

Sally Collins, Director
USDA Office of Ecosystem Services and Markets
October 12, 2009

The National Capital Chapter of the SWCS held its fall brown bag seminar on 10/12/2009, featuring Sally Collins, Director of USDA - Office of Ecosystem Services & Markets. About 20 persons attended, including the 2008 Norm A Berg Conservation Award winner, Carole Jett. Carole's was recognized at the event and she spoke briefly about the example set by Norm for professional conservationists throughout his life, up until the very end.

The Chapter was proud to be able to offer at this seminar a presentation by Sally. The OESM was created in response to the Food, Conservation and Energy Act of 2008 (The 2008 Farm Bill). Ms. Collins' PowerPoint presentation can be seen below. She laid out for us what their office is doing and how they and Secretary Vilsack are talking about ecosystem services and the role that various federal offices and agencies can play to make it work for landowners and operators. She offered thought provoking information on the environmental messages that her and staff deliver to sponsors, stakeholders and customers to regarding valuable ecosystem services that could be made available through the implementation and delivery of marketable conservation goods. These goods, in the form of nutrient cycling, fresh water, and aesthetic and other values could then be marketed to organizations as a cost-effective means to acquire desirable or necessary environmental improvements. The resulting environmental purchases could provide landowners and farmers with stable income for the valuable conservation amenities produced on a well managed and environmentally friendly farming operation. Conservation amenities would thus become a valuable commodity to be sold on a highly transparent marketplace to qualified bidders.

Prepared by Tom Hebert - Chapter President and Tom Fedewa, Chapter Vice President



USDA
Office of Ecosystem Services & Markets

Soil and Water Conservation Society
National Capital Chapter
10/27/2009



outline

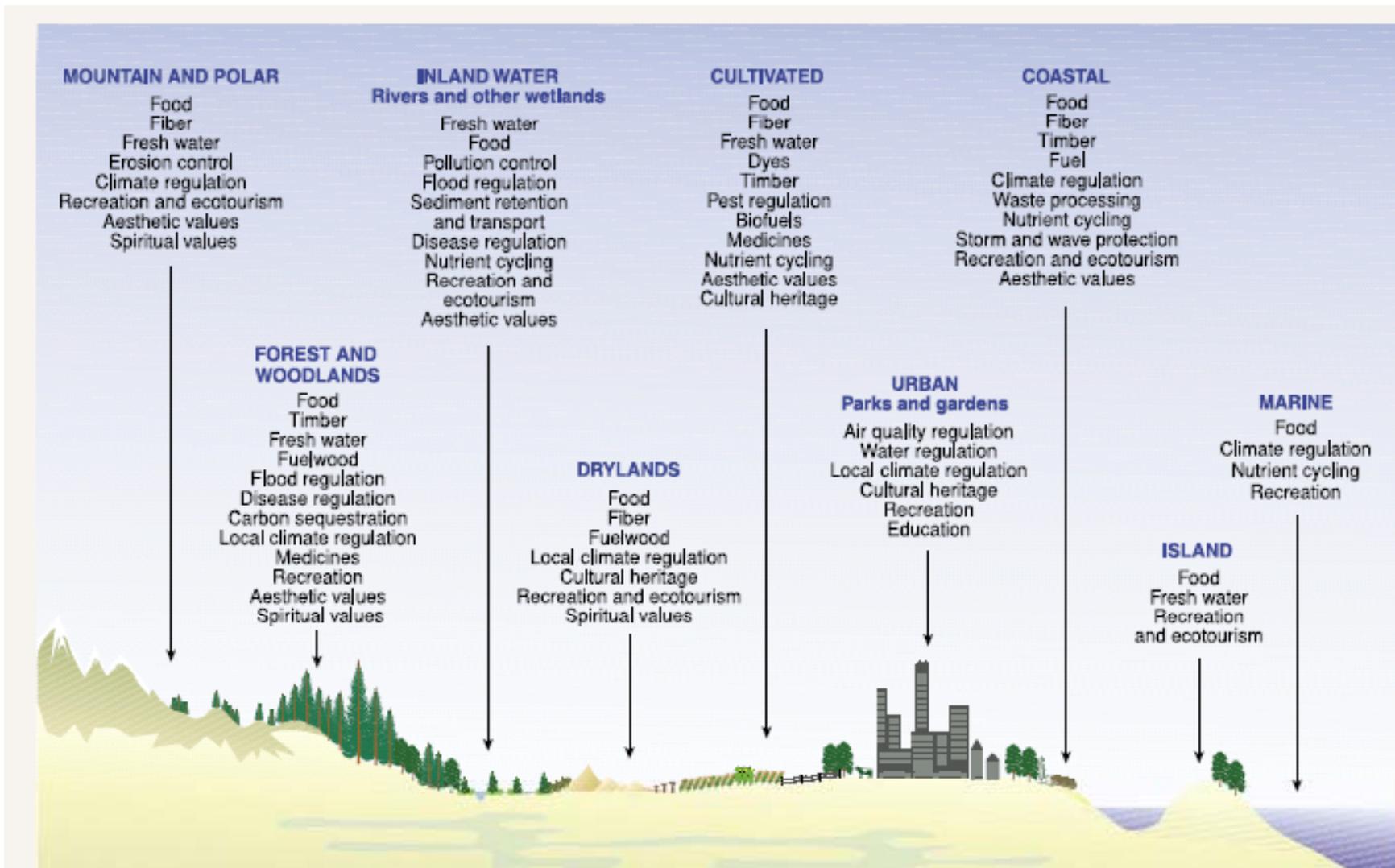
- Ecosystem Services 101: a brief introduction
- Emerging markets: working lands of the future
- Market needs: proof of concept
- The Office of Ecosystem Services and Markets

