August 30, 2015

Shelby Livingston

Climate Investments Branch Chief

California Air Resources Board

1001 I Street

Sacramento, CA 95812

Re: Cap-and-Trade Auction Proceeds Second Investment Plan Concept Paper

Dear Ms. Livingston,

The Carbon Cycle Institute (CCI) appreciates this opportunity to comment on the California Air Resources Board’s (ARB’s) Concept Paper for the Cap-and-Trade Auction Proceeds Second Investment Plan (Investment Plan). CCI is committed to stopping and reversing global warming by advancing science-based solutions that remove atmospheric carbon, while promoting environmental stewardship, social equity and economic sustainability. We are pleased by ARB’s increased focus on Working and Natural Lands in the Investment Plan and would like to provide comments on how the State may consider supporting for land managers, landowners, and resource organizations to deploy carbon farming and adopt climate-beneficial land and resource management practices throughout California.

**Significant Role of Natural and Working Lands in Meeting State’s Climate Goals**

CCI supports the Air Resources Board’s continued support of funding opportunities for carbon sequestration and greenhouse gas reductions on Working and Natural Lands. Carbon farming projects are uniquely positioned to engage rural communities, provide benefits to disadvantaged communities, reduce short-lived climate pollutants, maximize environmental and economic co-benefits, and promote climate adaptation on Working and Natural Lands. Between the Governor’s Healthy Soils Initiative, Department of Conservation’s Sustainable Agricultural Lands Conservation Program, and the state’s commitment to reducing short-lived climate pollutants, California has an opportunity to create transformative change on Working Lands in California.

As robust, peer reviewed research and over 70 years of Natural Resources Conservation Service (NRCS) conservation practice implementation has shown, a variety of land management practices can lead to increases in soil organic matter (SOM), of which approximately 58% is soil organic carbon (SOC). Properly implemented and maintained, such practices can lead to improved productivity on rangelands, pastures and croplands; increased water retention in soils; increase carbon sequestration in soils and vegetation; and decrease GHG emissions from farming and grazing systems, as well as having significant co-benefits for water quality, biodiversity and habitat, and climate adaptation.

Our research shows that the carbon sequestration potential on rangelands and agricultural lands are significant. An increase of 1% SOC (about 2% increase in SOM [Pribyl 2010]), by mass, in the top 6.7” of an acre of ground represents about 10 tons of SOC (20 tons of SOM) and an increase in water holding capacity of approximately 54,300 gallons (2 acre inches). If the state’s 16-30 million acres of Mediterranean grasslands achieved even a modest 1% increase in SOC in the plow layer (top 6.7 in.) alone, the associated water holding capacity increase would be roughly 2.67-5 million acre feet and the CO2e sequestered would be 587-1.1 million tonnes. If this increase could be achieved to the depth of 20 inches (the depth reported by Koteen et al, 2011, to have lost 40 metric tons SOC/ha [17.8 tons SOC per acre]), overall water holding capacity would increase to 8-15 million acre feet and CO2e sequestered would be 1.7-3.3 million metric tons. Other co-benefits of increase SOC include reduced erosion, increased water quality, increased productivity and crop yields, increased biodiversity in soils, and increased wildlife habitat.

**Investment Recommendations for Working and Natural Lands**

**Create Financial Incentives to Support Climate Strategies on Working Lands.** CCI encourages the creation of financial incentives to implement a variety of carbon farming and land management practices across a range of geographies and working land and crop types, including arable, pasture and rangeland systems across California. Incentives would provide support for implementation of practices that increase carbon capture and/or reduce GHGs on these landscapes, as well for quantification of the benefits of applied practices. This can be achieved through the Governor’s Healthy Soils Initiative, CDFA’s Environmental Farming Act, the Department of Conservation’s Sustainable Agricultural Lands Conservation Program, and other related programs at the state level.

