**Agricultural and Ecosystems Subcommittee**

**Pathways for Sequestration and Storing Carbon**

 **Framing – Goals and High Level Summary**

Because plants absorb carbon dioxide from the atmosphere and store the carbon in wood, leaves, roots, and soil, and the majority of the state is comprised of plant-based ecosystems (98% of the state), Vermont's natural and working lands and waters have the ability to help us mitigate the impact of climate change. Natural and working lands in Vermont currently store approximately 2,000 MMT CO2 –e, and sequester carbon at a current annual rate of -2.91 MMT CO2 –e [[1]](#footnote-2).

Those that live and work in these ecosystems have a critical role in helping us reduce our net emissions. Management decisions can result in increased absorption of carbon dioxide (sequestration) or a decrease, perhaps even resulting in net emissions. Therefore, it is critical that we empower landowners and those within the farm and forest sectors to select the best management decisions both to ensure the continued sequestration and storage of carbon. A critical component of moving into a resilient and adaptive future in the face of our changing climate lies squarely in our ability as a state to empower, embrace, and increase the inherent resiliency of our natural and working lands and ecosystems to provide for our shared future. As you will find below, the Agriculture and Ecosystems subcommittee has worked to create a set of pathways, strategies, and actions that will not only empower our land in its highest capacity to store and sequester carbon, but additionally, to uplift and resource the land stewards, land owners, farmers, foresters, and caretakers who interact with our natural and working lands every day. The increased sequestration and storage of carbon in our soils hosts myriad co-benefits, including buffering the impacts of extreme precipitation and drought stress, reducing downstream flood risks, supporting biodiversity, protecting water quality and enhancing productivity and investing in healthy soils benefits all of us immensely.

Within that reality, it is imperative too that we acknowledge the systems in which we are currently mired, those that capitalized farmers and foresters into extractive methods of production and resulted in both deep inequity to our land base, historically marginalized populations, and to our current day frontline and impacted communities.

Efforts to invest in the capability of our natural and working lands to sequester and store carbon are alive in our state, but as we face increased extreme weather events, generational land transfer, exacerbated income and social inequity it will be incumbent upon us all to transform the manner with which we design and implement our approach moving forward to ensure that both an equity and climate lens are first and foremost in how we prioritize our actions.

At the moment our forest and wetland carbon stocks are large and it is imperative they be prioritized for protection. Additionally, our agricultural soils and landscapes present an opportunity to increase carbon sequestration through the greater adoption of conservation practices, particularly cover cropping and agroforestry. Carbon sequestration rates however are not constant and likely to decline in the future as stocks get bigger. We are in a moment that requires a much deeper understanding of Vermont’s sequestration potential. We need increased research and monitoring as this may not offset fossil fuel emissions indefinitely.

In conclusion, in order to meet the goals of the GWSA and mitigate drivers of climate change, it is critical that the State of Vermont invest in measures to protect existing carbon stocks, increase the net balance of carbon sequestration in natural and working landscapes, better understand the way land management changes influence the storage and sequestration of carbon, and accurately track changes over time. The State of Vermont must provide land managers with financial and technical support to implement practices that protect and increase carbon in the landscape in order to meet the state’s sequestration and storage goals

1. Galford et al. 2021. A Carbon Budget for Vermont. Insert link [↑](#footnote-ref-2)