

November 13, 2019

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# **From Forest to Frame** *A Climate Solution*

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Services**

**Ecotrust**

## Forests and Ecosystem Services

**Our goal is to transform the dominant forest management paradigm in the Pacific Northwest, and around the world, to one that more closely mimics natural forest processes, while providing for our region.** In a carbon-constrained world, the transition to climate-smart forestry will only be possible if we better align our policies and markets with our values.

Ecotrust creates the tools, the structures, and the research to support climate-smart forest management, demonstrating that forests can store more carbon, provide high quality habitat for native fish and wildlife, offer recreational and economic development opportunities, and produce clean and abundant water, all while supporting a robust and reliable forest products industry.

# Agenda



- Introduction to Climate-smart Forestry in the Pacific Northwest



- Tradeoffs in Timber, Carbon, and Cash Flow



- Forest to Frame: the Built Environment



- Why we need Land Trusts and RCPs



## *Forests in the Pacific Northwest*



- Carbon sequestration
- Water
- Biodiversity habitat
- Food
- Flood protection
- Timber
- Cultural resources
- Recreation
- Jobs





## *Climate-smart Forestry in the Pacific Northwest*



- Longer rotations that grow older, bigger trees
- Larger stream buffers
- Leaving more live trees in the forest
- Conservation areas
- Steep slope protections
- Timber & NTFP production
- Steady, reliable jobs
- Limited and strict chemical use



*Tradeoffs in Timber, Carbon, and Cash Flows*

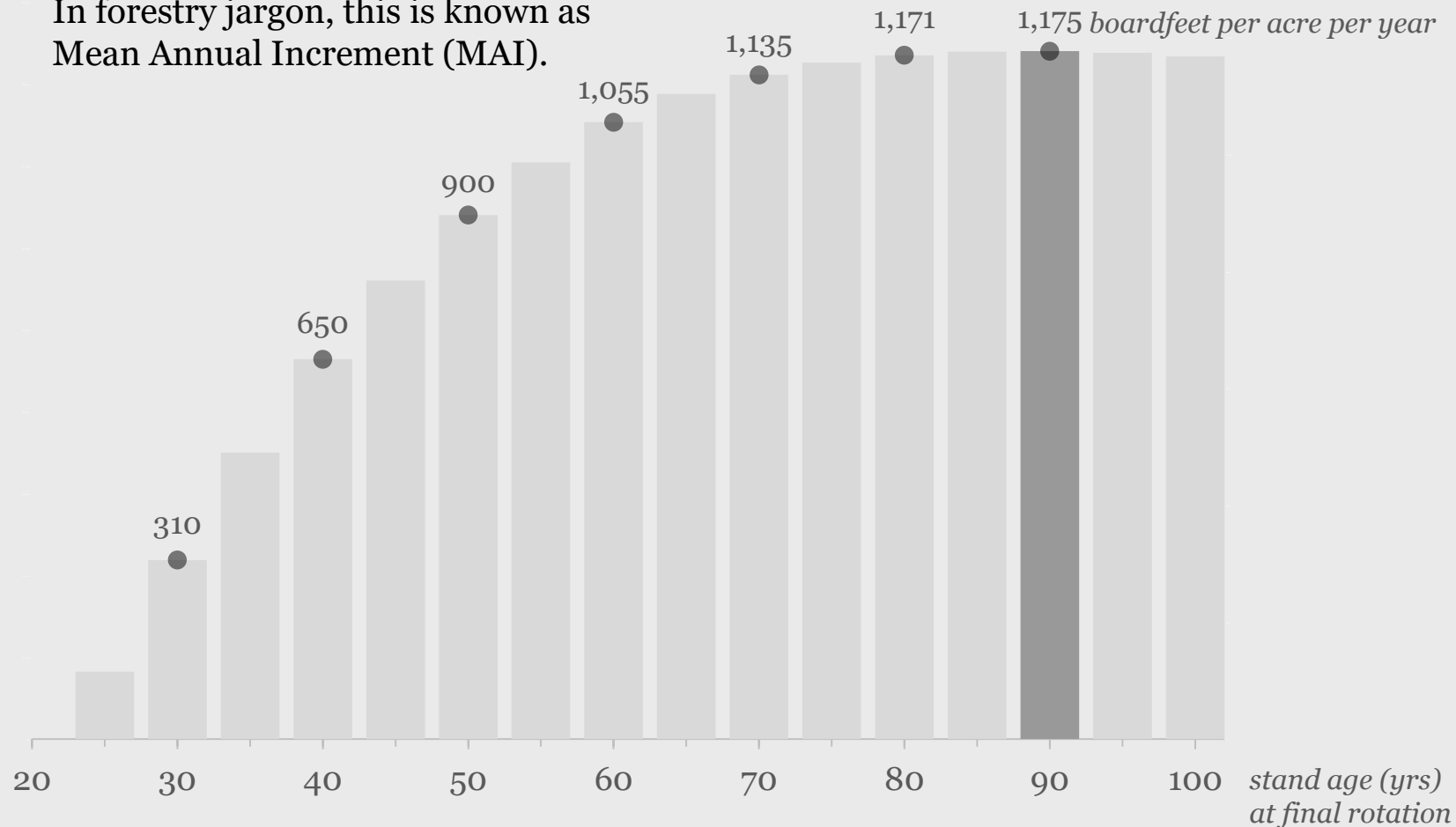
Climate-smart forestry:  
how our forests grow and how  
we choose to manage them



# Douglas-fir forests don't hit peak productivity for an entire human lifetime.

This graph shows average annualized timber growth for even-age harvest rotations of a moderately productive Douglas-fir forest.

In forestry jargon, this is known as Mean Annual Increment (MAI).

