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Offset Credit Stacking: Introduction and Overview

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**With recognition:
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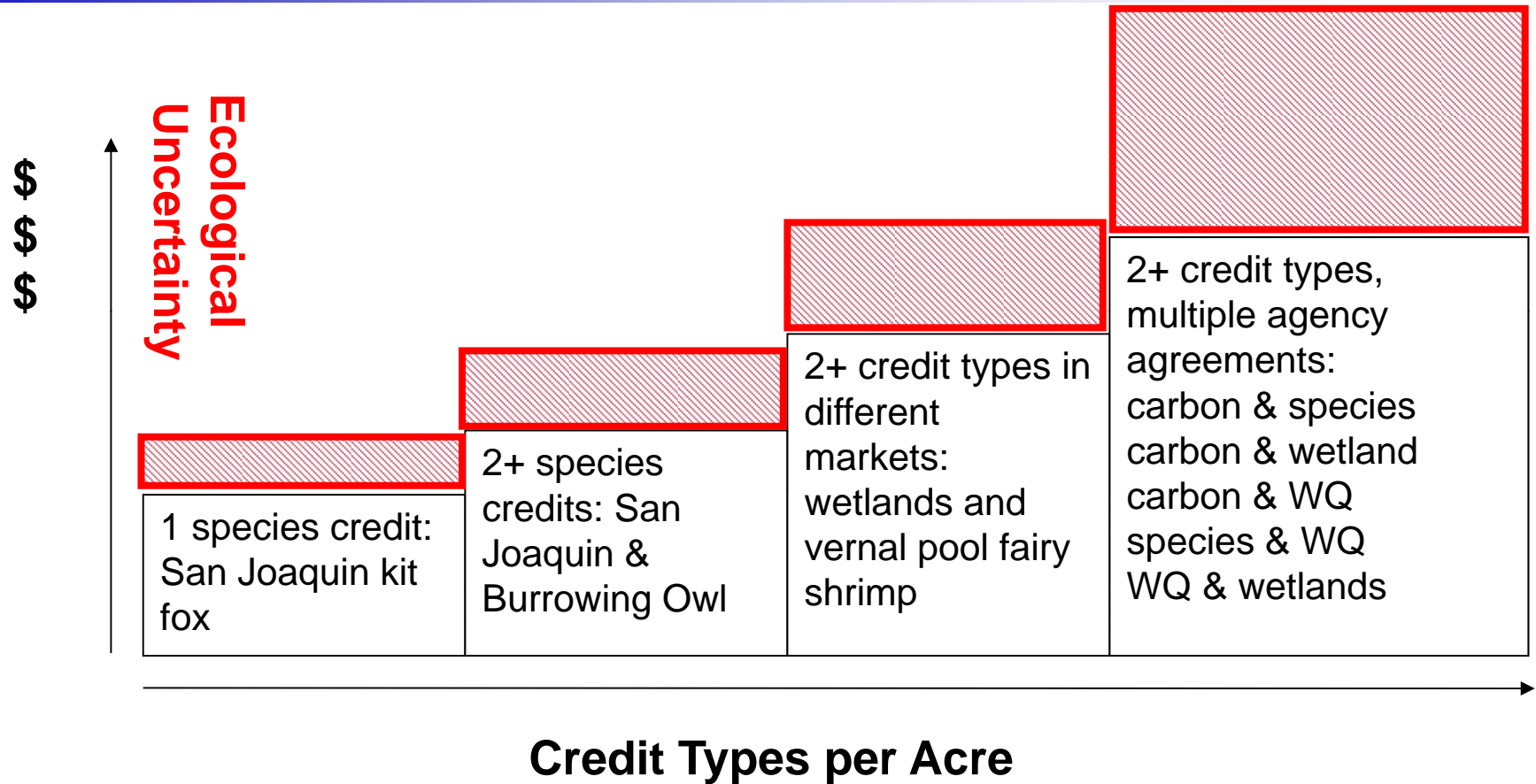
Environmental Credit Markets

Natural Resource	Federal Guidance/ Policy (Year)	Credit Currency	Total Annual Market Value	Credit Price Range
Carbon (global)	Pending	Pounds (lbs) tons CO ₂ e	\$142 billion	\$1-\$20
Wetlands and streams (U.S.)	Mitigation Banking Regulations (2008), superseding Mitigation Banking Guidance (1995)	Acres and functions	\$1.8-\$3.2 billion	\$3,000-\$653,000
Threatened and Endangered Species (U.S.)	Conservation Banking (2003) (1995 in CA only)	Acres and individuals	\$200 million	\$2,500-\$300,000
Water Quality (U.S.)	Water Quality Trading (2003)	Pounds of nutrients, or similarly specific credit	\$10.8 million	<ul style="list-style-type: none"> • \$1.21-\$10 (lb Nitrogen) • \$3.76-\$25.16 (lb Phosphorous)

Confusion of Terms

- Bundling
- Unbundling
- Credit stacking
- Payment stacking
- Double dipping
- Double counting
- Horizontal stacking
- Vertical stacking
- Temporal Stacking

Continuum of Credit Stacking



Fox, J. 2008.
Earthscan.

