



**CARBON  
SEQUESTRATION  
AS A COMMODITY**

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**D&D LARIX, LLC**

*Project Synopsis*

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## TABLE OF CONTENTS

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Introduction .....	1
History .....	1
Carbon as a Commodity .....	1
Financial Benefits to Forestland Owners .....	2
Climate impact .....	2
Underfunded markets .....	3
Shared alignment .....	3
Climate equity .....	3
Climate Innovation .....	3
Company Overview .....	4
Works Cited .....	5

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## INTRODUCTION

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Carbon sequestered by forests must be treated as a measurable commodity in carbon markets where willing buyers interact with willing sellers. This is the only way carbon exchanges can be meaningfully actualized in balancing out carbon emissions totals expressed in tons per year against sequestered carbon totals of the same measure. Quantifying carbon sequestration appears as the only pragmatic solution to accomplishing a meaningful Carbon Negative status.

Currently, this is an arena where investments and capital needs for climate change challenges are not being met. In a brief synopsis we offer our view in how to align carbon emitters with forestland sequestration operatives articulating in the process meaningful financial and social benefits for the players involved.

### History

Critical in our approach to the issue discussed is Forest Growth & Yield software written in Microsoft computer programs in the early 1980s (Wykoff, Crookston, & Stage, 1982; Belcher, 1982) which have since been expanded (Arney, 2016; Miner, Walters, & Belli, 1988). Timber management entities became the first beneficiaries of this development allowing them to calculate tree volumes as a commercial commodity extrapolated into future tree growth (Schlosser, RPA Forecast Tool, 2020; Schlosser, Bassman, Wagner, & Wandschneider, 2002). Later it has expanded to capture wildlife habitat, riparian zones, and, eventually, carbon sequestration (Schlosser, Bassman, Wandschneider, & Everett, 2003).

While international effort focuses on reducing carbon emissions, little attention is given to the need of measuring how much carbon is annually sequestered by forests. Conceptually, we can state that “a lot of carbon is sequestered in large trees”, but those heuristic statements fail to express it in terms of metric tons of carbon held within the trees’ four segments defined as roots, stems, foliage, and bark.

When building our computer-based platform we developed forest biometric indices for individual forest stands to calculate how much carbon is sequestered in each of the four segments annually, which combined through time, morph into quantified data presentations of annual and 5-year time periods extending into hundreds of future growth years.

### Carbon as a Commodity

At this time of global climate change focus, it makes sense to assume that carbon sequestration needs to be elevated to the rank of a valuable measurable commodity which begs to influence timber harvest decisions.

We are prepared to discuss the way this logical eventuality can be accomplished. To start with, forestland owners need to be financially incentivized to hold sequestered carbon in their growing trees. Carbon emitters also need a reliable mechanism to purchase offset credits against their current and potential atmospheric emissions.

# Carbon Sequestration

## Synopsis

Here we introduce the concept of conservation easements which has served for decades as a trusted mechanism for forestland owners to interact via these voluntary legal agreements between willing landowners and a land trust or government agency. In the same framework of conservation easements, incentivized carbon emitters become motivated to pay for carbon sequestration credits, offsetting their emissions. This interaction can be handled through an already existing mechanism empowered to limit uses of land to protect its conservation values (North American Land Trust, 2021).

To extend the logic of their immediate purpose, conservation easements may serve as the mediator for carbon commodity markets where willing buyers and willing sellers interact to serve the interests of the players involved.

**This creates an offset arrangement enabling description of Carbon Net Negative status.**

### Financial Benefits to Forestland Owners

Critical participants in this process are Indigenous peoples of the USA, Indian Tribes and Nations (Pevar, 2002). Indian Reservations are lands previously held in US Federal Trust status but are now being reverted to tribal management control (Cobell Settlement, 2010). Tribes are intrinsically linked to the need of climate change abatement (Whyte, 2018). Indian Tribes across this continent have reduced carbon emissions (NICC, 2017), but are still challenged to articulate volumes of sequestered carbon on tribal forestlands.

Carbon sequestration revenues will potentially benefit Tribal, Non-Industrial Private Forestlands (NIPF), commercial forestland owners, state and federal agency landowners. Carbon emissions need to be described in support its noble goal of “enhanced sequestration” with-the-boots-on-the-ground effectual carbon exchanges program based on quantifiable measurements which our computer platform offers.

*This is where we operate.*

NIPF owners are obligated to maintain their forestlands within the system of local and state taxation needs. These lands are levied an annual property tax (Schlosser, Users Guide to the (Idaho) Timber Productivity Option’s Valuation Method, 2005; Schlosser, Baumgartner, & Hanley, Forest Taxes in Washington, 1998) as forest landowners seek revenue to keep and maintain their lands. Timber harvests are viewed as the primary way for forestland owners to financially balance their forestland ledgers.

