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Environmental Markets at NRCS

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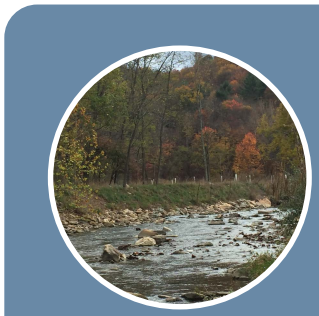
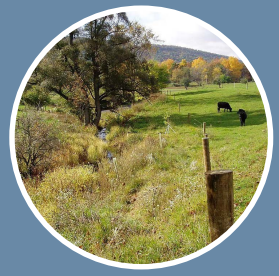
NRCS Conservation Innovations Team



Mitigation Banking

Wildlife Habitat Markets

Greenhouse Gas Markets



Water Quality Trading Markets

Conservation Finance

Consumer-Driven Supply Chain Approaches

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Overview

- What are Environmental Markets?
- Why Environmental Markets at NRCS?
- NRCS roles
- Water Quality Markets
- Greenhouse Gas Markets
- Wildlife Habitat Markets
- Supply Chain Conservation Labeling
- NRCS environmental markets policy
- Environmental markets and NRCS programs

What are Environmental Markets?

- **Ecosystem services are the environmental benefits that healthy ecosystems provide, such as:**
  - Clean water and air
  - Flood prevention
  - Healthy soils
  - Wildlife habitat

- **When ecosystem services can be measured and quantified they can be sold and purchased through emerging markets.**

- **<u>These markets are called ecosystem or environmental markets.</u>**

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Millennium Ecosystem Assessment, 2005

NRCS and Ecosystem Services

Farmers and ranchers often generate ecosystem services for the public good when they implement conservation practices on their lands.

- **Animal waste management, fencing riparian areas → water quality improvements**
- **Rotational grazing, cover cropping → increased soil carbon**
- **Pollinator borders, wetland restoration → wildlife habitat**

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Payment for Ecosystem Services

Public Payments

- Government Tax Incentives (e.g. easements)
- Government Conservation Programs

Private Payments

- Private Conservation Programs
- Voluntary Markets
- Cap-and-Trade
- Certification/Labeling

Source: http://www.ecosystemmarketplace.com/payments-ecosystem-services/

Growth in Markets for Ecosystem Services

nature sustainability

Access provided by USDA

Altmetric: 101 Citations: 1 More detail »

Analysis | Published: 12 March 2018

The global status and trends of Payments for Ecosystem Services

James Salzman ✉, Genevieve Bennett, Nathaniel Carroll, Allie Goldstein & Michael Jenkins

Nature Sustainability **1**, 136–144 (2018) | Download Citation ⬇

"Just two decades ago, Payments for Ecosystem Services (PES) was an obscure term, **with only three PES journal references in 1995**…There are now over 550 PES programmes around the wold, with combined annual payments over $36 billion."

"PES has been featured on the cover of *The Economist* magazine and become a central component of China's nationwide environmental protection strategy.

In 2016, **there were over 1,900 PES journal references**, reflecting the breadth of scholarship that has emerged."

Why Market-based solutions at NRCS?

- **Attracting additional resources to private lands conservation**
- **Potential new source(s) of revenue for landowners**
- **Paying for Performance/Outcomes/Success/Results**

NRCS Roles in Supporting Market-based Solutions

- **Community building and education**
- **Development of ecosystem services quantification tools**
- **Technical assistance for policy-making**
- **Grants to support the development of markets and protocols**

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Community Building and Outreach

About the National Network

National Network Mission

The purpose of the National Network ("Network") is to establish a national dialogue on how water quality trading can best contribute to clean water goals. That includes providing options and recommendations to improve consistency, innovation, and integrity in water quality trading.

Who Participates in the Network

Image: Original participants in the National Network (2013)

Formed in 2013, the National Network on Water Quality Trading started with 18 organizations (shown in the banner above) representing the diversity found in most emerging trading programs in the country, including agriculture, wastewater and stormwater utilities, environmental groups, regulatory agencies and practitioners

