
TALBOT COUNTY GREEN INFRASTRUCTURE PLAN

THE CONSERVATION FUND



July 2004

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About The Conservation Fund

The Conservation Fund, a nonprofit organization, acts to protect the nation's legacy of land and water resources in partnership with other organizations, public agencies, foundations, corporations, and individuals. Seeking innovative conservation solutions for the 21st century, the Fund works to integrate economic and environmental goals at the community level. Since its founding in 1985, the Fund has helped safeguard wildlife habitat, greenways, community "greenspace" and historic sites totaling more than 3.5 million acres throughout the nation, including more than 135,000 acres in Maryland.

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I. EXECUTIVE SUMMARY

Green infrastructure is a strategic approach to land and water conservation that identifies conservation priorities and provides a framework for proactive conservation. Highlighting the importance of protecting large blocks of contiguous land and establishing links and connectivity, this approach identifies opportunities to establish a connected matrix of natural areas, conservation lands and working landscapes.

The Conservation Fund ('the Fund'), which has been active in developing and applying the green infrastructure concept, produced a local-scale Green Infrastructure Plan focused specifically on Talbot County, MD. Talbot County is centrally located on Maryland's Eastern Shore of the Chesapeake Bay (Figure A). The County features an extensive coastline bordering the Bay and its multiple inlets, as well as the Choptank River and Tuckahoe Creek to the east and the Miles and Wye East Rivers to the northwest.

GREEN INFRASTRUCTURE:

An interconnected network of **natural areas** (*waterways, wetlands & forests*), **green space** (*parks, greenways & conservation lands*) and **working landscapes** (*farms, ranches & woodlands*) that protect natural ecological processes, support wildlife and benefit people.

PURPOSE

The purpose of the Talbot Green Infrastructure Plan is to provide the County with a methodology for prioritizing its land according to resource value and a tool that will enable County leaders to make the most educated conservation and land use decisions.

PROCESS

The Conservation Fund worked with Talbot County to develop a Green Infrastructure Plan, focusing on the protection of the County's valuable ecological, agricultural and aquatic resources. This Plan consists of two basic parts:

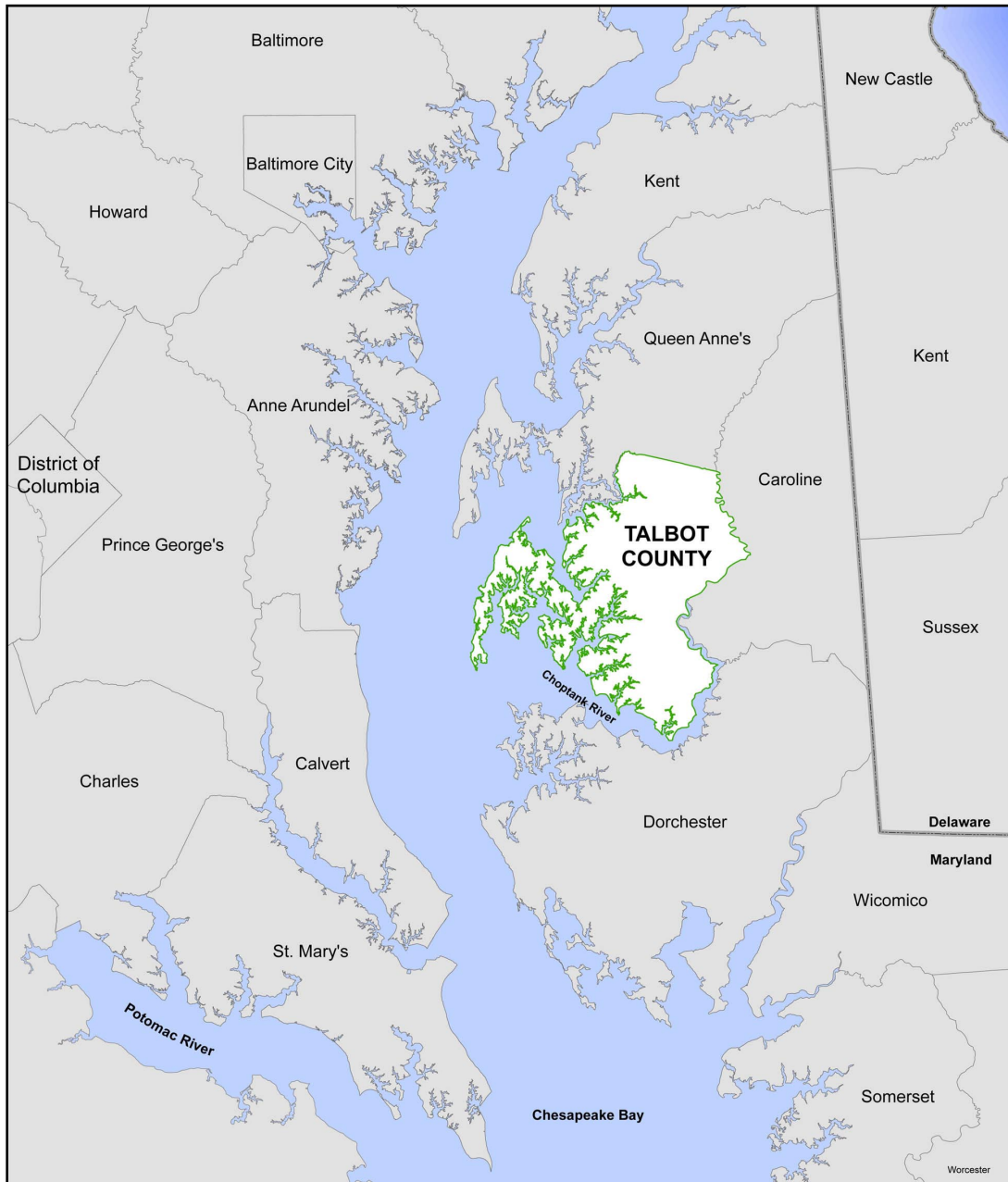
Resource Evaluation – First, the Fund designed and performed a set of geographically based resource assessments to produce a decision-making tool that can be used to identify conservation priorities for Talbot County.

Implementation Strategies – Based on the above analysis, the Fund recommended ways to use existing and potential County, State and Federal programs to achieve land conservation and planning goals.

In view of the community values set forth in the recently updated Talbot County Comprehensive Plan, the Fund focused on the preservation of:

- (i) *Ecological resources*, including sensitive species and their habitats and valuable ecosystems with their associated functions

Figure A. Regional Context Map of Talbot County, Maryland



- (ii) The *agricultural and rural landscape*, including economically productive working lands and open spaces that give the landscape its character
- (iii) Critical *aquatic resources*, including wetlands, floodplains and riparian zones that contribute to water quality and the health of the greater Chesapeake Bay system.

The Fund performed quantitative geographic evaluations of these three resource targets in order to rank the relative suitability and conservation importance of all lands within Talbot County. The current boundaries of municipal areas and rural villages as well as the proposed Growth Areas (*those areas deemed necessary to accommodate anticipated development*) were then

incorporated into this assessment. The Fund is pleased to present a bold vision for the future of Talbot County – a vision for conservation based on objective resource assessments and the community values articulated in the County Land Use Plan. This vision provides a blueprint that will enable the County to focus conservation efforts in the areas of highest resource quality so that the County’s land protection and managed growth goals can be realized.

Another product of this Green Infrastructure Plan process is a flexible ‘Conservation Priorities Tool’ that will allow County planners and officials to compare the relative values of different conservation options. Using this decision-making aid the County can respond to landowner requests and market opportunities as they arise and can maximize environmental benefits with limited financial resources.

Based on our evaluation of resource quality, the Fund estimates that Talbot County needs to protect approximately 50% of its total land area – through a combination of fee-simple purchase, conservation easements, transfer of development rights and other management agreements and protection mechanisms. We believe that protecting 50% of the County will enable Talbot to maintain the viability of its critical natural resources and agroecology. Considering the desire of residents to preserve the County’s valuable natural flora and fauna, green spaces and rural character, this level of protection is an appropriate target. Furthermore, Talbot recently joined five other Eastern Shore counties in signing a landmark resolution committing itself to preserving 50% of the County’s land outside the designated Growth Areas by 2010.

PRIORITIES

The Green Infrastructure Plan identifies several locations that contain concentrations of high quality resources and rank as high priority ‘focus areas’ for coordinated protection efforts (see Figure B, following page). These focus areas include:

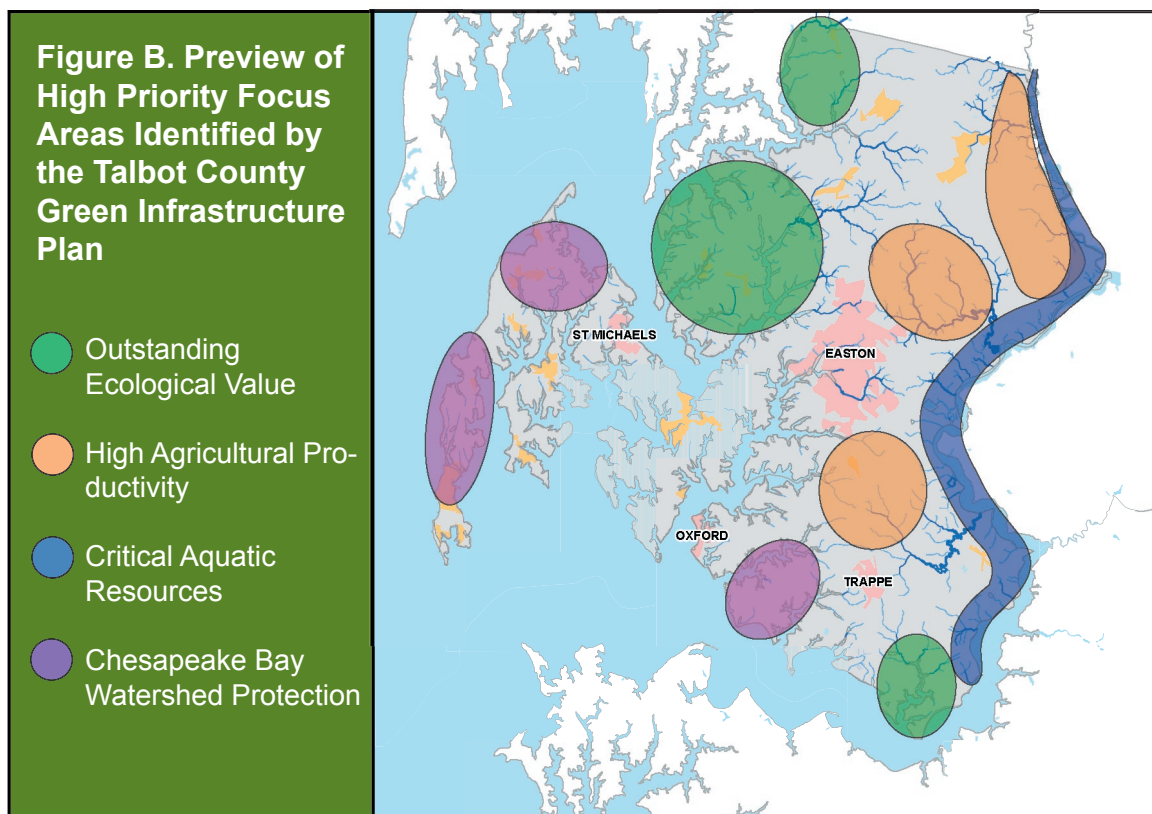
- 1) Two regions in the northwest of the County, bordering the Miles and Wye East Rivers, and one in the southern tip of the County surrounding Bolingbroke Creek, all of which possess **outstanding ecological value**;
- 2) The region bordering Tuckahoe Creek in the northeast that lies in the County’s Rural Legacy Area and two buffer areas on the outskirts of the burgeoning municipalities of Easton and/or Trappe, important for their **high agricultural productivity**;
- 3) The riparian corridor along the east-bounding Tuckahoe and Choptank River that provide **critical protection of aquatic resources**;
- 4) Three western coastal regions with Bay or Choptank shoreline for their contribution to overall **Chesapeake Bay Watershed protection**.

While the focus areas have been grouped under distinct resource categories, in reality the majority of them benefit multiple resources. In keeping with green infrastructure theory, these locations are envisioned as major hubs in the County’s network of protected lands. Thus the second-tier conservation priority for the County would be to protect open space corridors to link these hubs, following the conservation biology principle that connected lands are more viable (*i.e., able to withstand natural and anthropogenic agents of change*) than isolated tracts.

IMPLEMENTATION

The Talbot County Green Infrastructure Plan identifies state and federal funding sources and suggests mechanisms for protecting conservation lands and determining which sources are best suited for different locations. The Plan also describes innovative local funding strategies. While large land parcels, collections of adjacent parcels, and areas that scored high in the Maryland DNR Green Infrastructure Assessment have the greatest likelihood of receiving state funds, realization of this bold conservation vision

will require supplemental local funds. The Fund recommends a bond initiative to fund a package of high-priority conservation ventures, financed by an existing dedicated revenue source (e.g., Program Open Space funds) and/or a voter-approved tax increase. Other Maryland counties have financed successful land protection programs using a local real estate transfer tax or a recording tax. Such a tax could be further leveraged by establishing a local 'land bank' such as those in the socioeconomically similar communities of Martha's Vineyard and Cape Cod, MA.



