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Public Kick-Off Meeting: Biochar Protocol v1.0

August 12, 2021

- All attendees are in listen-only mode
- Please submit your questions in the GoToWebinar question box and we'll try to answer them at the end, time permitting
- 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

- Climate Action Reserve
- Background on biochar projects
- Protocol development process/timeline
 - REMINDER: Statements of Interest for joining workgroup due Friday, August 27
- Key considerations for protocol development
 - Project definition
 - Project ownership
 - Additionality
 - Permanence
 - Quantification
 - Monitoring / reporting / verification
- Next steps

Climate Action Reserve



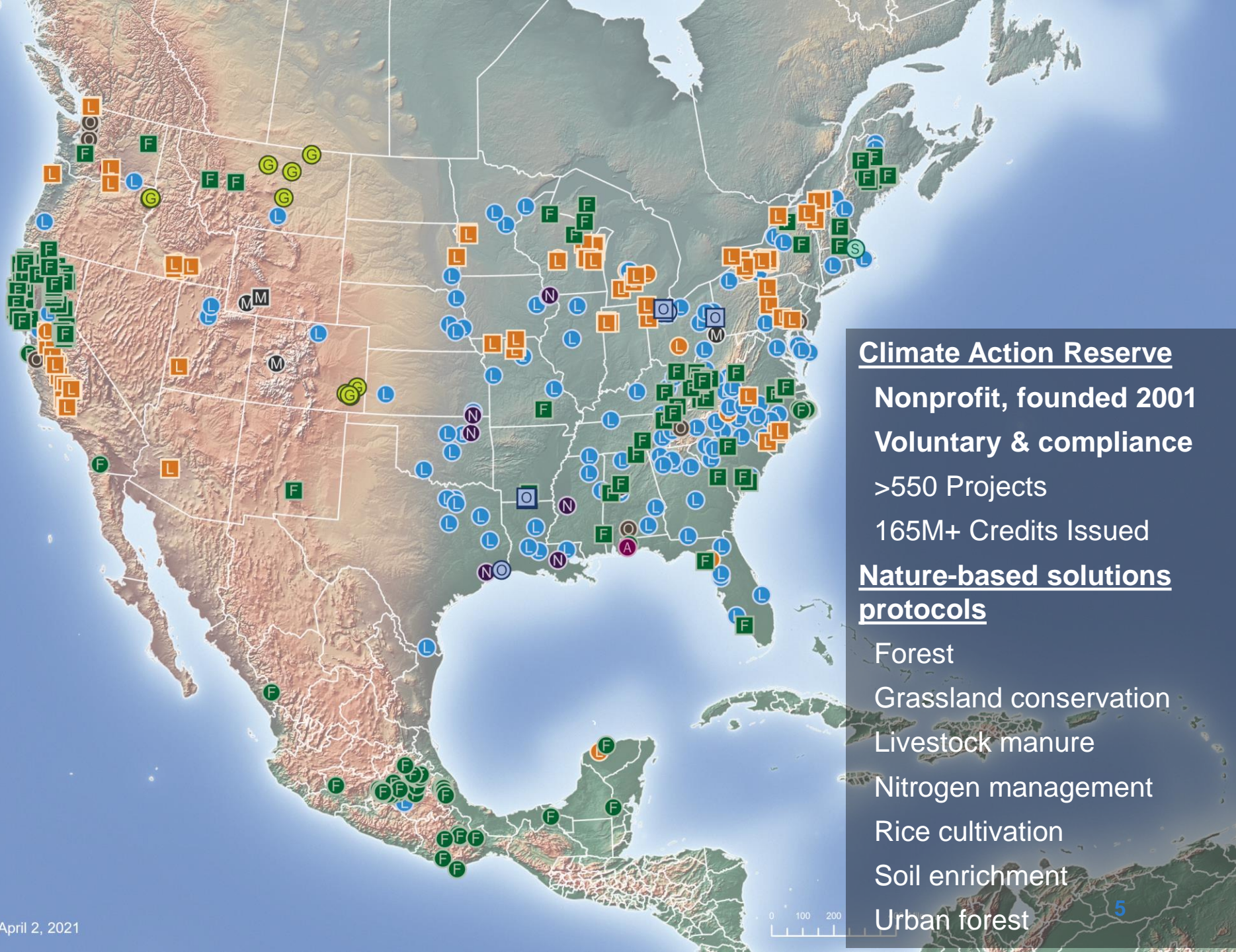
- Mission: to develop, promote and support innovative, credible market-based climate change solutions that benefit economies, ecosystems and society
- Develop high-quality, stakeholder-driven, standardized carbon offset project protocols across North America
- Accredited Offset Project Registry under the California cap-and-trade program
- 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



