Watershed Management

Our methods and the results of our efforts to study, protect, and restore stream conditions in Frederick County

Our Presentation

- Regulatory Drivers
- Permit Progress
- Implementation of Restoration and Protection Goals
- Example: Watershed Restoration Action Strategy (WRAS)
- Leveraging Funds and Effort

Regulatory Drivers

- Safe Drinking Water Act
- Chesapeake Bay 2000 Agreement
- Clean Water Act

Progress: Monitoring

- Long-term discharge sampling at two stations
- 12 storm event samples per year
- Physical, Biological monitoring at long-term stations, restoration projects, watershed assessment follow-up sites
- Monitoring of site for MD2000 Stormwater Manual evaluation

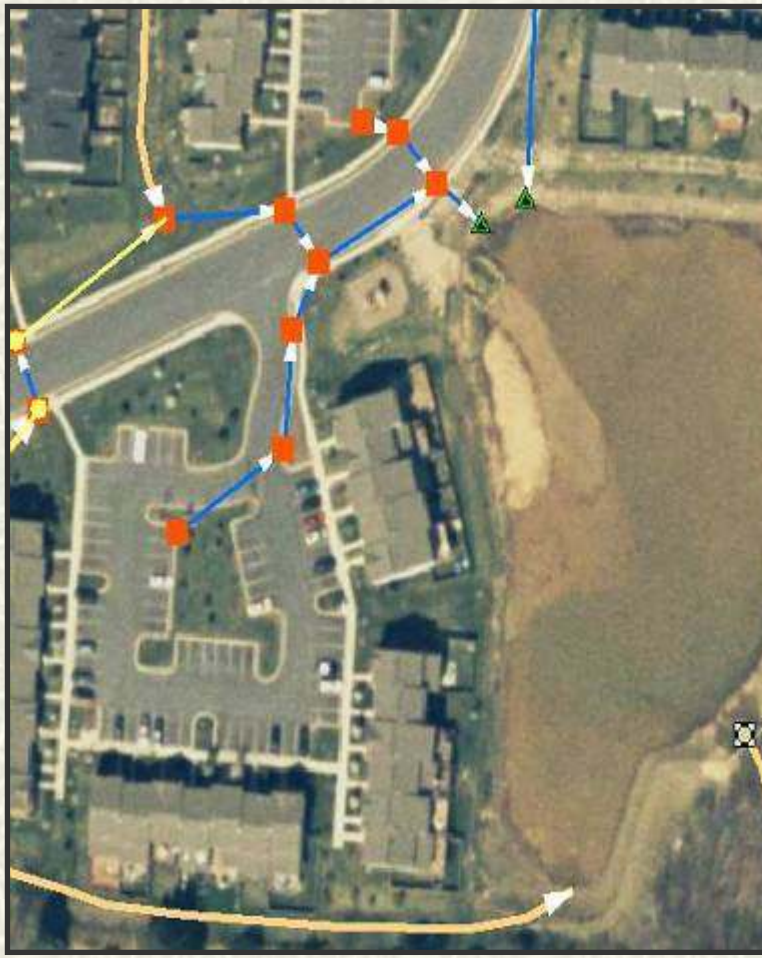
"Monitoring efforts are on track…The County's efforts with regard to the long-term monitoring requirements continue to be strong…The County's effort toward monitoring data analysis continues to be exemplary" –MDE 2004 Annual Report Review