National Network Steering Committee
with USDA as technical advisor
American Farmland Trust
Association of Clean Water Administrators
Electric Power Research Institute
Environmental Incentives
Kieser & Associates, LLC
Maryland Department of Agriculture
Mississippi River Collaborative
National Association of Clean Water Agencies
National Milk Producers Federation
The Freshwater Trust
The Ohio Farm Bureau Federation
Troutman Sanders
Willamette Partnership
World Resources Institute

www.nnwqt.org

www.c-agg.org

C-AGG
Coalition on Agricultural Greenhouse Gases

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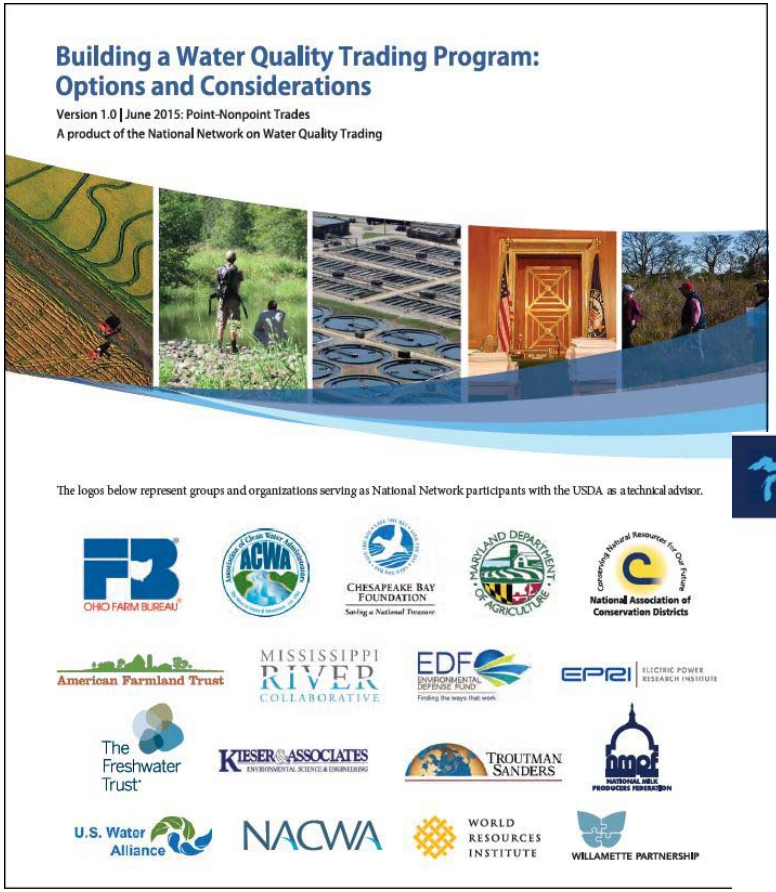
Development of Ecosystem Services Quantification Tools

Technical assistance to States and Stakeholders



CALIFORNIA
AIR RESOURCES BOARD

Grants to Support Market Development

Conservation Innovation Grants

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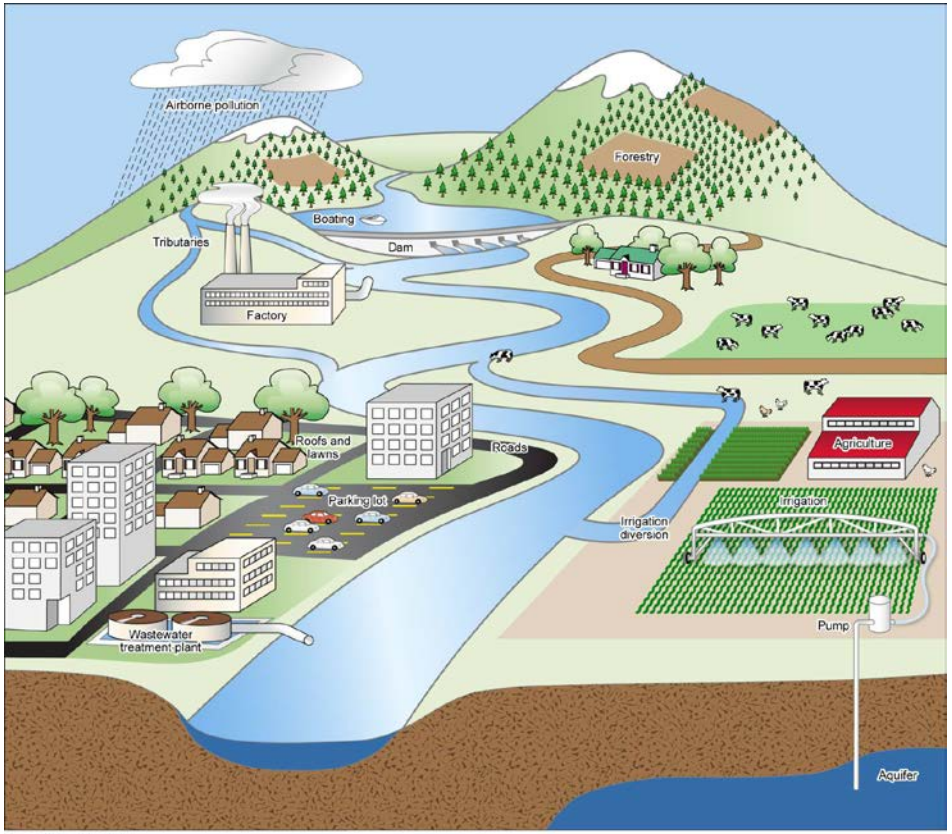
What do markets need to thrive?