II. BACKGROUND

THE CONSERVATION FUND

Since its founding in 1985, the Fund has been committed to preserving and protecting natural, cultural and historic landscapes. The Fund strives to develop new models of sustainable development that accommodate growth and provide for economic benefits while protecting the natural landscape and cultural heritage of a region.

Beginning in 2001 with the launch of its Chesapeake Bay Initiative, the Fund renewed its commitment to and interest in the Chesapeake Bay Watershed. To date, the Fund has protected over 200,000 acres and has supported numerous conservation projects within the Bay watershed.

As part of this on-going effort to protect important natural resources throughout the Chesapeake Bay, the Fund proposed to work with the Talbot County Planning Department to prepare a Green Infrastructure Plan ("Plan") for the County. In November of 2002, the County Council voted to engage the Fund to prepare a plan that would identify and prioritize environmentally sensitive areas and important agricultural lands that should be protected through targeted purchases, conservation easements or other protection mechanisms.

TALBOT COUNTY

Covering 269 square miles on Maryland's central Eastern Shore, Talbot County is a thriving example of the Chesapeake Bay region's rural and agricultural history as well as its resource-rich wetland, riparian and upland ecosystems. Only 1½ hours from Washington, D.C., Talbot County is an extraordinary landscape worthy of protection and preservation. Historic towns like St. Michaels, Easton, and Oxford co-exist with thousands of acres of woodlands, farmfields, rural villages and waterfront communities. The western boundary of the county lies on the Chesapeake Bay and consists of a series of fragile peninsulas that form over 600 miles of shoreline. In fact, 99% of the County is surrounded by water. The County's history harkens back to colonial times and is still very evident in the culture and pride of its residents. The five incorporated municipalities (Easton, St. Michaels, Trappe, Oxford and part of Queen Anne) account for 44% of the County's population, with the largest concentration in Easton (about 1/3 of the total population). US Route 50 runs North-South through the County. Figure C shows Talbot's major roads, waterways, towns and villages.

Talbot County contains a vast network of rivers, creeks, streams and drainage ways. The largest rivers are the 30-mile long Choptank River that flows along the eastern and southern boundary and into the Chesapeake Bay; the 10-mile Tred Avon that flows from Easton south, emptying into the Choptank between Oxford and Bellevue; the 10-mile Wye East River that separates northwest Talbot County from Wye Island in

Figure C. Talbot County Base Map (175,000 acres)



Queen Anne's County; and the 9-mile Miles River northeast of St. Michaels that empties into the Eastern Bay. Three important creeks – the Tuckahoe, the Bolingbroke and the LaTrappe – feed into the Choptank.

Talbot County is accustomed to a steady level of growth. Estimated at 34,263 in 2002, the County's population increased by 11% between 1990 and 2000. The State of Maryland anticipates the county's population to increase by another 6% by 2010. Currently, development in Talbot is focused in Easton

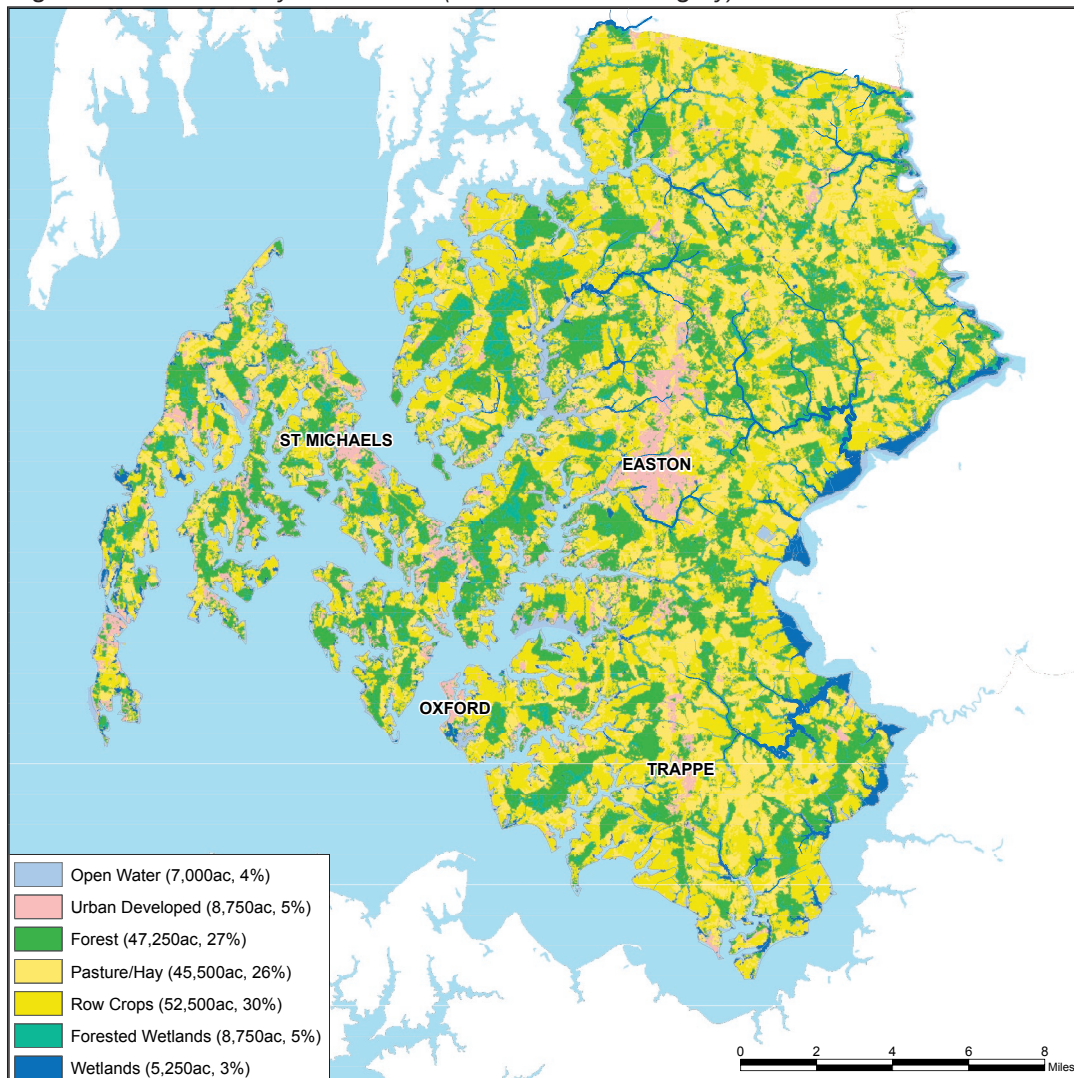
(the county seat), Trappe and along the western shoreline. Based on 1997 satellite imagery, 12% (20,506 acres) of the land area in the County is developed. However, development restrictions in neighboring counties combined with available land and close proximity to Baltimore (59 miles) and Washington (73 miles) are driving significant development interest in Talbot County. The County is doing an excellent job of concentrating future growth within established Priority Funding Areas (PFAs); only 25.5% of residential development is projected to occur

outside the PFA boundaries between now and 2020. This is a dramatic improvement compared to the 40% of new growth that occurred outside of PFAs during the 1990s.

The undeveloped lands of the County include working farmland, coastal tidal marshes and forest (Figure D), much of which is ecologically significant and economically productive. The majority of the county is agricultural with scattered low-density, rural residential areas. Almost 110,000 acres - 66% of the County - is under some form of agricultural production, and 89% of

the County is zoned for agriculture. This agricultural land is concentrated in the eastern half of the County where the soils are better drained. In 1999, 21% of the agriculture was in easement. Sensitive Species areas are located throughout the northwest quadrant of the County and along the Choptank River. Wetlands primarily consist of brackish to fresh tidal marshes or seasonally flooded bottomland forests. According to Maryland DNR's Strategic Forestland Assessment (based on 1992 30-meter resolution satellite imagery), approximately 32% of the county is forested, of which 20 to 25% is wetland

Figure D. Talbot County Land Cover (based on 1992 imagery)



forest. Common tree species include loblolly pine, sweet gum and oak. The majority of silvicultural activity occurs on woodlots owned by traditional farmers and forestry remains a limited industry in the County.

The scattered pattern of modern development tends to consume large amounts of land and can fragment natural systems. Future growth in Talbot County could result in the loss of valuable forested and agricultural land, ecologically significant habitat, and open spaces within planned developments and in rural areas. Fragmentation and unplanned growth can disrupt important ecological functions, affect scenic quality, reduce open space and negatively impact the rural character of the County. Talbot County took a major step towards ensuring responsible growth and safeguarding its critical natural and cultural resources and services by joining five other Eastern Shore counties in signing the landmark Eastern Shore 2010 Resolution in Fall 2002. In this regional agreement, the Counties each committed to working towards four land-use goals, including the protection of 50% of the land outside of their designated growth areas by 2010 through voluntary measures.

GREEN INFRASTRUCTURE

Green Infrastructure is a strategic approach to land conservation that identifies conservation priorities and develops a framework for proactive and holistic conservation actions. The Fund has long been a proponent of green infrastructure planning as a critical initial step in any effort to preserve a region's most valuable natural assets while allowing for sustainable growth and appropriate economic development. As part of the GreenPrint program signed into law in May 2001, the State of Maryland developed a statewide green infrastructure network to identify the best remaining ecological lands in Maryland as well as potential restoration areas.

The green infrastructure assessment methodology was developed to provide a consistent, scientifically defensible approach for evaluating ecosystem conservation and restoration initiatives in Maryland. The Green Infrastructure Network is based on principles of landscape ecology and conservation biology and consists of "hubs", "corridors" and "gaps".

The purpose of the network is:

To systematically identify and protect ecologically important lands

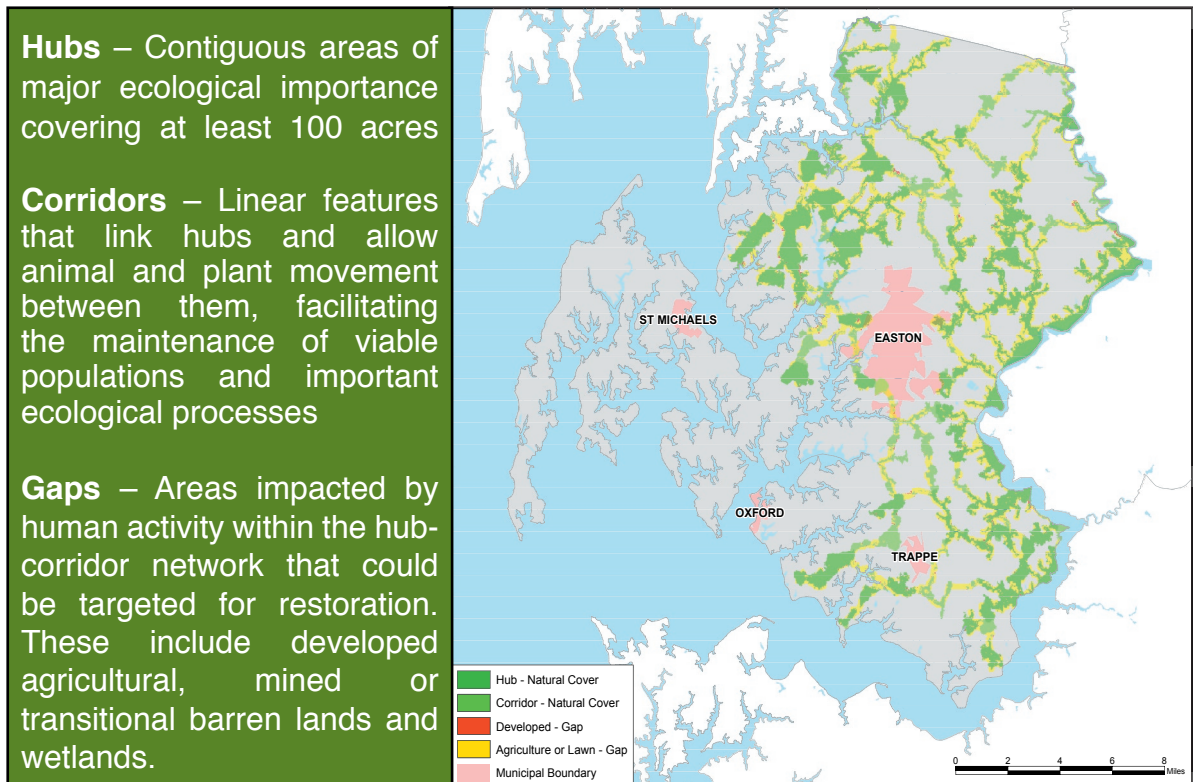
To address problems of forest fragmentation, habitat degradation and water quality.

To maximize the influence and effectiveness of public and private conservation investments.

To promote shared responsibilities for land conservation between public and private sectors.

To guide and encourage compatible uses and land management practices.

