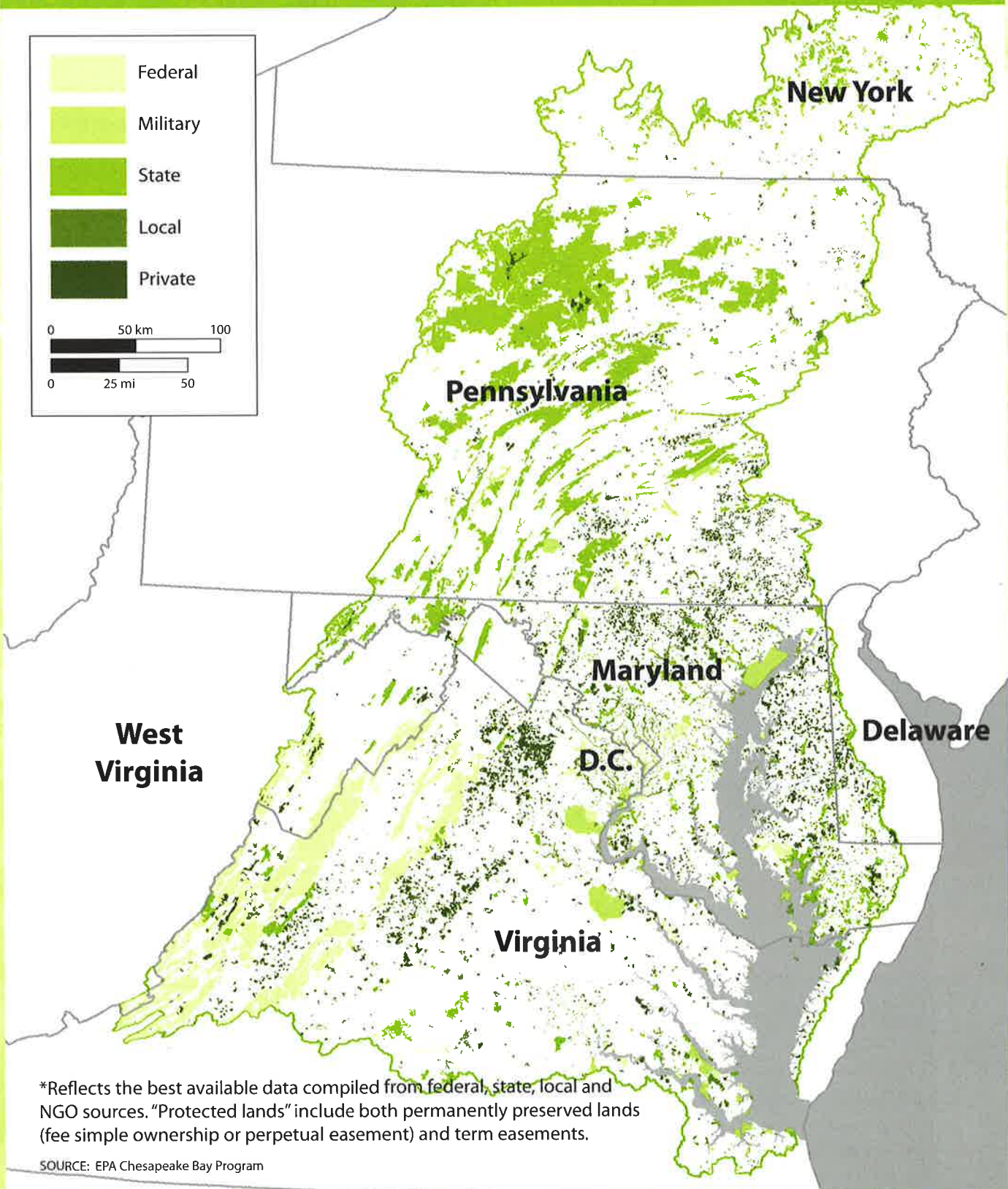
2. Sustain Local Programs, Explore New Options. Local governments should continue to develop and evolve their land conservation programs based on best practices from across the watershed. Existing local programs should attempt to maintain their land conservation pace during this fiscally difficult period. Localities that lack dedicated funding or other tools to conserve working lands and open spaces should recognize the importance of land conservation to their local economies and their quality of life. In turn, they should establish new programs that build from other successful local conservation initiatives across the watershed.

✓ What Is 'Permanently Preserved?'

In 2000, the Chesapeake Bay Program partners agreed that land is permanently preserved from development with a perpetual conservation or open space easement or fee simple ownership, held by a federal, state or local government or nonprofit organization for natural resource, forestry, agriculture, wildlife, recreation, historic, cultural or open space use, or to sustain water quality and living resource values. This definition still stands.

3. Unleash the Potential of Ecosystem Markets. The Chesapeake region should work together to proactively establish, enable and support new market-based mechanisms that contribute to the funding of land conservation activities. These include nutrient, water and carbon trading programs, as well as offset mitigation banks to protect wetlands, stream banks, species and other ecological attributes. Many of these mechanisms are in various stages of development today; Pennsylvania and Virginia, for example have initiated and are further refining their nutrient trading programs that have been in effect for several years. Similar programs are being tested in Maryland as well. These mechanisms need to grow and flourish and, if they are unified and standardized across the Bay region, could create a larger and more effective multi-state market.

Protected Lands in the Chesapeake Watershed 2009*





PART 1

The Last Decade Of Land Conservation

ACHIEVING THE 2010 BAY LAND CONSERVATION GOAL

On June 28, 2000, the Chesapeake Executive Council signed a new agreement for the restoration of the Bay, entitled *Chesapeake 2000*. Unprecedented in scope and complexity, the new accord called for a range of actions, most with specific goals and a timeframe of 2010 for completion. While many of the goals were related to the Bay's water quality improvements, others dealt with the need for healthy and productive natural systems throughout the 64,000 square mile watershed. Among the most important means to achieve the goals is the permanent protection of open lands, including farms, forests and wetlands.

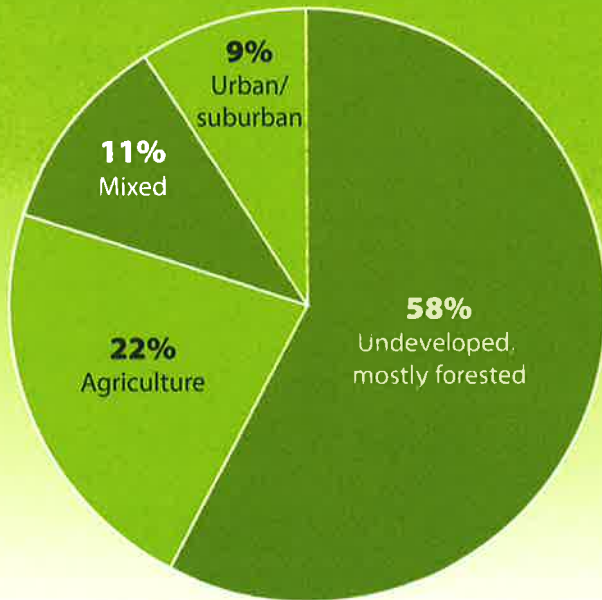
One specific goal of *Chesapeake 2000* was to permanently protect 20 percent of the land area of the watershed in the signatory jurisdictions — Maryland, Pennsylvania, Virginia and the District of Columbia — by 2010. To place the magnitude of this goal in perspective, about 58 percent of the Bay watershed is undeveloped and primarily forest lands, with the remainder in agriculture, urban, suburban and other uses. (See Figure 1).

As with all goals, it is important to establish a baseline and to define terms in order to accurately measure progress. With this in mind, the Chesapeake Bay Commission and the Trust for Public Lands published a report in 2001, *Keeping Our Commitment: Preserving Land in the Chesapeake Watershed*. This report, produced in cooperation with federal agencies, the Bay states and private groups, used Chesapeake Bay Program data to set land protection baselines for the three states and the District of Columbia.

Over the course of the decade, progress toward the goal was tracked. In some years, funds were widely available, while in other years progress was limited by budget constraints. Patterns among the states emerged as Virginia committed to securing conservation easements and purchasing large blocks of land under state bond initiatives; Maryland emphasized purchases of land under Program Open Space and donated easements through the Maryland Environmental Trust; and Pennsylvania grew its extensive farmland preservation programs.

Along the way to 2010, additional goals boosted progress. In 2006, Governor Kaine of Virginia established a goal of conserving 400,000 acres in the Commonwealth during the four years of his administration. In 2006, the Chesapeake Executive Council adopted a new goal to preserve an additional 695,000 acres of high quality forests by 2020. Of note, this new forest preservation goal

FIGURE 1
Chesapeake Bay Watershed
Land Use/Land Cover



SOURCE: EPA Chesapeake Bay Program

is one of the few goals also adopted by the three upstream states — Delaware, New York and West Virginia.

With the help of these new goals and strong state and local programs and funding support, as well as growing federal resources made available to the states, by mid-2009, the 2010 land protection goal was met. For Maryland, Pennsylvania and Virginia the 20 percent goal translates, in updated Chesapeake Bay Program numbers,

to 6.80 million acres. By 2010, the three states had preserved 7.26 million acres, exceeding the goal by more than 450,000 acres (Figure 2).

BENEFITS OF LAND CONSERVATION

Historically, land preservation in the Bay has occurred largely to protect open space, conserve wildlife habitat and provide access for recreation. In the last two decades, more tailored land protection programs have also targeted protection of forest resources and agricultural lands, as well as battlefields and other historic lands. In recent years, a significant and growing focus of land conservation in the Bay region has been to protect the water quality of the Chesapeake itself.

The primary sources of the Bay's poor water quality are excess nutrients and sediment pollution, all of which comes from the land: sewage, urban runoff, septic tank leachate, excess fertilizer and runoff from agriculture, eroding stream banks, even air-borne nitrogen that once came from a tailpipe or from loose soil blowing off a field. As a result, land conservation efforts provide tangible and absolutely critical benefits in avoiding increased nutrient and sediment loadings to the Bay's waters from what they would otherwise be if those lands were developed.

The filtering capacity of forests protects drinking water supplies, and as the market for carbon and nutrient credits grows in the Bay region, forests can serve as a revenue source for local economies. Water and land trails create recreation opportunities and enhance tourism economies, while promoting healthy living. Significant preservation of Revolutionary and Civil War battlefields creates cultural and historic tourism destinations on which local economies rely. In all its forms, land conservation can shape sustainable land use and development patterns and serve

FIGURE 2 Permanently Protected Lands

	Watershed Acres ¹	Protected Lands Within the Chesapeake Watershed			
		2000 Baseline Acres	2000 to 2009 Acres ²	Total ³ Acres	Percent of Total Land
Maryland	5,849,553	1,037,628	402,556	1,440,184	24.6%
Pennsylvania	14,313,538	2,844,663	331,329	3,175,992	22.2%
Virginia	13,821,194	2,131,244	508,196	2,639,440	19.1%
TOTAL	33,984,285	6,013,535	1,242,081	7,255,616	21.3%

1. SOURCE: U.S. Geological Survey, September 2010.

2. Calculated using year 2000 baselines for Maryland and Virginia, and year 2010 for Pennsylvania as provided to EPA Chesapeake Bay Program from the states.

3. SOURCE: EPA Chesapeake Bay Program and states through July 30, 2009.

✓ Shifting Demographics Pose Conservation Risk . . . and Opportunity

The wave of Baby Boomers born between 1946 and 1964 is fast approaching retirement age and accounts for a large portion of the growth among older age groups. According to the most recent census projections, the age group from 45 to 64 will account for 25 percent of the U.S. population in 2020.

As the number of older Americans increases, this region will experience the largest number of intergenerational transfers of family-owned forests and farms in history. This transition presents both risks and opportunities for reaching our land conservation goals.

According to the 2007 Census of Agriculture, the fastest growing group of farm operators is those 65 years and older. In the Bay states, the majority of farmland is owned by those 55 years and older. Significantly, in Virginia, Pennsylvania and Maryland almost ten percent of privately-owned forestland is owned by those 75 years old and older, which indicates that ownership of these lands will likely change in the next decade. In fact, Pennsylvania estimates that half of their 12 million acres of privately held forestland will change hands within the next 22 years.

A potential risk of this upcoming transition is that economic pressures on younger people today may increase the conversion of forests and farms into developed lands. On the other hand, recent studies indicate that the emerging generation of landowners is more interested in and knowledgeable about conservation than previous generations, and may present an opportunity to advance land conservation.

This emerging situation suggests that we should redouble efforts to work with landowners and their heirs on land transition and estate planning. We should increase our outreach efforts to property owners in transition to better inform them of existing tools such as tax credits that provide economic benefits to permanently conserve land. States should craft or reshape inheritance tax policies and other programs to provide incentives for landowners to protect their land through intergenerational transfers.

