

Framework for a Summerfallow Reduction Protocol

ClimateCHECK
SET THE STANDARD™



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Presented To:

**Developing a Summerfallow
Reduction Protocol: Science
at Work**

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Perspective

- Agriculture important in the carbon market.
- Agricultural offsets providers need expertise demanded by investors in the carbon market.
- Standards crystallizing
 - Offsets not physical, so quality is function of rules.
 - Alberta & Canada, Offset Quality Initiative, California Climate Action Registry, Voluntary Carbon Standard – ISO 14064.



Perspective

- Carbon offsets and investors under scrutiny
 - ENGO's quick to criticize lack of credibility
 - Public relations requires professional credentials and verifiable depth/breadth of technical competence
- Carbon offsets are (like?) financial instruments
 - Investors are often publicly traded companies with stringent regulatory requirements
 - Due diligence requires professional credentials and verifiable depth/breadth of technical competence



Perspective

- Tillage offsets only the beginning
 - Larger reduction/removal opportunities
 - Integrated projects/protocols
 - Emerging 'cleantech'
- Key role of Aggregators
 - Investors need agent to represent farm managers
 - Farm managers need information systems



KEY MESSAGES

Science well established to quantify GHG removals from reduced summerfallow.

- **Based on empirical data.**
- **Implemented in National Inventory Report.**

Protocol development focus on implementation of science.

- **Project condition — determine relationship of proposed Summerfallow Protocol to existing Tillage System Protocol.**
- **Baseline scenario — determine spatial scale and temporal period.**



**Canada's GHGFarm &
Holos**

**Tillage Management
System Protocol**

**Canada's National
Inventory Report**

**ISO 14064-2 Standard
Alberta Offset System, Canada's Offset System,
Voluntary Carbon Standard**

Protocol Design

GHG reduction = Coefficient X Activity

- Canada emissions inventory approach for IPCC Tier 2 coefficients - changes in Soil Organic Carbon using all realistic cropping-tillage-climate-soils management combinations at the SLC (soil landscapes of Canada) analytical unit
- Soil C Change Coefficients were weighted-averaged up to the soil reporting zones for CO₂e
- Fuel consumption changes and N₂O changes with tillage were derived as well and scaled to similar units



Project Condition

- **Scope.**
 - **Sequestration of carbon.**
 - **Energy use.**
 - **N₂O emissions.**



Project Condition

- **Co-implementation with Tillage System Protocol.**
- **Acknowledges importance of No Till to facilitate reduced summerfallow.**
 - **Decreases risk of reversal.**
- **Raises credibility of Tillage System Protocol.**
- **Uses data monitoring and data management tools developed for Tillage System Protocol.**



Project Condition

- Practices
 - Change in area of farm in summerfallow.
 - Definition from Tillage System Protocol
- Ownership
 - Address as in Tillage System Protocol.
- Verification.
 - Address as in Tillage System Protocol.
 - BUT, need evidence of practice change.



Sample Calculation

	TSOC / ha / y	T/CO ₂ e/ ha/y	T/CO ₂ e/ac/y
Parkland & Semi-arid	0.30	1.101	0.45
Brown & Dk Brown	0.53	1.95	0.79
Black & Grey	0.17	0.65	0.26



Sample Calculation

- Farm — 1000 ha, Dark Brown
 - Baseline — 350 ha summerfallow
 - Project — 100 ha summerfallow
 - Reduction
 - Factor: $1.101 - 0.1045 = 0.997 \text{ Mg CO}_2\text{e} / \text{ha}$
 - Credits: $250 \text{ ha} * 0.997 = 249.1 \text{ Mg CO}_2\text{e} / \text{ha}$





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