

Berkeley Faculty Roundtable on Environmental Services in Rangeland Production Systems

Presentation and Notes on Discussion from the Sixth Roundtable: December 1, 2009

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CARBON COWBOYS: UNDERSTANDING AND ENHANCING RANCHERS' ROLE IN MITIGATING CLIMATE CHANGE

Berkeley Faculty Roundtable on Environmental Services in Rangeland Production Systems

**Part I:
Powerpoint Presentation by Hannah Gosnell**

Carbon Cowboys:

Understanding and Enhancing Ranchers' Role in Mitigating Climate Change

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Overview

- * Research questions and methods
- * Current carbon market opportunities for ranchers
 - * Chicago Climate Exchange (CCX)
 - * *Sustainably Managed Rangeland Soil Carbon Sequestration Offsets*
 - * Over-the-counter transactions (OTC)
- * Perspectives from ranchers and other key informants
 - * Opportunities, challenges, limitations
- * Future opportunities
 - * Compliant market participation?
 - * OTC “gourmet” carbon, certification schemes, eco-labeling

Research Questions

- 1) What factors shape ranch owners' decisions regarding participation in existing voluntary carbon markets?
- 2) How does managing for carbon sequestration, as dictated by current institutions and informed by the best available science, fit with the existing land management practices and objectives of ranchers?
- 3) What policies, incentives, market conditions, and outreach are needed to help landowners manage their lands in ways that enhance carbon sequestration and mitigate climate change?

Methods

- * Literature review, document analysis
- * Semi-structured interviews (Summer/Fall 2009)
 - * 26 ranchers with CCX projects
 - * Montana, Wyoming, Colorado, New Mexico
 - * <2000 acres to >500,000 acres
 - * Family ranchers, corporate ranchers, tribal owners, absentee owners, newcomers, longtime owners
 - * 9 key informants
 - * aggregators, range scientists, agency personnel
- * Development of case studies for USDA publication

The Opportunity

- * Growing interest in and appreciation for ecosystem services provided by ag landscapes, especially extensive rangelands
- * Climate change mitigation through terrestrial carbon sequestration on ranches – low cost, low tech, relatively easy
- * Co-benefits of managing for carbon – ecological and social
- * Factors affecting amount of carbon sequestered
 - * soil type, cover type, and *land management*



*Benefits of
Prescribed Grazing*



July 2003

*Increasing Cover
and Diversity*



October 2006

Current \$ Opportunities for Ranchers

- * Ranchers can generate carbon credits through rangeland soil carbon sequestration projects
 - * In compliance with Chicago Climate Exchange (CCX) protocol
 - * In compliance with other standards
- * Credits are sold through the CCX or “over the counter”
- * If sold through CCX, they are “generic” carbon credits
 - * Currently trading at \$.15/ton (\$.20/ton this past fall)
- * If sold OTC, they can command more – “gourmet” carbon
 - * Tap into public’s desire to support ranching
 - * Ag offsets may be worth more depending on legislation
 - * Aggregators getting \$1.50-\$4.00/ton OTC this past fall

Chicago Climate Exchange

- * North America's only cap and trade system for all six GHGs
- * "CCX emitting Members make a voluntary but legally binding commitment to meet annual GHG emission reduction targets. Those who reduce below the targets have surplus allowances to sell or bank; those who emit above the targets comply by purchasing CCX Carbon Financial Instrument (CFI) contracts."
- * CFI contracts are tradable commodities
 - * Each represents 100 metric tons of CO₂ equivalent
 - * Comprised of Exchange Allowances or **Exchange Offsets**
- * Eligible Offset Projects: ag and rangeland soil carbon, forestry, methane capture, renewable energy
 - * Projects must undergo independent third party verification