Due to the spatial requirements for hub size and adjacency in the green infrastructure methodology, the coastal areas in the western portion of the County were not designated as part of the statewide network (i.e., no hub areas met the minimum size requirement of 100 acres). Maryland's Green Infrastructure Network for Talbot County is shown below.



TALBOT COUNTY PLANNING

*“The primary goal of Talbot County’s Comprehensive Plan is to preserve its existing **Quality of Life and Rural Character.**”*

Talbot’s plan recognizes that the health and well-being of the local community and its economy are inexorably tied to the protection of vital ecosystems, waterways and productive agricultural lands. In its recently updated (2004) Comprehensive Plan, the County expresses its desire to meet development pressures with caution in order to ensure protection of existing quality of life and rural character. The Comprehensive Plan contains goals addressing the County’s approach to conservation of its agricultural land, natural resources, and open space that have direct implications for the Green Infrastructure Plan.

COUNTY GOAL: Conserve the agricultural land base of the County and preserve rural character in predominantly rural areas of the County by directing growth to existing population centers.

Maintaining the ‘Rural Character’ of the County depends on the preservation of a landscape dominated by working fields, woodlands, waterways and open spaces containing scattered small towns and villages. Farmland is a precious and threatened resource in Talbot County, and once developed it cannot be reclaimed for agricultural use. Based on recommendations in the Comprehensive Plan, policies will be designed to ensure that agricultural and forestry activities remain the primary

and preferred land use activity in the rural areas of the County. These policies will also focus on maintaining open space, protecting natural resources through best management practices, and promoting economic benefit and self-sufficiency.

The Comprehensive Plan emphasizes the importance of design and development standards and land use regulations that focus on preserving the rural landscape as well as the need for easement programs and other incentives to assist in attaining this goal.

COUNTY GOAL: Conserve and protect the County’s most valuable and attractive assets, its natural resources and Critical Areas.

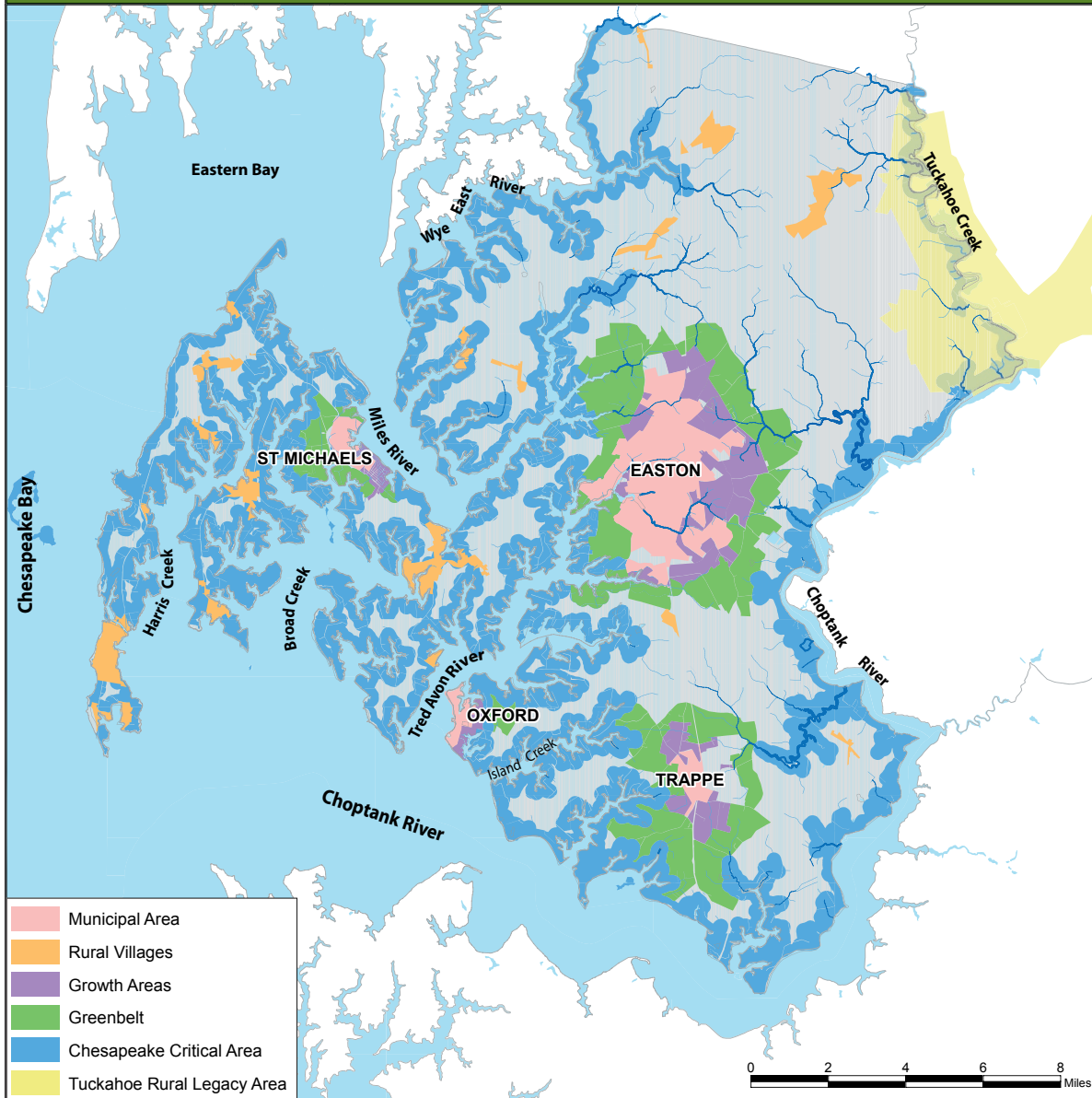
Plentiful fields and forests, wildlife and clean water are all elements of the high ‘Quality of Life’ enjoyed by Talbot County citizens. The Plan calls for provisions to ensure minimal environmental impacts from future development, reflecting heightened concern from the public for preventing the loss and degradation of Talbot’s sensitive natural resources.

Policies will focus specifically on the protection of critical shoreline areas, the 100-year floodplain, tidal and non-tidal wetlands, perennial and intermittent streams and stream buffers and associated water quality, forestland, environmentally sensitive areas, and threatened or endangered species and their habitats.

Several overlay zones with special land use designations have been established as part of Talbot's Land Use Plan and are outlined in the Comprehensive Plan (Figure E). At the time of the printing of this report, these boundaries were under review and subject to revision by the Talbot County Planning Commission:

- ❖ The *Chesapeake Bay Critical Area* program, a Maryland program since 1984, designates the shoreline area within 1,000 feet of the landward boundary of tidal wetlands for special protection and mandates the development of a set of guidelines for any development or land use within this area to ensure it does not harm the sensitive coastal and wetland systems. The Talbot County Critical Area Plan, adopted in 1989, imposes strict environmental regulations within the County's Critical Areas. Furthermore, Talbot County considers the Chesapeake Bay and its system of tributaries and wetlands to be "the most visual and important natural resource of Talbot County."
- ❖ Designated *Growth Areas*, based on State and County Priority Funding Areas (PFAs) for growth-related projects (a product of Smart Growth legislation), indicate lands adjacent to current municipal boundaries that have been determined capable of accommodating future growth. These areas serve as targets for the concentration of development activities in order to minimize overall impact to the landscape. The Land Use Plan also identifies a Future Growth Area near Easton that is part of its long-range plan.
- ❖ Talbot County's *Greenbelts* are continuous areas encircling the edges of the Growth Area that contain low-density rural residential, open space, resource conservation, agriculture, and recreational uses. They are intended to provide a buffer between the towns and the surrounding rural and natural landscape and guarantee the containment of urban areas.
- ❖ *Western Rural Conservation* districts include all non-critical area lands in western Talbot County (west of Hwy 50). They contain many sensitive natural resources, have limited highway access and represent areas of high conservation priority for the County.
- ❖ *Rural Villages* are unincorporated residential areas within otherwise rural or agricultural regions, characterized by historic qualities, where any new growth would be limited and primarily internal. Under the SmartGrowth Areas Act, Rural Villages can be certified as PFAs if they are designated in the Comprehensive Plan. They are areas that will generally serve as targets for preservation or limited growth centers.

Figure E. Talbot County Land Use Plan Overlay Zones



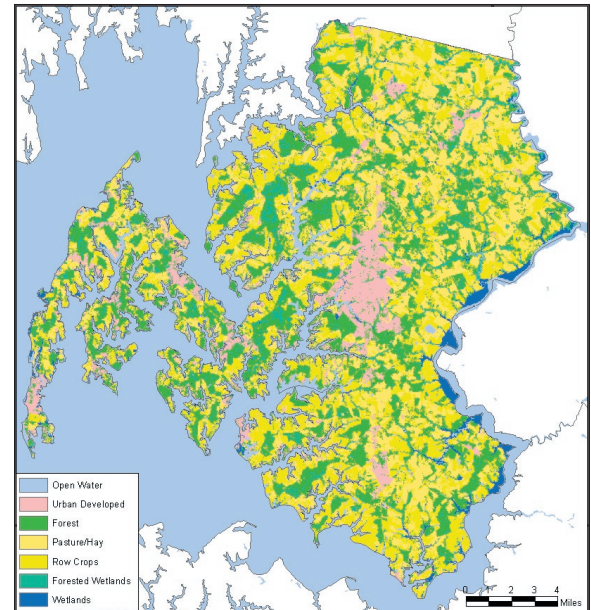
The objective of the Fund's Green Infrastructure Plan is to provide efficient resource conservation evaluation and implementation strategies to assist County officials in best meeting the goals of their Comprehensive Plan while maintaining consistency and compatibility with its overall land use intent. Both Plans are ambitious and reflect the desires and preferences of Talbot residents for the future of their county. Based on the designated Growth Areas, the County has agreed to allow a 4.3% increase in the extent of urban and developed land cover over the course of future generations. An idealized picture of the transition from the current landscape to the anticipated future landscape of Talbot County at the Plan's accepted maximum degree of infill – with natural land cover retained in all remaining areas – is presented in Figure F.

The projected future landscape condition assumes that development will occur only within the areas defined and prioritized for it, and not in the uncontrolled, isolated and ultimately unsustainable pattern that has become all too familiar across the country – a pattern that would degrade the natural systems, rural character and vitality of the region. The Green Infrastructure Plan presented here can help the County realize its vision and permanently protect those areas deemed unsuitable for urban or residential growth by prioritizing conservation efforts, determining where each of Talbot's preservation values are best represented and tailoring the most appropriate strategies and mechanisms to identified sites.

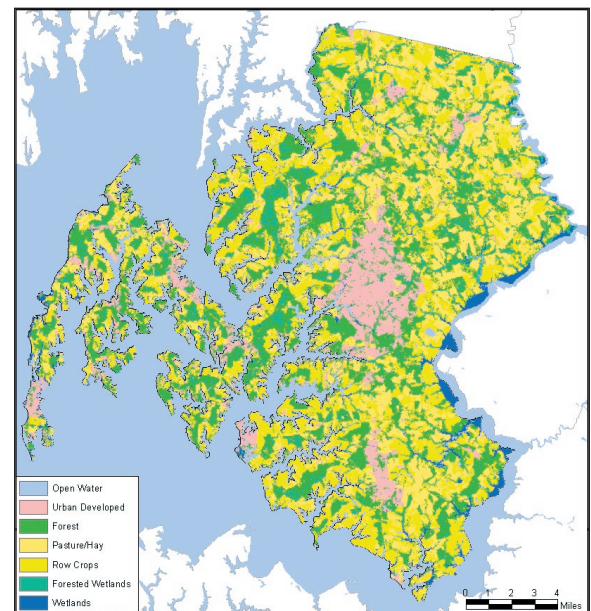
Figure F.

