Developing Grassland Carbon Projects

April 21, 2016

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Agenda

I. Welcome and introductions
II. Overview of the Grassland Project Protocol
III. Initial feasibility assessments
IV. Market outlook
V. Questions and discussion
Welcome and Introductions

• Max DuBuisson
  – Senior Policy Manager
  – Climate Action Reserve

• Robert Parkhurst
  – Agriculture Greenhouse Gas Markets Director
  – Environmental Defense Fund
OVERVIEW OF THE GRASSLAND PROJECT PROTOCOL (GPP)
Protocol background

- Kickoff May 2014
- Technical support from WSP and Colorado State University
- 30-day public comment period
- Adopted July 22, 2015

<table>
<thead>
<tr>
<th>Workgroup Member</th>
<th>Organization</th>
<th>Sector</th>
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<tbody>
<tr>
<td>Joel Brown</td>
<td>USDA-NRCS</td>
<td>Government</td>
</tr>
<tr>
<td>Adam Chambers</td>
<td>USDA-NRCS</td>
<td>Government</td>
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<tr>
<td>Richard Conant</td>
<td>Colorado State University</td>
<td>Academic</td>
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<tr>
<td>Joe Fargione</td>
<td>The Nature Conservancy</td>
<td>NGO, Project Developer</td>
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<tr>
<td>Billy Gascoigne</td>
<td>Ducks Unlimited</td>
<td>NGO, Project Developer</td>
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<td>Teresa Koper</td>
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<tr>
<td>Robert Parkhurst</td>
<td>Environmental Defense Fund</td>
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</tr>
<tr>
<td>Richard Scharf</td>
<td>Environmental Services, Inc.</td>
<td>Verifier, Consultant</td>
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<tr>
<td>Patrick Splichal</td>
<td>SES, Inc.</td>
<td>Verifier, Consultant</td>
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<tr>
<td>Peter Weisberg</td>
<td>The Climate Trust</td>
<td>NGO, Project Developer</td>
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GPP highlights

• Permanent conservation of threatened grassland
• Baseline = avoided soil carbon loss and avoided emissions from cultivation
• Flexible monitoring and reporting schedules and approaches
• Projects may join together into cooperatives
# Eligibility checklist

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<tr>
<th>Eligibility Item</th>
<th>Criteria</th>
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<td>☑ Location</td>
<td>Lower 48 United States</td>
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| ☑ Ownership prior to project commencement             | Property is either:  
A. Privately owned, or  
B. Publicly owned other than by the Federal government                                                                                  |
| ☑ Action taken to initiate project                    | To initiate the project, the landowner must either:  
A. Record a conservation easement on the property, or  
B. Transfer ownership of the property, or  
C. Third option for cooperative participants |
| ☑ Land use history                                    | Property has been continuous grassland cover for at least 10 years prior to project                                                        |
| ☑ Tree cover                                          | Less than 10% tree canopy on the project by area                                                                                         |
| ☑ Financial pressure                                  | Located in a county identified as eligible in the published table of county parameters                                                  |
| ☑ Soil suitability                                    | At least 75% class I-IV soils as determined by the Land Capability Classification system                                                 |
| ☑ Activities prohibited during the project            | Will the landowner abstain from the following activities for the lifetime of the project?  
• Land conversion or disturbance  
• Irrigation  
• Synthetic fertilizer application  
• Alteration of natural hydrology |
Cooperatives

- Multiple projects managed by a single cooperative developer (no limit on # of participants)
- Not necessarily a legal entity
- Common monitoring, reporting, and verification
- Single verification report
- May have different start dates
- Projects may enter and leave cooperatives over time
# Parties involved

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
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<tr>
<td>Grassland Owner</td>
<td>• Fee owner of the property containing the project area</td>
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| Project Developer           | • Owner of the GHG reduction rights; has a Reserve account.  
                                • May be the landowner, easement holder, cooperative developer, or another third-party development firm |
| Cooperative Developer       | • Entity who manages a cooperative                                                                                                          |
| Easement Holder             | • Entity who owns the conservation easement                                                                                                |
| Technical Consultant        | • No ownership stake in the project. Simply fee for service.                                                                              |
# The process

