Palouse Soil Carbon Project Now Enrolling New Farmers

APPLIED ECOLOGICAL SERVICES, INC.
NATIVEENERGY, INC.
Background

Began with a Shepherd’s Grain soil carbon initiative

Applied Ecological Services and NativeEnergy with partner Palouse farmers are now commercializing another soil carbon project in the Palouse region

Shepherd’s Grain partnership with over 30 producers over past two years implementing on-the-ground science

One of the largest land-based carbon projects in the US receiving significant attention and funding from USDA-NRCS, policy makers, and carbon investors
### NativeEnergy

- **Pioneer Carbon project developer** and carbon credit seller – driving the market for 14 years
- **Focused on delivering carbon revenue to Shepherds Grain and PNDSA enrolled farmers.**

### Applied Ecological Services (AES)

- Science team is focused on **measuring soil carbon**
- **Work on thousands of land and soil improvement projects.**
LAN D OWNERS CAN:

1. Receive a new revenue stream from improved soil carbon levels, and/or offer low/no carbon grain

2. Receive measurements of your soil carbon

3. Help innovate to increase soil carbon and improve soil health
• Addresses a marketplace requirements.

• Create new revenues from direct seeding that increase soil carbon.

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How Did We Measure Palouse Soil Carbon

Over 7 million acres Included in Measurements
Sampling
Analysis

Number of Cores and Samples Collected
608 sampled locations +
102 total duplicates
710 cores total, 2062 lab samples (~3/core)

Samples by type
<table>
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<th>Count</th>
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<td>H1 – Conventional</td>
<td>(81 samples)</td>
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<tr>
<td>H2 – 1-5 yrs No-till</td>
<td>(73 samples)</td>
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<tr>
<td>H3 – 6-12 yrs No-till</td>
<td>(100 samples)</td>
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<tr>
<td>H4 – 13-20 yrs No-till</td>
<td>(84 samples)</td>
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<tr>
<td>H5 – 21+ yrs No-till</td>
<td>(52 samples)</td>
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<tr>
<td>H6 – CRP</td>
<td>(101 samples)</td>
</tr>
<tr>
<td>H7 – Misc/Irrigated</td>
<td>(8 samples)</td>
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<tr>
<td>H9 – Reference Area</td>
<td>(109 samples)</td>
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Then further allocated by several strata categories: slope position, aspect, precipitation zone, etc.

Soils Lab Analysis
- Core description & splitting by horizon
- Course Fragments
- Bulk Density
- % Organic Carbon
- % Inorganic Carbon
- % Total Carbon
How carbon assets are created

Carbon and GHG balance, Tons of CO$_2$e

- Project scenario projections made at the beginning (assuming implementation)
- Baseline scenario projection (assuming business-as-usual)
- Asset is the difference between actual measured CO$_2$e levels and the baseline projection
- Measurements over crediting period according to Soil Carbon methodology

Loss of CO$_2$e

Gain of CO$_2$e

- Project start
- Year
- End of project
Palouse Soil Carbon Project **Now Enrolling** New Farmers

HELP US ENROLL ANOTHER 300,000 ACRES OF PNDSA FARMLAND

JOIN THE PROCESS:
- Review farm eligibility, program guidelines and terms of agreement
- Producer enters into contract agreement.
- AES measures soil carbon improvements about every 5 years.
- Verified increases in soil carbon become salable as carbon credits.
- NativeEnergy arranges carbon credit sales on behalf of farmers.
- Please see us at BOOTH #37.

0.5-1 Tonne/acre-yr

2-3 Tonne/acre-yr
How the program works

• Review farm eligibility, program guidelines, and terms of agreement
  • Long-term commitment to allow soil testing
  • Direct seeding/No-till unless commercially unreasonable that year

• Producer enters into contract agreement.

• Soil carbon re-measured~ 5 years and carbon accruals are independently verified.

• Verified increases in soil carbon levels become salable carbon credits.

• NativeEnergy arranges carbon credit sales on behalf of farmers

Producers “bank” their carbon
How to get started

1. PLEASE ----COME TO OUR BOOTH #37.
2. Provide contact information to learn more.
3. We contact you on next steps.

HELP ENROLL 300,000 ACRES AT PNDSA Conference
For more information

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