Carbon sequestration credits can serve their needs as an incentive to hold the growing tree status. Conservation easements legally bind forestland owner property title to the conditions of the agreement.

### Climate impact

The approach we offer articulates volume in tons of carbon sequestered on forestlands held by each ownership class. This will be integrated into the conservation easement framework. D&D Larix, LLC, will serve as a broker for the parties involved. Our online platform, accessible through Microsoft’s cloud services provides clear insight to the way this can be accomplished.

# Carbon Sequestration

## Synopsis

### Underfunded markets

Investing is targeted where capital needs for climate solutions are not being met. This is especially critical for Tribal land operatives where financial incentives to sequester carbon have not been made. Tribal forestlands have potential to enter carbon sequestration markets, but only if a standardized system is developed and revealed.

We are fully experienced in the marketplace for conservation easements along with forestland biometric measurements extrapolated into future growth indices, as well as the computerized systems optimizing results for small and large forestland ownerships. We are capable to deliver this market to incentivized forestland owners in North America.

### Shared alignment

D&D Larix, LLC, designed and deployed the Forest Resource Analysis System Software (FRASS) solution in 2010 (D&D Larix, LLC, 2010). The FRASS system incorporates forestland biometrics, geospatial analysis, and econometric evaluations to discover financially optimal timber harvest timing for landowners. We anchored this system on Microsoft's Visual Studio software integrated with SQL server database management protocols. Property databases eclipse millions of time-specific data cells to align with ever changing temporal economic data of the macroeconomy. This is blended with microeconomic conditions of each forestland owner to reveal optimal property management decisions.

Carbon sequestration should be treated as a viable commodity to forestland owners who will be motivated to diversify their financial and social benefits in a developing market of carbon exchanges. The historically underrepresented communities, such as Indian Tribes/Nations, can be the beneficiaries of this approach. They become financially linked to a broader framework of activities to mitigate negative effects of global climate change.

### Climate equity

Our approach ensures development of underserved communities to align and deliver financial benefits from climate change solutions. These benefits are locked with existing protocols to link property title restrictions with carbon sequestration agreements.

## CLIMATE INNOVATION

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D&D Larix, LLC, aligns our tested research-based technologies, with Microsoft software solutions to blend with USA financial and policy regulations. This structure integrates carbon emitters - within the conservation easement framework - with landowners, the carbon sequestration entities.

1. Financial and social benefits accrue to the communities through ownership, production, deployment, and operation of this solution. This state-of-the-art technological business model is used as the vehicle for delivering innovative climate impacts and community benefits.

# Carbon Sequestration

## Synopsis

2. Trade-offs in climate impact and community benefits consider investments in location-specific projects. Willing sellers will commit to land management consistent with maintaining and enhancing carbon sequestration in forestland communities.
3. Indian Tribes/Nations on Tribal forestlands will experience significant financial benefits through the carbon sequestration matrix. Rural forestland owners will partner with these movements to become critical operatives in this mix.

## COMPANY OVERVIEW

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D&D Larix, LLC, is a Washington State registered company providing natural resource consulting services in the USA, and internationally. Founders, Birgit R. Schlosser, M.A., and William E. Schlosser, Ph.D., have led international environmental science efforts together since 1994, as they both implemented tasks for the Environmental Policy and Technology Project (EPT) for the US Department of State, USAID, in the Newly Independent States of the Former Soviet Union. After conclusion of the EPT project Birgit and William's company implemented the Russian Environmental Partnership Project (REP) for USAID in the Russian Far East and Siberia through 2000. Their company has worked closely with USA Federal agencies, Indian Tribes/Nations, states, counties, and private businesses.

There are four (4) members of D&D Larix, LLC, and two of them are women with Birgit R. Schlosser serving as Managing Member. Birgit Schlosser immigrated to the USA in 1998 and is now a US citizen.

Dr. Schlosser is an active faculty member for the School of the Environment (SoE) at Washington State University (WSU). He teaches a core SoE class in Natural Resource Ecology (SoE-300), guiding approximately 200 students each year through topics including carbon sequestration by forestland ecosystems.

Dr. Schlosser holds significant experience with carbon sequestration topics specifically in respect to how it is sequestered by terrestrial plant communities. He serves as D&D Larix's lead scientific designer and analyst in natural resource management fields.

He performs his professional services with a federally recognized long-term disability (LTD).

The people of D&D Larix come from a wide background of experiences and expertise. Our Financial Manager, Susan J. Veach, B.A., operates her woman owned and managed accounting firm, Accountability Plus, Inc., of Washington State. She and also works through challenges of a federally recognized LTD. The Schlossers and Mrs. Veach have worked together since 1990.

Our lead database analyst and programmer, John Doroshenk, M.A., is a long-time member of the Microsoft Developer Network, as he leads the company's programming nexus with the tools designed to serve people and their organizations by using Microsoft software and techniques.

# Carbon Sequestration

## Synopsis

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