



To: California Air Resources Board

Date: March 14, 2011

Subject: Inclusion of rangeland offset projects in the California cap and trade system

Mary Nichols
Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95812

Dear Ms. Nichols,

The undersigned partners of the California Rangeland Conservation Coalition (Coalition) are writing to strongly encourage the California Air Resources Board (“ARB”) to consider, and eventually implement, offset protocols that help to incentivize rangeland owners and managers to participate in the carbon market. We believe that rangeland-related project types are critical to California’s effort to reduce statewide greenhouse gas emissions to 1990 levels, and even more critical to the ranching community which may be adversely affected by both rising production costs and increasing developmental pressure that threatens irreversible changes to the California rural landscape.

California’s rangelands are critically important ecosystems that support a variety of plant and animal species. Moreover, rangelands represent the bedrock of the ranching industry and the rural communities they surround. The ranching industry employs thousands of California citizens and plays a key role in U.S. food security. However, rangeland owners and managers face constant challenges from rising input costs, and rangeland itself is often located in California’s fastest-growing counties and thus faces development pressure. These represent serious threats to ranching stability, and natural ecosystem function. We believe that the California cap and trade system presents a tremendous opportunity to help protect these fragile systems.

Carbon offset projects on rangeland produce a number of positive environmental outcomes, or co-benefits, in addition to reducing greenhouse gas emissions. Carbon is a critical macronutrient in soil, and increased levels of carbon improves aeration and soil tilth, and plays an important role in

determining pH levels, nutrient availability and cycling, cation exchange capability and buffer capacity.^{1,2} Water quality and quantity benefits can also be generated by carbon offset projects by improving water infiltration and water holding capacity,^{1,3} by reducing soil erosion and sedimentation^{4,5}, and by increasing groundwater recharge and drought resistance in arid areas.⁶ The benefits to soil and water quality are vital to supporting rangeland ecosystems as well as the State's water supply; 85% of California's drinking water supply is generated and stored annually within rangeland watersheds.⁷ Improvements can also lead to increased biodiversity of both fauna and flora.^{8,9} Carbon market incentives that protect existing carbon sinks and lead to increased carbon sequestration can lead directly to these environmental co-benefits.

We welcome and applaud ARB's efforts to-date that have generated offset protocols for the management and protection of forestlands, and for methane-capture projects for the dairy and swine farm industries. We also applaud the Climate Action Reserve ("CAR") for recently announcing that it has begun developing offset protocols for crop farmers and rice growers. We believe that the success of the California cap and trade system will hinge upon successful engagement with the agricultural sector, so these recent efforts are encouraging.

However, we are disappointed and concerned with the exclusion of rangeland-related projects from these early efforts. This is despite the enormous potential of the rangeland category to reduce greenhouse gas emissions through increased carbon sequestration and through avoidance of emissions resulting from rangeland conversion to commercial and residential developments.

California has approximately 38 million acres of rangelands, but tens of thousands of acres are being converted annually to other uses¹⁰. Through preventing development and/or improving the grazing management on these lands, millions of tons of carbon dioxide equivalent emissions can be reduced. This could mean millions of carbon offsets available for California emitters to purchase. We believe this point is extremely important when considering the possibility of an offset shortfall

¹ Tisdale, S.L., W.L. Nelson, and J.D. Beaton. 1985. *Soil Fertility and Fertilizers* (fourth ed.). Macmillan: New York, NY; Collier Macmillan: London. 754 pp.

² Evrendilek, F., I. Celik, and S. Kilic. 2004. Changes in soil organic carbon and other physical soil properties along adjacent Mediterranean forest, grassland, and cropland ecosystems in Turkey. *Journal of Arid Environments* 59:743-752.

³ Greenhalgh, S. and A. Sauer. 2003. *Awakening the Dead Zone: An Investment for Agriculture, Water Quality, and Climate Change*. World Resources Institute. Available at: <<http://www.wri.org/publication/awakening-the-dead-zone>> Last accessed Feb 14, 2011.

