GOVERNANCE OF FEDERALLY PROTECTED RIVERS: AN INSTITUTIONAL ANALYSIS OF THE PARTNERSHIP APPROACH TO WILD AND SCENIC RIVER MANAGEMENT IN THE WHITE CLAY CREEK

Kristen Molfetta
Master of Science in Water Science and Policy

College of Arts & Sciences, School of Public Policy & Administration
University of Delaware Institute for Public Administration, Water Resources Center

June 29, 2016

Presentation Overview

- Research Introduction
- Fundamentals of Water Governance and Policy
- National Wild and Scenic Rivers Act and System
- Partnership Wild and Scenic Rivers: Management Framework
- Study Area: Interstate White Clay Creek Watershed
- Research Methodology
- Research Results
- Conclusions and Recommendations for Future Research

Research Introduction

- 3.5 million miles of rivers and streams in the United States that support an assortment of uses and vary in condition
- Approaches to management and policy have evolved to address these differences
- Less than ¼ of 1% of all U.S. rivers have been uniquely designated as wild and scenic under the national system

- Goal: To conduct a rigorous institutional analysis of the partnership approach to Wild and Scenic river management using the White Clay Creek watershed as a case study.

Research Introduction

Research Questions

- 1. What is the particular structural arrangement of the partnership Wild and Scenic river management regime?

- 2. What are some of the institutional processes and outcomes that result from working in this particular forum?

- 3. What are the factors that promote partnerships in the Wild and Scenic river context and how is success measured?

Fundamentals of Water Governance and Policy

Defining Water Governance

- "The range of political, social, economic, and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society."

- Formulation, establishment, and implementation of:
  - Water policies
  - Legislation
  - Institutions
  - Roles and Responsibilities of: government, private sector, civil society

Fundamentals of Water Governance and Policy

Complexities of Water Management

- Scarcity
- Maldistribution
- Sharing and Overutilization
- Transboundary or interjurisdictional obstacles

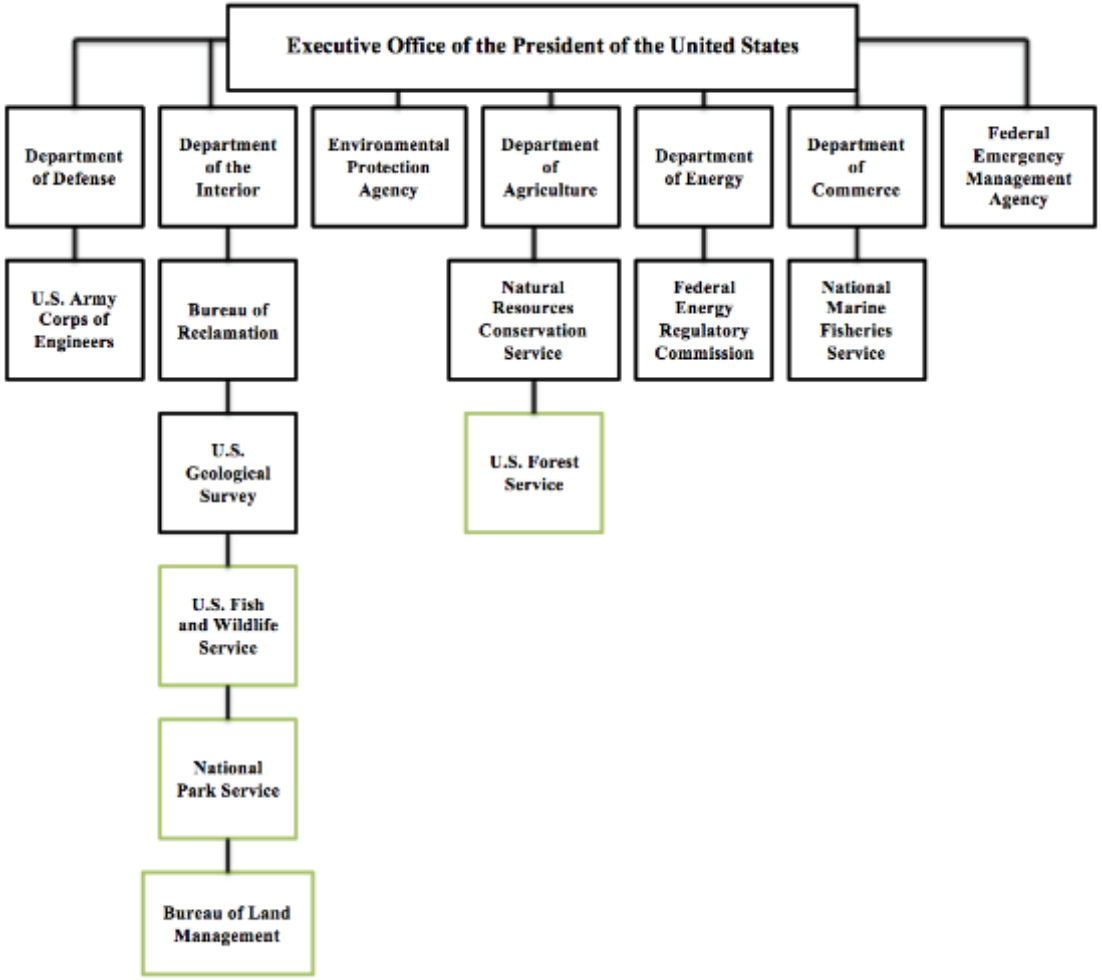
Fundamentals of Water Governance and Policy

Federal Laws and Regulations

- Rivers and Harbors Act (1899)
- Reclamation Act (1902)
- Boundary Waters Treaty (1909)
- River Basin Study Act (308 Act) (1925)
- Federal Water Pollution Control Act (1948)
- Water Resources Council (1965)
- Wild and Scenic Rivers Act (1968)
- National Environmental Policy Act (1969)
- Federal Water Pollution Control Act Amendments (1972)
- Clean Water Act (1977)
- Water Quality Act (1987)
- Safe Drinking Water Act and Amendments (1986, 1996)

Fundamentals of Water Governance and Policy

Selected U.S. Federal Water Resources Agencies



Fundamentals of Water Governance and Policy

Evolution of Partnerships in Water Governance

- Devolution of federal and state agency authority
- Adaptable strategies
- Problem driven and process oriented
- Egalitarian and proactive
- Formal or Informal
- Watershed partnership is inclusive of terms such as: committees, councils, advisory groups, task forces etc.

National Wild & Scenic Rivers Act and System

Wild and Scenic Rivers Act (1968)

- Established a policy of preserving designated free-flowing rivers for the benefit and enjoyment of present and future generations
- Protects certain rivers and river segments that qualify as "outstandingly remarkable"
- Eligible rivers must be free-flowing and possess one or more Outstanding Resource Values (ORVs):
  - Scenery
  - Recreation
  - Geology
  - Fish
  - Wildlife
  - Prehistory
  - History
  - Cultural
  - Other Values

National Wild & Scenic Rivers Act and System

Classifications

- **Wild:** rivers or river sections free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive with unpolluted waters

- **Scenic:** rivers or river sections free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but are accessible in places by roads

- **Recreational:** rivers or river sections readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past

National Wild & Scenic Rivers Act and System

National System

- 208 river units
- 12,708.8 miles
- 40 U.S. States and Puerto Rico
- Administered by Federal Agencies (National Park Service, Fish and Wildlife Service, Bureau of Land Management and the National Forest Service), State Agencies, Local or Tribal Governments
- Less than ¼ of 1% of all U.S. rivers

Roles of Wild and Scenic River Administering Agencies

Federal	State	Municipal/Local
-Administered by BLM, NPS, USFS, or USFWS under WSRA Section 3(a) -Responsible for implementing the WSRA's requirements including the development of a comprehensive river management plan within 3 fiscal years from the designation date -Must protect and enhance a river's values, through its authority on federal lands and through voluntary, cooperative strategies -May regulate use and activities occurring on WSR surface waters (exercise of Federal authority relies on a connection between regulated conduct and designated purpose)	-Administered by respective state(s) under WSRA Section 2(a)(ii) -Responsible for providing protection (except on federally administered lands) -Regulating and enforcing fishing and/or hunting regulations -Adjudicating water rights and appropriation -Developing and administering water quality standards -Administering state land use regulations on non-Federal lands -Managing state lands and facilities along the river (e.g., forests, parks, state highways)	-Encouraged via Federal WSR agencies to provide for protection of values in land use plans (including the use of zoning decisions and other land use restrictions). -Participation in the development of comprehensive river management plans in areas of mixed ownership