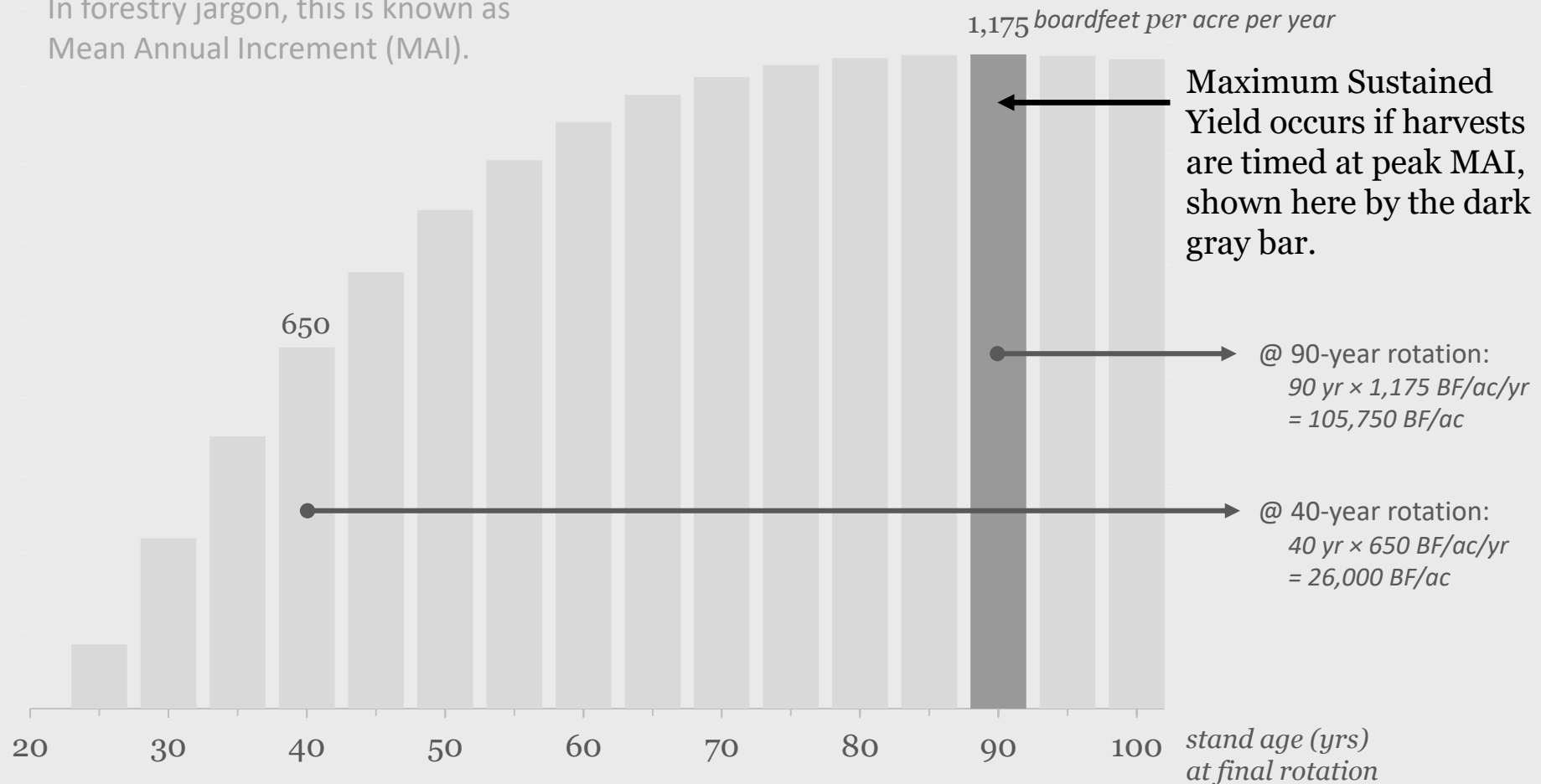




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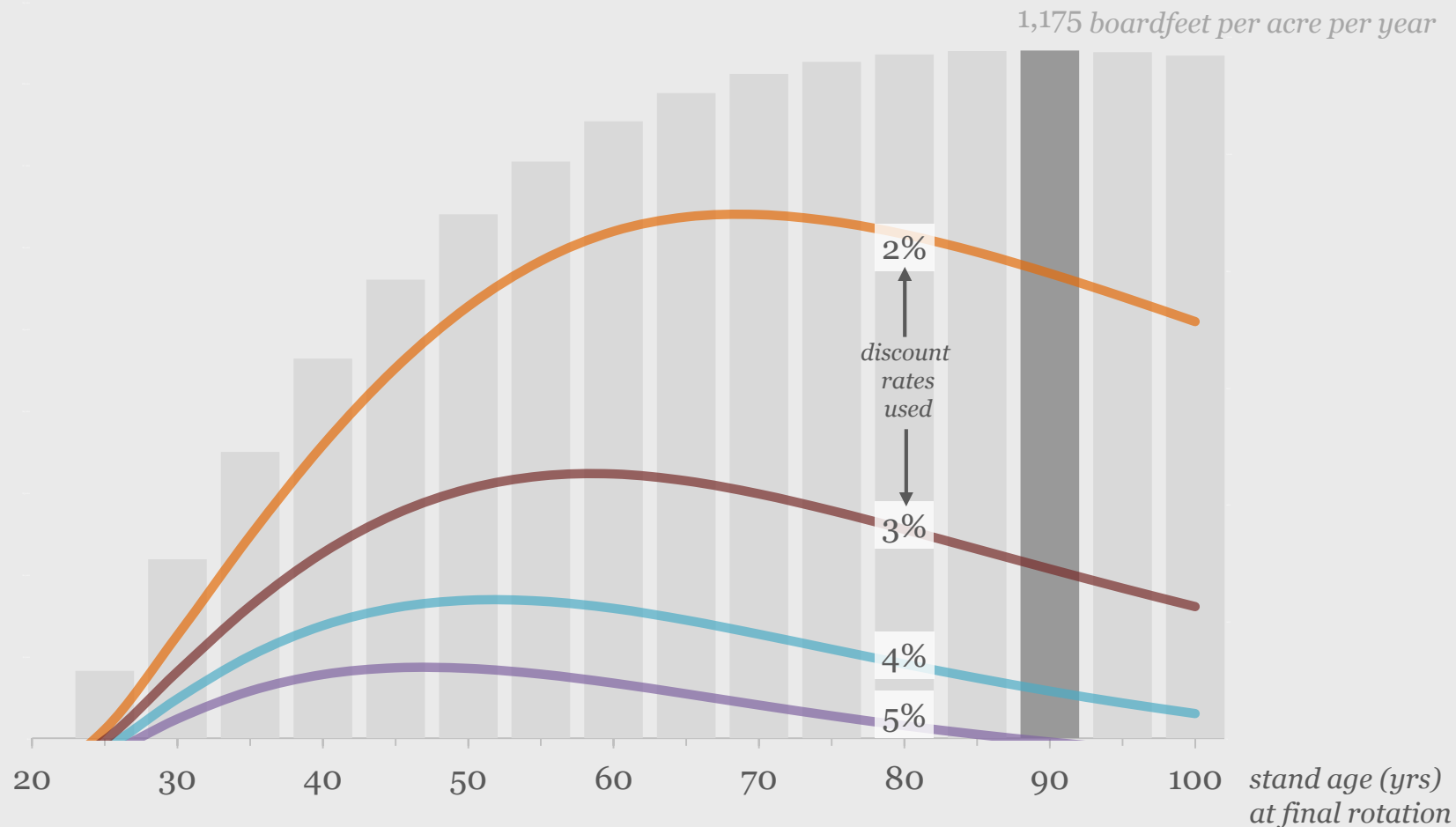






