

Science.

Policy.

Partnerships.

PARTNERSHIP APPROACH

The Conewago Initiative, Ecosystem Services, and Environmental Markets:

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Conewago Creek Collaborative Conservation Initiative

A Targeted Watershed



Goal Build partnerships and pool resources to establish a “discovery watershed” for PA

ALL PARTNERS NEED: A collaborative success story and template for integrating practices and approaches for cooperative conservation, restoration and management in an ag-impaired watershed.

The Conewago Initiative



- LOCAL

- Conservation Districts – Dauphin, Lancaster, Lebanon
- Tri-County Conewago Creek Association
- Municipalities – S. Londonderry Township
- E-town College
- Residents

- STATE

- Penn State
- PA DEP
- NRCS – PA
- Chesapeake Bay Foundation
- PDA
- PA DCNR



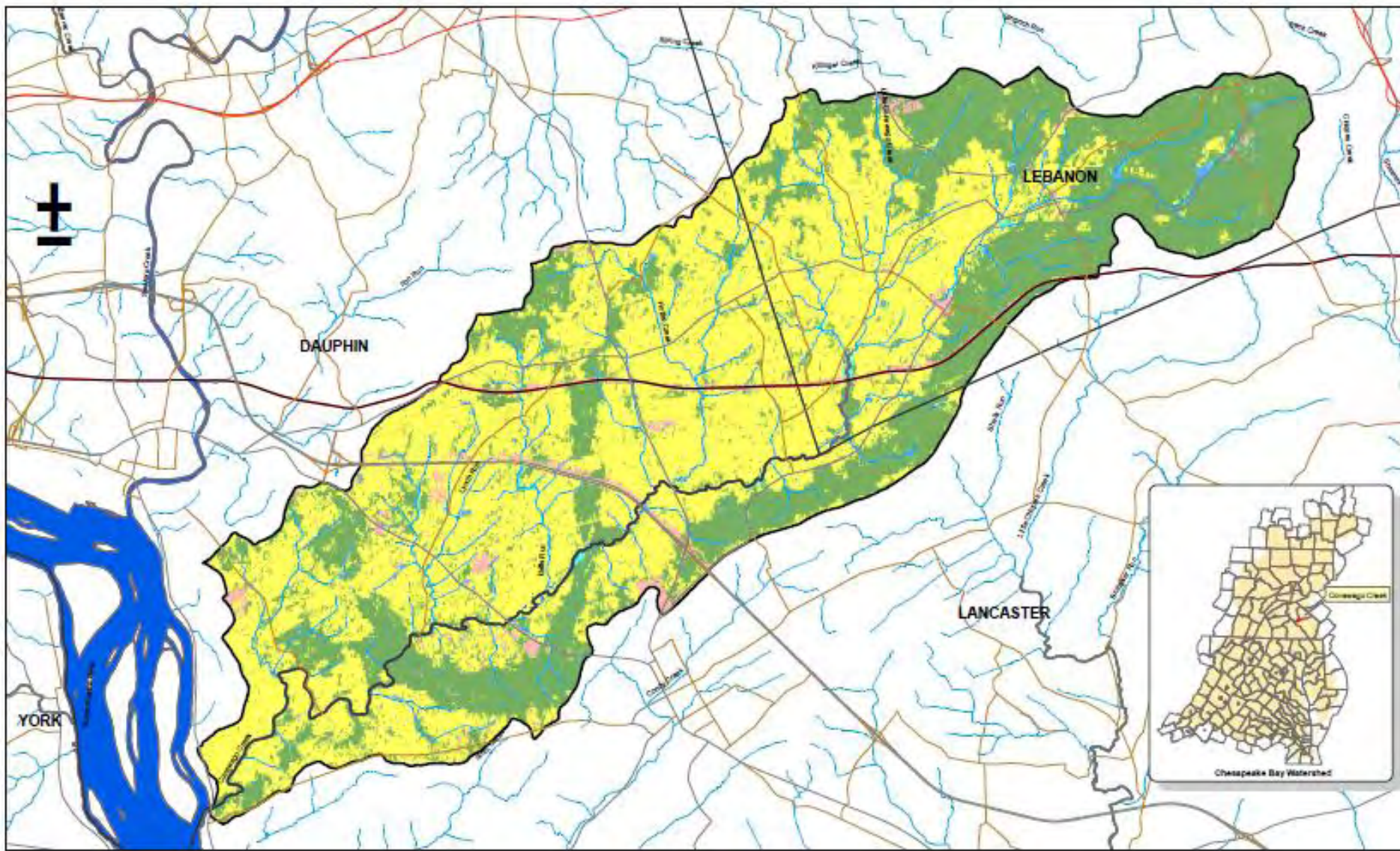
- NATIONAL

- USDA NRCS
- US EPA
- National Fish & Wildlife Foundation
- Susquehanna River Basin Commission
- USGS
- USDA ARS