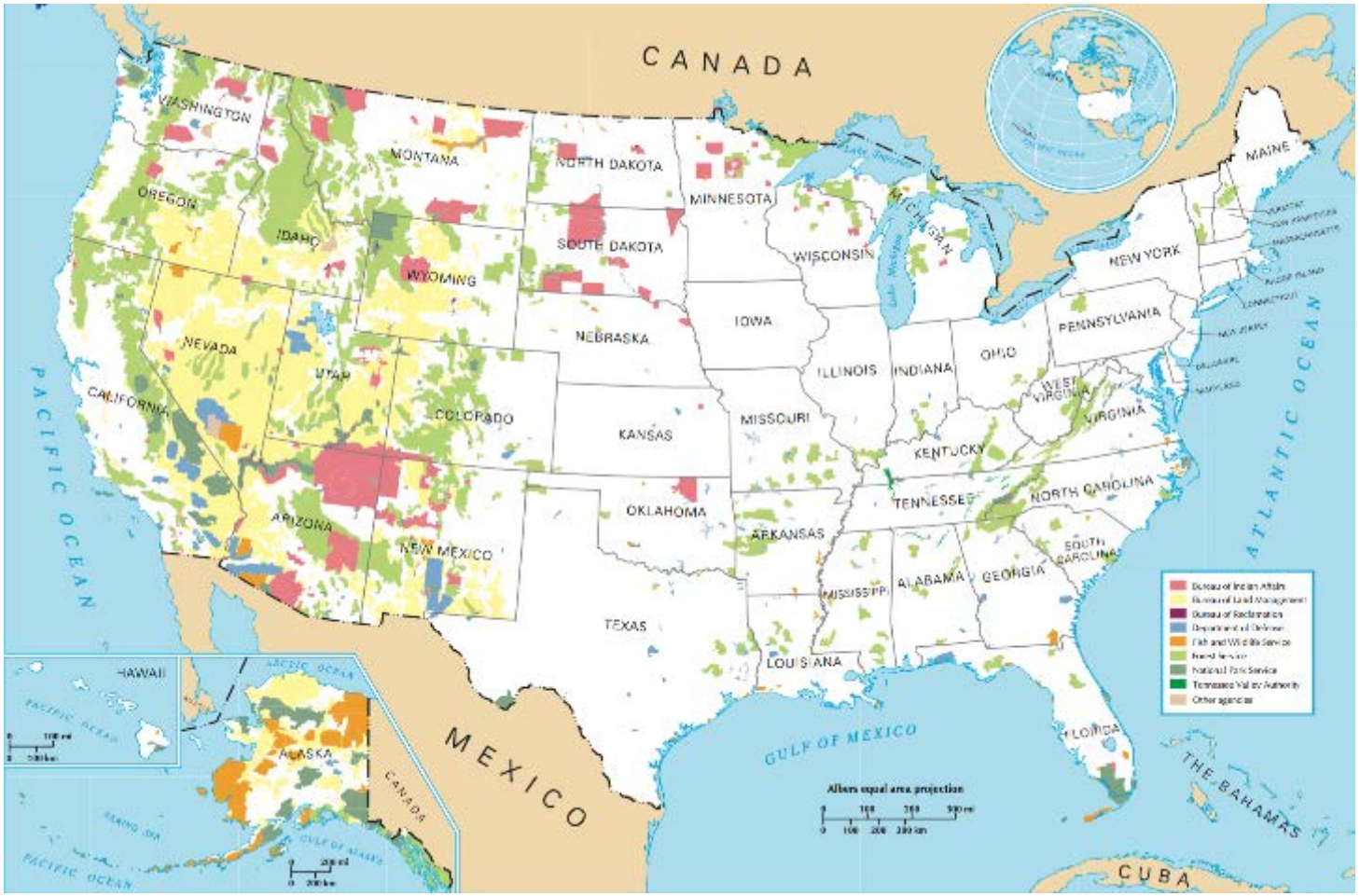
Management Framework

Approaches to Wild & Scenic River Management

- Top-Down, Federal Management
  - One of four federal land management agencies administer responsibility for the designation
  - Implemented on federally owned lands

- Partnership Management
  - National Park Service, state, county, and local stakeholders collaborate in overseeing and maintaining responsibility for the designation
  - Implemented on privately owned lands
  - Geographically located in the Northeast and mid-Atlantic

Federal Lands and Indian Reservations



Partnership Wild and Scenic River: Management Framework

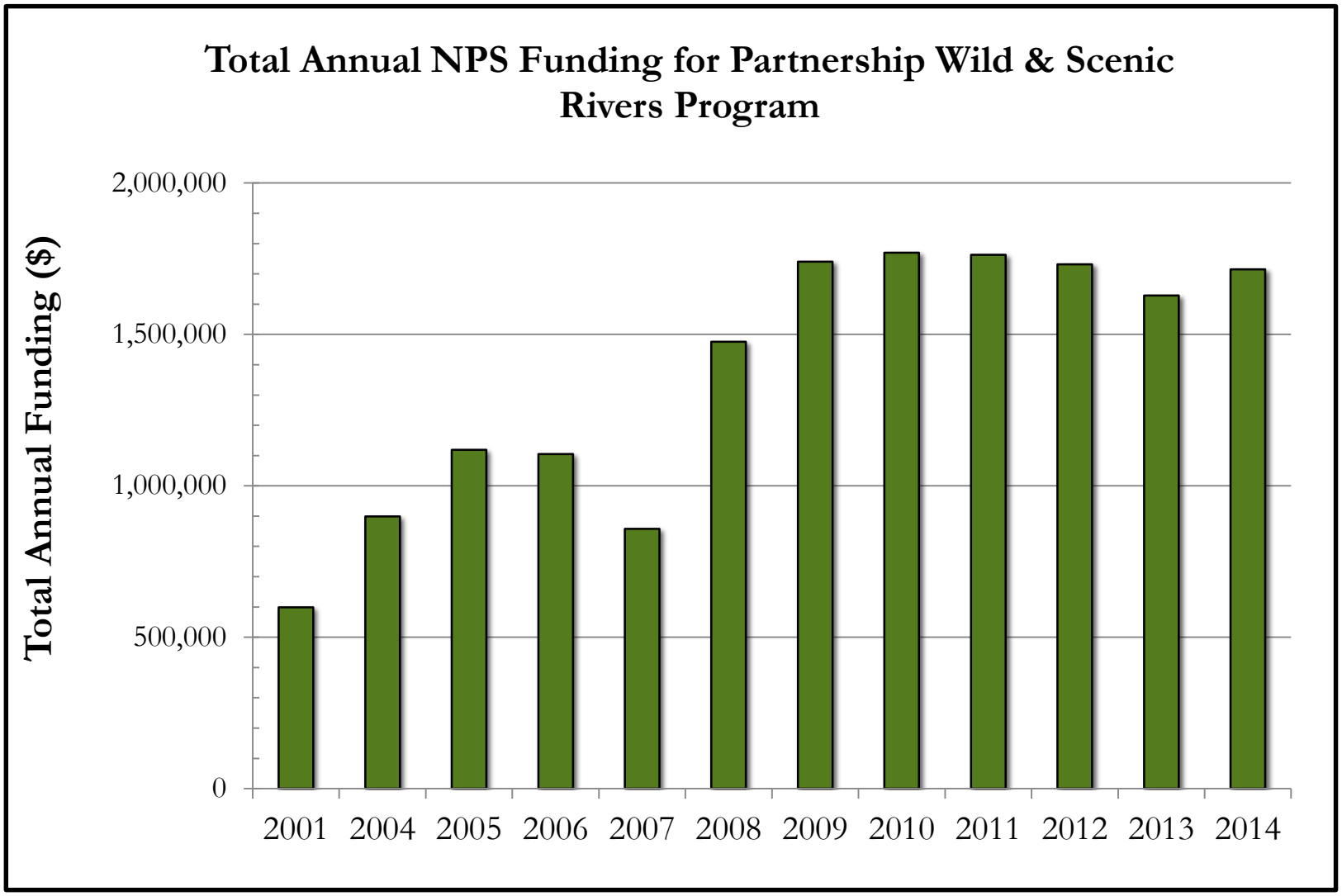
- Little, if any adjacent land is federally or state owned and is instead concentrated in private or local municipal jurisdiction
- Federal acquisition of land is prohibited and designation does not establish a national park
- Local control and self-determination prioritized
- Existing river uses continue
- Existing management responsibilities remain unchanged