Progress: GIS Mapping

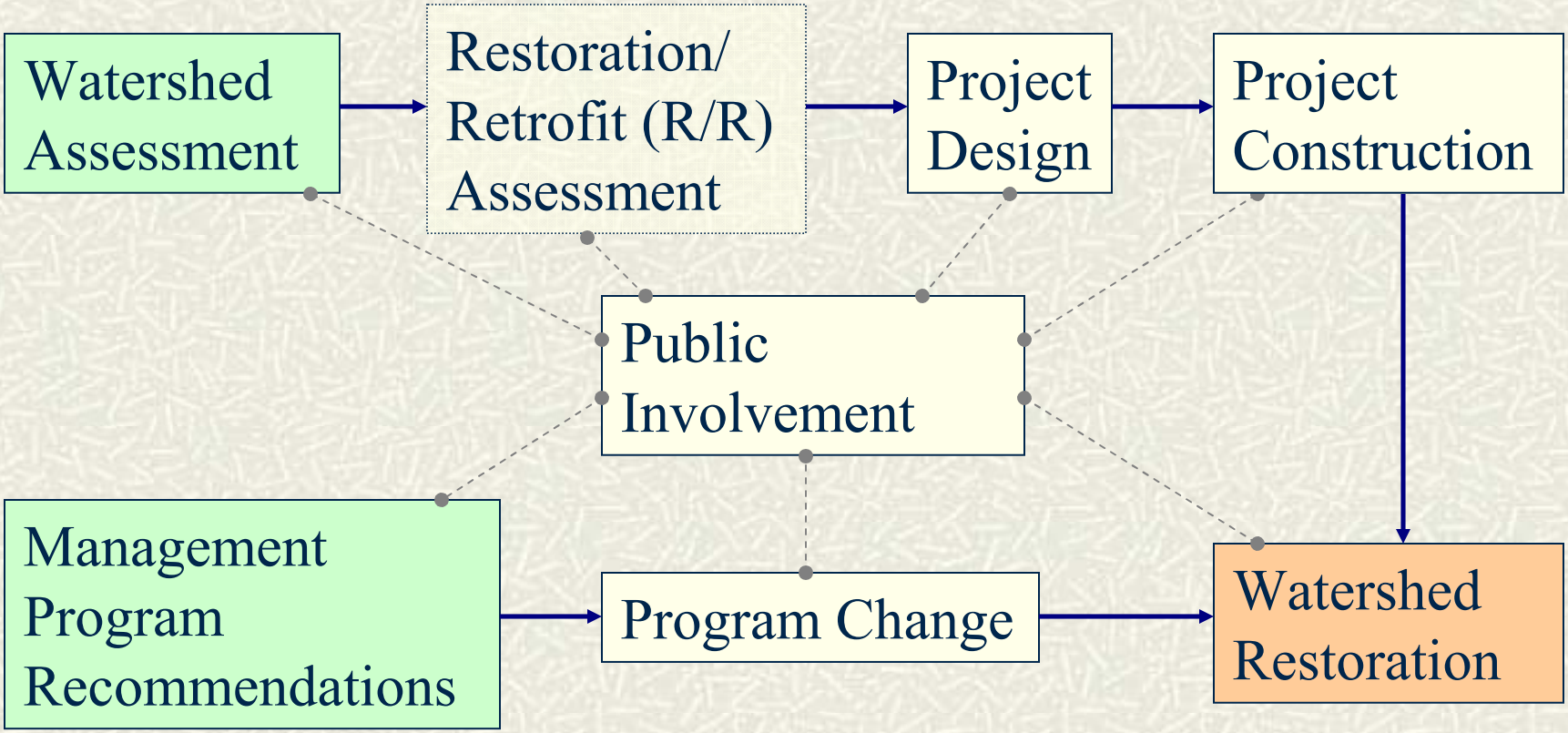
- Nineteen GIS map layers required by NPDES Permit.
- We (County) had to create many layers
- More layers under development

"The County continues to make substantial progress in enhancing its GIS capabilities. "

–MDE 2004 Annual Report Review



Implementation: Watershed Restoration and Protection



Implementation: Management Programs

- Preventative Maintenance Inspections of Stormwater Management Facilities (SWMF) and Enforcement
- Illicit Connection Detection and Elimination Program
- Program to Respond to Illegal Dumping and Spills
- Review of County-Owned Facilities for NPDES Industrial Stormwater Permit

Implementation: Management Programs

- Public Outreach Program
- Road Maintenance Activities Reporting
- Pesticide/Herbicide/Fertilizer Use Reporting
- Erosion and Sediment Control Program

"Frederick County has successfully implemented many of the stormwater management program elements required by its NPDES permit. Continuation of these efforts is an enormous undertaking and the County is commended for its continued commitment in this regard. "
–MDE 2004 Annual Report Review

Implementation: Watershed Assessments

- Assessments in 16/20 watersheds
  - Lower Bush Creek
  - Lower Linganore Creek
  - Ballenger Creek
  - Lower Monocacy Watershed Restoration Action Strategy (WRAS)
  - Upper Monocacy WRAS (just completed!)

"The County's efforts regarding watershed assessment are considered to be strong." –MDE 2004 Annual Report Review

Implementation: Restoration/Retrofit Assessments

- Goals to protect and restore streams
- Stream Restoration/SWMF Retrofit Reports
  - Lower Bush Creek
  - Ballenger Creek
  - Linganore Creek (underway)

"The County needs to clearly define an implementation strategy and timeline for restoration projects within each watershed."

