Prevented Planting Policy in a Highly Erodible Area of the Inland Pacific Northwest

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Central Problem

- Wet Spring in 2011
- Large number of Prevented Planting claims
- High Rates of Erosion—50 tons/acre
- Policy Confusion
- Increasingly wet springs
Crop Insurance System

- USDA Risk Management Agency (RMA)
- Federal Crop Insurance Corporation (FCIC)
- Protect against drops in yield, reductions in price
- Many forms of crop insurance
Policy Changes

• Encourage cover crops after PP claims
• Premium increases for noncompliance
• Education on cost-share programs, general cover crop benefits
Cover Crops

- Kinderiene & Karcauskiene- “Effects of different crop rotations on soil erosion and nutrient losses under natural rainfall conditions in Western Lithuania.”
- Less erosion
- Soil benefits
  - Organic Matter
  - Soil structure
  - Microbial life
Erosion and Crop Yields

- Pimentel et al. - “Environmental and Economic Costs of Soil Erosion and Conservation Benefits”
- High rates of erosion = lower crop yields
- STEEP
- Reduces nutrient reserves, organic matter
- Topsoil vs. Subsoil - Palouse soils significantly deeper than average
- Reductions offset by synthetic fertilizer
Model Precipitation and PP

- Use Stata for regression analysis
- NOAA climate data
- RMA insurance claim data
- Predict PP acreage
<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient (Std. Error)</th>
<th>t-value</th>
<th>Max</th>
<th>Min</th>
<th>Mean (Std. Dev.)</th>
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<tbody>
<tr>
<td>jandev</td>
<td>3312.815 (2158.476)</td>
<td>1.53</td>
<td>3.472441</td>
<td>-1.200787</td>
<td>.1041162 (.7244545)</td>
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<tr>
<td>febdev</td>
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<td>11.72**</td>
<td>1.184567</td>
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<tr>
<td>mardev</td>
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<td>9.67**</td>
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<td>.6782882 (.8776061)</td>
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<td>aprdev</td>
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<td>16.09056 (4.680534)</td>
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*=Significant at 0.10
**=Significant at 0.05
Analysis of Policy

• Precipitation models vary
• Winter/Spring precipitation increase, Summer/Fall precipitation decrease
• Without precipitation increase, retains ~32,000 tons of soil/year
• Under the RCP 8.5 climate scenario in 2030-2060, retains ~41,000 tons of soil/year
• Costs producers $13.45/acre
Ethical Considerations

• Policy development is advocacy
• Consider implications for all parties
  o Easy to focus on one group, issue
• Interest groups
Prevented Planting, the Economy, and the Environment

- Encourage sustainable management practices
- Conserve valuable soils
- Sustain high yields
- Maintain fiscal responsibility
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