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Canada Grassland Project Protocol v1.0

Public Comment Webinar

Aug 28, 2019

Agenda

1. Background
2. Presentation of protocol
3. Audience questions
4. Next steps

Housekeeping:

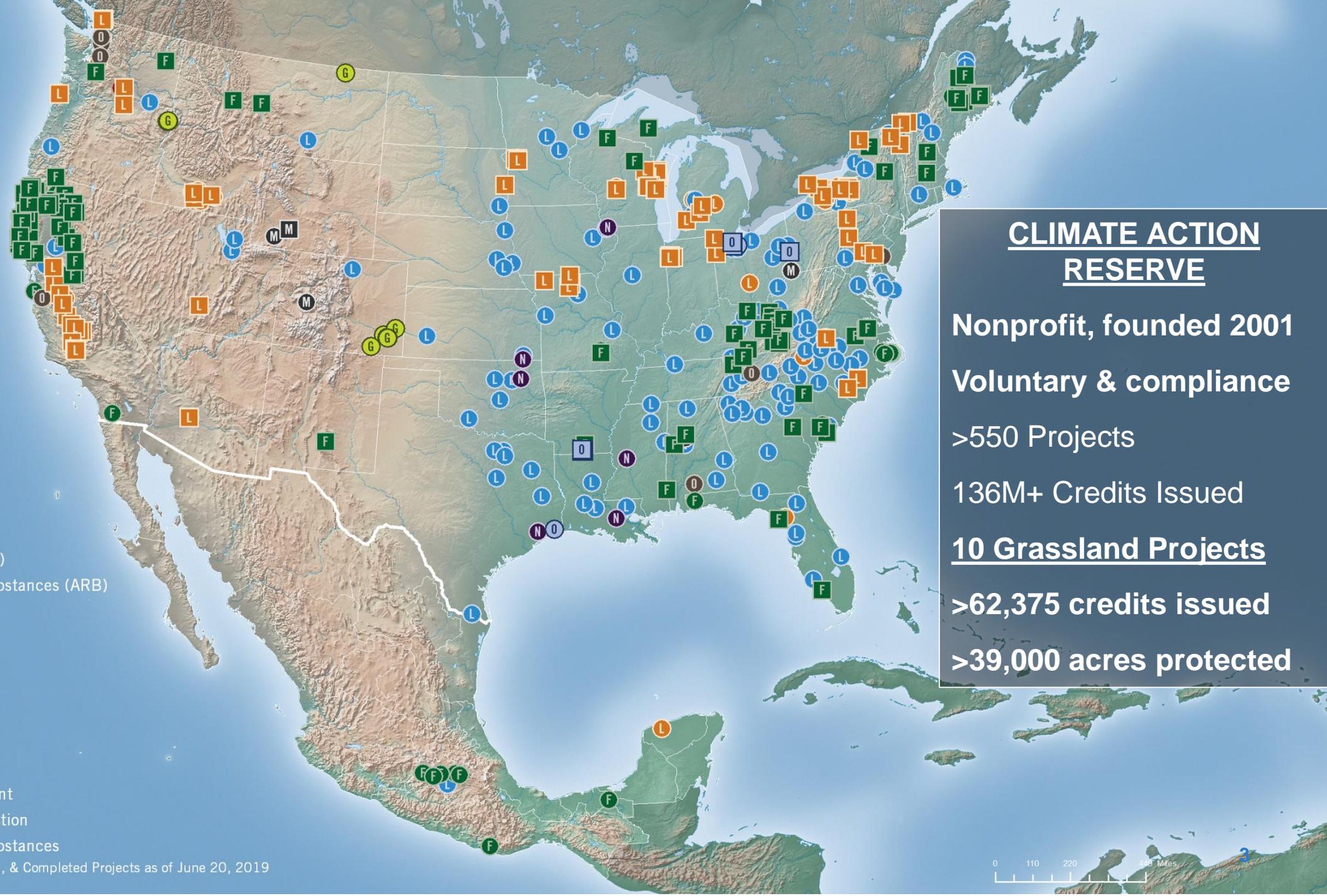
- *Please use the question panel to communicate*
- *This webinar will be recorded*
- *Please email bzavariz@climateactionreserve.org if you need assistance*