- PRIVATE SECTOR

- ZedX
- ECC

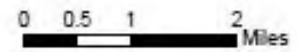




Legend

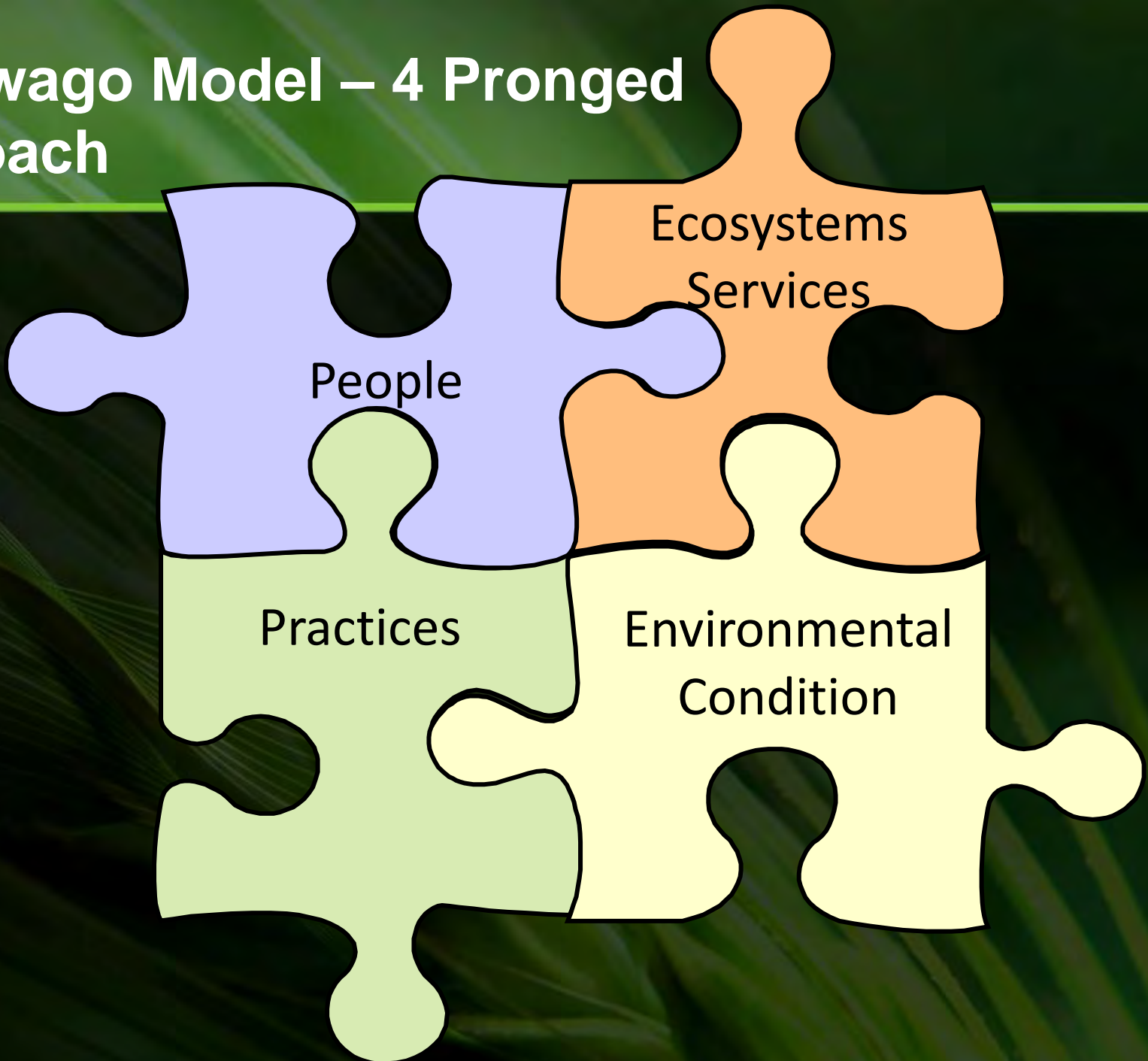
- Conewago
- Counties
- Interstate Hwy
- US Hwy
- VA Hwy
- Stream - Intertribal
- Stream - Perennial
- Streamflow
- water
- low density urban
- agriculture
- forest
- wetland
- pasture
- transitional

