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Soil Enrichment Version 2.0

Workgroup Meeting 1
February 7, 2024

Housekeeping

- Workgroup members have the opportunity to actively participate throughout the meeting
 - Ask that you keep yourselves muted unless / until would like to speak
- We will ask and take questions throughout the session
 - Please use the raise your hand function
- All other attendees/observers are in listen-only mode
- Observers are free to submit questions in the question box
- We will follow up via email to answer any questions not addressed during the meeting
- The slides and a recording of the presentation will be posted online



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AGENDA

- Introductions (30 mins)
- Protocol Update Process (15 mins)
- Update Considerations (45 mins)
 - Clarifications and Required Updates
 - Potential Additions or Updates
- Setting Priorities (15 mins)
- Open Discussion (10 mins)
- Next steps (5 mins)



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INTRODUCTIONS

Climate Action Reserve

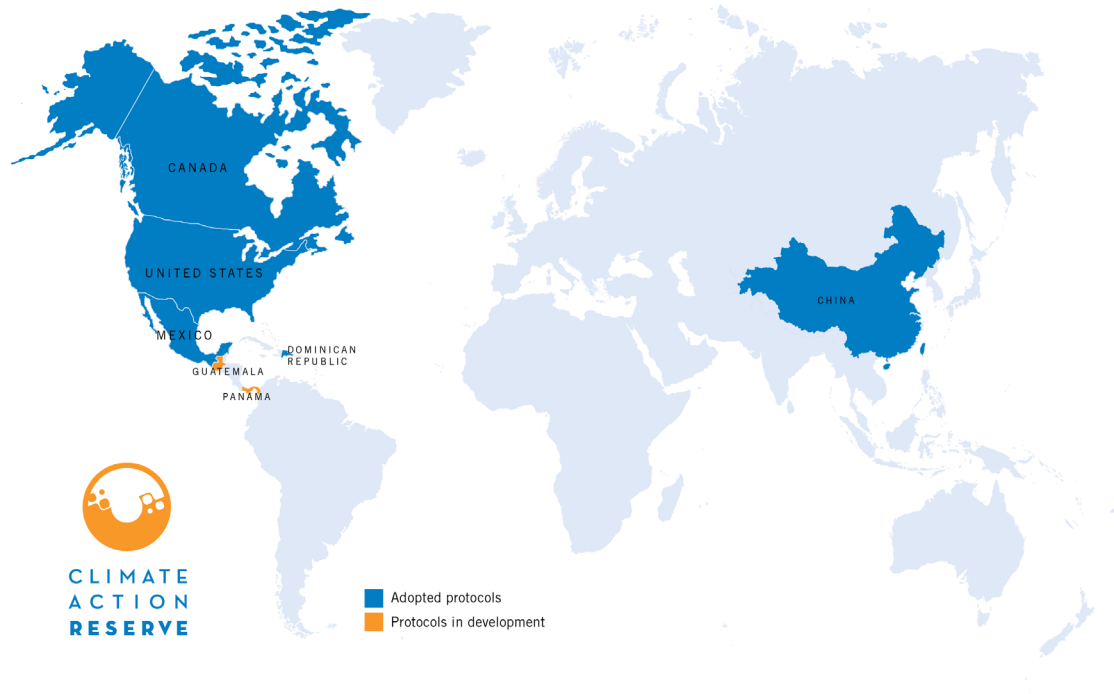


- Mission: to develop, promote and support innovative, credible market-based climate change solutions that benefit economies, ecosystems and society
- Develop high-quality, stakeholder-driven, standardized carbon offset project protocols across North America
- Accredited Offset Project Registry under the California cap-and-trade program, State of Washington and CORSIA
- Serve compliance and voluntary carbon markets
- Reputation for integrity and experience in providing best-in-class registry services for offset markets
- Based in Los Angeles, CA

Climate Action Reserve

- Nonprofit, founded 2001
- Voluntary & compliance
- >500 Projects
- >200M Credits Issued

- Agriculture Protocols
- Soil Enrichment Protocol
- Nitrogen Management Protocol
- Grassland Protocols
- Rice Protocol
- Livestock Protocol



Reserve Staff:

- McKenzie Smith, Associate Director
 - Protocol update lead
- Alison Nord, Senior Associate
 - Protocol update support
- Jon Remucal, Director of Nature-Based Solutions
 - Protocol update support

