

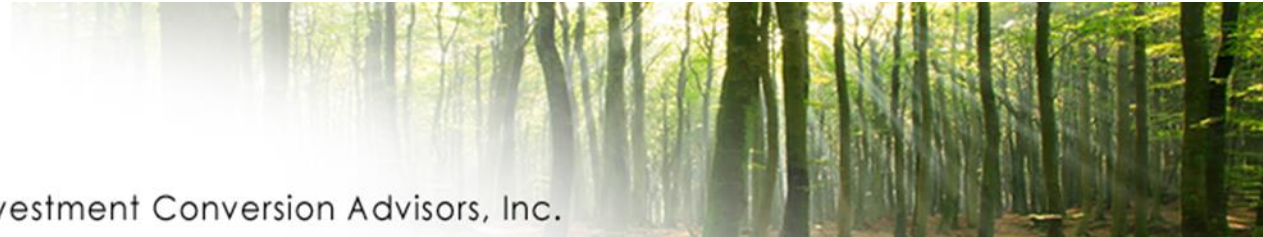
# Sawmill Industrial Implementation

By

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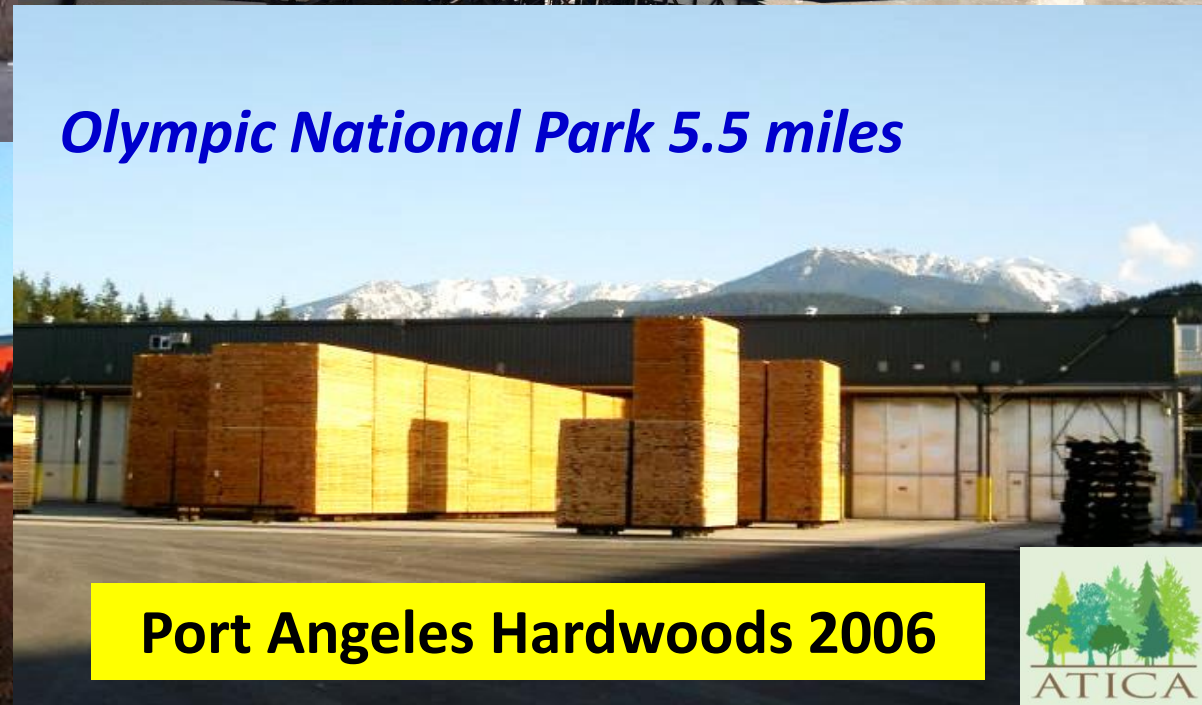
**Aracruz - Brazil 1999**



**Blanca, Colorado 2017**



**Yakama Forest Products 2002**



*Olympic National Park 5.5 miles*

**Port Angeles Hardwoods 2006**



# Sawmill Industrial Implementation

## Step 1 - Resource characterization – *precision matters*:

- Log quality determines product opportunities (potential value), target markets, and process design attributes
- Log diameter distributions drive product opportunities (volumes), scale of mill, design and equipment selection
- Accurate volume per acre by diameter & quality; high level of confidence for developers and potential investors

Value opportunities in Ponderosa Pine range from lumber worth \$125/MBF to over \$2,000/MBF, in other conifers such as Douglas Fir & Southern Yellow Pine typical values range from \$125/MBF to \$750/MBF

