

# Nutrient Management Project Protocol (NMPP)



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## Workgroup Meeting #1

May 18, 2011

10-12 AM PDT



# Agenda

- Welcome and Introductions
- Workgroup Process
  - Goal and objectives
  - Roles, responsibilities and expectations
  - Program rules
- Protocol Specific Discussion
  - Protocol development process and timelines
  - Preliminary discussion of protocol criteria
- Next steps



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# Welcome and Introductions



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# Reserve Staff and Consultants

## Reserve Staff

Kathryn (Katie) Goldman – staff lead  
213-213-1239

[kathryn@climateactionreserve.org](mailto:kathryn@climateactionreserve.org)

Rachel Tornek – credit stacking lead  
213-891-6930

[rachel@climateactionreserve.org](mailto:rachel@climateactionreserve.org)

Teresa Lang – research support  
213-891-6932

[tlang@climateactionreserve.org](mailto:tlang@climateactionreserve.org)

Heather Raven - coordinator  
213-542-0282

[heather@climateactionreserve.org](mailto:heather@climateactionreserve.org)

## Consultants

Managing Consultants:  
Terra Global Capital, Inc  
Steven De Gryze  
Mark Lambert

Technical Experts:  
Johan Six, UC Davis  
Bill Salas, Applied Geosolutions  
John Kimble, Soil Scientist

# Workgroup



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Blue Source

Camco

Independent Scientist, Ecosystem  
Modeling

Environmental Defense Fund

Environmental Services, Inc.

Michigan State University

Natural Resources Defense Council

Preferred Carbon Group

Scotia Capital, Inc.

The Clark Group, LLC / Agricultural  
Carbon Market Working Group

U.S. Department of Agriculture, Natural  
Resources Conservation Service

U.S. Environmental Protection Agency

UC Davis, Agricultural Sustainability  
Institute

UC Davis

Union of Concerned Scientists

Western Growers Association

Western United Dairymen



# Open Development Process

- Transparency is an important principle
- Significant interest in agriculture workgroup involvement
- We are striving for completely open development process:
  - Each agriculture protocol has a website with meeting logistics
  - Background papers , slides, agendas, and other materials will be posted
  - Workgroup meetings will be open to the public in real time (listen-only)
  - After the meetings a video recording of webinars will be posted (if technically feasible)

<http://www.climateactionreserve.org/how/protocols/in-progress/nutrient-management-project-protocol/>



# Workgroup Goal and Objectives

- Develop a standardized approach for quantifying, monitoring and verifying GHG offsets resulting from changes in nutrient management practices that reduce N<sub>2</sub>O emissions from U.S. croplands
- Maintain consistency with or improve upon existing methodologies
- Ensure accuracy and practicality of projects



# Workgroup Responsibilities

- Participate in approximately 4 workgroup meetings
  - 3 webinars planned, possibly 1 additional call (as needed)
  - 1 in-person all-day meeting in Los Angeles (July)
  - Possibly additional sub-group conference calls (as needed)
- Review background materials for meetings
- Provide written comments on protocol drafts
- Serve as a resource to Reserve staff throughout process

# Science Advisory Committee (SAC)



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- Agriculture protocols are uniquely complex and the science is continually evolving
- Anticipate needing real-time, directed scientific input into the protocols
- SAC will enable broad scientific affirmation of the protocol approach
- The SAC will advise Reserve staff on scientific aspects of protocol development only, mainly with:
  - Interpretation of research on GHG impacts
  - Evaluation of how technical and scientific information is applied in the NMPP
  - Evaluation of quantification methodologies under consideration
- Reserve will periodically email SAC members with specific questions, SAC will meet for one all-day in-person meeting at Reserve offices in September, additional follow-up SAC webinars as needed.