- **Sufficient supply of the thing being sold**
- **Sufficient demand to buy that thing**
- **Marketplace rules**
- **Transparency**

Market Sector: Water

- Program-based by jurisdiction—local impacts
- Largely compliance-based



Source: GAO. | GAO-18-84

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Figure Credit GAO

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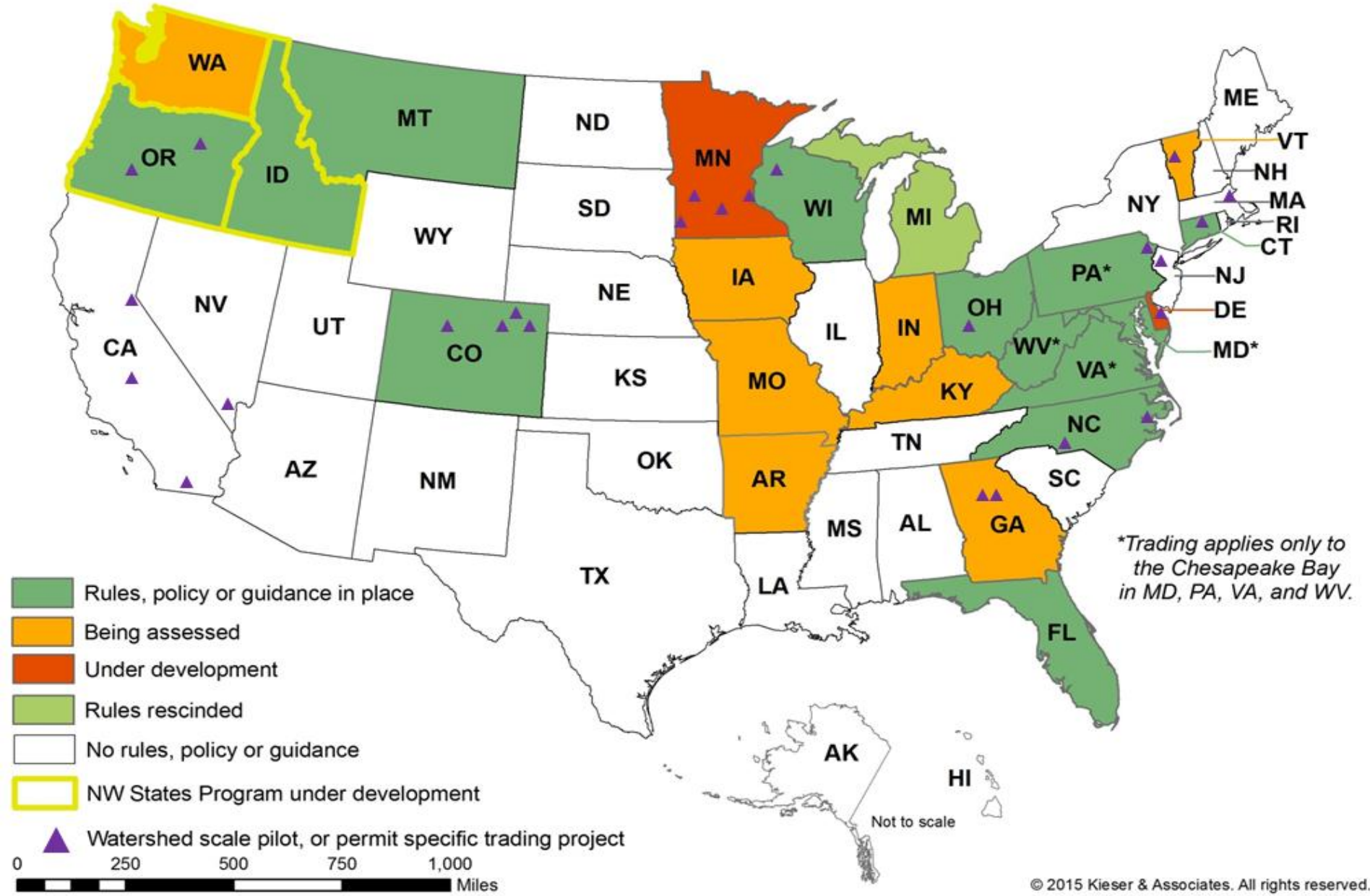

The Ohio River Basin Water Quality Trading Project

Water Quality Trading Project – Ohio River Basin

First-of-its-kind interstate program spans Ohio, Indiana, and Kentucky to evaluate the use of trading by industries, utilities, farmers, and others to meet water quality goals while minimizing costs.