–MDE 2004 Annual Report Review

Implementation: Watershed Restoration and Protection

- NPDES Permit requires Frederick County to treat 10% of untreated impervious area in Frederick County
  - 672 acres.
- Two Types of Restoration Projects
  - Capital Improvement Projects
  - Community Restoration Projects (R/R optional)

Example: Monocacy Watershed Restoration Action Strategy (WRAS)

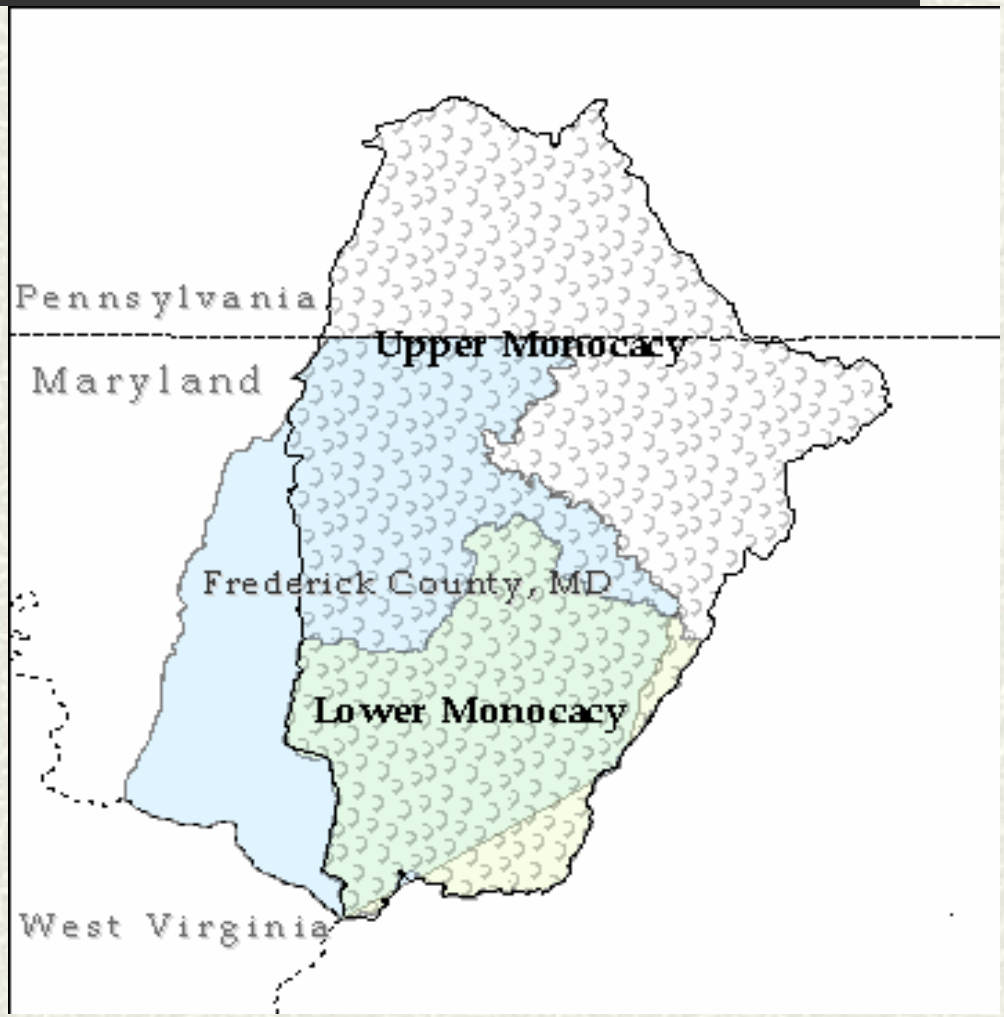
A Major Project to Gather and Analyze Information, Involve Citizens, and Develop a Plan to Improve Water Quality and Habitat

Key Principles of WRAS Process

- Voluntary
- Open
- Inclusive
- Dynamic
- Multifaceted

Location of Monocacy Watershed

- The Monocacy River Watershed is located in Adams Co, PA and Maryland
- It encompasses 351,000 acres in Maryland and is located in 3 counties: Frederick, Carroll and Montgomery



The Monocacy WRAS

- Planning initiative
- Broad-based, open Steering Committees
- Grant support & technical reports
  - Watershed Characterization
  - Synoptic Survey
  - Stream Corridor Assessment (SCA)
- Plan to improve water quality & habitat
- First the Lower, then the Upper Watershed

