

# *Southern Watershed Area Management Program*

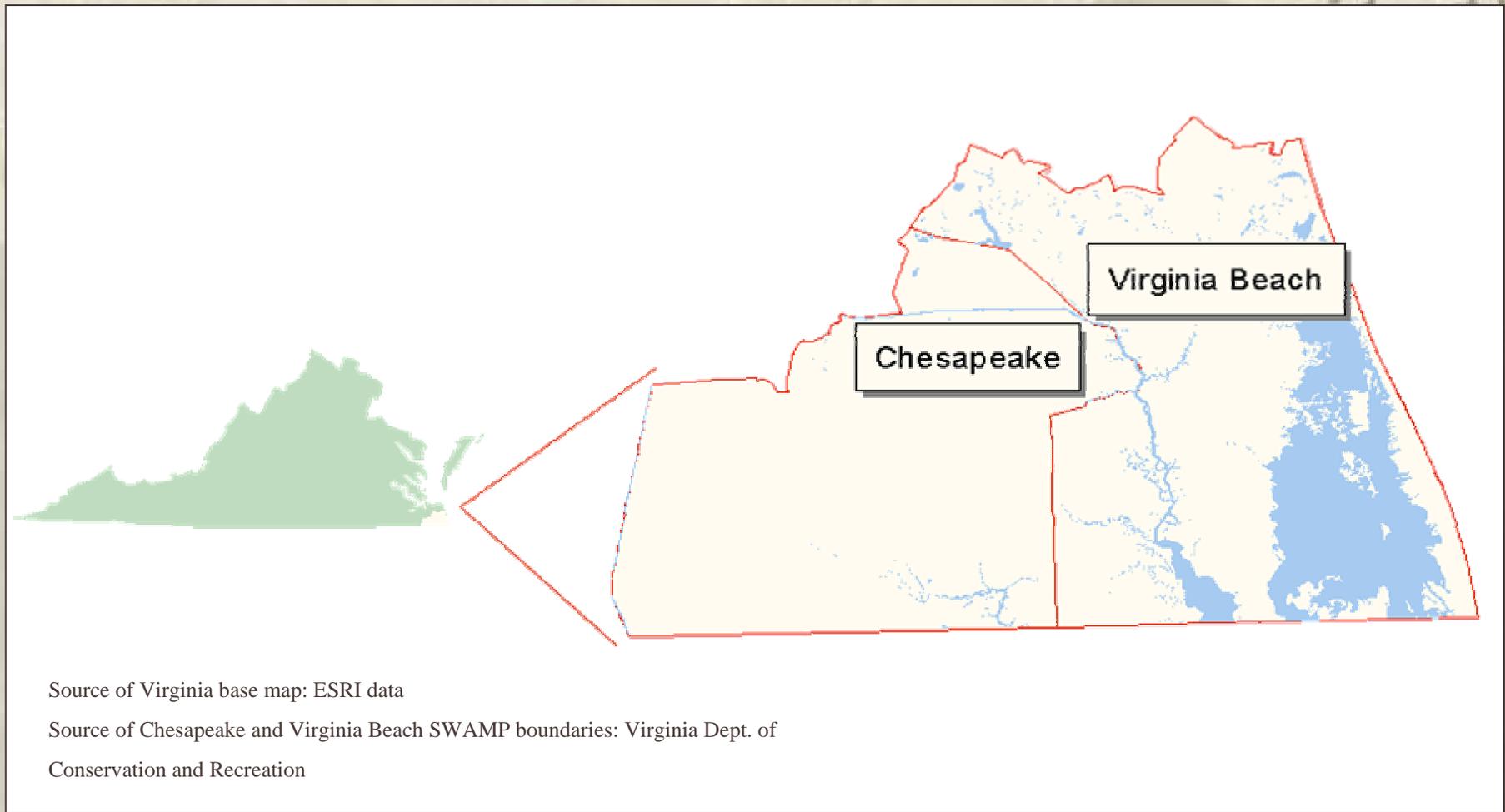
*Presented by Eric J. Walberg, AICP  
Hampton Roads Planning District Commission*

# *SWAMP Overview*

**The Southern Watershed Area Management Program (SWAMP) is a collaborative effort involving:**

- the Cities of Chesapeake and Virginia Beach,**
- the Hampton Roads Planning District Commission (HRPDC),**
- the Virginia Coastal Program,**
- and the National Oceanic and Atmospheric Administration (NOAA).**
- Majority of the funding obtained through Virginia Coastal Program Special Area Management Plan designation.**

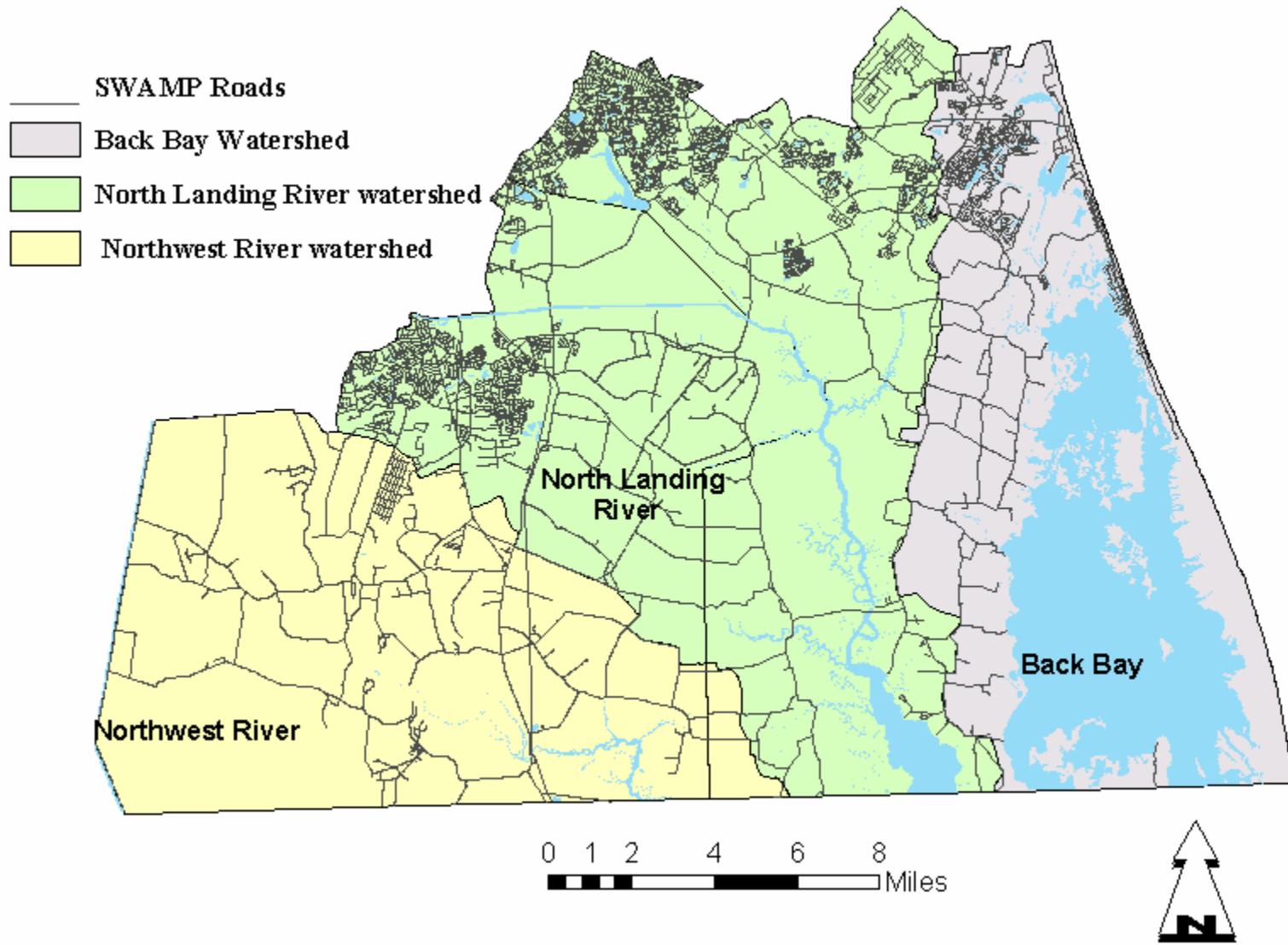
# *Location of the Southern Watershed Area*



Source of Virginia base map: ESRI data

Source of Chesapeake and Virginia Beach SWAMP boundaries: Virginia Dept. of  
Conservation and Recreation

# *Southern Watershed Area*



Source of Road Data: Thomas Brothers Maps  
Source of Watershed data: Compiled by LANDMARK Design Group

