

U.S. Natural Climate Solutions Accelerator

Round 2 Finalist: Manomet, Inc.

Initiative: Increasing Carbon Sequestration and Storage on Corporate and Institutional Forestland

NCS Pathway: Forest Management Practices

Location: New England

The “Increasing Carbon Sequestration and Storage on Corporate and Institutional Forestland” project is focused on increasing the climate mitigation value of commercial forest land in the United States. Project leader Manomet, Inc. will partner with members of their [Climate Smart Land Network](#), including many of the major forestry companies in North America, to quantify benefits and improve enabling conditions for the adoption of management practices that enhance climate change mitigation. Two categories of mitigation enhancements will be evaluated, those that can be implemented through improved efficiency and/or at a cost savings, and measures that are only feasible with carbon market support. In the first category, enhanced silvicultural practices such as expanded application of data from tree improvement programs to enhance growth rates, application of genetic research to improve carbon sequestration in plantations, and modification of shelterwood protocols to increase carbon stocking will be pursued. For those practices that are only feasible with the carbon market support, the team plans to identify and address opportunities to increase market participation by corporate forest owners and to offer recommendations for modifications to existing carbon protocols to improve carbon market utilization by the private sector.

How it works: The project is an opportunity to bring the expertise of our industry partners to bear on the challenge of increasing the mitigation value of commercial forest land. The effort will consist of three phases. The first will be an analysis of a range of forest management practices in terms of effectiveness in enhancing carbon sequestration and storage. The second will be an assessment of implementation feasibility, both through efficiency/cost savings and through carbon market support. Finally, the project will identify opportunities for implementation.

Scaling/Replication: Corporate forestland, at over 124 million acres in the United States, presents a tremendous opportunity for scaling up measures to increase natural system-based carbon sequestration and storage. The project will identify a range of practices that are both effective and feasible from the perspective of for-profit forestry companies. This vetting process will result in a framework that is applicable across all commercial forest land.

NCS Pathway: Practices to be analyzed and implemented are related to enhancing growth rates, harvest operations, silvicultural activities, extended rotation, and improved alignment of carbon market protocols with commercial operations. The harvest operations category includes reduced impact logging coupled with related efficiency measures linked to equipment selection, fuel efficiency, and road/trail layout. The silviculture category includes a range of measures, such as modification of shelterwood protocols to increase carbon stocking and leveraging tree improvement programs to enhance growth rate.

Carbon Sequestration: The team estimates that a subset of practices included in the project—if implemented on a share of corporate U.S. forestland—could potentially mitigate 922 million tCO₂e. Assumptions for this estimate include a reduction in harvest emissions of 10% coupled with efficiency gains from new technology, such as depth-to-water-table mapping for skid trail layout, lower-impact equipment, and increased fuel efficiency. Implementing improved harvest operations on 50% of U.S. corporate forestland could result in 139 million tCO₂e in avoided emissions over 30 years. Broader application of and improved techniques for silvicultural interventions such as fertilization, removal of competing vegetation, and tree improvement, could result in an additional 293 million tCO₂. In addition, implementing extended rotations through natural forest management on 15% of U.S. corporate forestland can furthermore sequester 488 million tCO₂e over 30 years.