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- F Forest (ARB)
- L Livestock (ARB)
- M Mine Methane (ARB)
- O Ozone Depleting Substances (ARB)
- O Composting
- F Forest
- G Grassland
- L Landfill
- L Livestock
- M Mine Methane
- N Nitric Acid Plants
- N Nitrogen Management
- O Organic Waste Digestion
- O Ozone Depleting Substances

Listed, Registered, Transitioned, & Completed Projects as of June 20, 2019



CLIMATE ACTION RESERVE

Nonprofit, founded 2001
Voluntary & compliance
>550 Projects
136M+ Credits Issued
10 Grassland Projects
>62,375 credits issued
>39,000 acres protected



Background

- July **2015**: US Grassland Project Protocol (GPP) v1.0 adopted
- **2016**: First US grassland projects submitted
- January **2017**: US GPP v2.0 adopted
- **2017**: First US grassland credits (Climate Reserve Tonnes, or CRTs) issued
- **2017**: Began adaptation of 13 compliance offset protocols for Ontario and Quebec, including avoided grassland conversion
- **2018**: Ontario elections signal the end of the cap and trade program, along with the protocol development contract
- Late **2018**: Canadian Forage and Grassland Association, along with Viresco Solutions, provides funding to work with the Reserve to finish adaptation of the Canadian GPP
- **2019**: Protocol drafting, workgroup meetings, public comment, and final adoption

Protocol Development team

Climate Action Reserve

- **Max DuBuisson**, Policy Director
- **Bety Zavariz**, Policy Manager
- **Heather Raven**, Senior Project Coordinator

Viresco Solutions

- **Karen Haugen-Kozyra**, President
- **Jonathon Alcock**, Sustainability Specialist
- **Dr. Brian McConkey**, Chief Scientist

Technical Working Group

- Ecological Gifts Program, Canadian Wildlife Service
- Shell Canada
- Trimble
- Government of Manitoba
- Carbon Credit Solutions Inc.
- The Nature Conservancy Canada
- Alberta Beef
- Canadian Forage and Grassland Association
- Saskatchewan Stock Growers Association
- Saskatchewan Cattlemen's Association
- Applied GeoSolutions
- Brightspot Climate
- Ducks Unlimited Canada
- Southern Alberta Land Trust Society (SALTS)



Remaining timeline

<i>Week beginning</i>	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct
Public comment period									
Public webinar		28th							
Final protocol revision									
Internal final reviews									
Final protocol to Board									
Board Adoption									16th



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THE GHG REDUCTION PROJECT

Project definition

- The GHG reduction project is defined as the prevention of emissions of GHGs to the atmosphere through conserving grasslands, shrublands, rangelands, or pasture land belowground carbon stocks and avoiding crop cultivation activities on an eligible project area.
- Conversion is avoided through the recording of a Qualifying Land Conservation Agreement
- The project area must be grassland, shrubland, rangeland, or pasture land
- Projects may contain limited areas of intact wetlands on mineral soils and classified as 1-3 under Stewart & Kantrud Classification System
- Land must be suitable for conversion to crop cultivation
- Project area must have been in continuous grassland cover for at least 10 years prior to the project start date

Activities permitted in project area



- Livestock grazing
- Moderate levels of seeding
- Fertilizer application
- Haying
- Forage harvesting
- Irrigation
- Recreational or economic activities
- Manure not managed in liquid form



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OWNERSHIP

Project area

- One grassland owner
- One easement holder (could be multiple easements)
- May be a subset of the area covered by the easement

GHG reduction rights

- GHG rights may be separated from the land
- Rights holder = Project Owner and account holder
- All entities involved must be party to GHG reduction rights agreement