CCX Rangeland Offset Protocol

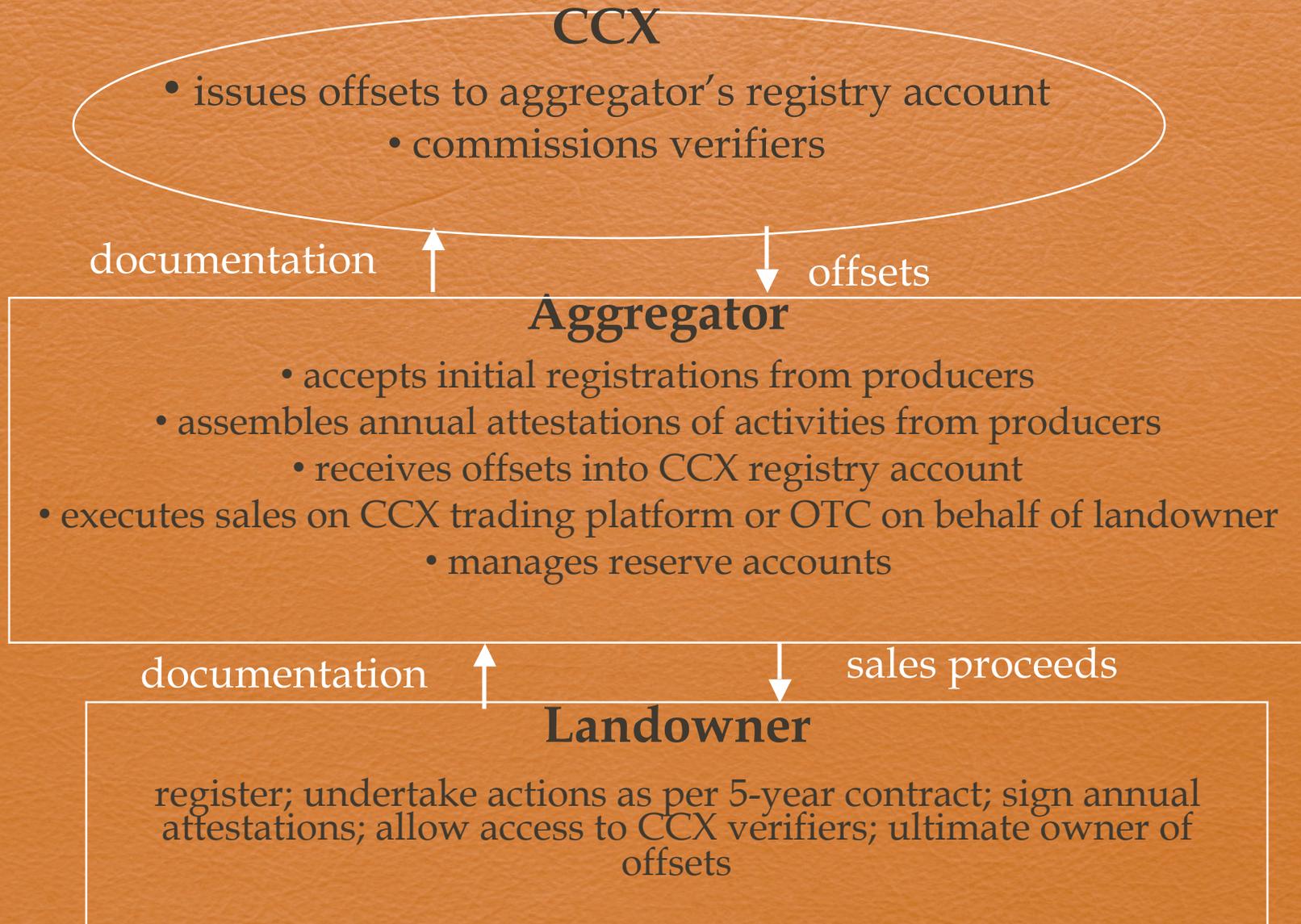
- * Long term (min 5 yrs), “legally binding commitment to defined mgmt practices which increase soil carbon stocks on Rangelands in specific geographic areas”
 - * Prescriptive or “rules-based” protocol (vs. “outcome-based”)
 - * Specific mgmt approaches required
 - * Increased C sequestration assumed

