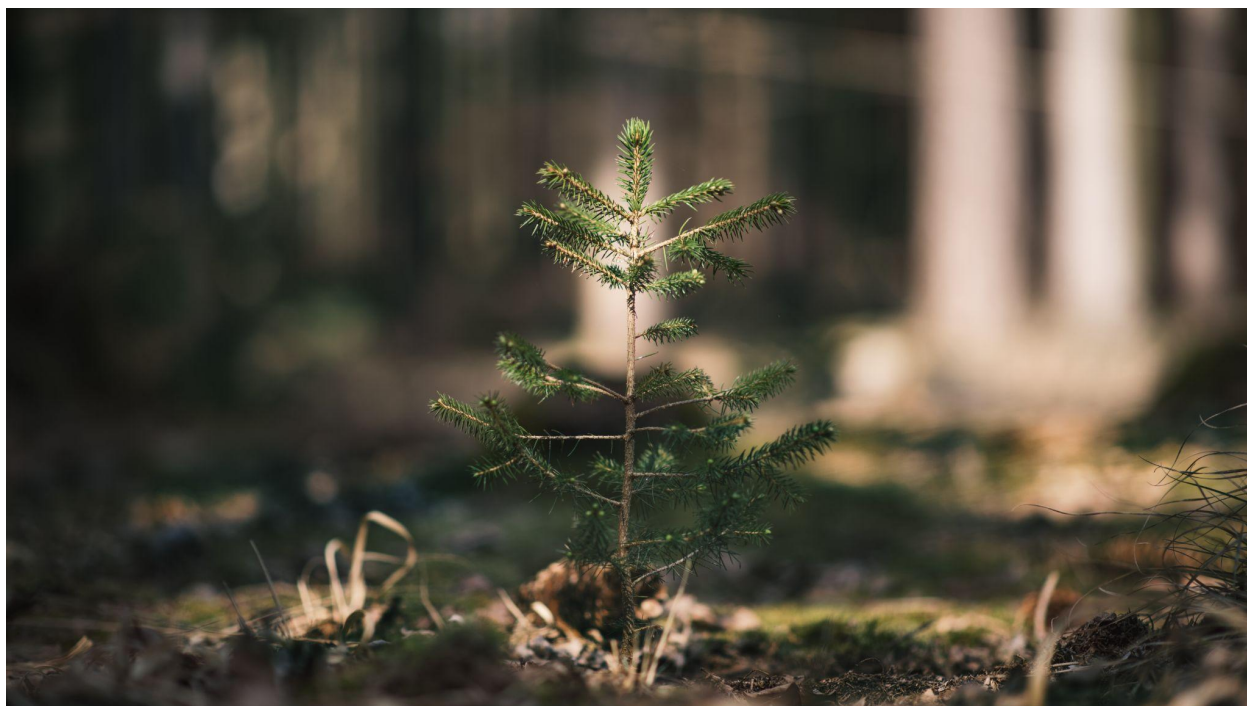# Forest & Wood Carbon Data Platform

Project Brief | January 8, 2024

This project creates a single U.S. Department of Agriculture (USDA)-sponsored platform with multiple user-friendly tools providing transparent, high-integrity forest and wood product carbon data throughout the value chain.

A single platform would align with a U.S. Forest Service (USFS) objective to serve as the primary source of information on carbon and carbon flows across U.S. forest lands, harvested wood products, and end-use life cycle assessment.

The Inflation Reduction Act and the Executive Order on Tackling the Climate Crisis have specifically called out the need to enhance Measurement, Monitoring, Reporting and Verification (MMRV) across all sectors to meet public and private climate goals. Currently, forest and wood product data exist in disparate sources. To meet MMRV needs for a variety of end-users, connections and improvements are necessary to produce standardized data and approaches for quantifying forest-sector greenhouse gas flux for entities across the value chain using the most current regional and national parameters.

This platform will:

- Provide high-quality carbon data on forests and wood products, enabling consistent holistic reporting at three starting points: the landowner, manufacturer, and end-user.
- Combine Forest Inventory Analysis (FIA) data and other non-proprietary sources of forest sector inventory data with tools, technologies, , and approaches to enable forestowners to determine the forest carbon stock impacts of forest management regimes for various forest types or species compositions including in regional and localized geographies across the country.
- Use published manufacturing environmental product declarations (EPDs) and life cycle assessments (LCAs) to report the embodied (emissions associated with materials or construction processes) carbon in wood products.
- Use USDA entity level guidelines to calculate the embedded (stored) carbon in manufactured products and estimate the carbon displacement of wood products using substitution factors found in published literature.

Benefits

Policymakers and regulators can use the platform to meet existing directives related to natural climate solutions, e.g., fulfilling MMRV requirements, creating decision support tools needed to inform climate-related management decisions on federal lands, informing the expanded capability of the USFS to provide relevant FIA data and analysis and enabling USDA to connect forest carbon modeling with soil estimation and forest practices to quantify carbon benefits.