Partnership Wild and Scenic River: Management Framework

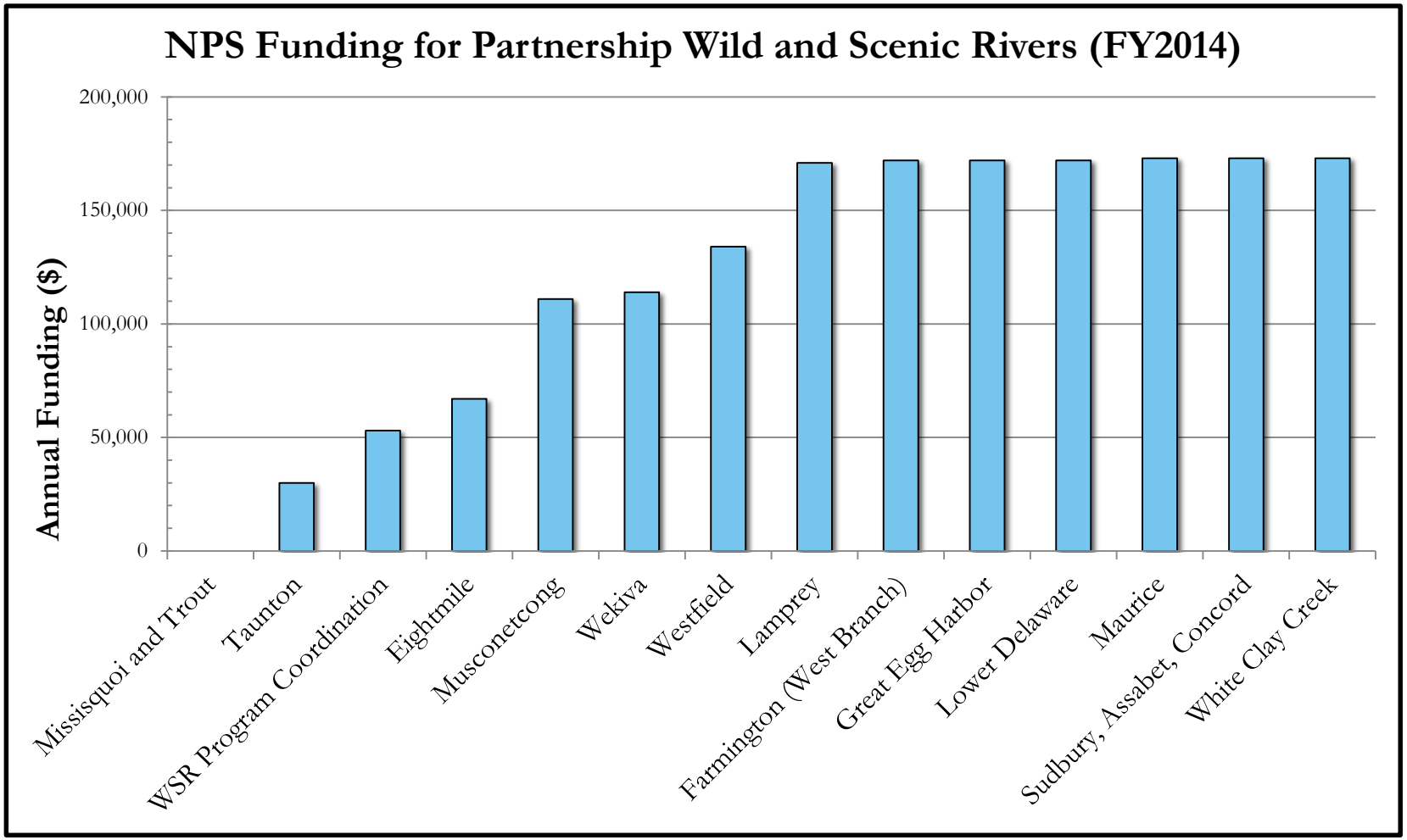
The Partnership Rivers

Partnership WSR	State(s)	River Miles	Designated
Eightmile River	CT	25.3	2008
Upper Farmington River	CT	14	1994
Great Egg Harbor	NJ	129	1992
Lamprey River	NH	23.5	1996
Lower Delaware River	NJ, PA	67.3	2000
Maurice River	NJ	35.4	1993
Missisquoi and Trout Rivers	VT	46.1	2014
Musconetcong River	NJ	24.2	2006
Sudbury, Assabet, Concord Rivers	MA	29	1999
Taunton River	MA	40	2009
Wekiva River	FL	41.6	2000
Westfield River	MA	78.1	1993
White Clay Creek	DE, PA	199	2000

Partnership Wild and Scenic River: Management Framework Federal Funding



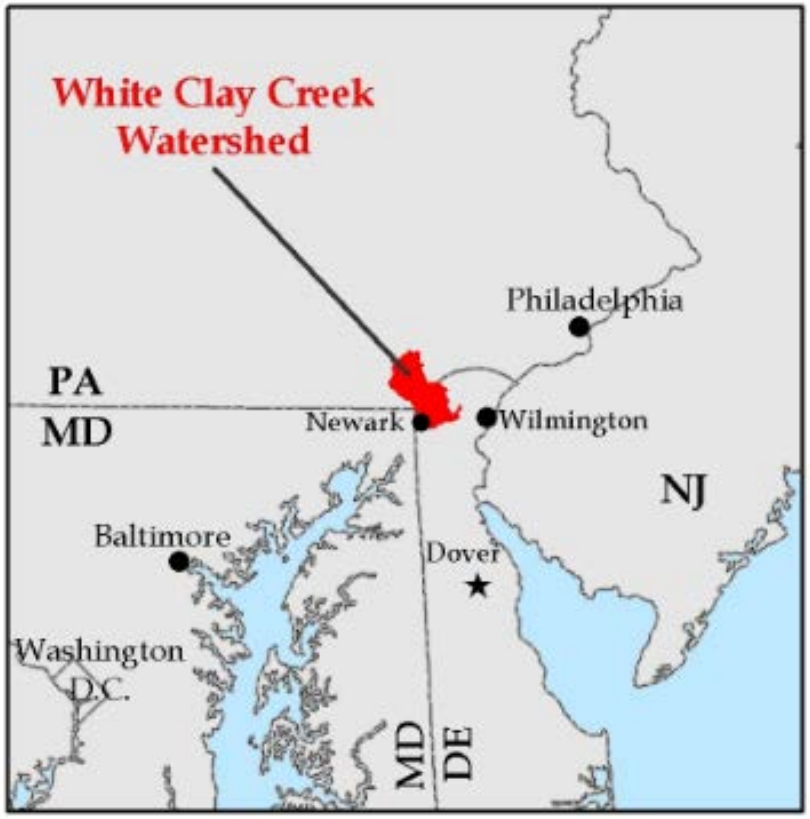
Partnership Wild and Scenic River: Management Framework Federal Funding



Study Area: Interstate White Clay Creek Watershed

White Clay Creek as a Case Study

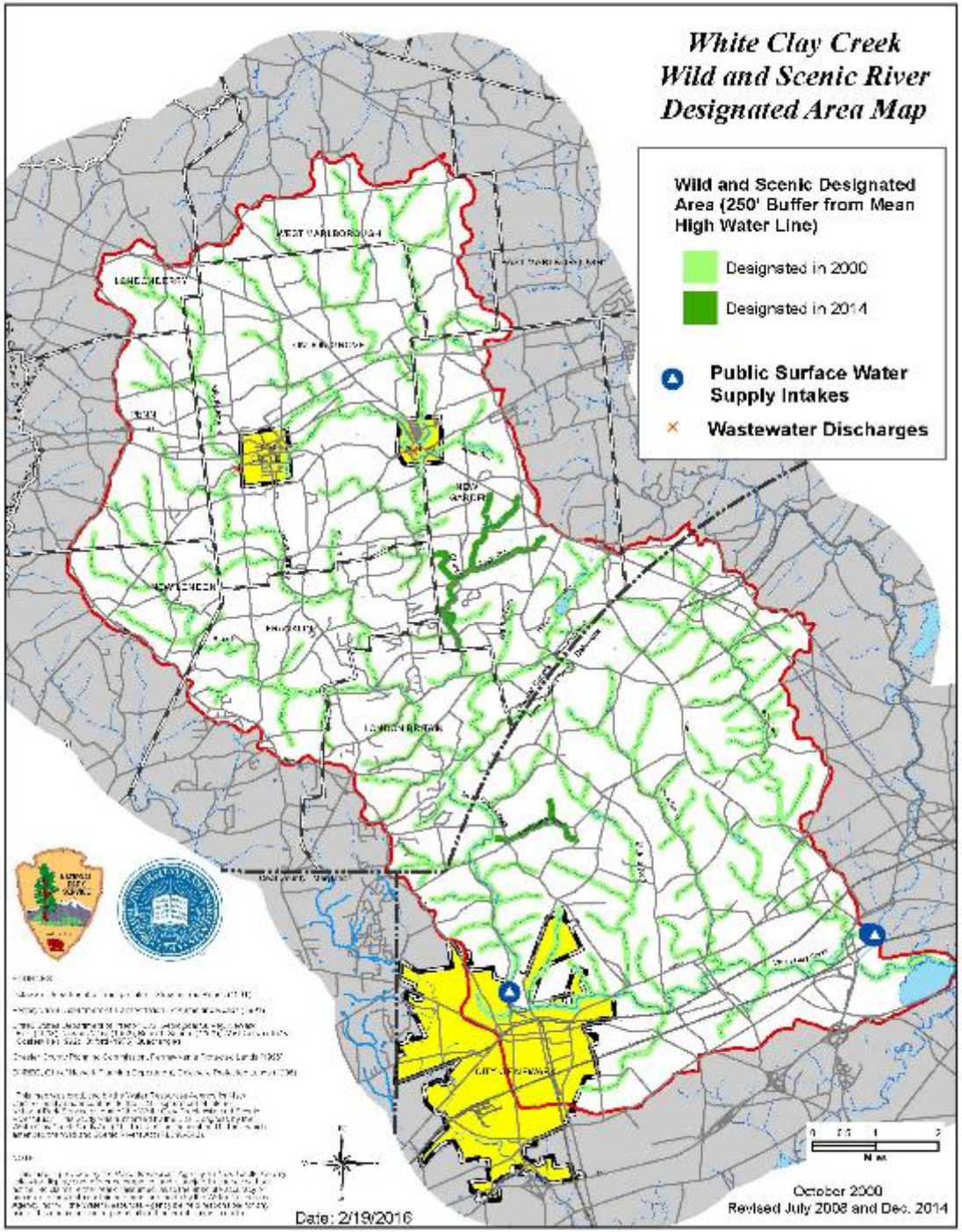
- One of a few relatively intact, unspoiled and ecologically functioning rivers in the area
- First entire watershed (rather than just a corridor or river segment) designated into the national Wild and Scenic system
- Bi-state watershed
- Significant source of drinking water for 120,000 people



