

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

Western Forest Economists

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**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?”

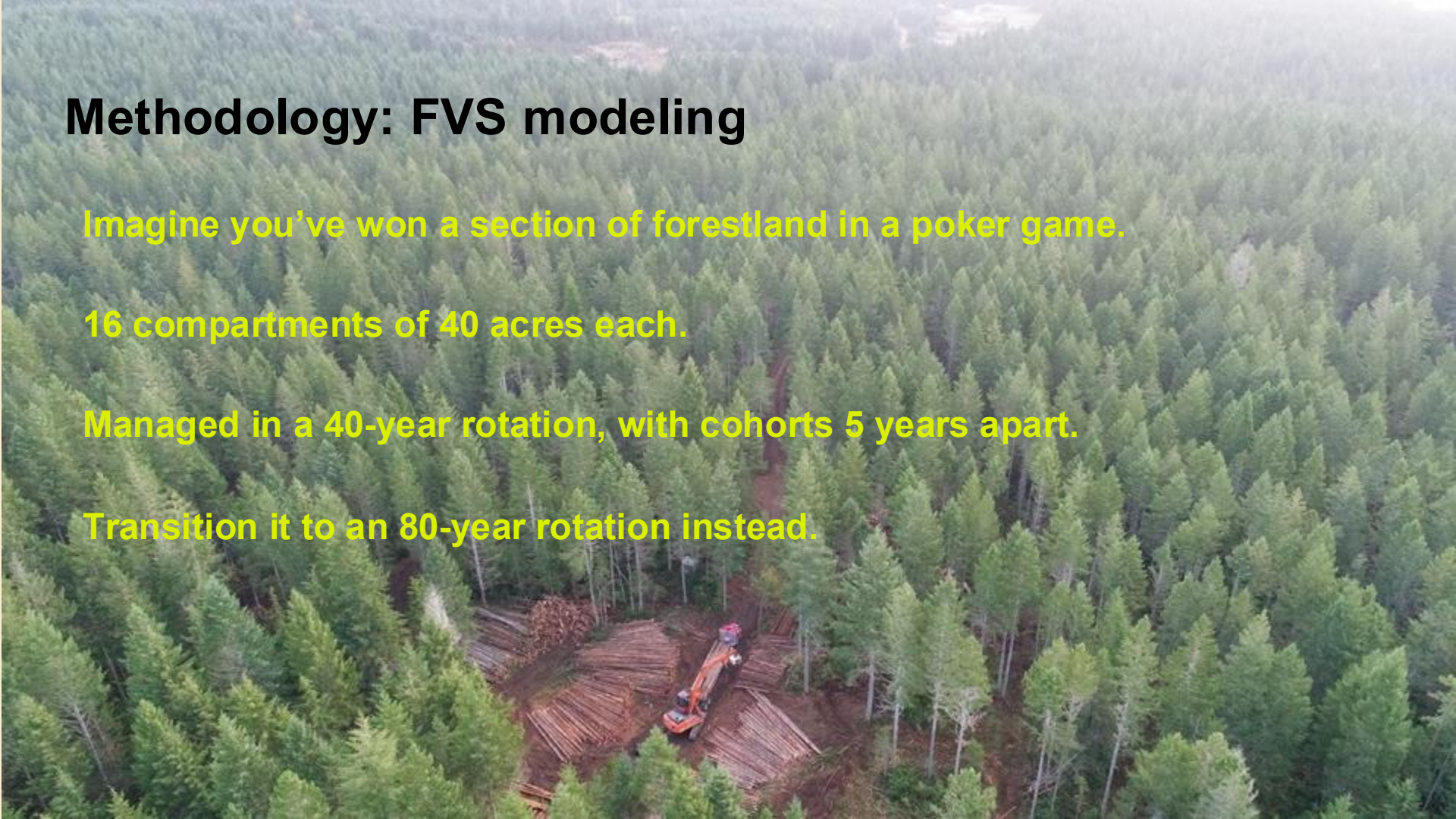
# Methodology: FVS modeling

Imagine 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
<b>Total over 80 years</b>	<b>47,600</b>	<b>59,600</b>