# *Southern Watershed Area Land Uses*

SWAMP

## Land Uses

Multi-Family Residential

Single Family Residential

Commercial

Office

Public/Institutional

Industrial

Military

Approved - Being Developed

Undeveloped/Vacant

Right of Way

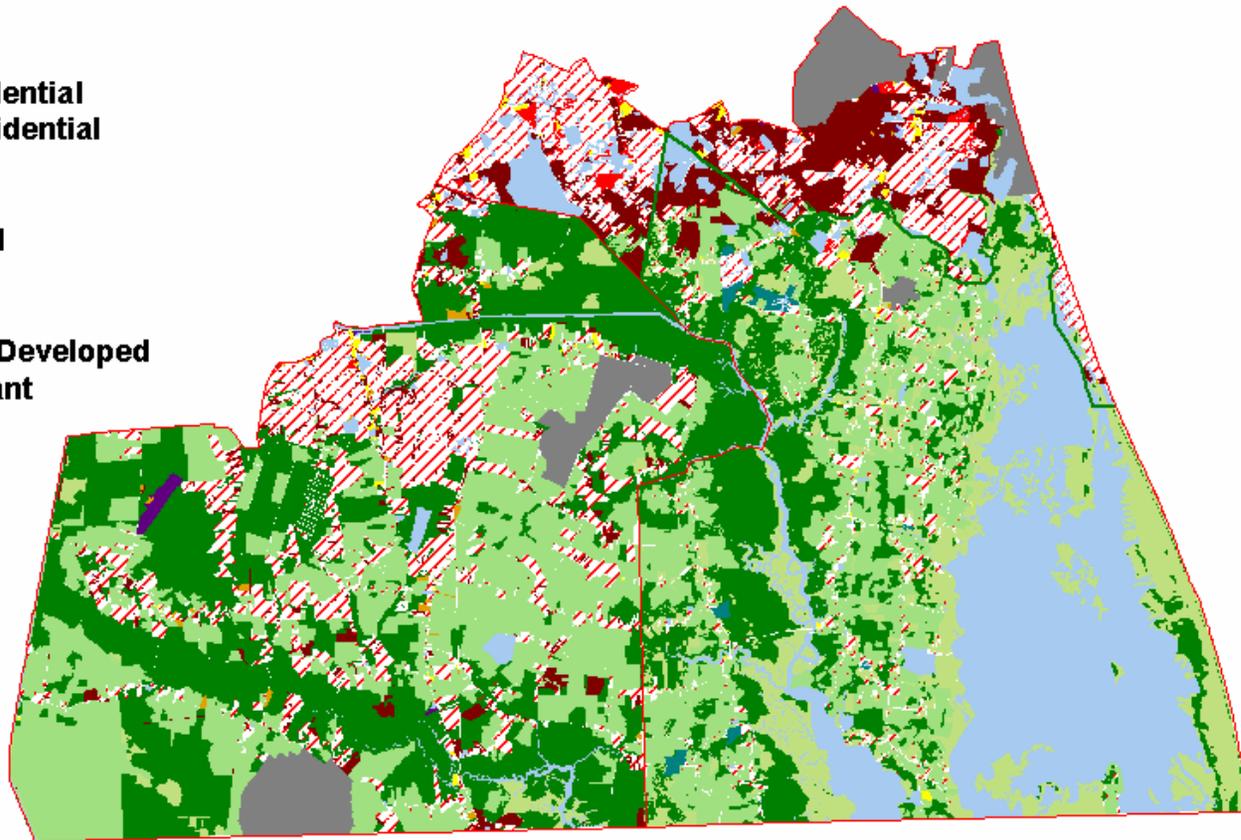
Forest

Grass

Agriculture

Swamp/Marsh

Water



4 0 4 8 Miles



Source of Land Use data: CHSMHILL

## *SWAMP Goals*

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- ❖ Water quality should be protected and enhanced for water supplies and natural resources conservation.
- ❖ Preserve open lands to help protect and enhance water quality.
- ❖ The character of the Southern Watershed should remain rural while providing for rural residential development.
- ❖ Ensure compatibility of recreational activities and commerce with natural resource protection.
- ❖ Agricultural and forestal activities in the Southern Watershed should be sustained and encouraged.

# *Presentation Structure*

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- ❖ Conservation Plan for the Southern Watershed Area
- ❖ Multiple Benefits Land Use Analysis
- ❖ Urban Design

# *Conservation Plan for the Southern Watershed Area*

VA Dept of Conservation & Recreation  
Division of Natural Heritage

Natural Heritage Technical Report 00-12

Sandra Y. Erdle  
Joseph T. Weber  
Richard K. Myers  
Steven H. Carter-Lovejoy

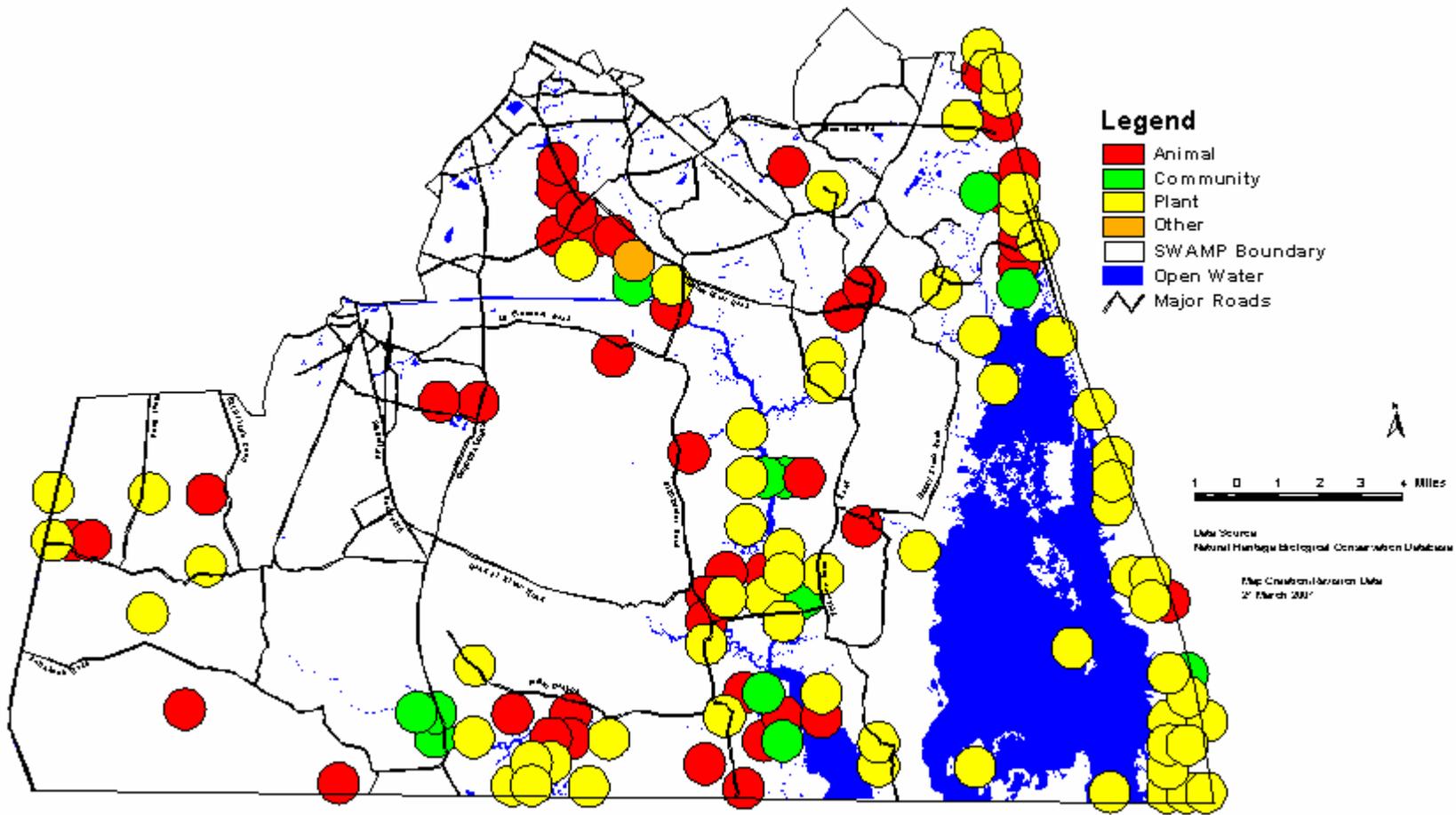


**Virginia Natural Heritage Program**

# *Natural Heritage Resources of the Southern Watershed Area*



**Figure 2. Locations of natural heritage element occurrences in the Southern Watershed Area**



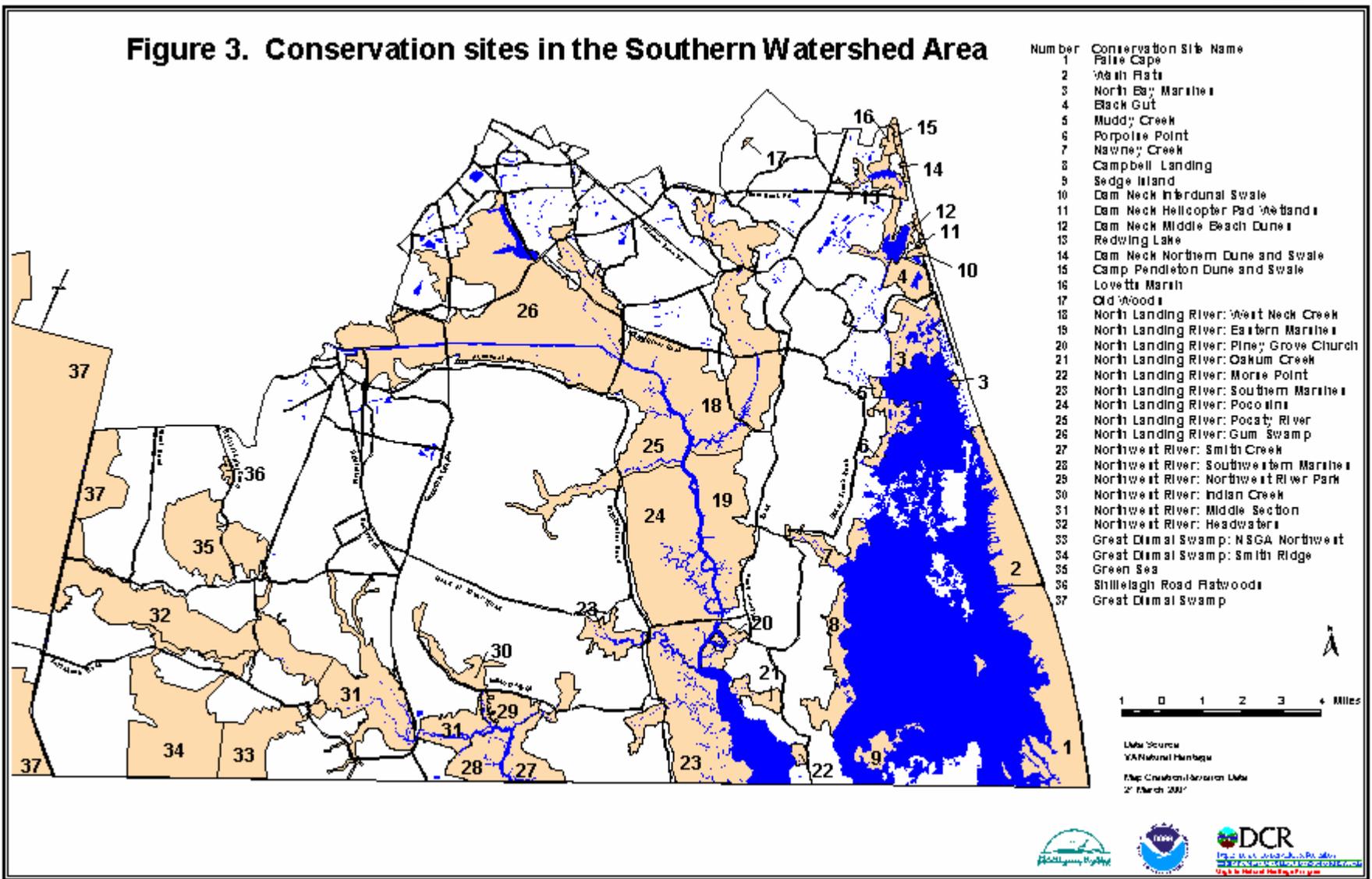
# *Conservation Sites*

- Conservation Sites are mapped boundaries that enclose one or more rare plant, animal, or natural community and the surrounding habitat or buffer necessary to protect the resources.
- Each site is given a biodiversity significance rank based on the rarity, quality and number of resources they contain.
- Boundaries are delineated using species locations and topographic maps, aerial photography, field data, and requires data management and science staff.