Study Area: Interstate White Clay Creek Watershed

Wild and Scenic Designation History

- **1991:** White Clay Creek Study Act (P.L. 102-215) signed
- **1992:** Study task force (later advisory committee) convened charged with overseeing the preparation of the management plan, and creating a forum for communication
- **1993-1994:** Subcommittees held public workshops in both Delaware and Pennsylvania, put out a number of pertinent reports and studies
- **1995**: Study task force organized a planning committee to begin management plan development
- **1997:** Original Management Plan completed; amended in 2001
- **2000:** White Clay Creek officially designated (P.L. 106-357)
- **2014:** White Clay River Expansion Act (P.L., 113-291) added approximately 9 miles stream miles to the existing designation


White Clay Creek
Wild and Scenic River
Designated Area Map
Wild and Scenic Designated Area (250' Buffer from Mean High Water Line)
Designated in 2000
Designated in 2014
Public Surface Water Supply Intakes
Wastewater Discharges
Date: 2/19/2016
October 2000
Revised July 2008 and Dec. 2014

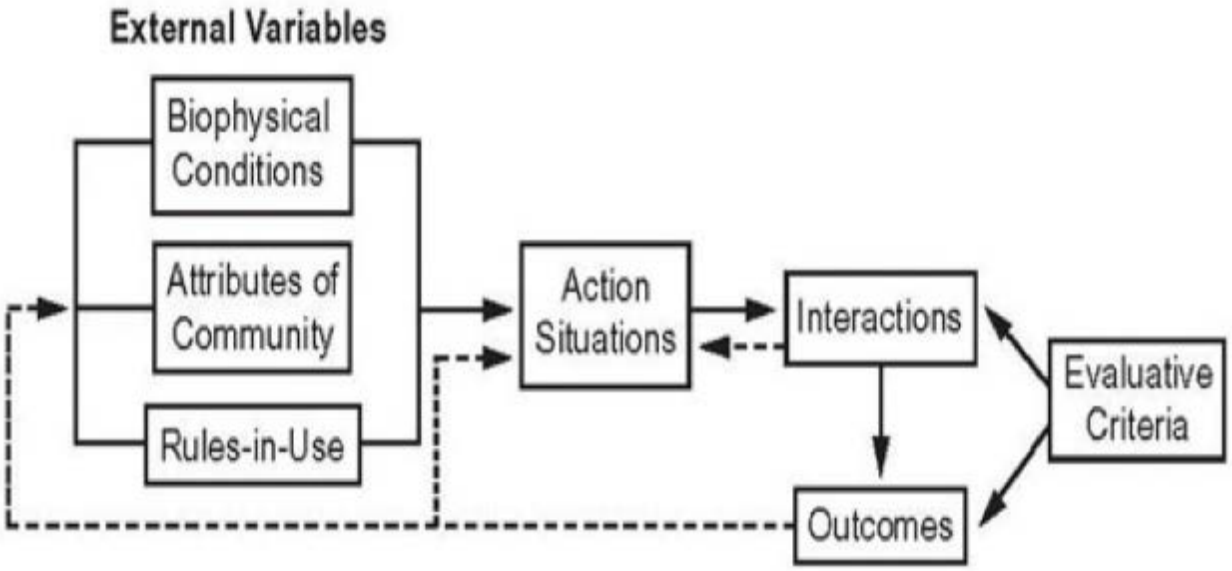
Research Methodology

Institutional Analysis and Development (IAD) Framework

- IAD framework is used to investigate the institutional arrangement and performance of the partnership approach to Wild and Scenic river management using the White Clay Creek watershed as a case study.
- Theoretical framework developed by Elinor Ostrom and colleagues
- Method used to assist policymakers and researchers study governance systems by identifying aspects of the physical, cultural, and institutional settings that are likely to affect the determination of:
  - Who is involved in a situation
  - Actions those involved take and the costs
  - The outcomes that are achieved

Research Methodology

IAD Framework



Source: (Ostrom, 2011)

Research Methodology

Data Collection

- White Clay Creek Wild & Scenic Quarterly Steering Committee Meeting Attendance:
  - May 2016
  - Notes were taken by the researcher during the meeting on procedures, processes, and discussion topics; past meeting minutes were also reviewed to account for general patterns
- Key Informant Interview
  - April 2016
  - Semi-structured in depth interview carried out with the White Clay Creek Management Plan Coordinator (MPC)
- White Clay Creek Wild & Scenic Committee Member Survey
  - Survey instrument distributed online to 19 committee members; 63% response rate
- Document Analysis
  - Comprehensive River Management Plan and updates
  - Annual Reports
  - Websites

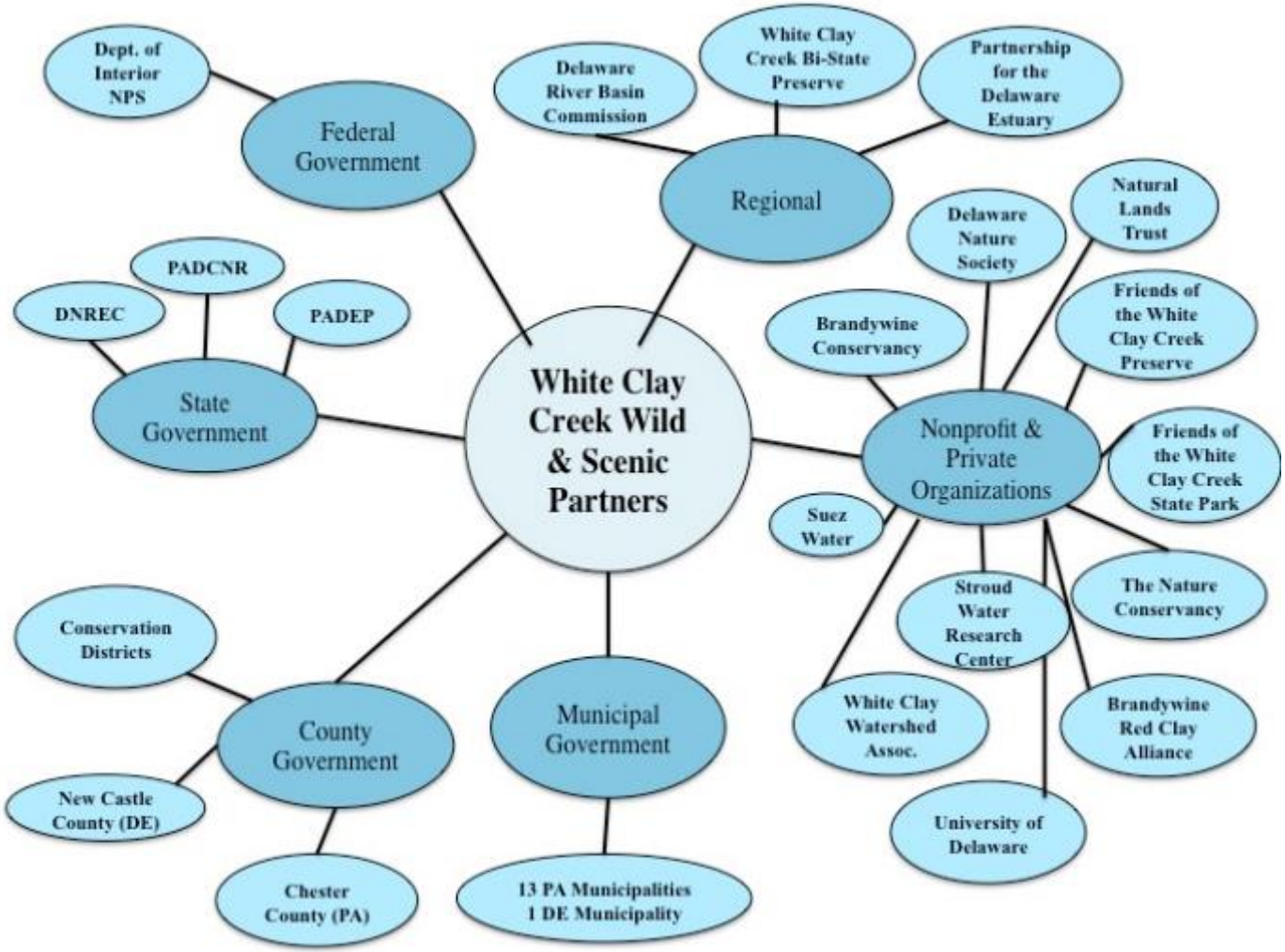
Research Results

Actors and Agencies

- General Membership "members at large"
  - Non-voting, participatory
  - Dispense knowledge and support the program
  - Technical expertise in archaeology, cultural and historical resources, fisheries biology, watershed management, recreation etc.
  - Program partners change year to year
  - Some agencies more inclusive than others