## Step 2 - Market research – *thoroughness matters*:

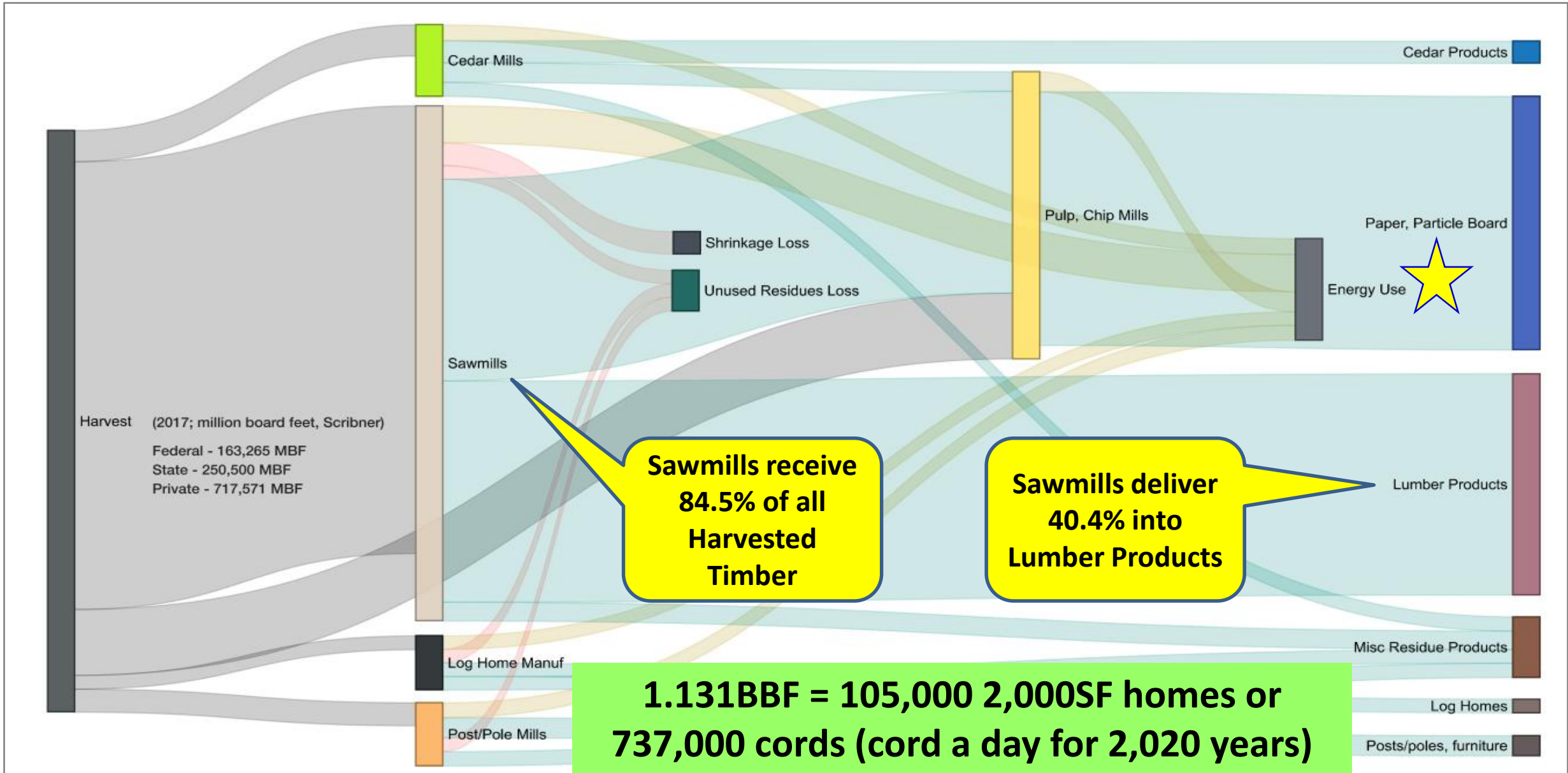
- Modeling of all relevant product opportunities from each log diameter by quality classification
- Presentation of modeled products (T x W x L x Grade) and projected quantities (volume) to Pine market(s)
- Market feedback determines true value potential, focuses product line and thus mill design & process attributes

## Step 3 – Mill Design – *profitability matters*:

- *Mill properly designed to take “characterized resource” into the highest value market(s) at the lowest cost of manufacturing ~ designed to be resilient to inevitable market fluctuations and remain profitable*
- *Profitable sawmills are the key economic engine to advance restoration efforts across a broader landscape*
- *Profitable sawmills require the support of companion wood products cluster businesses*



# Idaho – Utilization of Harvest of 1.131BBF



**Wood-fired  
Biomass Boiler  
Heat-energy for  
drying lumber**

**Whole Log Chipper  
Non-merchantable  
logs & Mill residues**

**Blanca, Colorado 2016-17**

# Thank You!

4FRI = approx. 9.0BBF of standing timber