# Staff Responsibilities

- Ensure protocol meets Reserve's standards and is aligned with Reserve's principles
- Lead and facilitate workgroup discussions
- Direct research of contractor in support of protocol development
- Maintain transparent development process with workgroup and other stakeholders
- Liaise with the Science Advisory Committee
- Work closely with contractor team on drafting protocol and responding to public comments on the protocol
- Integrate new protocol into Reserve program
- Support implementation and feedback processes



# Protocol Decision-Making

- Strive for workgroup consensus during protocol development
- Workgroup focuses on eligibility and additionality test development, quantification, monitoring, verifiability and practicality
- Climate Action Reserve has pre-defined program rules for certain protocol elements
  - Detailed in the Reserve Program & Verification Manuals  
<http://www.climateactionreserve.org/how/program/program-manual/>



# Selected Program Rules

## ■ Project Start Date

- Tied to the start of a project activity
- Pre-existing projects can submit for a limited time (“Look back period”):
  - Project start date cannot be more than 24 months prior to the protocol adoption date
  - Must submit before the deadline, i.e., 12 months after protocol is adopted
- New projects must submit within six months of the start date (“New” projects are those with start dates *after* the protocol adoption date)
- Transfers are possible for projects starting after Jan 1, 2001

## ■ Crediting Period

- Start of crediting period = Project start date
- 10-year crediting period renewable one time (non-sequestration)
- For sequestration projects “the crediting period may be up to 100 years”



# Selected Program Rules

- **Standardized additionality**
  - Project must exceed any existing regulatory requirements and meet a performance standard
  - Project developer must also sign an Attestation of Voluntary Implementation
- **Do no harm**
  - Projects may not undermine progress on other environmental issues
    - air and water quality, endangered species, natural resource protection, environmental justice
  - Project developer must sign Attestation of Regulatory Compliance stating the project is in compliance with all applicable laws



# Selected Program Rules

- **Ownership must be unambiguous**
  - Project developer must have exclusive ownership of GHG reductions for the Reserve to issue CRTs; must sign an Attestation of Title
  - Reserve protocols typically credit only direct emission reductions
- **Verification process**
  - Periodic third-party verification of projects is required for issuance of CRTs
  - Verification activities such as site visits, desk reviews, staff interviews, re-sampling and re-calculation of a sample of data
  - Verifiers must be approved by the Reserve
  - Some flexibility is possible for practicality (Livestock Project Protocol Verification Options, Forest Project Protocol Aggregation Guidelines)



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# Discussion of Nutrient Management Project Protocol (NMPP)



# Protocol Development Timeline

Methodology Synthesis Paper	May 6, 2011
WG Meeting 1 (conference call)	May 18, 2011
Background Paper Completed	Week of June 13, 2011
Interim WG Meeting (conference call, if needed)	Week of June 20, 2011
Draft protocol to workgroup	Week of July 4, 2011
WG Meeting 2 (Los Angeles)	Week of July 18 or 25, 2011
Second draft protocol to WG and SAC	Week of Aug 29, 2011
Science Advisory Committee Meeting	September 7, 2011
WG Meeting 3 (conference call)	Week of Sept 12 or 19, 2011
Revised protocol & start of 30-day public comment period	November 1, 2011
WG Meeting 4 (conference call)	Week of November 14, 2011
Public workshop	Week of November 28, 2012
Protocol adoption by Reserve Board	February 2012



# Existing Methodologies

- American Carbon Registry (ACR)
- Electric Power Research Institute with Michigan State University (EPRI-MSU)
- Compliance program in Alberta, Canada (Alberta)



# Background Paper

- Definitions of nutrient management practices
- Additionality research
  - Related legal constraints, review of data on common practice, recommendations on performance standards
- Review of relevant GHG sources and sinks
- Information on environmental credit stacking
- Review and comparison of GHG accounting in existing methodologies
- Recommendations on the use of biogeochemical process models



# Legal Constraints

- All existing protocols stipulate that project activities cannot be required by laws, mandates, statutes, regulatory frameworks, etc.
- More specificity is needed:
  - Voluntary actions that go beyond legal requirements
  - Voluntary or required actions incentivized by other non-GHG regulatory frameworks
    - water quality in particular



# Environmental Credit Stacking

- A single voluntary action to change nutrient management can yield both water quality and carbon credits on a single parcel of land.
- How do you ensure that the action was incentivized by the carbon market?  
(i.e. not undertaken solely for water quality credits)
- Clear rules are needed for the NMPP
- Credit Stacking Sub-committee will be established