Cypress Savannah at  
Northwest River NAP



**Figure 3. Conservation sites in the Southern Watershed Area**



# *Conservation Site Descriptions*

- ❖ 37 Conservation Sites in SWA
- ❖ Site Conservation Plans in Report include:
  - Name
  - Location information
  - Natural resources table
  - Site description
  - Site conservation plan boundaries and map
  - Threats
  - Management recommendations
  - Protection recommendations

*Increasing development presents threats  
in a variety of ways, including:*

- ❖ Point and non-point source pollution to surface and groundwater
- ❖ Loss of habitat and natural resources
- ❖ Loss of wildlife movement corridors
- ❖ Loss of open space and multitude of associated benefits
- ❖ Loss of rural lifestyle
- ❖ Disturbance or loss of groundwater recharge areas
- ❖ Loss of public recreational opportunities

# *Conservation Corridors*

Conservation corridors are linear green-belts or open space that provide connectivity for wildlife between primary natural habitats that otherwise become isolated by unplanned development patterns.

Conservation corridors increase and extend the functions of natural areas.

While helping to sustain natural communities and populations, they also provide a variety of direct benefits to society, including

- ❖ protection of riparian systems
- ❖ improved surface and ground water quality
- ❖ filters to reduce air and noise pollution
- ❖ recreational opportunities

**Figure 5. Public lands and private protected lands in and adjacent to the Southern Watershed Area**

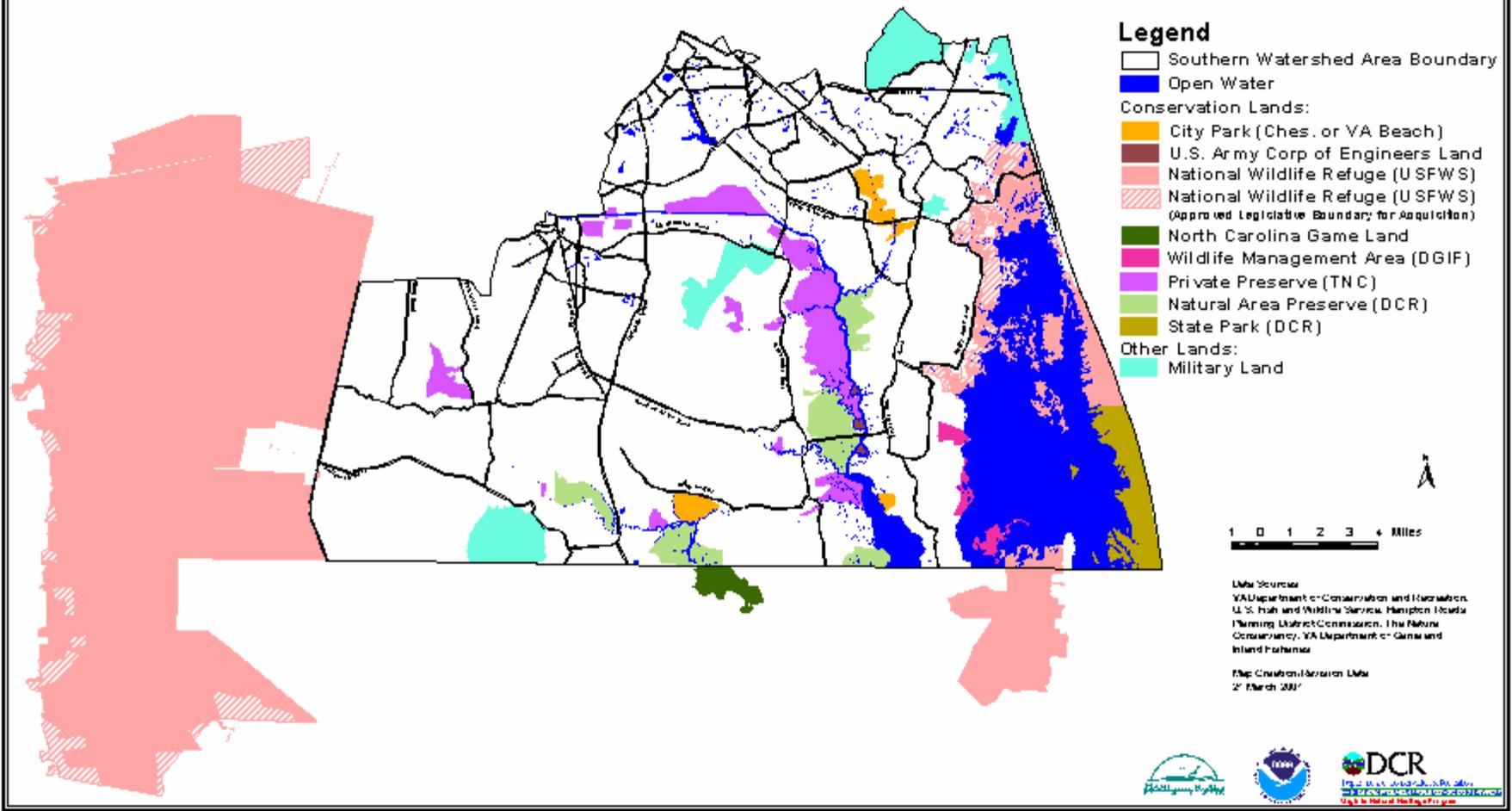
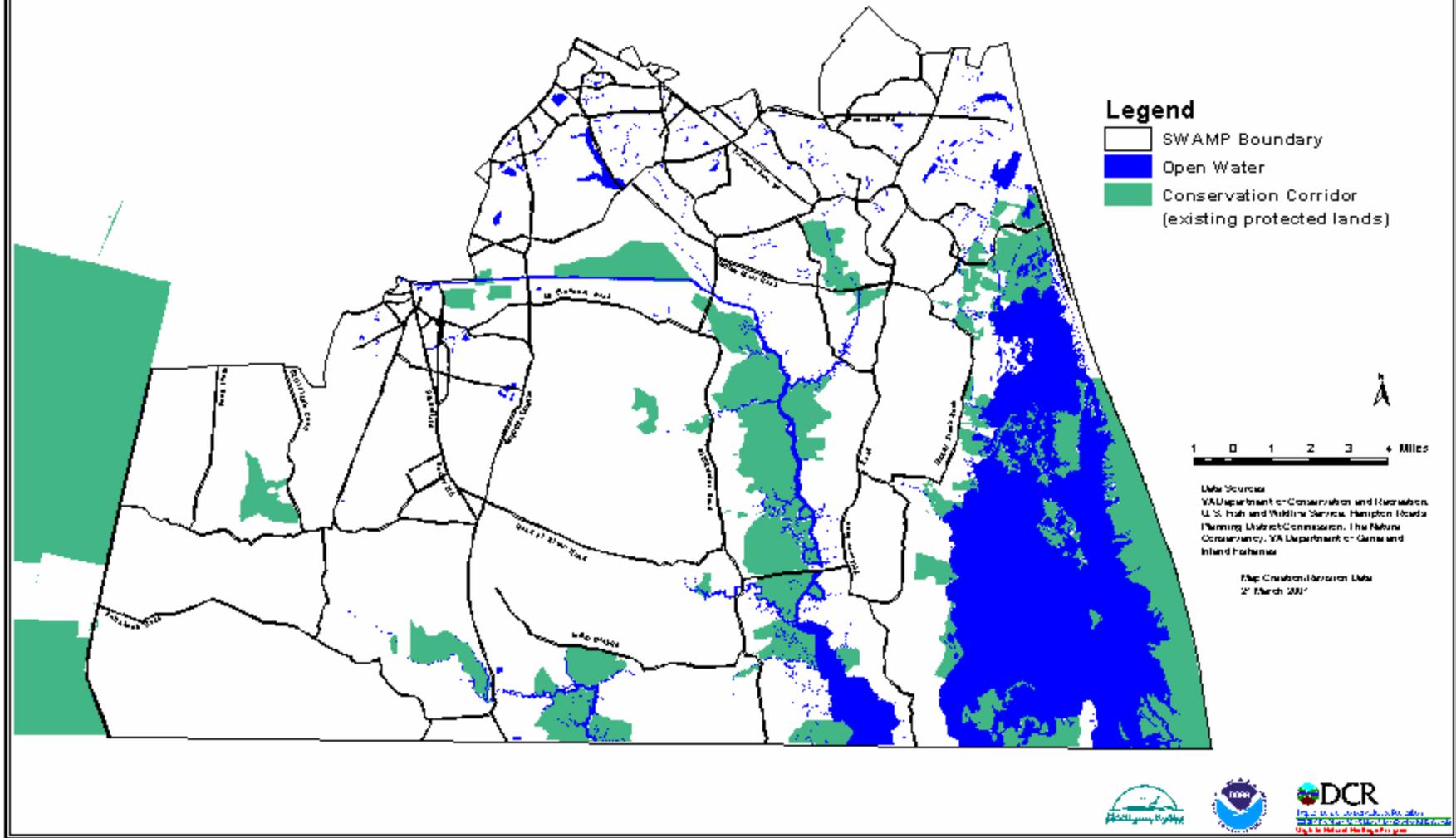
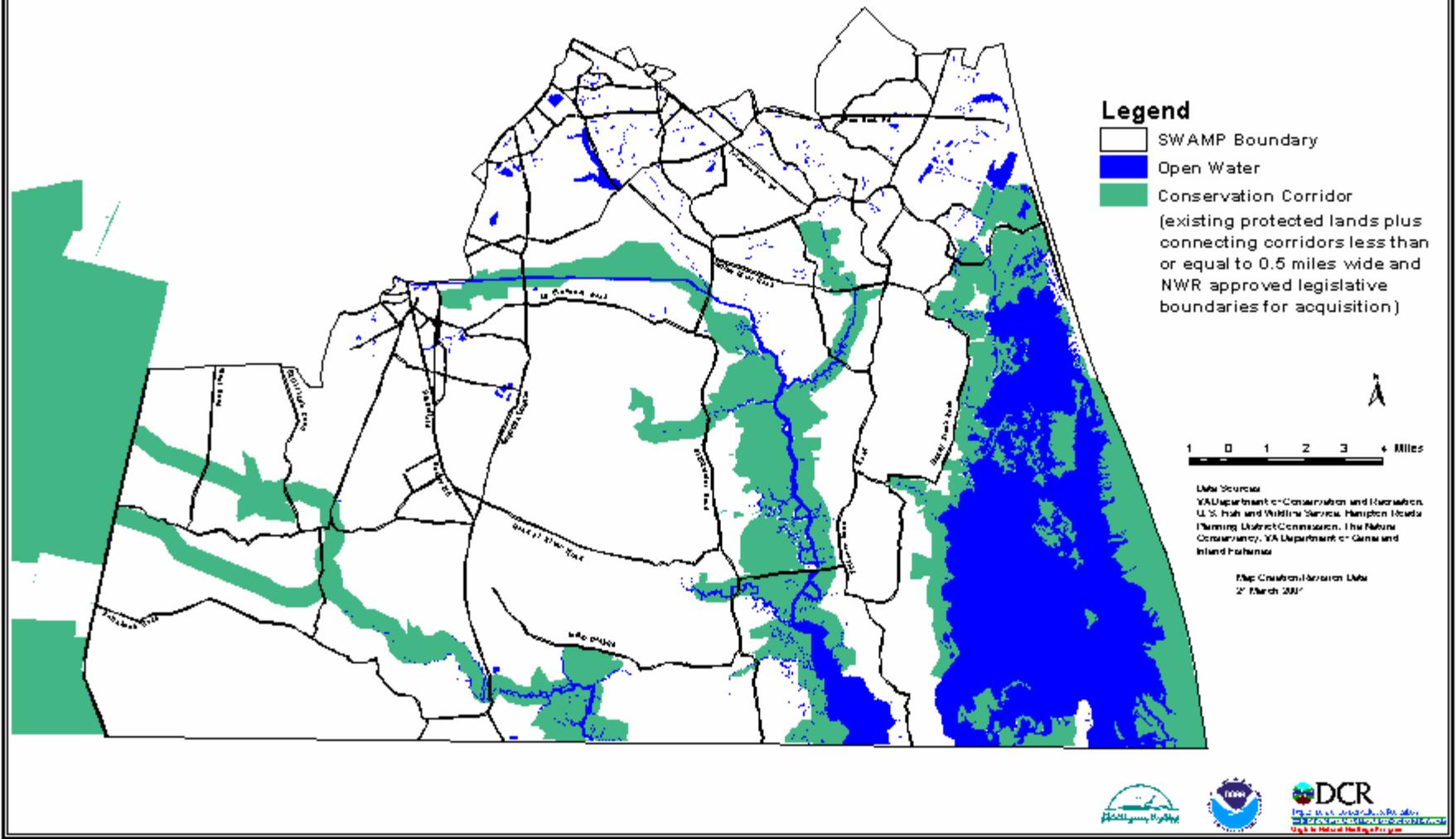