WRAS Partners and Working Groups

- Partners
  - 65 Steering Committee Members
  - 37 Organizations and Interests Represented
  - Broad participation from different sectors
- Working groups
  - Citizen practices
  - Agricultural practices
  - Municipal/industrial practices
  - Natural Resources & Wildlife Management
  - Sound Land Development
  - Monitoring

Water Sampling Results

- Long term water monitoring data
- Synoptic Survey results
- Biological data from 1996-present

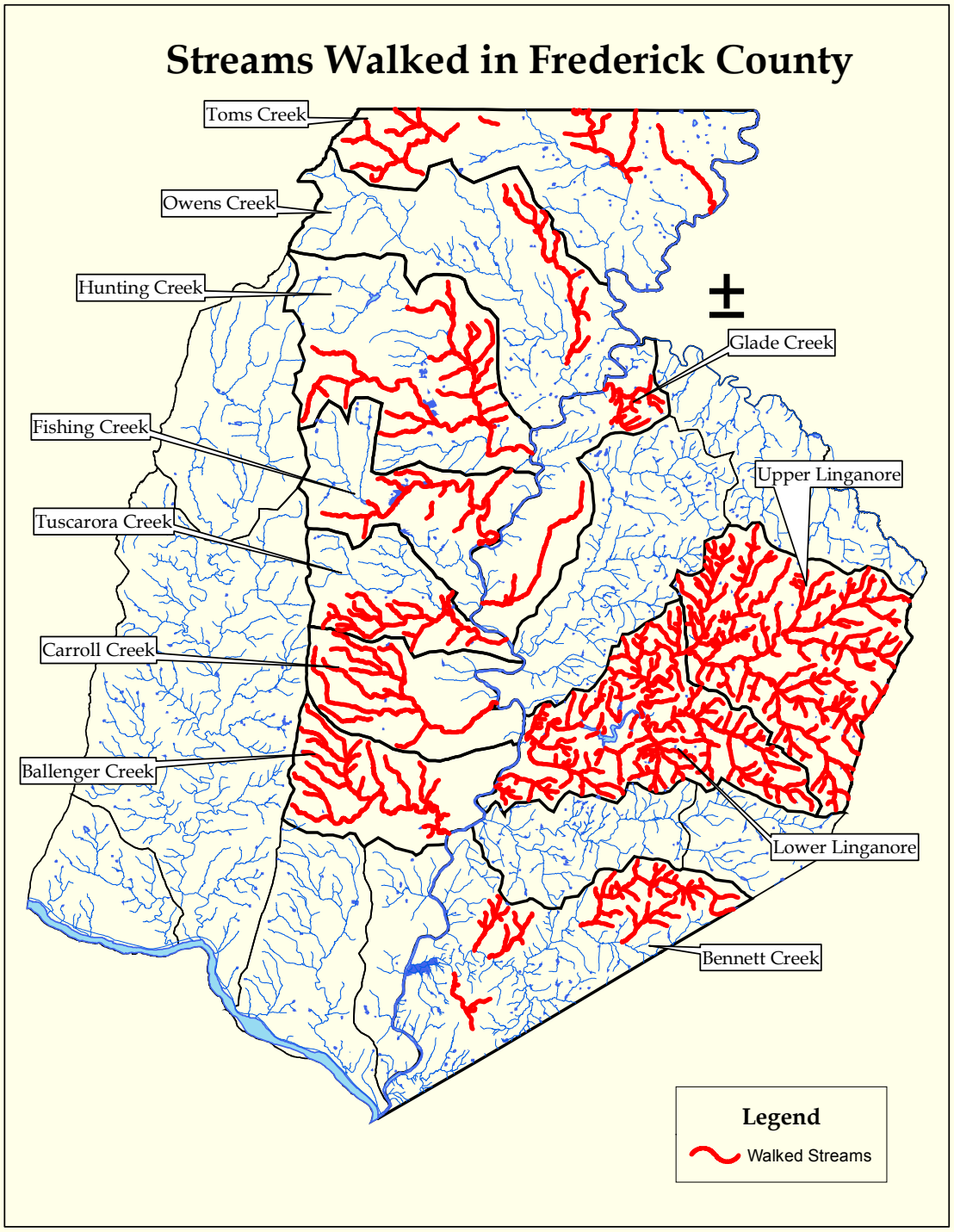
Stream Corridor Assessment (SCA)