# But we discount the future and choose lower timber yields in exchange for higher Net Present Value

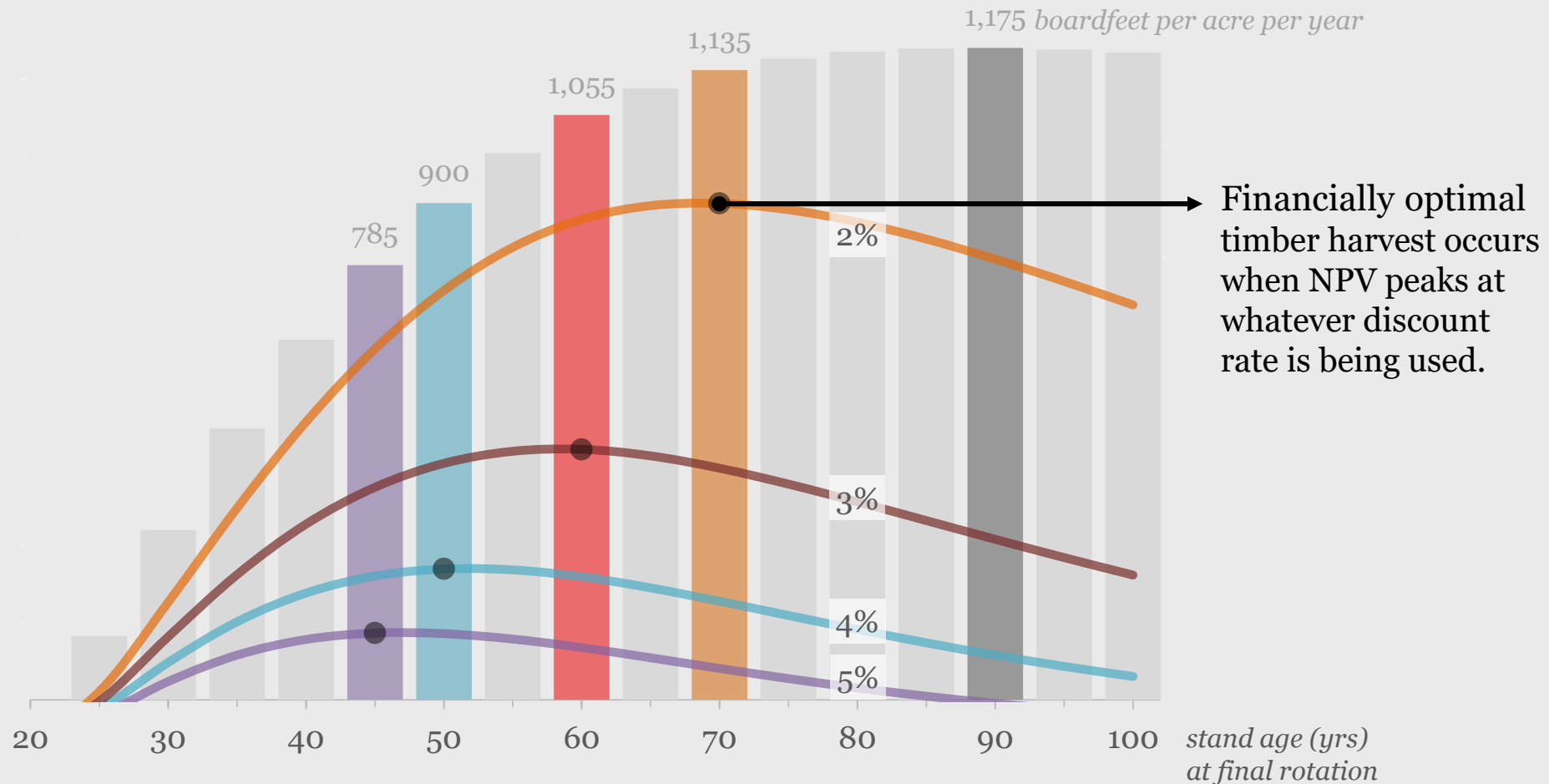
Each line in the graph below shows Net Present Value (NPV) per acre for a timber harvest at each rotation age using a different annual discount rate (%).