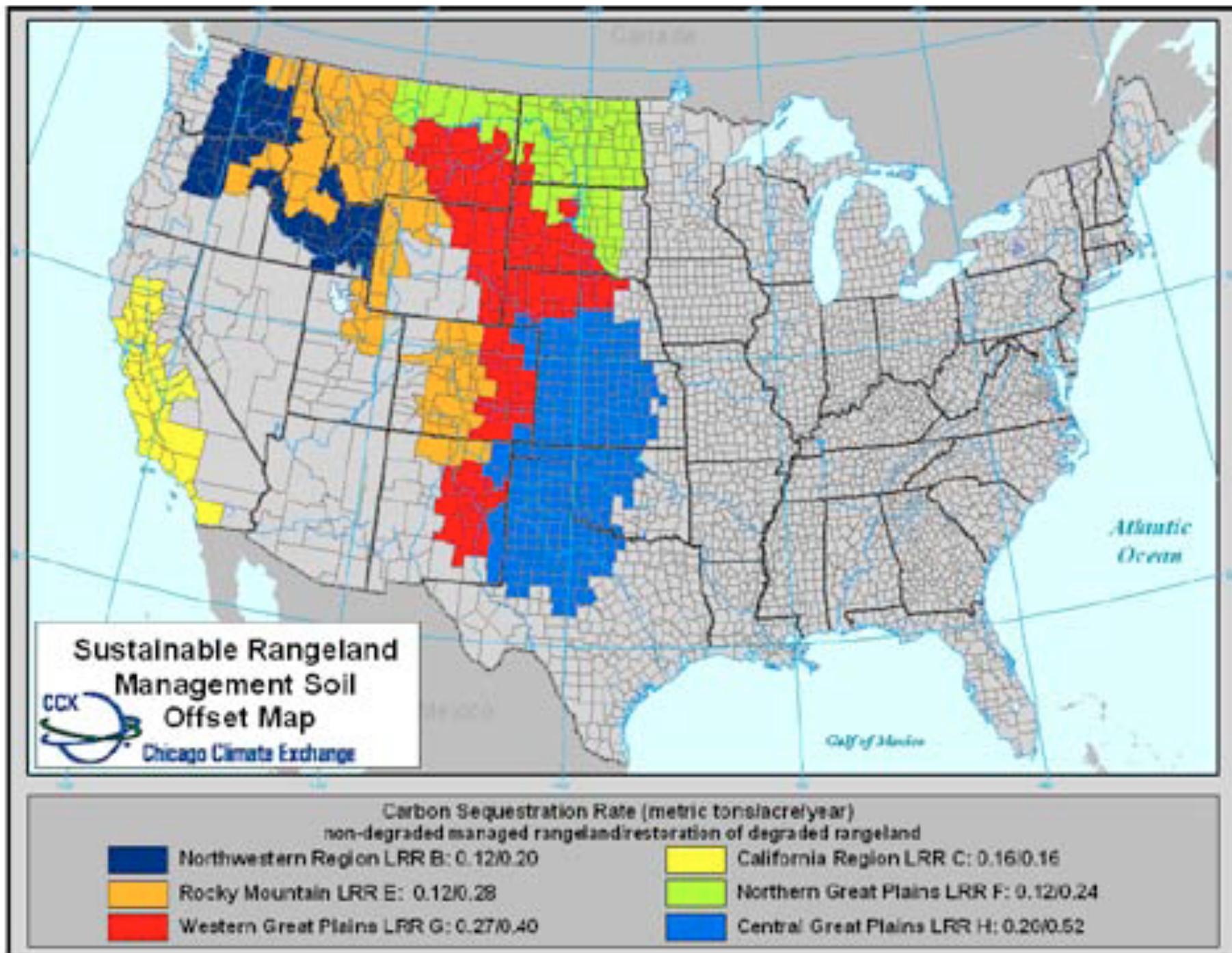
- * Involves adoption of “a forward looking, documented plan to manage Rangeland for increased soil carbon storage through practices that
 - * identify and accommodate periods of grazing
 - * ensure sustainable forage-animal balance such that forage produced meets demand of livestock and/or wildlife
 - * provide for a contingency plan for management under drought conditions”