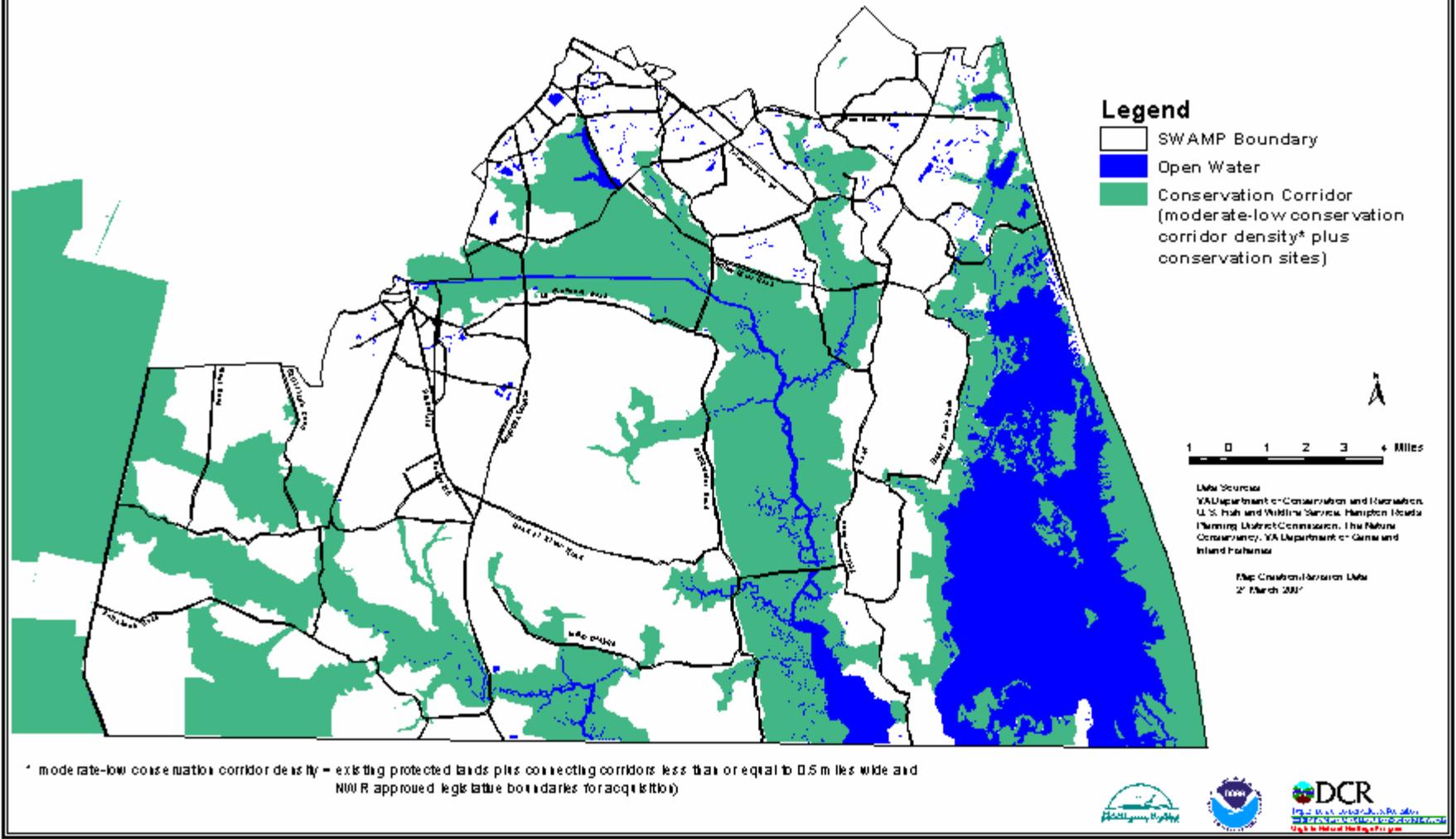
Figure 6. Low conservation corridor density



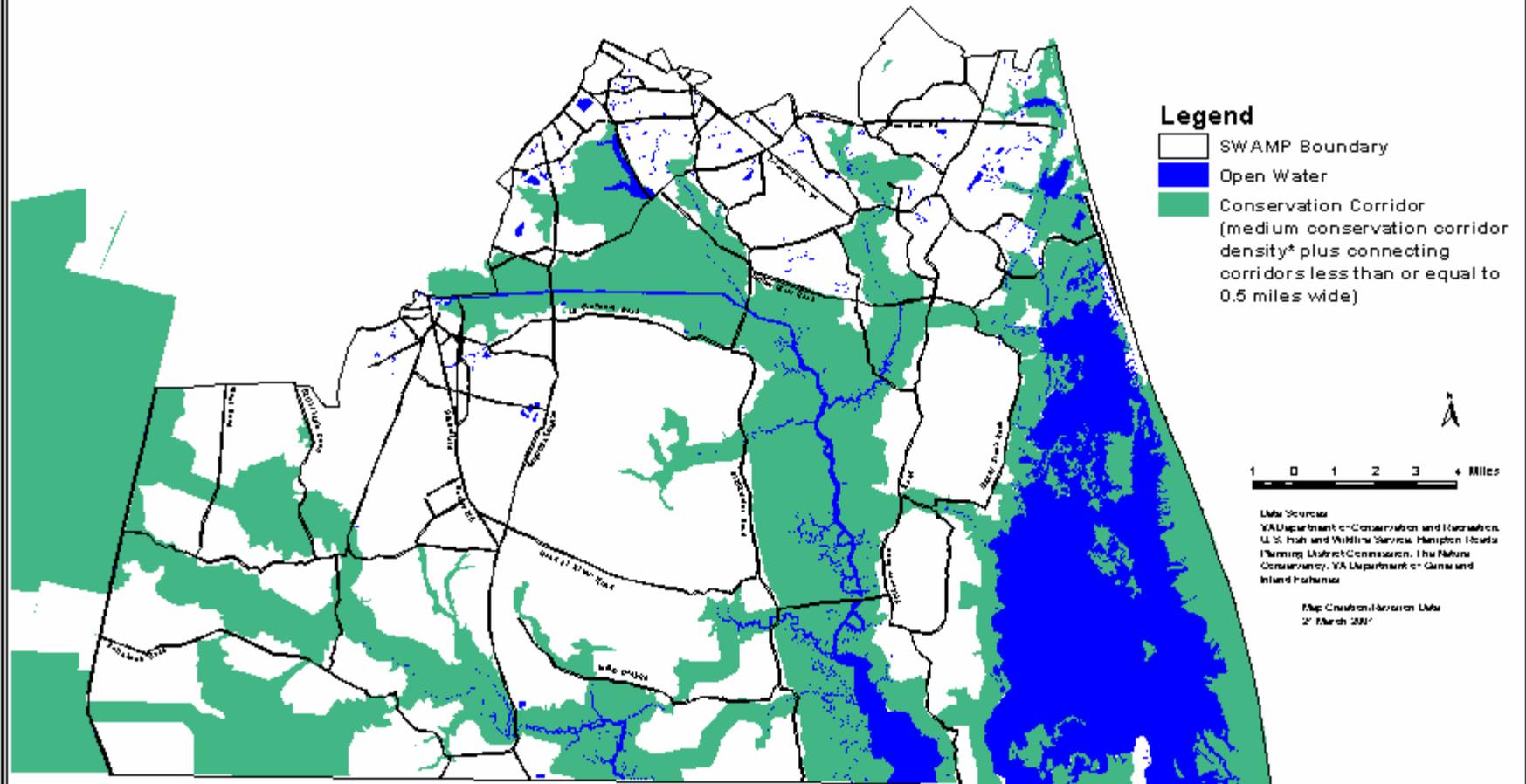
**Figure 7. Moderate-low conservation corridor density**