Forest sector stakeholders will use the platform to translate their inventory data into carbon data using a standardized approach; to calculate the embodied and embedded carbon of manufactured products, and to answer both high-level and localized questions about the carbon attributes of forests and wood for sourcing decisions and the relative benefits of forests and wood products as natural climate solutions.

Image: George W. Peavy Forest Science Center
Source: Oregon State University. Credit: Hannah OLeary

Platform Components

Six core tools will collate and make accessible high-quality and standardized carbon data on private working forests and forest products manufacturing, leveraging public and private resources and data.
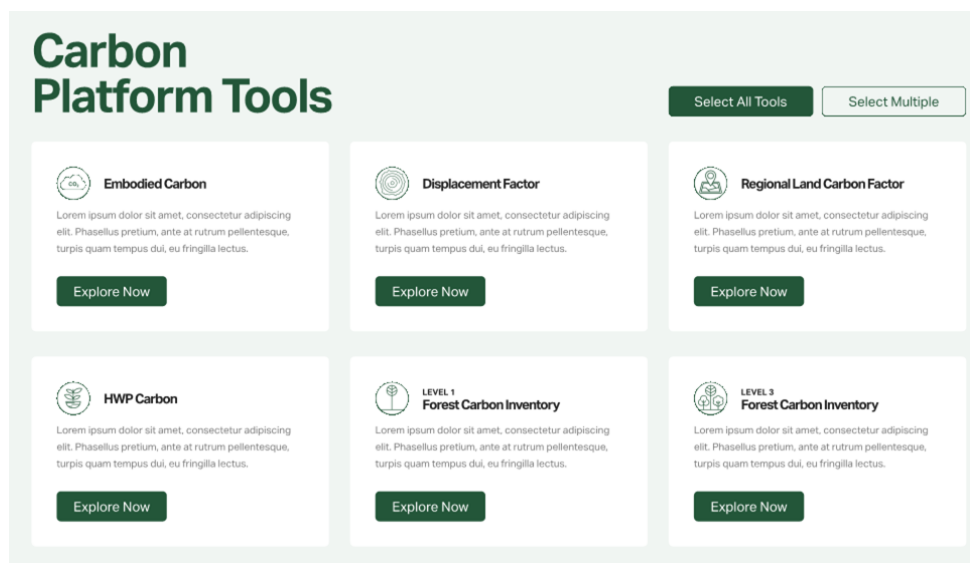
Level 3 (customized) Forest Carbon Inventory Tool will convert species and stand-level data to carbon stocks, including above- and below- ground pools, and to standardize reliable forest carbon reporting. *Users: Companies/large landowners that want a consistent methodology to calculate their Scope 1 (direct) emissions and credibly report their carbon stocks.*

Level 1 (default) Landowner Carbon Inventory Tool will create customizable look-up tables for smaller area estimations, using FIA data. *Users: Small landowners wanting to estimate their carbon inventory or stakeholders wanting a general sense of carbon in different US forest types.*

Land Regional Carbon Accounting (LRCA) Factor Tool will use FIA data to measure carbon-stock change across a region or wood basket along with the amount of harvest in the same region. *Users: Landowners and manufacturers who want to calculate their Scope 3 regional land carbon accounting factor; architects and engineers who want to understand the land carbon changes in regions where wood products are sourced.*

Harvested Wood Products (HWP) Carbon Tool will quantify carbon storage in wood products over a 100-year timeframe, using the query tables in the USDA entity guidelines in an accessible format. *Users: Landowners, manufacturers, and end-users who want to calculate and incorporate the long-term carbon storage in the logs or manufactured products that flow through the value chain.*

Embodied Carbon Tool will report embodied carbon in manufactured forest products through verified LCAs and EPDs, reflecting geographically relevant data, for representative forested acre and product types. *Users: Landowners, manufacturers, and end-users who want to incorporate the embodied carbon emissions of manufactured products into LCA tools.*

Displacement Factor Tool will use USDA entity level guidelines to estimate the substitution factors of wood products compared to fossil-intensive, mineral-based systems. *Users: Manufacturers, architects and engineers, and other end-users who want to compare the carbon impacts of wood products to alternative products and systems.*
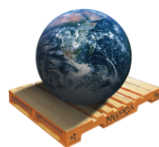
Project Partners

USDA — United States Department of Agriculture

Forest Service — U.S. Department of Agriculture

U.S. Endowment for Forestry and Communities

NAFO — National Alliance of Forest Owners

AMERICAN WOOD COUNCIL

American Forest Foundation

HARDWOOD FEDERATION

DECORATIVE HARDWOODS Association

National Wooden Pallet & Container Association — Pallets Move the World®