



# Developing Markets for Ecosystem Services

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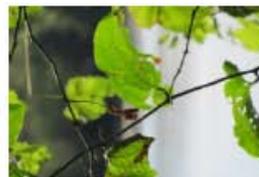
# What are markets for ecosystem services?

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## A tool for...

- Paying landowners for the ecosystem services they provide on their private lands
- Investing private funds in natural capital
- Encouraging innovation
- Reducing the costs of regulatory compliance
- Improving the effectiveness of practices

...bringing real, verifiable conservation to scale



# U.S. markets for ecosystem services

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## Greenhouse gas offsets ( $\text{CO}_2$ , $\text{NH}_4$ , $\text{N}_2\text{O}$ )

- Regional Greenhouse Gas Initiative
- Oregon  $\text{CO}_2$  Standard
- Voluntary markets

## Water quality credits (N, P, temperature, sediment)

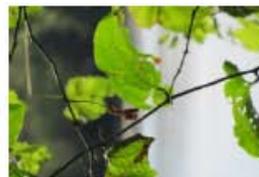
- Total Maximum Daily Loads (TMDL) under the Clean Water Act

## Wetland mitigation banking

- Clean Water Act Section 404

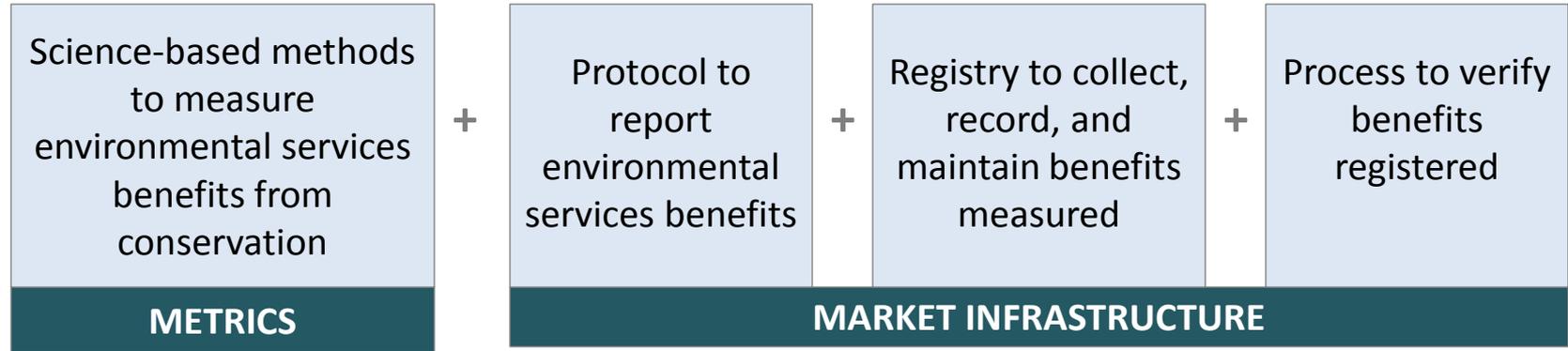
## Conservation banking

- Endangered Species Act
- Voluntary markets for biodiversity/habitat credit trading



# 2008 Farm Bill: Section 2709

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**Use of existing information:** Build on existing activities or information

**Consultation:** Consult with Federal and State government agencies and nongovernmental interests including farm, ranch and forestry producers; financial institutions involved in environmental services trading; academic institutions; NGO's; and private sector representatives

**COORDINATION**

# The Office of Environmental Markets

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Helping to build unified, transparent **markets for ecosystem services** where landowners can participate and buyers can trust that they're purchasing a **real conservation benefit.**

In other words...



**...making markets work for conservation**



# Market Development

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## Happening now...

- UMD water quality trading guidelines
- CWS biodiversity metrics



## Coming attractions...

- Registries Protocol Development
- Verification Guidelines Development





# Government Collaboration

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## Happening now...