As the teams walk the streams, they look for problems in these categories, take pictures, and GIS the following:

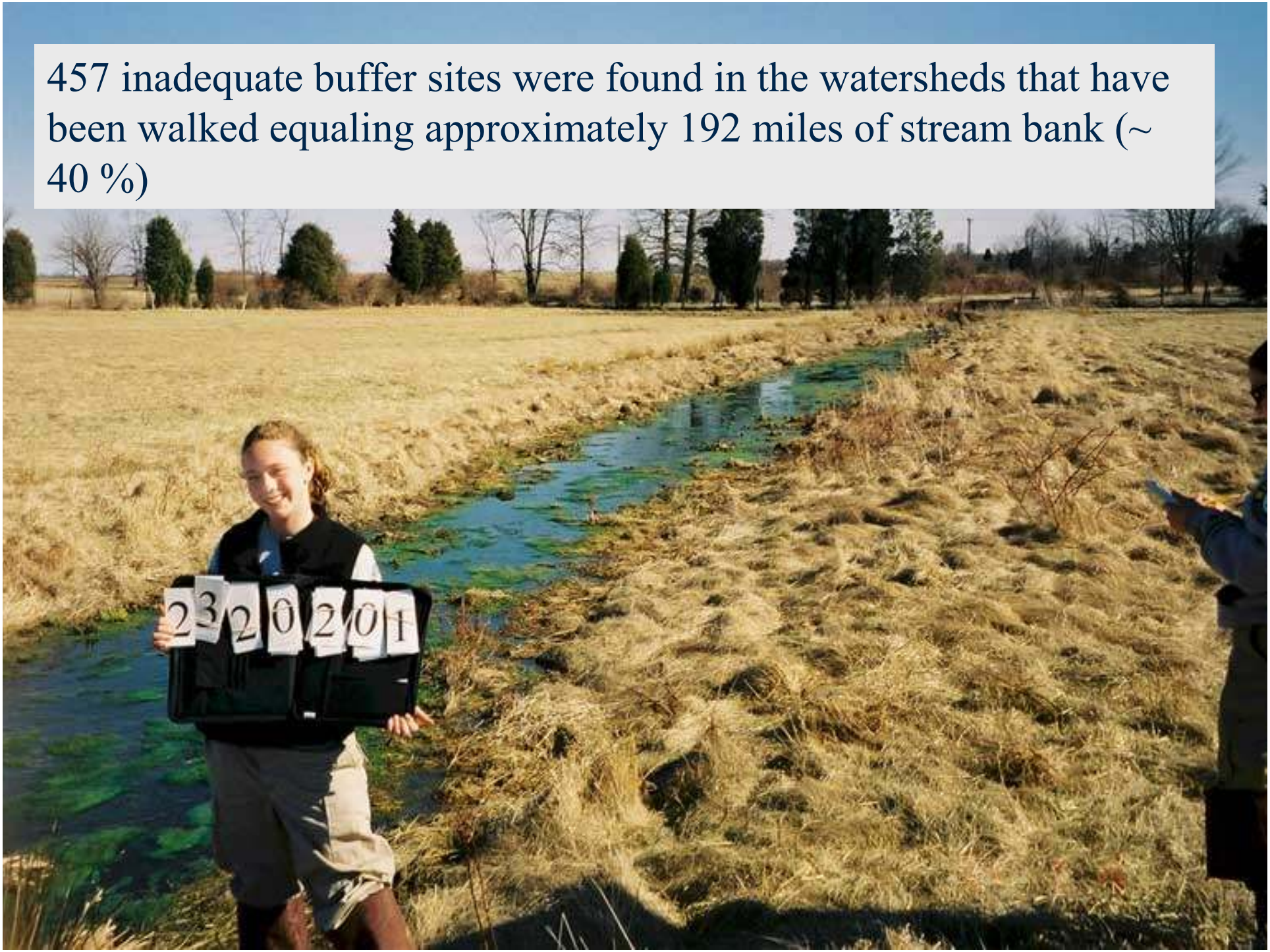
- Inadequate Buffers
- Erosion
- Trash Dumping
- Pipe Outfalls
- Exposed Pipes
- Fish Barriers
- Channel Alterations
- Unusual Conditions/ Comments