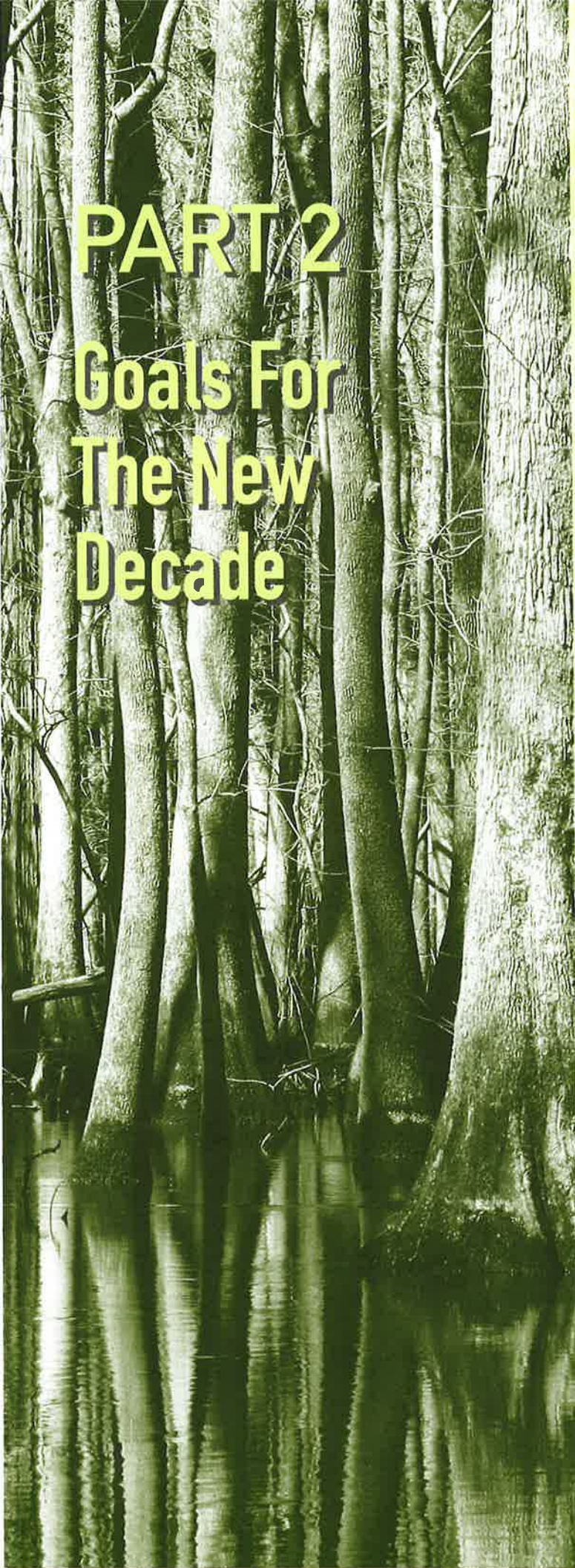
This exceptional window of opportunity deserves an equally unprecedented effort by land professionals to maintain and preserve the Bay's treasured natural and working landscapes.

to confine the adverse impacts of sprawl in scope and location, making its impacts less costly to the public.

Growing evidence points to the local economic benefits of conserving open space and working lands. New parks increase the value of homes in their vicinity and enhance the livability and quality of life of the communities in which they are dedicated. Studies consistently report that industries and other employers are drawn to the Bay region because of the quality of life offered to their employees. Often cited are opportunities for recreation and the beauty of the countryside.

In these difficult fiscal times, political leaders may be tempted to reduce or redirect conservation funding for

other purposes. Such thinking, however, does not factor in the economic benefits of conservation outlined above. Indeed, in 2009, facing similar fiscal challenges as the Bay states, the New Jersey legislature considered not authorizing a ballot initiative to fund its Green Acres land conservation program. Fortunately, a cost-benefit analysis turned the political tide. The analysis showed that for every dollar the state invested in conservation, 10 dollars in economic value are generated. Certainly, similar economic benefits would be the case in the Bay states, too. With land values at an historic low, today Bay states get a significant return from their land conservation investments.



PART 2

Goals For The New Decade

In 2009, President Barack Obama issued Executive Order No. 13508 (EO) to promote Chesapeake Bay protection and restoration. The order and the implementation strategy that followed in May 2010 outline a number of initiatives that federal agencies should take, including land conservation, to accelerate the rate of progress to restore the Bay. Specifically, the EO Strategy sets a goal to permanently protect an additional two million acres by 2025. A related land use goal calls for adding 300 public access sites along the Bay and its rivers.

The federal two-million-acre land protection goal and the 300-public-access-site goal were developed in consultation with state officials. Each goal is built on existing state priorities and past Chesapeake Bay Program goals and accomplishments. For example, Virginia Governor Robert McDonnell has set a new 400,000 acre goal for the Commonwealth to be accomplished by the end of his term in early 2014. Additionally, the 2006 Executive Council goal to protect 695,000 acres of forest by 2020 has been folded into the broader two-million-acre goal. Most importantly, the EO Strategy clearly recognizes that achievement of both goals is dependent upon the collaborative efforts of federal, state and local governments, non-governmental organizations and the private sector.

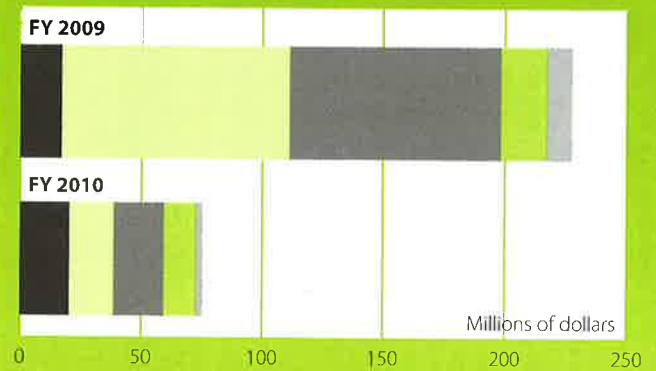
Each Bay state has existing and successful land conservation programs and policies that will contribute to reaching this new goal. For example, during the past decade, Maryland, Pennsylvania, Virginia and the District of Columbia achieved an average of 125,000 preserved acres per year. If that level of success were to remain constant for the next 16 years from 2010 to 2025, it is feasible to reach the target of protecting two million acres. In addition, land preservation efforts in the Bay watershed portions of Delaware, New York and West Virginia, which were not included in the previous 2010 goal will now be counted under the new federal goal.

However, in the near term, states will likely have fewer dollars for land conservation compared to the previous 10 years, which will create a significant challenge to achieving the new goal. The current pace of state land conservation efforts relies heavily on state-funded programs, which are increasingly under budget pressure and, in the current fiscal climate, are not funded at previous levels. (See Figure 3.)

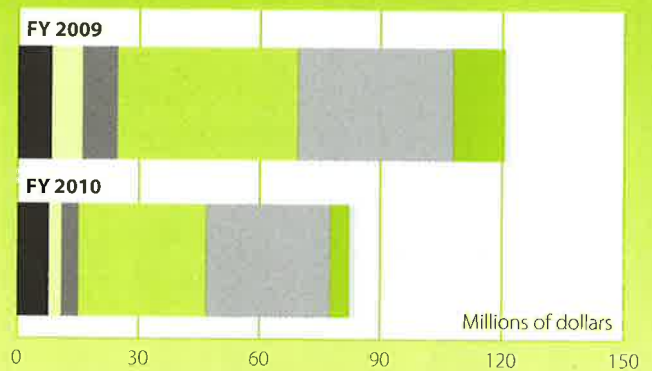
In order to achieve even the former pace of land conservation, federal land conservation programs, including the Land and Water Conservation Fund and the Farm and Ranch Lands Protection Program, must be fully funded. Compared to the states, federal programs have funded

FIGURE 3 States' Investments in Land Conservation**Maryland State Land Conservation Program Expenditures**

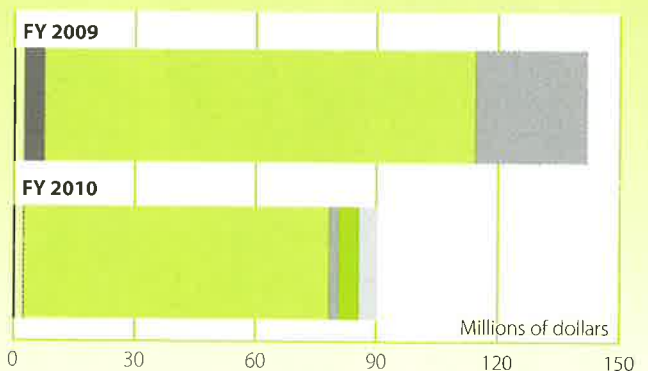
	FY 2009	FY 2010
Rural Legacy	\$ 17,111,124	\$20,352,741
Program Open Space Stateside	94,142,038	18,352,350
Program Open Space Local	87,120,867	20,517,339
Maryland Agricultural Land Preservation Foundation (MALPF) State	18,704,000	13,000,000
MALPF County Match	10,331,535	3,037,133
TOTAL	\$227,409,564	\$75,259,563

**Pennsylvania State Land Conservation Program Expenditures**

	FY 2009	FY 2010
State Forests and Parks	\$8,449,782	\$7,859,000
Community Grant (CG)	7,549,300	3,058,870
Land Trust Grant	8,748,900	4,222,300
Farmland Preservation	44,561,657	31,422,770
County Farmland Preservation	38,597,978	30,970,600
Local CG Match	12,630,450	4,800,412
Game Commission	1,382,659	1,568,486
TOTAL	\$121,920,726	\$83,902,438

**Virginia State Land Conservation Program Expenditures**

	FY 2009	FY 2010
Office of Farmland Preservation	\$500,000	\$400,000
Land Conservation Program	2,000,000	2,000,000
Department of Historic Resources	5,190,000	190,000
Land Preservation Tax Credit*	106,647,006	75,685,002**
Public Building Authority Bond	27,600,000	2,400,000
2002 General Obligation Bond	0	5,000,000
VDOT/Federal Transportation Enhancement Fund	0	4,800,000
TOTAL	\$141,937,006	\$90,475,002



*Calendar years **As of July 2010

SOURCE: Compiled by the report authors from data provided by the state agencies

only a fraction of the land conservation investments in the watershed. (See Figure 4).

In addition to relying on traditional land conservation programs and strategies, achieving the new federal goal can take advantage of the opportunities created by the imposition of the Bay Total Maximum Daily Load (TMDL), which sets pollution reduction targets under the Clean Water Act. If current polluters subject to permits are given TMDL targets that may be difficult to achieve, there may be growth in the market for water quality credits. These credits could be generated by placing additional protections and environmental management measures

on agricultural and forest lands. The credits generated by these actions on farms and forests could be sold to permitted entities seeking pollution credits at a lower cost than they would otherwise have to spend to reach their reduction goals. The permanent protection of land could be a by-product of these new markets since permanent protection of the land makes it more likely that environmental enhancements will remain in place over time and continue to generate credits. See Recommendation Six of this report for more on this subject.

In sum, while the two-million-acre goal is needed and even feasible, most experts in the region believe that

attaining that goal by 2025 will be difficult. The greatest challenge will be securing increased levels of both federal and state financial support in a difficult economic climate. Local government land conservation programs are under similar fiscal constraints. However, as public funding declines or stagnates, there is an increasingly important opportunity for private investors and other businesses involved in the emerging ecosystem marketplace to engage in land conservation. New private sector initiatives, such as nutrient and carbon trading and other means of monetizing the ecological value of land conservation, should be carefully and actively developed and supported.

Clearly, achieving the new conservation goal will require engagement of the private sector, new programs, creative financing and an even greater level of federal, state and local cooperation that has yet to be realized in the Chesapeake region.

FIGURE 4 Federal Investment in Land Conservation Within the Chesapeake Watershed

Select Federal funding sources for land conservation in the Chesapeake (millions of dollars).