Find more information at: wqt.epri.com

EPRI | ELECTRIC POWER RESEARCH INSTITUTE

The pilot trading period, from 2013-2015, is expected to reduce nutrients by . . .

30,000 lbs of Phosphorous

66,000 lbs of Nitrogen

That's equivalent to keeping 2,950 50-lb bags of fertilizer out of the Ohio River.

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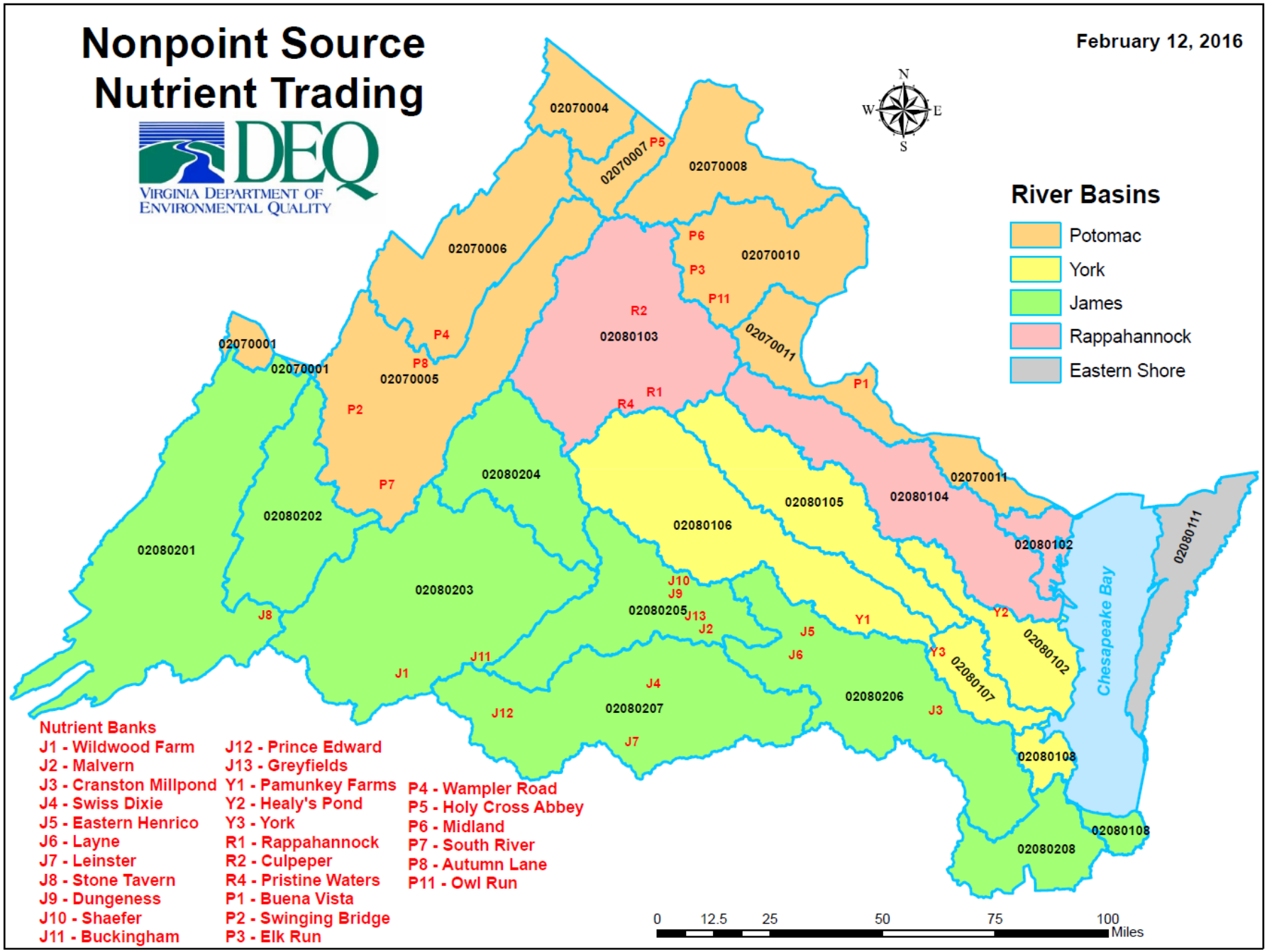
https://www.youtube.com/playlist?list=PLphKrnecF69WvqhErCE8n90ptlHV_Q-HR