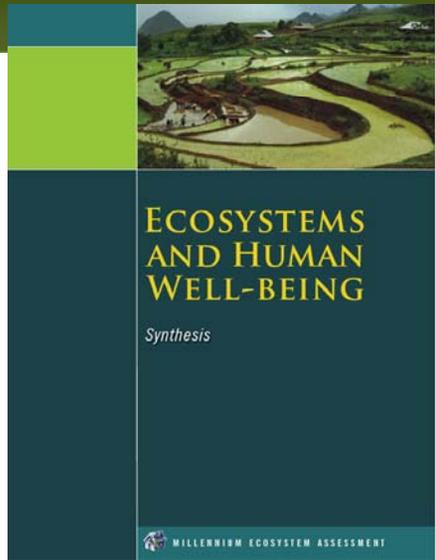


Ecosystem services...

The benefits people obtain from ecosystems.

ECOSYSTEM SERVICES	
Supporting Services Nutrient cycling Soil formation Primary production	Provisioning Services Food (crops, livestock, wild foods, etc...) Fiber (timber, cotton/hemp/silk, wood fuel) Genetic resources Biochemicals, natural medicines, pharmaceuticals Fresh water
	Regulating Services Air quality regulation Climate regulation (global, regional, and local) Water regulation Erosion regulation Water purification and waste treatment Disease regulation Pest regulation Pollination Natural hazard regulation
	Cultural Services Aesthetic values Spiritual and religious values Recreation and ecotourism





Millennium Ecosystem Assessment

2005

1360 experts, 95 countries

“Approximately 60% of the ecosystem services evaluated in this assessment are being degraded or used unsustainably.”

		Habitat change	Climate change	Invasive species	Over-exploitation	Pollution (nitrogen, phosphorus)
Forest	Boreal	↗	↑	↗	→	↑
	Temperate	↘	↑	↑	→	↑
	Tropical	↑	↑	↑	↗	↑
Dryland	Temperate grassland	↗	↑	→	→	↑
	Mediterranean	↗	↑	↑	→	↑
	Tropical grassland and savanna	↗	↑	↑	↘	↑
	Desert	→	↑	→	→	↑
Inland water	↑	↑	↑	→	↑	
Coastal	↗	↑	↗	↗	↑	
Marine	↑	↑	→	↗	↑	
Island	→	↑	↘	→	↑	
Mountain	→	↑	→	→	↑	
Polar	↗	↑	→	↗	↑	