SOURCE OF FUNDS	FY 2007	FY 2008	FY 2009	FY 2010
Federal Land & Water Conservation Fund (LWCF)				
U.S. Fish & Wildlife Service	2.45	3.37	6.90	4.53
National Park Service ¹	5.00	5.91	5.58	2.44
U.S. Forest Service (Forest Legacy)	4.03	1.73	3.26	5.97
Subtotal	11.48	11.01	15.74	12.94
North American Wetlands Conservation Act (NAWCA)	1.36	0.26	0.12	0.06
National Coastal Wetlands Conservation Grants	0	0.26	0.36	0.63
Stateside LWCF²				
Delaware	0.27	0.22	0.26	0.36
Maryland	0.54	4.47	0.53	0.74
New York	1.38	1.14	1.34	1.86
Pennsylvania	0.93	0.76	0.90	1.26
Virginia	0.62	0.51	0.60	0.84
West Virginia	0.30	0.25	0.29	0.41
District of Columbia	0.06	0.05	0.06	0.09
Subtotal	4.10	7.40	3.98	5.56
Farm Bill Programs				
Farm & Ranch Lands Protection Program ³	7.3	15.0	13.75	na
Wetlands Reserve Program	2.6	7.1	8.27	na
Subtotal	9.90	22.10	22.02	na
DoD Readiness & Env'l Protection Initiative (REPI)	3.75	3.77	6.01	5.36
TOTAL (millions of dollars)	30.59	44.80	48.23	24.55

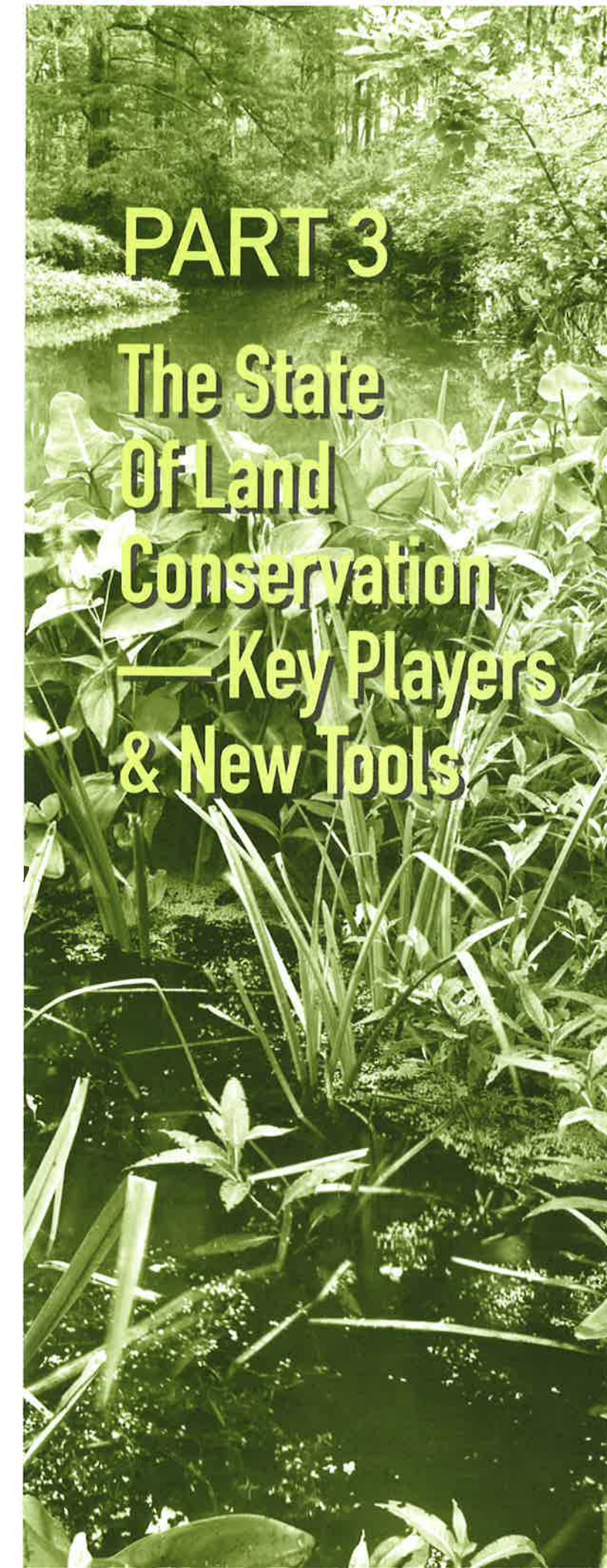
SOURCE: EPA Chesapeake Bay Program and Natural Resources Conservation Service

na — data not available at present time

1. For acquisition within National Park System units and along National Trails in the Chesapeake Bay watershed.

2. Total funding provided to states, not specific allocations for land acquisition within the Bay watershed. Stateside LWCF may also be used for recreation development grants as well as for land acquisition.

3. The Wetlands Reserve Program and Farm & Ranch Lands Protection Program fund conservation easement purchases; however, a portion of funds may be used for other purposes.



PART 3

The State Of Land Conservation — Key Players & New Tools

THE STATE OF LAND CONSERVATION

An array of tools has been used to protect many types of land throughout the Bay region. Today, fee simple purchases and conservation easements are being complemented with new tools, such as purchase of development rights and installment purchase programs, designed to conserve still more acreage. New entrepreneurial players are using tools to join the efforts of existing conservation groups. A rich variety of lands ranging from agricultural and forest lands to wetlands and historic sites to archeological and cultural landscapes have been targeted by different programs. A range of priorities, from water quality to preserving working landscapes, is now driving conservation decision making.

Extensive forests blanket the upper reaches of the watershed, many of which are publicly owned (generally under state ownership in Maryland and Pennsylvania and federal ownership in Virginia), reflecting the strong acquisition priority of the last century. However, in recent years, very little forest acreage has been acquired or placed under easement since publicly funded programs have focused elsewhere. In fact, for the past decade across Maryland, Pennsylvania and Virginia, 2.9 acres of agricultural land have been conserved by the states for every one acre of forest land (See Figure 5). Even though many of these agricultural acres include woodlots, it illustrates the region's profound reliance on the farmer to preserve the Chesapeake landscape. Much of this conserved agricultural land is in regions of high nutrient loadings — the Lower Susquehanna, the Virginia Piedmont and the Eastern Shore of Maryland — providing opportunities for enhanced management practices to reduce loadings to the Bay's waters.

There is now a wide range of state programs designed to keep farms and forests economically viable in the watershed. This is one area that would benefit from even higher levels of collaboration between state and federal agencies and private entities. One example is Pennsylvania's Woodnet Program. This multi-partner initiative markets local wood products and networks local mill owners, woodlot owners and artisans. The South Mountain region, located within the Bay watershed, now generates a more reliable income for forestland owners, thereby keeping their lands in forest.

The protection of lands of high ecological value — wetlands, buffers, riparian and wildlife corridors — remains a priority of existing public programs most interested in protecting water quality and fish and wildlife habitat. At the same time, restoring abandoned

or underutilized farmland, reclaimed mined areas and other deteriorated areas is a growing focus of an emerging private sector market seeking to establish mitigation banks and generate offset credits. The growth of these entities is being driven by increased enforcement of permits to reduce pollution entering streams and rivers or to protect wetlands or endangered species habitat. This opens up another important area of collaboration between public land conservation agencies and the emerging private entities engaged in this work.

Another evolving aspect of land conservation involves sea level rise and climate change. In certain parts of the Chesapeake, sea level rise is affecting shorelines, wetlands and other natural systems that protect water quality and wildlife habitat. Conservation strategies that take sea level rise into account can help protect communities and make natural systems more resilient. Each state is required to produce a state Climate Change Adaptation Plan to remain eligible for multiple federal grant programs. States are using this charge to rethink land conservation strategies that incorporate adaptive management in order to conserve wildlife migration corridors, fish and wildlife habitats and important community buffer zones.

Still others are interested in conserving lands that have recreational, historic or cultural values. Much of this work takes place in the more developed parts of the region. Here, collaboration among a wide range of stakeholders, including land trusts and localities, is key to identifying potential parcels, educating landowners and successfully conserving priority lands.

While it is difficult to choose priorities among this array of objectives, the conservation of high-value forest and other ecologically valuable lands has the greatest water quality benefit per acre, both locally and for the Bay. The area of perhaps greatest opportunity relative to water quality is the conservation of agricultural lands with best management practices, especially if a strong market for credits and trading with point sources of pollution can be established.

The most critical element in achieving the 2025 land conservation goal is for all land protection agencies and

FIGURE 5 A Typical Year of Land Conservation

Average annual state funded land conservation rates in the Chesapeake Watershed¹

Category	Fee Simple Acres	Less Than Fee Simple Acres	Total Acres Protected
MARYLAND			
Agricultural Lands	270	16,966	17,236
Forest, Wetlands, Natural Areas	6,694	1,752	8,446
Cultural, Historical, Park Lands	298	1	299
Other Conservation Lands ²	590	6,119	6,709
VIRGINIA			
Agricultural Lands	157	10,451	10,608
Forest, Wetlands, Natural Areas	1,796	698	2,495
Cultural, Historical, Park Lands	336	446	783
Other Conservation Lands	146	25,688	25,834
PENNSYLVANIA			
Agricultural Lands	NA	13,881	13,881
Forest, Wetlands, Natural Areas	3,418 ³	NA	3,418
Cultural, Historical, Park Lands	140	NA	140

1. All figures based on a 15 year annual average except as noted; figures do not include other conservation acreage protected by federal, local, or private entities.

2. "Other Conservation Lands" means lands with multiple uses including a mix of agricultural lands, natural areas or historic sites.

3. 28-year annual average

NA—Not available

programs to collaborate and take stock of changing priorities and the emergence of new land protection tools and players.

KEY PLAYERS

Although the federal government set the two-million-acre goal, federal agencies realistically will not likely take on the bulk of the responsibility for actions needed to achieve the goal. The EO strategy does call for efforts to examine such concepts as establishing a Chesapeake Bay unit of the National Park system and expanding federal wildlife refuge areas, protected land around Department of Defense facilities and in National Forests. But overall, the major role seen for the federal government is as a source of substantially expanded funds through: full funding of the Federal Land and Water Conservation Fund and increasing the proportion of these funds available to the states; more efficient use of existing funding sources such as agriculture and forest conservation programs; and creation of new or expanded funds.

For example, the federal Forest Legacy Program should be expanded because today it is not meeting demand for forest conservation easements.

State governments have borne a large share of the land preservation efforts that contributed toward the 20 percent land protection goal. The states will have to continue that leadership role to attain the 2025 goal. There is a wide range of programs in each state that support both the previous and new goals. Maryland established a real estate transfer tax in 1969 as a dedicated funding source that now supports agricultural and natural resource conservation, recreation and parks, and historic preservation programs. Pennsylvania's Agricultural Conservation Easement Purchase Program was established in 1988 and leads the nation in the amount of farmland acreage protected. As of October 2009, the program has protected over 2,000 farms in the watershed and more than 4,000 statewide. Virginia has developed a very effective program backed up by over \$100 million in tax incentives each year including transferable tax credits, which has protected over 500,000 acres.

Importantly, each state will need to find ways to fully fund and, where needed, expand these important programs as we continue to recover from the current economic situation. Above and beyond the states' own funding, all of the state programs are going to need more federal funding support simply to maintain the same level of effort reached over the previous 10 years.

Local governments have also been active and remain critical to reaching the new two-million-acre goal. A number of Maryland counties have developed and operated their own land preservation programs for decades, with impressive results. Several Pennsylvania townships have their own open space acquisition bonds and other programs, and the counties play a critical role in the Commonwealth's agriculture preservation effort. Localities in Virginia have also started developing their own land preservation programs, and are increasingly partnering with state and federal agencies to leverage local funds.

Non-profit land trusts have been active for many years acquiring easements and working with landowners.

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- Innovative local government preservation techniques
- A tri-state historical & cultural conservation corridor; and
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Although private grants and donations have decreased due to the recession, the long-term expectation is that funding from these NGOs with interests ranging from ecological to historic, cultural and archeological, will only grow in importance in the future. As government reliance grows, the capacity of these private land trusts must be supported and built up.

Newer to the land conservation game, Timberland Investment Management Organizations (TIMOs) and Real Estate Investment Trusts (REITs) are playing an increasing role

in forestland conservation in the Bay watershed. REITs purchase timberland while TIMOs manage the forests for financial returns on behalf of their owners. Both are independent investors that together buy, manage and sell forestland on behalf of large investors, such as corporate pension funds. Recently, two major conservation easements were negotiated by The Nature Conservancy and several TIMOs in Virginia and Pennsylvania. Covering more than 20 square miles of forestland in the Dragon Run and Mattaponi watersheds, one easement, the largest recorded to date in Virginia, protects 13,350 acres. The other is in the heart of the Pennsylvania Wilds region in the headwaters of the Bay watershed, and protects 9,500 acres of ecologically and economically important forestland in Elk County.

The for-profit sector role is the newest and fastest growing among the land conservation players. Private sector businesses are just beginning to develop opportunities around emerging trading and offset programs related in large part to state and federal regulatory programs that protect streams, wetlands and wildlife. Nutrient trading programs in Virginia, Maryland and Pennsylvania are in varying stages of development. Carbon trading to protect forests is being developed in Pennsylvania, and mitigation banks for the protection of wetlands have been established as well.

How these private enterprises will grow and what role they will play in achieving the land protection goal remains to be seen. The collaboration of private firms with public natural resource agencies will determine their success.

NEW TOOLS

For many years, the primary land preservation tool of government was the full title or fee simple purchase of land from the owner. This type of transaction was popular for decades with land managers because it gave public agencies full control to manage the land for the public interest and often allowed for citizen access to the land. Outright acquisition of land is still important, but a far greater number of acres are now protected through the use of conservation easements, which provide more limited public access.

Over time, first with non-profit conservancies and then with government agencies, the advantages of conserving some land that remains in private ownership became obvious as the costs of maintaining and acquiring land grew. Today, most land preservation is carried out through acquisition of a conservation easement or other forms of transferring development rights, where the landowner maintains ownership but either sells or donates their rights to develop the property. This is especially prevalent in working landscape conservation programs that seek to protect agricultural lands or forests.

Tax incentives have emerged as another major financial aid for landowners who participate in land preservation programs. The wide use of donated conservation easements has been influenced by federal and state tax benefits to landowners, generally in the form of sizeable tax deductions or credits. Local tax benefits vary, but in general, a landowner under an easement is taxed only on the lower value of the remaining property rights.