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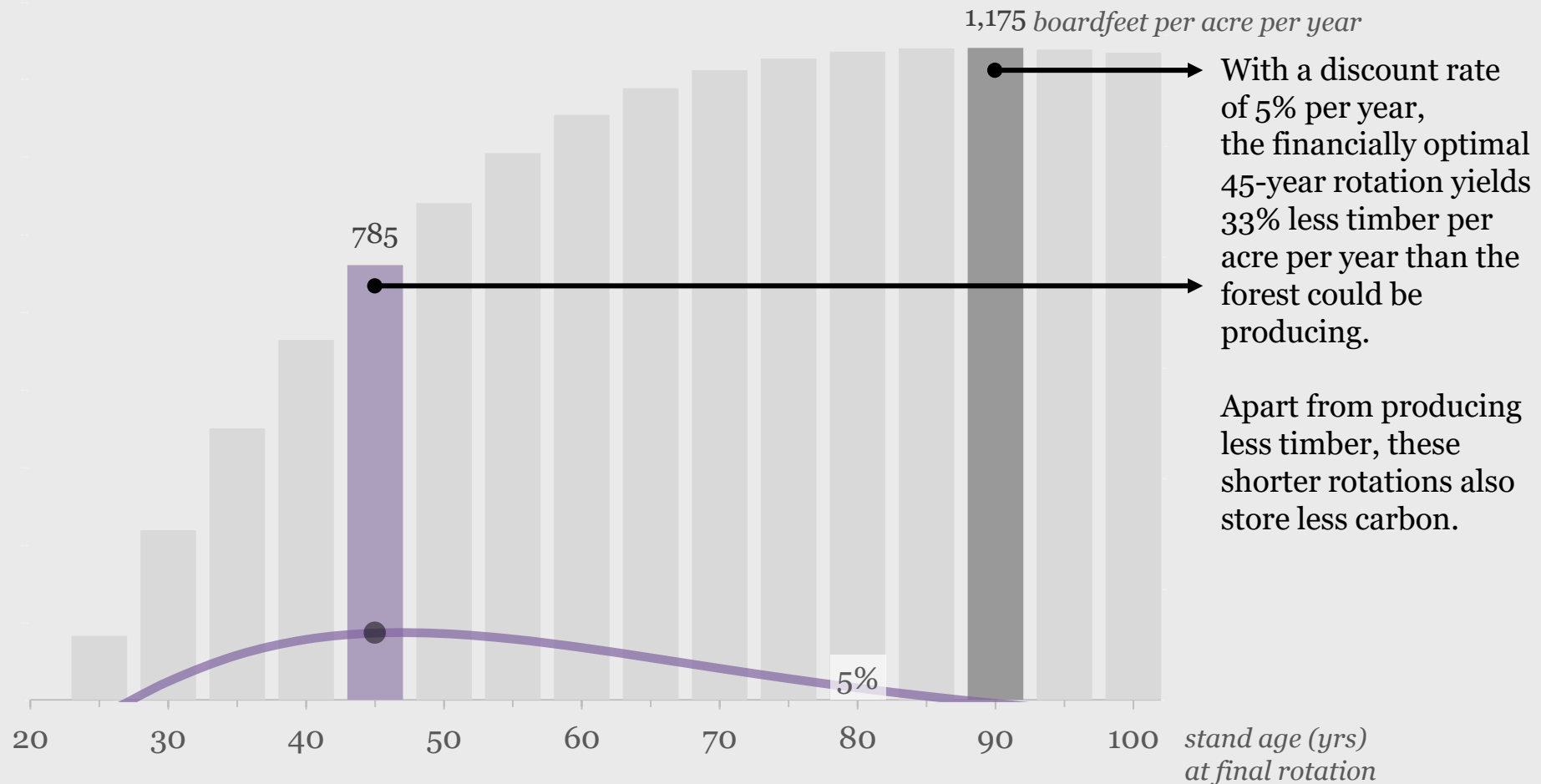
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## WHAT WE VALUE MATTERS

Modern industrial timber companies usually have a fiduciary obligation to prioritize return on investment (not timber output).

The only forest resource typically valued and monetized is timber (and sometimes development potential).

**Our markets tend to ignore nearly every other forest resource value, including carbon storage.**



**FSC certification** offers a simpler  
and more cost-effective way  
to identify and reward landowners who  
manage forests for additional carbon and ecological  
values





# WHAT RIPARIAN BUFFERS LOOK LIKE *on coastal Oregon timberland*







# WHAT RIPARIAN BUFFERS LOOK LIKE *under Oregon state law*





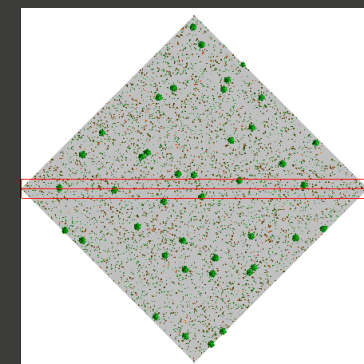
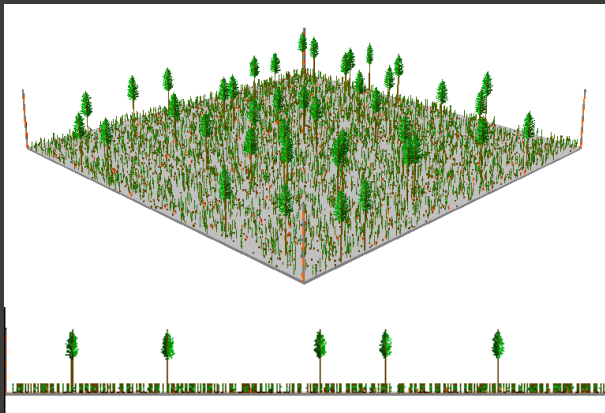


# WHAT RIPARIAN BUFFERS LOOK LIKE *under FSC*

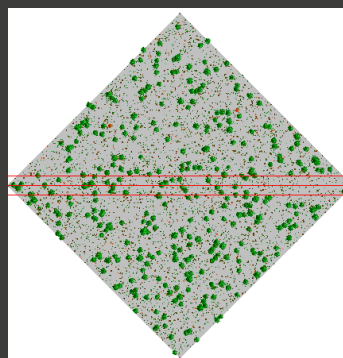
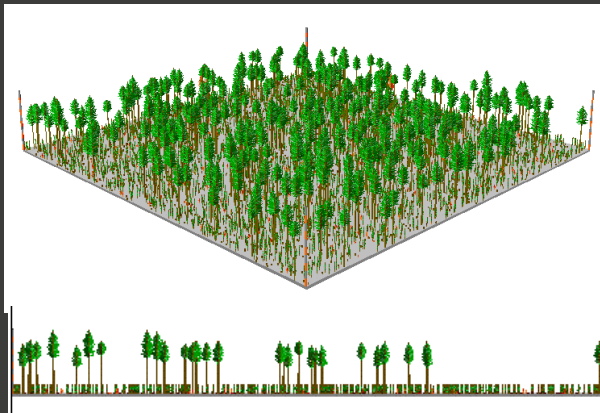