# Additionality in Existing Protocols

- Demonstrated change in fertilizer application rate relative to historic levels at farm or county-level (EPRI-MSU)
- Project-specific assessment of whether the project goes beyond common practice, plus assessment of implementation barriers (financial, technological, and institutional) (ACR)
- Adoption of a BMPs with oversight by an accredited professional (Alberta)



# Reserve Additionality Research

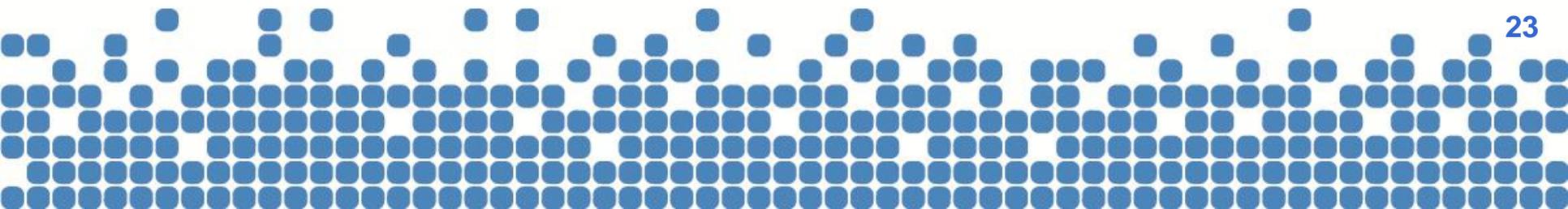
- What data are available to describe trends in fertilizer use and other practices?
  - E.g., NASS Agriculture Chemical Use Program
- What factors affect fertilizer application rates and other practices?
  - E.g., Fertilizer use appears inelastic to fertilizer price
- What are the benefits and limits of using optimal fertilizer N rate calculators to set baseline nutrient management practices?

# GHG Quantification Options



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“Tier 2” Emission Factors	Process Model
<p>Simple and inexpensive</p> <p>Emission factor development needed to complete geographic coverage of the U.S.</p> <p>Accounts for:     Change in fertilizer application rate</p>	<p>Data intensive and sophisticated</p> <p>Need proper validation and calibration (potentially limits coverage)</p> <p>Accounts for:</p> <ul style="list-style-type: none"><li>Real-time dynamics &amp; conditions</li><li>Multiple nutrient management practices</li><li>Historical practices</li><li>Soil nitrogen and carbon cycling</li></ul>





# Leakage Options

- Assume leakage risk is low and ignore (EPRI-MSU)
- Restrict project-related yield impacts
  - No more than 5% decrease in yields allowable, relative to model projected baseline (ACR)
- Account for negative yield impacts with GHG intensity (GHG/unit product) metrics (~Alberta)
  - Reserve will not account for “positive leakage”



# Aggregation

- Aggregation likely to be important for NMPP
- Would allow multiple landowners/farmers to jointly report and receive CRTs
- Reduce costs of reporting and potentially verification (through use of auditing)
- Can improve quantification uncertainty by increasing the scale of reporting



# Aggregation

- Details needed in the NMPP, e.g.,
  - Who holds the account with the Reserve and is liable for reporting and compliance with the protocol?
  - Are there size limits for joining an aggregate?
  - What are the requirements for entering and leaving an aggregate?
  - Who can be an aggregator?
  - Will verifiers be able to conduct annual audits of projects to verify the aggregate? How much of the aggregate must be audited each year?
- Forest Project Protocol aggregation can be informative  
<http://www.climateactionreserve.org/how/protocols/adopted/forest/aggregation/>
- Statistical analysis of DNDC for Rice Protocol



# Next Steps

- Poll workgroup and set in-person meeting date for late July
- Establish the Credit Stacking Sub-committee (led by Rachel Tornek and Teresa Lang)
- Complete and circulate Background Paper to WG
- Schedule an optional WG meeting before in-person meeting to discuss Background Paper if time permits
- Reserve and contractors begin drafting protocol



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# Thank you!