Projected Landscape Change in Talbot County, MD, based on accepted levels of growth and accomplishment of conservation goals

Current Landscape Condition



Future Landscape Condition



DATA SOURCES AND INPUT

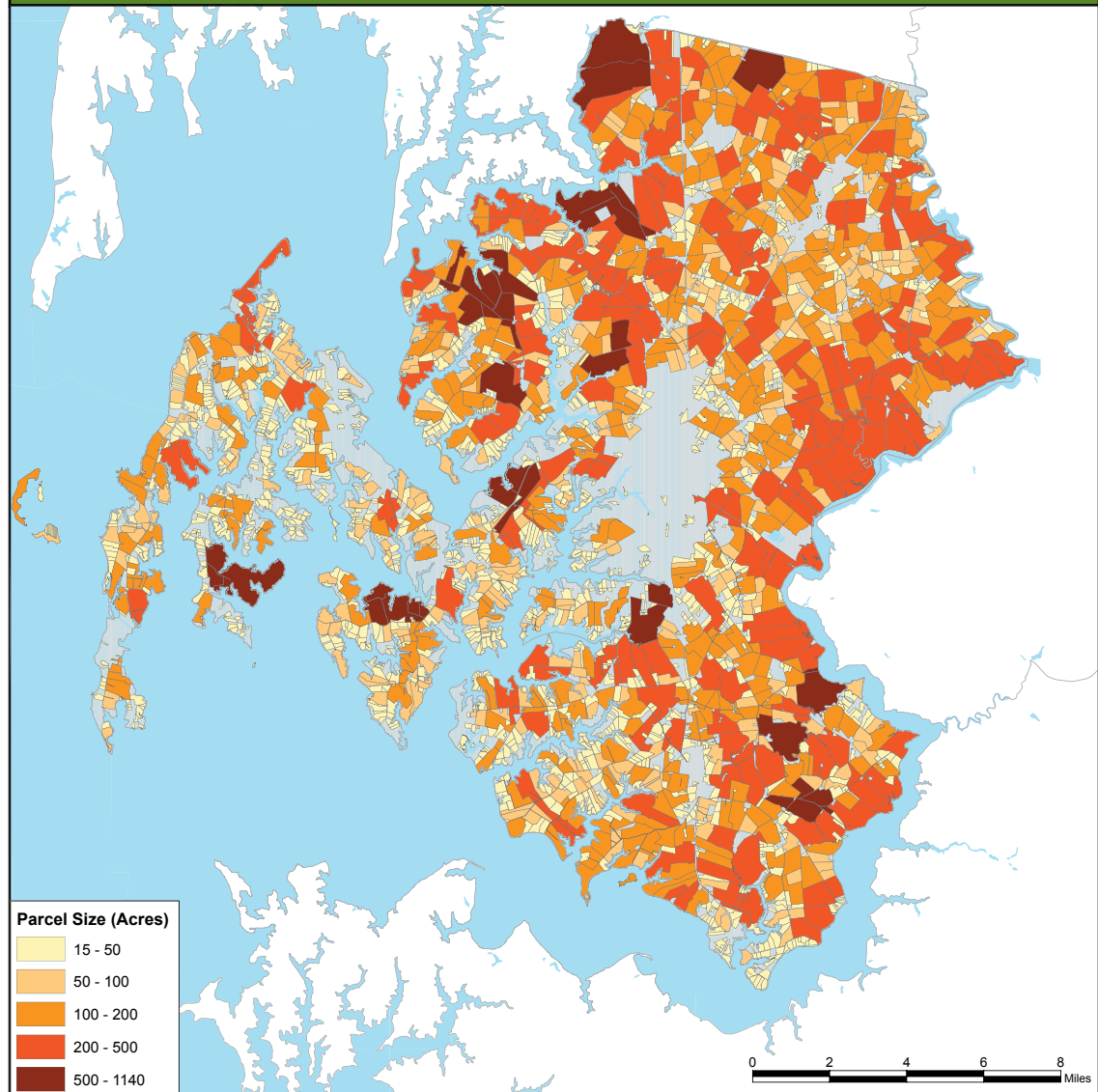
To ensure compatibility with the County's recently updated Comprehensive Plan, the Fund worked closely with the Talbot County Department of Planning. To further guide and inform the effort, the Fund also met with experts from Talbot County, Maryland Department of Natural Resources and Soil Conservation Service to gather valuable input on the characteristics of the local environment and community and its most valuable resources. Geographic data used to perform the resource assessments and develop the Green Infrastructure Plan are summarized below.

The Fund selected 2,205 parcels (140,000 acres) from the Talbot County Property View database to digitize and evaluate for the Green Infrastructure Plan (Figure G). This subset, which satisfied criteria related to size, protected status and logistical concerns, captured 80% of the County's land area held by only 12% of its owners. A suite of criteria was compiled to identify those parcels most useful and applicable to the Green Infrastructure strategy. Parcels selected included those greater than 10 acres in size; all agricultural properties; all protected lands; parcels with the same owner as those above; and residential properties greater than 5 acres in size that are vacant (no structural improvements).

Summary of Baseline Data Used to Evaluate Conservation Priorities:

- (1) **Ecological Value** – This statewide measure, developed by the Maryland Department of Natural Resources (MD DNR), employs a dozen criteria based on principles of conservation biology (such as vegetation type, rare species presence, interior forest, etc.) to quantify ecological importance.
- (2) **Maryland Protected Lands** – From DNR's statewide data layer of parcel ownership and protection status, The Fund identified all currently protected land in Talbot and adjacent counties and determined proximity, or distance, of all areas in Talbot to lands under some form of conservation ownership.
- (3) **Talbot Soil Conservation District Soil Map** – The Natural Resource Conservation Service provided digitized data on soil types and characteristics throughout the County.
- (4) **Maryland Property View for Talbot County** – The Maryland Department of Planning maintains a database of tax parcel boundaries along with a host of descriptive attributes linked to the land parcels. The Fund selected a subset of this parcel information that we deemed most useful for evaluating the County's green infrastructure priorities.

Figure G. 2,205 Talbot County Parcels Evaluated in the Green Infrastructure Plan
 [Talbot Co. parcel data distributed by Maryland Department of Planning and licensed by The Conservation Fund.]



III. GREEN INFRASTRUCTURE PLAN

PURPOSE

The Fund developed the Talbot County Green Infrastructure Plan to identify critical areas for conservation, establish priorities for protection and recommend tactics for implementation. Based on an assessment of natural resources, the Plan focuses on ecologically important upland areas (woodlands, high quality wildlife habitat), highly productive working landscapes (farmland and forestland) and critical areas for the protection of aquatic resources (wetlands, sensitive shoreline areas, riparian corridors, floodplains).

The Green Infrastructure Plan is meant to help Talbot County planners preserve natural resources, ensure the economic viability of working landscapes and orient development in a way that is compatible with the resources and character of the County. The Plan provides a pragmatic tool that makes strategic conservation planning more efficient and provides a framework for action. If successfully implemented, it will provide a model for other counties faced with similar pressures to construct and implement a green infrastructure strategy in response to local interests, conditions and needs.

OBJECTIVES

Based on the existing open space assets and planning goals of Talbot County, the Green Infrastructure Plan will:

- (1) Identify areas of high conservation value for the protection of important ecological resources, aquatic systems and working landscapes to allow for prioritization of land preservation efforts;*
- (2) Spatially represent the environmental and agricultural goals outlined in the Talbot Co. Comprehensive Plan and provide a mechanism for quantitatively ranking land areas based on these priorities;*
- (3) Recommend implementation strategies and funding sources that leverage existing state and federal programs and introduce innovative local conservation mechanisms;*
- (4) Provide a dynamic, adaptable methodology that evaluates various conservation opportunities efficiently and effectively by measuring relative benefits and allows for the incorporation of new data as it becomes available.*

RESOURCE ASSESSMENTS

In identifying conservation priorities for Talbot County, the Fund focused on three major natural and cultural resource targets important to the County and evaluated the suitability of lands throughout the County to protect and preserve each of these targets:

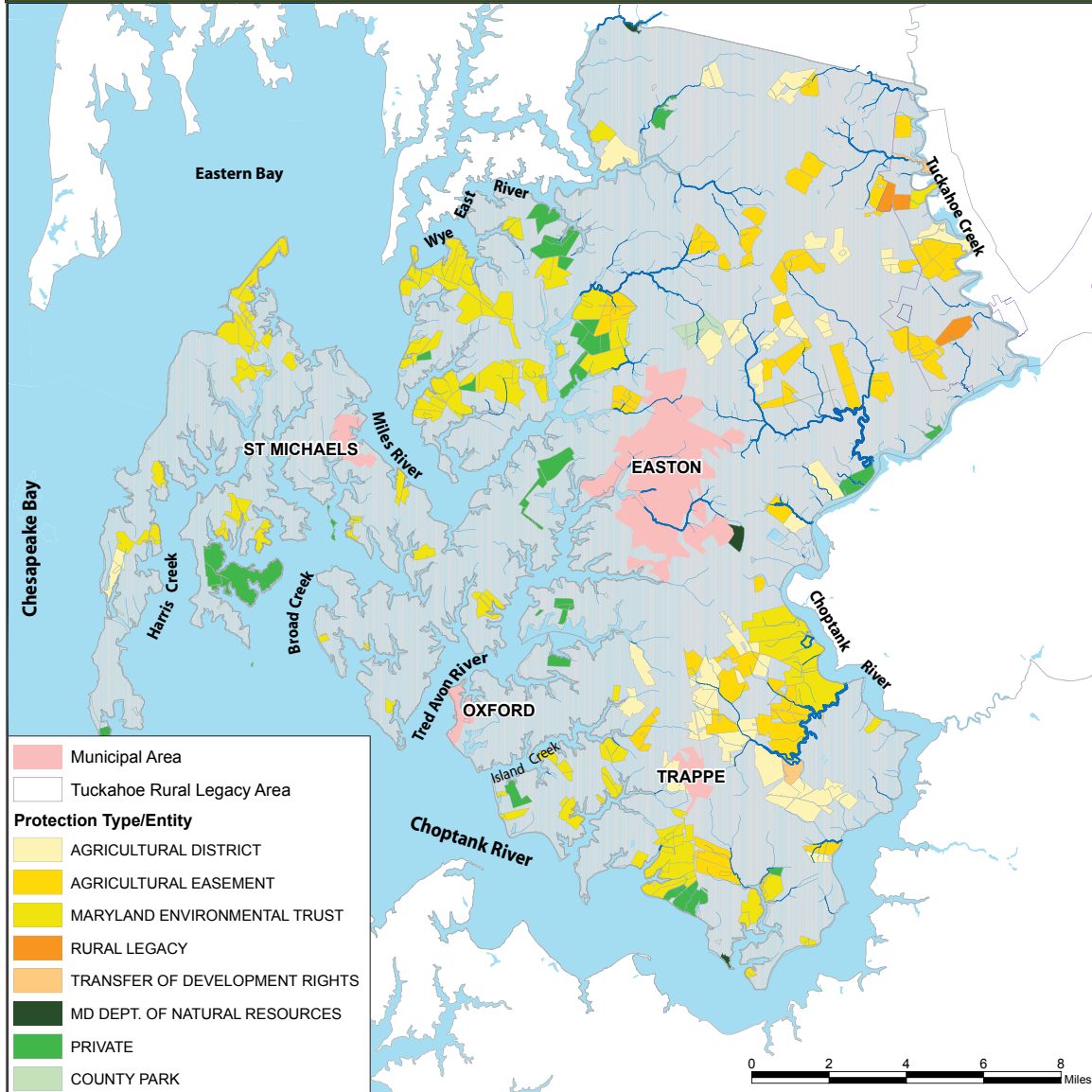
- 1. Ecological Resources**
- 2. Agriculture and the Rural Landscape**
- 3. Critical Aquatic Resources**

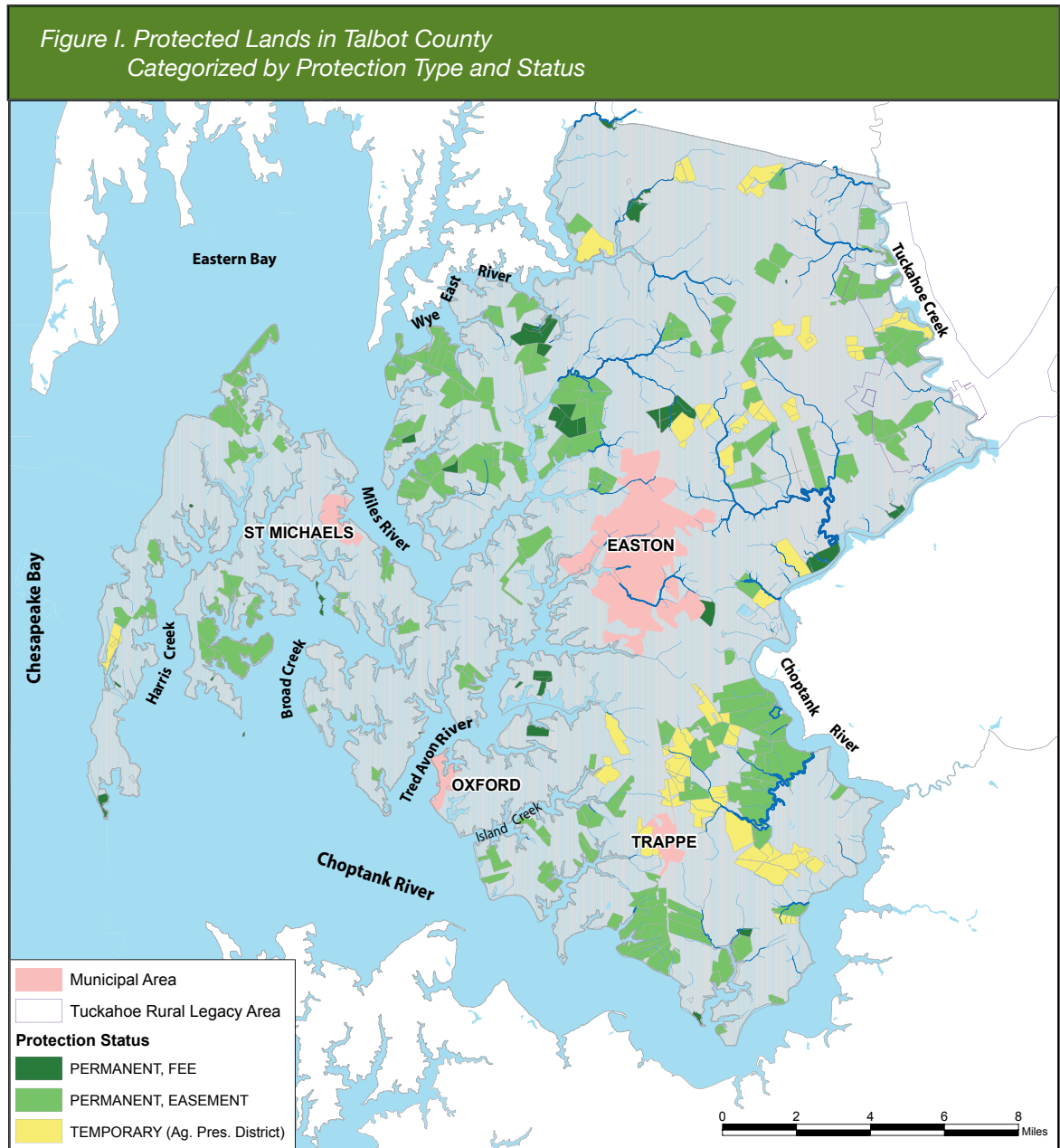
These assessments are intended to locate the critical areas where the County should concentrate its protection efforts to most efficiently and effectively meet its conservation goals.