**Support Technical Assistance and Resource Existing Infrastructure.**  To successfully implement the 3-Year Investment Plan, ARB and its partners agencies will need to include Technical Assistance for land managers and producers to identify and implement practices appropriate to their unique systems. Leveraging existing resources and institutions, including USDA-NRCS, UCCE and Resource Conservation Districts (RCDs), will be critical to the success of this effort. In particular, RCDs are trusted local government agencies that have a long history and successful track record in implementing conservation programs on Working Lands. And, several RCDs are already innovating and leading the State in developing and implementing projects on Working Lands that sequester carbon, reduce GHGs, and address significant resource issues, such as water quality and drought resilience. These special districts cover almost every part of California and work with public and private partners from all resource sectors, including agriculture, rangelands, forestry, fisheries and all forms of wildlands.

**Encourage Farm and Landscape-Level Approaches to Planning.** We support a comprehensive and holistic approach to management of Working and Natural Lands. CCI’s carbon farming approach embodies the elements of holistic and comprehensive conservation planning as an essential approach to maximize long-term carbon sequestration and GHG reduction benefits that are consistent with farm- and landscape scale goals. CCI strongly urges ARB to increase funding for carbon farm and watershed-scale planning, where land managers, landowners, producers, and their on-the-ground partners can come together to plan scaled implementation of Working Lands climate and carbon sequestration strategies.

**Evaluate the Carbon Sequestration and GHG Reduction Potential Across California’s Working and Natural Lands.** We would strongly recommend that ARB investment in systematic assessment of the carbon sequestration and GHG reduction potential of various regions, soils, and systems across the State. The assessment should be identify the geographies and systems within the State’s Working Lands with the greatest opportunities for carbon capture and GHG reduction, as well as other important climate adaptation benefits, such as soil water holding capacity, reduced erosion and flooding, and improved water quality.

**Refine and Strengthen Quantification Methods for Working Lands**. Early implementation of carbon farming and land management practices will allow continued study and measurement of the climate, environmental, and economic benefits of climate-beneficial practices. Extensive research that can be used by the State in establishing the scientific basis for the Healthy Soils Initiative already exists, and has been widely employed by IPCC, USDA and others. ARB, CDFA, DoC, CalRecycle, and other agencies can increase efficiency and usefulness of new research by creating a shortlist of key research questions that the State needs answered to support and advance carbon sequestration as both a GHG and drought remediation strategy. This will ensure that current or future research is not duplicative and that research efforts are focused on critical knowledge gaps.  We support the use, expansion and refinement of Comet-Planner as a platform for quantification across a range of Working Lands and agricultural systems.

**Dedicate a Greater Proportion of Auction Proceeds to Working and Natural and Lands.** Governor Brown included Working and Natural Lands as one of the five ‘pillars’ for meeting the state’s GHG reduction goals, stating that we should “[manage] farm and rangelands, forests and wetlands so they can store carbon”. Consistent with his Executive Order B-30-15, the Investment Plan identifies the actions that can be taken to manage and enhance our working landscapes, including through improved land and soil management practices. As discussed above, due to the significant potential of these sectors to reduce emissions and sequester carbon, the proportion of auction proceeds dedicated to these sectors should be much greater.

**Invest in Local and Regional Programs that Can Scale Climate Strategies on Working Lands.** CCI strongly encourages ARB and its partner agencies to invest in programs at the local and county level to create, implement, and refine comprehensive plans and innovative strategies for carbon sequestration and GHG reductions on Working and Natural Lands. Innovative approaches at the local level will be required to reach the State’s long-term climate change and adaptation goals. We are already witnessing a renaissance of action that, if nurtured and scaled, could contribute significantly to the success of the Working and Natural Lands sectors. The first critical step is to support the integration of Working and Natural Lands goals and climate approaches into local and regional climate and GHG reduction plans, which notably is occurring in some key jurisdictions, including our home counties of Marin and Sonoma.

Thank you very much for the opportunity to comment on the Investment Plan. **We plan to provide additional technical comments and investment suggestions as the process moves forward**. We look forward to working with you and other stakeholders to refine the Second Investment Plan. If you have any questions regarding our comments, please do not hesitate to contact us at (707) 992-5009.

Sincerely Yours,

Torri Estrada Jeff Creque, PhD

Managing Director Director of Land and Agroecosystem Management