



Working Paper

BCarbon: A New Soil Carbon Storage Standard

Prepared by

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Preface

Since November 2019, the Baker Institute for Public Policy at Rice University has been hosting a multi-constituent working group (see partial list of participating organizations below) to develop an innovative measurement-based standard, known as BCarbon, for removing carbon dioxide from the atmosphere and storing it in the soil as organic carbon.

The proposed system is designed to enhance economic resilience for both the agricultural and industrial communities, offering solutions that could result in a new, multibillion-dollar market while restoring the robust ecosystem of the native prairie and grasslands. Increasing biodiversity, restoring natural water cycles, and improving drought resistance are all important co-benefits that enhance quality of life for rural communities and economic resilience of ranches and farms.

Participation is voluntary and designed specifically to work for landowners and businesses in the United States. This document summarizes the need for such a system and provides a framework of principles that form the basis for moving forward.

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Baker Soil Carbon Working Group - Partial List of Participants

Government Agencies

USDA Natural Resource Conservation Service
New Mexico Department of Agriculture
Texas Parks and Wildlife Department
British Consulate General, Houston

Non-Profit, Academic and Philanthropic Organizations

America's Wetland Foundation
Audubon Texas
Carbon Nation
Coalition of Sustainable Communities NM
Cynthia and George Mitchell Foundation
Dixon Water Foundation
Ducks Unlimited
Lone Star Coastal Alliance
Pecan Street
Quivira Coalition
Rice University
Texan By Nature
Texas Coastal Exchange
The Progressive Forum

Businesses

Applied Ecological Services, Inc
Batker Consulting
CSL Capital
Formosa Plastics
Gensler Architects
Greater Houston Partnership
Groundwater Services, Inc.
LaBelle Properties
Plasmonics
Soil Value Exchange
Sourcewater, Inc.
Sprint Waste
The Right Environment
Topl
US Business Council for Sustainable Development
Valero

Landowners

King Ranch
LaBelle Properties, Ltd.
Sneery Family Cattle and Windmill Farms
Western Landowners Alliance

Motivation and Description

Significant potential exists to make the United States agricultural community a partner in the effort to address climate change. According to the EPA, the U.S. currently emits about 6.5 billion tons of carbon dioxide annually.¹ Initial estimates indicate that as much as one sixth of that could be removed from the atmosphere and stored in the grassland soils of the U.S. if a workable standard were in effect.²

This requires the development of a system that works for landowners and carbon storage buyers. To do this, we must reward maintenance of the currently stored carbon so it is not lost, and we must adequately compensate landowners to expand that storage by creating a market to encourage management techniques that optimize the removal of carbon dioxide from the air.

Many of these management techniques have the additional benefit of increasing soil health and making the soil more fertile and productive, thereby supporting rural economies and restoring natural ecological systems. To this end, the proposed BCarbon standard offers a new approach to unlock the potential for removal, storage and certification of upwards of one billion tons of carbon dioxide.

BCarbon is a scalable, measurement-based, soil carbon storage standard designed to work for landowners and soil carbon storage buyers. The proposed standard allows grasslands owners to monetize the removal of carbon dioxide from the atmosphere by storing it in soil as organic carbon.

In order to mobilize the full potential of U.S. lands in reducing our carbon footprint, it is imperative that a standard be developed that works with, rather than excludes, the U.S. model of private land ownership. The most prevalent standards in use today comes from the Clean Development Mechanism (CDM) of the 1997 Kyoto Protocol, a mechanism designed to expedite payments among nations for carbon reductions in the Least Developed Countries of the world. These standards, however are too restrictive to function successfully within the private land ownership and property rights model of the U.S., where more than half of total lands are privately owned.

For example, a provision of the currently utilized system disqualifies any landowner already utilizing good stewardship practices before entering the market. Another provision disqualifies any landowner who wishes to follow a particular practice if already in use by 25 percent or more of adjoining landowners. Yet another provision disqualifies landowners already receiving economic benefits from land management practices that store carbon. Such provisions are counterproductive in the context of the U.S. property rights and ownership model.