Driver's impact on biodiversity over the last century

- Low (light yellow)
- Moderate (yellow)
- High (orange)
- Very high (red)

Driver's current trends

- Decreasing impact (↘)
- Continuing impact (→)
- Increasing impact (↗)
- Very rapid increase of the impact (↑)

Source: Millennium Ecosystem Assessment

Drivers of ecosystem loss

Habitat / Land use change and conversion

Overexploitation e.g. overfishing

Pollution, particularly nutrient loading

Invasive species

Anthropogenic climate change



The degradation of ecosystem services represents loss of a capital asset.

Markets for ecosystem services...

Arrangements for placing economic value on natural assets normally “outside the market”

Financial systems through which those receiving benefits can compensate producers of benefits



Markets are a tool for valuing our resources

- Create a pivotal link between ecosystem service providers and those who need or desire the services
- Promote public awareness of the importance of nature to human health and well-being
- Provide an economic incentive for private landowners to own and sustainably manage their land
- Target conservation actions
- Encourage private investments
- Create green business opportunities
- Help identify & measure successes of conservation and restoration
- Inspire individual efforts to reduce consumption



In many cases, investments in ecosystem protection are more cost-effective alternatives to building new, or improving existing infrastructure designed to meet the same societal goals.

built infrastructure



natural infrastructure



*In northwestern Oregon, a local wastewater facility is paying upstream landowners to plant shade trees along the Tualatin River. Instead of installing refrigeration systems at two treatment plants—a **\$35 million expense** with additional annual operating costs—the water utility is investing **\$6 million** in direct **landowner incentives** to achieve the same water quality goals.*

Elements of an ecosystem services market

Market infrastructure

market players (buyers, sellers, brokers/aggregators, verifiers, regulators)

institutions (exchange or meeting place, registry)

rules and standards: protocols for measuring, monitoring, verification

Assurances that cover the inherent risks: credit quality, permanence, potential for reversal

Accessible information for buyers and landowners



Types of markets

Payments for Ecosystem Services (PES)

Most prominent world-wide; traditional or new outcome-based incentives

e.g. NYC watershed payments to upstream landowners; USDA's Conservation Reserve Program

Voluntary, Over the Counter (OTC) exchanges

Usually in the absence of regulation; 1 to 1 deals – benefit and opportunity

e.g. OTC retail carbon, project-based

Compliance Markets

Regulatory standards or pollution caps; driven primarily by lower cost

e.g. carbon cap-and-trade; wetland mitigation banks

Water markets in the U.S.

Water quality (Nitrogen, Phosphates, sedimentation, temperature) and quantity

e.g. Willamette Partnership, State of Oregon; Miami River Watershed, State of Ohio

Wetlands

500 wetland mitigation banks in 42 states worth \$3 billion USD

Regulatory drivers

Clean Water Act: Section 404,
NPDES permits, TMDLs



Willamette Basin

Biodiversity markets in the U.S.

Species and Conservation Banking

113 species banks total, operating in 12 states worth \$370 million

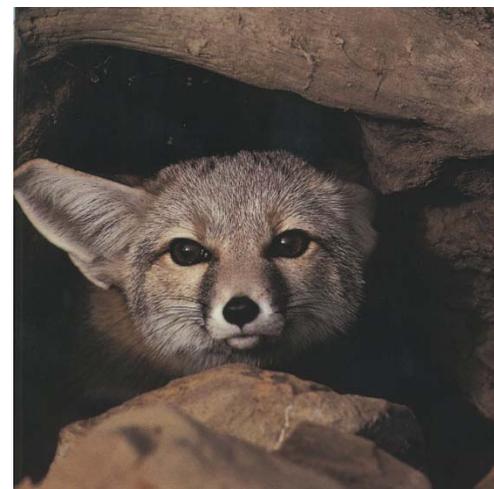
78 species banks protect 63,000 acres for 30 federally listed species

\$3,000/acre for San Joaquin Kit Fox habitat

\$125,000/acre for Least Bell's Vireo habitat

Regulatory driver

Endangered Species Act : Section 7 (consultation)
and Section 10 (incidental take)

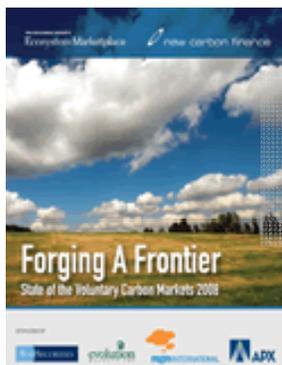


Carbon markets in the U.S.