Unbundling Values

Conservation Bank Credit

Habitat

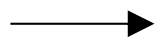
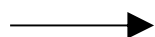
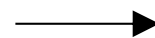
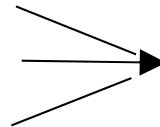
Listed species

non-listed species

Greenhouse gas sequestration

Water filtration & assimilation

Ancillary recreational value



Unbundled Credits

Species Credits

Carbon Credits

Water Quality Credits

Ecotourism/recreation

Fox, J. Getting Two for One: Opportunities and Challenges in Credit Stacking.
In: Conservation and Biodiversity Banking.2008. Earthscan.

Coordination of Policies

7 agencies involved in environmental credit markets!

- Some existing policies are conflicting.
- The absence of policies creates uncertainty.
- Ultimately, lack of clarity and coordination risks accountability of stacked payments & credits and destabilizes markets.

Credit Type	Oversight Agency
Carbon	Private organizations, DOE EPA, USDA
Endangered Species	FWS, state Departments of Fish and Game, NOAA
Wetlands	U.S. Army Corps of Engineers, NOAA, EPA
Water Quality	EPA, Office of Water. Some states.

Regulatory Uncertainty

- The United States Environmental Protection Agency (USEPA) Water Quality Trading Policy:
“supports the creation of water quality trading credits in ways that achieve ancillary environmental benefits . . . such as the creation and restoration of wetlands, floodplains and wildlife and/or waterfowl habitat.”

Assumption is landowner retains rights to those ancillary credits, though not specifically stated.

Regulatory Uncertainty

Thumbs Up from USDA:

USDA allows for “the sale of carbon, water quality, or other environmental credits” associated with federal grants (EQIP, CRP, WRP).


Thumbs Down from EPA & ACE:

United States Army Corps of Engineers (USACE) and USEPA have issued a regulation that precludes the use of CRP or WRP monies to generate wetland credits.

National Credit Stacking Study (Jan 2010)

Collaboration:

- EPRI
- Stetson University
- World Resources Institute
- University of Kentucky



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Survey

Credit Stacking Survey

The Electric Power Research Institute (EPRI), World Resources Institute, Stetson University College of Law, and the University of Kentucky invite you to participate in the first national survey on mitigation credit stacking.

The growing markets in carbon sequestration, water quality trading, and wetland and species banking have brought attention to the need for understanding protocols, case studies, and opinions for how credits can be stacked among these different markets. Compiling the national perspectives on credit stacking requires receiving quality data from market practitioners and regulators like you. Your responses will shape the future of this national debate.

The survey will take about 5 minutes.

[Take the survey](#)

We appreciate receiving your response within two weeks. Please feel free to forward this survey to your contacts involved with market mechanisms.

Thank you very much.

Jessica Fox
Senior Project Manager, EPRI

Profile of Survey Takers

- 318 responses
 - 40% Credit sellers (127)
 - 25% Researchers (87)
 - 25% Policy Makers (85)
 - 10% Buyers (19)



Where it was sent:

- USDA
- Forest Service
- EPA
- NMBA members
- Universities
- Ecosystem Marketplace
- National Ecosystem Research Partnership

Defining Credit Stacking

1. Establishing more than one credit type on one piece of property, but not spatially overlapped. (10%)
2. **Establishing more than one credit type on spatially overlapping areas, ie in the same acre. (83%)**
3. Establishing credits on property that is publicly owned (National Park, Forest Service). (0%)
4. Establishing credits for a best management or conservation practice that was originally funded by the government (via grants, subsidies, payments, etc) (1%).
5. Other (5.5%)

Consensus Definition of Credit Stacking

Not Stacked (Spatially Distinct)		Stacked (Spatially Overlapped)
1 acre forest earning carbon credits	1 acre forest earning endangered species habitat credits	1 acre forest earning both carbon credits and endangered species habitat credits
 <p><i>One property</i></p>		 <p><i>One property</i></p>
Total Credits = 2 Total Acres = 2		Total Credits = 2 Total Acres = 1

Most Common Scenario

Wetland and Species

Van Vleck Ranch Mitigation Bank, California

Vernal pool fairy shrimp (species)

Vernal pools (wetlands)

Elements

Coordinated banking review team.