This evaluation was designed to take advantage of existing data from recent statewide resource evaluations as well as to identify valuable land that might be missing from prior models due to gaps in information. For one, the Fund's Talbot County Resource Assessments place a greater emphasis on development risk than previous evaluations. The Fund's Plan also identifies significant coastal lands in the western portion of the county, a region underrepresented in the state's Green Infrastructure Network. Finally, this Plan included an analysis of adjacency to protected areas, a defining principle of the green infrastructure vision but one that is not directly represented in either the state's ecological valuation or its GreenPrint statistics. Approximately 18.5% (32,300 acres) of the land in Talbot County is currently under some form of protection (Figures H and I), with protection mechanisms as follows:

- 9% (2,900 acres) protected by outright fee purchase.
- 91% (29,400 acres, primarily farmland) protected by conservation easement, restricting development and other intrusive or intensive uses not compatible with agricultural preservation objectives
- 4% of Talbot lands (6,800 acres, 52 properties) are classified as Agricultural Preservation Districts, a designation under the Maryland Agricultural Land Preservation program (described in a subsequent section), where development is prohibited over a temporary 5-year period but dedicated agricultural easements have not yet been established. Thus 21% (all easement) of the 'protected' land in Talbot is only temporarily protected.
- The remaining 96% (28,225 acres) of easement land is permanently protected.

Figure H. Protected Lands in Talbot County
Categorized by Ownership or Protection Mechanism





A. ECOLOGICAL RESOURCES

The Ecological Resource Assessment evaluates a number of ecological criteria to identify the areas where protection efforts would make the greatest relative contribution to the preservation of the County's significant natural species, habitats, communities and ecosystems. By identifying lands of high ecological value within Talbot County, the analysis aims to create a County-scale application of Maryland DNR's Green Infrastructure Network and GreenPrint Program to help the County recognize and prioritize its distinctive assets.

Figure J illustrates the results of this assessment and hence the relative ecological value of land throughout Talbot County. The darker green areas represent greater ecological value, and red circles identify regional concentrations of high ecological resource value. Not surprisingly, this map resembles the state Green Infrastructure Network, but it is better able to capture ecological importance in the coastal region of the County. Visual inspection reveals the northwestern, Choptank River Watershed portion of the County (A and B), bordered by the Miles and Wye East Rivers, and the land adjacent to the Choptank River in the east (C, D, E and F), to be particularly ecologically rich. Though dispersed among smaller, more isolated locations and thus not featured as prominently in the map, the ecological assessment also identified valuable coastal ecological resource areas in the western Chesapeake and Eastern Bay region, such as in the St. Michaels area.

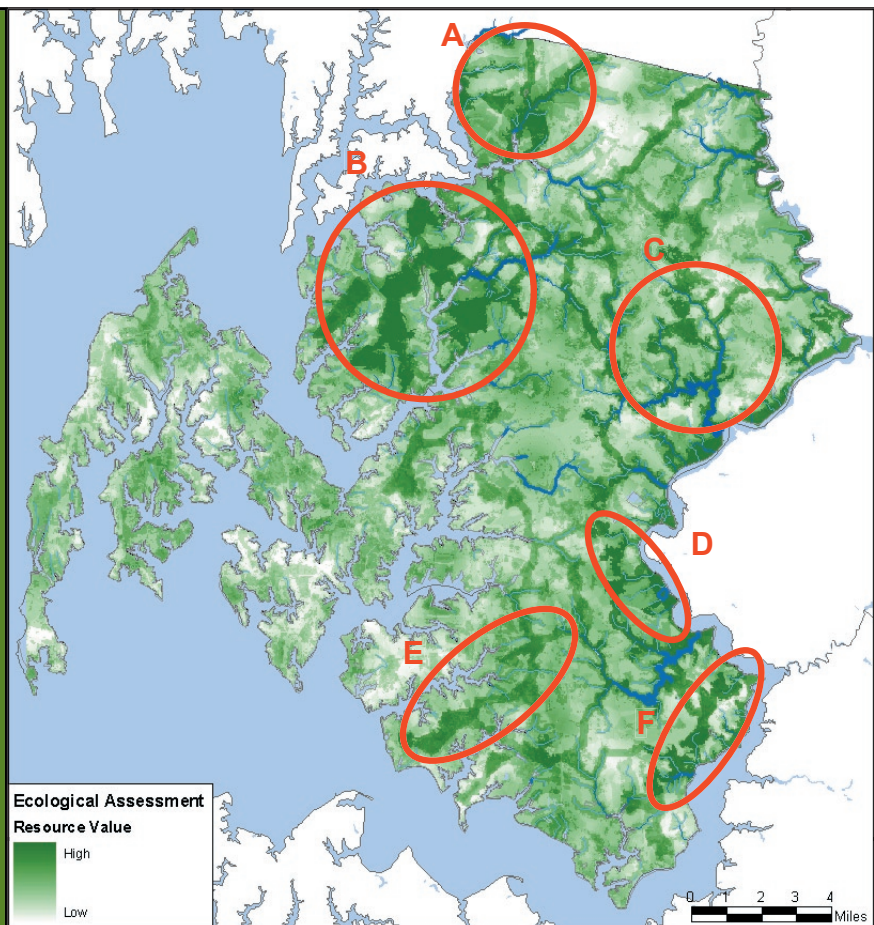
Criteria Used to Evaluate Ecological Resources:

- Rare Species Habitat
- Proximity to Natural Heritage Areas
- Green Infrastructure Network
- Proximity to Streams, Wetlands and Floodplains
- Distance from Roads and Urban Areas
- Vegetation Type/Land Cover
- Interior Forest Habitat
- Proximity to Existing Protected Lands

Figure J.

*Talbot County
Ecological
Resources*

○ *Regional
Concentrations
of High
Resource Value*



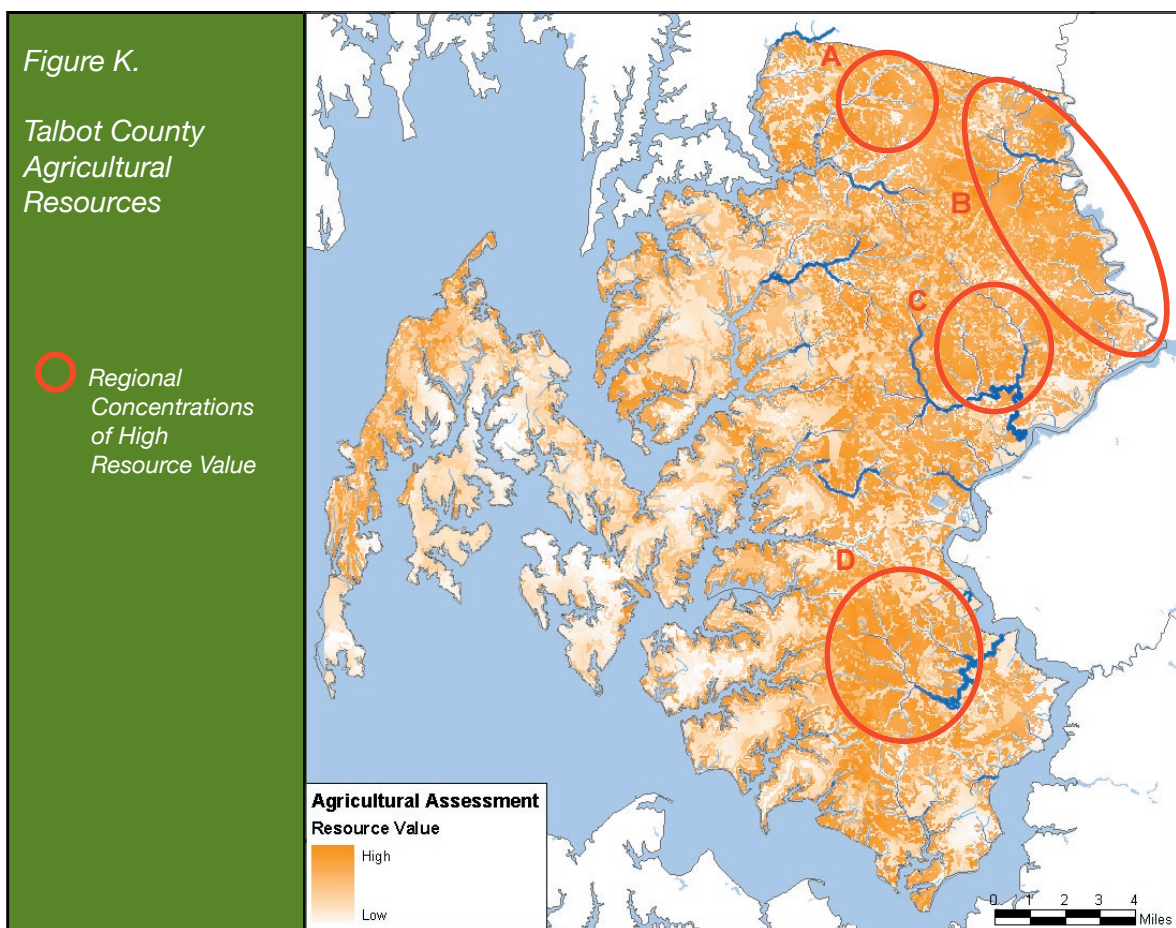
B. AGRICULTURAL RESOURCES

The Agricultural Resource Assessment identifies lands that are most valuable to the county's agricultural production and essential to the preservation of the county's rural character and landscape. Its purpose is to assist the prioritization of conservation efforts to ensure the maintenance and enhancement of Talbot County's farming economy and its low-density open spaces.

Figure K shows the relative agricultural suitability of County lands, measured using the listed criteria, with higher farmland value represented by darker yellow. Red circles highlight areas with large expanses of exceptionally high value. This assessment captures the most productive lands in the County that are currently under some form of agricultural cultivation but face an impending threat from development pressure. Areas of particularly high importance are found in the Tuckahoe Rural Legacy District in the northeastern part of the County (B) and the lands lying northeast of Easton (C) and northeast of the southern town of Trappe (D).