Multiple entities

- Landowner
- Easement holder
- Project Developer
- Cooperative Developer

Cooperative structure

- Joint monitoring, reporting, and verification
- Project data remain independent, and CRTs are issued to individual projects
- Projects may join or leave at any time

- Cooperatives are collections of two or more individual grassland projects managed by a common entity (Cooperative Developer) that engage in **joint monitoring, reporting and verification**
- No comingling of project data or codependence of eligibility
- Projects may join or leave at any time without impacting other participants
- Cooperatives must:
 - Engage the services of a single verification body for all grassland projects enrolled in the cooperative
 - Coordinate submittal, monitoring, and reporting activities for all projects in the cooperative
 - Coordinate a verification schedule that maintains appropriate verification status for the cooperative
 - **Maintain traceability of credits to individual projects**



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ELIGIBILITY & ADDITIONALITY SCREENS

Project Start Date

- No more than 12 months prior to project submission
- Events that mark project start date
 - Project submittal to the Reserve
 - Recordation of a Land Conservation Agreement (LCA) on the project area
 - Transfer or sale of property to a public or private entity for purpose of carbon project
- Start dates back to October 2017 will be accepted if submitted before October 2020

- **Legal Requirement Test**

- Is the land legally able to be converted to cropland on the project start date?

- **Performance Standard Test**

- Part 1: Financial additionality screen

- A proxy for the financial pressure to convert the project area to annual cropland

- Assessed through a site-specific real estate appraisal

- Part 2: Land suitability screen

- Confirmation that the project area is suitable for annual crop cultivation

Default financial test

CROPLAND PREMIUM = (cropland value – grassland value) ÷ grassland value

- “How much more is the land worth as cropland vs grassland?”

Cropland Premium	Eligibility	Baseline Discount
>100%	Yes	0%
40% - 100%	Yes	Sliding scale, 0% - 50%
<40%	No	N/A

- All projects must obtain a certified real estate appraisal to identify the financial pressure to convert
- Appraisals reviewed by an expert panel for ECOGift program participation are sufficient for this performance standard test

Certified real estate appraisal must show

- 1. The project area is suitable for conversion to cropland**
- 2. Conformance with a set of minimum standards, including**
 - Prepared and signed by a third-party, licensed Real Estate Appraiser
 - Specification and quantification of areas that are suitable for crop production
 - Inclusion of a complete description of the property land, site characteristics and improvements
 - Description of what would be described for a conversion to cropland
 - Presentation of evidence that demand exists for the conversion to cropland
 - Demonstration of soil suitability, water availability and absence of limitations for crop productions
- 3. The cropland land use has a higher market value than maintaining the project area for sustainable grassland management, such that it meets the financial additionality threshold**

Suitability threshold

- Suitability for conversion to cropland can be demonstrated by:
 - Determining the specific suitability classification for the project soils, according to the Land Suitability Rating System (LSRS) or,
 - Canada’s Land Inventory (CLI) data can be used when LSRS data are not available or,
 - Site-specific soil classification assessment by an independent expert

Suitability: Land Suitability Rating System

Class Soil Description

1	Soils in this class have no significant limitations in use for crops.
2	Soils in this class have moderate limitations that restrict the range of crops or require moderate conservation practices.
3	Soils in this class have moderately severe limitations that restrict the range of crops or require special conservation practices.
4	Soils in this class have severe limitations that restrict the range of crops or require special conservation practices.
5	Soils in this class have very severe limitations that restrict their capability in producing perennial forage crops, and improvement practices are feasible.
6	Soils in this class are capable only of producing perennial forage crops, and improvement practices are not feasible.
7	Soils in this class have no capacity for arable culture or permanent pasture.
8	Organic Soils (not placed in capability classes).

