



Buckwheat Blossom Farm

Horse-Powered Fossil-Fuel-Free Agriculture

A Nature-Based Climate -Smart Carbon Farming Solution to Climate Change

“Biotechnology for the Biosphere”

Learn More: [Planet Alpha](#), [Shop Farm Biotechnology Offsets](#), [Instagram](#)

Buckwheat Blossom Farm (BBF) is unique among farms: *fossil-fuel emissions from farm operations have been eliminated*. Instead, a culture of horse-powered agriculture practiced for two decades has a net-zero fossil fuel-footprint relative to tractors. The Burchstead family of Wiscasset, Maine, has proven that farm operations and nature can co-exist with social, economic and planetary benefits.

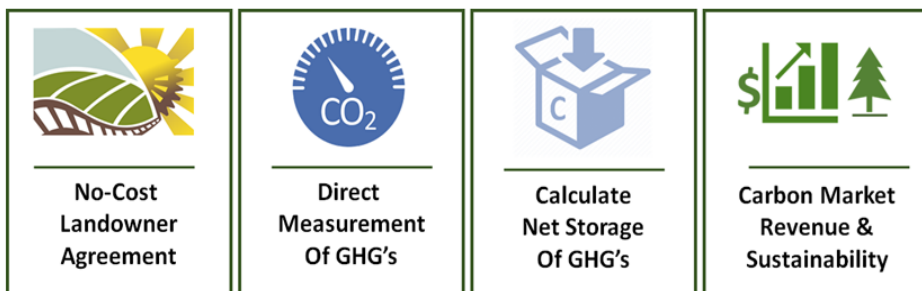
From a carbon farming perspective, horse-powered agriculture, no-till farming, cover crops and sustainable stewardship of the farm ecosystem likely results in increased carbon storage. The farm also cultivates areas of pasture within the forest, a practice know as silvopasture, to humanely raise sheep for wool and food, taking a deliberate “step-back” from large farming operations.

The silvopasture approach means that BBF pastures have never seen sewage sludge deposits and are free of PFAS (forever chemicals) relative to land with a history of sludge application. Jeff Burchstead recommends that a small portion of the abundant forest land in Maine be converted to silvopasture to eliminate PFAS contamination providing a fresh start for affected farms. BBF silvopasture lamb and chickens are available at the Brunswick, Maine, farmers market every Saturday.

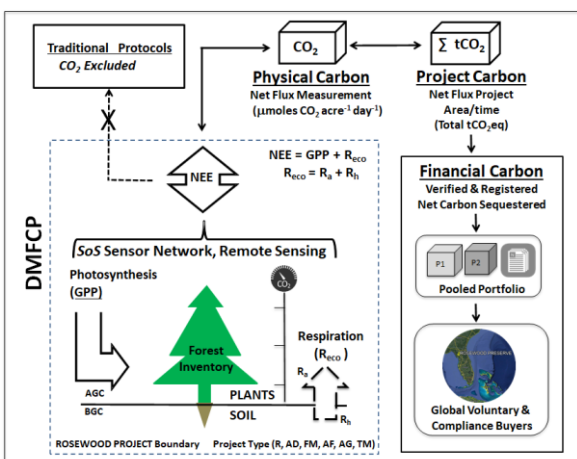
The BBF greenhouse gas emissions profile is likely net-negative relative to fossil-fuel CO₂ emitting farms and very small compared to methane (CH₄) emissions from raising cattle. A horse-powered agriculture framework is a game-changer for soil health and lacking the use of broadcast fertilizers, likely reduces nitrous oxide (N₂O) while supporting natural and human selected biodiversity and protection of the local and regional watershed. Planet Alpha will directly measure the GHG emissions of BBF, tracing its biological uniqueness and managing for emission reductions. This is “*biotechnology for the biosphere.*”

BBF operations result in farm biotechnology offsets (FBOs) available to community small businesses, governments, corporations and individuals signaling support for a legacy of farm conservation in Maine, now and for future generations. The BBF Community action results in tangible benefits that fight climate change. FBO pricing is consistent with the social cost of GHGs and achieving the Paris Agreement temperature target goals of limiting global warming to 1.5° C above preindustrial levels.

How Does It Work?



What Science Is Involved? How Can I Purchase Farm Biotechnology Offsets?