Temperature TMDL Trading in the Pacific NW

Nonpoint Source Nutrient Trading

February 12, 2016



Market Sector: Greenhouse Gases

- Protocol-based—national/global impact
- Voluntary and Regulatory (CA) markets

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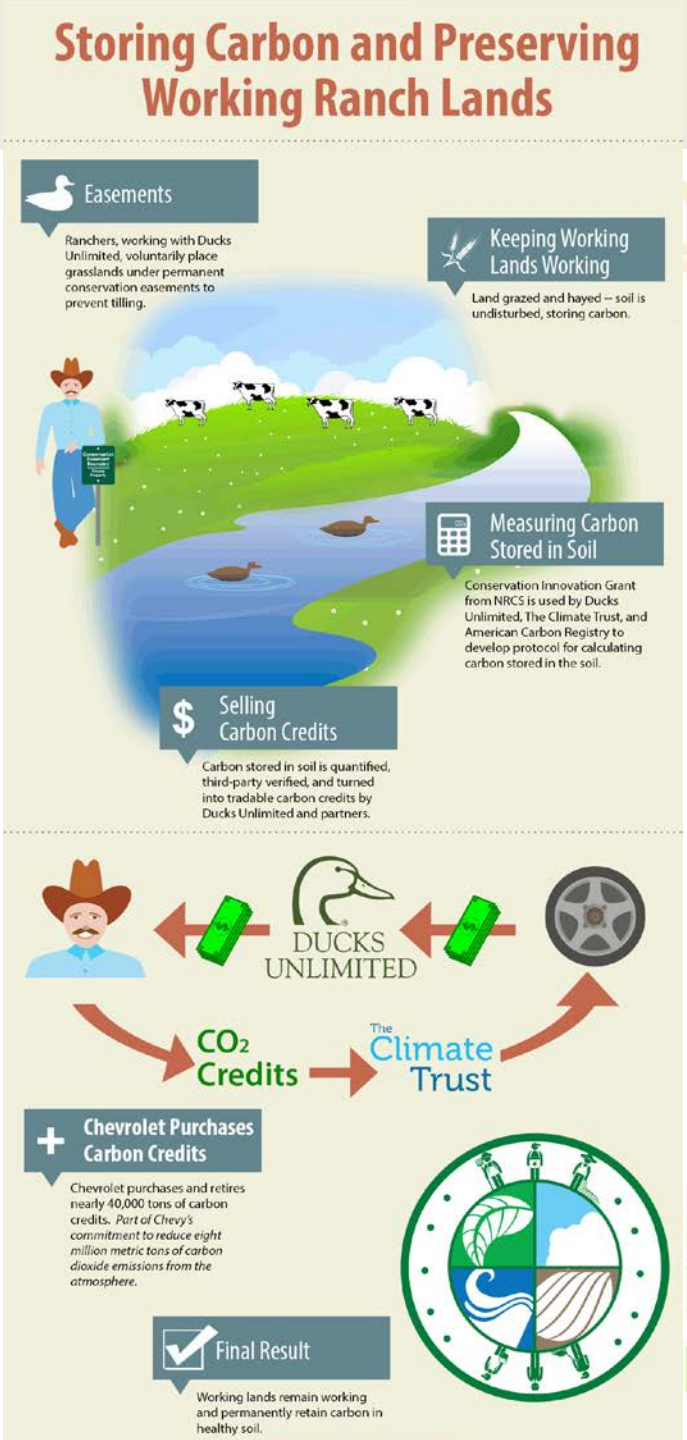
Photo credit Noble Research Institute

Protocol: Avoided Conversion of Grasslands



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Protocol: Reduced Use of Nitrogen Fertilizer

First ever purchase of carbon credits from nitrogen stewardship practices implemented on corn fields

Protocol: Methane reductions from rice production

http://nrcs.maps.arcgis.com/apps/Cascade/index.html?appid=c00a7710dbe04790823c4133777e49c0

Market Sector: Wildlife Habitat

- **Habitat Mitigation Credits and Trading Programs**
- **Mitigation Banking**

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Photo Credit: Jeannie Stafford/USFWS

THE UPPER GREEN RIVER CONSERVANCY™ IS THE NATION'S FIRST CO-OP CONSERVATION BANK™ CREATED TO RESTORE AND MANAGE HEALTHY SAGEBRUSH LANDSCAPES WHILE PROVIDING FOR ENERGY DEVELOPMENT AND CONTINUED RANCHING.