Land suitability screen

- Must be able to show that the project area is suitable for conversion to cropland
 - Class 1-4 soils are most suitable for cultivation
 - Evidence of existing crop cultivation and recent conversion on Class 5-6 soils
 - Class 7-8 soils are ineligible
- Each Ecoregion has its own threshold for the minimum amount of Class 1-4 soils
- *Option 2: Local Cropland Assessment:*
 - Allow for assessment of local cropland to determine appropriate LSRS threshold
 - Must include at least three actively-cultivated farms in the same ecoregion, no more than 200 km from the project area
 - Farms must be at least as large as the project area, and must assess entire farm property (no cherry-picking)

Concurrent legally binding agreements and credit stacking



- A Grassland Owner may concurrently enter into a legally binding agreement related to ecosystem services or protection on the project area
- Agreement is considered concurrently entered if approved no more than 6 months prior to the project start date
- Credit and payment stacking must not violate the Legal Requirement Test
- Agreement or program must demonstrate legal additionality of the grassland project
- Any type of Concurrent Legally Binding Agreement must be disclosed to the verification body and the Reserve on an ongoing basis
- The Reserve will evaluate the additionality of Concurrent Legally Binding Agreements on an case by case basis



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CREDITING PERIODS

Crediting periods

- Maximum of 30 years from project start date, based on emission factors
- Modeled emission factors are in 10-year increments
- **May voluntarily be ended early as long as permanence is maintained**
- Not a single crediting period applicable to the entire cooperative, unless all projects share the same start date



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PERMANENCE

Permanence

- A CRT is ultimately retired (“used”) as an offset, allowing the emission of a tonne of CO₂e elsewhere
 - E.g., direct CO₂ emissions from air travel
- The “allowed” emission is effectively in the atmosphere forever
- The international community has defined “forever” as 100 years in order to make offsets practical
- Offsets must represent a “permanent” reduction in order to be credible

THEREFORE...

- ***Stored carbon must remain stored for 100 years to achieve equivalence***

Reversibility of emission reductions

Non-reversible

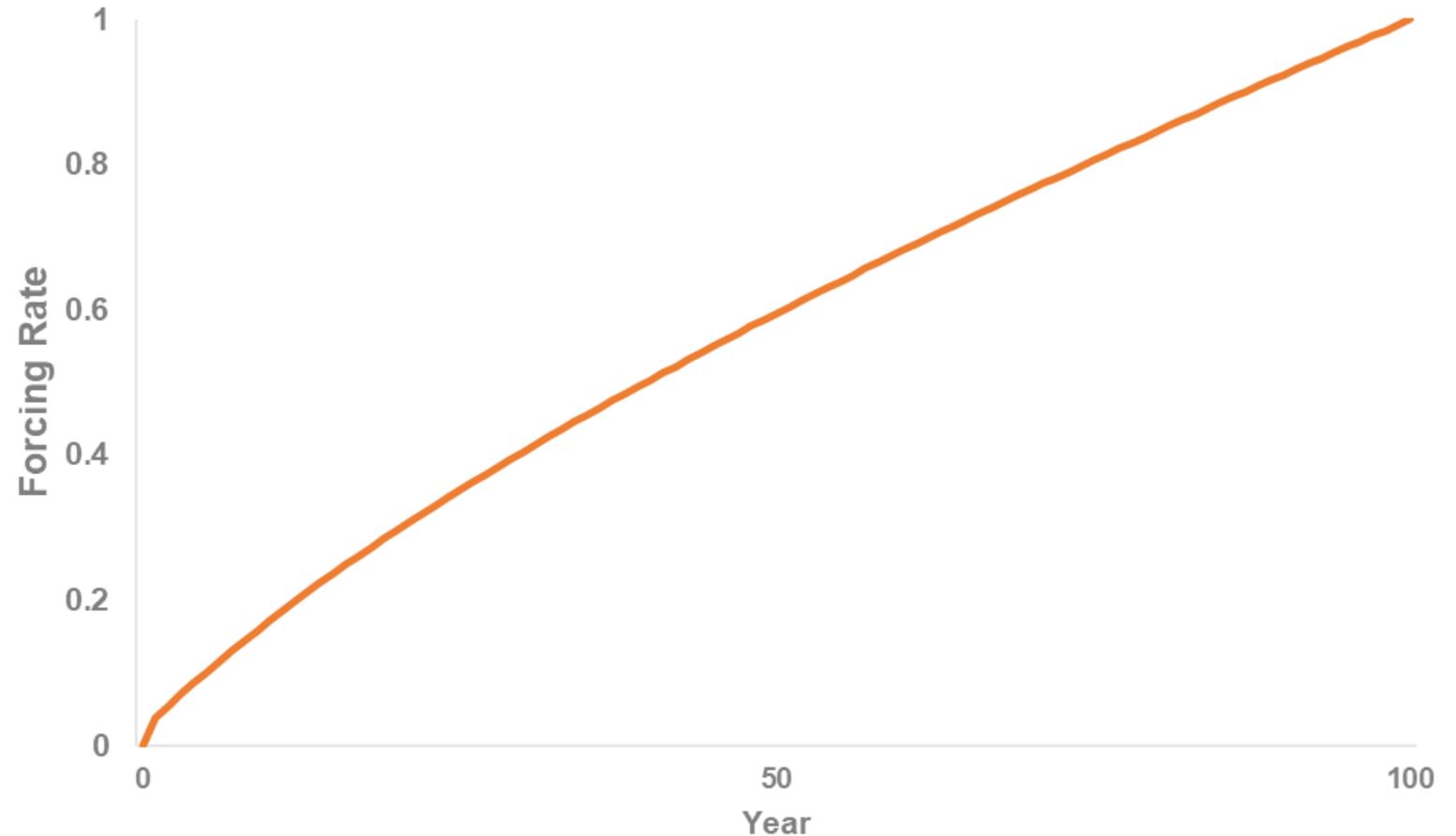
- Projects which capture, destroy, or avoid GHG emissions
- No long-term storage of the captured/avoided GHGs
- An emission avoided or destroyed is eliminated forever
- E.g., avoided fertilizer use