SCA in Frederick County

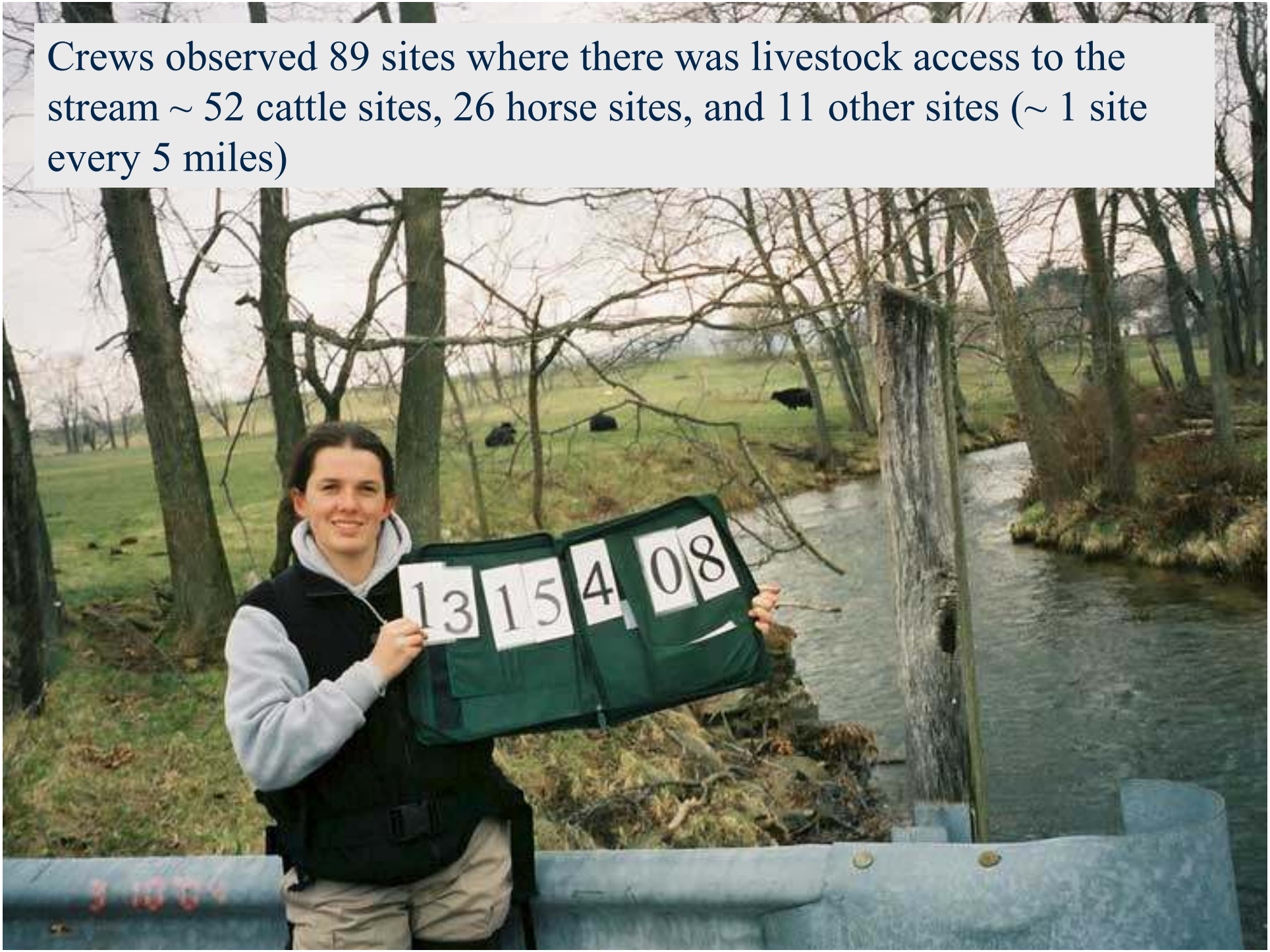
- There are approximately 1,434 miles of stream in Frederick County
- There is SCA data for approximately 476 miles (33 %)



457 inadequate buffer sites were found in the watersheds that have been walked equaling approximately 192 miles of stream bank (~ 40 %)



Crews observed 89 sites where there was livestock access to the stream ~ 52 cattle sites, 26 horse sites, and 11 other sites (~ 1 site every 5 miles)



Crews found 293 erosion sites in the watersheds that have been walked equaling approximately 95 miles of stream (~ 20%)