Criteria Used to Evaluate Agricultural Resources:

- Prime Farmland Soils (County Soil Survey)
- Proximity to Existing Protected Lands
- Distance from Urban Development



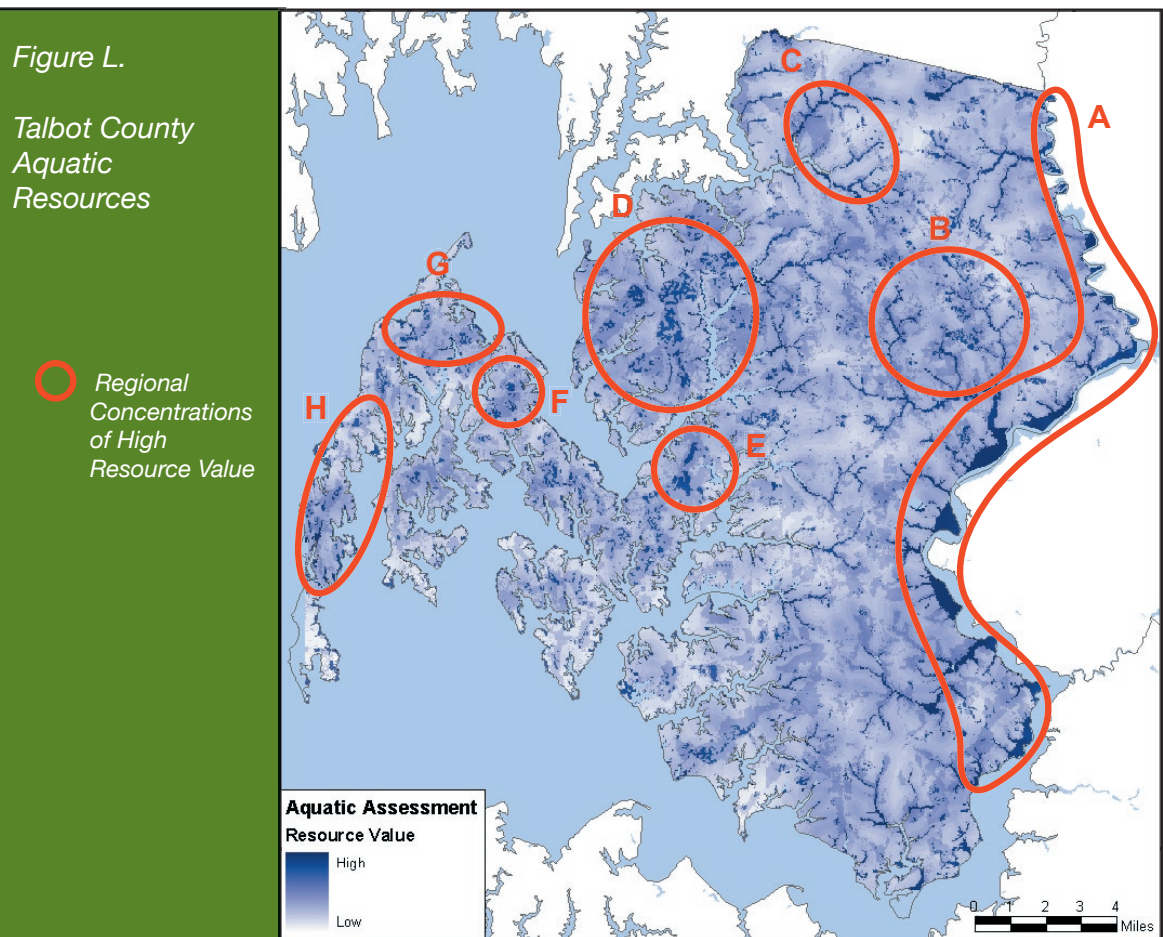
C. AQUATIC RESOURCES

The Aquatic Resource Assessment focuses on identifying the areas most crucial to the protection of the Chesapeake Bay and its tributaries and the viability of the riparian communities, tidal and non-tidal wetlands and aquatic systems associated with it. The restoration and maintenance of a thriving Bay ecosystem will require the protection of not only the fragile and vital coastal lands but also stable, canopied stream corridors and natural, undeveloped upland areas throughout the Basin. A watershed tends to function as a unit, with the health of the waterways tied to the relative land degradation as a whole.

Figure L identifies the lands that are particularly important to protecting and preserving the impaired and imperiled Chesapeake Bay and the wetlands and tributaries that sustain it. Higher value is indicated by darker blue and certain areas with concentrations of valuable resources are circled in red. Protection of these areas is critical to water quality as well as to the majority of sensitive natural resources in the County. Talbot has already demonstrated its commitment to the conservation of the Chesapeake Bay resources through zoning restrictions and land use regulations in the Critical Area and Western Rural Conservation Area; the priorities identified by this evaluation can aid the development of a complementary land conservation program to guarantee permanent protection. Valuable riparian wetlands are found along the eastern edge of the County, bordering the Choptank River and Tuckahoe Creek (A and B), and along the Wye East River tributaries (C), while valuable coastal wetlands are found adjacent to the Miles River, Eastern Bay and Chesapeake Bay along the west coast and on the St. Michaels-Tilghman peninsula (D-H).

Criteria Used to Evaluate Aquatic Resources:

- Forested and Nonforested Wetlands
- Proximity to Streams
- Proximity to Existing Protected Lands



IV. CONSERVATION PRIORITIES

The Fund presents two main products in this Green Infrastructure Plan. On one hand, the results of the three resource assessments can be integrated to produce a comprehensive resource evaluation. This map shows where each of the targeted resources is most prominent and depicts conservation needs within the County. It is a holistic and proactive vision for Talbot's future designed to capture a spectrum of long-range conservation objectives. Second, we have provided an adaptable tool that can be used to evaluate individual conservation opportunities as they arise and conduct rapid assessments of conservation costs and benefits.

VISION

To secure the long-term protection of the most precious of Talbot County's resources, it is both appropriate and practical for the County to actively and assertively pursue land conservation prospects by seeking out landowners willing to engage in real estate transactions. The use of a Green Infrastructure Plan guarantees that such efforts occur in a strategic and not a haphazard manner.

To create a prioritization methodology that can assist and inform the proactive approach to conservation, the Fund merged the three green infrastructure resource assessments described above and identified where each of the three conservation targets rates highest across the entire landscape of the County. By incorporating current land cover to distinguish forested areas from agricultural fields and to mask out the areas designated

for development, the Fund produced a bold vision for the future of Talbot County (Figure M). This vision builds on the County's stated growth allocation goals and classifies all lands outside the anticipated urban areas (priority funding areas) by resource value and level of priority for the purpose of streamlining preservation efforts. This land cover vision and distribution of resource priorities led to the development of Talbot County's Green Infrastructure Plan – illustrated in Figure N – which can serve as a conservation blueprint to guide actions and provide targets when initiating contact with landowners and promoting land protection. In addition it synthesizes Talbot's conservation priorities, effectively capturing the most special and critical regions of the county – those rural and environmental treasures that represent the best of Talbot County that should be protected for the benefit of generations to come.

Based on this broad vision, several regions of the County emerged as "Focus Areas." These are areas with concentrations of one or more of the County's essential resources. These areas serve as the "hubs" in the Fund's proposed Green Infrastructure Plan for Talbot County. Depending on the unique qualities of each area and the conservation objectives that could be met there, the most appropriate funding mechanisms have been determined and specific implementation strategies suggested. Using a broad spectrum of suitability factors, the Fund quantified overall conservation significance and determined that approximately 47% (~56,000 acres) of the land area in Talbot County should be considered high priority for permanent protection. This number

reinforces the County's commitment in the Eastern Shore 2010 Resolution to protect 50% of its land outside Growth Areas, with the remaining 3% likely fulfilled by preserving tracts with historical and cultural significance or public access value.

ECOLOGICAL RESOURCES

The first evaluation focused primarily on uplands and riparian zones with high ecological value. The major external source of conservation funding envisioned for these areas is the Maryland GreenPrint program. Maryland DNR used its green infrastructure assessment to assign each ownership parcel in the State a green infrastructure value (based on both its ecological importance

Figure M. Talbot County Green Infrastructure Vision



and degree of threat from land use change and representing its suitability to serve as a hub or corridor) and place it into one of five categories of GreenPrint funding likelihood. When Talbot County officials are seeking to secure the protection of lands in areas identified as high ecological priorities by this Plan, the parcels designated with an 'Excellent' or 'Good' rating by the State have the greatest potential to receive GreenPrint funding. Combining these ratings with the results of the State Ecological Suitability Model can help further refine prioritization.

Since acreage is also a major factor when distributing State money for land conservation projects, smaller parcels can be the focus of County-level funding efforts to restrict development in areas not substantial enough to merit attention from the State but critical to the creation of a viable Green Infrastructure Network in Talbot County. Finally, when attempting to prioritize limited conservation money, the valuable areas that rank the highest as habitat for sensitive species should be targeted for actual fee-simple acquisition, while those with more general ecological value can be protected with a combination of regulatory mechanisms, zoning designations and conservation easements, in addition to opportunistic land purchases. Most of the ecologically important focus areas in Talbot County are located west of Hwy 50 in the Upper Eastern Shore Watershed portion of the County.

AGRICULTURAL RESOURCES

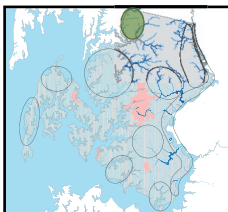
The assessment of high agricultural and/or open space value in Talbot County focused primarily on soil productivity. To more specifically target high priority farmland according to its suitability for various funding sources, the County should incorporate criteria including total single parcel acreage, total (contiguous and/or non-contiguous) multiple-parcel acreage under the same ownership and presence in particular Overlay Zones or Land Use Plan designations. The primary source of state funding for the conservation of valuable agricultural regions is the Maryland Agricultural Land Preservation Foundation (MALPF). MALPF money is of course limited and thus should be directed towards protecting lands with the highest likelihood of success. Since land area (of a single parcel or several contiguous ones) is one of the most important criteria for protection under MALPF, large parcels are generally top priority unless they fall within a region already designated by another program (e.g., Rural Legacy). In addition, those high priority parcels designated as Agricultural Preservation Districts that are currently protected only by temporary measures should rank as the primary targets for easement acquisition, since they are high quality and presumably have willing landowners.

FOCUS AREAS

Based on the analysis of ecological, agricultural and aquatic resource values, the Fund's Green Infrastructure vision identifies ten focus areas for future land and water conservation in Talbot County (Figure M). Due to overlap among the resources and considering the desire for a comprehensive, strategic approach to land conservation in the County, these focus areas represent a synthesis of the three resource assessments to achieve multiple conservation objectives:

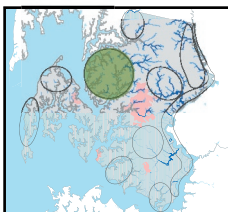
Wye Mills Region

This northwestern corner of the County contains the village of Wye Mills. Characterized by several stream corridors, its riparian areas contain valuable ecological resources and rare and threatened species habitat.



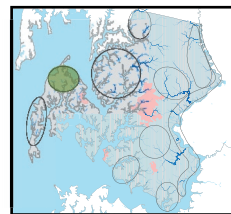
Miles / Wye East River Peninsula

This region in the western part of the county contains extensive waterfront along the Miles River – a major waterway leading directly into the Chesapeake Bay – and its tributaries. The peninsular area features large swaths of forested uplands and wetlands with extremely high ecological value. The Rural Villages of Copperville, Tunis Mills and Unionville are all situated in the center of the region.



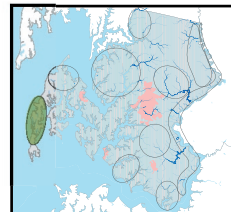
Claiborne / Eastern Bay Shores

Slightly north of the Sherwood-Tilghman Bay Coast Focus Area, this valuable aquatic area lies along the inlet between the Chesapeake and Eastern Bays. It includes the Rural Village of Claiborne and features a small but important network of protected lands in its north central tip. Both this and the previous focus area are excellent candidates for federal funding aimed at Chesapeake Bay protection and could also provide much-needed public access to the Bay.



Sherwood-Tilghman Bay Coast

This narrow peninsular region lies along the outer western coast of Talbot County, with the Chesapeake Bay on its western side and Harris Creek along the eastern shore. The focus area stretches between the Rural Village of Tilghman north to the Village of Sherwood.



Island Neck

This critical peninsular area lies along the middle of Talbot County's extensive southwestern coastline bordering the Choptank River, flanked by Latrappe Creek on its southeastern edge and Island Creek to the northwest. These lands constitute a prime candidate to qualify for federal funding aimed at preserving wetland ecosystems (NAWCA).

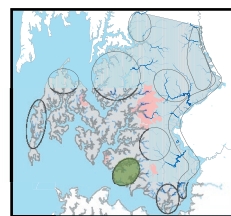
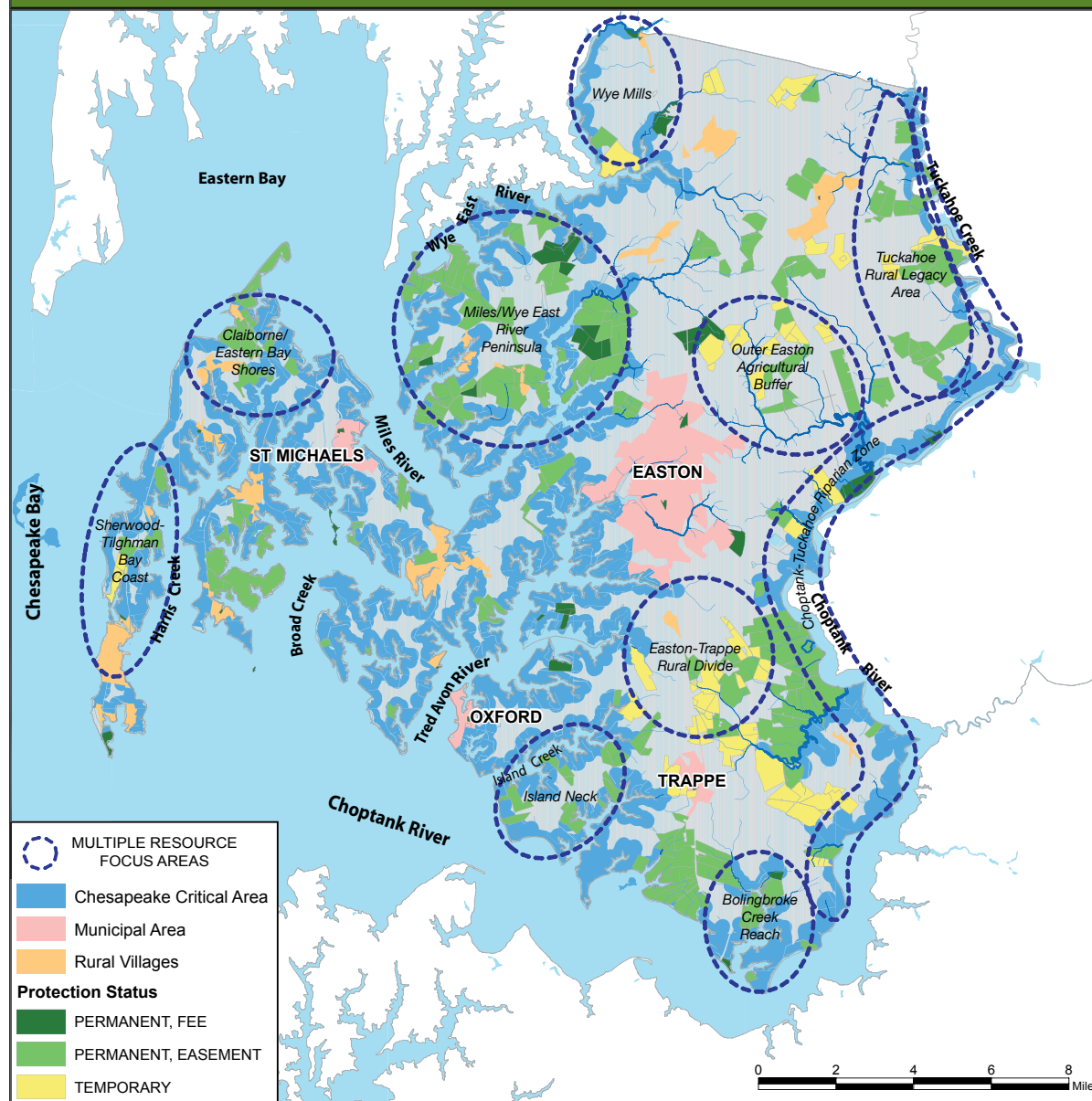
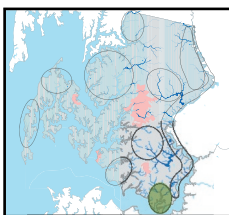