Two components to the voluntary carbon market:

OTC carbon (44 % market share 2008) – project-based transactions



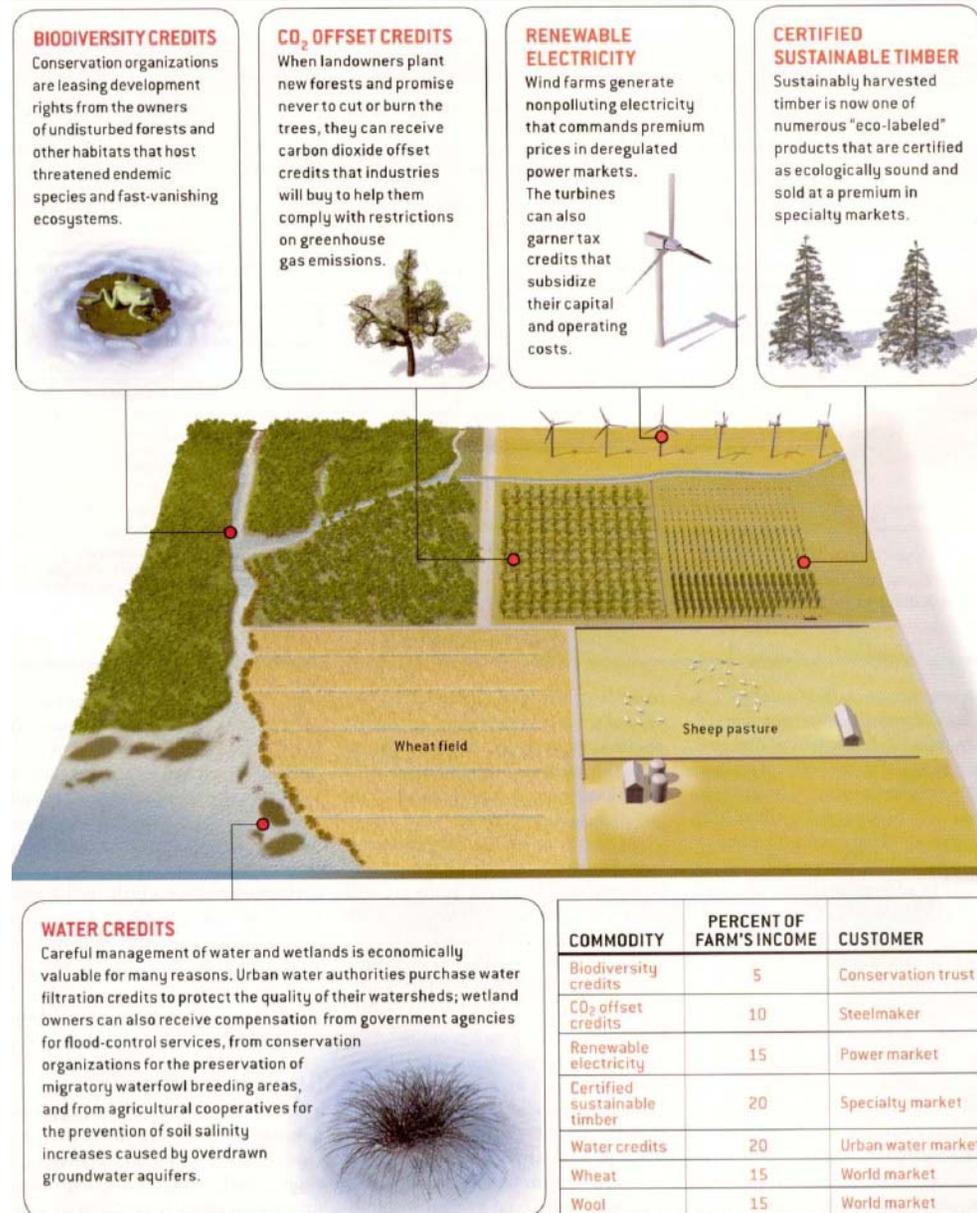
***Voluntary carbon markets nearly doubled in 2008...
123 million metric tons CO₂e worth \$705 million***