- Horse-Powered Agriculture
- Silvopasture Agroforestry
- Soil Carbon Sequestration
- Managed Woodlands
- Managed Wetlands

Marino BDV, et al. 2020. <https://doi.org/10.7717/peerj.8891>

Interested in Collaboration or Farm Project? [Contact PAC.](#)





BBF Diversification Table

A				B			C				
Large	Medium	Small		Atm	Soil Atm	Isotopes		Large	Medium	Small	
			10 YR			TBD	CO ₂				High
			10-30 YR			TBD	CH ₄				Medium
			30+ YR			TBD	N ₂ O				Low
Project Area & Duration				GHG Direct Deploy			Carbon Price Risk/Area				

D				E			F				
Value	Blend	Growth		Value	Blend	Growth		CO ₂	CH ₄	N ₂ O	
			10 YR				CO ₂				\$10 -500
			10-30 YR				CH ₄				\$750
			30+ YR				N ₂ O				\$1,000
Project Style & Duration				GHG Asset Classes			GHG Price (mt)				

Project Diversification: Buckwheat Blossom Farm is a small (~142 acre), 10- to 30-year terrestrial project monitoring GHGs directly including CO₂, CH₄, and N₂O in the atmosphere and soils (isotopic species will be added). The risk of carbon pricing is considered low given the small size of the project area. BBF is comprised of value (forests, wetland), blended (silvopasture + forests), and growth (silvopasture) land-use styles. GHG asset class styles consist of value (CO₂), blend (CO₂, CH₄, N₂O), and growth (CH₄, N₂O). GHG pricing (per metric ton) for products ranges from ~\$40 to \$750.

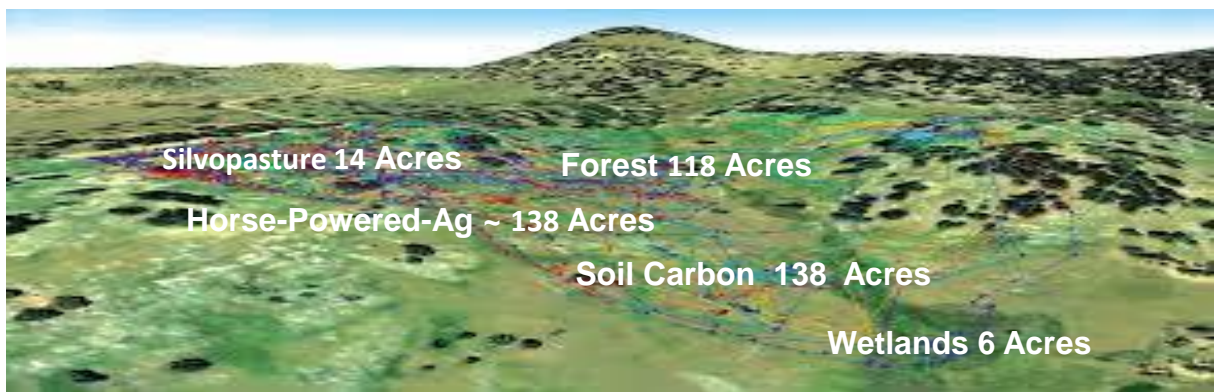
What Greenhouse Gases Will be Measured?
 Carbon Dioxide (CO₂), followed by Methane (CH₄) and Nitrous Oxide (N₂O) and Carbon Isotopes (QQ)

What Methods Will be Used?
 1) Eddy Covariance, 2) Remote Sensing, 3) Automated Systems (SoS) and Drone Imaging (UAS)

<input checked="" type="checkbox"/> Carbon Dioxide	<input checked="" type="checkbox"/> Methane	<input checked="" type="checkbox"/> Nitrous Oxide	<input checked="" type="checkbox"/> Carbon Isotopes	<input checked="" type="checkbox"/> Eddy Covariance	<input checked="" type="checkbox"/> Remote Sensing	<input checked="" type="checkbox"/> System of Systems	<input checked="" type="checkbox"/> Aerial Systems

What is the Type, How Many Offsets are Available, How Often Can They Be Purchased?

Voluntary Offsets, 414 Units, Annual Renewal



Why Buy Buckwheat Blossom Farm Offsets?

- ~200,000 Small US Farms Earn Revenue
- Climate Change Requires Active Management
- Reduce Development Pressure on Land