

California Grassland Carbon Challenge launches in January

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Introduction

Peter Donovan, who lives in eastern Oregon, spearheaded the *California Grassland Carbon Challenge* with a meeting in San Juan Bautista this past January. Joe Morris and family graciously hosted the meeting. An ad hoc group of over 55 people gathered, including ranchers, university and agency representatives, and a great diversity of other grassroots citizens from far and wide—all anxious to improve and sustain California grassland health.

Throughout the day, the group explored the power and importance of monitoring soil organic matter—a key indicator of how land management affects the global carbon cycle, other nutrient cycles, the water cycle, the diversity and productivity of life above and below ground, and whether our land management is moving toward something regenerative and sustainable for human life as well as our California native grasslands and farmed lands. After a morning meeting at the St. Francis Retreat, followed by a Morris grass-fed beef lunch, we spent the afternoon on a hillside where the rancher's use of holistic planning and decision-making has changed a small, inconspicuous patch of native needlegrass plants into over a thousand plants. I believe everyone enjoyed meeting, sharing, and learning from each other that day.

Peter Donovan's websites ([HTTP://SOILCARBONCOALITION.ORG/](http://SOILCARBONCOALITION.ORG/); [HTTP://WWW.MANAGINGWHOLES.COM/](http://WWW.MANAGINGWHOLES.COM/)) are rich in user-friendly references, including brief videos. I asked Peter to share his thoughts with CNGA. Here is his report about the *California Grassland Carbon Challenge*. —Richard King

In January 2011, seven California grassland managers, from Red Bluff to Goleta, established monitoring sites as starting points for seeing whether, or how fast, they could turn atmospheric carbon into water-holding, fertility-enhancing soil organic matter.

These microsites or plots are geo-referenced, as well as located via permanent markers, compass, and tape. With the help of the land managers, Peter Donovan of the Soil Carbon Coalition (SOILCARBONCOALITION.ORG) documented basic soil cover, including with photography, and took some measurements with a tension infiltrometer, as well as bulk density and carbon content for three soil layers, down to 40 cm. Carbon samples are currently being processed at Cal Poly.

Resampling of these microsites is projected for 2014, 2017, and 2021. The focus of the *California Grassland Carbon Challenge* is to provide practical and accurate feedback to managers interested in trying to increase soil organic matter, which is the number-one recommendation of the Natural Resources Conservation Service (NRCS) soil quality team to land managers.

The *Challenge* is not connected with any carbon market or offset scheme, but is about exploring what's possible, using the creativity, imagination, and skills of the land managers. The initial entrants plan to use, or continue to use, management of grazing to favor plant health, soil cover, and an increase in perennials.

In one case, soil carbon plots were established on sites measured by NRCS personnel in 2001 for perennial versus annual root mass, as well as soil carbon and bulk density. Data could emerge from this 10-year comparison.

The launch of the *California Grassland Carbon Challenge*, which remains open for entry, was highlighted by a day-long mini-conference hosted by the Morris Ranch in San Juan Bautista and facilitated by Jeff Goebel. Topics covered included:

1. The generally lower levels of carbon in soil, combined with higher levels in the atmosphere, were likely to exacerbate food and water issues such as flooding, drought, water scarcity and quality, food security, and biodiversity loss;
2. Continuing to manage against these eventualities was a losing proposition;



Peter Donovan collecting baseline soil carbon data at Richard King's Sonoma County farm

3. The carbon cycle is a process, not an event, and is driven mainly by the metabolisms of self-motivated organisms such as plants, fungi, and bacteria;
4. Soils are the terrestrial hub of the carbon cycle as they contain several times the carbon of atmosphere and vegetation combined;
5. Human management has enormous influence, not only on fossil fuels, but on how the carbon cycle functions through soils; and
6. Significant reversals of the general pattern of soil carbon loss have occurred as a result. Humans can manage for increased soil organic matter, which can be measured.

After a lunch of Morris Ranch grass-fed shortribs, Joe Morris led a discussion tour on his land, focusing on how planned grazing and direct marketing of grass-fed beef could enhance the carbon cycle, which in turn has enormous influence over the water cycle. Participants witnessed an infiltration demonstration of bare ground versus native perennial grass. The effects of plant material and soil organic matter on the soil's ability to accept water made a significant impression on many.