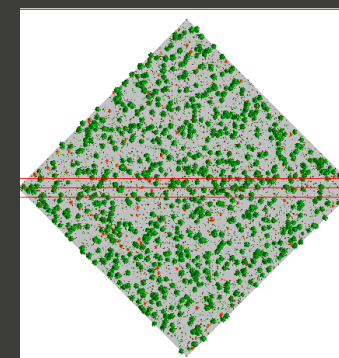
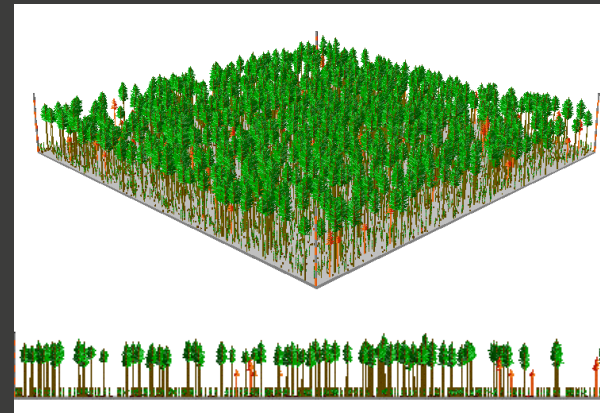
# WHAT GREEN TREE RETENTION LOOKS LIKE *following the first harvest (on 10 acres)*



4 trees per acre  
(FPA Rules)



10% of basal area  
(FSC Rules)



30% of basal area  
(FSC Rules)





# DOING BETTER THAN BUSINESS-AS-USUAL *for green builders*

- FSC stores **more carbon** (including the forest + wood products).
- FSC-certified wood is very likely to carry an embedded carbon benefit (at least for this region and forest type).
- If you were willing to pay a 5-12% (WA) or 3-21% (OR) premium for FSC-certified wood, FSC-style riparian protections and green tree retention would be competitive with business-as-usual wood.
- If you use an internal price on carbon, consider how that might translate to direct incentives for FSC producers.



# The Opportunity



*Building with Mass Timber*

The house made of wood

# Why more buildings should be made of wood

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*It is better for the planet, and safer than you think*





*Forest to Frame: the Built Environment*

# Incentivizing Climate-smart Forestry through the supply chain



# Forest to Frame

**Landowner**

**Primary  
Processing  
Manufacturer**

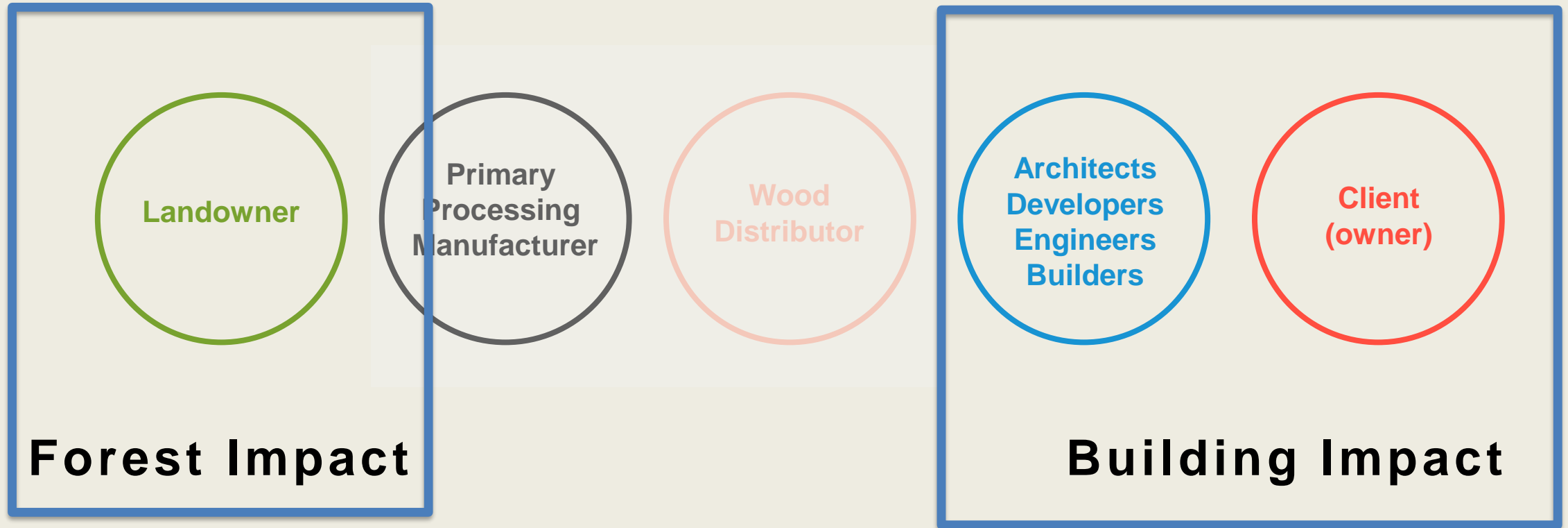
**Wood  
Distributor**

**Architects  
Developers  
Engineers  
Builders**

**Client  
(owner)**



## Forest to Frame







*Built Environment*

# Building Impact: Life Cycle Assessments



## TWO TYPES OF LCAs

### CONSEQUENTIAL

(less common,  
more controversial)

- Used to quantify impact for “what if” scenarios, such as:

What if I use wood instead of another material in my project?

What if I changed the way I managed my forest?

- Requires definition of a reference scenario against which impacts are benchmarked.