Performance Standards

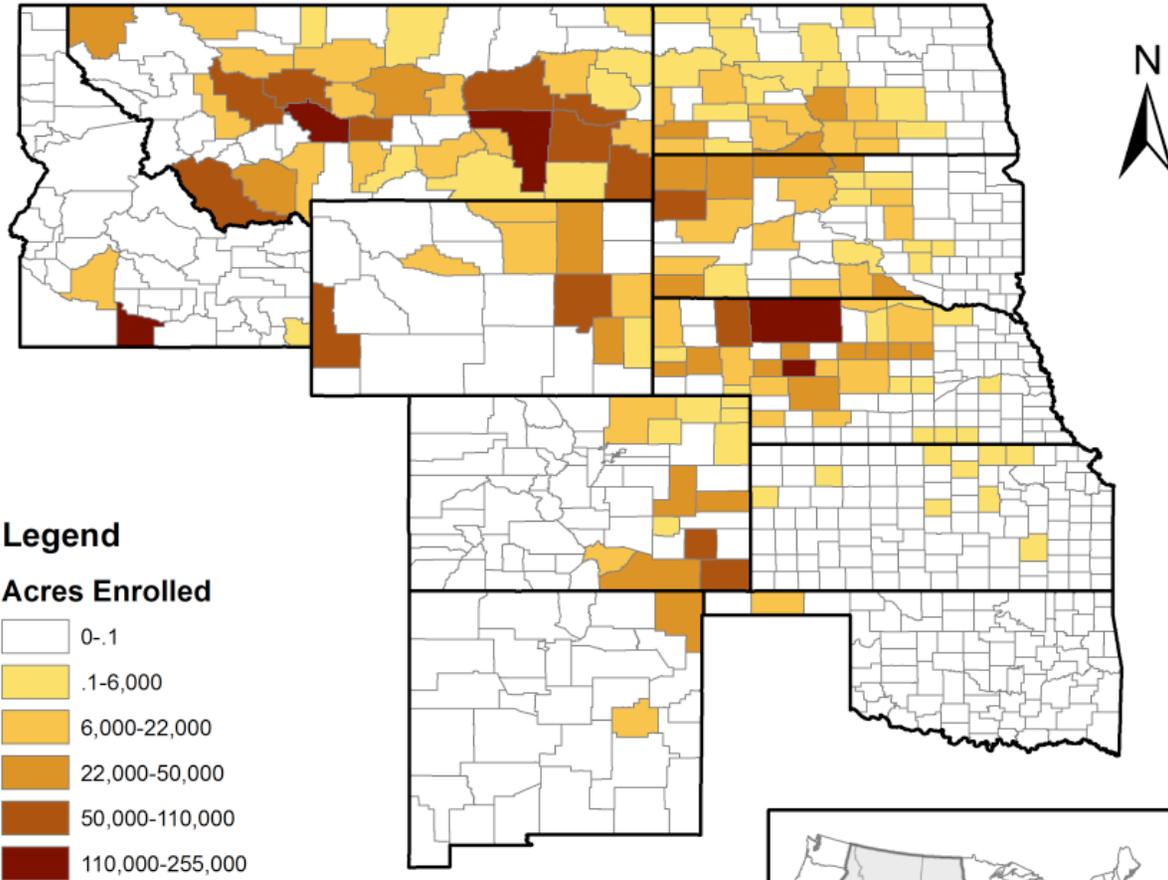
- * “Soil carbon Projects shall not generate Offsets if the practices are **business as usual** or not voluntarily undertaken.”
- * Regulatory Test
 - * elements of protocol may not be required under any federal, state, or local regulations or other legally binding or enforceable agreement (e.g. grazing permit)
- * Common Practice Test (BAU)
 - * USDA: “common practice” on private rangelands in US results in soil erosion and depleted productivity; “long term sustainable management practices are not common practice”
 - * Therefore, anyone who follows protocols is providing additionality (a regional perspective vs. project level)

Mechanics of Ag Offset Aggregation in CCX





Acres In CCX Rangeland Soil Carbon Sequestration Projects Fall 2009



Fall 2009

~ 1000 ranchers enrolled

~ 5m acres enrolled

~ 12 aggregators

~ 90% enrolled with two aggregators

National Carbon Offset Coalition
(Butte, MT)

ND Farmers Union
(Jamestown, ND)

1) What factors shape ranch owners' decisions regarding participation in existing voluntary carbon markets?