⁴ Zebarth, B.J., G.H Neilsen, E. Hogue, and D. Neilsen. 1999. Influence of organic waste amendments on selected soil physical and chemical properties. *Canadian Journal of Soil Science* 79:501-504.

⁵ Celik, I. 2005. Land-use effects on organic matter and physical properties of soil in a southern Mediterranean highland of Turkey. *Soil & Tillage Research* 83:270-277.

⁶ Overstreet, L.F., and J. DeJong-Huges. 2009. The Importance of Soil Organic Matter in Cropping Systems of the Northern Great Plains. Available at: <<http://www.extension.umn.edu/distribution/cropsystems/M1273.html#2d>> Last accessed Aug 14, 2011.

⁷ Havstad, K. M., D. P. C. Peters, R. Skaggs, J. Brown, B. Bestelmeyer, E. Fredrickson, J. Herrick, and J. Wright. 2007. Ecological services to and from rangelands of the United States. *Ecological Economics* 64:261-268.

⁸ Bohlen, P.J., W.M. Edwards, and C.A. Edwards. 1995. Earthworm community structure and diversity in experimental agricultural watersheds in Northeastern Ohio. *Plant and Soil* 170:233-239.

⁹ Huston, M.A., and G. Marland. 2003. Carbon management and biodiversity. *Journal of Environmental Management* 67:77-86.

¹⁰ California Department of Forestry and Fire Protection, Fire and Resource Assessment Program

in 2012 and beyond, which could lead to spiraling compliance costs if additional offset supply is not introduced into the market. Moreover, carbon offset finance represents a new funding source to achieve agricultural conservation goals.

While early protocol development efforts in California have not focused on rangeland, there are several efforts outside of the state that we encourage ARB to consider. **Specifically, we urge ARB to review and adopt two types of rangeland offset protocols in particular:**

- 1) Avoided Conversion of Rangeland & Grassland - Similar to the ARB forestry protocol, this type of protocol awards carbon offsets when land is conserved where it otherwise might be developed into alternate land uses, such as residential or commercial property.
- 2) Rangeland Management - This type of protocol would recognize carbon offsets for changes in rangeland management techniques or changes in carbon stocks. The protocol should be flexible to account for the various types of land management techniques that can lead to increased soil sequestration.

In conclusion, rangeland offset projects present several beneficial opportunities for California:

- § The environment benefits because offset-based incentives can help unlock the tremendous greenhouse gas mitigation potential of rangelands. Moreover, carbon finance incentives for sustainable land management practices can help produce better habitats for wildlife, protect open spaces, lead to improved water quality and quantity, reduce sprawl, and other significant environmental co-benefits.
- § Cap and trade market participants gain a source of additional offsets, which will reduce the risk of spiraling compliance costs due to lack of carbon offset supply.
- § The agricultural community and society in general benefits because carbon offset revenue provides a new source of non-public funding to sustain ranching economies and conserve rangelands.

The Rangeland Coalition is an unprecedented group of California ranchers, environmental organizations, researchers and government agencies. Together, these partners are working to preserve private working landscapes, support the long-term viability of the ranching industry, and protect and enhance California rangeland for both legally protected and still-common species.

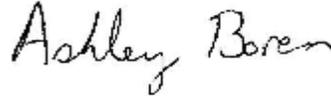
The undersigned partners of the Coalition are supportive of ARB considering the inclusion of rangeland offset projects in California's cap and trade system, and we look forward to working with ARB in the future to adopt a protocol that is mutually agreeable and scientifically justified. Once again we thank you for the opportunity to share our strong beliefs with you, and we are happy to provide additional information. Should you have any questions regarding our support please contact Pelayo Alvarez, Program Director, California Rangeland Conservation Coalition at 916-313-5800 x107 or palvarez@defenders.org.

Sincerely,

Partners of the California Rangeland Conservation Coalition



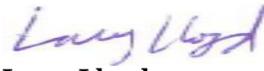
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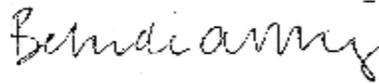
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