Once parcel is sold, it is retired.

No double counting.

A Case of Double Dipping?

North Carolina, Neu-Con Bank:

Wetlands (2000) and Water Quality (2009)

More from George Kelly at this workshop . . .

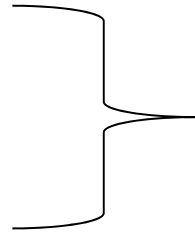
The Crux of Stacking

Can you get paid twice for the same conservation action?

- Drive to maximize **Economic Returns**
- Concern over **Ecological Validation**
- Development of **Policy**

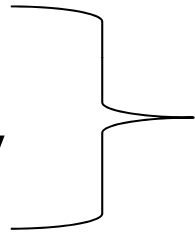
Accounting Units

- Species
- Wetlands



Bundles of Ecosystem Values
(Acres)

- Carbon
- Water Quality



Defined Accounting Units (tons, pounds)

Additionality

- How do you determine additionality:
 - Technology Test
 - Investment Test
 - Barrier Test
 - Common Practice Test
 - Timing Test
 - Performance/ Benchmark Test

Ohio River Basin Trading Project

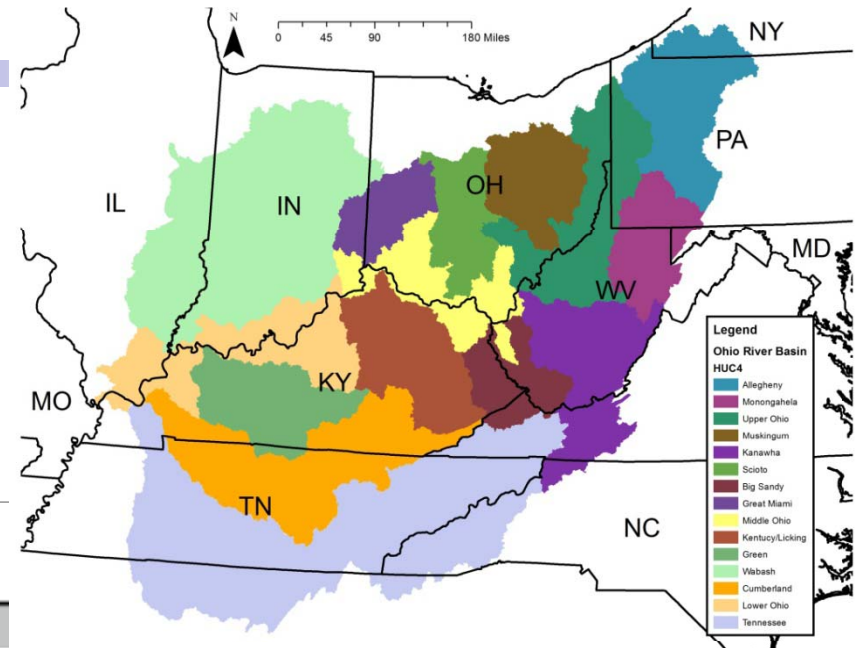
EPRI-MSU N₂O Offsets Protocol
-- "Quantifying N₂O Emissions Reductions in US Agricultural Crops through N Fertilizer Rate Reduction"

Mitig Adapt Strateg Glob Change (2010) 15:185–204
DOI 10.1007/s11027-010-9212-7

ORIGINAL ARTICLE

Nitrogen fertilizer management for nitrous oxide (N₂O) mitigation in intensive corn (Maize) production: an emissions reduction protocol for US Midwest agriculture

Neville Millar • G. Philip Robertson • Peter R. Grace •
Ron J. Gehl • John P. Hoben



The Trading Plan is Signed!

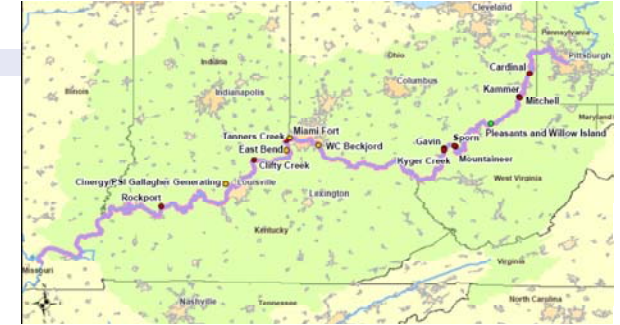
August 9th, 2012 in Cincinnati Ohio



**The
Economist**

June 22: A [nutrient pollution article](#) in The Economist mentions EPRI's Water Quality Trading Program.