Conewago Creek Watershed

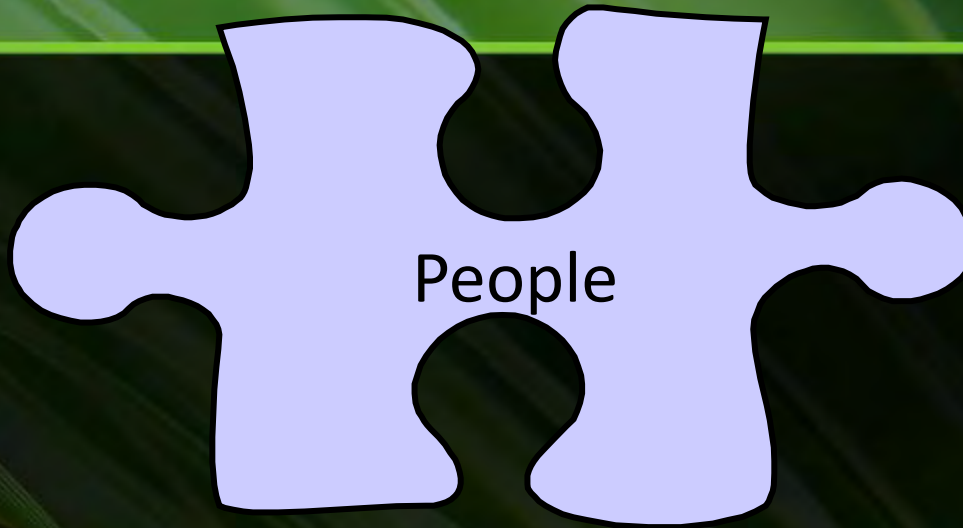


Map produced by the Land Analysis Laboratory, Department of Crop and Soil Science, College of Agriculture, Salisbury State University.
 Data Sources: USGS National Hydrography Data, 2004 Topographic Land Use Land Cover
 Coordinate System: NAD 83 Plane, North Zone, NAD 83

Conewago Model – 4 Pronged Approach



Conewago Model – Stewardship Development



Accelerate adoption of BMPs in all segments of watershed (ag, forest, residential, commercial, and municipal) that will result in significant reductions.

Identify, develop, and connect with points of entry and social networks that will improve willingness to- and actual adoption of practices.

Conewago Model – BMP Implementation

Conduct whole farm systems and forest land assessments in partnership with land owners that will increase the implementation of core conservation- and innovative practices.



Integrate and increase training, assessment, cooperator identification drawing from extensive partner expertise, resources and programs.

Conewago Model – Environmental (Stream) Monitoring

Monitor early-, interim-signals and long term improvements that will measure movement towards environmental goals.

Establish meaningful, sustainable monitoring program that can also inform adjacent and higher order watersheds.