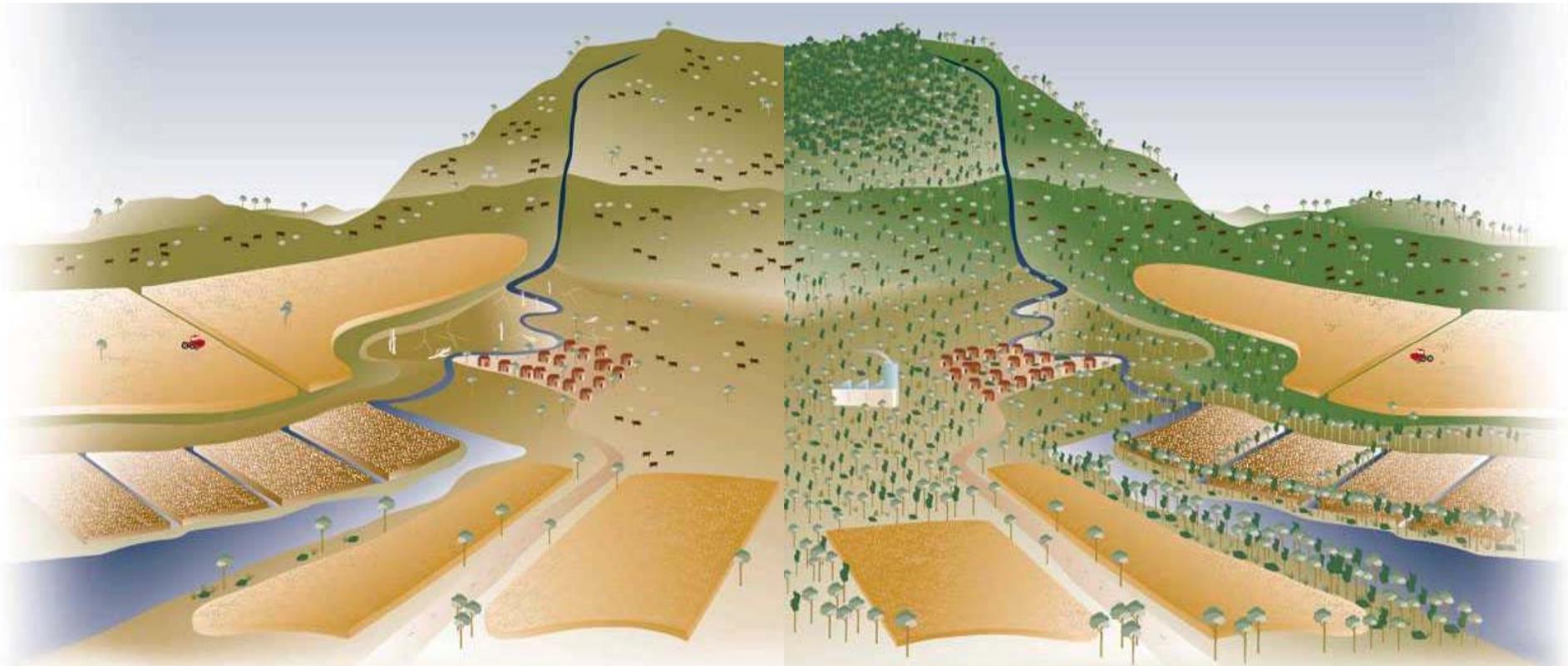
Potential regulatory drivers of cap-and-trade with GHG offsets

California's *Global Warming Solutions Act (AB 32)*

Federal *Waxman-Markey climate and energy bill (HR 2454)*

A FARM of the FUTURE...