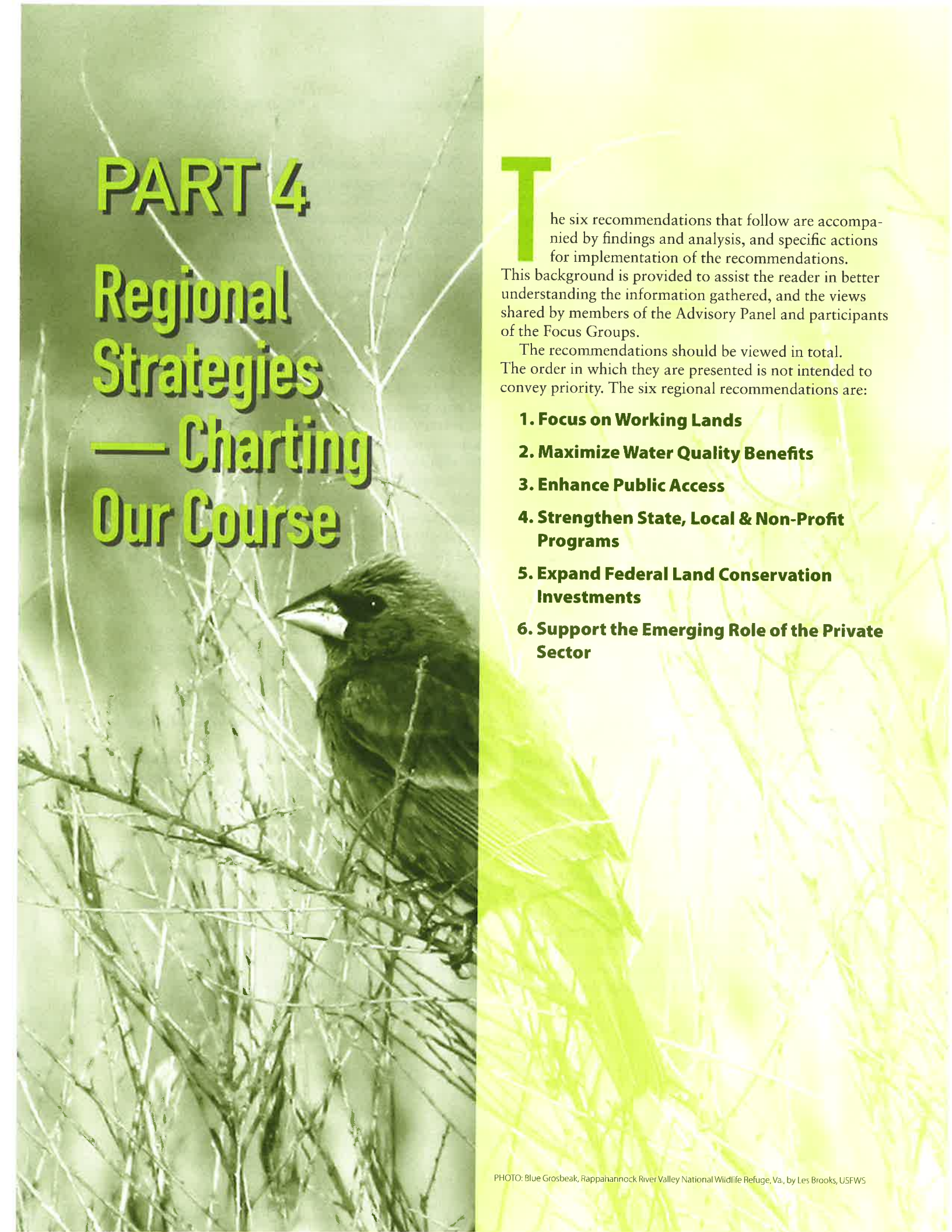
As private, non-profit land conservation organizations and government agencies have become more sophisticated in real estate finance, there has been a growth of innovation and tools to make conservation of lands more attractive to the owner and affordable to the purchaser. These include installment purchases, use of municipal or state bond authorities to raise money, programs to purchase and sell development rights, and creative use of zoning. Land conservation programs in Virginia, Maryland and Pennsylvania grew more complex throughout the 2000 to 2010 time period. Now the states can learn from one another and apply these lessons to create a truly comprehensive approach to land conservation in their own jurisdiction (see Part 5).

The next wave of new land preservation tools may come largely from the private sector, in the forms of businesses created to establish mitigation banks and offset credits, and other innovative financial tools that capitalize in part on private markets. These include nutrient or pollution credit trading programs or various forms of species or ecological mitigation banks that could lead to restoration and protection of ecologically valuable land areas. More and more private companies are launching efforts to capture the economic values generated when land is protected, potentially creating new means to fund additional land protection.

This entire area of development — commonly referred to as payments for ecological services (PES) — is in its infancy and requires significant public and private investment, a regulatory authority with geographic breadth and the appropriate balance of policies and rules to both enable the efficient functioning of these markets while at the same time ensuring that pollution caps or land conservation objectives are monitored and met.

Finally, conservation corridors along stream valleys and the great rivers of the Chesapeake, including land and water trails, greenways and cultural landscapes have been used around the watershed to protect important linear landscapes. They offer multiple benefits to improve water quality; create nearby recreational opportunities; protect wildlife and fisheries corridors; revitalize communities and create cultural connectivity in urban and rural settings. Land conservation corridors can be linked to form regional networks and managed through public-private partnerships among federal, state and local entities and private landowners.

The Conservation Reserve Enhancement Program (CREP) offers an excellent example of the benefits derived from linking conservation efforts linearly, along corridors. Vermont has used CREP to promote stream buffers and other best management practices on farms and forests that have water quality resource concerns, with a focus on establishing contiguous corridors of protective stream buffer vegetation. Vermont officials are also pursuing an innovative river corridor management program that uses both conservation easements and local zoning controls to encourage natural river stability. The technique creates broader protective buffers that allow streams to meander within a calculated corridor width that accounts for the likely adjustments a particular stream will make.



PART 4

Regional Strategies — Charting Our Course

The six recommendations that follow are accompanied by findings and analysis, and specific actions for implementation of the recommendations. This background is provided to assist the reader in better understanding the information gathered, and the views shared by members of the Advisory Panel and participants of the Focus Groups.

The recommendations should be viewed in total. The order in which they are presented is not intended to convey priority. The six regional recommendations are:

- 1. Focus on Working Lands**
- 2. Maximize Water Quality Benefits**
- 3. Enhance Public Access**
- 4. Strengthen State, Local & Non-Profit Programs**
- 5. Expand Federal Land Conservation Investments**
- 6. Support the Emerging Role of the Private Sector**



PHOTO: Pennsylvania Landscape by Gretchen Hoffman, American Farmland Trust

FINDINGS & ANALYSIS

It is no small challenge to identify large tracts of high quality lands, including 695,000 acres of high-value forest lands, to achieve the goals of permanently conserving two million acres of additional land in the watershed. Remaining unmanaged forests are being fragmented and sold off to numerous owners, making it more difficult to accumulate large parcels, contiguous lands and wildlife corridors. Lands with high ecological value such as stream buffers and wetlands are the focus of both regulation and assistance programs, but they do not add up to a large number of acres. Damaged lands (e.g. reclaimed mine lands) that have the potential to be restored may be more widespread, but the programs to incentivize their conservation and restoration through ecosystem service markets are not yet developed.

As a result, the most likely source for lands to conserve are the millions of acres that comprise our existing farms and managed forests, whose owners are coming under economic pressure to either sell their land or allow the

RECOMMENDATION

1 FOCUS ON WORKING LANDS

States and localities should continue and expand programs and advance new policy initiatives to conserve a critical mass of well-managed working farms and forests to ensure their economic viability into the future.

land to go fallow. According to Penn State University, over one million acres of farmland have been abandoned in recent decades, and the regional forest products industry has fallen on hard times, causing many mills to shut down, especially hardwood mills in Pennsylvania. Efforts to preserve working farms and forest lands will fail unless the economy can support their long-term viability.

Our success in saving working landscapes requires efforts to assure that the farm and forest economies along with the tens of thousands of jobs they provide are supported with adequate infrastructure, such as roads, railroads and other means to reach their traditional markets.

There must also be access to tech-

nical assistance and government support programs. Otherwise, the fields will go fallow and the forests will go unmanaged, neither of which provides the benefits to the community or to water quality that come from environmentally sound management of these landscapes.

More importantly, there must be appropriate land use and zoning controls in place to retain strong, identifiable

clusters of working lands and a volume of activity to assure an economically viable service support industry that provides places to buy or rent equipment, suppliers, and individuals with connections to markets and financial institutions.

The point is that there must be a sense that there is now and there will be for the long haul, a structure of support for environmentally responsible forestry and farming in the community. In Lancaster County, Pennsylvania, farmland adjacent to land under easement costs more than acreage not yet conserved. This is because there is assurance that the surrounding farms, also under easements, will always be there to maintain a critical mass to keep the support structure in place.

The Harry R. Hughes Center for Agro-Ecology in Maryland presented well-researched recommendations for tools to preserve local working lands. The research supports the use of preferential agricultural use tax assessments in combination with land transfer tax rates that are high enough to discourage conversion of agricultural land to development. The increased revenue is then redistributed to local land conservation programs. This combination provides a successful approach to slow the conversion of farmland while supporting farming activities.

Similarly, local government investment in working land preservation, particularly in areas where such lands represent a significant economic contribution, yield important public benefits at relatively low cost compared with traditional capital spending projects (e.g. road construction and stormwater controls). Further, local government land use controls that are designed to keep contiguous clusters of working lands intact are essential to maintaining their long-term economic viability.

A related and recent incentive that may improve the economic viability of agricultural land is the emergence of local markets for specialty products. Much of this has to do with using part of the farmland to grow food for local markets and restaurants. States and localities have supported this with farmers markets and informational programs to increase citizen awareness. As the buy local movement gains in popularity along with programs to improve the quality of food to deal with obesity in our society, these efforts could expand and strengthen the economic base of farming.

Similar efforts to promote the use of local timber and non-timber products are underway in Pennsylvania, including organizing local production and marketing of

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ginseng, maple syrup, wood crafts, and locally milled wood products. Markets for using wood chips and forest slash as a fuel source for public buildings is another possibility. The Pennsylvania Fuels for Schools Program has been such a success that it is being broadened to support boiler retrofits and other needs at a full range of local and state public buildings. Also, generation of heat

and electricity from biomass is **increasing** in popularity for on-farm and nearby use in the **region**.

Ultimately, if markets for cellulosic biofuel feedstocks develop, both forests and farms will be able to benefit from new sources of income — forests from thinning, slash and chips and farms from switchgrass, corn stover and fast-growing trees. In 2009, Pennsylvania published one of the first guidance documents in the country on sustainable development and harvesting of forest biomass to ensure appropriate scale and environmental safeguards.

Finally, there is the tourism potential of having preserved wide swaths of the countryside for active or passive recreation. Scenic drives remain a major weekend activity for urban dwellers. Programs to allow public access for fishing, swimming and other water-based recreation are being developed consistent with landowner needs and desires along water trails. As more and more open lands become protected, and as more and more of those are prosperous working lands, the result can be investment in the local tourism economy. The 2006 U.S. Fish and Wildlife Service Survey of Fishing, Hunting and Wildlife-Associated Recreation cites combined annual incomes for fishing, hunting and wildlife watching activities and travel as: \$1.6 billion for Maryland; \$2.4 billion for Virginia; and \$5.4 billion for Pennsylvania.

ACTIONS

- **Establish a Differential Land Transfer Tax Rate to Encourage Local Conservation.** States and localities should establish higher agricultural land transfer tax rates, where such taxes exist, for farms converted to development. The resulting revenue should be allocated to local forest and farmland preservation programs. This could be enhanced with creation of a state-level dedicated fund to apportion the development tax proceeds equitably to all rural areas.
- **Dedicate Operating Funds to Conserve Working Lands.** Local governments should dedicate funding

in their annual operating budgets for the conservation of working farms and forests at a rate that reflects the economic significance of these industries in their communities. For instance, on Maryland's Eastern Shore, the Eastern Shore Land Conservancy recommends local governments commit at least 1.5 percent of their annual operating budgets for land conservation to support traditional economies.

- **Integrate Agriculture and Forestry into Regional Economic Development Strategies and Local Ordinances.** State, regional and local business development agencies should encourage the retention and growth of resource-based businesses — farming and forestry — in their economic development strategies. Support should include regional branding efforts; help identifying emerging market opportunities including the use of biomass and biofuels for alternative energy production; and promotion of local and regional outlets for farm and forest products. Many codes and ordinances lack sensitivity to the changes in agriculture and forest products and should be reviewed and revised to support greater growth opportunities.

- **Ensure Planning and Zoning Policies Support the Long-Term Conservation of Working Lands.** While planning and zoning practices cannot alone assure the needed level and extent of open land conservation, they can help to prevent the acceleration of land values in response to development pressure. Underlying zoning densities and permitted land uses should be structured to encourage the right to farm and discourage incompatible uses. Full accounting of the costs and benefits to taxpayers of different land uses should be researched and taken into account.

- **Build the Heritage-Tourism Potential of Open Lands and Towns.** State, regional and local agencies should work together to promote tourism that connects preserved open spaces with water and land trails and the resources of neighboring towns. Agencies should also ensure that on-farm, tourist-related activities are permissible to the extent possible under conservation agreements and local ordinances.





PHOTO: Nassawango Creek, Md., by Alan Eckert, The Nature Conservancy

FINDINGS & ANALYSIS

An emerging priority for land protection programs in the Bay region is to protect land from being developed in order to protect local and Bay water quality. The rationale is that developed land, with its extensive roads, parking lots, roofs and subdivisions, increases the flow of runoff and impairs natural stream courses. Development also brings sewers or septic systems that add to the loadings of nutrients to the receiving waters.