Research Results

White Clay Creek Wild and Scenic Program Partners



Research Results

Actors and Agencies

- Steering Committee Members
  - Two Co-Chairs (one each from DE and PA)
  - One paid staff (Management Plan Coordinator) supported through the White Clay Watershed Association
    - MPC position was added in 2002 to assist the committee in project and administrative duties.
    - Current MPC has held the position since 2012
  - Minimum goal of 17 additional steering committee positions

Research Results
White Clay Creek Wild & Scenic Committee Profile

Public Agencies and Organizations	Private/Non-Profit Agencies and Organizations
• National Park Service (liaison) • DNREC, Division of Parks and Recreation • Chester County Planning Commission • Chester County Conservation District • New Castle Conservation District • City of Newark • Franklin Township • New Garden Township • London Britain Township • London Britain Land Trust	• Coalition for Natural Stream Valleys • White Clay Creek Watershed Association • UD Water Resources Agency • Delaware Nature Society • Sovereign Consulting Inc. • White Clay Fly Fishers • Brandywine Conservancy • Natural Lands Trust • Friends of PA White Clay Creek Preserve

Research Results

Action Situation Defined

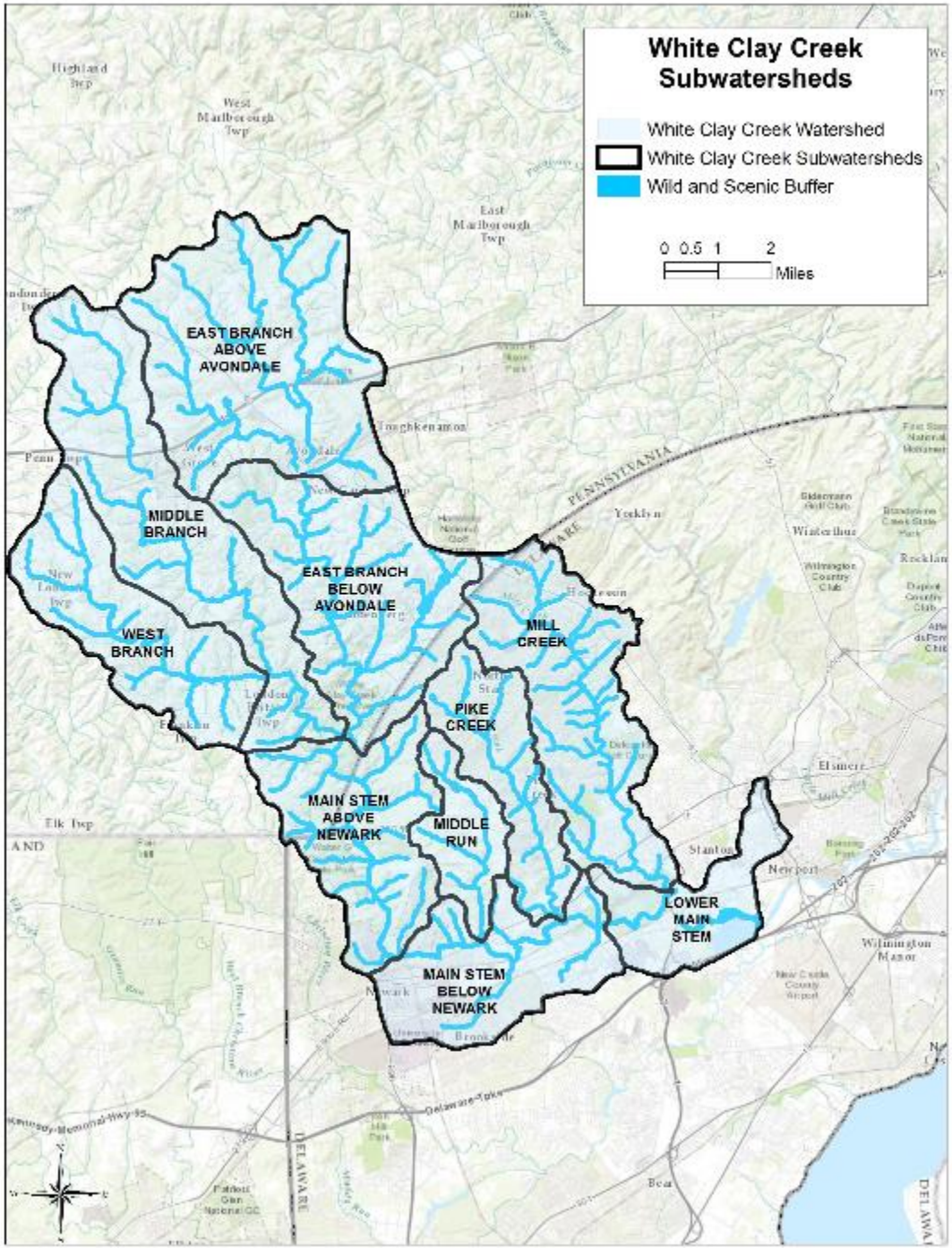
- Conceptually: Action situations are the social spaces where individuals interact, exchange goods and services, solve problems, dominate one another, or fight (Ostrom, 2011).
- An action situation is the 'IAD centerpiece', where individuals meet in social settings, and establish patterns of interaction that generate outcomes for those individuals, as well as social and ecological effects.
- Structurally composed of three sets of broad variables:
  - Biophysical structure of the resource
  - Community attributes
  - Institutional rules in use

Research Results

Biophysical Structure of the Resource- Geography

- White Clay Creek drains roughly 108 square miles (69,000 acres)
- Southeastern Pennsylvania and Northwestern Delaware
- Runs through the Piedmont region, dropping over the fall line and to the Atlantic Coastal Plain
- One of four watersheds that make up the larger Christina River Basin (565 square miles), which flows into the Delaware River Estuary

Stream	Drainage Area (mi^2)
East Branch White Clay Creek	33
Middle Branch White Clay Creek	16
West Branch White Clay Creek	10
Main Stem White Clay Creek	25
Middle Run	4
Pike Creek	7
Mill Creek	13
Total Area	**108**


White Clay Creek Subwatersheds
White Clay Creek Watershed
White Clay Creek Subwatersheds
Wild and Scenic Buffer
0 0.5 1 2
Miles
EAST BRANCH ABOVE AVONDALE
MIDDLE BRANCH
EAST BRANCH BELOW AVONDALE
WEST BRANCH
MILL CREEK
PIKE CREEK
MAIN STEM ABOVE NEWARK
MIDDLE RUN
LOWER MAIN STEM
MAIN STEM BELOW NEWARK
PENNSYLVANIA
DELAWARE

Research Results

Biophysical Structure of the Resource- Hydrology

- Mean annual temperatures: 54 degrees Fahrenheit
- Normal annual precipitation: 44 inches/year
- Mean annual flow: 133 cubic feet/second (White Clay Creek Near Newark, DE)
- Watershed is affected by seasonally occurring severe weather
- Surface and groundwater in the White Clay Creek watershed provide water to over 120,000 people