- USDA Coordination Council
- USDA Interagency Working Group
- Cross government policy dialogues



## Coming attractions...

- Federal activity inventory and assessment



# Advance Innovation

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## Chesapeake Bay EO13508

### C'Bay Environmental Markets Team

- Led by OEM
- Baselines issue paper
- Anatomy of ecosystem services
- Reporting and verification protocols





# Advance Innovation

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## Upper Mississippi and Ohio River Basin MOU

– USDA/EPA/EPRI

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- Coordinate research and activities;
  - Support data collection and analysis;
  - Explore barriers and ways to overcome them;
  - Support demonstration projects
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# Build an Information Gateway

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## Nutrient Trading Tool

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- Web based, User Friendly model
  - Calculates estimates for:
    - Nitrogen
    - Phosphorus
    - Sediment
    - Yield



United States Department of Agriculture  
Natural Resources Conservation Service



Agricultural Research Service  
the in-house research arm of the U.S. Department of Agriculture



# Build an Information Gateway

## Farm of the Future

- Sacramento River
- Watson Partners Farm
- Buck Island Ranch
- Mudford Farm
- Big River and Salmon Creek Forests

**FARM OF THE FUTURE**

### Buck Island Ranch

In a pilot project where Florida ranchers are paid to retain water on their pastures, wetland and native areas, the Florida Ranchlands Environmental Services Project (FRES) is laying the groundwork for a Payment for Ecosystem Services (PES) program that would yield critical water and nutrient retention services while creating an additional revenue stream for working ranches.

**Northern Everglades**  
Buck Island and the other FRES ranches are located in a region of

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**FARM OF THE FUTURE**

### Mudford Farm

Keeping core farmland in production while addressing pollution problems in the Bay, the Biophilia Foundation buys degraded farm properties and implements conservation measures with Chesapeake Wildlife Heritage to increase the ecological and economic value of the land.

**Chesapeake Bay**  
Mudford Farm is located within the Chesapeake Bay region on Maryland's eastern shore. The Chesapeake Bay is the largest estuary and one of the biologically richest areas in the United States. Historically an important fishing and seafood production region, it has been adversely impacted by nutrient runoff causing algal blooms and the creation of a dead zone in the Chesapeake. Non-point source agricultural runoff from fertilizer and manure comprise a significant portion of excess nutrients in the Bay.

**Field Borders** 15 acres habitat for grassland birds, established through Conservation Reserve Enhancement Program

**Filter Strips** 25 acres warm season grasses, established through Conservation Reserve Enhancement Program

**Ditch Plug** Wetland restoration technique

**Wooded Wetland** 10 acres, established through Maryland Department of the Environment mitigation easement

**Before** **After**

**Crop Areas with Poorly Drained Soil**

**Emergent Wetland** 30 acres, established through Conservation Reserve Enhancement Program

**Crop Fields** 80 acres Corn/wheat/soybean rotation

**Temperate Woodland** 112 acres, naturally occurring

Through local partnerships and federal programs, the Biophilia Foundation is restoring 80 acres of wetland, creating 40 acres of warm season grass meadow, and restoring 10 acres of wooded wetland on Mudford Farm.

These conservation practices set up a natural filter for agricultural runoff, and create a habitat for waterfowl, shorebirds, turtles, frogs, and song birds, thus increasing the ecological value of the land.

The Biophilia Foundation is negotiating an easement sale through CREP to permanently protect the nutrient reduction credits restored wetlands and (buffers) plus an additional 80 acres of woodlands.

Once the protection of the property is complete, it will be resold and the buyer will continue to produce crops on the 80 acres of land with the most productive soils. Revenue from the wetland mitigation easement and nutrient reduction credits will be reinvested in similar projects.

#### Farm Income Sources, 2009

Source	% of Income	Customer
Corn, soy and wheat revenue	49%	Quality companies
CREP rental payment	35%	The State of MD
Wetland Hunting leases	20%	Spartan

Pre-restoration revenue (2009) is 132k greater than pre-restoration revenue (2006)

For more information, please contact Richard Pritzlaff at the Biophilia Foundation at [Biophilia@bioweb.com](mailto:Biophilia@bioweb.com), the Office of Environmental Markets at the USDA at [OEM@usda.gov](mailto:OEM@usda.gov), or EcoAgriculture Partners at [info@ecoagriculture.org](mailto:info@ecoagriculture.org)

USDA OFFICE OF ENVIRONMENTAL MARKETS

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# Thanks!

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