Reversible

- Land use projects (grassland and forestry)
- The carbon contained in biomass can be released at any time
- Needs special measures to be comparable to non-reversible ERs
- E.g., avoided soil carbon emissions

Time value of carbon storage

- Based on the 100 year scale, there is approximately 1% of the total radiative forcing benefit for each year that the carbon remains stored
- This allows for alternative crediting approaches to avoid 100-year commitments
- It also means reversals are less significant over time





Two options for permanence: TTA & TYA

Tonne-tonne accounting (TTA)

- 100-year legal commitment to monitoring and reporting
- Full credit value issued upon successful verification
- Higher cost & reversal risk = higher reward
- Higher risk of reversals and buffer pool contribution

Tonne-year accounting (TYA)

- 20-year minimum commitment
- No obligation beyond 20 years
- Project Owner may decide on any length of commitment beyond the initial 20 years (0-100)
- Credit issuance is severely limited if no additional commitment is made
- Lower cost and reversal risk = lower/delayed reward
- In-built incentive to stay in the program and continue monitoring/verification in order to eventually receive all CRTs

Compensating for reversals

- Avoidable reversals
 - Due to intent (e.g., plowing for crops) or negligence (e.g., allowing activities which disturb soil carbon)
 - Project Owner pays back the CRTs related to reversible emission reductions
- Unavoidable reversals
 - Acts of nature, etc.
 - CRTs are paid out of a shared risk buffer pool
 - Projects deposit into the buffer pool between 2% - 16.8% of baseline emissions



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LEGAL INSTRUMENTS

1. Qualified Land Conservation Agreement (QLCA)

- The mechanism by which conversion is avoided and permanence is maintained

2. GHG Reduction Rights Contract

- Involves landowner & QLCA holder (and maybe a 3rd party)
- Establishes identity of Project Owner

3. Project Implementation Agreement

- Contract between Project Owner and registry
- Ensures ongoing monitoring and reporting