**Figure 8. Medium conservation corridor density**



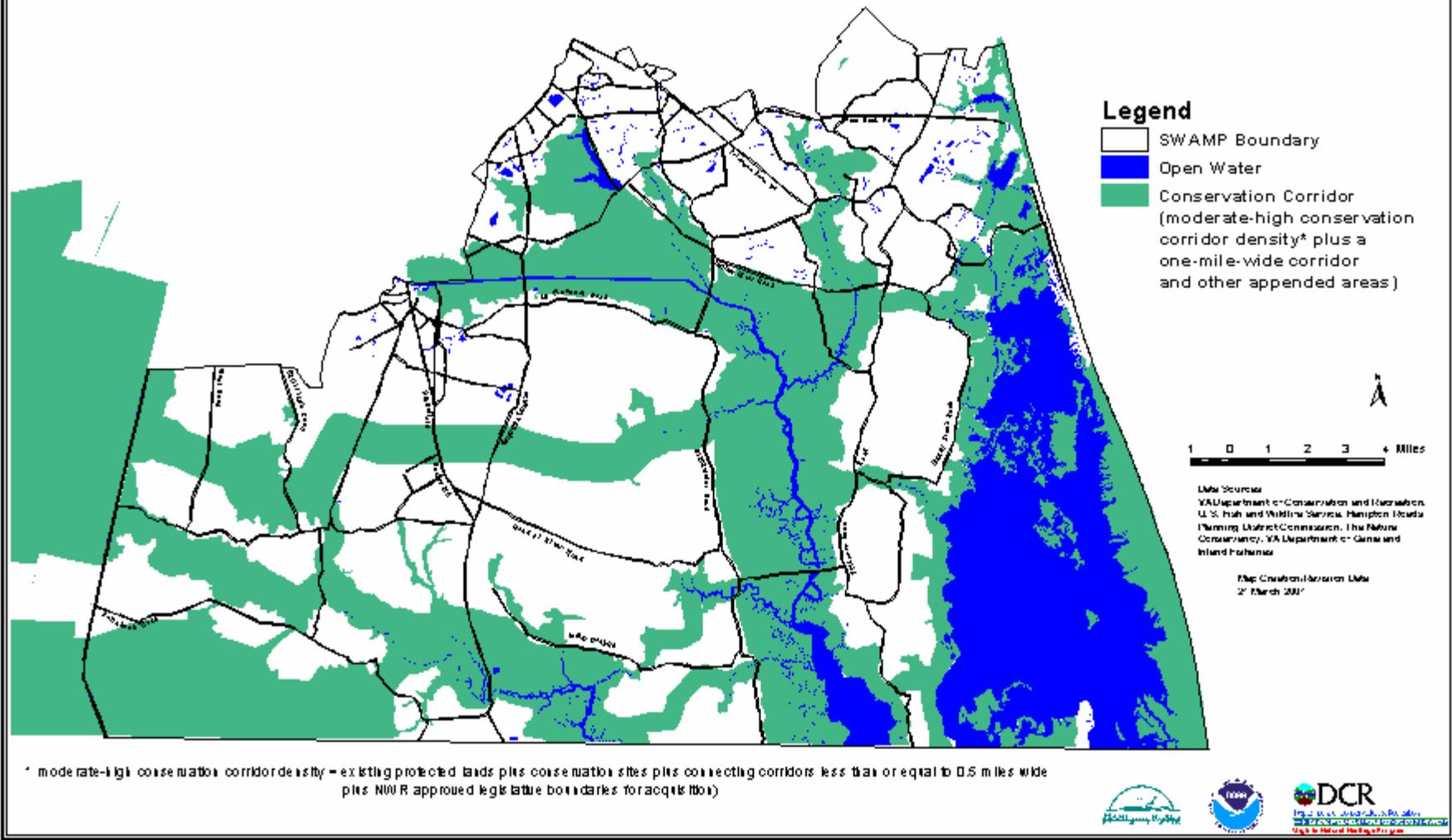
**Figure 9. Moderate-high conservation corridor density**



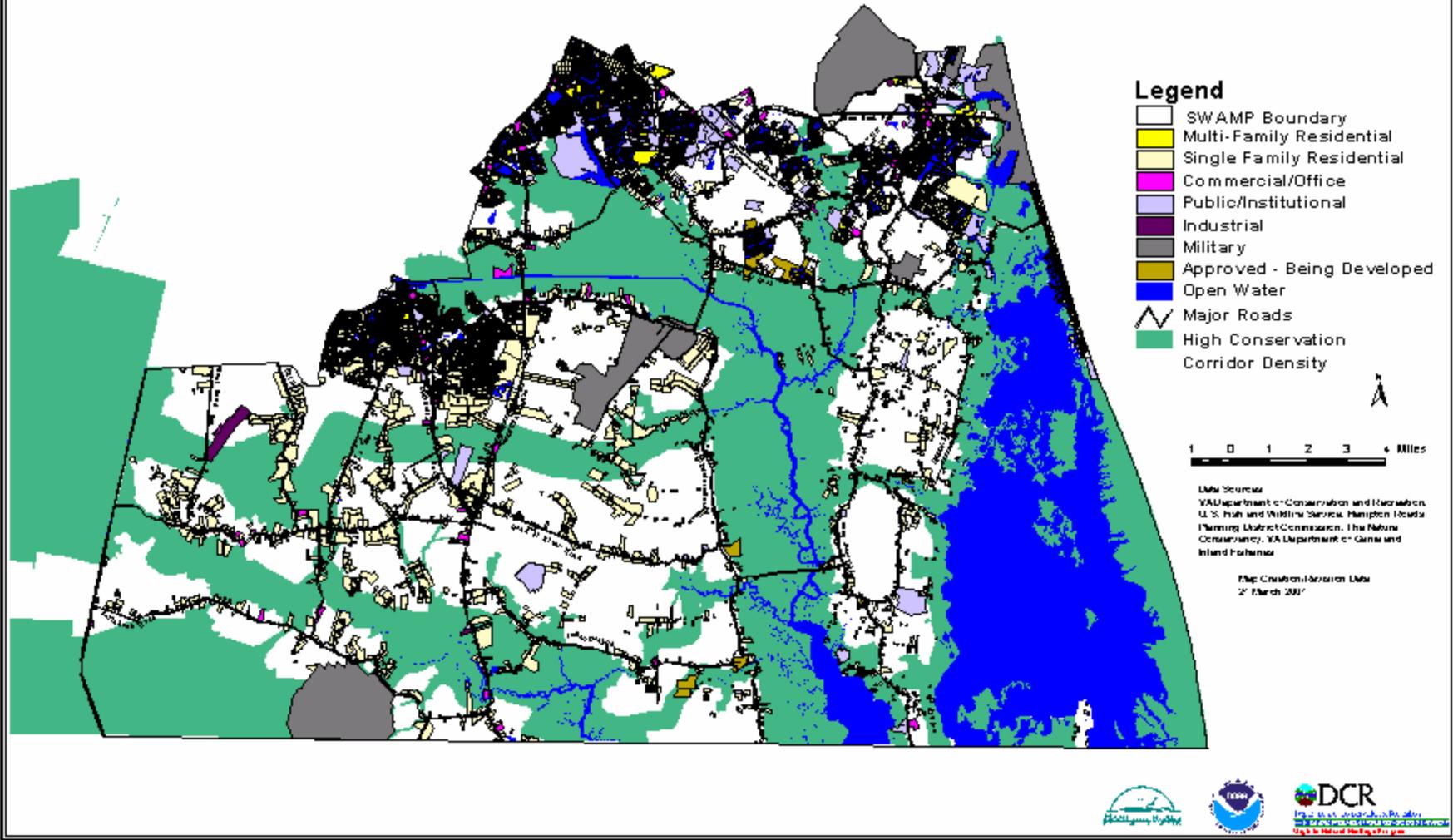
\* medium conservation corridor density = existing protected lands plus conservation sites plus connecting corridors less than or equal to 0.5 miles wide plus NWR approved legislative boardwalks for acquisition