However, not all undeveloped lands provide the same benefits. There is a clear difference in the benefits derived from forest land versus land in agriculture. Forest cover absorbs nutrients effectively and prevents them and sediment from reaching streams. Agriculture is a less clear case. Some even argue that the cultivation of heavily fertilized row crops such as corn and soybeans on farms where sound environmental practices are not put on the ground are

RECOMMENDATION

MAXIMIZE WATER QUALITY BENEFITS

Federal, state and local land conservation programs should be enhanced, to the extent feasible, to yield greater long-term water quality benefits through the addition of requirements and incentives for farmers and forest owners to use best management practices for preserved agricultural and forested lands.

worse for the Bay than developed land.

In general, there is agreement that a mix of forests and farms is better for the Bay than the same acreage developed as housing or businesses, and that significant additional benefits can be derived from employing a variety of management practices on working lands of all types. Simply preserving agricultural land is only the first step from a water quality perspective. Farms that secure conservation easements are required in some states to take a number of other conservation steps, with many counties adding their own requirements. Yet, there is much more that can be done to increase the return on the conservation dollar by further incentivizing land owners to increase the use of conservation management practices as well.

Such practices are well known and include conservation plans, nutrient management plans, cover crops, grass swales, forest or grass stream buffers, stream fencing and other measures

and best practices aimed at reducing runoff and retaining soil and nutrients on the land. Conserving land through best management practices can go well beyond simply preventing the added impacts of development, and can make important contributions to reducing pollution loadings to the Bay.

Based on our analysis of Chesapeake Bay Program data, there is a large untapped potential for conserved lands to contribute to the achievement of the Chesapeake Bay pollution limits established under the Bay TMDL. For example, if the new Bay region goal of two million acres is achieved, and if the conservation of these acres is targeted to those lands known to have the greatest influence on main stem water quality, and in addition if BMPs are applied to all these lands, the benefits could exceed several million pounds of nitrogen per year. Moreover, the Bay region has already conserved 7.3 million acres. Many of these lands, with the addition of BMPs, could provide substantial opportunities for water quality improvements.

Some management practices are already required on lands subject to conservation efforts. For example, the Pennsylvania Farm Land Preservation Program requires each farm to have a conservation plan in place as a condition of the program. Also, Pennsylvania's 2.2 million acres of state forestlands must follow strict best management practices to retain third-party certification as sustainably managed forests under the Forest Stewardship Council program. All farms in Maryland are required to have nutrient management plans. And for large transactions involving over \$1 million in tax credits under Virginia's land preservation tax credit program, water quality criteria must be met.

ACTIONS

■ **Target Land Conservation to Achieve Water Quality Benefits.** To meet the Chesapeake land conservation goal, forest land protection should be given greater emphasis as forest is the most beneficial land cover for water quality with the least cost. Fortunately, protection of forest lands can be effectively combined with farmland protection efforts as there are over three million acres of forests located on active farms in the watershed. States should continue to develop and

utilize helpful GIS tools to identify priority landscapes with the highest benefit to water quality as well as other natural resource benefits, such as Virginia's Land Conservation Needs Assessment and Maryland's GreenPrint.

- **Target Public Investment of Best Management Practices to Permanently Preserved Lands.** Public funds invested in BMPs should be targeted, to the extent possible, to landowners who have conserved their working farms and forests in perpetuity. This will help to ensure long-term benefits from these investments in water quality improvements for the Bay.
- **Integrate Agricultural Stewardship into Agreements for Permanent Land Conservation.** Federal, state and local governments and non-profit organizations engaged in programs to conserve farm lands should establish a minimum level of management practices as a condition of participation. The level should be set to assure continued interest by landowners in permanent conservation. Additional management practices can then be provided through cost-share or credit and sale programs.
- **Develop Next Generation Eco-Easements.** Chesapeake Bay Program scientists should work with the conservation community and landowners to develop the next generation of performance-based easements to be used by states, local governments, land trusts and others working with landowners. The effort should result in a template that outlines new "eco-easements" that would improve watershed health through a variety of practices including: forest management for nutrient reduction; stormwater management that incorporates emerging technologies; and wetland migration corridors that deal with increasing sea levels. Eco-easements should allow for revisions over time, in response to changes in our understanding of the natural conditions. Obviously, continued monitoring and cooperation of the landowners will be key. States and land trusts should consider revisiting land owners of older easements to encourage strengthening their early easements with such performance-based practices, which may be eligible for financial assistance or tax credits.



PHOTO: Williams Wharf, Va., by Tim Ulsaker, Mathews Land Conservancy

FINDINGS & ANALYSIS

Public access to natural areas such as rivers, trails and forests allows the public to enjoy and experience the lands and special places that make up the Chesapeake. Such outdoor experiences often inspire an appreciation for nature and help to build support for the permanent conservation of land together with all its benefits. In fact, few voter ballot initiatives can match the public approval record of those for open space and public access.

Yet public access, especially water access in the Bay region, is limited by the lack of public ownership, the high cost of shoreline property, issues of maintenance and liability, and especially the weakness of long-term planning for all forms of access.

This need not be the case. There are many ways to accommodate public access to water and land as part of the land conservation effort. One place to start is by questioning the means by which water access goals are

RECOMMENDATION

3 ENHANCE PUBLIC ACCESS

Legislative, policy and programmatic initiatives coupled with landowner incentives and volunteer actions are needed to create new public access locations that offer all citizens opportunities to enjoy the Bay, its rivers, forests and other natural features.

traditionally set. Neither the Bay Program goals nor the latest goal established under the Executive Order on the Chesapeake reflect the reality that the quality and location of access points are often more important than their number. Instead, Chesapeake public access goals have focused on the number of access points to the water — for example, the Executive Order goal is 300 new access points by 2025. Counting the number of sites and the percentage of shoreline that is publicly accessible does not tell the whole story.

Although new access points have been added over the years, many of these locations are difficult to reach, of low quality or otherwise inconvenient to use. Conversely, a single, relatively small, but well positioned site can provide adequate access to

the water. For example, the Pennsylvania Fish and Boat Commission works with private landowners to obtain permanent public fishing access easements along a 35-foot corridor next to stream banks. The landowner enters into

the easement contract voluntarily, continues to own and control the land and receives payment for the easement value. Since 2006, more than 15 sites have been secured providing over 15 miles of access to fishing grounds.

ACTIONS

- **Ensure that Land Conservation Efforts Achieve an Appropriate Balance Between Private Land Conservation and the Acquisition of Public Lands.** As the population of the Bay watershed grows, there is an ever-growing need for more parks, wildlife refuges and other government-owned lands that provide recreational access to the public. Concurrently, holders of conservation easements should seek opportunities to include public access in conservation easements where appropriate. States should also address the real or perceived landowner liability issues that have been barriers to landowners granting trail access in the past.
- **Set More Refined Access Goals for the Bay Watershed.** As the lead federal agency for public access under

the Bay Executive Order, the National Park Service should convene representatives from federal, state and local governments and the non-profit sector to establish next stage access goals that better reflect the range of access opportunities as well as current needs, such as multi-purpose access along water trails.

- **Ensure the Next Transportation Reauthorization Bill Promotes Recreation and Public Access to Waters.**

During the federal highway act reauthorization process, states should work with their Congressional delegations to require that transportation plans and projects include canoe, kayak and fishing access at stream crossings and to authorize funding as part of the project costs.

- **Enhance Voluntary Landowner Stewardship**

Programs. States should work in partnership with private organizations to establish or expand voluntary state programs to open private lands to recreational access including hunting, fishing and hiking. Assistance should be sought from the U.S. Department of Agriculture's new Voluntary Public Access and Habitat Protection Incentive Program.





PHOTO: Fort Hunter, Pa., by Trish Carothers, Susquehanna Greenway Partnership

FINDINGS & ANALYSIS

There is a wide range of programs managed by state and local governments and private conservation groups to preserve open space in the region (noted in Part 3 of this report and covered in detail in the Commission's 2001 report, *Keeping Our Commitment: Preserving Land in the Chesapeake Watershed*). While the purposes and priorities of the various programs differ, there is a fair level of cooperation among the groups and a high level of awareness of what each is doing. At the same time, some of the more innovative programs could be adopted by other states or local governments to great benefit in those jurisdictions.

The three Bay region states benefit from some of the most effective state land conservation programs in the nation. Maryland's Program Open Space is a dedicated fund, financed by a real estate transfer tax, which supports a set of state and county conservation programs. These include conservation easement and land

RECOMMENDATION

4 STRENGTHEN STATE, LOCAL & NON-PROFIT PROGRAMS

State and local governments should diversify their land conservation programs by offering a combination of dedicated revenue sources, tax incentives and market-driven approaches, as well as participating in programs to learn from each other's successes.

trust assistance programs under the Maryland Environmental Trust, state and local recreation funding, the Maryland Agricultural Land Preservation Fund, and the Rural Legacy Program that all support open lands conservation.

A number of Maryland counties have undertaken their own land conservation programs. Baltimore County has been targeting desirable properties for conservation easements with a priority selection system developed with The Conservation Fund. The county uses a detailed planning process and takes advantage of the state's Critical Areas Law and a variety of Program Open Space options, including the Rural Legacy Program. Nearby Carroll County has relied more on installment purchases and

has included a number of management measures as parts of their agreements, including minimum 50-foot buffers along streams.

Pennsylvania is said to have the finest agricultural land preservation program in the country, with over

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4,000 farms permanently protected, of which 2,000 are in the Chesapeake watershed. The program requires each property to meet soils criteria, to have at least 50 percent harvested cropland, pastureland or grazing land, and have an approved Soil and Water Conservation Plan. Counties play a key role in helping landowners enter the program and in the required annual monitoring visits.

Local non-agricultural programs in Pennsylvania are quite varied, in keeping with the local government structure, where, unlike Maryland and Virginia, substantial powers are vested in townships, boroughs and other local units that subdivide counties.

Some Pennsylvania communities are taking advantage of bond financing to accelerate land conservation efforts. Bonds are used to facilitate immediate land or easement purchases and to distribute costs over a long-term, fixed time period. Both revenue and general obligation (GO) bonds can be used. GO bonds allow the government to borrow secure funds with a commitment to timely payments of principal and interest over a fixed period of years. Revenue bonds are paid by the proceeds from an existing specialized tax or fee like a real estate transfer tax.

Virginia has protected over a half-million acres of open space with easements and income tax credits. This approach has become the Commonwealth's primary means of meeting both its own 400,000 acre goal and its share of the broader Bay region goals. The state income tax credits are set at 40 percent of the easement value and can be taken over a period of years. The credits are transferable to other taxpayers, so they can be of particular value to landowners who are land-rich and cash-poor, which is the case with many farmers.

Virginia has also enacted an enabling law to allow groups of counties in the Chesapeake watershed to establish Public Access Authorities. These new authorities can raise funds to acquire access for a wide range of public uses. The Middle Peninsula counties were the first to take advantage of this law, followed by the Northern Neck. Such coordinated efforts will help with the establishment of a congruent set of access points as water trails gain in popularity.

ACTIONS

- **Establish Dedicated Land Conservation Funds and Provide Tax Credits.** States should establish both a core, dedicated source of revenue and offer a range of tax credits to encourage landowner participation. Dedicated funds allow for long-term planning, setting of priorities and purchasing both public lands and easements. Substantial and transferable tax credits use market forces to expand land conservation opportunities, in particular by incentivizing the use of easements. The combination of these tools provides the greatest opportunity to enhance the quantity and quality of conserved lands. In both cases, states should provide adequate technical assistance and capacity support so that all citizens and landowners, across the economic spectrum, can actively participate in the programs.
- **Use State and Local Bonding Authority for Land Conservation.** Local governments that lack dedicated preservation funds, and have experienced or anticipate significant losses of valuable conservation lands, should consider bond financing to facilitate land or easement purchases. Bonds allow governments to capitalize upon market sources of financing. While the immediate benefit might be addressing short term needs, bonds can be used to finance conservation over the long term.
- **Support Monitoring and Stewardship of Conservation Easements.** Achieving the new Bay acreage goals will require even greater reliance upon land trusts as they secure and become holders of more and more conservation easements. Federal, state and local programs should support more efficient, cost-effective methods to monitor protected lands, as this is one of the most important and expensive responsibilities that easement holders undertake. GIS technology using the very latest up-to-date aerial photography should be utilized to enable widespread remote monitoring of conservation easements.
- **Convert Federal Short-Term Agreements with Farmers into Permanent Preservation Agreements.** Localities and other Bay states should emulate the Maryland and Virginia programs to piggyback the federally-funded Conservation Reserve Enhancement Program (CREP) that pays farmers to improve and protect ecologically sensitive areas. When the 10- to 15-year federal contracts finally conclude, the state can offer to pay to convert the conservation acreage to a permanent easement. Since it is essentially buying a future set of use restrictions, the earlier the state acts in the CREP period, the less expensive the easement.



PHOTO: Cat Point Creek, Va. by U.S. Fish & Wildlife Service

FINDINGS & ANALYSIS

The 20-percent land conservation goal accomplished over the past 10 years was funded primarily by state programs and private conservation groups. The new federal goal of two million acres, called for in the Executive Order, relies on nearly the same annual level of effort. However, state budgets are now under increasing pressures, and it is highly unlikely that this same level of effort can be supported for the foreseeable future. This means that the federal government will need to fill the gap to meet the goal.

