

THE  
**TRUST**  
*For*  
*OUR*  
**LAND**

# Habitat Restoration Planning in Western Pennsylvania

Mitchel Hannon

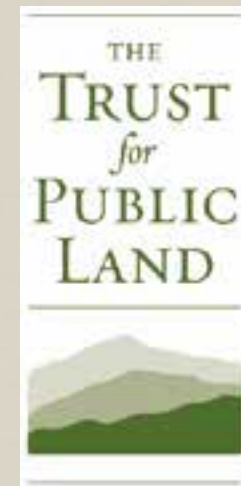
THE TRUST *for* PUBLIC LAND

LAND FOR PEOPLE

§ In July 2014, The TPL Conservation Vision and GIS department partnered with the National Fish and Wildlife Foundation to develop a Business Plan and custom reporting website for the Richard King Mellon Foundation to guide their restoration funding for the next five to ten years



Richard  
King  
Mellon  
Foundation



# What is a NFWF Business Plan?

Outline NFWF conservation program strategies and the resources necessary to meet measurable goals

They contain Conservation Goals, Priority Actions, Resource Needs and Performance Measures



# NFWF Business Plans

§ Species and Ecosystem based.

§ 19 have been produced including:

American Oystercatcher

Apache Trout

Bog Turtle

Eastern Brook Trout

New England Cotton Tail

Path of The Pronghorn

Hawaiian Forest Birds

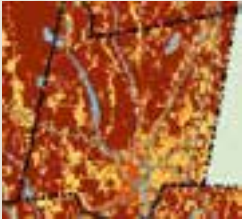
Sierra Nevada Meadow

Upper Klamath Basin



# Greenprinting and Measures of Progress Tools

Water Quality



30%

Resource Protection



50%

Composite



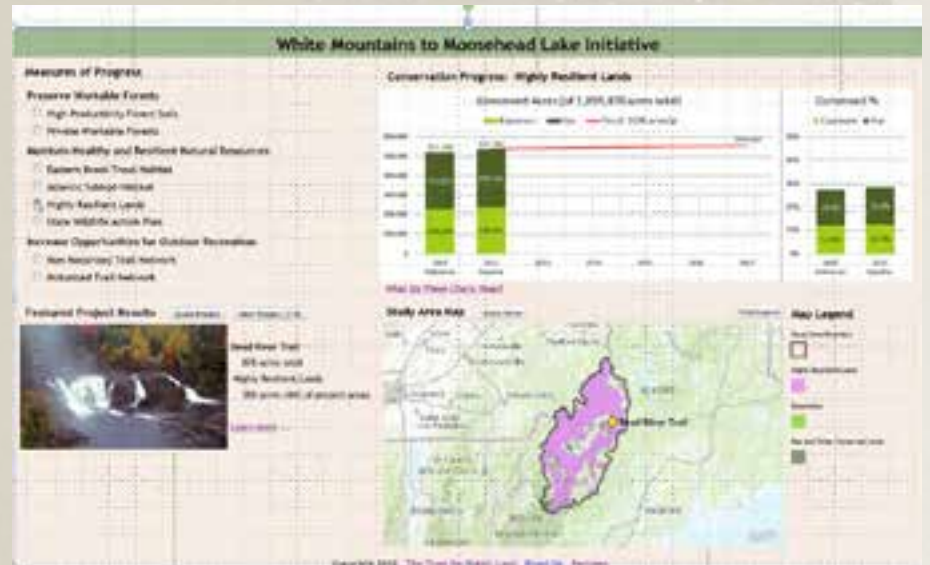
Trail Connections



Recreation Needs



10%



# Project Staff

- § Amanda Bassow \* National Fish and Wildlife Foundation \* Director Eastern Partnership
- § Christina Kakoyannis \* National Fish and Wildlife Foundation \* Director Strategic Planning and Evaluation
- § Kristen Saake Blunk \* Headwaters LLC \* contractor for NFWF
- § Brian Hill \* Richard King Mellon Foundation \* Senior Program Officer
- § Mitchel Hannon \* The Trust for Public Land \* GIS Program Manager