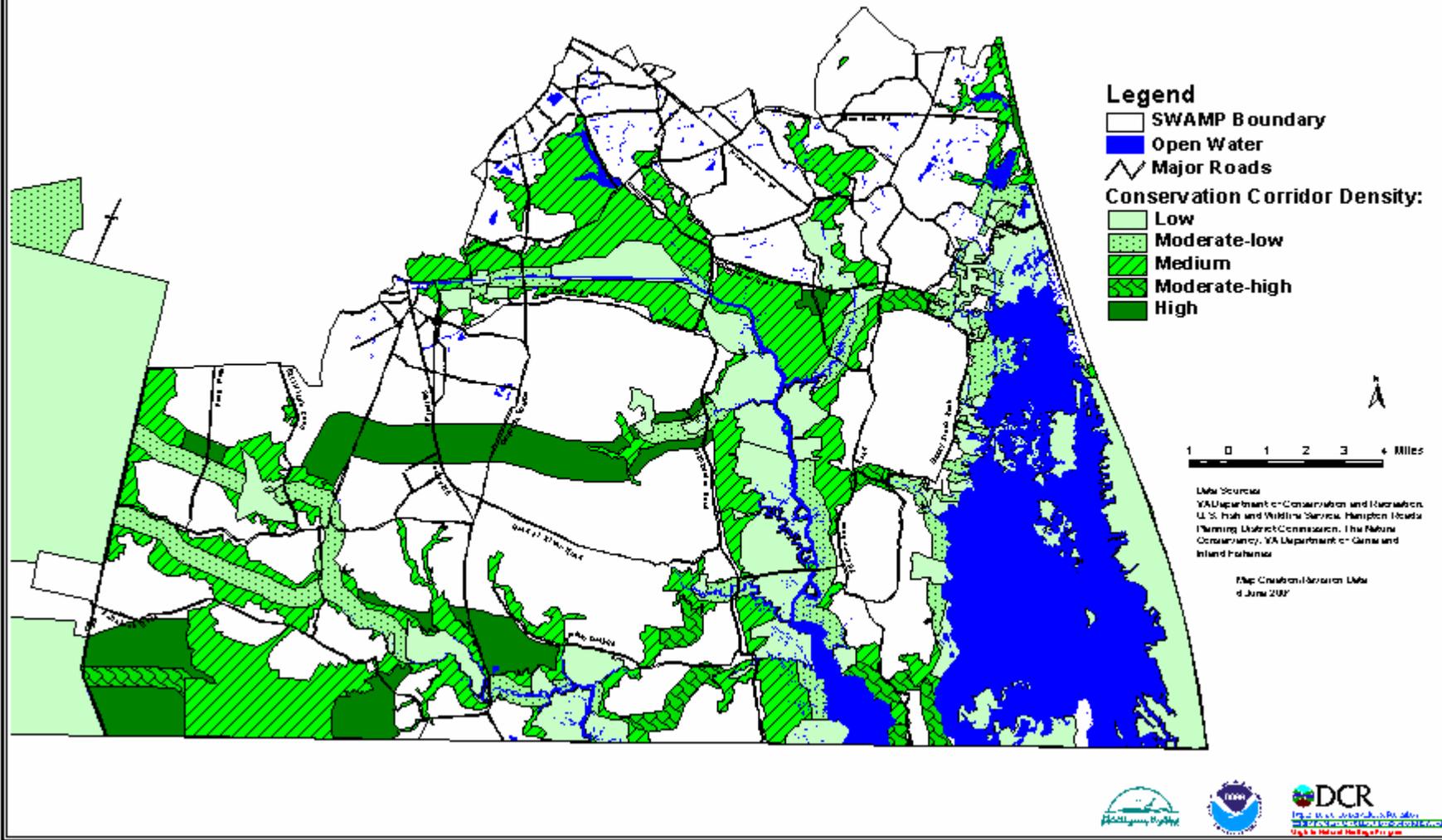
**Figure 10. High conservation corridor density**



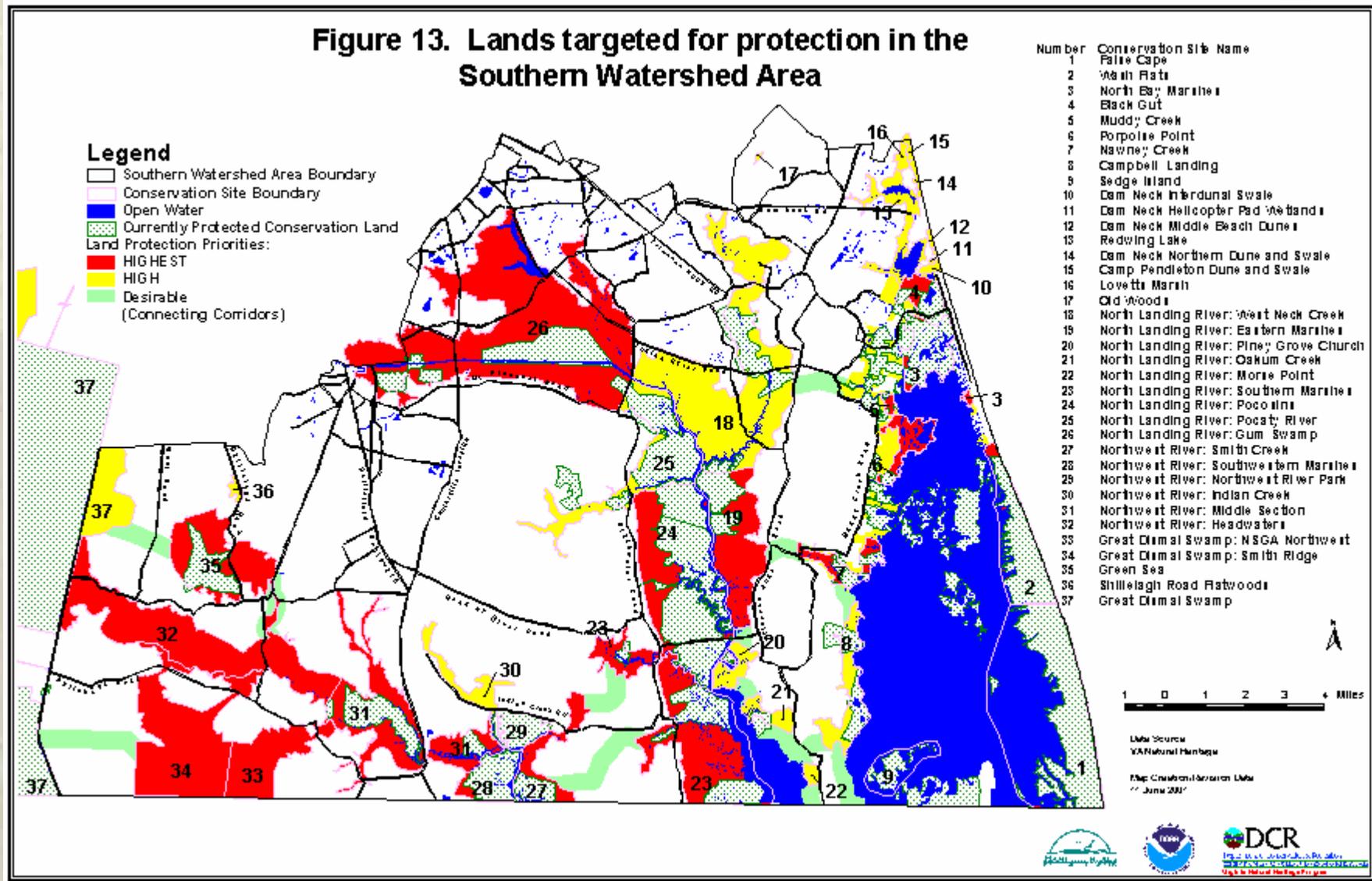
**Figure 11. High conservation corridor density and selected land uses in the Southern Watershed Area**



**Figure 12. Comparison of the five levels of conservation corridor densities for the Southern Watershed Area**



**Figure 13. Lands targeted for protection in the Southern Watershed Area**



*Land use  
within corridors could include  
(where appropriate):*

- ❖ public recreation – trails, greenways, blueways
- ❖ open space
- ❖ agriculture / rural land use
- ❖ forestry/silviculture
- ❖ low-intensity, low-impact development
- ❖ natural history education

*Land management practices  
within corridors could include  
(where appropriate):*

- ❖ hydrologic restoration
- ❖ re-vegetation / vegetative restoration
- ❖ prescribed fire
- ❖ invasive species control
- ❖ forestry / silviculture activities
- ❖ wildlife management – fishing, hunting
- ❖ habitat creation

## *Protection and Stewardship of SWA Lands*

- ❖ The Conservation Plan outlines a variety of land protection tools for areas not already in some class of protected status and targeted for ‘near-term’ protection.
- ❖ To ensure the long-term viability of protected resources requires good **Stewardship**, land management activities that maintain and/or reinstate natural ecosystem processes on which biological resources depend.

The background of the slide features a soft-focus landscape of a wetland. In the foreground, there are tall, thin reeds or grasses. The middle ground shows a body of water reflecting the sky. In the background, there are rolling hills or mountains under a hazy sky. The overall color palette is muted and naturalistic, with greens, browns, and greys.