¹ <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

² <https://climatenewsnetwork.net/carbon-farming-can-slash-co2-emissions/>

The BCarbon system, by contrast, allows landowners and ranchers to determine their own best practices, as long as they do not disturb the carbon in the soil and commit to retaining the land in the same way for ten years. This commitment is renewed each year in which a sale takes place. Unlike regulatory programs that set up artificial markets (such as the Renewable Fuel Standard and its associated RINs program), the proposed BCarbon system is voluntary and does not rely on mandatory regulations. BCarbon is not prescriptive. By enabling a voluntary market based on payment for ecosystem services, the BCarbon standard encourages changes in land-management practices that significantly reduce atmospheric carbon.

Currently, our privately-owned natural systems, ranches and farms are not managed with the goal of maintaining or increasing carbon dioxide storage. Instead, decisions made by landowners are guided by traditional markets, which incentivize certain patterns of domestic production. As a market develops for carbon dioxide storage in the soil, practices to enhance such storage will naturally be incorporated into farm and ranch management decision-making processes. Some practices will yield more carbon in the soil than will others, and those differences will be measured and verified. Over time, landowners are expected to migrate to practices that yield more carbon storage every year based upon observations of peer financial success.

BCarbon will have robust independent verification and certification requirements to ensure the validity of the soil carbon storage. Implementation of BCarbon will therefore require the creation of an independent certification process by establishing a 501(c)(3) non-governmental entity to certify credits. This entity will likely be based in Houston and will be part of a Houston-centered effort to establish global leadership in the emerging carbon market.

Soil carbon storage can be managed, and most likely enhanced, through various soil amendments, such as biochar application, and land use practices, for instance in association with cattle ranching. At the same time, other ecological services such as pollination, biodiversity, flood storage and water supply augmentation can be realized. In this manner, carbon storage can be a part of the overall enhancement of agricultural economics, an important consideration at a time when rural America is under pressure.

Core Principles of BCarbon

The SCWG has extensively explored the concept of soil carbon storage over the past year. This has involved discussion with and review of existing programs as it conducted a review of various soil carbon storage standards and contemplated challenges associated with launching a new standard. As a result of the deliberations, ten principles were developed as being fundamental to BCarbon. These principles are summarized as:

- Principle 1.* The credits under this system are issued for the removal of carbon dioxide from the atmosphere by photosynthesis and storage in the soil as carbon.
- Principle 2.* Any landowner who sequesters carbon dioxide in the soil within a given calendar year is eligible for soil storage payments for that year.
- Principle 3.* Transactions may occur on an annual basis after an initial declaration of intent to participate in the soil carbon sales program and the initiation of soil carbon testing requirements.
- Principle 4.* Transactions can be based upon estimated values subject to verification. Soil carbon testing is required for verification.
- Principle 5.* To become eligible for payments, a landowner must agree that the land will be maintained and protected in a way that promotes and protects soil health and landscape ecological health for ten years. Transactions occurring in subsequent years will require renewal of the ten-year commitment, creating a “rolling” ten-year requirement.
- Principle 6.* Landowners are not required to manage their land in any particular fashion. However, certain land management techniques will lead to greater carbon sequestration than will others.
- Principle 7.* A buffer account will be maintained to ensure all credits issued under this standard are protected against failure risks.
- Principle 8.* It is anticipated and specifically allowed that third-party entities will act as assemblers (also described as “aggregators”) of credits creating the market between buyers and sellers.
- Principle 9.* All credits issued under this standard must be certified.
- Principle 10.* All credits certified under this standard may be bought and sold until retired, with all transactions being recorded with the certification entity.

Next Steps

These ten principles represent the best effort of the working group to articulate a system that is fair, works for landowners and carbon storage buyers, and offers independent verification and both scientific and market-based credibility. The BCarbon team at the Baker Institute is moving forward with this strategic framework, finalizing the specific protocol, and implementing the necessary systems and partnerships.

We invite interested organizations and individuals to join us.