

# Ecosystem Services Market: Scaling Land Stewardship Outcomes

*Growing resilience in our nation's soil*

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# Topics Covered

- Deploying Ecosystem Service Markets
  - GHG
  - Water Quality
  - Water Quantity
    - Biodiversity
- Impediments to Overcome

# Overcoming Impediments

## How are ecosystem service markets like a transit strike?

- Cost of Verification and Certification has typically been 80% of the cost of a market transaction
  - That means little money gets to the implementer
  - Price is not high enough to advance change
- The value of any single “commodity” is not high enough to pay for conservation practice
- To overcome these barriers Noble designed simple unified verification system for multiple commodities

# Overcoming Impediments 2

## Or Why ESM is the “most likely to succeed”

- Noble uniquely has built ecosystem market from the perspective of the farmer.
  - Simply to enroll & manage (Note Reed reference of Ap)
  - Diverse revenue stream
  - Support multiple conservation actions
- Services multiple classes of buyers for multiple needs (Multiple markets meeting multiple needs)
  - Trades
  - Offsets
  - Insets
  - Social Responsibility
  - License to operate

# What makes an ESM Ecosystem Credit?

## Base Objective is to improve Soil Health

- Recognize that many ecosystem services are delivered off site that do not provide a return to the farmer or producer.
  - Want to create additional funding for conservation
  - Want to create new revenue stream for producers
- Term – 10+ years. Recognize agricultural producers reluctant to tie up land permanently
- Credits can be sold in bundle or distinctly
  - Different levels of rigor have different price

# Pilot Project Expansion

## Operate Nationally by 2022

- Build out additional pilots each year
- Selecting Pilot States:
  - ✓ Demand for ES Market
  - ✓ Partners
    - Operations
    - Farmer outreach
  - ✓ Replicability – Regional if not National Scalable
  - ✓ \$ to Support

# Scaling Ecosystem Service Markets

## Will Operate Where Cost Effectively Deliver Goods/Services

- Agriculture is a huge contributor to ecosystem service challenges
- Agriculture can be THE key partner to deliver enhancements in ecosystem services
  - 80% of precipitation that falls in the continental US falls on private lands.
  - Soil Carbon building is perhaps the most efficient tool to sequester carbon.
  - Vast majority of wildlife lives on private lands.

# Scaling Ecosystem Service Markets 2

## ➤ Scale

- 300 million acres in row crop agriculture
- 300 million acres in private lands grazing

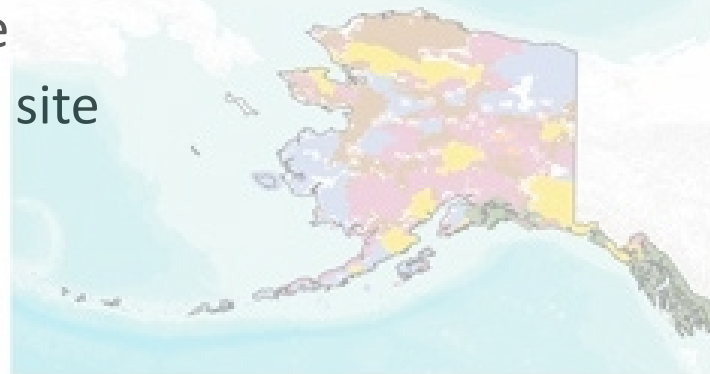
## ➤ Price

- Nitrogen can be removed for less than \$1/LB
  - ✓ Keep in mind N < 300 times more powerful GHG than CO<sub>2</sub>
- GHG
  - ✓ Building soil carbon improves productivity and sustainability

### Public Lands

- Bureau of Land Management (BLM)
- Department of Defense (DoD)
- National Park Service (NPS)
- USDA Forest Service (USFS)
- U.S. Fish and Wildlife Service (USFWS)
- State lands

NOAA lands are included on both maps but are too small to detect.





# Trade Operation: Water Quality

- **Producer installs and operates water quality management**
  - No penalty for use of NRCS or other incentive
  - Verification required
- **Buyer selects which “commodity” to purchase**
  - Buyer only pays for credits they want
  - Reduce cost of business
- **“Insurance” pool from “stranded” credits**
  - Not all credits from all sites will be sold
  - Still booked and with value



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*QUESTIONS?*