*Memorandum of Agreement to  
Improve the Wetlands Mitigation  
Process*

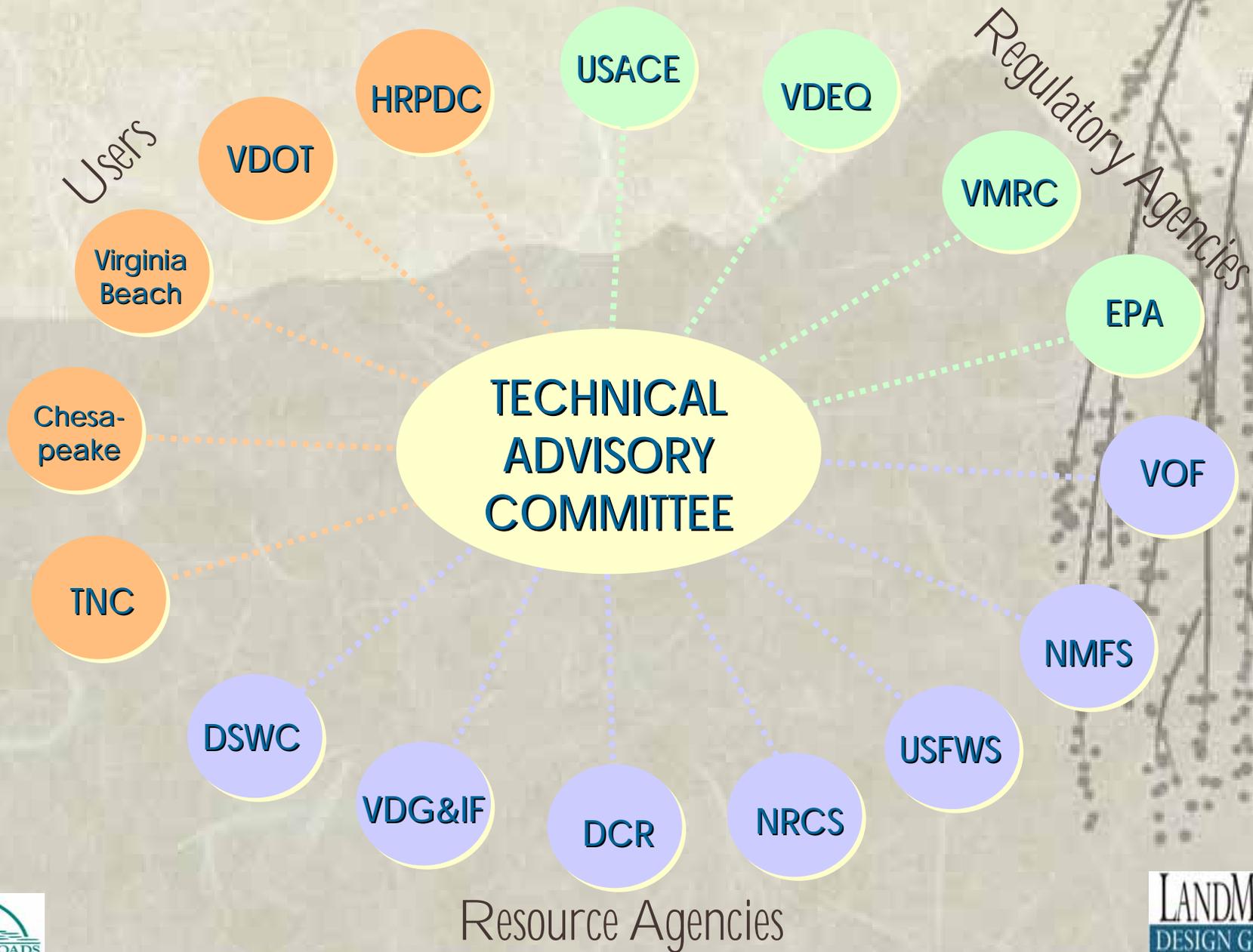
# *Need for the Multiple Benefits Conservation Plan*

- ❖ Current compensation decisions not well coordinated.
- ❖ No data on the location of Multiple Benefit Conservation Areas.
- ❖ No framework for identifying and maximizing benefits.
- ❖ Better guidance on potential wetland compensation sites for long term planning.
- ❖ No regular forum for discussion of activities and progress.

# *Multiple Benefits Conservation Plan*

- ❖ Riparian corridors providing multiple benefits:
  - Water quantity management and water quality protection
  - Wildlife habitat enhancement and Natural Heritage Resource protection
  - Compatible recreation and tourism opportunities
  - Environmental education opportunities
  - Potential wetlands compensation capability
- ❖ Wetland compensation site selection methodology

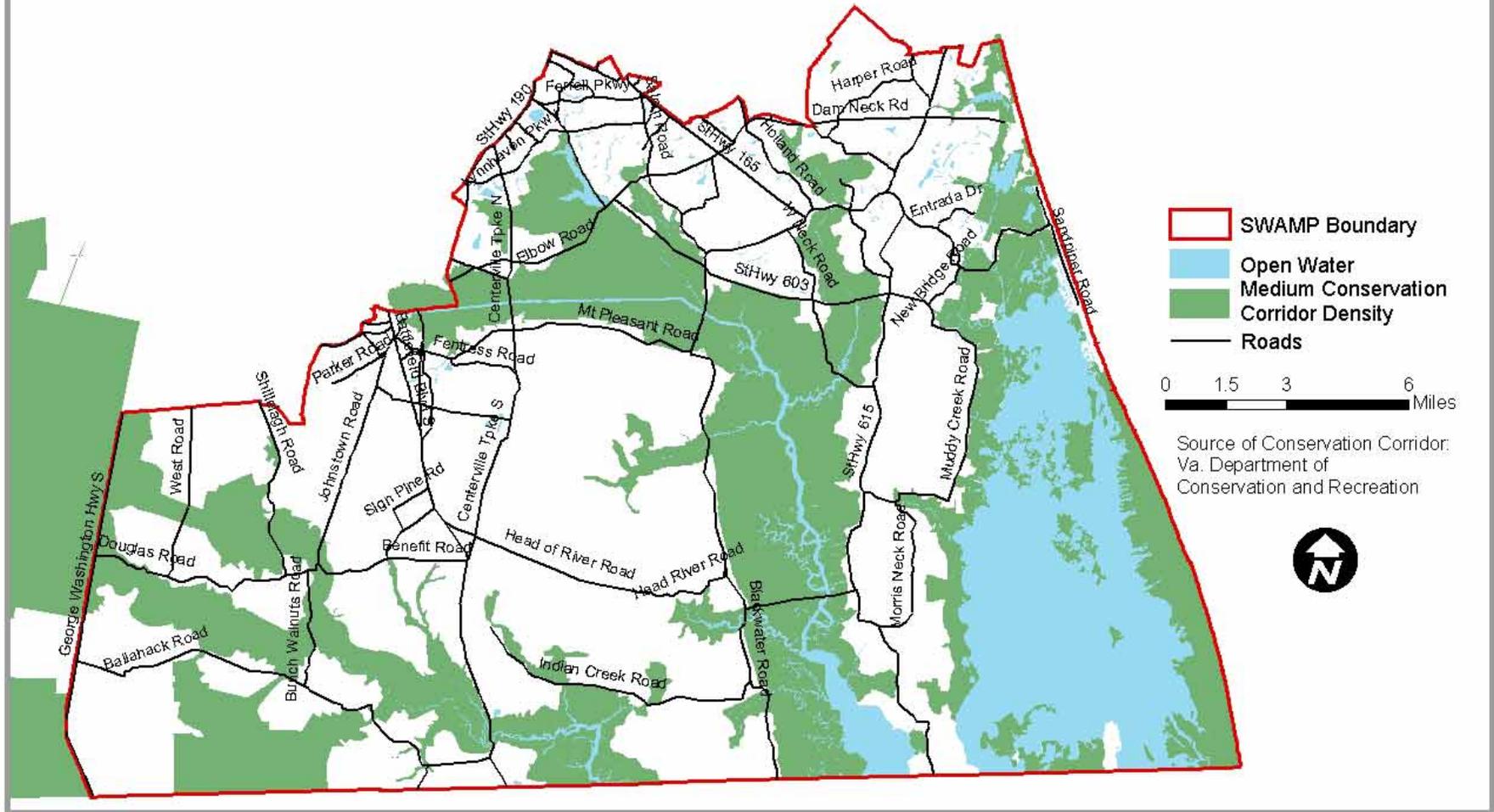
# The Multiple Benefits Conservation Plan



# *Memorandum of Agreement*

- ❖ Improve coordination and sharing of information among the agencies involved in the wetlands mitigation process in the SWA.
- ❖ Employ the shared methodology to:
  - Select compensation sites for wetlands impacts;
  - Achieve multiple conservation benefits;
  - Comply with existing regulations; and,
  - Maintain local land use control.

# MEDIUM CONSERVATION CORRIDOR DENSITY



# *Memorandum of Agreement*

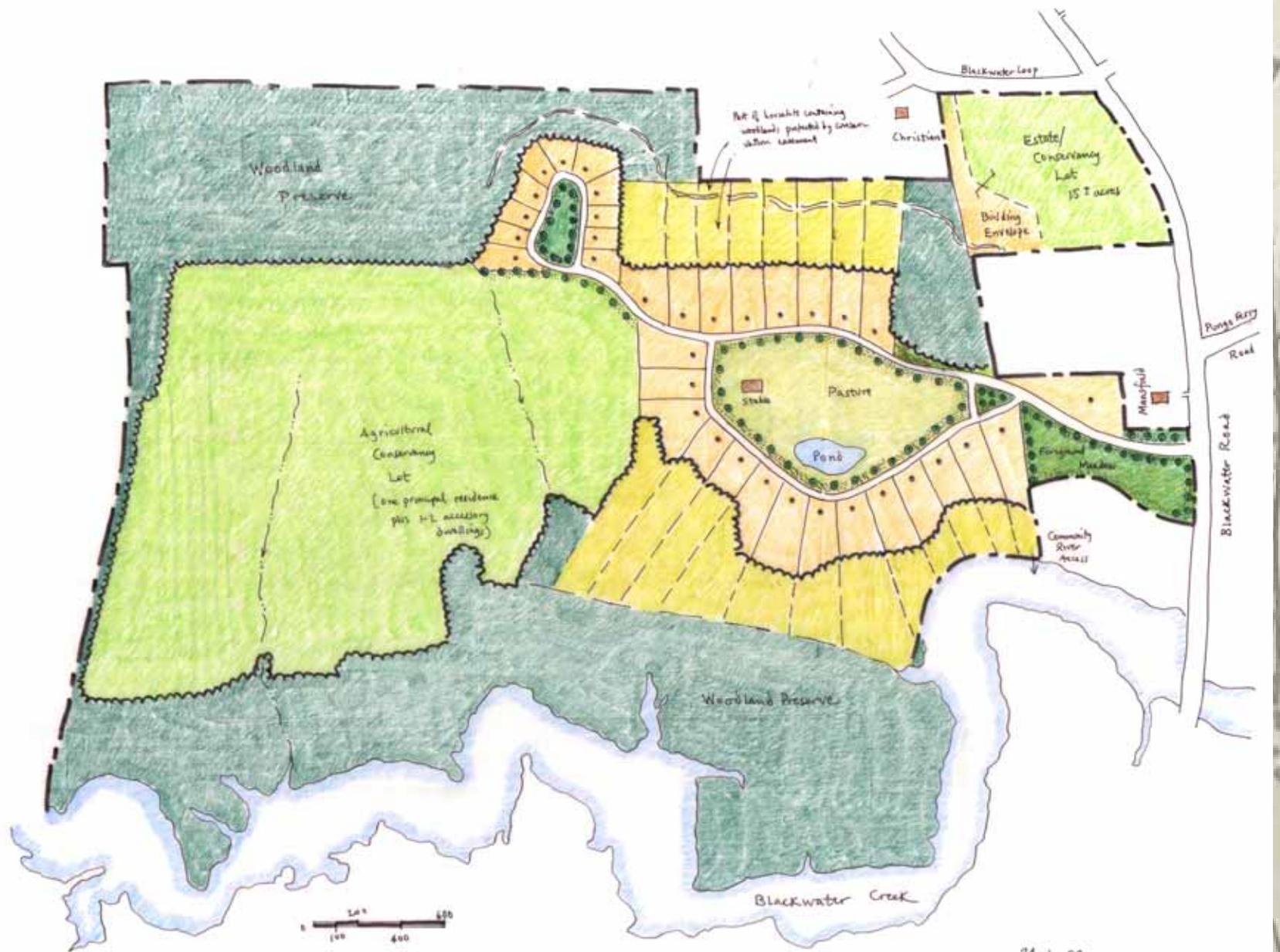
- ❖ Technical Advisory Committee established by the MOA
- ❖ Refine the multiple benefits site selection process based on experience in analyzing mitigation site options.
- ❖ HRPDC functions – clearinghouse, technical analysis and administration