# Kickoff meeting in July 2014 - Participants

- § Audubon Pennsylvania
- § Foundation for Pennsylvania Watersheds
- § FracTracker Alliance
- § National Fish and Wildlife Foundation
- § Pennsylvania Biological Survey
- § Pennsylvania Department of Conservation and Natural Resources
- § Pennsylvania Department of Environmental Protection
- § Pennsylvania Environmental Council
- § Pennsylvania Fish and Boat Commission
- § Pennsylvania Game Commission
- § Pennsylvania State University
- § Richard King Mellon Foundation
- § Stroud Water Research Center
- § The Nature Conservancy
- § The Trust for Public Lands
- § Trout Unlimited
- § United States Environmental Protection Agency
- § United States Fish and Wildlife Service
- § USDA Forest Service and Natural Resources Conservation Service
- § Western Pennsylvania Conservancy
- § Wildlife Management Institute

# Indicator Species of Habitat Health

## § Forest Habitat

Cerulean Warbler

Golden-winged Warbler

American Woodcock

Black-throated Blue Warbler

Louisiana Waterthrush



## § Stream and Riparian Habitat

Eastern Hellbender

Eastern Brook Trout

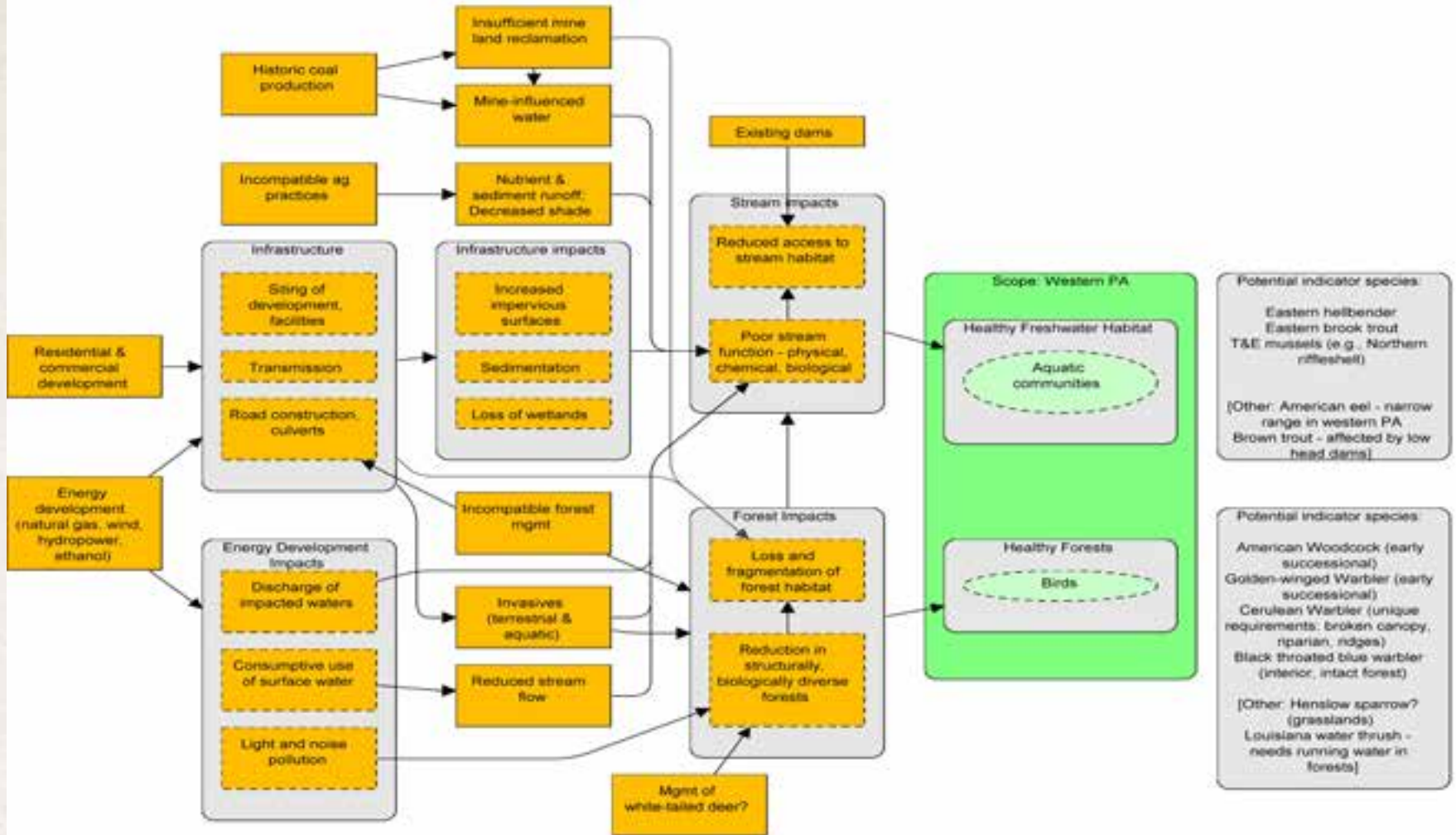
Threatened and Endangered Mussel Species