- * Approached by aggregator or went to local meeting
- * Seemed like free money – why not?
 - * Was already in compliance with protocol (EQIP, CSP)
 - * Little up front investment in terms of money, time (vs. forestry)
- * Concerns about climate change
 - * “I think CO₂ is degrading the earth. I took a trip to Alaska and saw where the glaciers were receding.” (DP)
- * “An opportunity to do something positive whether or not you believe in climate change” (PO)
- * “Want to raise public awareness about good things ranchers/farmers are doing” (LH, BK)

1) What factors shape ranch owners' decisions regarding carbon-friendly ranching in general?

- * Wanted to increase stocking rates, efficiency
 - * Looked to NRCS prescribed grazing, or HM training (many)
- * Resilience to drought (CO)
- * "I love seeing what the grass can do." (SO)
- * "Makes me look at things closer." (CV)
- * "I've always been an environmentalist." (DP)

the existing land management practices and objectives of ranchers?

- ★ “We didn’t have to change anything. Because we were, I felt like we were trying to do that in the first place.” -PK
- ★ “If you’re doing HM, you’re already sequestering carbon because you’re managing it ... managing it for the grass in the proper way that ultimately sequesters the carbon as you’re doing it.” -NL
- ★ “So to us, this is like potentially icing on the cake. We’ve done all these things. They’re already in place. We really don’t have to change any practices.” -BM
- ★ “I’d already started with protecting my property, and my grass and everything anyway. Might as well be compensated in another way, y’know with the carbon credits. -KR
- ★ “We looked at it and said 'Well geez, that's the stuff we're doing.'”
-WF
- ★ “Yeah, we certainly ... didn’t change our management practices in order to enroll in this program.” -DS

needed to help landowners manage their lands in ways that enhance carbon sequestration?

* Protocols

- * More rigorous – need outcome-based protocol, quantification, ensure additionality
 - * “Could be a method by which some people doing bad things in carbon world are getting off.” (KS)
 - * “I’m worried polluters are just throwing money at us to make them feel better. Companies need to do something besides throw money at ranchers.” (BK)
- * More consistent
 - * “The protocols were actually implemented in 2008. But here we are, what, a couple years later - we’re now on the 12th iteration of those protocols. So it’s a moving target. You’re trying to enroll ranchers to sell their carbon credits. How do you advise them on what they’re going to have to do? Because it changes so many times, the protocols do.” – TG

3) What policies, incentives, market conditions, and outreach are needed to help landowners manage their lands in ways that enhance carbon sequestration?

* Protocols, cont.

- * Need to be more transparent, less mysterious, less arbitrary, less “obtuse”
 - * Why isn't that part of ranch included? (DH, DS)
- * Allow for variability – spatial, temporal, managerial
 - * “too coarse” “primitive”

* Need for better incentives – price, support

- * “People enrolling now are people who have always been way ahead of the curve.” (SM, CCX)
- * Higher price will allow smaller acreages to participate (TG)
- * Support for transition – financial, technical, psychological

3) What policies, incentives, market conditions, and outreach are needed to help landowners manage their lands in ways that enhance carbon sequestration?

*** Need for better outreach, engagement, education**

- * Aggregators – need incentives to engage “late adopters” and “laggards” on degraded lands
- * Need for better communication b/w aggregators and landowners
- * NRCS – needs more capacity
- * Computer/web presence – NDFU on Facebook
- * Outreach catered to diff types of owners – elderly widows, newcomers, absentee owners
- * Education re: risks of not doing it – “If you’re not at the table, you might be on the menu.”

3) What policies, incentives, market conditions, and outreach are needed to help landowners manage their lands in ways that enhance carbon sequestration?

- * Ranchers divided about desirability of compliant market under cap and trade

- * Concerned about role of gov't in carbon market

- * Diff b/w Farmers Union and Farm Bureau ranchers

- * Implementation? USDA vs. EPA

- * Concerns about 'Al Gore factor'

- * Need for additional ways for ranchers to be compensated for carbon friendly land management

- * Tap into demand for broader ecosystem services ranchers can provide

- * More quantifiable services, with C sequestration as a co-benefit?