Workgroup Members

Organization (alphabetical)	Name
AgriCapture	Lincoln Day
Aster Global Environmental Solutions, Inc.	Matt Campbell
Aster Global Environmental Solutions, Inc. (Alternate)	Shawn McMahan
ATOA Carbon	Sami Osman
Water for Food Global Institute/LI-COR Biosciences	George Burba
Environmental Defense Fund	Jocelyn Lavallee
Grassroots Carbon Public Benefit LLC	Henk Mooiweer
Indigo Ag	Max DuBuisson
Indigo Ag (Alternate)	Ryan Pape
Land O' Lakes Truterra	Josiah McClellen
National Association of Conservation Districts	Jennifer Nelligan

Workgroup Members

Organization (alphabetical)	Name
Nutrien	Michael Nassry
Nutrien (Alternate)	Mike Gill
Regrow Ag	Lucia von Reusner
Sierra View Solutions	Robert Parkhurst
Soil Health Insitute	Jason Ackerson
The Nature Conservancy	Negar Tafti
Viresco Solutions Inc.	Brian McConkey
Viresco Solutions Inc. (Alternate)	Karen Haugen-Kozyra
Government Representative - TBA	TBA



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PROCESS OVERVIEW

Protocol Update Overview

- Adhere to high quality offset criteria and Reserve's principles
- Leverage lessons learned from emerging technologies, other offset protocols and projects, other regulatory programs, and other conservation programs
- Solicit and incorporate expert stakeholder feedback
- Direct carbon finance to nature-based solutions and make innovative agriculture projects more feasible and financially attractive to investors

Protocol Development Timeline

1. Kick-off meeting (*October 25, 2023*)
2. Workgroup process
 - Formation (*November 2023 – January 2024*)
 - Meeting 1 (*today – February 7, 2024*)
 - Meeting 2 (*March 2024*)
 - Meeting 3 (*April 2024*)
 - Meeting 4 (*May 2024*)
 - Meeting 5 (*June 2024*)
 - Meeting 6 (*July 2024*)
 - *Additional Meetings - TBD*
3. 30-day public comment period (*TBD September 2024*)
4. Propose to Board adoption (*January 2025*)



Workgroup Process and Expectations

CAR/Process:

- Manage the development process
- Hold 5-6 workgroup meetings
- Reserve staff identify and solicit feedback on specific protocol criteria
 - **Specific questions for WG will be highlighted in red**
- Reserve staff will share draft protocol with WG
- Revise protocol based on feedback

WG/Expectations:

- Attend all (~5-6) workgroup sessions
- Be active participants: provide input and ask questions on protocol concepts and language
- After meetings, share additional input and expertise as needed
- Review draft protocol and provide written feedback to Reserve staff
- Be constructive, collaborative, and productive



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PROTOCOL CONSIDERATIONS



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SEP V2.0: CLARIFICATIONS & REQUIRED UPDATES

SEP V2.0: Clarifications & Required Updates

- Project Definition – Section 2.0
- Project Start Date – Section 3.2
- Permanence (practice specific thresholds) – Section 3.5 / Section 6-8 MRV
- Quantification – Section 5
- QA/QC Guidance – Section 6.1
- Model Guidance and Validation Documentation - Section 6.6
- Tree Coverage Guidance
- Initial Verification Deadlines - Section 8

Project Definition – Section 2.0

- Definition: **and/or** Soil Organic Carbon
 - Defined as the adoption of agricultural management practices that are intended to increase soil organic carbon (SOC) storage **and/or** decrease net emissions of CO₂, CH₄, and N₂O from agricultural operations
- 2.2.2 Defining the Project Area
 - I.e. Update language differentiating project start date vs. field start date
- 2.2.3 Project Aggregation (field submittal requirements)
 - Change language around requirements of field enrollment form
- 2.2.3.2 Transferring Fields Between Projects
 - Ability to have individual fields ‘come and go’ from the project

Project Start Date – Section 3.2

- Project Start Date vs. Field Start Date requirements
- Project Start Date is set by the first field in the project in the registry, and reporting periods and verification periods are set in alignment with this date and protocol requirements
- Fields can continuously be added to a project – currently uploading the field on a field list to the registry can timestamp the field start date
- Challenges with this approach - timing, administration and guidance
- **Can we use field contracts as the start date? Concerns? Confidence?**
- **Should 12-month field submittal deadlines be aligned with growing seasons rather than calendar? Could allow fields to be registered up until the harvest event of an initial cycle?**
- **Need an updated form for field list submittals and tracking by project**