Crews found 216 fish barrier sites
(~1 site every 2.2 miles)
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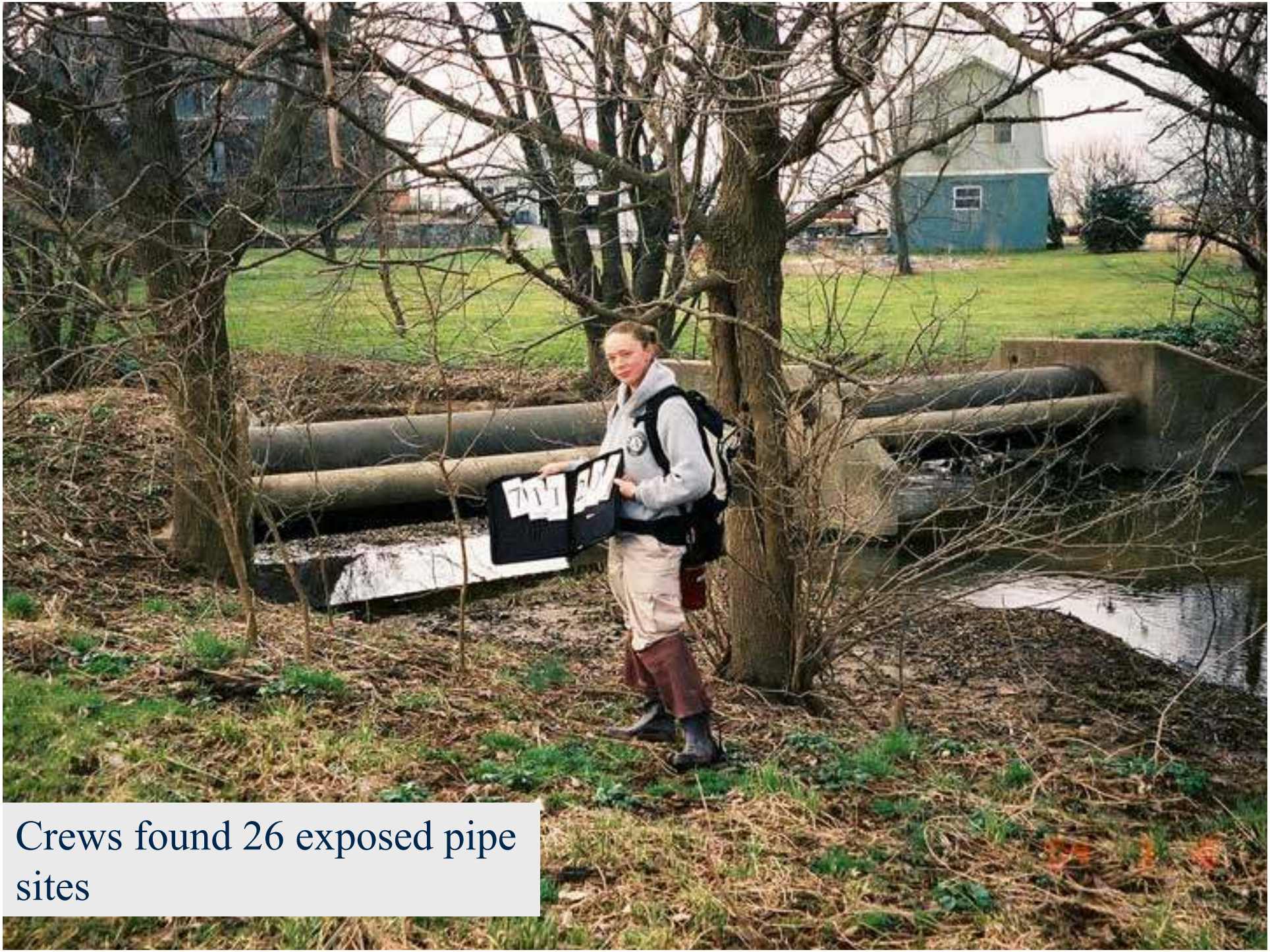
Crews found 182 pipe outfalls
(~1 site every 2.6 miles)

Crews found 48 trash dumping sites

Crews found 79 channel alterations

Crews found 68 unusual condition/comment sites



Crews found 26 exposed pipe sites

Lower Monocacy WRAS Plan

- Objectives for
  - Natural Resource Management
  - Community Education and Outreach
  - Issues Requiring Further Study
- Each working group developed recommendations for the WRAS plan

The plan is a working document with changing goals as watershed priorities change