P R E S E N T

The existing rural landscape.

LAND USE

OUTPUT	AREA (ha)	REVENUE (000's)
Sheep	200,000	40,000
Cattle	250,000	118,000
Wheat	150,000	112,000
Canola	150,000	490,000
Cotton	150,000	490,000
TOTAL	1,000,000	785,000

ENVIRONMENTAL PROBLEMS

- ◆ Dryland salinity increasing
- ◆ Rising water tables and saline discharge
- ◆ Nutrients leaching into waterways
- ◆ Low biodiversity
- ◆ Soil erosion and turbid waterways

F U T U R E

Planted forests in the landscape create a more diverse economy and a healthier environment.

LAND USE

OUTPUT	AREA (ha)	REVENUE (000's)
Sheep	150,000	18,000
Cattle	120,000	28,000
Wheat	200,000	94,000
Canola	120,000	90,000
Cotton	150,000	490,000
Timber	26,000	12,000
Bioenergy	117,000	9,000
Charcoal	117,000	14,000
Carbon credits		41,000
Salinity credits		26,000
TOTAL	1,000,000	822,000

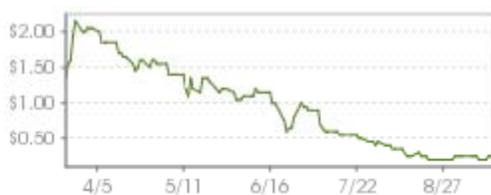
ENVIRONMENTAL BENEFITS

- ◆ Dryland salinity reduced
- ◆ Lower water tables and clean discharge
- ◆ Nutrients retained on farm
- ◆ Biodiversity increased
- ◆ Soil erosion reduced

NewForests

What will make ecosystem markets successful?

- strong demand drivers (i.e., *regulation*)
- clear, consistent **standards** and **protocols**
- low transaction **costs**
- environmental and financial **risk management**
- institutional/policy **frameworks**
- transparency** and **expertise**
- clear **property rights**



CCX carbon: 180 day price history (2009)





Farm Bill 2008: section 2709

The Farm Bill authorizes USDA to create a federal framework to facilitate markets for environmental services...

Guidelines and protocols for measuring environmental benefits

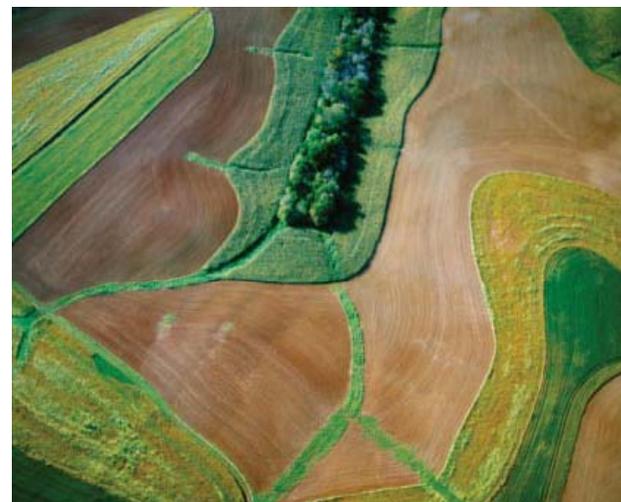
A registry to collect and record environmental benefits

Verification guidelines to ensure benefits are real

The Office of Ecosystem Services and Markets

... to help build a more unified, transparent **market system** where landowners can actively participate in emerging markets, and where investors can trust that they're purchasing a real conservation benefit.

Farm Bill 2008: section 2709



making markets work for conservation

Five points to consider...

I

It's more than carbon



Carbon is only one component

All ecosystems services are connected

We need a holistic, landscape approach

Trade-offs must be recognized

Five points to consider...

2

We need unified standards



Multiple standards exist for carbon;
most have different levels of rigor
Standards must be scientifically defensible
Same holds true for other emerging markets

THE CLIMATE REGISTRY



Five points to consider...