- * Provide more autonomy/control to rancher re: the fate of credits they generate

Need for Alternatives

- * “Some places like the Padlock, or Arapaho Ranch... They’re clearly way out in the league. The market structure today and the protocol today cannot reward them for that work. It can’t do it. How do we find ways? Well, take the Arapaho Ranch - 600,000 acres, contiguous. How do we measure the amount of soil carbon they’re sequestering each year and reward them for that? That’s what we need to be doing. That’s what we need to be selling. That’s what they should be selling.” -TG
- * “We’re used to being price setters, not price takers.” (CNB)
 - * Don’t want to manage to someone else’s standard

Future Opportunities

- * Potential for inclusion of ranchers as offsetters in a compliant market under cap and trade legislation?
- * Continued participation in voluntary carbon market
 - * OTC transactions (differentiated “gourmet” carbon credits)
 - * Certification schemes
 - * Green marketing, eco-labeling
- * Buyers who are looking for carbon offsets that will give them the biggest political, ethical or public relations bang for their buck will be more interested in “a value added model that seeks to provide what we might call ‘gourmet carbon’ where the provenance and feel-good attributes of the carbon play an increasingly important role” (Bayon et al, 2007)

Over-the-Counter (OTC) Transactions

- * 3 types of buyers
 - * Individuals/small businesses
 - * Large business/industry
 - * Speculators
- * Motivations – ethical, PR, anticipatory
- * Advantages/ Appeal
 - * Place specific/track back
 - * Recognizes co-benefits
 - * More autonomy in project transactions

Examples – OTC Market Players

- * Land Rover
– buyer



- * ClearSky Climate Solutions
– project developer; broker



- * FCStone
– project developer; broker



Examples – OTC Market Players

- * ClearSky Climate Solutions (MT)
“complete climate change solutions provider”



- * Develop CC mitigation and avoidance projects
 - * Register/acquire carbon credits & bring to market
 - * Act as intermediary to connect buyers + sellers
- * *Montana Rangeland Carbon Sequestration Pool*
 - * 9 ranch contracts | 70,000 acres | 120,000 tons C
 - * Verified to CCX Range Protocol



ClearSky
Climate Solutions
for our shared future

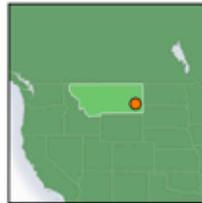


ClearSky Carbon Offset Project Description

Montana Rangeland Project Pool

Project Activity:

The ClearSky Montana Rangeland project consists of 9 ranching contracts that have been pooled together, representing 28,570 hectares (70,600 acres) of rangeland in southeastern Montana (Carter, Custer, and Powder River counties). Ranchers in this project pool are committed to carefully managed rotational grazing practices that help the soil sequester carbon, maintain native grassland species, and provide habitat for native wildlife. Different sections of the rangeland are rested during different times of year, and this pattern is switched from year to year to allow grassland plant species a chance to re-seed and persist over time.



Carbon Sequestration:

From the 2003 to 2008, this project has sequestered almost **120,000 metric tons of CO₂** from the atmosphere.

Certification:

The Montana Rangeland Project has generated Carbon Sequestration Offsets on the Chicago Climate Exchange (CCX) for the years 2003-2008. This project was verified by a CCX-approved auditor and entered the CCX through an aggregator of rangeland emissions reduction projects.



Additional Benefits:

Beyond sequestering CO₂, this project helps to:

- Encourage responsible land management
- Deliver a meaningful financial benefit to ranchers
- Provide habitat and migratory corridors for native flora and fauna (The grazing plans of these ranches maintain habitat for wildlife like mule deer, whitetail deer, elk, antelope, pheasant, sharp-tail grouse, and sage grouse.)
- Stabilize soils, reduce erosion, and increase soil fertility
- Create green-collar jobs related to range management, emissions reduction certification, and other activities

How to Purchase Offsets:

Organizations:

We will work closely with you to design a custom greenhouse gas mitigation plan. This will include an emissions audit, strategies to reduce emissions, and a personalized selection of offsets from our project portfolio to mitigate remaining, unavoidable emissions.



Individuals:

Please visit our web page (www.clearskyclimatesolutions.com) to purchase carbon offsets from this project. You can use our custom Carbon Footprint Calculator to determine your yearly personal greenhouse gas emissions, or work with us to design a carbon footprint assessment for your special event!