ORB WQT Stakeholder Engagement



Organizations:

Electric Power Research Institute
American Farmland Trust
Ohio Farm Bureau Federation
ORSANCO
Tennessee Valley Authority
American Electric Power
Hoosier Energy
Duke Energy
Hunton & Williams
Kieser & Associates
UC Santa Barbara

States:

Ohio
Indiana
Kentucky

Agencies:

USEPA
USDA

Steering Committees:

WWTP
Agriculture
Power Plants
Environmental Groups

Opportunities for Conservation

- BMP Examples:
 - Cattle Exclusion Fencing,
 - Nutrient Management,
 - Cover Crops,
 - Buffer Strips,
 - Grass Waterways,
 - Heavy Use Pads,
 - Manure Pits
- Enhance Ecosystem Services:
 - carbon sequestration,
 - native plants,
 - habitat, etc.



Other Examples

- Environmental Banc and Exchange (EBX)
- Willamette Partnership – Credit Accounting System
- Climate Action Reserve – Policies on Stacking

Ecological Benefit of Stacking

83.9% of survey respondents are optimistic that stacking results in positive ecological benefits.

But . . . 45% did not know of any research or studies that support ecological benefit.

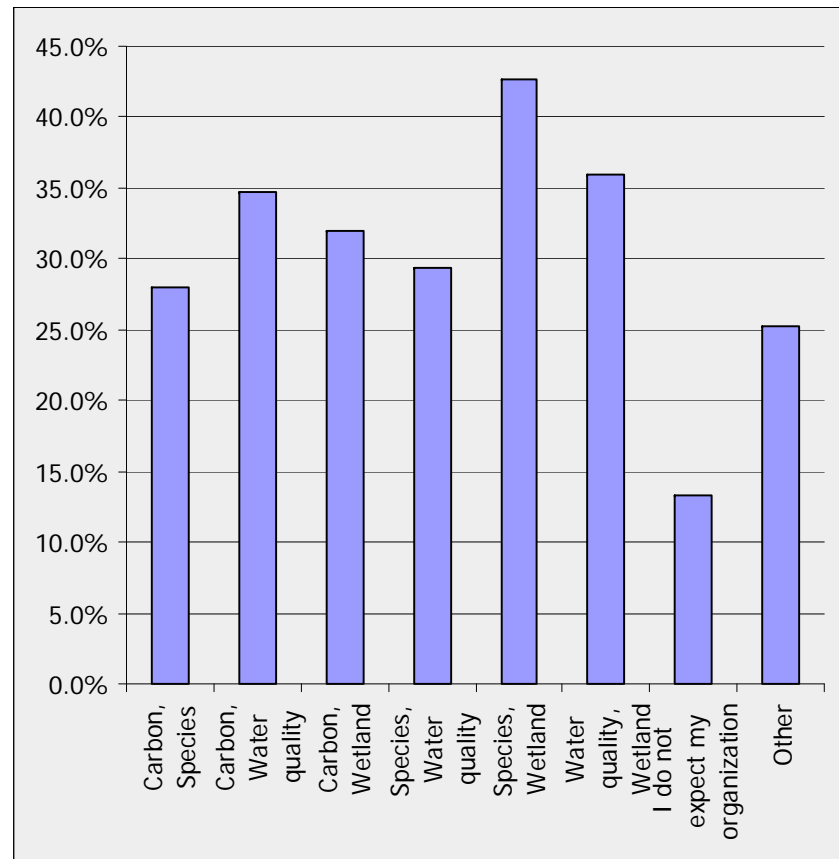
And . . . We didn't find one study to verify additional ecological benefits of credit stacking.

Is Stacking Needed for Conservation?

- Do landowners and project developers need to get more money in order to implement conservation?
- Ohio River Basin WQT Project
 - Farmers willing to do conservation practices on working farms for 75% cost-share (they pay 25%)
 - Is more needed for permanent conservation easements? How much more?

Stacking is Growing

73% of survey respondents plan to become involved in credit stacking.



Current Play of Credit Stacking

- Consensus around definition
- Many sellers, researchers, and policy makers already interested
- Many more are expecting to become involved
- Optimism about the potential for credit stacking to provide positive ecological benefits, despite lack of evidence
- Even interest across various stacking scenarios
- There are very few case study examples of credit stacking, as defined in EPRI Survey
- Very little (if any) scientific research validating optimism about ecological benefits of stacking

Moving from Concept to Reality: Defining Details

- Prohibitions: for example, when acres is the credit metric
- Requirements: additionality, agency monitoring, etc.
- How to test/verify compliance with requirements
- Necessity: Is it needed as a conservation incentive?
- Benefits: Which stacking scenarios lead to good ROI and/or ecosystem benefits.
- Protocols/Policies
- Pilot Projects: what is needed, characteristics, steps.

Questions

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