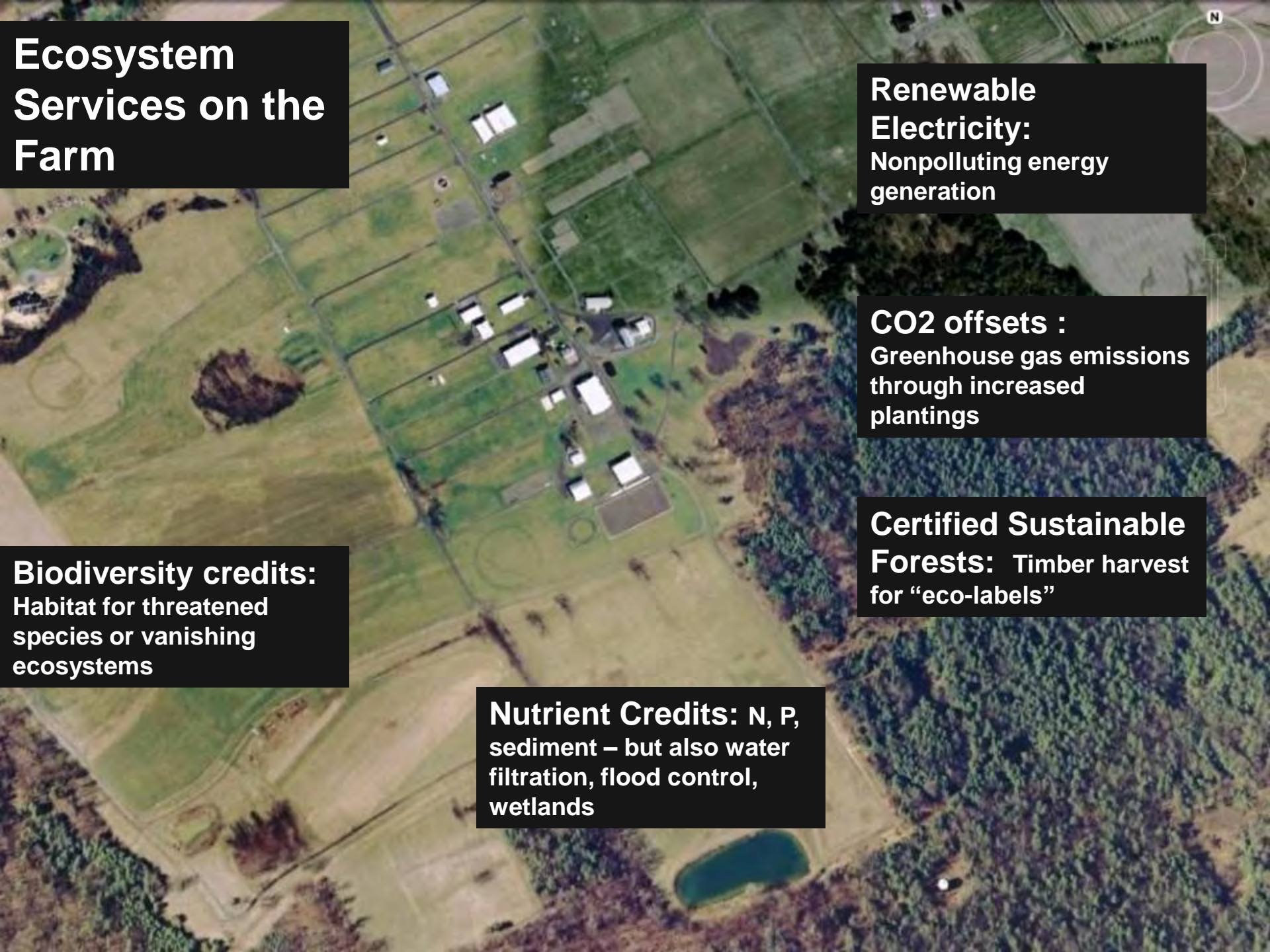
Conewago Model – Environmental Markets

Increase local awareness of the ecosystem services provided by well managed lands and waterways, their value, and the potential for environmental improvements to qualify for participation in environmental markets.



Understanding Ecosystems Services

- Increase local understanding of what ecosystem services are, their value, and opportunity.
- ID the specific ecosystem services of value and interest across all sectors in the watershed.
 - Residents/neighborhoods, producers, municipalities, water providers, forest owners, recreational enthusiasts.
- Evaluate the baseline ecosystem services provided by current management.
- Landowner and community “PORTFOLIOS” of ecosystem services.



