

# Climate Action Reserve and Nitrogen Management Project Protocol Development



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# The Climate Action Reserve

- Chartered by California state legislation in 2001
  - Initially focused on emission reporting and reductions by member organizations in California
- The “Reserve” launched in 2008
  - North American program focused on emission reduction projects generating offsets
- Today’s Mission and Vision Statements:

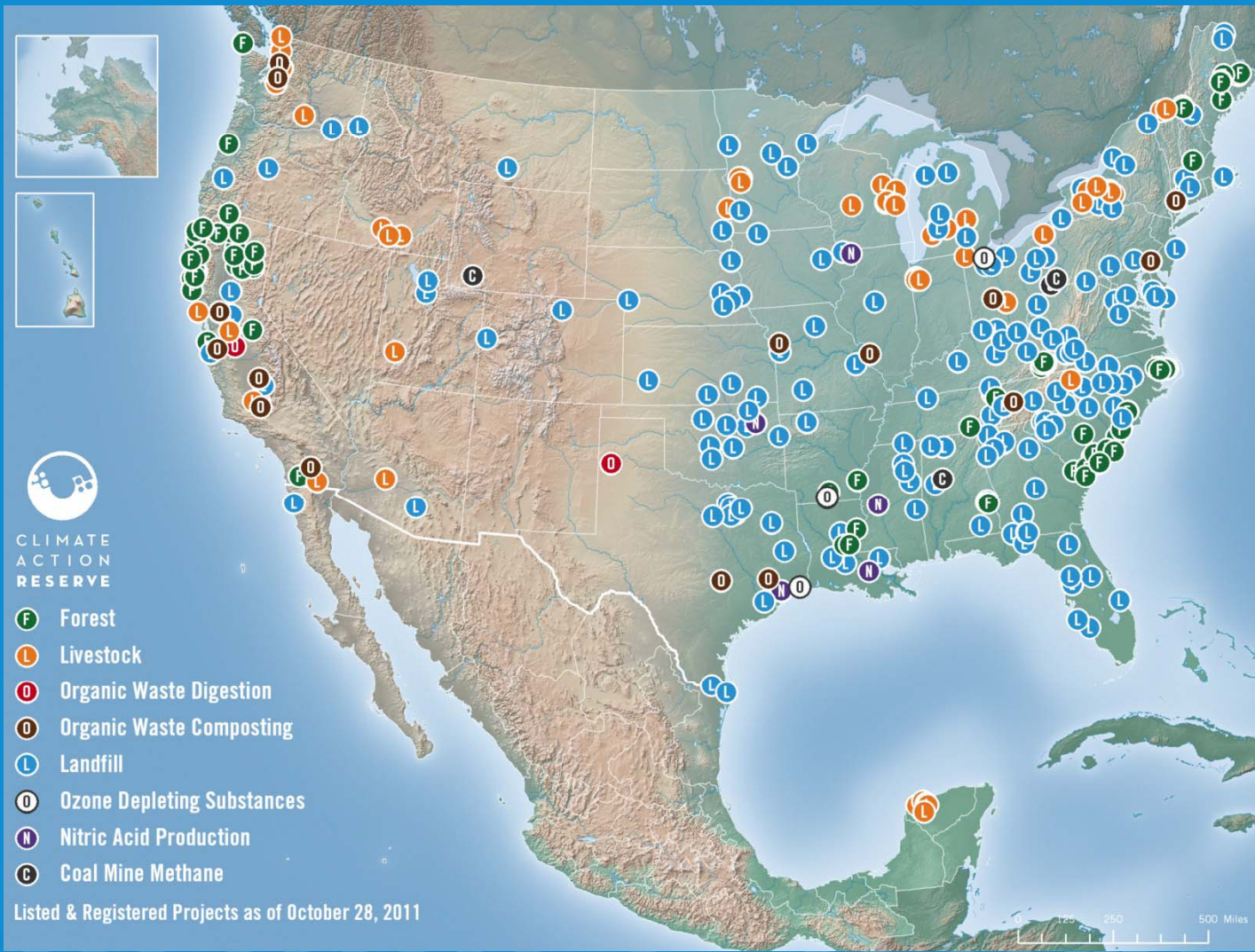
*Promote the reduction of greenhouse gas emissions by pioneering credible market-based policies and solutions*

*Work collaboratively with government, business, environmental and other interests to be a respected and valued resource for GHG emissions accounting and climate change action*



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# Listed and Registered Projects



409 Account Holders  
118 Projects registered  
227 Projects listed  
134 New projects

17,533,427 CRTs  
issued



# Protocol Development Process

1. Internal research and scoping
2. Public scoping meeting(s)
3. Multi-stakeholder workgroup formation and meetings
4. The Reserve drafts a preliminary protocol
5. Draft protocol considered by workgroup
  - Provides technical expertise and practitioner experience
  - Period meetings and individual consultation when needed
6. Input from Science Advisory Committee (*unique to Ag*)
7. Revised draft protocol released for public comment
8. Public workshop
9. Final version adoption by Reserve board in public session

# Goals for Nitrogen Management Project Protocol (NMPP)



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- Develop a standardized approach for quantifying, monitoring and verifying GHG offsets resulting from changes in nitrogen management practices that reduce N<sub>2</sub>O emissions from U.S. croplands
- National scope & relevant for CA cap and trade program
- Maintain consistency with & improve upon existing methodologies
  - American Carbon Registry
  - Electric Power Research Institute/MSU
  - Alberta Offsets Program