<table>
<thead>
<tr>
<th>PLANNING</th>
<th>Submittal &amp; Listing</th>
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<tbody>
<tr>
<td>• Feasibility assessment</td>
<td>• Open a Reserve account ($)</td>
</tr>
<tr>
<td>• Initial mapping &amp; stratification</td>
<td>• Submit a Project Submittal Form ($)</td>
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<tr>
<th>Monitoring &amp; Quantification</th>
<th>Verification</th>
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<tr>
<td>• Collect data</td>
<td>• Contract with approved verification body</td>
</tr>
<tr>
<td>• Complete quantification tool and monitoring plan</td>
<td>• VB conducts desk review and site visit (optional)</td>
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<th>Registration</th>
<th>Sales</th>
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<td>• Reserve staff review and approve verification report</td>
<td>• CRTs issued to account holder ($)</td>
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<tr>
<td></td>
<td>• CRTs may be transferred to the buyers account ($)</td>
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$ denotes steps subject to registry fees
Important time periods

**PROJECT LIFETIME**
150 years

**CREDITING PERIOD**
50 years

**PERMANENCE PERIOD**
100 years

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**VP = verification period**

**RP = reporting period**

* Crediting period may be shorter than 50 years
Documenting land use

• Need evidence that project area is grassland, and was grassland for a certain period of time prior to the start date
  – Either 10 years or 30 years
• Various options for evidence:
  – Site visit
  – Remote sensing data (satellite, aerial)
  – Tagged photos
  – Contracts
Monitoring grazing

• Need to be able to reasonably estimate the type of animals, population, and amount of time spent grazing the project area

• Flexible data options:
  – Electronic animal monitoring
  – Handwritten logs and records
  – Rough estimates based on contracts, local expert guidance, or other data sources
  – Other?
Monitoring other sources of project emissions

- Burning
- Fossil fuel use
- Electricity use
- Application of organic fertilizer
  - Type, mass applied, nitrogen content
INITIAL FEASIBILITY ASSESSMENT
Initial feasibility assessment

✓ Stratification
  – Major Land Resource Areas
  – Soil Texture
  – Land Capability Classification

✓ Quantification
  – Rough estimate of credit volumes and timing

• Cash flow analysis (not covered in this webinar)
MLRAs

Interactive map available at: http://apps.cei.psu.edu/mlra/
Soil properties

- Soil surface texture and Land Capability Classification
Example initial assessment

- Arbitrary polygon in Holt County, NE
- Process for initial assessment:
  1. Determine MLRA
  2. Find soil data in Web Soil Survey
     a. Determine Land Capability Classification and acreage
     b. Determine soil surface texture and acreage
  3. Define stratification
  4. Input data into GrassTool
     • Financial test happens in the tool when you select the county
Example: quantification

- Baseline uses the stratification results
- Project emissions assumptions for example:
  - 20% economic leakage (the major source of PE)
  - 4,000 animal grazing days for beef cows
  - 50°F average ambient temp during grazing season
  - Minimal amount of diesel and gasoline used
  - No fertilizer or fires
- Buffer pool contribution = 11.8%
  - Contract PIA
  - Site visit during verification
Example parcel assessment

- ArcMap
- MLRA Explorer
- Web Soil Survey
- Microsoft Excel
- GrassTool
MARKET OUTLOOK
Voluntary carbon markets

Figure 3: Historical Market-Wide Voluntary Offset Transaction Volumes

Notes: Based on 931.2 MtCO₂e in transacted volume over time.
Figure 5: Transacted Volume by Project Category and Type, 2014

Notes: Based on 764 transactions representing 61.7 MtCO₂e.
Offsets from working lands
Voluntary Carbon Market

Figure 2: Historical Market-Wide Average Price

REDD Early Movers uses a proxy price of $5/tonne

US fails to pass law that would establish national cap-and-trade

Offset Purchasers

Compliance

Voluntary

http://www.climateactionreserve.org/how/crt-marketplace/
QUESTIONS AND DISCUSSION
## Contact Us

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
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