Permanence - Section 3.5 / Section 6-8 MRV

- What constitutes as a reversal for practices (i.e. tillage)?
- At what point do we see reversals for specific practices, in specific locations, in combination with other practices?
- Modelling vs. sampling?
- How do we at the Reserve monitor and verify reversals (templates, etc.)
- Reversals are at the project level, but we need consensus on how to monitor and verify what is happening at field level

Quantification – Section 5

- Fossil Fuel Quantification – Equation 5.29
 - By practice vs. consumption of fuel
 - Deminimis – 5% compared to delta vs. baseline
- Grazing Quantification – Section 5
 - Potential for limited use of conservative emission factors
 - Applicability and limitations of empirical approaches (% , timelines, model)
 - Allowing Animal Unit Equivalents (AUEs) and Animal Unit Months (AUMs) to serve an alternative metric of grazing activity to Animal Grazing Days (AGDs)

Quantification – Section 5

- Defining Baseline Scenarios (Timelines) – Section 5.1
 - Fallow fields, cultivation cycle dates, normalization by days, etc
- Removals and Reductions - Eq 5.2 and 5.3
 - Edits to distinguish SOC between 5.2 and 5.3
 - Tagging credits as removals vs. reduction // reversible vs. non-reversible
- Methane and Nitrous Oxide Emissions – Sections 5.4.1/5.4.2
 - Level of distinguishing model vs. equations for non-reversible emissions

QA/QC – Section 6.1

- Each project is required to develop and seek Reserve approval for a methodology for quality assurance / quality control (QA/QC) for their data
- Missing data
 - Need additional guidance for how to handle missing data in different scenarios
 - Soil sampling points (minimum threshold)
 - Baseline data (grower doesn't have full management history)
 - Improving QA/QC guidance (review template for criteria needed for QA/QC)
- Develop monitoring report template
- Agricultural Management Data Collection
 - Update quantitative data hierarchy and minimum data requirements (QA/QC template)

Model Guidance and Validation Documentation

- Separate Model Validation and Calibration Guidance Document
- **Strong need for the following to standardize process & increase transparency:**
 - Training, guidance and requirements of third party validation experts
 - Step-by-step overview documents outlining the requirements and timelines
 - Template to summarize model applicability (i.e. CFG x ES x PC)
 - Requirements for additional model validation / calibration (amendments)
 - Internal review form to standardize requirements
 - Clarify COI form requirements
 - Other comments/concerns?

Tree Coverage Guidance

- Grasslands = Areas dominated by grasses with <10% tree canopy cover, including savannas (i.e., grasslands with scattered trees).
- Project activities must not result in long-term material decreases in carbon stocks in woody perennials on the project area, but the removal of small volumes of woody biomass (such as the removal of trees along fence rows) is allowed
- The prohibition on clearing native ecosystems does not include the removal of a small numbers of trees, such as the removal of trees along fence rows that is immaterial respective to project emission reductions.
- Fields that are split by minor breaks consisting of ineligible areas (i.e., fields split by roads, tree breaks, hedgerows, or watercourses) can still be considered a single field, if desired.
- **Additional guidance for <10% (by acres/field/project) and ‘small’ # of trees**

Initial Verification Deadlines – Section 8

- Projects may submit for verification for up to 5 reporting periods at a time, and verification for each field may include up to 5 reporting periods for this field
- If a field is unable to get into the project verification process by the Reporting Deadline for its initial Reporting Period, but the overall Project does undergo verification, the field may be included in the subsequent verification cycle
- For reporting periods for which the project developer is deferring verification to a future date, a monitoring report must be submitted prior to the required verification deadlines (i.e., 12 months following the end of the reporting period)
- **Except initial verification – maximum of 2 cultivation cycles or 24 months**



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SEP V2.0: POTENTIAL UPDATES OR ADDITIONS

SEP V2.0: Potential Updates or Additions

- Eligible Practices – Section 2.0
- Additionality – Section 3.4
- Ecosystem Services Payment Stacking – Section 3.4.3
- Soil Sampling – Section 6.5
- Sub-field Management / Measurement Only
- Cumulative Accounting
- Remote Sensing
- **Other items?**