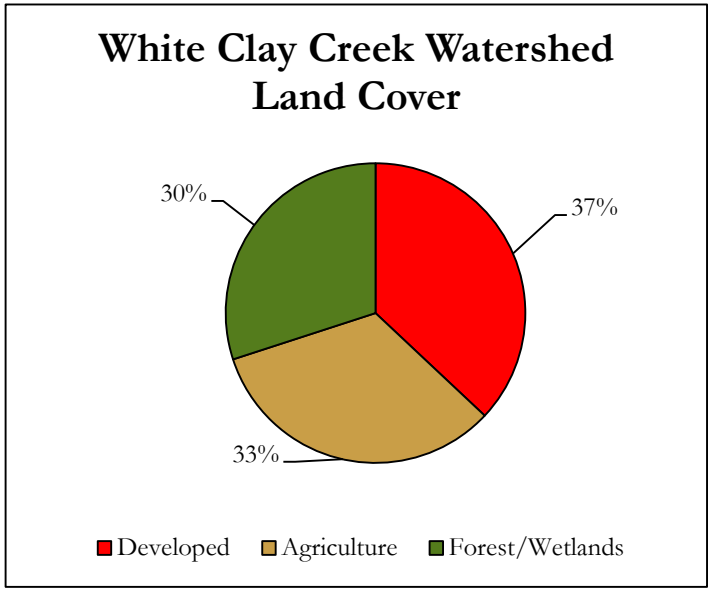
Research Results

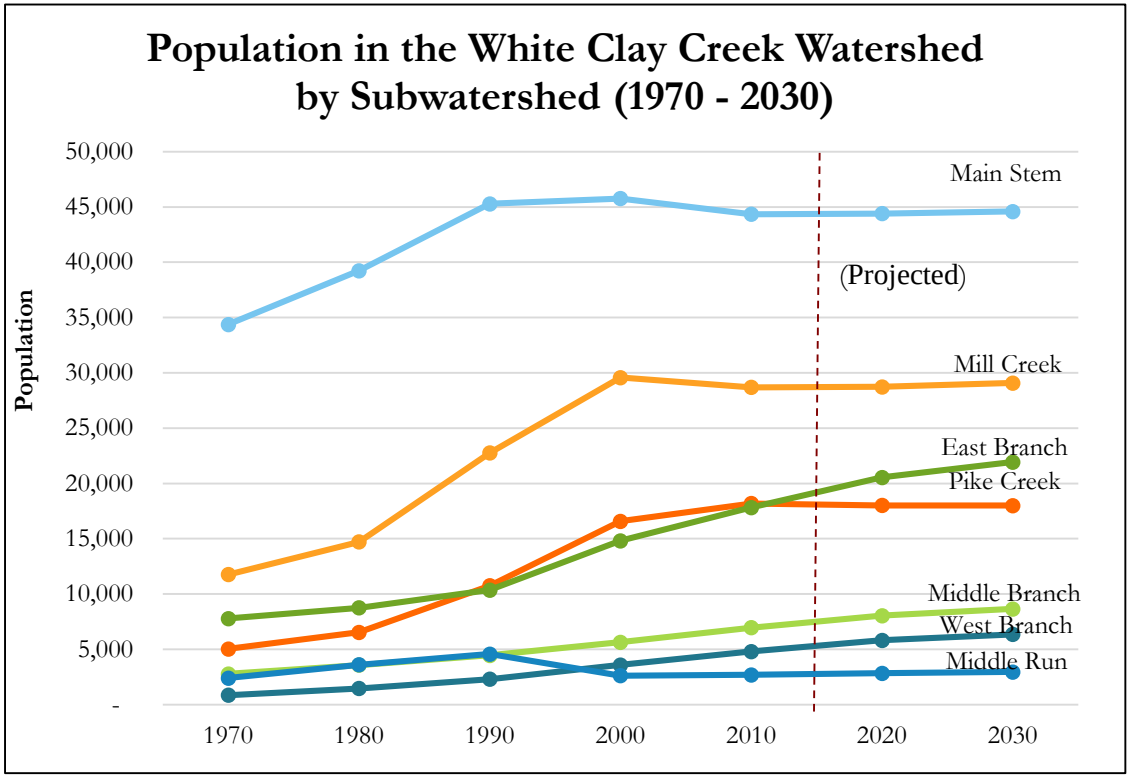
Perceived Environmental Issues in the White Clay Creek Watershed

Environmental Issue of Concern	Mean Value (0-5)	STDEV	*N=*
Land Conversion	3.27	0.90	11
Storm water Runoff	4.00	1.00	11
Flooding	3.10	0.74	10
Water Supply (Quantity)	2.88	0.64	8
Toxics in Water	3.80	0.92	10
Sedimentation	3.91	1.14	11
Nutrients in Water	4.00	1.00	11
Bacteria in Water	3.91	0.94	11
Invasive Species	4.27	1.01	11
Species Diversity	3.45	1.04	11
Loss of Wetlands	3.09	0.83	11
Habitat Loss	3.55	0.82	11
Key: *Very Low=1, Low=2, Moderate=3, High=4, Very High=5*			

Research Results

Community Attributes: Disparate Land Uses and Population



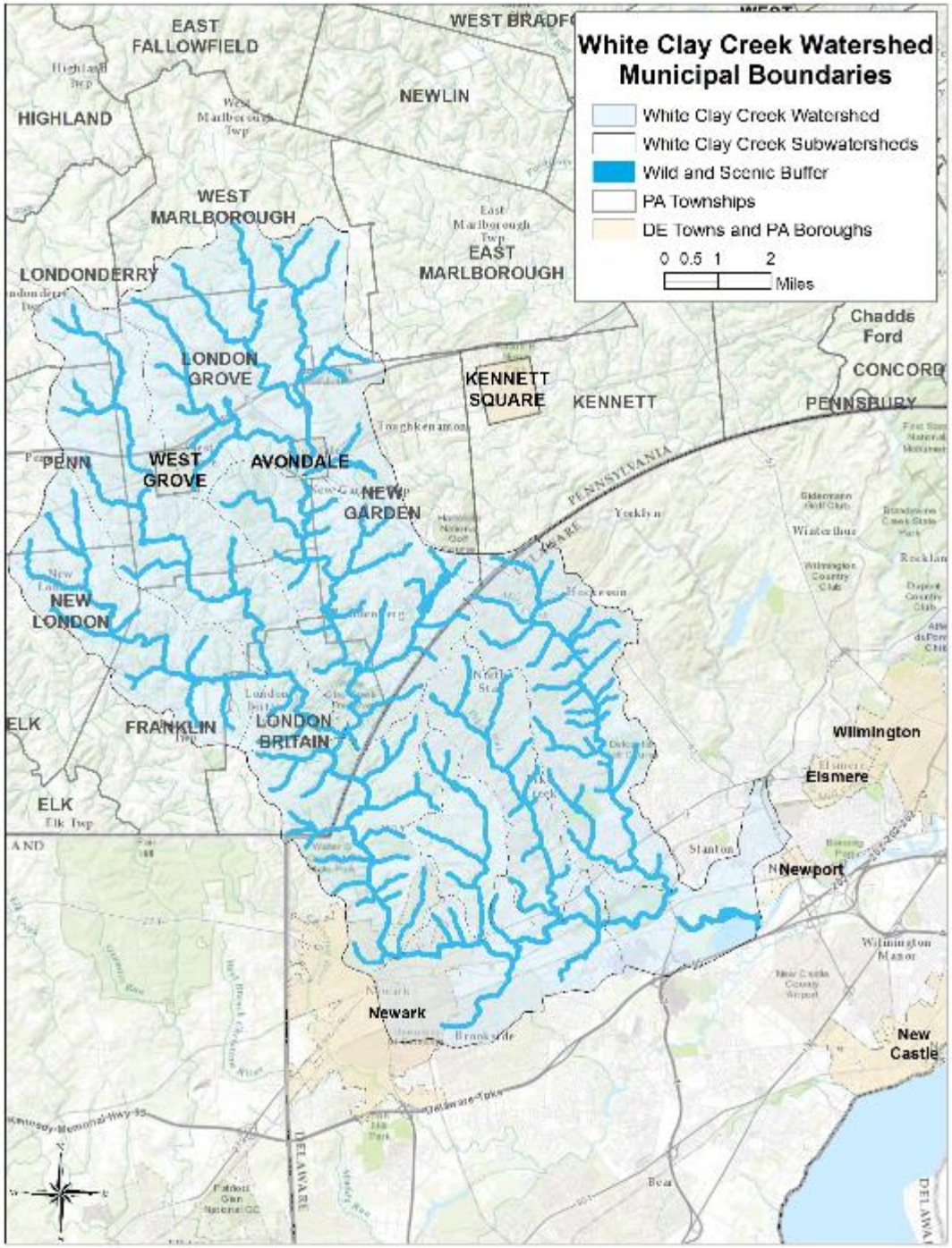


Research Results

Community Attributes: Political Jurisdictions and Considerations

- 43% of the watershed area lies within Delaware
- 57% of the watershed area lies within Pennsylvania
- (a very small portion, less than 1% also crosses into Maryland

States	Counties	Municipalities
Delaware Pennsylvania	Chester New Castle	City of Newark Avondale East Marlborough Franklin Kennett Londonderry London Britain London Grove New Garden New London Penn West Grove West Marlborough


White Clay Creek Watershed
Municipal Boundaries
White Clay Creek Watershed
White Clay Creek Subwatersheds
Wild and Scenic Buffer
PA Townships
DE Towns and PA Boroughs
0 0.5 1 2
Miles
EAST FALLOWFIELD
NEWLIN
HIGHLAND
WEST MARLBOROUGH
EAST MARLBOROUGH
LONDONDERRY
LONDON GROVE
KENNETT SQUARE
KENNETT
Chadds Ford
CONCORD
PENNSBURY
PENN
WEST GROVE
AVONDALE
NEW GARDEN
NEW LONDON
FRANKLIN
LONDON BRITAIN
ELK
Wilmington
Elsmere
Newport
Newark
New Castle
PENNSYLVANIA
DELAWARE

Research Results

Community Attributes: Municipal Support

- Value of cooperative support that certain municipalities provide
  - *"The committee has very good support from townships in the watershed".*
  - *"Willing landowners and willing municipalities are crucial for implementation of projects such as land preservation, streamside buffers etc."*

- Larger municipalities that have more resources available to them have been more participatory
  - Certain municipalities are not fully represented as members of the committee (e.g., Avondale, Londonderry, Penn)

Research Results

Human Resources

- Wild and Scenic Program itself has minimal full time human resources
  - MPC- part-time position; only paid program employee
    - Provides updates to the steering committee via reports, meeting materials and annual reports
  - University of Delaware Water Resources Center Student Intern (via contractual agreement)
  - Summer Intern (funding permitting)
  - Expertise of the committee members
  - Volunteers and community members

Research Results

Technical Resources

- GIS mapping assistance from the UD Water Resources Center and Brandywine Conservancy
- UD Water Resources Center also assists with writing and publishing brochures, graphic publications, and repots (via contractual agreement)
- Publically available datasets
  - USGS data (historic and current stream gage data- stream flow conditions)
  - Delaware Environmental Observing System (DEOS) (meteorological conditions; temperature and precipitation data)
  - Delaware Water Quality Data Portal (water quality data)