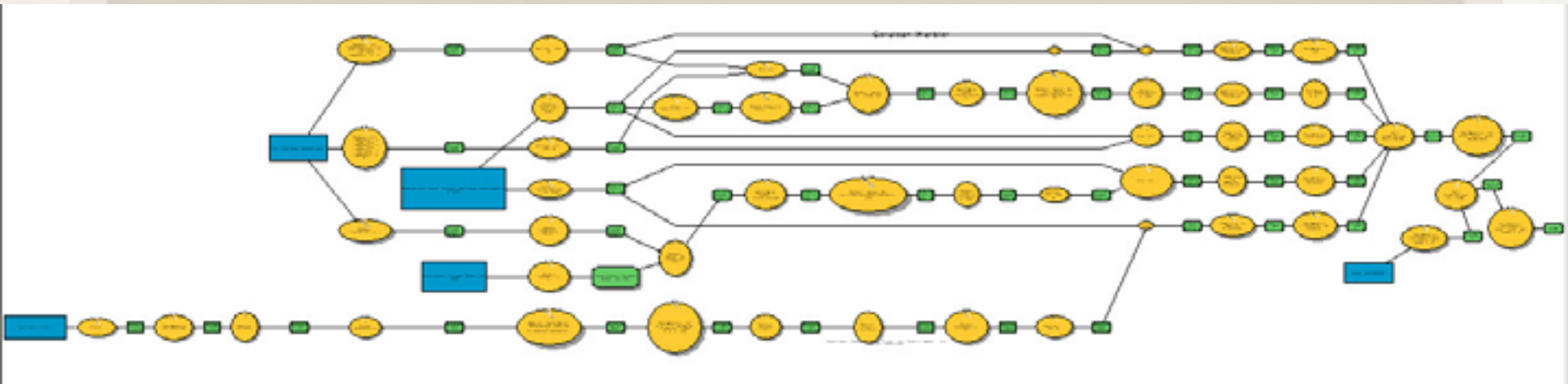
# Threats

Conceptual model of threats to Western PA  
DRAFT 7-14-14

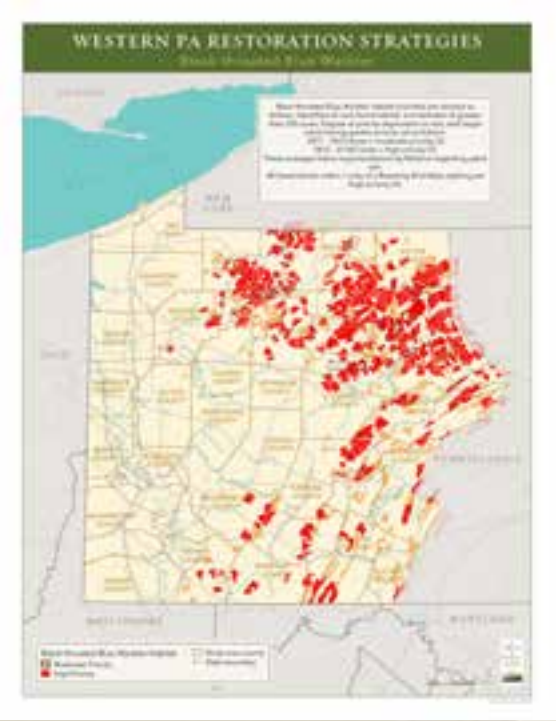
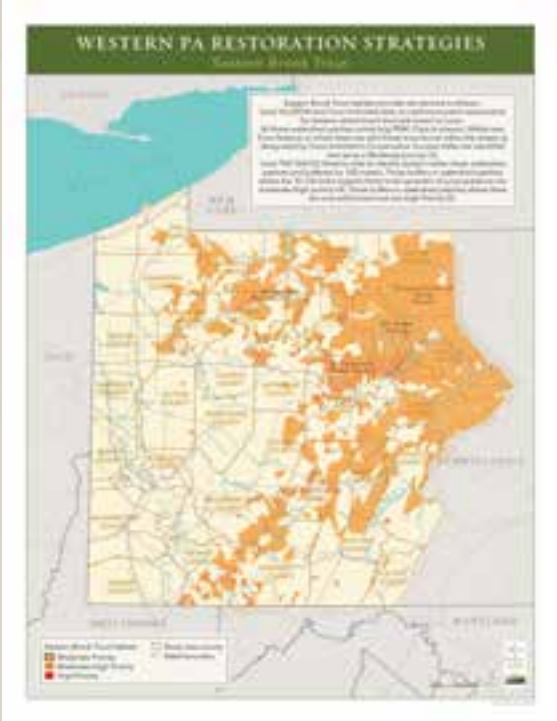
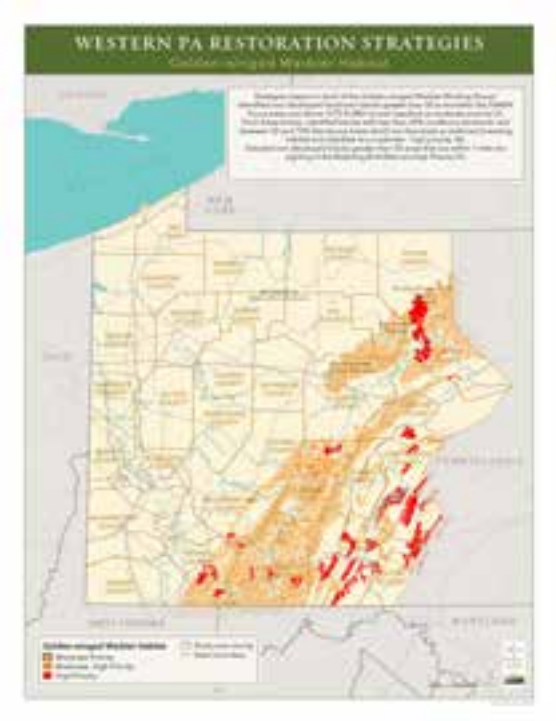


# Model Building to Find Habitats and Threats

- § Cerulean Warbler - Species prefers old large deciduous forests and avoids edges impacted by fragmentation of forests. Requires a structurally complex forest to support its life cycle. Prefers ridgelines and upper steep slopes or the forests along larger stream rivers where there are breaks in the forest.
- § Louisiana Waterthrush - Requires mature riparian forests, typically with steep sided valleys with swiftly flowing streams.
- § Eastern Brook Trout - Species prefers clean, cold, rocky streams with plenty of shade, and well-oxygenated water.