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- A Adipic Acid
- F Forest
- F Forest (ARB)
- G Grassland
- L Landfill
- L Livestock
- L Livestock (ARB)
- M Mine Methane
- M Mine Methane (ARB)
- N Nitric Acid Production
- O Organic Waste Composting
- O Organic Waste Digestion
- O Ozone Depleting Substances
- O Ozone Depleting Substances (ARB)
- S Soil Enrichment

Listed, Registered, Transitioned, & Completed Projects as of April 2, 2021



Climate Action Reserve

Nonprofit, founded 2001

Voluntary & compliance

>550 Projects

165M+ Credits Issued

Nature-based solutions protocols

Forest

Grassland conservation

Livestock manure

Nitrogen management

Rice cultivation

Soil enrichment

Urban forest

Funding support



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U.S. Forest Service Wood Innovations Program



CAL FIRE Forest Health Grant, part of California Climate Investments



Funding also supporting:

- Companion market analysis by Blue Forest Conservation (with additional funding support from the Doris Duke Charitable Foundation)
- Pilot projects to test protocol and demonstrate its viability and versatility



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BACKGROUND

Background: Why biochar?

Long been recognized for its potential to sequester C for long periods of time while producing numerous co-benefits

Can help to address resource management concerns, including reducing wildfire risk

Greater scientific certainty around the durability of carbon in biochar

Incentives may be necessary to increase production and use of biochar, which has been plagued by high costs despite the numerous benefits it can provide

Can offsets support large scale increases in biochar production/use?

Background: What types of activities are related to biochar production/use?



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Feedstocks

- Forest fuel treatment biomass
- Forest harvest residues
- Agricultural prunings/residues
- Other waste biomass sources
- Others? TBD

Production Technology

- Dedicated biochar facility
- Biochar/bioenergy co-production facility
- On-site/mobile pyrolysis equipment
- Others? TBD

End uses

- Ag soil application
- Forest soil application
- Construction materials
- Abandoned mine reclamation
- Others? TBD

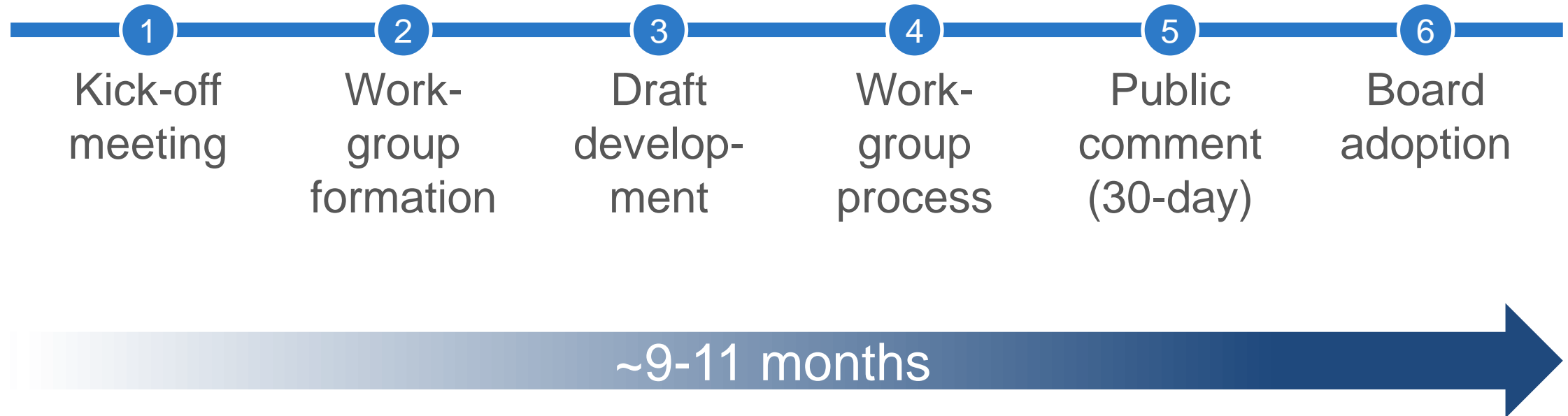
* Examples of what may be considered but not necessarily what will end up in the final protocol?