The Upper Green River Conservancy Co-Op Conservation Bank™ (UGRC) is an innovative partnership of energy companies, ranchers, conservation stakeholders, and impact investors working together to ensure the protection of core sage grouse habitat in the ecologically and energy rich Upper Green River watershed in southwestern Wyoming.

For energy companies and developers, UGRC establishes a market based solution to offset the environmental impacts of development. The groundbreaking new model rewards ranchers for conservation practices and establishes critical unfragmented, landscape level protection of valuable habitats and ecosystems. UGRC provides energy companies and other organizations pursuing development the ability to achieve net conservation gains required by State and Federal regulators, and positions Wyoming to sustainably develop its substantial energy resources.

To learn more about the history and ecological importance of the Green River basin please see: The Green River Basin: A Natural History.

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http://www.uppergreenriver.com/


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CONSERVATION CREDIT SYSTEM
Generate net benefit for Greater Sage-Grouse and create regulatory certainty.
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State of Nevada Conservation Credit System
The Conservation Credit System (Credit System) is an innovative approach to greater sage-grouse habitat protection that ensures habitat impacts from anthropogenic disturbances are fully compensated by long-term enhancement and protection of habitat that results in a net benefit for the
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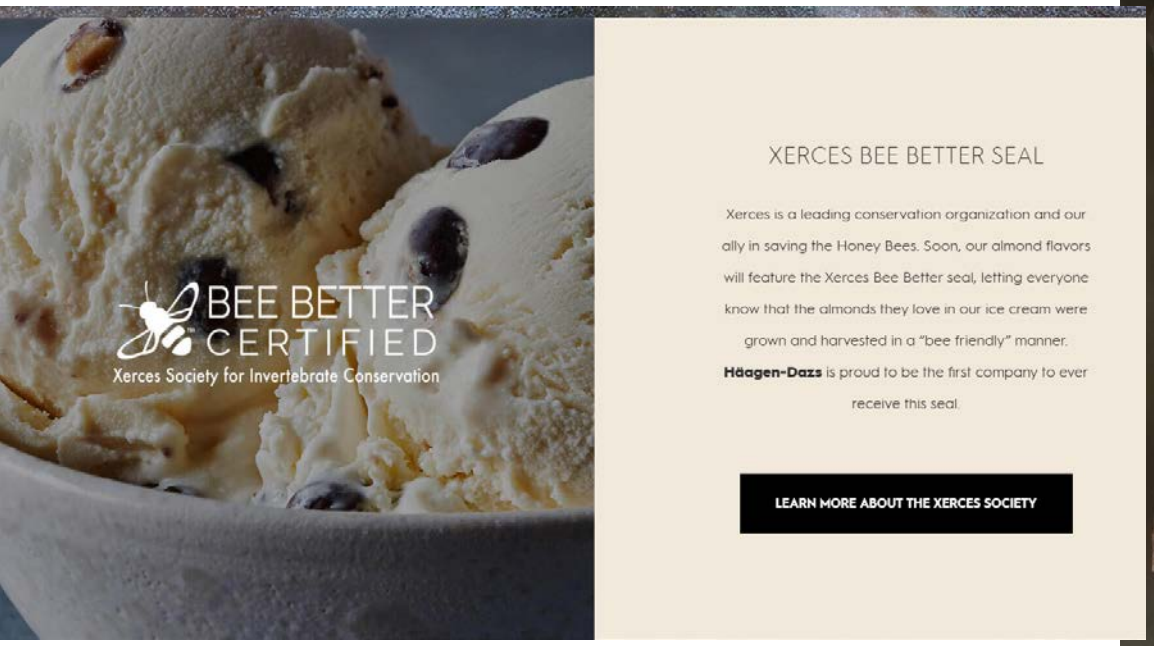
The 2017-2018 Improvements to Nevada's Conservation Credit System
https://www.enviroaccounting.com/NVCreditSystem/Program/Home
nrcs.usda.gov/

Market Sector: Supply Chain Conservation Labeling

- **Consumers choosing commercial goods for their conservation benefits**
- **Increasing interest in use of NRCS tools and science in pursuit of supply chain activities**

Supply Chain Conservation Labeling



Supply Chain Conservation Labeling

Conservation-Minded Purchasing: How Clothing Purchases Help Get Conservation on the Ground

Posted by Chad Douglas, Acting Internal/External Communications Team, NRCS in Conservation
Feb 26, 2018

Bare Ranch owner Lani Estill, pictured with her daughter Anna, raises cattle and sheep on more than 40,000 acres in northern California. Photo/Paige Green.