# *SIGNATORY AGENCIES*

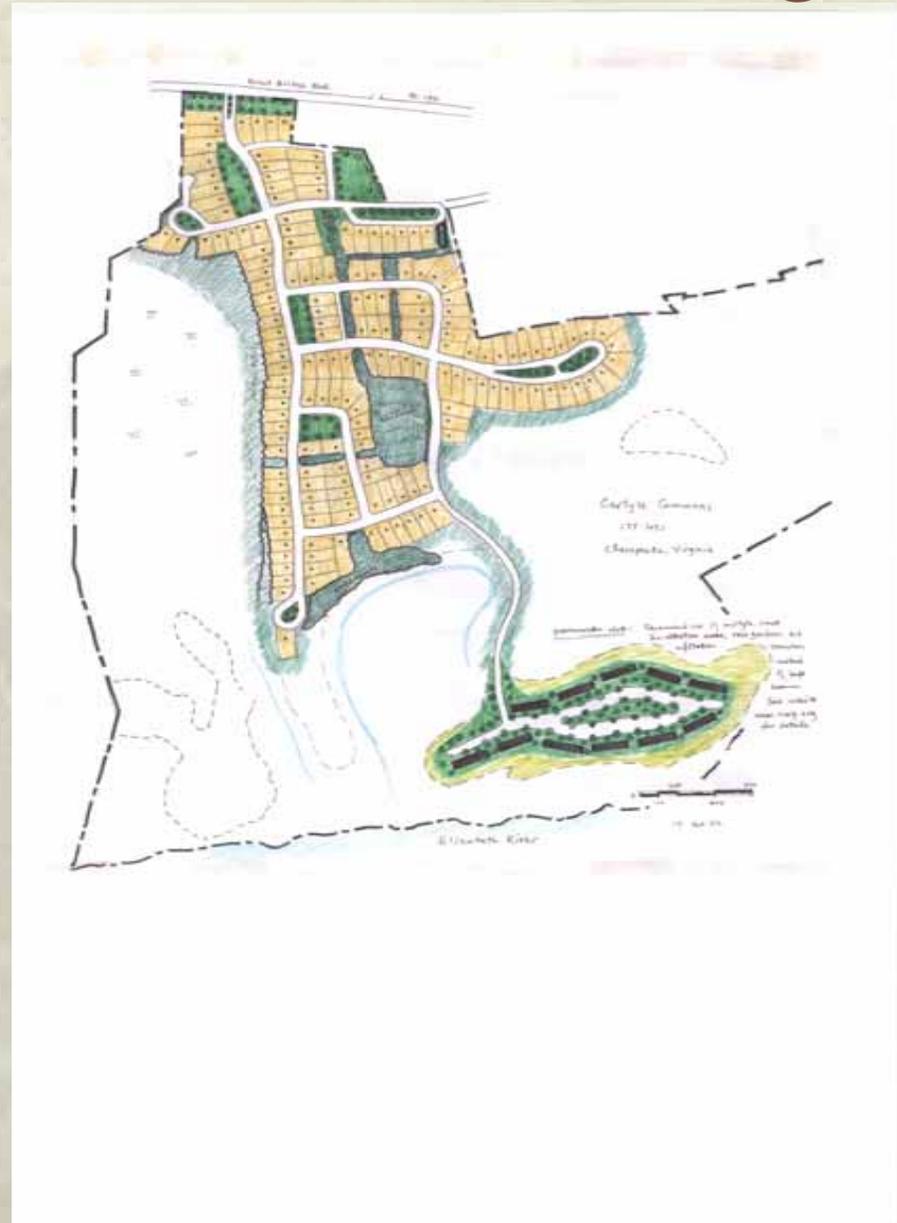
- ❖ City of Chesapeake
- ❖ City of Virginia Beach
- ❖ HRPDC – Hampton Roads Planning District Commission
- ❖ VDOT- Virginia Department of Transportation
- ❖ USACE – U.S. Army Corps of Engineers
- ❖ VDEQ – Virginia Department of Environmental Quality
- ❖ VMRC – Virginia Marine Resources Commission
- ❖ USFWS – U.S. Fish and Wildlife Service
- ❖ NRCS – Natural Resources Conservation Service
- ❖ VDCR – Virginia Department of Conservation and Recreation
- ❖ VDGIF – Virginia Department of Game and Inland Fisheries
- ❖ VDSWCD – Virginia Dare Soil and Water Conservation District
- ❖ TNC – The Nature Conservancy

# *Conservation Design*

- Randal Arendt analyzed comprehensive plans, zoning ordinances and subdivision ordinances for Chesapeake and Virginia Beach.
- Recommended revisions to promote the use of Conservation Design.
- Mr. Arendt developed site plans for two subdivisions in the Southern Watershed Area.



# Conservation Design





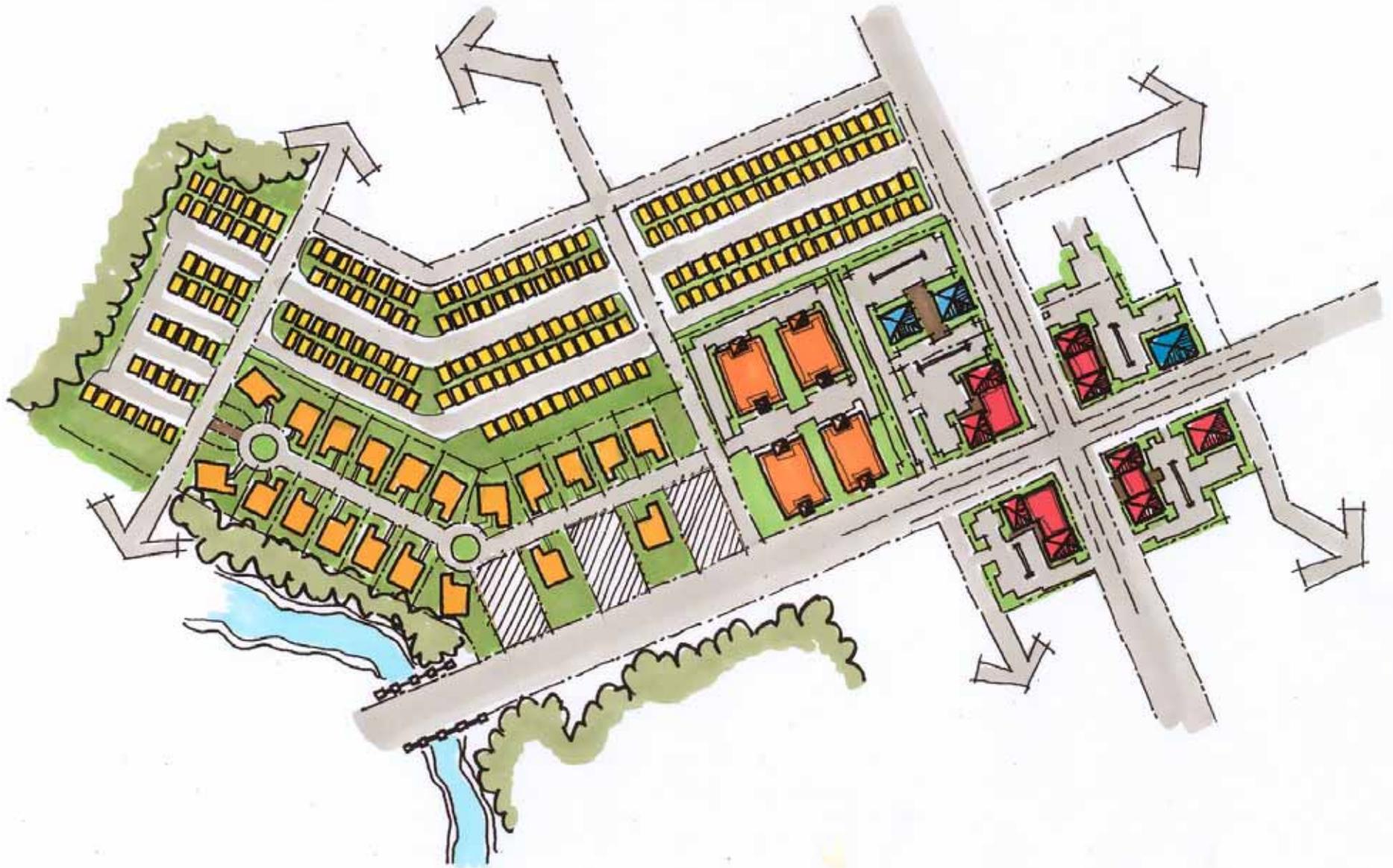




## *Rural Area Preservation Program*

- Intended to provide Chesapeake and Virginia Beach a “tool kit” to protect the integrity of the rural landscape.
- Includes model ordinances to foster the development of “cross roads communities” and “planned communities of place”.

# *Crossroads Community*



# *Planned Community of Place*