Fortunately, the President's Executive Order did not simply set a two-million-acre goal. It also requires that plans be developed to meet that goal. There is opportunity, for example, to celebrate the Chesapeake's Great Rivers by designing Blueways Conservation Corridors that complement the emerging national water trails, support stewardship efforts under way in the region and serve as a model federal-state-local partner-

RECOMMENDATION

EXPAND FEDERAL LAND CONSERVATION INVESTMENTS

Additional federal land conservation funding, tax deductions and tax credits for the Chesapeake Bay watershed are needed along with programmatic changes aimed at making existing programs more efficient and effective.

ship for the Chesapeake and for the nation. More fundamentally, the order provides a catalyst for federal agency action and attention to the Bay overall, and in this specific case to land conservation. In addition, the U.S. Department of the Interior is in the process of developing a renewed land conservation program under the heading America's Great Outdoors.

To keep up the pace of the last 10 years, federal funds must be better integrated among various federal programs and with ongoing state efforts and private conservation groups. In some cases, such as those programs funded by EPA and the National Park Service, this involves building on established program relationships. But there are challenges and opportunities at the federal level that require specific attention.

The primary source of federal funds for open space remains the Land and Water Conservation Fund (LWCF) in the Department of the Interior. In recent years, the LWCF has received varied levels of appropriations; generally well below the authorized \$900 million. In fiscal

year 2011, the Administration requested full funding and members of the Congress have called for a more equitable split of the funds. Over the years, the tradition of allocating half of the LWCF appropriation to the states has been abandoned, with the vast majority of the funds going to federal agencies. These funds support a range of federal land conservation priorities, including the conservation of critical ecological and cultural lands within National Parks and Fish and Wildlife Refuges.

The Rappahannock River Valley National Wildlife Refuge offers an excellent example of a LWCF funded project. Established in 1996, the goal of the Refuge is to protect 20,000 acres of wetlands and associated uplands along the river and its major tributaries. As of May 2005, a total of 7,711 acres has been purchased with LWCF funds from willing sellers or donations by Refuge partners, including 1,033 acres of conservation easements. Importantly, the LWCF money can also be prioritized to purchase in-holdings when boundaries of parks and refuges are expanded.

A particularly important program for working lands in the Bay region worthy of enhancement is the U.S. Department of Agriculture's Farm and Ranch Lands Protection Program (FRPP) established under the Farm Bill. The program funds easements to permanently protect farms. In February 2010, the Secretaries of Agriculture of the north-eastern states, including Maryland, Pennsylvania, New York and Delaware, raised issues needing resolution in a letter to the Department of Agriculture. Proposed changes included simplifying certification of entities eligible to negotiate conservation easements with farmers, and streamlining documentation requirements. Also requested were major changes or elimination of the USDA land appraisal process, which can delay finalization of agreements for up to six months, and easier eligibility criteria for forestlands on farms. While changes in the 2008 Farm Bill were supposed to make a difference in these and other areas of the FRPP, the Secretaries conclude they have in fact made things worse.

Another area of federal impact on the land conservation goals is the Internal Revenue Code. For several years, donations of qualified easements for conservation or historic purposes have been eligible for a deduction that is larger than for other charitable donations — up to 50 percent of a taxpayer's income, or 100 percent for farmers. These provisions expired at the end of 2009 and the rules reverted to a lower amount and a shorter carryover period for the deduction. Another section of the Code allows tax credits for historic preservation, and there have been efforts to expand this to cover natural areas of historic significance, such as the Appalachian Trail. This presents the Chesapeake region with an opportunity to do the same.

Many of the recent federal efforts to assist in the preservation of open landscapes in the Chesapeake region relate to programs of the U.S. Departments of Agriculture and the Interior. USDA houses the Natural Resources Conservation Service, the Farm Service Agency and the U.S. Forest Service. The Interior includes the National Park Service (NPS) and the Fish and Wildlife Service, among others. There is not a strong tradition of these two departments, or other federal agencies, working together on land conservation. The Executive Order calls for the National Park Service to strengthen federal interagency coordination.

ACTIONS

- **Take Action to Fully Fund the Land and Water Conservation Fund, with States Receiving an Equitable Share.** States, localities and private land conservation groups should take immediate action to jointly support full and dedicated funding of the LWCF that includes an equitable share guaranteed to the states and a dedicated allocation from the Secretary's Discretionary Account to the Chesapeake Bay. Additionally, the federal government should allow LWCF funds to support private land conservation through qualified conservation organizations.
- **Extend the Enhanced Federal Tax Deduction for Conservation Easements.** The Governors and state legislative bodies should actively encourage the Congress to extend the expired tax deduction provisions for conservation easements and work with their Congressional delegations to allow historic preservation tax credits for recreational access and conservation at sites throughout the Bay watershed, including those associated with such federally recognized entities as the Captain John Smith Chesapeake National Historic Trail and the Star Spangled Banner National Historic Trail.
- **Coordinate and Leverage Federal Conservation Funding.** As called for in the Executive Order, federal agency conservation programs should better coordinate and target their conservation dollars to achieve regional Chesapeake goals. The NPS should put in place sufficient resources and personnel to lead formation of a cooperative partnership that maximizes funding and integrates program delivery for land conservation in the Chesapeake region.
- **Streamline USDA Farm and Ranch Lands Protection Program.** USDA should work within its regulations and if necessary with the Congress to revise the Farm and Ranch Lands Protection Program to clarify that

those funds are grants to partners, not property acquisitions by USDA, and allow USDA to fund farmland conservation programs rather than funding individual easements. These changes will significantly reduce delays and appraisal costs and eliminate the need for USDA to co-hold easements. As a streamlining alternative, USDA could make all funds for the region available to an experienced fund administrator for distribution and record-keeping.

- **Launch a Treasured Landscape Competitive Grants Program.** The Governors and state legislatures should call upon the Administration and Congress to establish a Treasured Landscapes public-private partnership grants program in Fiscal Year 2012,

housed within the Department of the Interior and modeled after the successful EPA Stewardship Grants Initiative administered by the National Fish and Wildlife Foundation. The program should target land conservation and better coordinate and leverage federal, state, local and private sources of funding. This recommendation is in keeping with the Executive Order Strategy and the goals that are emerging from the Administration's America's Great Outdoors Initiative (AGO). The AGO seeks to, in part, use competition and innovation to ensure that the most cost-effective conservation strategies are applied, and that federal conservation funding is focused and targeted.





PHOTO: Maryland Forest by David Burke

FINDINGS & ANALYSIS

Ecosystem markets are an innovative approach that engages the private sector in solving environmental challenges facing the nation and the world. Over the past 10 years, through a variety of regulatory frameworks and voluntary private sector standards and registries, these markets have taken form. Specifically, markets have been created to protect wetlands and endangered species, to reduce carbon (for its role as a greenhouse gas) and other airborne pollutants and, most recently, to use ecosystem markets to help reduce nutrient and sediment pollution.

In the simplest of terms, ecosystem markets allow for a polluter to purchase pollution reduction credits on the open market from entities that reduce pollution or other environmental impacts beyond a set baseline and create environmental improvements. A credit equals some measurable and verifiable environmental improvement such that a polluter can purchase

RECOMMENDATION

SUPPORT THE EMERGING ROLE OF THE PRIVATE SECTOR

**Chesapeake Bay Program
federal and state partners and
local governments should send
a strong policy signal and set
precise standards and guidelines
to dramatically expand private
investment in ecosystem markets
to conserve landscapes and reduce
water pollution.**

as many credits as needed to offset pollution it creates, or anticipates creating, in order to meet either regulatory requirements or voluntary-based objectives.

In general, the ability of an entity (such as the owner of a forest, farm or wetland) to create value from ecosystem services and to sell those services on the open market requires three factors. First, there needs to be a regulatory system in place that has enforceable limits in permits. While there are voluntary programs in place, for a market-based system to succeed broadly a regulatory framework that sets clear rules for investors to follow is needed. Second, the regulating agency needs to allow the issuance and use of offset credits as part of the fair and transparent regulatory regime. Third, in cases when a permittee degrades the

system locally, credits should be purchased relatively close to where the impacts are generated.

Markets created in the Chesapeake region, including nutrient pollution markets, can support land conservation

efforts in a number of ways. The sale of credits on working landscapes provides an additional income stream for farmers and landowners helping to ensure the economic viability of those lands and therefore their availability for protection. Also, depending on the strength of the market, investors may seek to purchase, restore and, in some cases, conserve large tracts of land in order to enhance those landscapes and create significant ecosystem services that can be sold in the marketplace. In certain instances, the ecosystem credits that are generated also require protection in perpetuity in order to be certified. This is particularly true for wetland and habitat conservation banks. Since rural lands offer the greatest options to reduce a pound of pollution at the lowest cost, opportunities to improve the ecological health of such lands should emerge as a target for market-based solutions.

The beginnings of a whole new sector of natural resource businesses are developing to promote and capitalize upon new market-based solutions. A few start-up nutrient trading firms are operating in Virginia and Pennsylvania in direct response to the establishment of nutrient trading programs in those states. Initial participation in these programs is limited, but there are opportunities for these programs to grow and expand. Similar programs are being tested in Maryland as well. Carbon trading is emerging in the watershed too. For example, the Nature Conservancy and a private sector partner, Blue Source, are partnering on a forest management project in Pennsylvania that sells carbon offset credits into the voluntary carbon market. These markets and the businesses that are emerging to serve them are building on more mature ecosystem markets focused on wetland and stream mitigation, and habitat and endangered species protection.

The firms engaged in nutrient trading in the Bay region are currently seeking government action to set clearer and more consistent rules for a system of nutrient and sediment pollution offsets and credits that are needed to advance cost-effective strategies for pollution control. Some of these firms participated in the Ecosystem Services Focus Group as part of this report. These experts emphasized that it will take closely coordinated action by federal, state and local governments, and clear rules and enforcement to support the emergence of these new markets. They also made it clear that once a coordinated government framework and sufficient enforcement tools are in place, government should not interfere in the market other than to enforce rules and to monitor performance to ensure ecosystem benefits are achieved. Moreover, government subsidies provided to stimulate private investment could have the opposite effect and actually slow down the creation of a true and robust market and suppress private

investments. Any policies designed to stimulate the market should be closely vetted with the private sector, land-owners and others to ensure their success.

Urban stormwater, which has not been given much attention for credits or offsets to date, may well provide one of the strongest opportunities for establishing a robust ecosystem market in the Chesapeake. Under the next phase of the TMDL program, EPA is beginning to set requirements and discharge limits on nutrient and sediment pollution that could serve as a basis for utilizing offsets. Many management practices for controlling stormwater in urban areas are very expensive compared to agricultural practices per pound of pollution removed, so credits generated by agricultural best practices (above baseline reductions in loadings) could be traded as cost effective offsets to urban entities needing to contain stormwater. This potential market would thus reward farmers for their nutrient reduction activities, incentivize permanent protection of lands to fully monetize ecosystem enhancements and provide an alternative to expensive containment and treatment of stormwater runoff.

There may be other opportunities to establish stronger ecosystem service markets in the Chesapeake, but clearly reform and new ideas are needed to fully leverage private sector investments that can improve water quality and support land conservation. Below are suggested actions that begin to address the barriers that impede ecosystem markets today.

ACTIONS

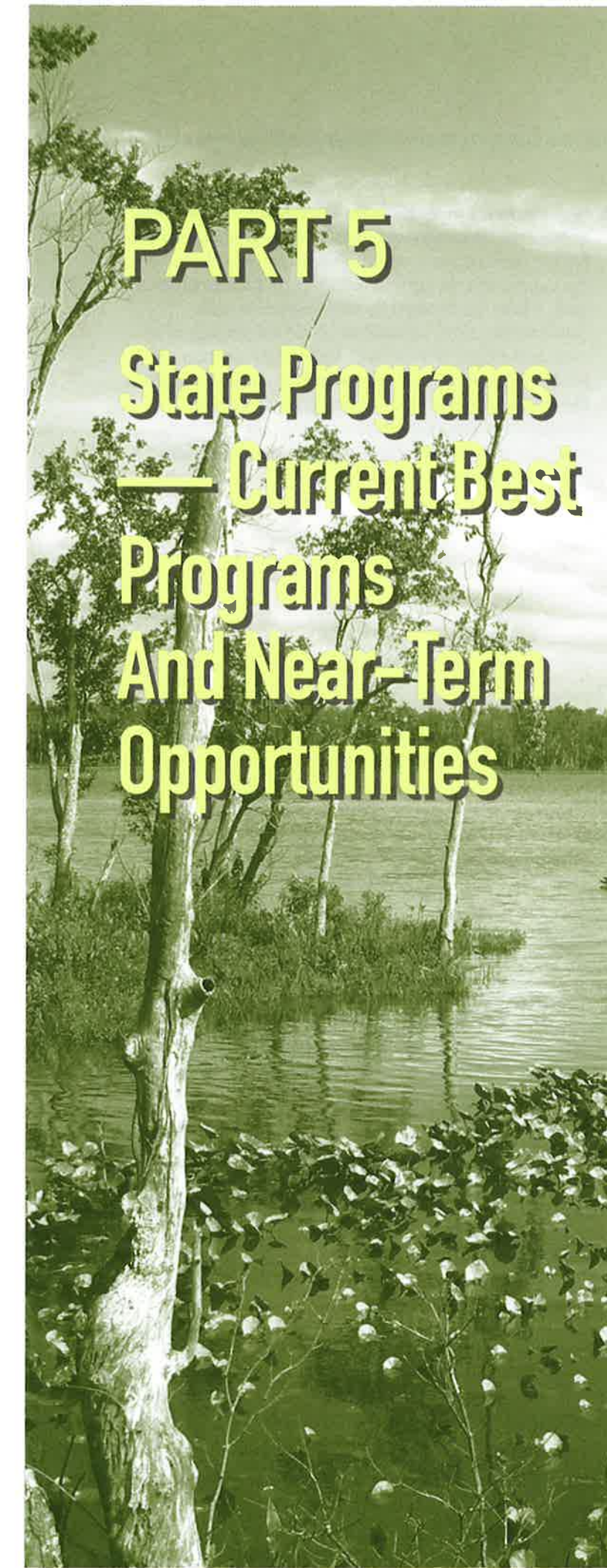
- **Set Baselines for Best Management Practices.** The first step to make a state or regional system of nutrient pollution credits work effectively is for states and EPA to set baseline management practices for open lands, including farms, forests and restorable lands of ecological value. A system for generating credits for voluntary actions above baseline could then be established. The credits should then be available for purchase by regulated sources, including wastewater treatment plants and stormwater permittees under clear rules that encourage development of a market in credits.
- **Establish a Market Framework.** Federal agencies and the states should establish a Bay-wide framework for ecosystem services with clear limits and rules that provide the market with certainty. This framework should minimize risks to attract private capital and build robust ecosystem markets. In appropriate cases, the rules should specify circumstances that allow use of offset credits or trades in tributary basins, as long as

sufficient pollution reduction is accomplished within every affected watershed. With respect to emerging water quality markets, the options are few and stormwater presents a strong opportunity for trades given the difficulty and expense of installing stormwater best management practices and the relatively low cost of reducing pollution on working lands — farms and forests. Since environmental enhancements placed on permanently protected lands provide a level of certainty to regulators and the market, land conservation should be factored into the rules and the framework for ecosystem services.