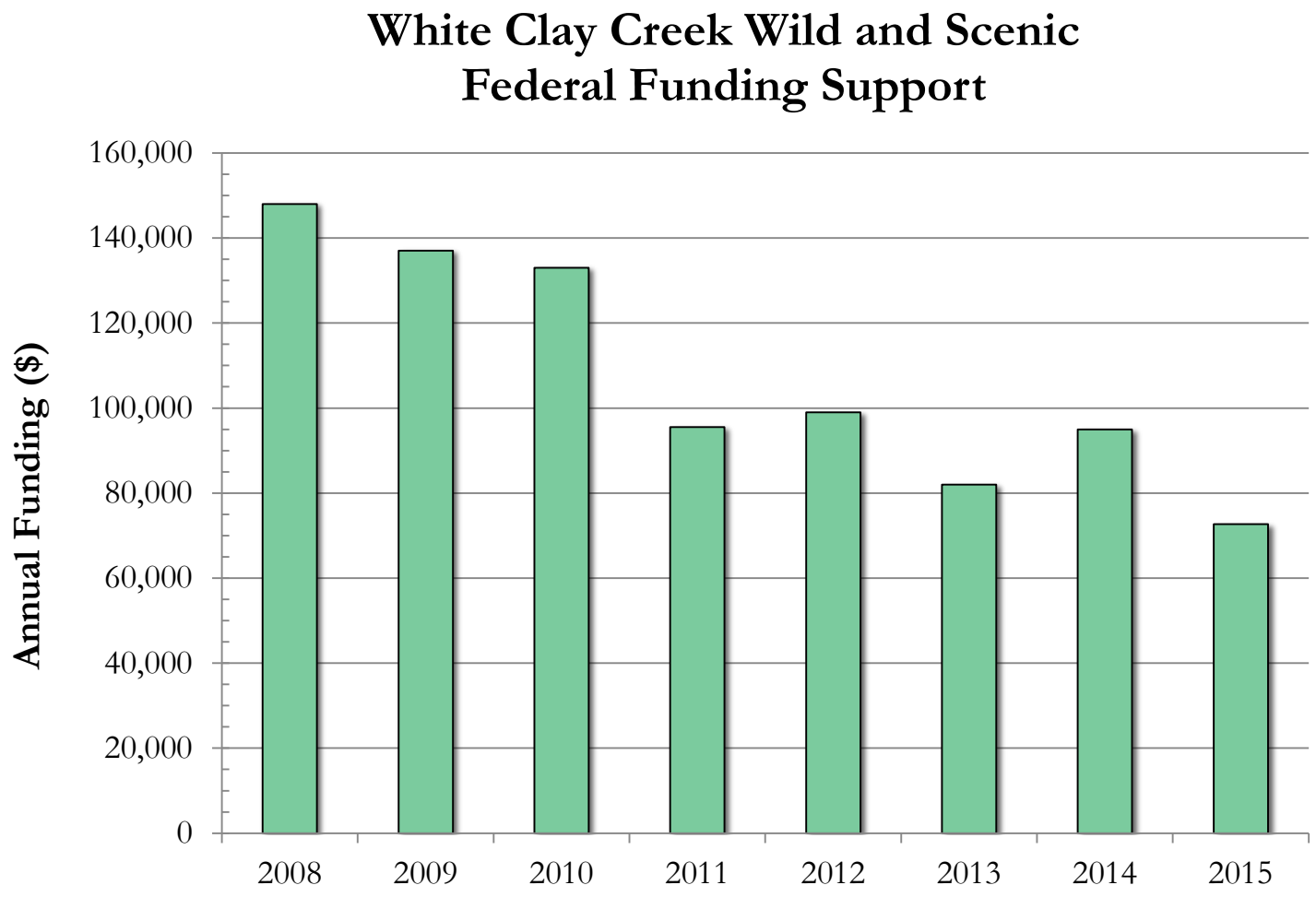
Research Results

Financial Resources

- White Clay Watershed Association (WCWA) is the umbrella organization that is responsible for the program's financial accounting
  - WCWA tracks expenditures, files appropriate tax forms with the IRS and State, files for reimbursement from the National Park Service, and holds checking accounts for the program in WCWA's name
- Updates on program budget intent and fiscal year work plan are discussed at committee meetings

- Federal Appropriations
  - Federal appropriation from NPS is the main funding source, but fluctuates from year to year

- Leveraged Funds and In-Kind Contributions
  - From state, county, and local governments, partner organizations and the community


White Clay Creek Wild and Scenic
Federal Funding Support
Annual Funding ($)
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
2008
2009
2010
2011
2012
2013
2014
2015

Research Results

White Clay Creek Wild & Scenic Funds and Contributions (2008-2014)

Year	2008	2009	2010	2011	2012	2013	2014
In-Kind	$100,000	$130,000	$124,360	$52,500	$72,517	73,041	$73,000
Federal	$148,000	$137,000	$133,000	$95,500	$99,000	$82,000	$95,000
Percent Change	73%	-7%	-3%	-28%	4%	-17%	16%
Grants	$1,000	$7,190		$1,000	$2,000	$85,678	$62,530
WCC Fund					$4,941	$5,924	$5,911
Charitable					$123	$67	$262
In-Kind Match	68%	95%	94%	55%	73%	89%	77%
Nonfederal Match	68%	100%	94%	56%	80%	201%	149%

Research Results

White Clay Creek Wild and Scenic Funding Sources (2010-2015)

Funding Source	2010	2011	2012	2013	2014	2015
NPS	$133,000	$95,000	$99,000	$82,000	$95,000	$72,721
Suez Water	$100	$1,000	$2,000	$2,000	$9,000	$14,222
PADEP					$54,630	$9,300
WCC Fund			$4,941	$5,924	$5,995	$8,213
DNREC				$83,078	$5,000	$3,285
Municipal Support					$4,380	$5,180
Mushroom Farmers (PA)				$600	$1,000	$1,000
DE State Charitable				$67.28	$300	$219
Habitat/Water Quality		$77,500	$8,078			
Open Space Preservation		$45,000	$30,000	$15,000		
Professional (Hours)	2,580	900	1,000	1,000	800	1,625
Professional ($)	$124,360	$52,500	$72,517	$73,041	$54,538	$51,834

Research Results

Institutional Rules: Internal Partnership Rules

- **Program Purpose**: "Promotes and supports the preservation, protection, restoration, and enhancement of natural and cultural resources, in addition to encouraging a balance of recreational enjoyment of the White Clay Creek watershed in Pennsylvania and Delaware"
- **Function and Authority:**
  - Strictly advisory in nature
  - Provides advice to agencies and institutions with management or regulatory authority
- **Procedures:**
  - Governed by a set of Bylaws and Memorandum of Understanding
  - Limits for terms of Co-Chairs, Committee Members,
- **Meetings:**
  - Quarterly steering committee meetings during normal business hours
  - Convenes for updates on activities and plans and to receive fiscal reporting
  - Meeting minutes are recorded and published on the program's website
  - All steering committee meetings are open to the public
- **Decision-making:**
  - Democratic decision-making through consensus
  - In cases where a majority vote cannot be reached, the decision falls to the Co-Chair whose state is most affected by the decision

Research Results
Institutional Rules: External Partnership Protection Regulations

Protection	State	
	Pennsylvania	**Delaware**
County/Local	-Pennsylvania Municipalities Planning Code (MPC; Act 247) -Chester County Comprehensive Plan Landscapes [1996] and Landscapes2 [2009]	-Delaware Storm Water and Sediment Regulations -New Castle County Water Resource Protection Area (WRPA) Ordinance [1987] -New Castle County Dept. of Public Works Drainage Code -City of Newark Zoning Regulations -Delaware Code Title 9, Chapters 13, 26, 30
State	-Pennsylvania Storm Water Management Act (Act 167) [1978] -Pennsylvania Municipal Waste Planning Recycling and Waste Reduction Act (Act 101) [1988] -Executive Order: Governor of PA, 1989-2 -Pennsylvania Rivers Conservation Program -Pennsylvania Scenic Rivers Act (P.L. 1277, Act 283) [1972] -Christina Basin TMDLs	-Delaware Land Protection Act [1990] -Source Water Assessment and Protection Program [1999] -Delaware Greenway Program -Delaware Open Space Program
Regional	-Delaware River Basin Compact [1961] -White Clay Creek Preserve and White Clay Creek State Park	
Federal	-National Environmental Policy Act [1970] -Clean Water Act [1972] -Endangered Species Act [1973] -Safe Drinking Water Act [1974] -Resource Conservation and Recovery Act [1976] -EPA Superfund Program	

Research Results

Evaluating Institutional Performance

Transaction Costs Reported by the White Clay Creek Wild & Scenic Committee

Transaction Costs	Mean Value (0-5)	STDEV	*N*=
Sharing Information	2.73	0.90	11
Coordinating Activities	3.00	1.10	11
Agreeing on management strategies	2.27	0.90	11
Building new relationships with stakeholders	2.45	0.82	11

Key: [Level of Difficulty] 1=very low; 2=low; 3=moderate; 4=high; 5=very high

Research Results

Evaluating Institutional Performance

Institutional Performance Reported by the White Clay Creek Wild & Scenic Committee