What if, before you purchased a hat or sweater, you knew the wool used to make it came from sheep raised on a ranch managed to improve soil health and increase soil carbon?

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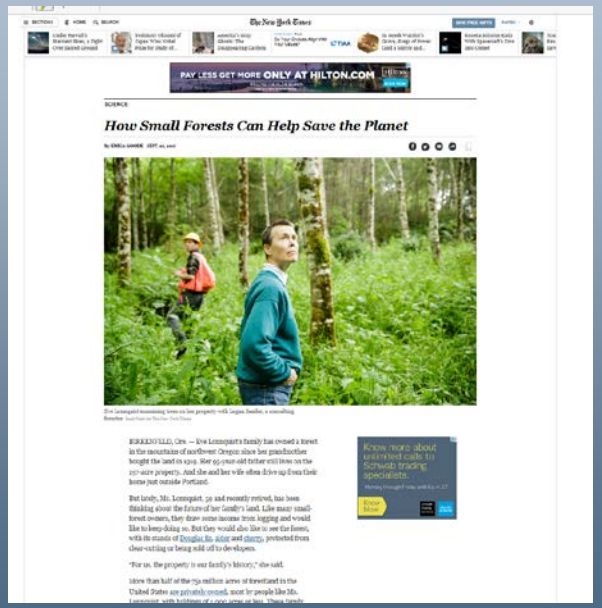
https://www.usda.gov/media/blog/2018/02/26/conservation-minded-purchasing-how-clothing-purchases-help-get-conservation

NRCS Policy on Environmental Credits

- **NRCS recognizes that producers and landowners can generate ecosystem services/credits when implementing conservation practices with NRCS financial assistance.**
- **NRCS asserts no direct or indirect interest in credits generated by EQIP, CSP or ACEP activities.**
- **However, NRCS retains the authority to ensure that NRCS program purposes are met.**
- **Can credits be developed by landowners when NRCS funds are involved?**

Markets and NRCS Programs

RCPP



RCPP

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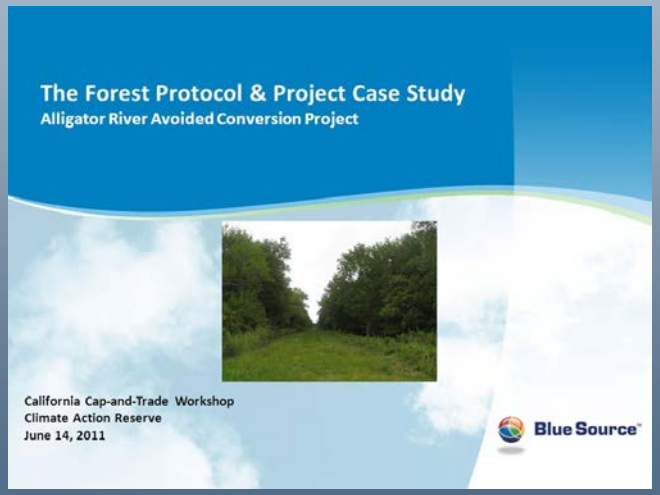
Markets and NRCS Programs

WRP/WRE



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- Field Office Technical Guide (FOTG)
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News about NRCS and Partner Projects

- Reflections on Efficiency (Quantified Ventures)
- Paying for Environmental Outcomes: A How-To Guide (Partner: Environmental Incentives)
- Managed Grazing Cultivates New Believers Among Watershed Farmers (Partner: Chesapeake Bay Foundation)
- Issuing Bonds to Invest in People (Partner: Blue Forest Conservation)

Environmental Markets & Conservation Finance

The Conservation Innovations Team was established in 2016 in response to growing interest in environmental markets and conservation finance. NRCS's work in these emerging areas complements, and in some ways is already integrated with, our traditional conservation planning and program implementation approach to private lands conservation. **Our vision: Developing new revenue streams and sources of private capital for agricultural producers and rural economies by attracting non-Federal funding to private lands conservation.**

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www.nrcs.usda.gov/emcf

Summary

- Landowners and land managers often generate ecosystem services when implementing conservation practices on their lands.
- Market-based solutions may exist to monetize those ecosystem services and generate new income streams for landowners.
- Interest in market-based solutions is at an all-time high as Federal, state and non-governmental entities look for new funding sources for conservation.
- In general, NRCS supports the development of market-based solutions to grow the amount of non-Federal funding available for private-lands conservation.
- Most environmental markets are still in early stages of development and operation and require a transparent policy framework to thrive.