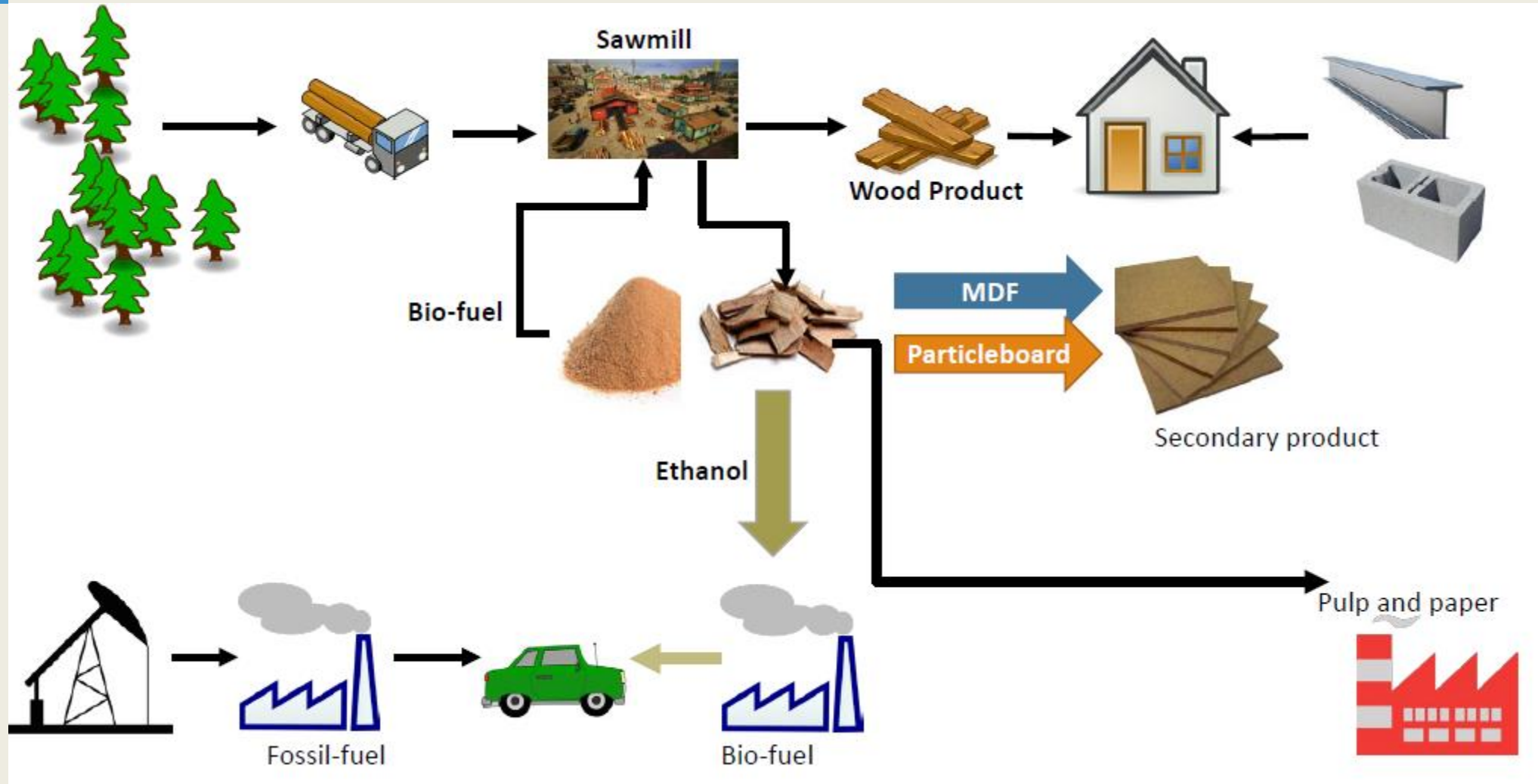
### ATTRIBUTIONAL

(most common)

- Quantifies impacts associated with the energy and materials used in the creation of a product.
- In the case of wood products, considers things like fuel, herbicides and fertilizers, and energy in growing, harvesting, transporting, and manufacturing wood products.
- Ignores the forest.
- Often ignores the carbon stored in the wood itself.