Eligible Practices – Section 2.0

- Current eligible practices:
 - Fertilizer (organic or inorganic) application; and/or, **(timing, placement, etc)**
 - The application of soil amendments (organic or **inorganic**); and/or,
 - Water management/irrigation; and/or, **(reduced energy (fossil fuel comparison))**
 - Tillage and/or residue management; and/or,
 - Crop planting and harvesting (e.g., crop rotations, cover crops); and/or,
 - Fossil fuel usage; and/or, **(update to reflect practice change vs. efficiency)**
 - Grazing practices and emissions **(federal lands, alternatives for activity levels, etc)**
 - **Agroforestry?**
- **Should projects be required to include more than one practice when claiming credits for specific, additional practices (i.e. fossil fuel usage)**
- **Should project be required to increase soil organic carbon on some or all fields (and/or in project definition)**

Additionality – Section 3.4

- Performance Standard Test
 - USDA datasets may be out of date depending on publication cycles / locations
 - Potential to use other third party dataset – Land Grant Universities? Surveys?

Ecosystem Payment Stacking – Section 3.4.3

- Reserve does not prohibit either payment or credit stacking unless such payments or credits are specifically delineated per tCO₂e
- Guidance and approval must be sought from the Reserve
- Any type of conservation or ecosystem service payment or credit received for activities on the project area must be disclosed by the Project Owner
- **Additional guidance and examples of typical ecosystem payments needed? Decision Tree style?**

Soil Sampling – Section 6.5

- Soil carbon analysis must be performed using dry combustion techniques.
- Remeasurement of previously sampled points during subsequent reporting periods is allowed, though remeasured sample points may comprise no more than 50% of the total number of sample plots
- **Need to review/update soil sampling techniques (spectroscopy, etc)?**
- **Remeasurement requirements – sampling points cannot be re-sampled, need to review this guidance, conflicts with modelling data requirements**
- **Other items related to soil sampling?**

Sub-field Management / Measurement Only

- Potential to distinguish between a field and management zones to account for the fact that growers may not have homogenous management across an entire field
- Would need to update language in this Section 2/5 to define project area in terms of “management zones” vs. fields
- Could reduce changes with field boundaries over time?

Cumulative Accounting

- Projects using SEP v1.1 report estimates of emissions reduction that occurred since the last reporting period, and uncertainty is estimated for this (usually 1-year) time period
- High uncertainty with this approach – why other programs are 5/10 years before issuance
- Model simulation updates occurring over time – not currently captured
- No opportunity to ‘correct’ or ‘true up’ small differences in predictions
- Cumulative accounting could help address the above concerns, among others
- Updating SEP to include cumulative accounting would involve edits to equations to quantify cumulative credits over time for the project and all its vintages vs. the credits in the reporting periods being verified alone
- Impacts on issuance, buffer pool, reversals, etc

- General:
 - Need to update in protocol to provide additional guidance on requirements for use of remote sensing to demonstrate historical practices and/or ongoing monitoring?
- Agroforestry examples:
 - Allow the use of remote-sensing-derived estimates of canopy cover, along with a carbon-to-canopy ratio specific to relevant species. Would need to outline additional details specific to remote sensing of tree canopy and planting events of perennial woody species.



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SETTING PRIORITIES

Workgroup Survey

- Survey to collect workgroup feedback and preferences for items to prioritize in update.
- 1 response per organization – please discuss internally to identify priorities
- There will be space to add additional feedback – feel free to record other items that you would like discussed in the workgroup
- Survey will be sent out Friday, Feb 9 – please complete by Feb 23



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OPEN DISCUSSION – FEEDBACK AND SUGGESTIONS



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NEXT STEPS

Next Steps

- Email us with any feedback on topics discussed today
- **Submit survey and comments/feedback by February 23, 2024**
- Reach out any time to discuss protocol topics or process
- *Reserve Staff to identify priorities for discussion at next WG meeting*
- ***Next Workgroup Meeting 2 – March 2024 (Doodle Poll to be sent)***

Key contacts

Protocol development lead:

McKenzie Smith, Associate Director

msmith@climateactionreserve.org

Alison Nord

anord@climateactionreserve.org

General inquiries:

Policy@climateactionreserve.org



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THANK YOU!