Qualified land conservation agreements

- Required for all projects
- The easement terms must prevent the conversion of the project area from grassland
- Perpetual for TTA
- Minimum term of 20 years for TYA
- Protocol includes additional *recommended* provisions:
 - Make ownership of GHG reduction rights explicit
 - Make future encumbrances subject to the PIA

GHG reduction rights contract

- Legally establishes ownership of GHG emission reductions, thereby defining the Project Owner
- May be in the form of easement language
 - Easement holder may take, or explicitly not take, ownership
- May be a separate contract
- May be a combination of contracts
- We have template language
- A third party (not the landowner or easement holder) may own the GHG rights

Project Implementation Agreement (PIA)

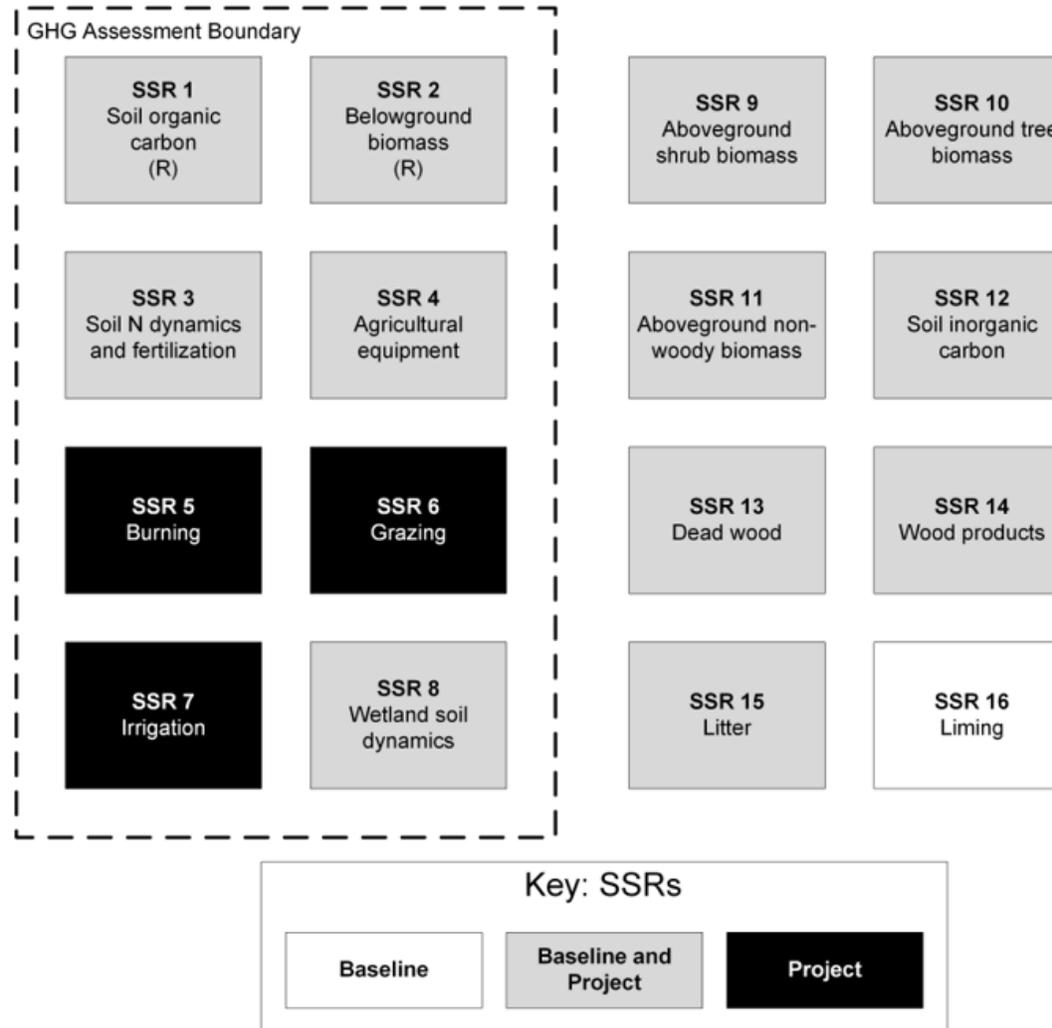
- Contract signed by the Project Owner and registry
- Commits PO to continued monitoring and reporting to avoid reversal determination
- This is the absolute final step during verification before credit issuance
- PIA amendment/extension is how the permanence commitment is extended
- Project Ownership may be transferred, and a new PIA will be executed
- If the PIA is recorded on the property, there is a lower buffer pool contribution
 - For projects under TTA
 - PIA is signed after credit issuance and amended at each subsequent verification
 - For projects under TYA
 - Minimum requirement of one PIA for a term of 20 years after the first reporting period