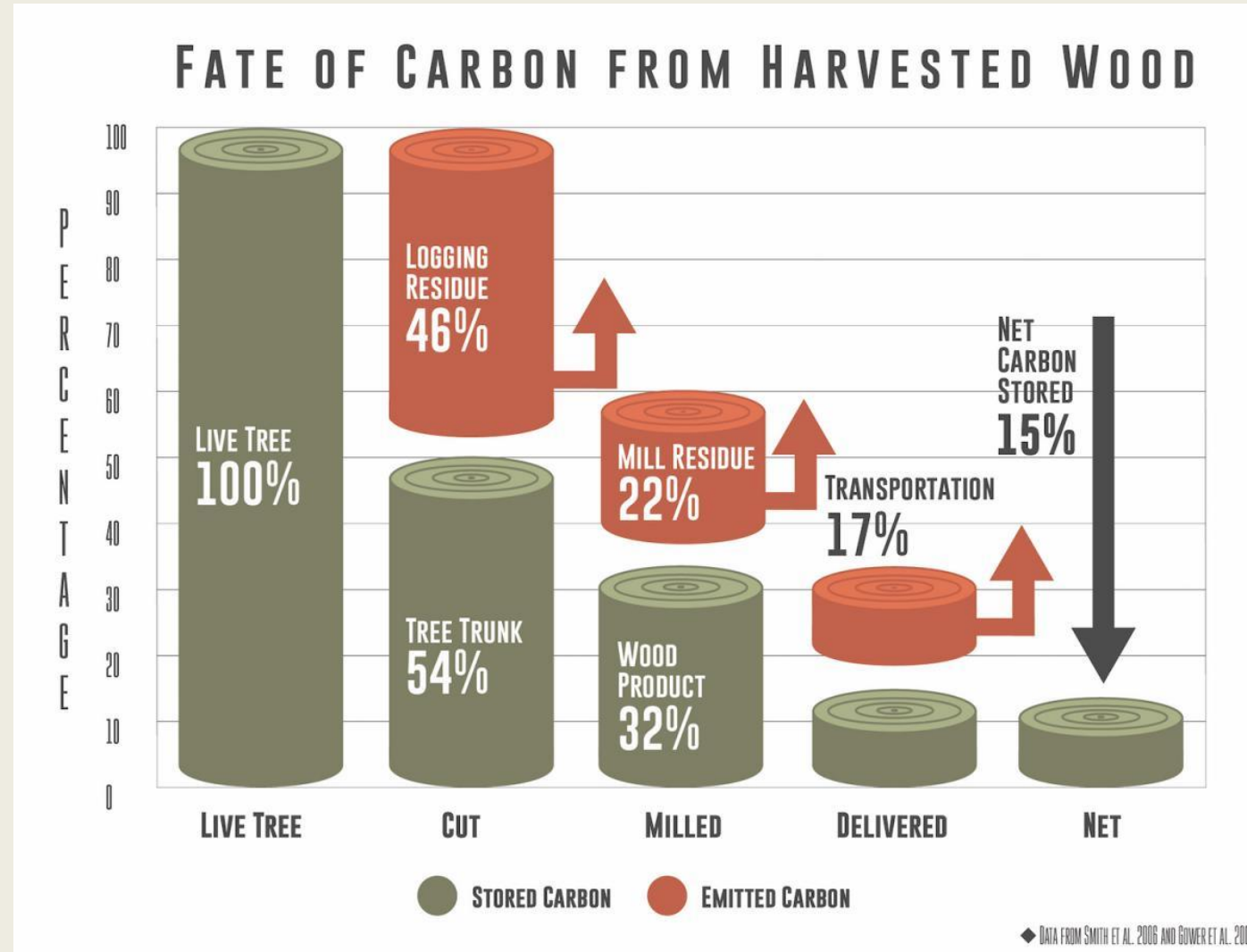
## Life Cycle Analysis: Consequential



Source: MAUREEN PUETTMANN  
WOODLIFE ENVIRONMENTAL CONSULTANTS  
CORRIM, CONSORTIUM FOR RESEARCH ON RENEWABLE INDUSTRIAL MATERIALS



## *Life Cycle Assessments: Attributional*



Source: Oregon Wild



# WHERE DO FORESTS FIT IN YOUR LCA?

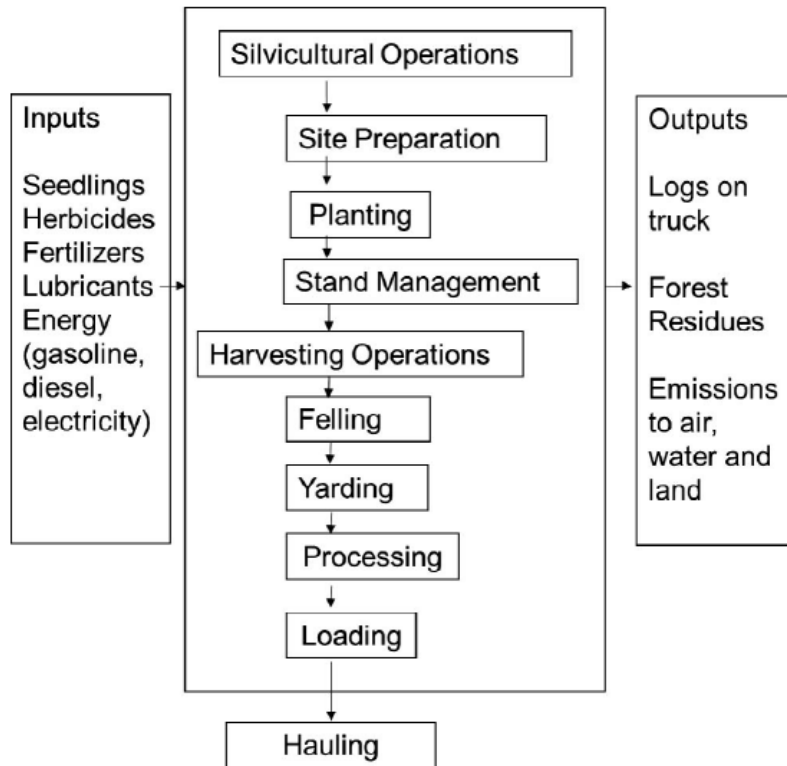


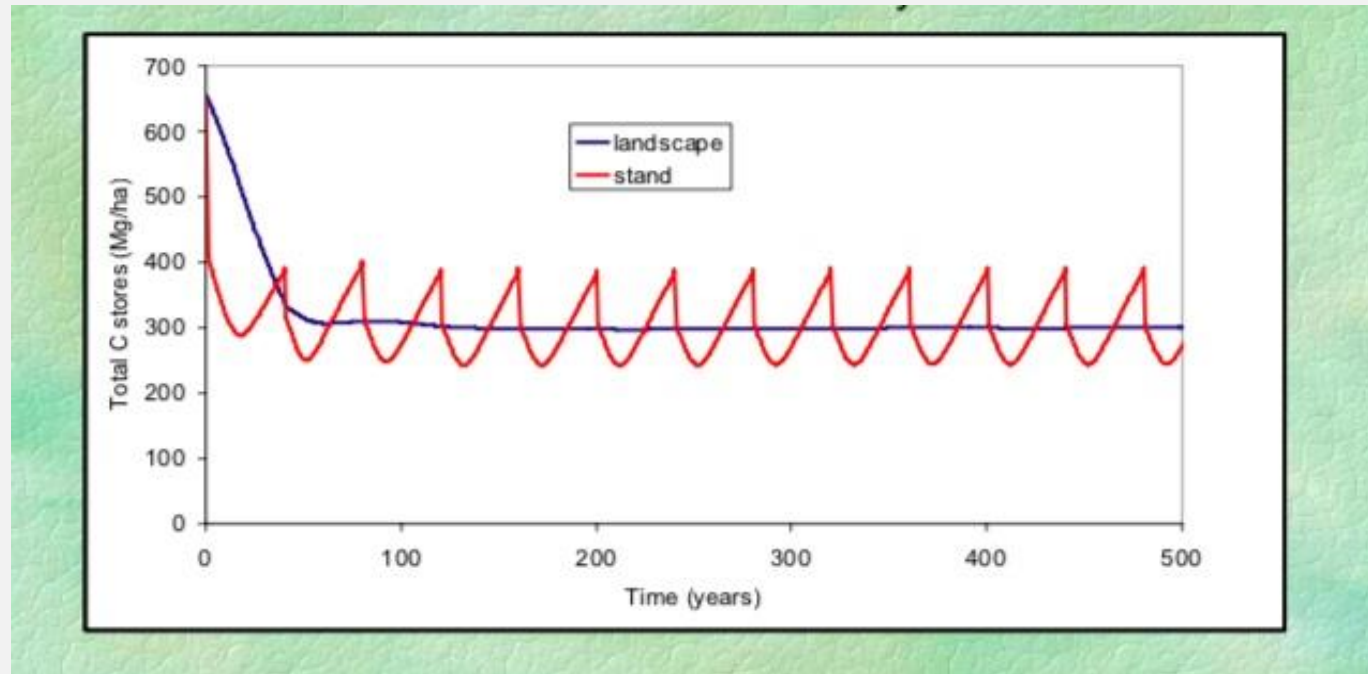
Figure 3.—System boundary for Pacific Northwest forest resources life-cycle assessment.