Evaluation Criteria	Mean Value (0-5)	SDEV	*N*=
Efficiency	4.50	0.52	12
Fairness	5.00	0.00	12
Accountability	4.27	0.79	11
Adaptability	4.33	0.65	12

Key: 1=Very Low; 2=Low; 3=Moderate; 4=High; 5=Very High

Research Results

Evaluating Partnership Success

Factors that Promote Collaboration Between White Clay Creek Wild & Scenic Partners

Item	Mean Value (0-5)	STDEV	*N=*
Trust	4.09	1.22	11
Communication	4.73	0.90	11
Shared Vision	4.45	0.82	11
Time	4.36	0.67	11
Planning	4.27	0.90	11
Leadership	4.64	0.92	11
Flexibility	4.18	0.98	11

Key: 1=Not Important, 2=Slightly Important, 3= Moderately Important, 4=Very Important, 5= Extremely Important

Research Results

Evaluating Partnership Success

Internal and External Factors that Influence WCCWS Success	
Internal Factors [#]	External Factors [#]
Funding [9] Human Resources [6] Time [4] Planning [1]	(NPS) Funding [2] Local/Community Support [2] State Rules, Regulations, Enforcement [2] Political Climate [1] Education [1]

Research Results

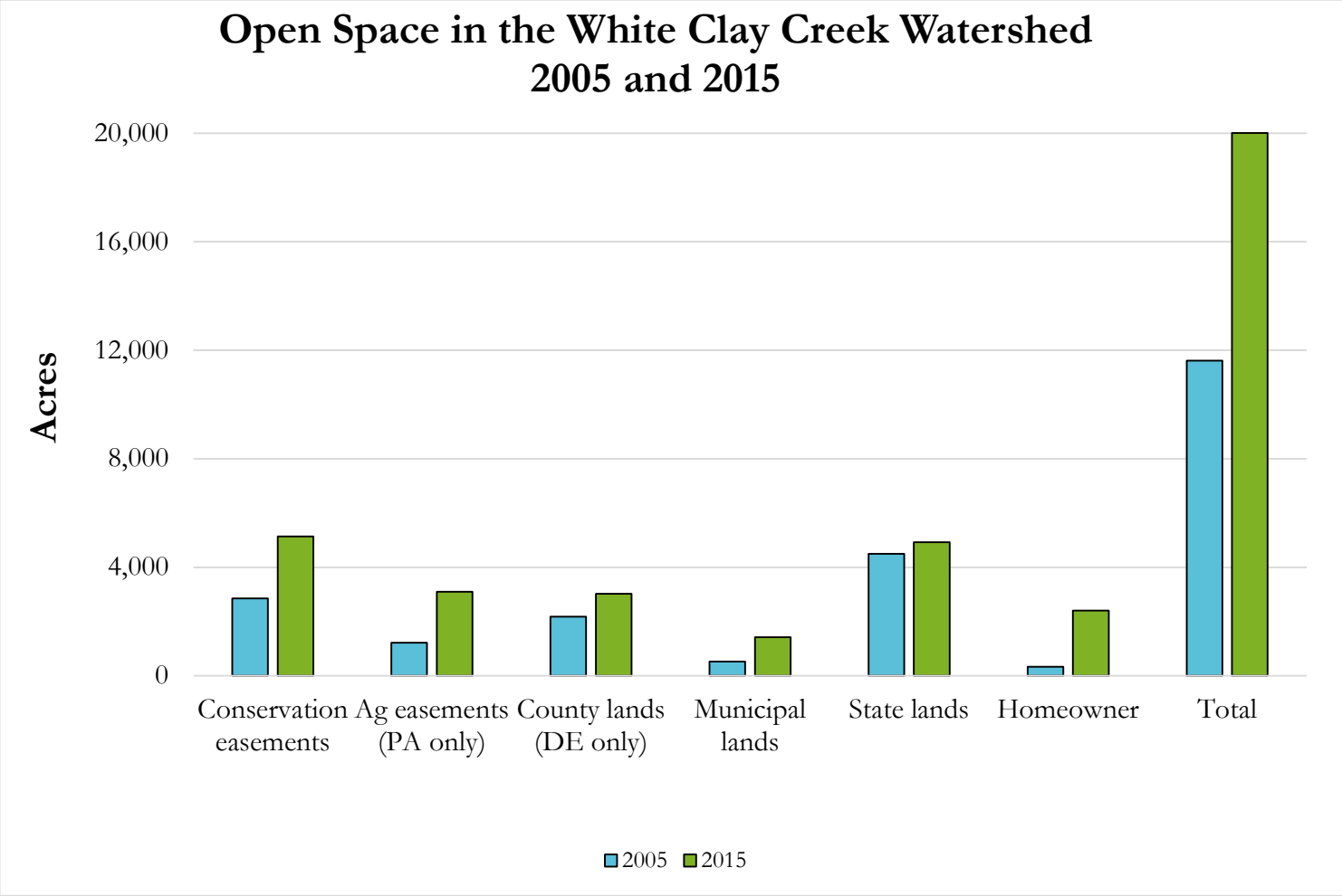
Environmental Outputs- Dam Removal

- Removal of Dam No. 1 (Byrnes Mill Dam) in 2014
- Opened up four miles of river corridor for fish
- First dam removal in the state of Delaware
- Project was led by the UDWRA; White Clay Wild and Scenic Program continues to work with partner organizations to support future removal of obsolete dams

Research Results

Environmental Outputs- Land Preservation

WCCWSP has directly contributed to preservation of just under 2,000 acres of open space and $88,760 in land preservation and acquisition.



Research Results

Environmental Outputs- Riparian Buffers

- Can be difficult to plan and install streamside buffers because the majority of land in the watershed is privately owned
- White Clay Reforestation Plan (2009) and data collection/GIS mapping by Stroud and the Brandywine Conservancy have identified gaps in forest areas

Annual Stream Buffers Implemented in the White Clay Watershed 2010-2015

Year	Acreage	Trees Planted	Stream Buffer (linear feet)
2010	10	3000	2400
2012	2.44	1150	1850
2013	8.18	2800	1400
2014	0.6	100	470
2015	12.7	3105	6180
Total	**33.92**	**10155**	**12300 (2.33 miles)**

Research Results

Environmental Outputs- Other BMPs

Year	BMP	Number	Location
2013	Stormwater Basins	3	City-owned land outside the Hunt at Louviers, City of Newark, DE
2013	Grass Swales	2	Swift Park, Hockessin, DE
2014	Rain Basins	2	Goddard Park, London Grove Township, PA
2014	Manure Management	1	Heifer Farm, Franklin Township, PA
2014	Habitat Planting	1	Landenberg Junction Trail Head, New Garden Township, PA
2015	Manure Management	1	Concentrated Animal Feeding Operation (dairy), London Grove Township
2015	Riparian Buffer and Floodplain Enhancement	1	New Garden Township Park, PA
2015	Riparian Buffer and Floodplain Enhancement	1	Curtis Mill Park, Newark, DE

Research Results

Social Outputs- Education, Outreach, Publications

- White Clay Creek Fest
- White Clay Creek Symposium
- City of Newark National Wildlife Federation and Community Habitat
- Shad in Schools Program
- White Clay Creek Passport
- BMP and Watershed Road Signage
- State of the Watershed (2008) and Update on the State of the Watershed (2016)
- Annual Report
- Program website; monthly blog posts, London Grove and New Garden Township Newsletters

Conclusions

- **1. What is the particular structural arrangement of the partnership Wild and Scenic river management regime?**

- Characterized by bi-state, interagency nontraditional management framework
- Based on the underlying principle that existing institutions and authorities provide the foundation for the long-term protection of the watershed
- Program it's actors include a consortium of all government units including local municipalities, counties, states, and the National Park Service as well as non-profits, non-governmental organizations, educational and research institutions, business and industry, water purveyors, private landowners and residents
- This structure is intended to merge diverse interests together under a common purpose and within a permanent and representative body

Conclusions

- **2. What are some of the institutional processes and outcomes that result from working in this particular forum?**

- Institutional Processes:
  - Plays a strictly advisory role
  - Institutional rules and processes intrinsic (memorandum of understanding, bylaws, committee meeting procedures) and external (existing regulations, laws, and agency responsibilities) to the partnership
  - Democratically oriented, consensus-based decision-making
  - Fairness unanimously ranked as the highest performance measure
- Program generates mostly social outputs focused on watershed education, outreach and publications; with implementation of environmental BMPs and land preservation

Conclusions

- **3. What are the factors that promote partnerships in the Wild and Scenic river context and how is success measured?**

- Measuring program success is somewhat ambiguous; success is not measured in one tangible way but rather by a number of different quantitative and qualitative metrics
- Factors that promote success
  - human resources
  - funding
  - communication

Research Limitations

- Results of this study are highly localized and confined to management in the White Clay Creek watershed
- Empirical and observational aspects of data collection
- Temporal limitations

Recommendations for Future Research

- Streamlining of available Wild and Scenic river datasets
- Institutional comparison using similar methodology for two partnership wild and scenic rivers (as opposed to a focused case study)
- Comparison of White Clay Committee member perceptions from this study to those in the future (e.g. 5, 10, 15 years from now)