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QUANTIFICATION

GHG assessment boundary



Quantification

- Baseline emissions
 - Avoided loss of belowground organic carbon (reversible)
 - Avoided cultivation emissions (N_2O from fertilizer, CO_2 from diesel) (non-reversible)
- Project emissions
 - Grazing (enteric CH_4 , manure CH_4 and N_2O)
 - Electricity & fossil fuels
 - Burning (CH_4 and N_2O)
 - Fertilizer use
 - Leakage (20% for all projects)
 - Wetland mineral soil dynamics

Baseline emissions

- Baseline emissions = Reversible + Non-reversible baseline emissions
- Reversible: Organic carbon loss
 - TTA: Credited assuming 100-year permanence
 - TYA: Credited based on length of permanence maintained and committed
- Non-reversible
 - N₂O and CO₂ emissions from use of fertilizers
 - Fossil fuel baseline emissions
- Most baseline emission equations rely on default, area-based emission factors (by stratum)
- Determine acreage in each stratum and use lookup tables to identify appropriate emission factors
- SOC and N₂O factors are provided in 10-year groups
- Fossil fuel use rate is constant for each stratum

- Two steps to identify strata:
 1. Geography & climate (Reporting Zone, RZ)
 2. Soil texture (using FAO Soil Texture Classification)
 - Coarse
 - Medium
 - Fine

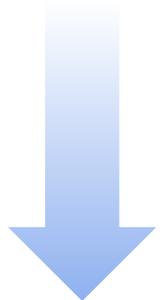
- Examples of strata

Stratum	Reporting Zone	Soil Texture
5_Medium	5- Boreal Shield East	Medium
14_Coarse	14 – Mountane Cordille	Coarse

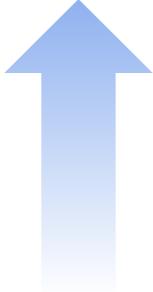
- Standardized emission factors were developed for reporting zones and soil textures across Canada based on Canada's NIR

Discounts

- Uncertainty of baseline conversion
 - Related to financial additionality test



Cropland Premium	Baseline Discount
>100%	0%
40% - 100%	Sliding scale discount: 0% – 50%
<40%	Not eligible (i.e., 100% “discount”)



- Uncertainty of modeling future practices
 - Fixed, indexed to 2019
 - Currently 1%, increases by 1% every 5 years

Project emissions

- Grazing
 - CH₄ from manure and enteric fermentation, plus N₂O from manure
 - Monitor the category, population, average ambient temperature, and grazing days for all livestock
- Burning
 - Quantification based on IPCC emission factors for N₂O and CH₄ from savannah burning
- Fossil fuel and electricity use and sources
 - Based on information from Canada's National Inventory Report
- Fertilizer application
 - IPCC default factors
- Wetland CH₄ emissions
 - Default area-based emission factor

Leakage

- **Leakage** = conversion of grassland to cropland outside of the project area
- If there is pressure to convert grassland to cropland, protection of one area could lead to conversion elsewhere
- Upon review of several studies of “slippage” in the US Conservation Reserve Program (10-year contracts to keep cropland out of production), **20%** was chosen as a conservative estimate



