

Timber yield decline, recovery, & augmentation in transition from short to long rotations

Western Forest Economists

May 16, 2025 Seth Zuckerman and Jaal Mann

NORTHWEST NATURAL RESOURCE GROUP LEADERS IN ECOLOGICAL FORESTRY

When you're in a hole, stop digging... ... but it's harder than it looks

- Many of our clients have bought industrial forestland and are trying to shift its management to ecological forestry*
- Driven by multiple objectives
 - * an approach that manages the forest as a holistic system, not for any single output. It asks not, "What can we take?" but "What will we leave behind?"

Methodology: FVS modeling

magine you've won a section of forestland in a poker game.

16 compartments of 40 acres each.

Managed in a 40-year rotation, with cohorts 5 years apart.

Transition it to an 80-year rotation instead.

Harvest projections

Age	Short rotation case (MBF / acre)	Long rotation case (MBF / acre)
30	4,800	
35		4,600
40	19,000	
50		10,300
65		12,100
80		32,600
Total over 80 years	47,600	59,600

How to make the leap? Not all at once



Transition to an 80-year rotation

5	5	10	10
15	15	20	20
25	25	30	30
35	35	40	40



From 30 CT / 40 CCT

2025

35 CT / 50 CT / 65 CT / 80 CCT

Here's the comparison at Year 5:



From 30 CT / 40 CCT

35 CT / 50 CT / 65 CT / 80 CCT

Now Years 10 and 20, transition case only:



25	25	30	30
28	35	40	40
45	5	50	10
55	15	60	20

35 CT / 50 CT / 65 CT / 80 CCT

Think



Years 30 and 40, and transition is complete:





35 CT / 50 CT / 65 CT / 80 CCT

How it started

How it's going

5	5	10	10
15	15	20	20
25	25	30	30
35	35	40	40



How does timber yield from this 640-acre tract change?



Year

Could carbon markets help?



Year

Working Forests & Timber Harvest

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2023 Percent of Timber Harvest Volume (mbf) and Ownership



Forestland ownership:

Stop sha

Talking: Indroneil Ganguly

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- 2/3rd state/federal/tribes
- 1/3rd private (small & large)

Timber Harvest:

You are screen sharing

• 1/3rd state/federal/tribes

Footer Text

• 2/3rd private (small & large)

Thank you!

For more: www.nnrg.org

Check out our book: A Forest of Your Own: The Pacific Northwest Handbook of Ecological Forestry



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