The emissions reductions credits we're selling **have already been certified and verified by an external, 3rd-party auditor.** This means the emissions reductions have already happened, and you can have confidence that your offsets are legitimate, rather than promises of future action.

www.clearskyclimatesolutions.com

415 N. Higgins Ave., Suite 117 • Missoula, MT 59802 • P: (406) 721-3000 ext. 1240 • F: (406) 721-5912

Pine Hurst Acres Methane Capture Offset (PA, USA)

This project, located on a family farm in Pennsylvania, captures methane gas from the animal waste of 4,200 hogs and uses it to generate clean electricity. To learn more about this project, please...



\$15.00

Add:

Montana Rangeland Carbon Sequestration Offset

This project consists of 9 ranches that cover 28,570 hectares (70,600 acres) in southeastern Montana, all of which have committed to sustainable grazing practices that allow the soil to sequester...



\$15.00

Add:

Texas Re-forestation Offset

Native forests are being re-grown on 5,420 hectares (13,400 acres) of marginal cropland and rangeland in Texas through this project. 129 individual landowners have signed agreements to maintain...



\$15.00

Add:

Certification Schemes

Marketing Stewardship



* Food Alliance

- * certifies ranches and farms for sustainable practices
- * standards have criteria to qualify for the certification (e.g Soil and Water Conservation Standard)



* VerifiedGreen

- * new third party verification system
- * Carbon credits “attached” to cows raised according to Standard

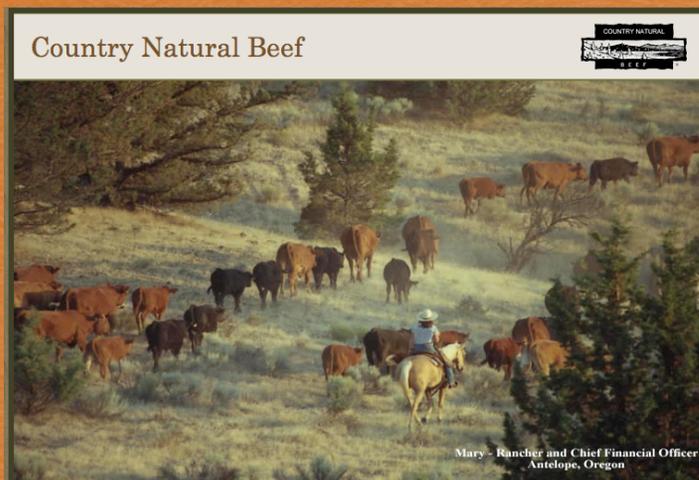
Branding of Green Practices

* Carbon Neutral Ranching (Quivira Coalition)

* *Profitable livestock production that is carbon neutral*

- Progressive cattle management that promotes land health
- +
• Local, grassfed beef raised, processed, and sold locally
- +
• Implementation of conservation practices that improve ecosystem services
- = *a profitable operation that is carbon neutral (or less)*

* Grass-fed Beef



Conclusions

- * Ranchers enrolled with CCX already engaged in carbon-friendly land management – “early actors” – tend to be innovators, opinion leaders
- * Inability to quantify C sequestration compromises legitimacy, is of concern to many ranchers and other observers – protocol too “coarse”
- * Irony – CCX performance standard assumes that all but a small minority of rangeland is managed unsustainably, so anyone complying with protocols is by definition creating additionality; but the only ones enrolling are the small minority that was already managing to that standard!
 - * Does nothing to engage the “majority” of ranchers who are presumably poor stewards

Conclusions

- * Need for more support and incentives in transition to carbon-friendly land management
 - * financial, technical, managerial, psychological
- * Arguments for including ranchers in compliant market
 - * Including ranchers might help prevent land conversion
 - * Would be unfair to exclude early adopters
 - * If only degraded lands can participate, creates perverse incentive
- * Boutique carbon (or other) markets that allow for bundling of ecosystem services, OTC transactions, certification schemes may be better fit than compliant markets



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Part II: Discussion

Notes and synthesis by Kayje Booker

Notes on presentation

Below is additional information presented by Dr. Gosnell but not included in the powerpoint:

- Everyone except the very largest ranches accesses the carbon market through aggregators who take about 20% of the profit. Before ranchers receive the payment, money is also taken out for Chicago Climate Exchange (CCX) fees and for validation, so the final amount ranchers receive is smaller than it may initially appear. Because the amount per acre is small and transaction costs fairly high, a ranch must be quite large to make a profit on carbon. If the carbon price is \$1, on average, a ranch would have to be 20,000 acres to make a profit on carbon. If the price were \$7, the size of the ranch would need to be 8,000 acres.
- 90% of the over the counter sales go to speculators who think there will be a compliant market and are buying up offsets now to use in the future.
- There are only three CCX-certified carbon verifiers for range in the U.S.