Figure N. Green Infrastructure Plan for Talbot County, Maryland



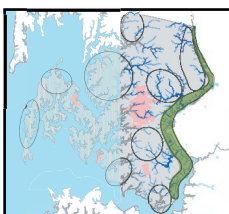
Bolingbroke Creek Reach

This extreme southern tip of the County surrounding Bolingbroke Creek has high ecological value and is fairly far-removed from any significant population centers in Talbot, although it does lie across the Choptank from the municipality of Cambridge in Dorchester County.



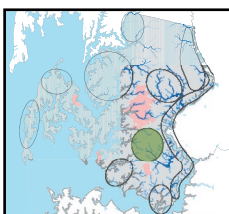
Choptank-Tuckahoe Riparian Zone

The Choptank River, which empties into the Chesapeake Bay, and Tuckahoe Creek together make up the entire eastern border of Talbot County. The riverine wetlands in the floodplains and low-lying areas along their banks represent some of the most important aquatic resources in the County. The permanent protection and maintenance of a vegetated riparian corridor here is essential to water quality and ecosystem health within Talbot as well as in the greater Chesapeake Bay. State and federal programs aimed at protecting water quality, such as the Water Quality Revolving Loan Fund (WQRLF), are good prospective funding sources.



Easton - Trappe Rural Divide

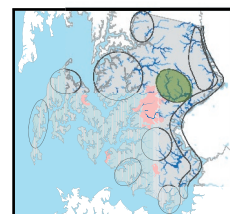
The swath of highly productive land separating the municipalities of Easton and Trappe in the southern portion of Talbot is essential to the preservation of the rural character of the County as well as to its agricultural economy. This area serves as an important buffer zone to the two growing



urban areas and represents a logical location for a Transfer of Development Rights (TDR) sending zone, from which development rights can be shifted to receiving zones in the Easton and Trappe Growth Areas. It also contains a number of Agricultural Districts that are only temporarily protected; these parcels should be the first priority for focusing permanent easement efforts.

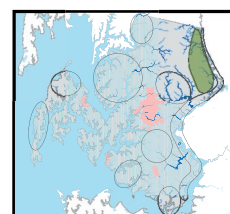
Outer Easton Agricultural Buffer

This small but valuable agricultural region northeast of Easton has the potential to serve as a critical buffer between the Tuckahoe Rural Legacy Area and the expanding Easton municipality. It is also a logical focus for TDR and agricultural easement programs. However, it is also an area of high ecological value and, due to its proximity to the Choptank-Tuckahoe Riparian Zone and as its significant amount of stream frontage on a major Choptank tributary, is quite important to the protection of aquatic resources as well. Thus a collaborative effort, using a combination of funding strategies and targeting multiple conservation objectives would have a high likelihood of success here.



Tuckahoe Rural Legacy Area

A concentration of some of the most productive agricultural land in Talbot County is located in the northeastern portion of the County along Tuckahoe Creek, within the already established Tuckahoe Rural Legacy Area. Efforts should be focused on placing land in this area under permanent protection as part of the Rural Legacy Program.



CONSERVATION PRIORITIES TOOL

The Talbot County Green Infrastructure Plan also provides a pragmatic decision-making tool for quantitatively evaluating and comparing different parcels of land and determining the relative value of protection efforts. This 'Conservation Priorities Tool' will enable the County to respond to different interests (landowner, agency, nonprofit organization and individuals) and customize assessments to respond to timely funding opportunities.

Concurrent with the landscape evaluations and the creation of a long-range conservation vision for Talbot County, the Fund amassed and analyzed a set of data during the green infrastructure process and created an extensive database of information on the 2,205 land parcels illustrated in Figure G.

This database contains descriptive information such as size; land use type; appraised value; level and type of protection; ownership; zoning; presence in the County Land Use Plan overlay zones; stream frontage; percent inclusion in the state green infrastructure network; adjacency and proximity of protected lands; and acreages of wetlands, interior forest, floodplain and Sensitive Species Project Review Areas (SSPRA). Additionally, the suite of attributes includes analysis results from all the parcel assessments, comprising cell ecological ranking (produced by MD DNR) averaged within parcels; development threat (produced by DNR); agricultural soils; DNR Strategic Forestland Assessment scores; resource suitability model scores for the three target resources presented in this report (produced by the Fund); and resource suitability rankings for each resource based on a conditional

analysis developed by the Fund using model scores and other characteristics. Model values have been calculated according to their relative importance within both the County and the entire State of Maryland.

Using the Conservation Priorities Tool, the County can access the above information via a Geographic Information System on a parcel-by-parcel basis. Thus instead of attempting to present a static picture of where protection efforts should be focused, the Green Infrastructure Plan's evaluation tool allows County officials to query the database according to changing priorities, opportunities and funding sources. In this manner, County planners and officials can locate areas that best correspond to available conservation programs or, conversely, determine the characteristics of a parcel in question and the funding mechanism most appropriate to its needs.

For instance, if a landowner approaches the State with a property on which s/he would like to donate a conservation easement or sell development rights, County officials can respond with a pre-determined set of criteria to evaluate whether the property warrants such an investment and can efficiently evaluate the degree to which the property in question meets these criteria.

Conversely, the Tool can aid County efforts to apply for grants for funding land protection efforts under a specific program, such as the federal Farm Bill's Delmarva Conservation Corridor project. First, the County crafts a set of conditions that meet the objectives of that particular program and then it queries the database to assemble those properties that – given landowner support – would most effectively meet the goals. Using the above

example, that query might include relative size, agricultural suitability score, adjacency to other protected farmland, the amount of surrounding farmland under identical ownership, location in a planned County Greenbelt, current zoning designation, stream frontage and/or distance to streams and other waterways. Since the Conservation Priorities Tool is a spatial database, one can find the properties that meet those conditions and are also in close proximity to one another and to other protected lands in order to maximize connectivity and viability.

To apply the Maryland green infrastructure model results at the local Talbot County level and target the acquisition of State GreenPrint funding, the Conservation Priorities Tool can be used to find and rate a parcel's green infrastructure hub and corridor values on a statewide level and justify the need for such funds. The most significant hub areas should be given top priority for full protection in the network first, after which the most feasible corridor areas should be acquired as money permits. These values should be evaluated simultaneously with a parcel's development threat, so that immediate efforts can be concentrated on the highest risk parcels.

V. IMPLEMENTATION

As evidenced in the Talbot County Comprehensive Plan, Talbot already recognizes the value of protecting the natural and agricultural resources essential to its health, quality of life, beauty and rural character. Furthermore, the County has exhibited in its desire for a Green Infrastructure Plan a commitment to initiating conservation efforts in concert with appropriately managed growth. In addition, numerous state and federal programs and policies for facilitating land conservation are already in place, and there is tremendous potential for developing new and innovative ones. The Green Infrastructure Plan will help the County capitalize on this vision and these tools by providing a coordinated framework that links land protection and growth and provides a guide for setting priorities and most effectively and efficiently meeting the County's long-term conservation goals.

Today Talbot County occupies the unique position of being able to protect its high-quality lands and valuable resources prior to development, opening the door to the creation of a viable open space network. By planning this network now, in advance of increasing future development pressures, a system can be developed to direct growth to pre-determined areas where it will impose minimal adverse impact on the County's most important natural resources. Furthermore, foresightful green planning and the decision to finance conservation land acquisitions and programs represent a sound investment that will result in the preservation of valuable ecosystem functions. The loss of such functions would lead to increased financial costs in the future for services

such as water treatment, stream restoration, flood and erosion damage repair and public health protection, among others. Besides providing a source of natural capital, open spaces and protected lands require much less infrastructure and other government services than residential development, often simultaneously generating property taxes and increasing property and land values. A simple cost-benefit analysis reveals the logic of a green infrastructure planning approach.



As a supplement to the comprehensive resource assessments and the identification of priority focus areas, the final section of this Talbot County Green Infrastructure Plan contains a collection of implementation recommendations and resources to assist the County in turning this visionary Plan into reality. The Fund presents these recommendations in three tiers. First, we offer an overview of conservation funding sources at the state and national levels, as well as potential mechanisms for generating local conservation funds. Next, strategies are suggested for securing and channeling these funds to maximize the success and efficiency of conservation efforts, targeted specifically to Talbot County's unique needs and character. Finally, the Plan introduces ideas for developing coordinated education and outreach programs that will publicize conservation needs and build crucial public support.

FUNDING

A. Existing State Funding Sources

Over the past 30 or so years, Maryland has established several mechanisms for funding land conservation efforts within the State:

Program Open Space (POS), created in 1969, is funded by a dedicated real estate transfer tax. POS money is allocated to counties for conservation purposes based on county population and real estate transfer revenue. Portions of this fund also go to various other State conservation programs.

The *Maryland Agricultural Land Preservation Foundation* (MALPF) was set up in 1977 for the preservation of productive agricultural land and woodland. It allows landowners to create Agricultural Preservation Districts out of at least 100 contiguous acres if they agree to keep it in production for five years, after which they can sell their development rights to the State for permanent easement protection. Talbot County currently has 14,523 acres in Agricultural Preservation Districts, with 8,100 acres permanently protected by easement.

The *Rural Legacy Program*, dating from 1997, also focuses on preserving large blocks of land with significant farm, forest, historic and environmental resources. Under it, local governments and land trusts can identify Rural Legacy areas where protection efforts are needed and then compete for funds to preserve land within these areas using fee or easement purchases. Partnership projects are often given priority in the selection process. One Rural Legacy Area has been established in Talbot County - the Tuckahoe Rural Legacy Area (14,500 acres) lies along Tuckahoe Creek in the northeast corner of the County and contains two permanently protected parcels.

In 2001, a green infrastructure initiative issued by the Maryland Administration established the *GreenPrint* program to fund the protection of lands identified as part of the statewide GI network.

The *Water Quality Revolving Loan Fund* (WQRLF), administered by the Maryland Department of the Environment (MDE), was initiated with money granted from the federal EPA. Although originally intended for sewage treatment plant upgrades and similar capital projects, currently land

Maryland State Conservation Financing Programs:

- ❖ Program Open Space
- ❖ Maryland Agricultural Land Preservation Foundation
- ❖ Rural Legacy Program
- ❖ GreenPrint
- ❖ Water Quality Revolving Loan Fund

Federal Conservation Financing Programs:

- ❖ Coastal Zone Management
- ❖ North American Wetlands Conservation Act
- ❖ USDA Wetlands Reserve Program
- ❖ Farmland Protection Program
- ❖ USDA Forest Service's Forest Legacy
- ❖ Farm Bill

conservation projects are being considered on a case-by-case, pilot basis. With POS revenues decreasing in the current fiscal environment, the WQRLF presents one of the best potential sources of land protection funding at the local level. These low-interest loans require some local matching funds and of course must be repaid, but they provide an excellent incentive for generating a new County conservation funding mechanism.