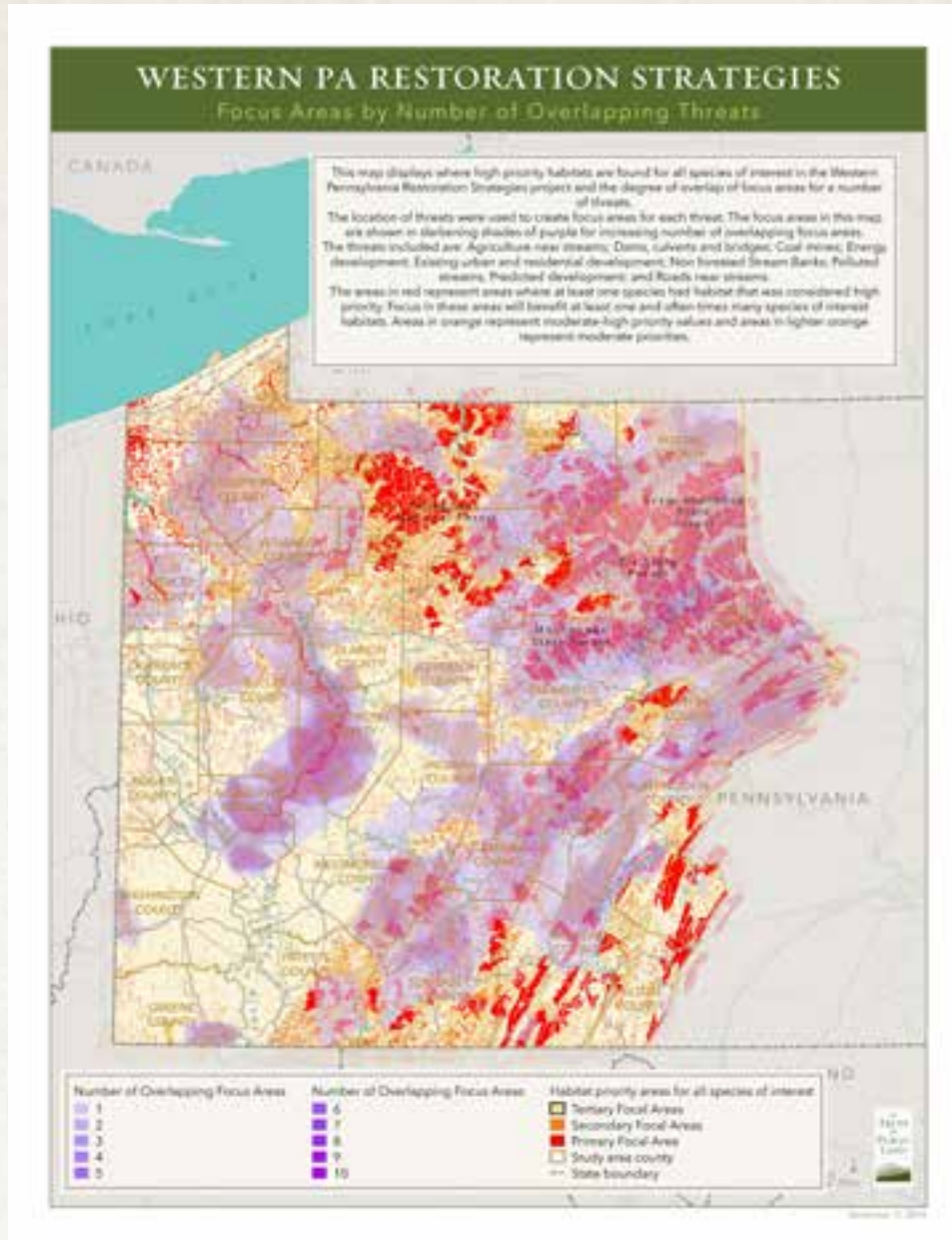


# Habitat Modeling Results Examples



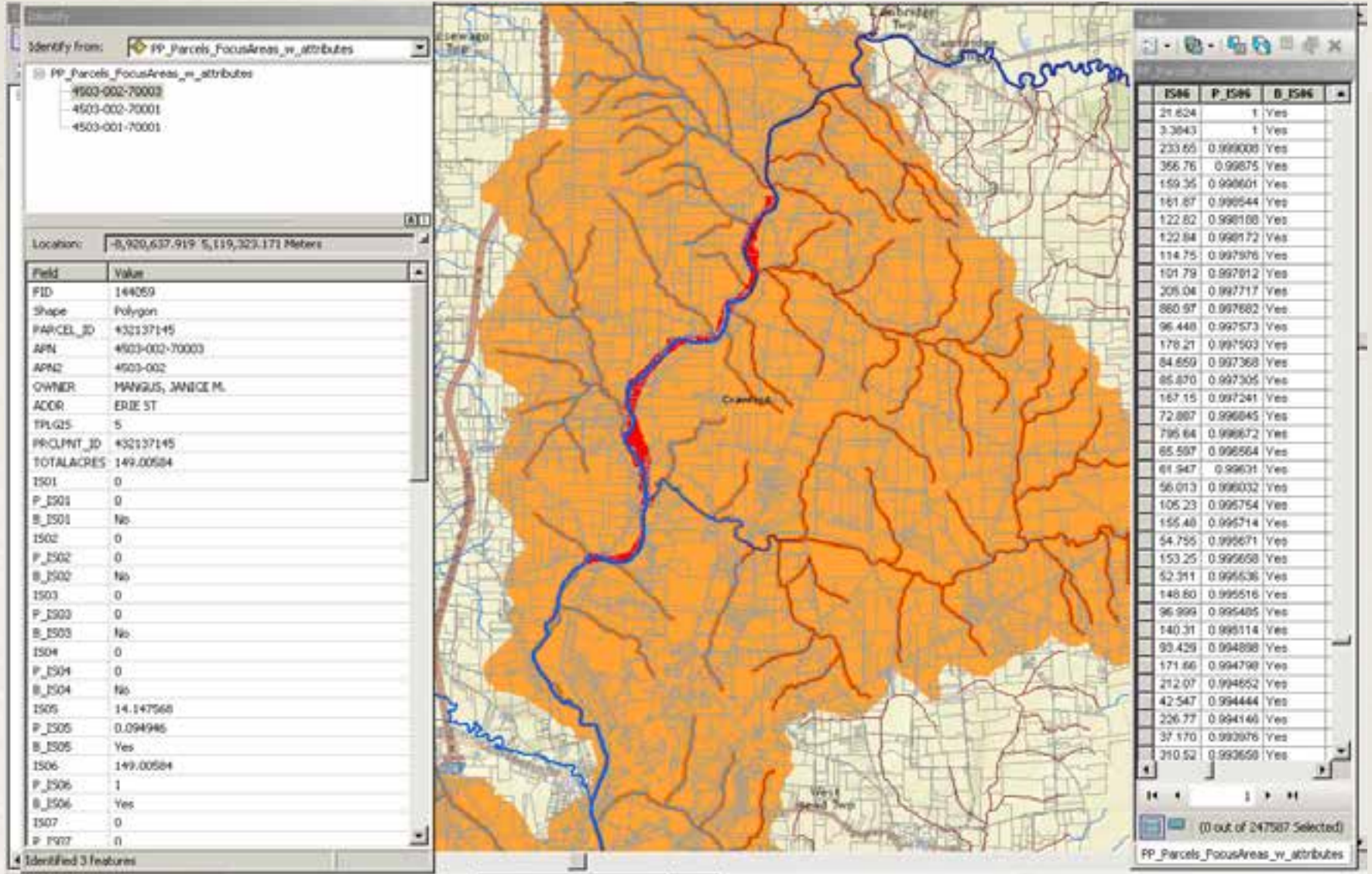


# Focus Areas





# Parcel Overlap Analysis



# Strategic Investment Plan for Western Pennsylvania



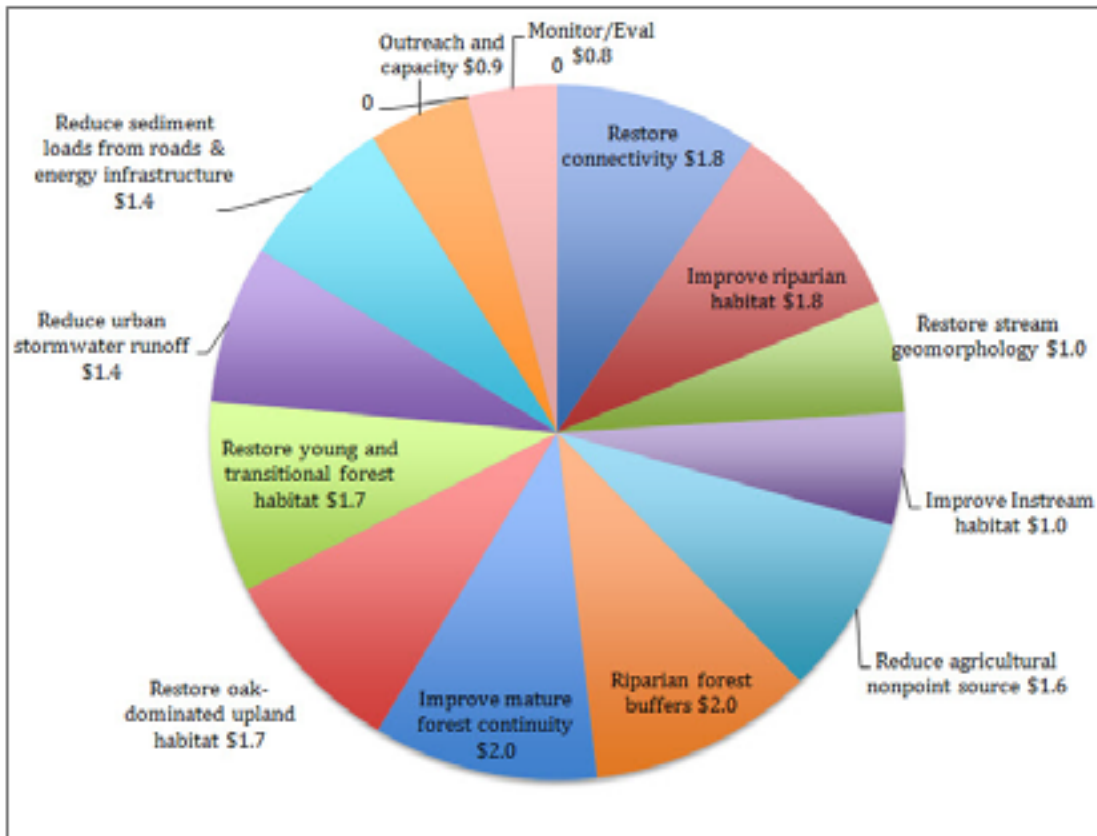
**National Fish and Wildlife Foundation  
Western Pennsylvania Business Plan for Restoration of  
Healthy Forests and Freshwater Habitat**

*Updated 2\_11\_2015*



# Strategic Investment Plan for Western Pennsylvania

The full costs of restoring Western Pennsylvania's freshwater and forest habitats, even in the habitat focal areas, would require billions of dollars over many decades. This plan will be implemented primarily through a 1:1 leveraging of a \$20 million investment over the 2015 to 2020 timeframe. Figure 3 provides an overview of the by-category investment approach. Table 1 breaks down these costs by primary strategy: stream and riparian