



# Making Markets Work for Conservation

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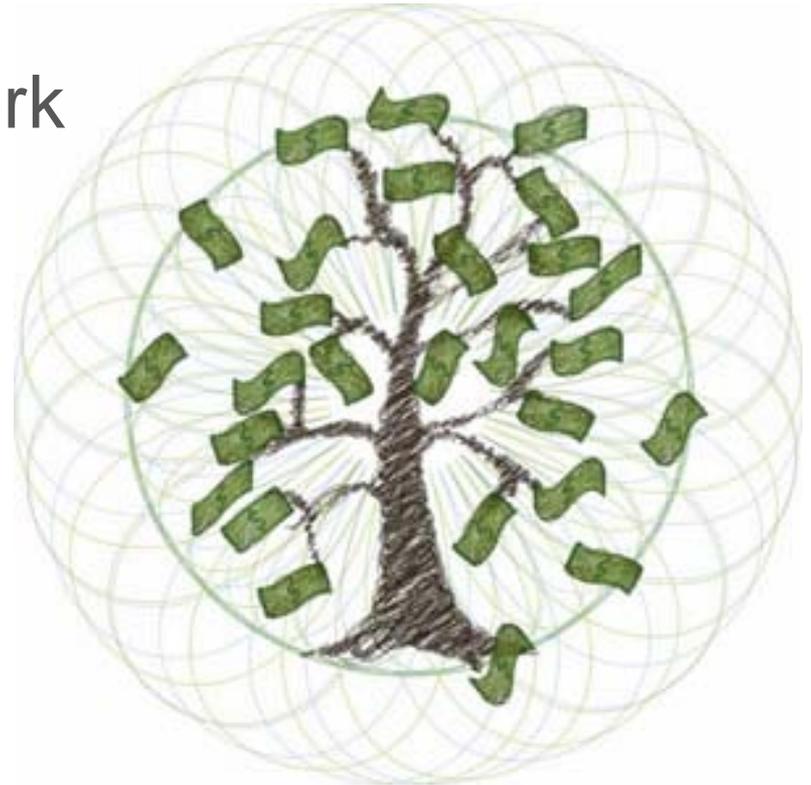
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U.S. Department of Agriculture

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# Agenda

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- Markets for ecosystem services
- 2008 Farm Bill and the Office of Environmental Markets (OEM)
- OEM 2011 Program of Work
- Looking beyond 2011



# What are markets for ecosystem services?

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## A tool for...

- Compensating landowners for the ecosystem services they provide on their private lands
- Investing private funds in natural infrastructure
- Reducing societal costs of regulatory compliance
- Encouraging innovation
- 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
- California Endangered Species Act and California Environmental Quality Act
- Pre-compliance/voluntary markets for habitat credit trading



# 2008 Farm Bill: Section 2709



Science-based methods  
to measure  
environmental services  
benefits of land  
management practices

+

Protocol to  
report  
environmental  
services benefits

+

Registry to collect,  
record, and  
maintain benefits  
measured

+

Process to verify  
benefits  
registered

## MARKET INFRASTRUCTURE

Build on existing activities or information

## EXISTING INFORMATION

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

## CONSULTATION AND COORDINATION

# 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**

# OEM Program of Work - 2011

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## Market infrastructure

- Technical guidelines for carbon and water quality metric development
- Assessment of existing biodiversity/habitat and wetlands metrics



## Application in the Chesapeake Bay

- Water quality trading rules under new Total Maximum Daily Load
- Tool integration and application (Nutrient Trading Tool)
- Interdepartmental Environmental Markets Team

# OEM Program of Work - 2011

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## Collaboration – USDA Council and Work Group



- Research agenda
- Policy development
- Tool and resource development
- Integration with USDA programs

## Ex: New USDA greenhouse gas efforts



- NRCS Conservation Innovation Grants and incentives – \$15 million for large-scale demonstrations of carbon sequestration
- FSA Voluntary Carbon Data Project – providing carbon sequestration estimates to certain landowners participating in CRP

# OEM Program of Work - 2011

- Information Delivery
  - Website launch
  - Communications strategy
  - *Farm of the Future*

## FARM OF THE FUTURE

### Buck Island Ranch

**Northern Everglades**  
Buck Island and the other FRESF ranches are located in a region of central Florida known as the Northern Everglades. A critical part of the Greater Everglades Ecosystem, this region has experienced severe reductions in biodiversity and an array of hydrological problems driven by changes in land use and water management over the last 100 years. Today, despite rapidly expanding urbanization, ranching is still the dominant land use in this region.



## 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.*

**FRESF Project Boundary**



**Monitoring Stations**

**Wetlands**

**Major Ditches**

**Pasture Fields**  
Sod, cabbage palm

**FRESF Water Control Structures**

**Farm Income Sources, averaged 2007-2009**

Source	% of Income	Customer
Cattle sales	88.6%	Feedlots
Other agricultural revenue (sod, cabbage palm)	3.2%	Sod and tree harvesters
Hunting leases and nature tourism	3.2%	Sportsmen and tourists
Participation testing pilot Payment for Ecosystem Services program	5%	State agencies

**Farm Income Sources, 2009**

Source	% of Income	Customer
Corn, soy and wheat revenue	45%	Poultry companies
CREP rental payment	35%	The state of MD
Wildlife hunting leases	20%	Sportsmen

Post restoration revenue (2009) is 112% greater than pre-restoration revenue (2006)

**Key Features and Outcomes:**

- Culverts with riser structures installed in a network of drainage ditches allow Buck Island Ranch to manage ranch stormwater runoff to increase water retention and reduce phosphorus load from the project site.
- Culverts with riser structures installed in a network of drainage ditches reduce phosphorus runoff from ranching and other land uses, and retain water on ranchland.
- Ranch staff have reported an increase in wetland plants, frogs, wading birds, and ducks in response to higher water levels and water retention associated with the project.
- During the FRESF pilot phase, Buck Island Ranch receives payment for land rental, forgone production, and consultation on the design of the PES program. In a scaled-up program, payment would be based on either acre feet of water retention or nutrient load reduction with the payment established through a reverse auction process.

**Conservation and Restoration:**

- Through local partnerships and federal programs, the Biophilia Foundation is restoring 30 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.

**For more information, please contact Patrick Bohlen at the Archbold Research Station at [PBohlen@archbold-station.org](mailto:PBohlen@archbold-station.org), the Office of Environmental Markets, USDA at [OEM@usda.gov](mailto:OEM@usda.gov), or EcoAgriculture Partners at [info@ecoagriculture.org](mailto:info@ecoagriculture.org)**

# *Farm of the Future*

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## Five cases

- Wheat, corn, and alfalfa farm (California)
- Corn, soy, and wheat farm (Maryland)
- Cattle ranch (Florida)
- Sugar beet cooperative (Minnesota)
- Forest providing timber (California)



## Findings

- Public programs jumpstart innovation
- Creative financing is often needed
- Demand is critical
- It takes a team



# Looking beyond 2011

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- Complete implementation of Section 2709
  - Technical guidelines for developing metrics, reporting protocols, registries, and verification processes
- Apply guidelines and other work products in the Chesapeake Bay and other areas
  - Federal Government as possible pilot purchaser of environmental outcomes
  - Improving project financing options (early capitalization of payments, revolving loan funds, loan guarantees)
- Next Farm Bill





“Environmental markets have the potential to become a new economic driver for rural America, exactly what we need to support a bold, creative future for America’s farmers, ranchers, and rural communities.”  
–Secretary Vilsack

**Thank you!**

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