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ONGOING MONITORING

Annual monitoring

- Overall land use (i.e., is it still a grassland?)
- Soil disturbance (i.e., monitoring for reversals)
- Monitoring grazing
 - Highly flexible, allows for conservative estimation without direct data
- Other project emissions sources
 - Farm trucks
 - Pumps
 - Equipment
 - Emissions from recreational activities that wouldn't occur in the baseline

- Project area must be continuous grassland cover for at least 10 years
- Flexible approach to documenting land use history, encouraging multiple forms of evidence, and usually requiring overlap/corroborations between different forms
- GOAL: verifier should be able to reach reasonable assurance of grassland cover for any particular year in the historical period, even if there's not a piece of dated evidence from that period
- The protocol includes a list which is not meant to be exhaustive
- The same mechanism is used for ongoing demonstration of grassland cover

Example forms of historical land use documentation

- Time-stamped aerial photos
- Georeferenced satellite imagery
- Time-stamped historical photographs
- Public records
- Grazing leases
- Haying contracts
- Signed attestations
- Drone imagery/video

Monitoring ecosystem health

- It is required that projects undergo a periodic assessment of ecosystem health
- Approach to be approved by the Reserve
- First health assessment within two first verifications, then every 6 years at a minimum
- Options for complying with this requirement
 - Use of the Rangeland Health Assessment Protocol developed by Alberta Environment and Parks
 - Use of an alternative assessment protocol which employs a robust sampling design, assesses widely recognized metrics for ecosystem health and was developed with input from relevant experts
 - Use of advanced remote sensing techniques coupled with scientific evidence to support their use for this purpose

Monitoring grazing for quantification of project emissions

- Data to monitor
 - Type of livestock
 - Total animal grazing days per type
- Type of valid documentation
 - Grazing logs
 - Animal purchase and sale records
 - Grazing management plans

Monitoring grazing to prevent ecosystem disturbance

- Each project needs to determine a mechanism to safeguard the project against overgrazing
- Reserve approves approach
- Potential mechanisms
 - Presence of terms within the LCA which would be violated in the event of significant overgrazing in the project area
 - Development and adherence to a prescribed grazing management plan, developed to a recognized government or industry standard for long-term grazing management
 - Use of mechanisms for monitoring ecosystem health
- All mechanisms should include requirements for monitoring and enforcement, and identify the entity responsible for enforcement



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VERIFICATION

- **Site visits are optional**, but projects must apply a 5% buffer pool contribution until a site visit occurs
 - A single site visit removes the extra buffer contribution
- Verifications without site visits may rely on the documentation options for evidence of land use
 - There's not much to see in an avoided conversion site visit
 - Land use can be confirmed via remote sensing
- Review documentation for project emissions
 - Burning, grazing, fertilizer use



Reporting & verification cycle

- Reporting period (RP)
 - Initial RP may cover up to 24 months
 - Subsequent RPs may cover no more than 12 months
- Verification period (VP)
 - Initial verification period is one reporting period, beginning with the project start date
 - Subsequent VPs may cover up to 6 RPs, with interim monitoring reports in years without verification activities (similar to forestry)
- Calendar year cycle is recommended, but not required

Cooperative verification cycle

- Single verification period for cooperative
- For a project's first VP with the cooperative, it may start reporting at a date later than the other projects, but all projects end reporting on the same date
- Suggest CD use initial VP to get all projects coordinated on a single schedule for RPs and VPs
- If individual projects cannot meet protocol requirements, they can report zero CRTs and continue to be verified with the cooperative



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AUDIENCE QUESTIONS



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NEXT STEPS

Next steps

- Please submit written comments electronically by **Friday, Sept 13th** (1 week from today)
 - Comments in MS Word format preferred
 - Please organize comments by protocol sections
 - All comments will be responded and published online
 - Send to **policy@climateactionreserve.org**
- Reserve Board will consider adoption in public session on October 16th
 - If adopted, project submittals will be accepted immediately

Thank you!

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