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DEVELOPMENT PROCESS & TIMELINE

Protocol Development Timeline



Workgroup Formation

Stakeholder participation & feedback is critical to protocol development

The Reserve assembles an intensive multi-stakeholder workgroup to advise protocol development and produce rigorous, well-vetted, and credible protocols

- Strive for balanced representation from industry, project developers, farmers, environmental NGOs, verification bodies, independent consultants, academia, and government bodies
- Interested stakeholders invited to submit Statement of Interest (SOI) forms
 - **Deadline for submitting SOI is Aug 27th**
 - **SOIs can be downloaded here:** <http://www.climateactionreserve.org/how/protocols/biochar/>

Requires commitment to ~2-3 workgroup meetings plus additional protocol reviews, familiarity with the feedstocks, technologies, and/or end uses for which the protocol is being developed, and solid understanding of project-based GHG accounting

Workgroup Process and Expectations for Workgroup members

Process

- Reserve staff identify and solicit feedback on specific protocol criteria
- Reserve staff schedule and hold meetings (~2-3)
- Reserve staff produce draft protocol for review
- Reserve staff revise protocol based on feedback

Expectations

- Review, comment on and provide recommendations on specific protocol criteria
- Participate in meetings via webinar
- Provide written comments on draft protocol



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KEY CONSIDERATIONS FOR PROTOCOL DEVELOPMENT

Key considerations for protocol development



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- *Project definition*
- *Project ownership*
- *Additionality*
- *Permanence*
- *Quantification*
- *Monitoring / Reporting / Verification*

This section of protocol will define eligible:

- ***Feedstocks:*** “Waste” biomass sources (i.e., typically have no economic use) to be converted into biochar, e.g., forest fuel treatment material, timber harvest residues, orchard prunings, urban wood waste—inclusion of any of these and others TBD
- ***Biochar production technologies/conditions:*** types of biochar production operations that may be eligible or perhaps specific types to be excluded
- ***End-uses:*** list of eligible end uses for which permanence of sequestered C can be reasonably estimated, e.g., soil amendments, construction materials

Project Ownership

Who has the right to be issued credits?

- Biomass feedstock provider
- Biochar producer (likely default)
- End user

Should projects be allowed to aggregate and under what conditions?

Additionality

Ensuring only crediting for actions that go beyond what would occur in the absence of the project

- Project activities must not be legally required
- Focus on performance standard – is biochar production a common use of waste biomass?

Sequestered carbon must remain secured for 100 years

- Releases of sequestered carbon are called ‘reversals’ and losses must be replaced – Are there significant risks of reversals?
- Crediting is ultimately based on expected levels of recalcitrance of stored C for at least 100 years
- How best to estimate the durability of C in biochar?

Baseline: Selecting and quantifying appropriate baseline scenario

- On-site combustion
- Decomposition
- Bioenergy production
- Assume 0 emissions

Estimating recalcitrance: IBI Stable C Protocol, IPCC temperature-based permanence factors

Quantification tool: Development of standardized tool to streamline quantification and improve efficiency of reporting and verification

Can impacts on N₂O and CH₄ be included?

Monitoring / Reporting / Verification (MRV)

- Sampling and laboratory analysis standards
- Chain-of-custody tracking requirements to appropriately document transfers from feedstock source to biochar producer to end use
- Standardized quantification/reporting tool to streamline reporting and verification
- Requirements for verification site visits

Can we leverage existing certification programs (e.g., IBI, EBC) to streamline our MRV process, including demonstration that some eligibility requirements have been met?



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NEXT STEPS

Protocol development process & timeline

Milestone	Date
Public kick-off meeting	August 12 th
Statements of Interest for workgroup due	August 27th
Formation of workgroup	September
Staff conducts internal research and drafts protocol	September/October/November
First workgroup meeting	Late September
Second workgroup meeting	November/December (tentative)
Third workgroup meeting (as needed)	January 2022 (tentative)
Public comment period	February - March
Protocol presented to Reserve Board for approval	<i>April (tentative)</i>

Next steps

- ***For interested stakeholders:***
 - **Submit a Statement of Interest to become a workgroup member (by Aug 27th)**
 - Email interest to sign up for updates as an observer
 - Email us feedback anytime
- ***For Reserve:***
 - Form workgroup
 - Start drafting!!
 - First Workgroup meeting late September (via webinar)

Key contacts

- ***Climate Action Reserve:***

- Email: Policy@climateactionreserve.org

- Protocol development lead:

- Jon Remucal, Senior Manager, Climate Action Reserve

- Email: jremucal@climateactionreserve.org