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# Forest Nursery Landscape Assessment Summary

## 1 Introduction

New Leaf Climate Partners (New Leaf) has completed a landmark assessment of the US forest nursery landscape to help inform new investment strategies and policies that equip and revitalize the sector to meet challenges including adapting to needs and opportunities driven by climate change. The study was funded by the US Endowment for Forestry and Communities as part of its wider programs to promote innovation and catalytic investment in working forests and the rural economy.

## 2 Process

New Leaf reviewed a range of sources, starting with the USFS RNGR Nursery Directory but also tapping other federal agencies, state forestry department information, academic papers and private research. In parallel, we went out into the field on eight regional roadshows - meeting nursery operators and sector stakeholders across 20 states. Building on this max of desk research and in person outreach, we built a database of nurseries across the continental US that help us understand key trends and drivers including the ownership structure, business maturity and product mix encompassing plants and other inputs for the timber industry, landscaping and land restoration and conservation projects.

## 3 Database

The resulting New Leaf database comprises 1,500 nurseries and related businesses. Within this universe, we stripped out roughly 500 locations that sit outside the scope of climate smart plant supply – because they are administrative locations, are closed, have limited operating information or are in Alaska, Hawaii and other US territories.

Of the remaining 961 locations, we screened for more qualitative alignment – did the supplier produce trees and other plants in a volume and format that makes sense for a sustainable timber or land conservation project – which narrowed the relevant universe down to 305 nurseries, mapped onto 15 regions that have similar economic and ecological drivers.

## 4 Learnings

Analyzing the companies in the database and pulling from relevant peer research has validated some hypotheses and revealed other features about the overarching seedling market dynamics:

### ① THE US HAS A 1 BILLION SEEDLING DEFICIT

- 1.5B seedlings produced per annum represents 60% of the 2.5B seedling near term demand driven by timber harvests, post-wildfire restoration and new climate-smart planting and 30% of the maximum planting rate that the US needs to achieve 2050 carbon sequestration goals.

This deficit is expanding – and market resilience deteriorating – because:

### ② THE SUPPLY CHAIN HAS PHYSICALLY CONTRACTED

- After decades of divestment and consolidation in the timber industry, 950M seedlings are supplied by eight industrial growers, 850M of which come from 40 physical sites run by three companies;
- The geographic footprint of the timber industry has moved away from legacy markets in the Pacific Northwest to nine states across the South/Southeast which account for over 900M seedlings pa:
  - 650M of those seedlings come from the alluvial and piedmont growing areas in Georgia, North Carolina, South Carolina and Virginia;

    - The balance originates in Louisiana, Alabama, Mississippi, Arkansas, and Missouri.

③ **PRODUCT OPTIONS ARE NARROWING**

- 90%+ of production is a handful of conifer species used for post-harvest regeneration and timber plantation – loblolly pine, slash pine, shortleaf pine, douglas fir, western larch, cedar, & hemlock;
- Eight companies dominate independent seed supply market for trees and related plants;
- Wildfire and other climactic changes are reducing the frequency of seed production, access to high yielding sites and labor available to harvest;
- Legacy state and federal orchards and collection processes critical for hardwood and non-timber conifer species based on volunteer and informal labor markets are collapsing.

④ **INDEPENDENT AND PUBLIC-FACING FOREST NURSERIES ARE IN RETREAT**

- Output has contracted at federal and state nurseries due to closures, under-investment in infrastructure and operating budget cuts – though this trend will be offset in the short term by new funding from BIIL and IRA allocations;
- Private independent nurseries are closing because:
    - Operating costs have squeezed margins to limit growth and investment;
    - Commercial capital struggles with nursery operating risks and timeframes; and
    - Owner-managers retire and sell to property developers and other businesses.

## 5 Plan from here

Acting on analysis, New Leaf is working with the Endowment and other funding partners to create a first of its kind - the **Nursery Financing Facility** - using flexible capital to strengthen and expand the supply of seedlings to reforestation projects.

We work with large independent nurseries with relatively established market presence, small independent nurseries with regional footprint or specialist product line, and integrated timber nurseries and specialist groups seeking to expand reforestation supply alongside or in place of existing channels. NFF provides flexible capital to nurseries in the form of:

- **Growth capital**: long term debt and equity to modernize and expand existing sites and build new locations in key markets;
- **Working capital**: short term finance to help nurseries purchase additional inputs and hold more stock as they scale up supply of locally-adapted reforestation and restoration products;
- **Transition finance**: equity and mezzanine/medium-term self-liquidating equity to allow owners of existing nurseries to transfer ownership to a new generation of management.

In parallel, the facility aims to act as a credible, pragmatic resource that improves the overall market infrastructure and performance by generating up-to-date market research and forecasting and acting as a platform for coordinated engagement between input providers and project developers.

## 6 Contact

For more information on the market research, Nursery Finance Facility or our range of other products and programs, please reach out to:

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