■ **Provide Extra Incentives for Permanent Protection.**

When ecosystem service enhancements generate credits for the market, extra credits should be provided — if the enhancements are located on permanently protected land. These lands could be working landscapes, conservation sites, cultural or historical properties or even archeological locations. Enhancements that are protected in perpetuity are easier to track and monitor for their ecosystem benefits and provide greater certainty for long-term performance. This incentive provides win-win solutions for both regulators and private investors.





PART 5

State Programs — Current Best Programs And Near-Term Opportunities

The Chesapeake watershed boasts three of the most successful land conservation programs in the nation. These three unique funding and conservation approaches in Maryland, Pennsylvania and Virginia, together have led to the permanent conservation of 1.24 million acres of land, an area slightly larger than the state of Delaware. This section briefly highlights these success stories along with each of the three states' other current land conservation programs. Also offered are concrete recommendations for expanding upon these programs with enhanced funding, innovation and resources to meet the new state and regional goals.

Maryland's Program Open Space was established in 1969 and, to date, has conserved more than 5,800 park and conservation area projects. This long-standing program receives its funding from a real estate transfer tax, which earmarks one-half of one percent of the purchase price of a home or property into a dedicated fund. The program provides financial and technical assistance to localities for the planning, acquisition and development of recreational land or open space areas, and funds land acquisitions and recreational facility development at the state level.

Created in 1999, Pennsylvania's Growing Greener program has had a variety of long-term, sustaining funding sources dedicated to conserving working lands and open spaces and other environmental goals. The Commonwealth has dedicated over \$1.3 billion through 2012 via General Fund appropriations, tipping fees, transfers from other existing funds and bond initiatives. These funds can be utilized to preserve farmland, forests, wildlife habitat, and new parklands in perpetuity.

The Virginia Land Preservation Tax Credit Program was also launched in 1999 and has been the key driver behind land conservation successes within the Commonwealth. Now, with the state authorizing the sale of transferable tax credits, record numbers of acres encompassing working farms, forests, recreational lands, scenic view-sheds, historic sites and natural areas have been preserved. Through the program, over 514,000 acres with an appraised value of \$2.4 billion have been protected through approximately 2,400 donations.

The conservation tools and funding mechanisms that currently exist in Maryland, Pennsylvania and Virginia represent a significant and strong base, but they are not sufficient to achieve the new state and Bay Program conservation goals confidently into the future. The recommendations that follow identify logical, near-term next steps that will firmly place each state on the path to success.



CURRENT BEST PROGRAMS

■ **Substantial Funding Source.** For over 40 years, Program Open Space has provided a dedicated funding source for Maryland's efforts to acquire and protect over 350,000 acres of open space and recreation areas. The fund is disbursed to counties based on population and the amount of real estate transfer revenue generated in that county. A recent change in the law in 2009 enabled the state to purchase land for less than fair market value through negotiations with willing sellers, enabling further leveraging and effective use of limited resources. Because of this program's success, most of Maryland residents now live within 15 minutes of an open space or recreational area.

■ **GreenPrint.** Maryland's GreenPrint computerized targeting system provides the technology to identify and communicate where the state's most ecologically significant lands occur, such as forests, wetlands and riparian areas. The system provides the basis for prioritizing land acquisitions to maximize clean air, clean water and thriving natural areas for wildlife and future generations. GreenPrint also features an interactive on-line map available to the public so citizens can learn about important ecological areas in their communities. This feature is instrumental in aligning the state's conservation partners to collaboratively protect ecologically valuable lands. Maryland's land trusts utilize GreenPrint to identify potential parcels for conservation and direct their outreach to those landowners. Local governments can also incorporate GreenPrint conservation priorities as a GIS-based data layer to facilitate comprehensive planning and land use decision making.

■ **Rural Land Protection.** Maryland's Agricultural Land Preservation Foundation (MALPF), now 33 years old, is one of the oldest agricultural land protection programs in the nation. The purpose of the program is to maintain sufficient land base to support Maryland's local supply of food and fiber. Since 1977, MALPF has protected over 280,000 acres of farm and forest lands. Counties with a MALPF-certified farmland preservation program are able to retain a higher proportion of the state's agricultural transfer tax revenues, which are collected for all transfers of land assessed for agricultural use. Now, certified counties must establish Priority Preservation Areas (PPAs) that designate their most productive farmland and pair this with land use policies that support protection of the rural land base.

The Maryland Agricultural & Resource-Based Industry Development Corporation (MARBIDCO) works in partnership with MALPF to offer landowners the opportunity to take advantage of Installment Purchase Agreements (IPA), a conservation easement payment option that is broken up into installments of tax-exempt interest payments, delaying assessment of capital gains taxes and providing greater flexibility for estate planning. MARBIDCO also works with commercial lenders and MALPF to help young or beginning farmers to purchase and permanently protect farmland through the Next Generation Farmland Acquisition Program.

One of the hallmark features of Maryland's preservation efforts is the emphasis on securing best environmental practices to help support restoration and protection of the Chesapeake Bay. The Rural Legacy Program protects working lands that are also of high ecological significance. The program rewards landowners with higher payments if they implement best green practices and incorporate them into their conservation easements. Green practices include streamside buffers, soil and water quality plans, and forest management plans. The Rural Legacy Program, as of July 2010, has protected over 67,000 acres.

Maryland's Conservation Reserve Enhancement Program (CREP) is an easement program developed in partnership with the U.S. Department of Agriculture. CREP is focused on protecting water quality by establishing and permanently protecting best management practices including streamside buffers, stabilization of highly erodible soils and restoration of wetlands. The CREP easement program is administered by Maryland Department of Natural Resources and is funded through Program Open Space funds. As of July 2010, the program had protected over 4,400 acres.

■ **Maryland Environmental Trust and Private Land**

Trusts. Since 1967, Maryland Environmental Trust (MET) has accepted donated conservation easements protecting over 126,000 acres on over 1,000 properties. MET has also played a critical role in creating 50 private local land trusts, and continues to provide vital education and assistance to Maryland's land trust community through its Land Trust Assistance Program. MET also hosts a volunteer easement monitoring program that assists with monitoring of protected lands. It is essential for easement holders to monitor or periodically check on conserved properties to ensure that conservation restrictions are upheld in perpetuity. In addition, MET works in partnership with Maryland's many land trusts, which have successfully protected over 150,000 acres, and others to provide landowners with a variety of innovative conservation options.

ENHANCEMENT OPPORTUNITIES

■ **Climate Change Adaptation and Mitigation.**

Maryland's Climate Change Action Plan calls for the development of new land protection tools that 1) help communities deal with rising sea levels, 2) enhance the ability of Bay, aquatic and terrestrial ecosystems to withstand or recover from the impacts of climate change, and 3) mitigate the impacts of climate change by increasing on-site carbon sequestration. New land conservation climate change evaluation criteria are being developed to consider these factors in future land conservation projects. Tools to assist landowners in climate-vulnerable areas should include revised easement agreements and best management or conservation practices that reflect climate change adaptation and mitigation strategies.

■ **Smart Growth Incentives.** As Maryland steps forward in the development of PlanMaryland, its first comprehensive plan for sustainable growth and development, more attention should be given to incentives and regulatory controls that have the dual effect of enhancing sustainable development and

encouraging the conservation of rural landscapes. For example, more offsets, in the form of land conservation, could be required for development outside of Maryland's Priority Funding Areas (PFAs), while fewer offsets would be required for development that occurs within a PFA. In addition, strong rural zoning policies would provide the most efficient and effective method of protecting Maryland's rural landscape.

■ **Urban Open Space.** Urban communities need better tools to create public access to nature, including trails, parks, gardens and other natural areas. Many opportunities exist to reclaim vacant urban parcels in underserved communities. For example, public health incentives or mitigation opportunities for developers could be leveraged to improve community connections to urban open space.

■ **Increasing Quantity and Quality of Private Land**

Conservation. Maryland Department of Natural Resources is conducting an examination of the latest trends across the country in federal tax benefits and state incentives for private land conservation and will make recommendations to increase land protection based on the most effective programs. Maryland land trusts, beginning with Maryland Environmental Trust, are seeking to become accredited by the Land Trust Accreditation Commission to ensure that the Maryland land trust community is using the best standards and practices possible for private conservation. The Land Trust Accreditation seal is awarded to land trusts that demonstrate the highest ethical and technical standards for organizations holding conservation easements.

■ **Ecosystem Services.** A framework is needed to integrate regulatory and voluntary ecosystem service valuation and market incentives across multiple government agencies and the private sector. A component should identify the elements needed to create an accessible marketplace for selling ecosystem credits by landowners who protect, restore and enhance their properties. Tools to support these efforts should include the development of an additional GreenPrint data layer showing the ecosystem value of currently degraded lands if restored.



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CURRENT BEST PROGRAMS

■ **Substantial Funding Source.** Pennsylvania has continued to utilize a combination of dedicated taxes, general fund appropriations and voter-approved general obligation bonds to fund land conservation efforts over the past two decades. The most recent bond initiative was in 2005 (Growing Greener Bond Fund), which provided \$625 million over five years for the maintenance and protection of the environment, open space and farmland preservation, watershed protection, abandoned mine reclamation, acid mine drainage remediation and other environmental initiatives. Of this, the Farmland Preservation Program received \$80 million in bond funding and the Community Recreation Program received \$27.5 million, with \$90 million specified for open space conservation.

■ **Local Taxing Authority.** Since 1996, municipalities have had the authority to levy a property tax or earned income tax to establish a fund for the purchase of open space. The tax may be raised on residents only and must be approved by referendum. In the Chesapeake Bay watershed, 31 initiatives have been enacted to date, with almost \$190 million approved for conservation funding.

■ **Local Incentives.** The Community Conservation Partnerships Program (C2P2) requires local partners to provide matching funds in order to receive a state grant for land conservation. C2P2 is a combination of several funding sources, including Keystone Recreation, Park and Conservation Fund, Watershed Protection Act (Growing Greener), Act 68 Snowmobile and ATV

Trails Fund and the federal Land and Water Conservation Fund. Between 2000 and 2010 the Commonwealth provided more than \$86.4 million in funding to conserve 46,173 acres in the Chesapeake Bay Watershed. This state funding leveraged over \$192 million in partnership funds.

Pennsylvania's Farmland Preservation Program has protected more than 435,000 acres through conservation easements since 1989, at a cost of more than \$740 million in state funds. The Program has prompted 57 counties to create local farmland preservation programs, leveraging an additional \$340 million.

■ **Transfer of Development Rights.** Transfer of Development Rights (TDR) is a zoning technique used to permanently protect farmland and other natural and cultural resources. TDR allows the redirecting of development that would otherwise occur on these resource lands to areas planned to accommodate growth and development. TDR programs enable landowners within valuable agricultural, natural and cultural resource areas to be financially compensated for choosing not to develop their lands. The TDR tool is similar to Pennsylvania's county agricultural conservation easement purchase programs, except TDR allows the purchased development rights to be transferred rather than retired as required under the agricultural easement scenario. Pennsylvania's TDR programs have focused largely on the protection of farmland, although historic and natural resources have also been permanently protected using the TDR tool. All but one of the 20 active TDR programs operates in southeastern and south central Pennsylvania where community consensus for farmland preservation is a high priority. TDR can be applied to practically any scenario where permanent land conservation and growth management are desired outcomes.