Email Lindsay White (lindsay.white@wdc.usda.gov) to sign up for updates on environmental markets and more!

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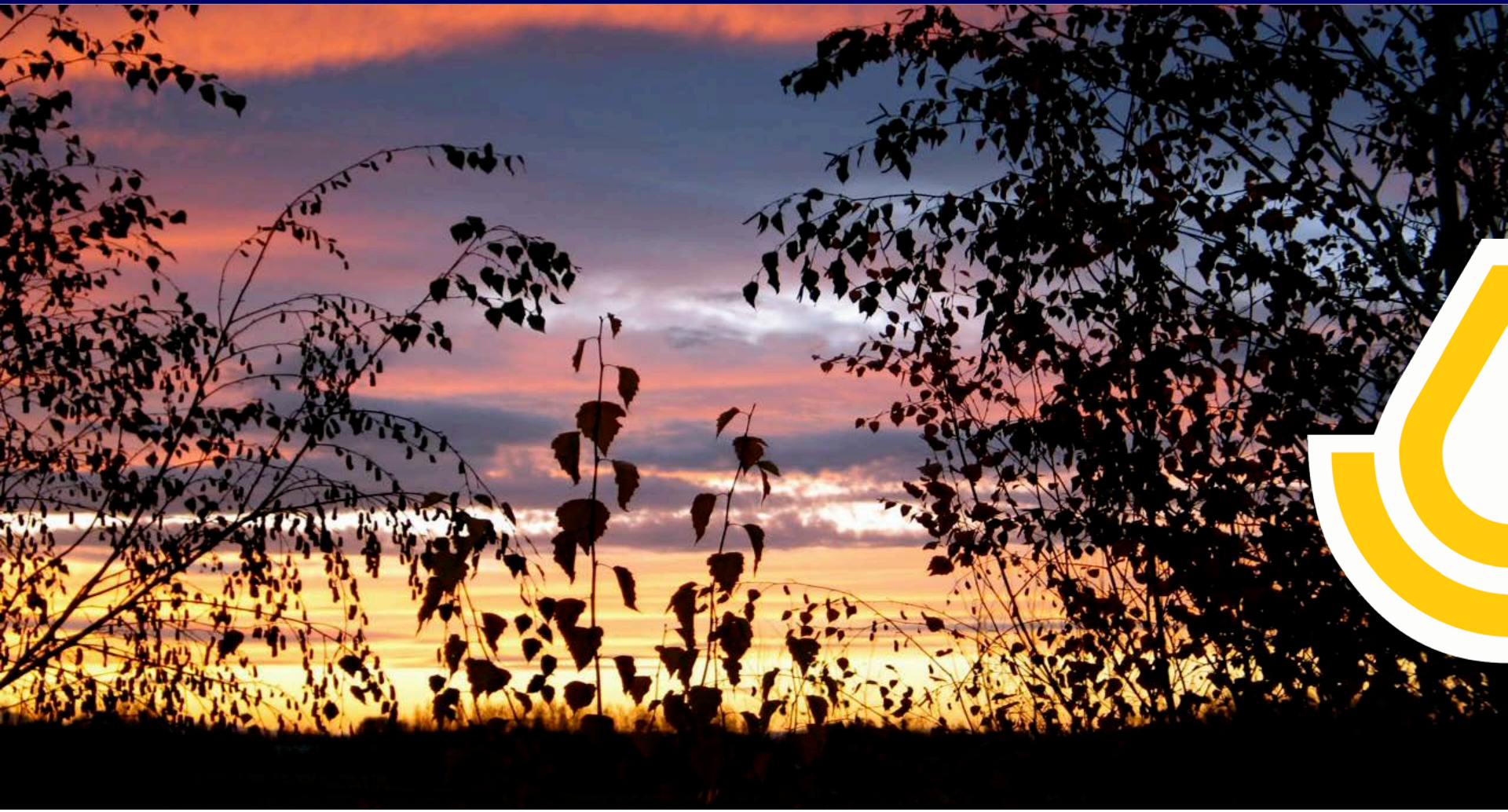

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