- They probably don't.
- LCA protocols generally exclude “biogenic carbon”, assuming it is inherently “carbon neutral” or “outside the scope.”
- This leaves carbon storage in the forest, and in harvested wood products off the balance sheet.



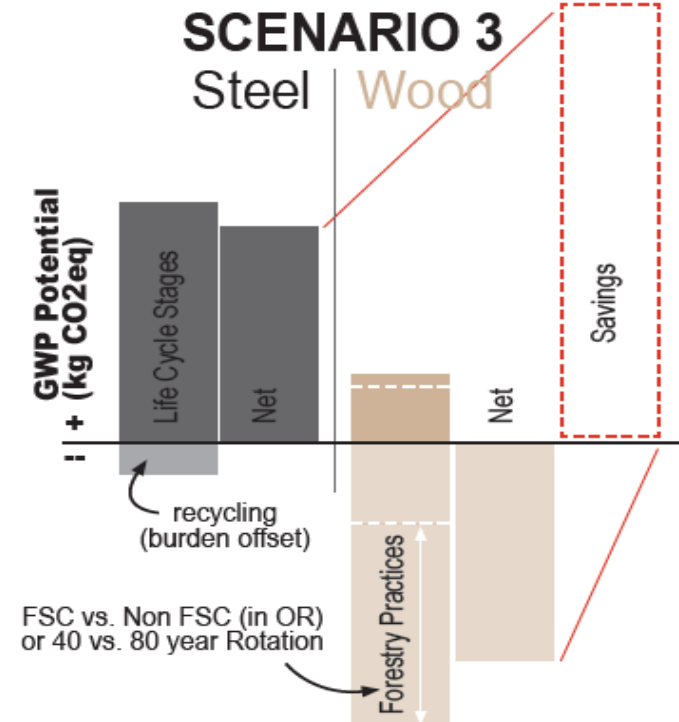
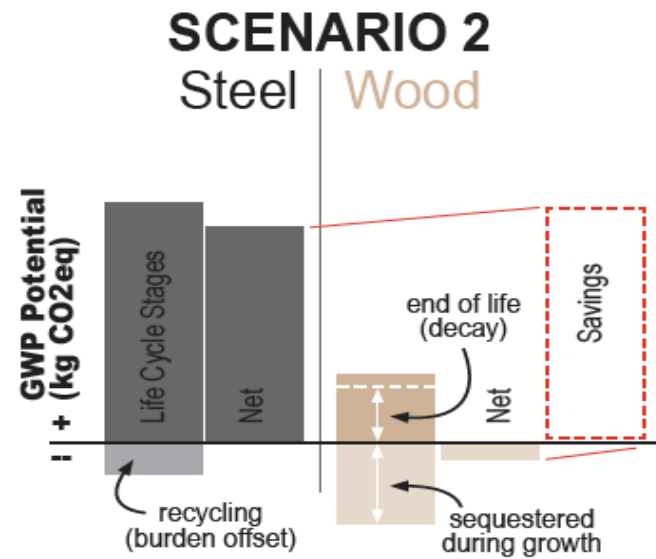
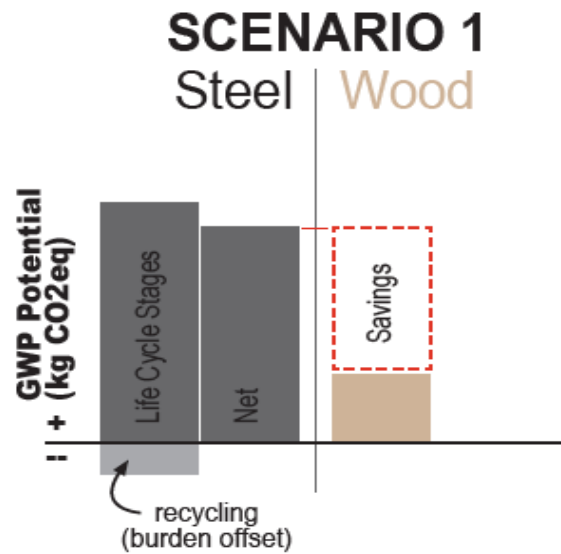


## *Life Cycle Assessments*



**Graphic courtesy of Mark Harmon**

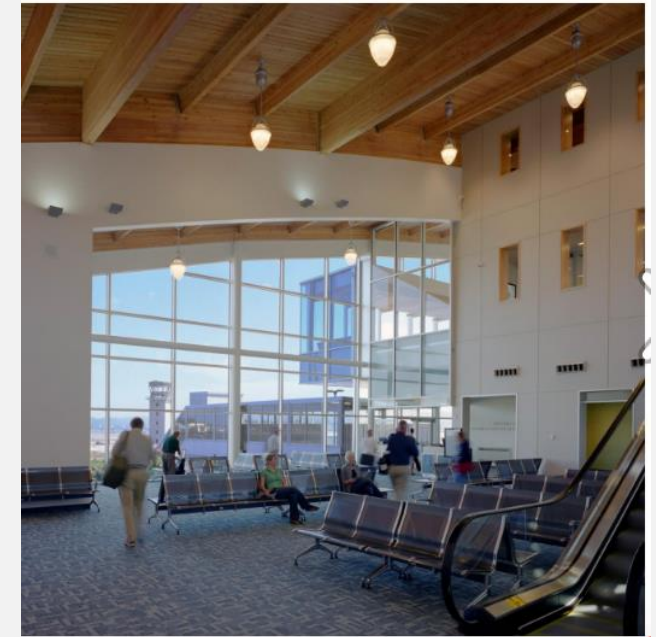
# LCA WOOD CARBON MECHANICS



## Climate-smart Wood Group

Create a demand-pull through the supply chain.

- PDX Airport
- Google
- WeWork
- Carbon Leadership Forum



## Environmental Product Declaration

Quantify impacts of wood sourcing decisions





*Role for Land Trusts and RCPs*

# Forest Impact: Role of Land Trusts and RCPs



*Put into practice and convey the importance of climate-smart management*



- **Know where and how your wood was grown**
- **Encourage climate-smart management with partners and other forest owners**
- **Manage forests for a climate benefit**



# Thank you

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## Forest to Frame