# How to make the leap? Not all at once

Industrial norm: 40-year rotation

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

2025

Transition to an 80-year rotation

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

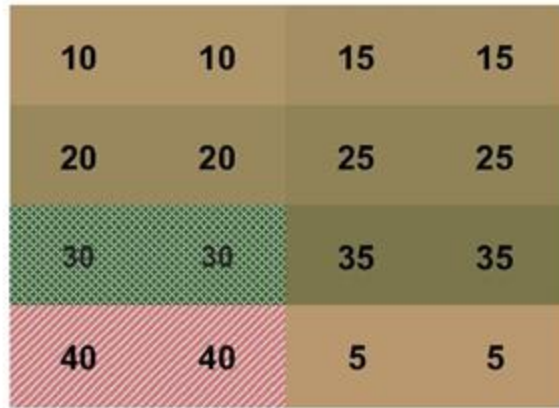


From 30 CT / 40 CCT

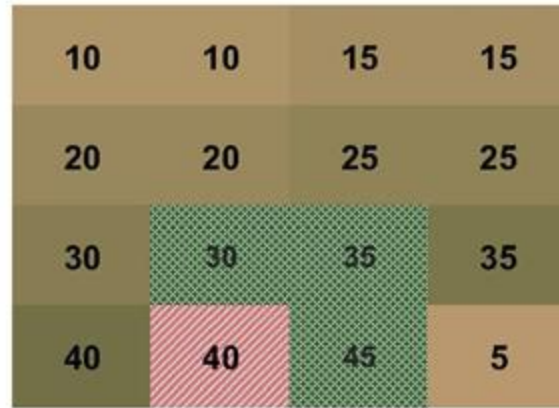
to

35 CT / 50 CT / 65 CT / 80 CCT

# Here's the comparison at Year 5:



2030



From 30 CT / 40 CCT

to

35 CT / 50 CT / 65 CT / 80 CCT

Now Years 10 and 20, transition case only:

	15	15	20	20
Clearcut	25	25	30	30
Thin	35	35	40	40
	45	5	50	10

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

35 CT / 50 CT / 65 CT / 80 CCT







Years 30 and 40, and transition is complete:

35	35	40	40
45	5	50	10
55	15	60	20
65	25	70	30

45	5	60	10
55	15	60	20
65	25	70	30
75	35	80	40

35 CT / 50 CT / 65 CT / 80 CCT

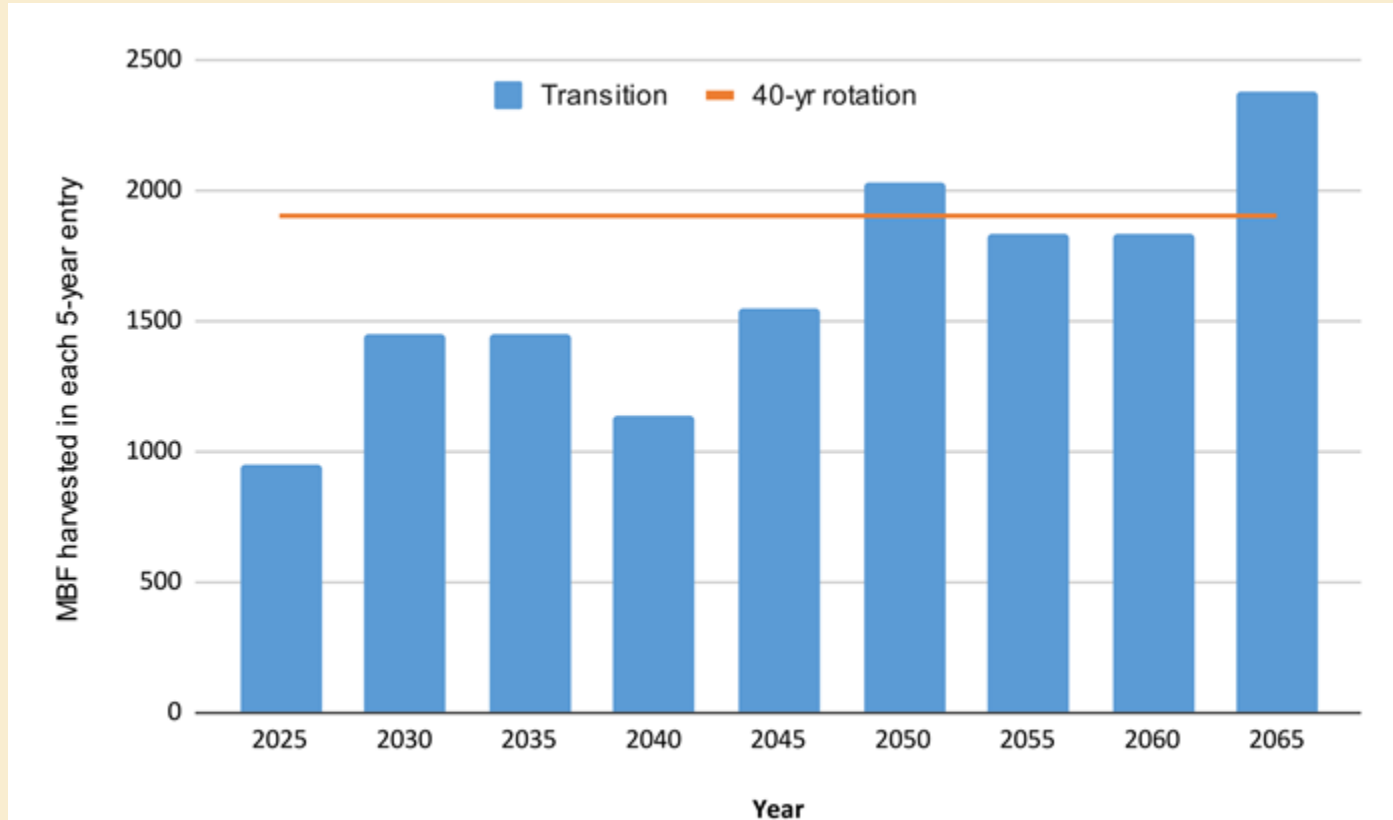
# How it started

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

# How it's going

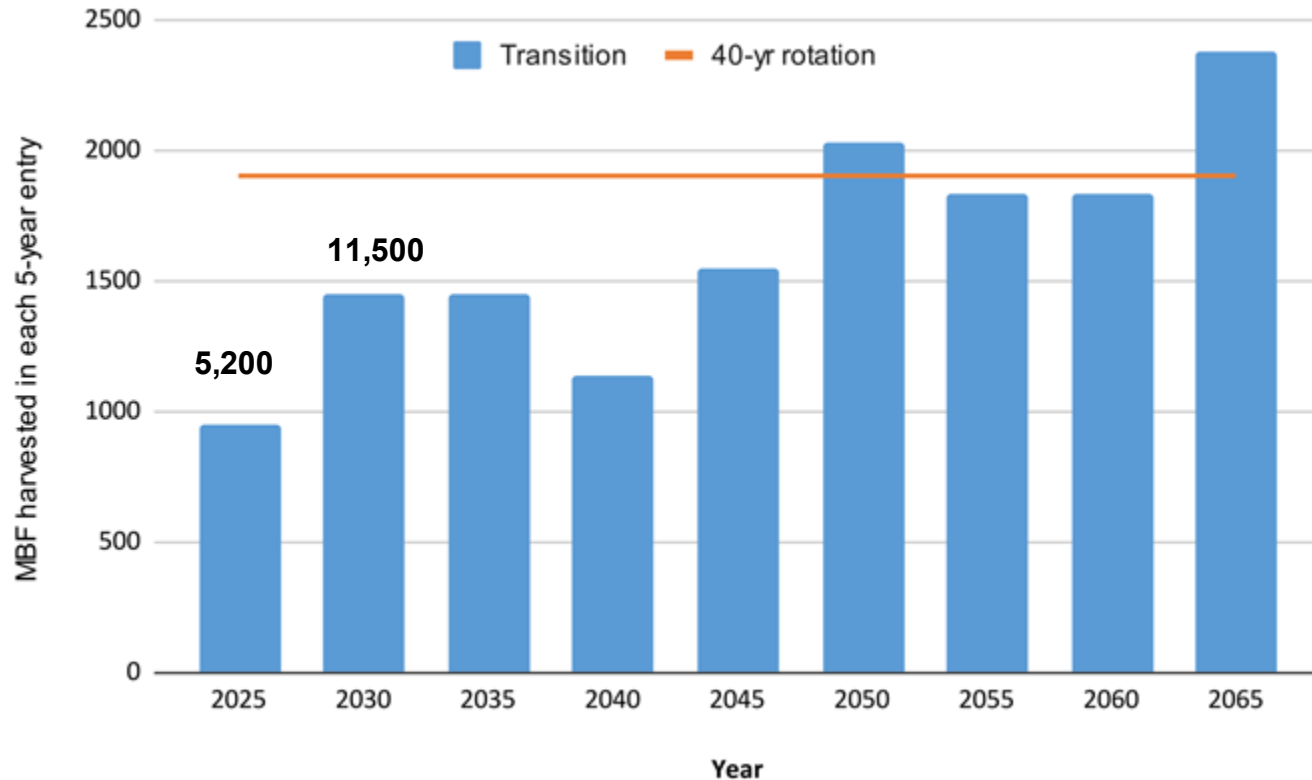
45	5	50	10
55	15	60	20
65	25	70	30
75	35	80	40

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



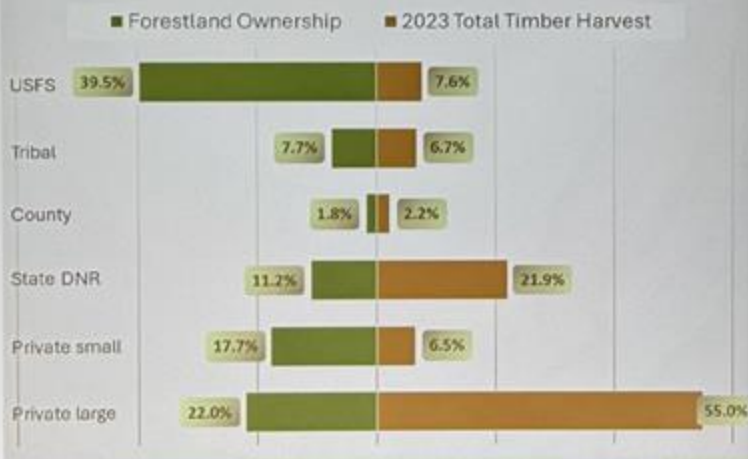


# Could carbon markets help?



# Working Forests & Timber Harvest

## 2023 Percent of Timber Harvest Volume (mbf) and Ownership



## Forestland ownership:

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

## Timber Harvest:

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

# Thank you!

For more:

[www.nnrg.org](http://www.nnrg.org)

Check out our book:

*A Forest of Your Own:  
The Pacific Northwest Handbook  
of Ecological Forestry*



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