Examples of WRAS Plan Goals

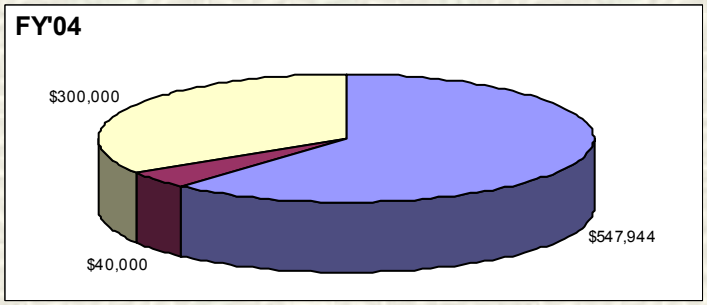
- Natural Resource Management:
  - Increase riparian buffer planting on all land use types & replace cleared forest cover
  - Increase wetland restoration and conservation
  - Protect a greater number of acres of forest land through conservation easements
  - Create a Monocacy Watershed Report Card reporting on the health of the subwatersheds
  - Increase monitoring and regulatory tracking in Lake Linganore

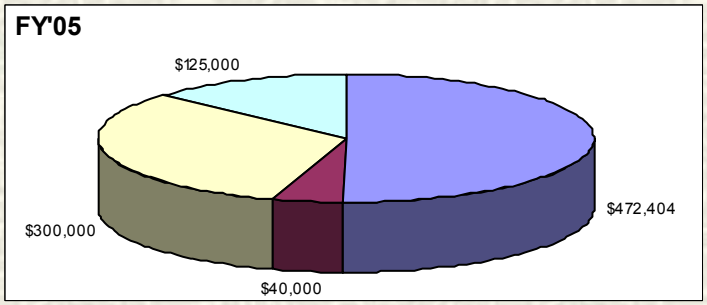
Examples of WRAS Plan Goals

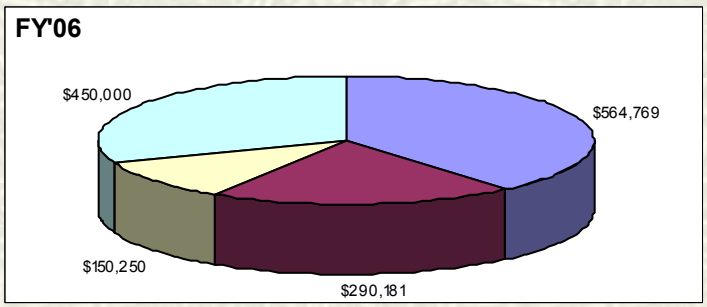
Community Education & Outreach:

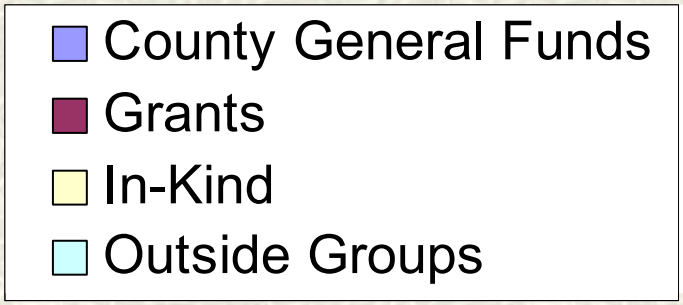
- Continue the "Greener Lifestyles" workshop series developed by Community Commons
- Publish watershed articles in local newspapers
- Develop interactive web site
- Present a Sediment & Erosion Control Conference for local developers
- Provide training to public officials and developers on conservation design

Leveraging: Operating Funds









- County proportion of costs is shrinking
- $83,750 less requested in 2005 than 2004
- $370,181 in grants awarded by FY'06*
- $750,250 in-kind services by FY'06
- $500,000 est. outside group funding increases due to partnership in WRAS
- Requirements escalate, budgets don't

*215K will be used to augment CIP efforts in Linganore

Leveraging: Operating Funds

- **Upcoming FY'06 Grants**
  - **$40,000 National Fish and Wildlife Foundation (NFWF) Legacy Grant** for outreach initiatives in Linganore
  - **$25,000 Chesapeake Bay Trust (CBT) Quarterly Grant** for restoration and outreach in Libertytown
  - **$150,000 Chesapeake Bay Trust (CBT) Targeted Watershed Grant** (submitted by the Potomac Conservancy) for restoration and outreach on Pleasant and Fahrney Branches in Bennett Creek
  - **$215,377 Section 319 EPA Incremental Grant** for restoration projects in Linganore

Thanks for all of your support

Questions?