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# NMPP Development Timeline

Methodology Synthesis Paper	May 6, 2011
Workgroup Meeting 1 (conference call)	May 18, 2011
Workgroup Meeting 2 (conference call)	June 27, 2011
Background Paper Completed	July 18, 2011
Draft protocol to workgroup	July 27, 2011
Workgroup Meeting 3 (Los Angeles)	August 1, 2011
Science Advisory Committee Meeting (Los Angeles)	September 7, 2011
WG Meetings 4 (conference call)	October 25, 2011
Second Phase of Background Research	Fall/Winter 2011
WG meetings 5+	TBD
Science Advisory Committee (conference calls)	TBD
Revised protocol & start of 30-day public comment period	April 2012
Public workshop	April 2012
Protocol adoption by Reserve Board	<b>June 27, 2012</b>

# Subcommittees



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<b>Credit Stacking Subcommittee</b>	
Meeting 1	July 12
Meeting 2	August 10
Meeting 3	September 22
Meeting 4	early November
<b>Methodology Subcommittee</b>	
Meeting 1	August 15
Meeting 2	October 12
<b>Aggregation Subcommittee</b>	
Meeting 1	August 17



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# Science Advisory Committee

- Committee of scientist with recognized expertise and research track record in agricultural nitrogen management met at the Reserve on Sept 7, 2011 to discuss the NMPP
- Three main questions guided the meeting discussion:
  1. Which specific nitrogen management practice changes is it “scientifically valid” to provide GHG mitigation credits for?
  2. Which greenhouse gas (GHG) sources, sinks and reservoirs (SSRs) must be quantified?
  3. What is a scientifically valid, economically practical, and ultimately verifiable approach to quantifying GHG reductions?
- Meeting report publicly available soon





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# Potential Approved Practices

- Reduce amount of N applied, w/out going below crop demand
- Increasing the number of N applications (if delivering N through irrigation systems)
- Switching from fall to spring N application
- Applying N closer to the root system
- Use of nitrification inhibitors or nitrification inhibitors combined with urease inhibitors
- Switch from anhydrous ammonia to urea
- Changing to slow-release fertilizer
- Adding N scavenging cover crops

*Meeting report provides important details on geographic variation and other potential considerations*

# SAC Direction on Quantification Approach (Direct N<sub>2</sub>O)



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- Concerns about relying exclusively on Tier 3 (DNDC)
  - Must be well validated and calibrated for specific circumstances; this is data intensive and current scope is limited; can give very incorrect answers when not well calibrated or if used incorrectly; complex to use
- Tier 3 is the “best” option when used correctly
- Strong support for further development of Tier 2 methods
  - Data available to cover a range of practices and geographic regions, less data intensive to develop and test than Tier 3, easier to use
  - May be limitation in ability to account for interactions
- Encouraged the Reserve to make the NMPP flexible enough to incorporate best available methods and emerging science
  - E.g., N<sub>2</sub>O research in California



## Quantification Approach

- Considering ways to include Tier 2 and Tier 3 quantification approaches in the NMPP
  - One “approved” approach per management system
- Working on operational standards and criteria for Tier 2 and Tier 3 approaches
- Considering allowing submissions of quantification approaches, in addition to Reserve developed approaches
  - Can cover diversity of possible management systems while applying uniform and consistent standards



# Prototype Criteria & Standards for Quantification Approaches

- Defines required components of an approach:
  - A description of the project activity/ies that are covered
  - A set of applicability conditions that must be met to use the quantification approach. (e.g. conditions that are related to geographic characteristics, soil type, cropping system, or any other relevant feature)
  - Equations to calculate N<sub>2</sub>O emission reductions
  - Approach to calculate uncertainty deductions
  - Parameters that must be monitored
- Outlines requirements for reference data set
- Details how to develop an empirical model and the statistical requirements for the model
- Working on the requirements for Tier 3 approaches

*Still in early stages of review*



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# Ongoing Research and Development for NMPP

- Environmental credit stacking subcommittee working on options and recommendations
- Analyzing EQIP and other program funding for approved nitrogen management practices
- Analyzing options for setting performance standards for approved nitrogen management practices
- Developing and testing prototype criteria and standards for quantification approaches
- Case study comparisons of Tier 1, 2, and 3 approaches

# Rice Cultivation Project Protocol (RCPP)



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- Please submit written public comments by **November 11, 2011**
- We plan to submit the RCPP to the Reserve Board for adoption on **December 14, 2011**
  - Board meeting will be open to public participation
- For more information, visit:  
<http://www.climateactionreserve.org/how/protocols/agriculture/rice-cultivation/>



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# Contact Information

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# Project Aggregation

- Aggregation is integral to NMPP (see RCPP for details)
- Purpose is to help make projects scalable and cost effective, and to improve accuracy of GHG reductions at aggregate scale
- A Project Aggregate = multiple fields owned/managed by one or more Project Participants
- Farmers can be their own aggregator
- Aggregates are unlimited in size
- Eligibility rules, start dates, & crediting periods associated with individual field, not the aggregate
- Fields have limited opportunity to switch aggregates
- Verification streamlined by using random sampling





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