Questions on presentation

- What is the methodology for rangeland owners with trees?
They can use the forestry protocol for the trees and the range protocol for soil.

- Does it have to be land you own? What if you are leasing from a private party? Can land trusts get the payments?

In general, the payments would go to the owner. New Mexico is trying a program where ranchers leasing state lands can split carbon payments with the state. If a rancher is leasing from a private party, they could work out an arrangement where the carbon money is split in some way, but the right to the carbon is with the owner. It does not appear that land trusts could get carbon payments, but that is still unknown.

Discussion

Discussion centered around three main topics regarding the Chicago Climate Exchange and carbon markets in general: additionality, measurement of rangeland carbon sequestration, and other carbon-related opportunities for ranchers.

- **Additionality:**

The main point of discussion was the “common practice test” (CPT) that is used by the CCX to measure the amount of carbon credits generated by a range project. The amount of carbon credits generated is the difference in carbon sequestration per acre between projects participating in CCX, which are required to use certain land management practices, and that sequestered by the average ranch. For range, they take the assumption that 90% of rangelands are degraded (according to USDA) common practice is management leading to degradation, so for a rancher to qualify for carbon payments, they need to be managing in a way that preserves or enhances

rangeland health. Many roundtable participants were not impressed with the CPT pointing out that the USDA's own data shows range management has improved over the last fifty years. However, the CPT does make it easier for ranchers to qualify for credits, and some on the roundtable stated that if land has been grazed, it is fairly easy to measure and prove additionality due to management changes.

One key characteristic of the CCX is that they do not require landowners to switch from poor land management practices to better ones in order to qualify for credits. A rancher that had good practices before beginning involvement with the CCX you would still qualify. In fact, according to Hannah's research, most ranchers participating in the CCX were doing this kind of land management long before they became involved in CCX, so carbon credits for them are more like a bonus for continuing to do good management than an incentive to change management. To engage the managers with poor land management practices in the carbon market and get them to transition to better management, carbon prices would have to be higher than they are now, and other forms of support would have to be offered to these managers to aid in the transition.

Many on the roundtable thought that the fact that managers could get rewarded for things they were already doing presented a real problem in terms of climate change mitigation because these credits clearly are not additional. A company purchasing a carbon credit will most likely use it to emit another ton of CO₂, so if that credit does not represent a real one ton saved on the range end (in addition to what would have been saved in absence of the carbon market), more carbon ends up being emitted.

- **Measurement**

The CCX does not actually measure the carbon (either baseline amount or increases) on rangelands. Instead, they have certain land management actions that they require, and for ranches that undertake those actions and can prove it, the CCX assumes a uniform amount of carbon per acre saved based on region. Their opinion is that, on a regional basis, there is clear evidence of widespread degradation and that with proper management these systems, on average, will increase the amount of carbon stored. Some roundtable members responded that this averaging approach in itself was not necessarily flawed but that the scale was too coarse and perhaps not correctly applied.

- **Carbon Market Opportunities for Ranchers**

Although all of the ranchers interviewed by Dr. Gosnell are currently involved in range carbon sequestration, at least one of the case study ranches is interested in taking advantage of their carbon savings in a different way. They are planning to develop market differentiation between grassfed beef and CAFO beef based on carbon. CAFO beef has a much larger carbon footprint than grassfed beef, so ranchers that are doing grassfed beef should be rewarded by the market for their lower carbon emissions.

The idea of differentiating between CAFO and grassfed beef on a carbon basis is something that many participants in the roundtable believe is important. Quantifying the difference in carbon emissions between conventional and grassfed beef may lay the groundwork for compensating grassfed beef operations either through higher prices due to consumer concerns over global warming or through some kind of carbon mechanism such as taxes or cap and trade.