■ **Growing Greener: Conservation by Design.** This program helps municipalities and developers build new housing and businesses while protecting important natural and cultural resources. With straightforward changes to municipal ordinances, new subdivisions can leave half (or more) of buildable land as open space while being fair to those seeking to develop their land. Municipalities that have adopted rigorous versions of the ordinances are preserving an average of 62 percent of the land each time a residential property is developed. In many of the resulting conservation subdivisions, developers have donated land to the municipality, at no public cost, greatly increasing local capacity to provide greenways and parks to residents.

■ **Conserving Special Places (Strategic Investments).** The Department of Conservation and Natural

Resources (DCNR) has developed a sophisticated approach to land acquisition investments based on four criteria: protecting existing public resources; ecosystem and habitat conservation; water resource protection and conservation; and public recreation and open space protection, coupled with conservation landscape priorities. Since 2002, DCNR has acquired or helped to acquire over 130,000 acres statewide.

ENHANCEMENT OPPORTUNITIES

- **Substantial Funding Source.** From surveys, poll results and voting patterns, it is evident that most Pennsylvania citizens strongly support the conservation of lands and special places. The Growing Greener funding sources (Environmental Stewardship funding and 2005 Growing Greener Bond Fund) are nearly gone. Yet there is more work to be done. A coalition has been formed to encourage passage of additional funding (\$200 million annually) to continue environmental, conservation and recreation work.
- **Local Taxing Authority.** The taxing authority that has been authorized for municipalities to purchase open space should be expanded to allow counties to levy a property tax for acquisition of open space.
- **Local Incentives.** To increase the number of municipalities (and potentially counties) that have adopted local tax measures for land conservation, the state should consider establishing a revolving loan fund that would be available to local governments that adopt an open space tax measure.
- **Public/Private Partnership.** There is currently no quasi-state organization that helps facilitate land conservation donations across the Commonwealth. Creating such an organization would help bolster the efforts of local land trusts and help to conserve farmland that might not meet the Farmland Preservation Program's particular standards and targeted geographic scope. In addition, to facilitate the protection of forest lands while keeping them under private ownership, a revolving loan fund could be established as part of a state Forest Legacy Program. Such a fund would help private conservation groups protect large tracts of land by assembling small parcels and reselling them to timber companies, with a conservation easement requiring responsible management of the property.
- **Tax Credits.** In order to encourage the donation of land or conservation easements on land, Pennsylvania should consider adopting an income tax credit program.



CURRENT BEST PROGRAMS

- **Tax Credits.** Virginia's Land Preservation Tax Credit Program was created to incentivize land conservation by providing an income tax credit of up to 50 percent of the value of conservation easements placed on land in the Commonwealth. The law was later amended to lower the allowable credit to 40 percent of the value of a donation and to authorize the transfer of credits, so they can be sold to other taxpayers. The program allows taxpayers to use up to \$50,000 of the credit per year for 13 years. Unused credits may be sold, allowing individuals with little or no Virginia income tax burden to take advantage of this benefit. To be eligible for tax credits, the easement must qualify as a charitable deduction under federal tax regulations and meet additional requirements under the Virginia Land Conservation Incentives Act. The Department of Conservation and Recreation (DCR) must verify the conservation value for those donations resulting in a tax credit request of \$1 million or more. To determine conservation value, DCR utilizes criteria adopted by the Virginia Land Conservation Foundation Board. An annual cap of \$100 million was established in 2006 for the program with annual adjustments dependent upon the consumer price index. This program has been extremely successful, and through mid-2010 had enabled the protection of approximately 514,000 acres.
- **State Incentives.** The Virginia Land Conservation Foundation (VLCF) provides grants to state agencies and matching grants to local governments and land trusts across the state to acquire land, open space and conservation easements. Funding for the program

has been variable. Since its inception in 2000, there have been six grant rounds, and over the course of the program, grant requests have exceeded available funds by a factor of three. In addition to VLCF, the Virginia Department of Agriculture and Consumer Services' Office of Farmland Preservation, which was first funded in 2007, provides matching grants to localities that have qualifying Purchase of Development Rights programs. Virginia's Department of Historic Resources also provides grant funding for battlefield protection.

- **Virginia Outdoors Foundation and Private Land Trusts.** The Virginia Outdoors Foundation (VOF), a public body created in 1966, has helped facilitate the donation of conservation easements on thousands of acres of land, and works in partnership with land trusts and other nonprofit conservation groups to protect land while keeping it in private ownership. VOF, which holds approximately 75 percent of all conservation easements in the Commonwealth, receives funding from VLCF and from the General Assembly to pay the costs associated with these transactions and sometimes to purchase easements. Between 1968 and 1999, VOF averaged about 4,700 acres of easements yearly, but after Virginia's land preservation tax credits were enacted, VOF's yearly average has increased to 44,920 acres — almost a ten-fold increase. VOF now holds more conservation easements than any public land trust in the nation. In the past decade, land trusts in Virginia have grown in both numbers and capacity and have become partners in the work of preserving Virginia's land-based resources. Virginia's United Land Trusts, a statewide coalition, was created to foster this growth in private land trust capacity.
- **Land Conservation Loan Program.** The Virginia Water Facilities Revolving Fund makes low-interest loans available to protect tracts of land that maintain or improve water quality and prevent pollution of state waters. These funds can be used as bridge loans that allow organizations to mobilize quickly when land is at immediate risk from development.
- **Identifying Priority Areas.** The Virginia Land Conservation Needs Assessment is a flexible mapping tool for integrating and coordinating different conservation interests. Issue-specific data sets can be weighted and overlaid to reflect the needs and concerns of a variety of conservation interests by using this geographic information systems (GIS) tool to model and map land conservation priorities, such as: prime agricultural

lands, cultural and historic resources, un-fragmented natural habitats, sustainable forestry, outdoor recreation, natural heritage resources, vulnerability, and water quality improvement. The maps that result highlight areas where conservation dollars can be targeted for the highest benefit.

ENHANCEMENT OPPORTUNITIES

- **A Stable Funding Source.** Establishment of a dedicated funding source or stable ongoing general fund appropriations are needed to provide more certainty of future funding.
- **State Tax Credits.** Virginia's land preservation tax credit is a key factor in many landowner decisions to donate easements to public bodies and private land trusts. Increasing the annual cap well beyond \$100 million and re-establishing the allowable credit at 50 percent of the value of the donation would help to ensure the continued success of the land preservation tax credit program and enable meeting the Governor's new 400,000-acre land conservation goal.
- **Land Conservation Bond.** As the economy improves, the Governor and General Assembly may wish to consider another state land-conservation bond. This would provide the necessary funding to enable the Commonwealth along with the land trust community to protect high-quality, strategic lands with great resource value for Virginia.
- **Encouraging Local Action.** In Virginia, municipalities have broad local taxing authority for land conservation. The City of Virginia Beach, for example, has used a dedicated property tax for the acquisition of conservation easements through the City's Purchase of Development Rights program. In addition, local governments are now authorized to create local service districts that have the authority to levy property taxes to fund the purchase of conservation easements. This mechanism can provide greater stability of funding levels while allowing localities the flexibility to raise or lower the tax rate according to changing circumstances. Fauquier County has used that authority to create such a service district over the whole county, but other localities could define service districts in areas identified in their comprehensive plan to remain rural or green space. Encouraging localities to exercise their authorities in these ways could provide another opportunity for locally based land conservation.

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Chesapeake Bay Commission

Policy for the Bay

ABOUT THE CHESAPEAKE BAY COMMISSION

For three decades the Chesapeake Bay Commission has been a leader in the effort to restore the Chesapeake Bay. The tri-state legislative commission works on a broad array of environmental policies including promoting land conservation and land management practices to benefit water quality. The member states, Maryland, Pennsylvania and Virginia are now national leaders in land conservation because of their innovative and successful efforts to achieve permanent protection of over 20 percent of their land in the Bay watershed. In recognition and support of the economic and environmental values associated with land conservation, the Commission partnered with the Chesapeake Conservancy to publish this report of policy recommendations. Identifying and putting into place the most effective and targeted public policy options will help to ensure new land conservation goals are met by the states and the Chesapeake region as a whole.



ABOUT THE CHESAPEAKE CONSERVANCY

Chesapeake Conservancy is a non-profit organization whose mission is to ensure conservation, stewardship, access and enjoyment of the Chesapeake's iconic landscapes, great rivers and cultural and historic assets. The Conservancy advances this mission through education, direct action, marshaling new resources and forging partnerships with governments, businesses, public-interest groups and citizens. The principal focus of the Conservancy is the implementation of: the John Smith Chesapeake National Historic Trail; the Chesapeake Gateways and Watertrails Network; and a Chesapeake Treasured Landscape Initiative. The Conservancy believes that by helping educate citizens about the Chesapeake Bay and by providing new opportunities for improved public access, tourism, recreation and cooperative conservation of its treasured landscapes and ecosystems, we can create a lasting ecological and cultural legacy for the Chesapeake Bay.

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COVER PHOTO

Upper Nanticoke, Md., by David Harp,
Chesapeake Photos



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the 1990s, the number of people in the UK who are aged 65 and over has increased by 1.5 million (1990–1999) and is projected to increase by a further 1.5 million by 2020 (Office of National Statistics 2000). The number of people aged 65 and over is projected to increase by 2.5 million by 2020 in the USA (U.S. Census Bureau 2000).

There is a growing awareness of the need to develop strategies to meet the needs of the ageing population. The ageing population is a heterogeneous group and the needs of the ageing population are not homogeneous. The needs of the ageing population are complex and multifaceted. The needs of the ageing population are not homogeneous. The needs of the ageing population are complex and multifaceted. The needs of the ageing population are not homogeneous. The needs of the ageing population are complex and multifaceted.

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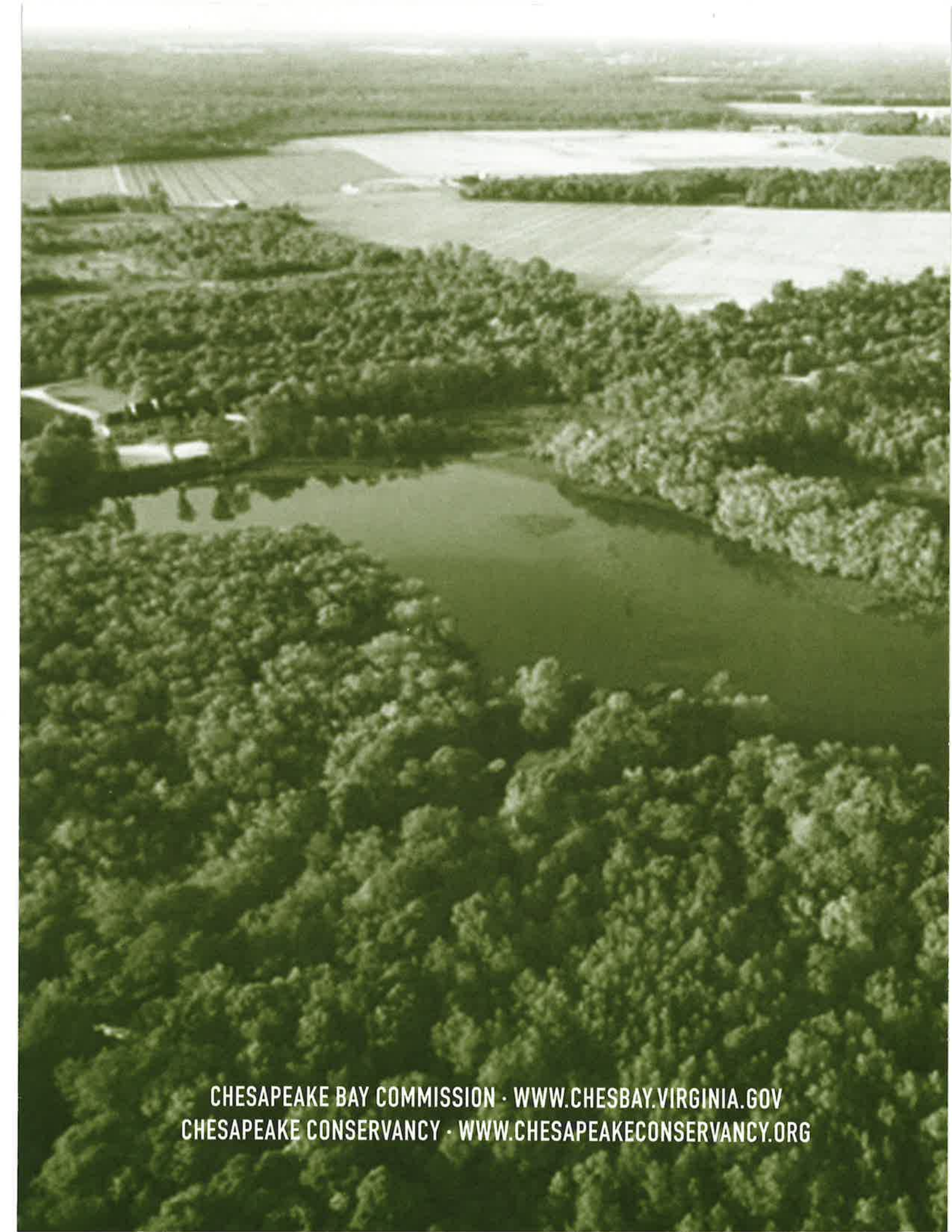
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An aerial photograph showing a dense forest in the foreground and middle ground. A small pond is visible within the forest. In the background, there is a larger body of water, possibly a bay or river, with some land and structures visible on the far shore. The image has a greenish tint.

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