habitat, forest habitat, nonpoint source pollution, and outreach and capacity. The monitoring funds should be aligned with significant resources devoted to assessment efforts underway or planned with federal and state agencies as well as grantees through a variety of resources.



# Strategic Investment Plan for Western Pennsylvania

Table 1 Costs to implement the Western Pennsylvania Restoration Business Plan, millions of dollars 2015–2020.

Budget Category	Dollars
<b>Stream and Riparian Habitat</b>	<b>\$5.6</b>
1. Improve riparian habitat	1.8
2. Improve in-stream habitat	1.0
3. Restore stream geomorphology	1.0
4. Restore connectivity	1.8
<b>Forest Habitat</b>	<b>\$7.4</b>
1. Improve mature forest continuity	2.0
2. Restore young and transitional forest habitat	1.7
3. Restore Oak-Dominated Upland Habitat	1.7
4. Improve and extend forested riparian corridors	2.0
<b>Nonpoint Source Pollution</b>	<b>\$4.4</b>
1. Reduce agricultural NPS	1.6
2. Reduce urban stormwater runoff	1.4
3. Reduce sediment loads from roads and infrastructure supporting energy development	1.4
<b>Outreach Capacity and Incentives</b>	<b>\$1.8</b>
1. Build capacity and strengthen landowner assistance	0.8
2. Advance innovations and new technologies to accelerate pace of restoration	0.6
3. Support financing strategies and policy development	0.2
4. Expand the exchange and transfer of information and technology	0.2
<b>Monitoring and Evaluation</b>	<b>\$0.8</b>
<b>TOTAL ESTIMATED BUDGET</b>	<b>\$20M</b>



# The beginnings of the project review site...



# Wrap Up

- § Project ongoing thru end of July
- § Great opportunity to continue to provide GIS services for NFWF business plans
- § Significant amount of funds available for land conservation to meet objectives
- § May expand into Eastern Pennsylvania, New Jersey and New York. New project in Texas.