B. Existing National Funding Sources

Several federal programs have the potential to serve as funding sources for conservation projects within Talbot County. The most prominent of these apply specifically to coastal regions and/or wetlands areas, including Coastal Zone Management (CZM), a federal/state partnership program; the North American Wetlands Conservation Act (NAWCA), administered by the U.S. Fish and Wildlife Service for the acquisition and enhancement of wetland ecosystems to benefit waterfowl and other migratory birds; and the USDA Wetlands Reserve Program (WRP), a program for private landowners to sell easements or restoration cost-share agreements to the USDA. The Farmland Protection Program provides federal matching funds in the form of competitive grants for state and local farmland protection efforts. To be eligible a jurisdiction must have a complementary program of funding for the purchase of conservation easements. Another program, the USDA Forest Service's Forest Legacy, provides funding to states for protecting threatened forestlands, allowing certain economic uses while promoting conservation. However, no Forest Legacy areas have been or are likely to be designated in Talbot County. Finally, the Farm Bill offers a voluntary, incentive-based stewardship

program that can be capitalized on to secure protection of much of the working lands in the County. In particular, the 2002 Farm Bill contains a project that establishes the three-state Delmarva Peninsula as the pilot site for the nation's first Conservation Corridor. Under this program, municipalities in this economically and ecologically important region can apply for funds to protect the peninsula's farmland (rated the 9th most threatened in the nation by the American Farmland Trust), water quality and wildlife habitat.

C. Innovative Local Funding Sources

If Talbot County hopes to implement its Green Infrastructure Plan, it cannot depend on outside sources of funding alone to accomplish this bold conservation vision. By devising creative means of generating funds at the local level, the County will be able to leverage limited state, federal and private money. Talbot is one of only a handful of Maryland counties that have not yet established their own funding mechanisms for acquiring or securing easements on land for open space or conservation purposes.

As a Maryland charter county, Talbot County enjoys home rule but with a considerable degree of fiscal oversight from the State. The County can incur general obligation debt up to a certain limit, and it has planning, land use and zoning authority but no general taxing authority, which is held by the state legislature. However, there has been a recent national trend towards devolution, and the current weakening economy and widespread state budget crises could accelerate this trend, allowing localities more taxing discretion so they can raise their own revenue to make up for cuts in state funding.

Potential Local Conservation Funding Mechanisms

	OPTIONS	DESCRIPTION	ADVANTAGES	DISADVANTAGES
BONDS	Revenue	Financed by existing tax or fee	Allows for immediate acquisition of land	More expensive to repay than GO; forfeits future revenue
	General Obligation (GO)	Govt.-borrowed funds	Conservation costs dispersed over time	Requires local ballot referendum
TAXES	New	Types include tourism- or entertainment-related; recording	Dedicated revenue source; allows for long-term planning; can be further leveraged	Requires active publicity campaign, education & outreach effort
	Earmarked Increase or Transfer of Appropriations	Local real estate transfer, property or sales tax set-asides	Popular among voters nationwide	Property tax increases constrained by 2% cap
FEES	Development Impact	Assessed on development projects	Assured revenue source	One-time fee, tied to real estate market

Furthermore, voters across the United States, particularly in the Mid-Atlantic region, have demonstrated overwhelming support over the past decade for local and state referenda that will increase spending for the protection of valuable lands. These ballot measures can provide a powerful source of funding for open space protection.

One potential mechanism for the County to accelerate its land acquisition efforts is through bond financing. The advantage of bonds is their ability to facilitate rapid, immediate land or easement purchase and distribute costs over a long-term, fixed time period (Maryland law sets a 15-year limit). The two main options are revenue bonds and general obligation (GO) bonds. Revenue bonds are paid by the proceeds from an

existing specialized tax or fee (e.g., real estate transfer tax). These types of bonds have a couple of drawbacks - they are more expensive to repay than GO bonds, and they usurp future revenues (to make interest payments) that would otherwise be available for potential land conservation opportunities.

Since the Program Open Space allotment to the County is a dedicated revenue stream but Talbot's share is relatively small, this revenue could be bonded to multiply the amount available upfront for priority conservation programs. According to a 1991 MD DNR report, two criteria determine the feasibility of using long-term debt to increase POS funding availability: 1) Land appreciation rates are greater than tax-exempt interest rates, and 2) The land parcels in question

face intense development and are unlikely to remain available. Land conservation in places such as Barnstable County, MA, and Douglas County, CO, has been funded through debt service on assured revenue sources, in order to take advantage of conservation opportunities or purchase threatened land.

A popular means of financing public infrastructure, GO bonds allow the government to borrow secure funds with a commitment to timely payments of principal and interest over a fixed time period. In Maryland, local governments have the authority to issue their own bonds for public facilities, including open space, subject to voter approval. Talbot County could propose a public referendum on a bond to fund a package of high priority County conservation initiatives based on the Green Infrastructure Plan. Background public opinion research should be conducted beforehand to determine the resources most valued by the community, what aspects of their local environment they are concerned about losing, and generally where their land protection priorities lie, in order to structure the targeted conservation programs effectively. Programs with a mix of objectives and targets are most likely to win voter approval. Gaining approval of a bond in the amount of \$10-30 million, consistent with

what has passed in similarly sized counties, is a reasonable goal for Talbot County.

Another option for Talbot is to levy a tax to help pay for conservation efforts. Talbot County's taxing authority is limited by a Charter amendment, in effect since July 1, 1997, that sets a 2% cap on the increase in overall property tax revenue from year to year. This restriction basically prevents the County from raising property tax rates, thus any conservation funding would have to come from the re-appropriation of property tax revenue. Sales taxes have proved to be a popular mechanism for funding conservation initiatives among voters. Morris County, NJ, residents have approved both property and sales tax set-asides for land protection. Earmarking tax increases for conservation programs, a strategy adopted by Calvert and St. Mary's Counties, MD, holds potential, as does initiating other tourism- or entertainment-related taxes or directing a portion of an existing business-related tax that is expected to grow in the future for conservation. The Fund suggests that Talbot County investigate following the lead of either Harford and Howard Counties, MD, by proposing a 1/2% local real estate transfer tax increase dedicated to Installment Purchases (a strategy discussed below), or Frederick County, which approved a

Keys to obtaining federal, state and private (e.g., corporate, foundation) funds:

1. Demonstration of a clear threat to the land in question
2. An established, long-term open space strategy and implementation plan (as in the County Comprehensive Plan and this Green Infrastructure Plan)
3. Existing state and local funds – many programs require matching funds
4. Partnerships or coordinated efforts
5. Identification of need

1/2% recording tax increase to fund land preservation. An impact fee – a one-time development fee set aside for conservation – is another funding option. The downside to this alternative is its dependency on the real estate market and future development.

Dedicated revenue sources such as taxes and fees provide funding security to allow for long-term conservation planning and can be leveraged through subsequent bonding or other measures. Morris County, NJ, was able to leverage such money by setting up a local 'open space trust fund,' funded by a property tax increase, that is used to buy land, finance debt service on bonds and match grants awarded by the state. Successful 'land banks' have been established in Cape Cod and Martha's Vineyard, MA, communities that are demographically similar to Talbot County, drawing from a local real estate transfer tax of as much as 3-5%. Talbot County has a fairly affluent, environmentally conscious population, but currently no mechanism is in place to handle private contributions by residents with an interest in land conservation in their county. A charity or land trust should be created, as in Loudon County, VA, where such gifts could be directed.

Strategies

Forging partnerships and alliances is critical when pursuing ambitious conservation objectives. Collaboration allows for a greater likelihood of success, both in winning support and funding for land protection initiatives as well as in the long-term viability and benefit of larger, often multi-jurisdictional networks of protected lands. Partnerships should be sought with other local governments in the region (counties and municipalities) for efforts such as the creation of a regional multi-county "Chesapeake Country" network of protected land, which could draw tourism dollars to put towards subsequent conservation projects. In addition, neighboring Dorchester County is involved in a visionary open space planning effort for the future of the greater watershed in which it lies (Nanticoke Watershed Initiative).

Local land trusts such as the Eastern Shore Land Conservancy also make excellent partners, and the Maryland Environmental Trust uses state money to provide training, funds and other support to local land trusts. In Boulder, CO, intergovernmental agreements were coordinated between the county and 10 municipalities on 'joint visions of land conservation,' and the county and cities have shared land purchase responsibility to make independent sources of money go further and help fill in the protection gaps in unincorporated areas.

Another critical strategy for implementing broad-scale conservation plans is to devise ways of bundling funding sources and creating multi-layered packages of support, drawing available money from different levels and leveraging it to cover a large project. Efforts to capitalize on currently available sources of funding should be combined with

ones to generate new sources of funds, such as those suggested above. Non-profit organizations can assist in identifying various sources of funds appropriate to a project and assembling packages.

One of the main objectives stated by the County in its Comprehensive Plan is to encourage greater participation by farmers in agricultural easement programs and voluntary transfer or sale of development rights (TDR/PDR) programs, which will necessarily involve establishing incentives for the use of these programs. One innovative conservation strategy demonstrated successfully in Calvert County, MD, is a market-driven TDR program. Such a program should be voluntary and community-supported and also provide incentives to developers to participate in the program. A streamlined, focused market-driven TDR program can be developed for Talbot using the Green Infrastructure Plan to identify the highest priority agricultural lands (sending zones) as well as areas outside the network where development rights can be shifted (receiving zones). Private developers will then purchase the rights and little government involvement will be necessary. Strategic land purchases by the County can be used to sustain the TDR program.

Howard County, MD, pioneered another incentive-based program involving the installment sales of easements for working farmland, which has since been replicated in a number of other counties, towns and states, such as Harford and Anne Arundel Counties, MD, and Virginia Beach, VA. This program allows the seller to receive the benefit of land value appreciation while deferring tax liability to the future. The system involves the government purchase of development rights

from farmers at market value, with payment delivered in semi-annual tax-free interest-only sums for a period of 25 or 30 years, at the conclusion of which full payment is due. In this manner, farmers can continue to work on their land and contribute to the agricultural economy while avoiding heavy capital gains taxes until they are presumably in a lower tax bracket, and the County can simultaneously maximize its funds by extending payment periods. The PDRs are usually financed with U.S. Treasury Zero Coupon Bonds acquired using a local real estate transfer tax. These agreements are assured and securitized, and the County receives a perpetual easement on the land at the end of the agreement. Such a system provides an excellent means of leveraging MALPF money. Although there are multiple advantages to the easement purchaser in this arrangement, it is also a complex transaction requiring extensive documentation and monitoring and therefore additional administrative costs must be taken into account.

Recommended Strategies for the Implementation of Conservation and Land Protection Efforts in Talbot County, MD:

CREATE LANDOWNER INCENTIVES:

- Market-Driven Transfer of Development Rights (TDR) Program
- Installment Purchase of Easements

LEVERAGE FUNDS:

- Establish Local Land Banks or “Open Space Trust Funds”
- Create Talbot Co. Charitable Land Trust

FORGE PARTNERSHIPS:

- Work with Local Governments (“Chesapeake Country”)
- Engage Land Trusts and other Non-profits in Comprehensive Conservation Efforts

LAUNCH EDUCATION AND OUTREACH INITIATIVES:

- Gather Public Input through Citizen Advisory Committees, Focus Groups, Forums and Opinion Polls
- Accompany Ballot Referenda with Strategic Marketing Campaigns

Education and Outreach

Public input and support are imperative to the success of any local land use and conservation plan, especially a far-reaching, integrated one like the Talbot County Green Infrastructure Plan. Before any concerted efforts are put into achieving the objectives of the Plan, it is advisable to form citizen advisory committees and focus groups, hold public input forums, conduct opinion polls and otherwise encourage public participation in any major land protection efforts. Garnering public support will also require thorough cost-benefit analyses of the proposed plan(s) and the public must be assured that conservation is a sound financial investment. An effective marketing program is necessary, and, depending on the scope of the particular project, hiring a campaign strategist could be beneficial. When any type of ballot funding initiative is involved, it is particularly important to build political momentum for the cause well in advance of the vote by educating the public on the economic advantages of conservation and presenting a convincing case for how the benefits will outweigh the costs.

VI. CONCLUSIONS

In much the same way that built infrastructure – such as roads, utilities, hospitals and schools – supports the growth and livelihood of a community and provides services upon which it depends, *green* infrastructure provides the “natural life support system” that sustains essential ecological, social and economic functions. Just as every government develops a long-range plan for maintaining and improving public infrastructure systems (i.e., transportation, telecommunications, sewer and water treatment), it also needs a plan for protecting and managing a network of natural, restored and working landscape areas.

Open space conservation is too often viewed as an unaffordable luxury. On the contrary, interconnected systems of viable, high-quality wetlands, woodlands, waterways, farms, wildlife habitat, and other open spaces provide countless benefits for human health and overall quality of life and therefore represent a necessary public investment. An integrated green infrastructure plan provides a blueprint for accommodating appropriate future development while simultaneously preserving valuable natural resources and native species.

The green infrastructure concept is a newly emerging, ambitious approach to land conservation that has yet to be broadly applied or adapted at a range of geographic and administrative scales. By positioning itself at the forefront of this innovative, strategic conservation planning movement, Talbot County has the opportunity to pioneer a landmark shift in the way land protection is achieved at the local level and to act as a model for counties and municipalities around

the country who struggle with accelerating rates of land conversion, uncontrolled growth, and degradation of public health.

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