3

Stakeholders need to be involved



Standards development includes policy issues

Markets need to work for landowners, investors,
and government to be robust – and
need to be scientifically

Stakeholders must be engaged in a sanctioned
process

Five points to consider...

4

We must learn from experience

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Featured Article
Will US Stimulus Lift Mitigation Banks?
 Real estate developers aren't starting many new projects these days -- which means they're also not doing much damage to wetlands and wildlife habitat. That's good news for the environment, but bad news for wetland and wildlife mitigation bankers. The Obama stimulus package looks set to give a needed jolt to certain segments of the economy and some banks. [Learn More](#)

Market Snapshot

Number of Banks	122 Banks
Species Credit Types	89 Types
Habitat Credit Types	50 Types
States with Banks	14 States
Land Area Protected	135,677.09 Acres

U.S. Species Banks

Find Banks

Banks by Name

Banks by State

Banks by Species

Banks by Habitat

[» View All Banks](#)

Find Transactions

Transactions by Bank

Transactions by Species

Transactions by Habitat

Transactions by State

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Find Species

Species by Common name

Species by Bank

Species by State

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Find States

States by Name

States by Species

States by Habitat

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Latest News

- Skills shortage poses 'Enron risk' for carbon market
- Blog: Green jobs and Chinese hydropower
- India's carbon market could end soon if EU has its way
- Power plant racks up \$135 million in Clean Air Act violations
- Climate protestors threaten to shut down London's carbon market

[View All Latest News](#)

New to this Market?

- What is Speciesbanking.com?
- Background: US Conservation Banking
- Conservation and Biodiversity Banking Book
- Design of U.S. Habitat Banking Systems E11 Report
- Federal Guidance for Conservation Banks
- Banking on Conservation 2007

[View all Key Resources](#)

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wetland mitigation markets
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Five points to consider...

5

Coordination across governments is key

Authorities developed at different times
Reconcile conflicts; address opportunities
Act as one government



OESM's work is organized around four programmatic goals

catalyze market innovation

1 Shaping the development of national market infrastructure for emerging carbon, water, wetlands, and biodiversity markets

operate as one government

2 Fostering collaboration around market-based conservation, within USDA and across government

build an information gateway

- 3 Establishing **informational platforms** and sharing tools that facilitate market transparency, landowner participation, and collaborative decision-making

define an ecosystem services approach

- 4 Helping USDA and other land management agencies use an **ecosystem services approach** that guides their programs, partnerships, and decisions

So what are we doing?

our current focus

Assessing the current state of ecosystem services markets

Assessing who across federal agencies are involved in these emerging markets

Observing a number of emerging protocol/standards processes in agriculture and forestry

Facilitating development of “brain trusts” in the ecosystem markets domain



...this means meeting with a lot of people.

Investors Solano Partners | New Forests | Working Lands Investment Partners | Equator Environmental | **Registry providers** TZ1-Markit | **Non-profit organizations** World Wildlife Federation | Ecoagriculture Partners | Forest Trends | Winrock International | Resources for the Future | World Resources Institute | Rainforest Alliance | The Nature Conservancy | 25 x '25 | American Lands Alliance | Pacific Forest Trust | Natural Capital Project **Cross-cutting teams** Forest Carbon Standards Committee | Forest Carbon Network Initiative | **Government agencies** USDA | EPA | Army Corps | OMB | Maine Forest Service | **Private sector** PointCarbon | Lyme Timber Company | **Offset Providers** TerraPass | **Foundations** Bullitt Foundation | Walton Family Foundation **Academia and Institutions** Yale University | Duke University | Sustainable Rangelands Roundtable | Ecological Restoration Institute Stanford University | **Landowner and producer organizations** Michigan Farm Bureau | National Farmers Union | National Cattlemen's Beef Association | National Corn Growers Association **Climate programs** Voluntary Carbon Standard | CAR | CCX

It's important to me that the USDA lead efforts to incentivize management practices that promote and provide clean air, clean water, and wildlife habitat, and to help farmers participate in markets that reward them for sequestering carbon and limiting greenhouse gas emissions.



Secretary Vilsack

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