Ecosystem Services on the Farm

Renewable Electricity:
Nonpolluting energy generation

CO2 offsets :
Greenhouse gas emissions through increased plantings

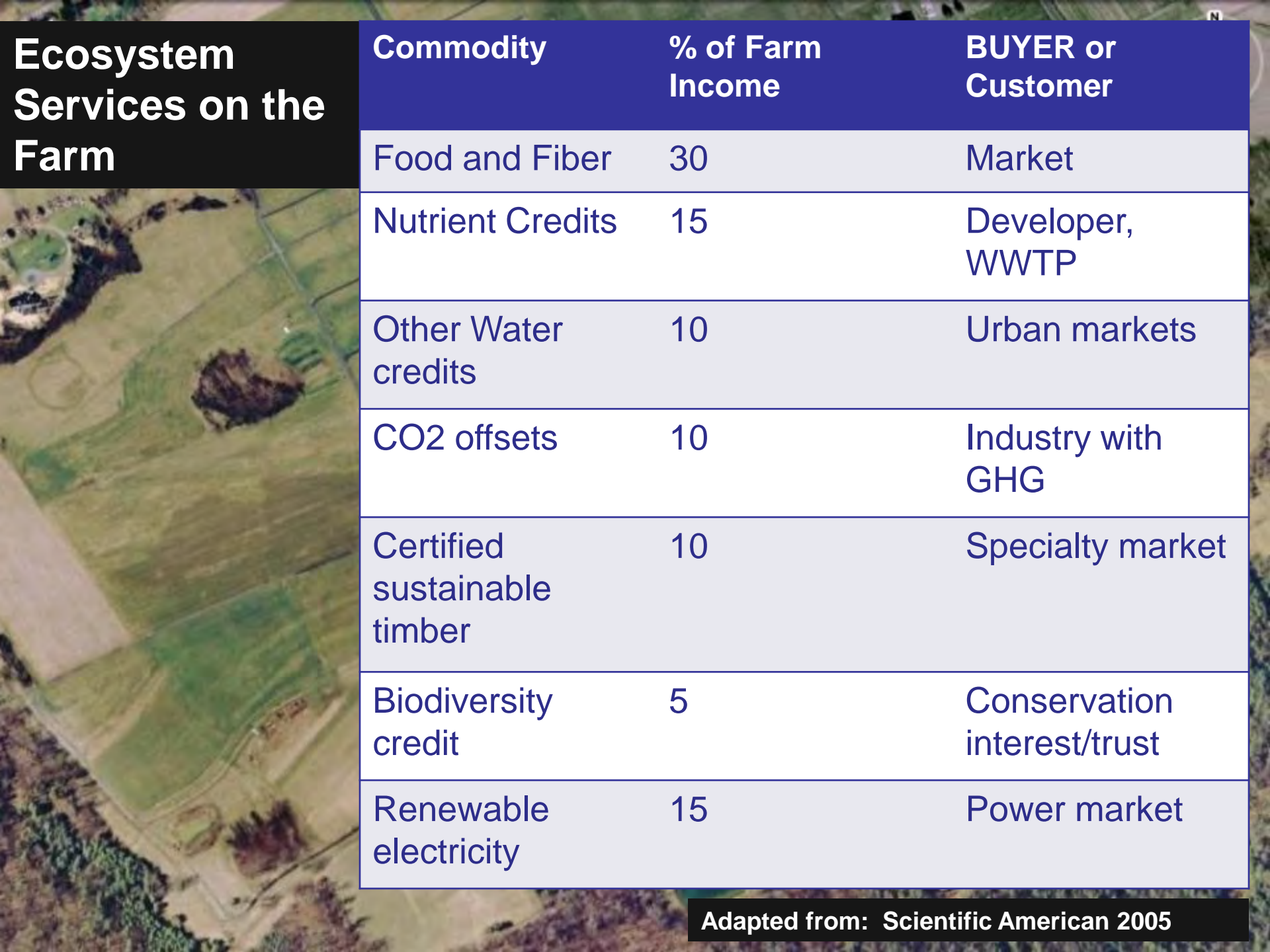
Certified Sustainable Forests: Timber harvest for “eco-labels”

Biodiversity credits:
Habitat for threatened species or vanishing ecosystems

Nutrient Credits: N, P, sediment – but also water filtration, flood control, wetlands

Environmental Markets

- Identify the environmental markets (existing and future) that are linked to these services and available to the Conewago community.
- Evaluate the potential for generating credits based on NEW or emerging management.
- Are community-based cooperatives for environmental markets an option?
- Support landowners efforts in identifying and meeting baselines necessary for participating in existing and emerging environmental markets.



Ecosystem Services on the Farm

Commodity	% of Farm Income	BUYER or Customer
Food and Fiber	30	Market
Nutrient Credits	15	Developer, WWTP
Other Water credits	10	Urban markets
CO2 offsets	10	Industry with GHG
Certified sustainable timber	10	Specialty market
Biodiversity credit	5	Conservation interest/trust
Renewable electricity	15	Power market

Adapted from: Scientific American 2005

Non-natives enjoying the Conewago's Ecosystem Services



For more information:

- Kristen Saacke Blunk, Penn State, ksaackeblunk@psu.edu
- Mike Hubler, Dauphin Co Conservation District, mhubler@dauphinc.org
- Matt Royer, Penn State (effective 5/3/10)