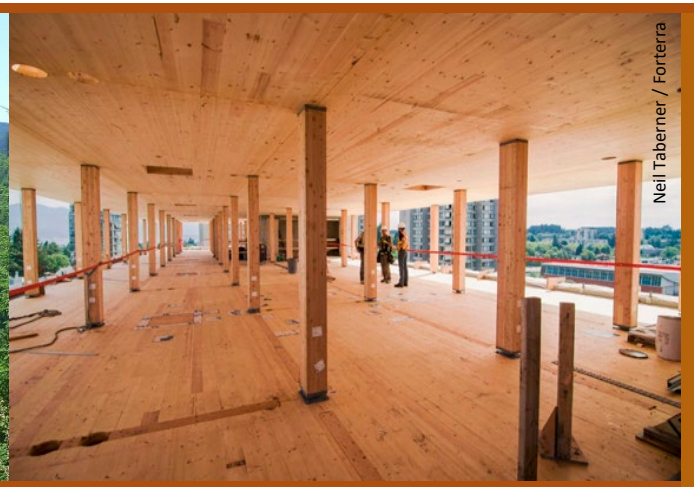
Carbon and Forest Management Work Group



Neil Taberner / Forterra

April 29 | 1 pm – 5 pm

Meeting #6.5

Welcome to Work Group Members

- This is a public meeting and is being recorded.
- Please use the chat for questions during the presentations. We will have designated times to address questions throughout the meeting.
- Please keep cameras on.
- Please keep microphones off unless speaking.
- Materials, including the meeting recording, will be available on the work group website after the meeting.



Welcome to Members of the Public

- The public will not be able to comment within this meeting but can share questions via email.
- Please direct all questions to Duane Emmons, duane.emmons@dnr.wa.gov
- Refer to the work group website for meeting information and materials.

www.dnr.wa.gov/about/boards-and-commissions/carbon-and-forest-management-work-group

Agenda

1. Welcome & Updates
2. New Voting Process
3. Friendly Amendments to Alternative 8
4. Scenarios Pending from April 10 Meeting
5. New Scenarios
6. *Break*
7. New Scenarios
8. Next Steps



Meeting Objectives

- Review new voting process.
- Review and discuss scenarios to be voted on during May 8 work group meeting.

Recap of Last Meeting

- Presentation on climate model methodology.
- Voting on proposed scenarios; none passed.



Resetting the Process

Voting Process

Voting Process for May 8

- The facilitator will review all of the scenarios with the work group.
- Work group members will receive a link to a Google form (or similar online form) that lists **all** of the scenarios. Members will vote "thumbs up, sideways, or down" for each scenario using this form.

How to Vote

- If you would like a scenario modeled, vote **thumbs up or say "Yes."**

- If you generally like a scenario but have some reservations, vote **thumbs sideways or say "Ok – would like to suggest a friendly amendment."**

- If you do not want a scenario modeled, vote **thumbs down or say "No."**

Voting Process, Continued

- **Supermajority of 75%** must vote thumbs up or sideways for a scenario to advance to modeling. If all members are present, must have 9 thumbs up or sideways votes.
- Scenarios that pass will be placed on the accepted list.
- If the work group does not pass enough scenarios to fill available slots, the facilitator will ask members voting thumbs down to explain their concerns and/or offer "friendly amendments" to improve support.

Voting Process, Continued

- A second vote will be held.
- If the work group passes more scenarios than slots available, those with the fewest "thumbs up" votes will be dropped.
- If the work group does not pass enough scenarios to fill available slots, a third vote could be taken *if time allows*. If not, the contractors will proceed with the scenarios that have passed, even if some slots are empty.
- **No additional voting will occur after May 8.**

Discussion of Management Scenarios

Site Class

- 79 percent of state trust lands in GEM areas are Site Class 2 or 3:
  - Site Class 1: 5%
  - Site Class 2: 41%
  - Site Class 3: 38%
  - Site Class 4: 12%
  - *Site Class 5 and 6: 4%*
- In the scenarios, DNR did not specify rotation lengths for Site Class 5 or 6 because there are few acres on the landscape and the growing conditions are poor. These "low" sites tend to have glacial till, glacial drift over bedrock, or gravel alluvium, and are rarely productive enough to actively manage for timber harvest.



Difference Between Scenario 6 and 7

Voted down in the April 10 meeting but built into new scenarios to meet the intent of the proviso to "conserve and manage" carbon-dense, older, structurally complex forest. Both defer 100% of the following in GEM areas:

Scenario 6

Older, carbon-dense, structurally complex forest as DNR defines them in the *Policy for Sustainable Forests**

Scenario 7

Forest deferred under Scenario 6 *and* less complex forest as selected by the work group

*Only definition of structurally complex forest recognized by DNR

Structurally Complex Forest

For scenario development, using the definition of structurally complex stand in the 2006 *Policy for Sustainable Forests (PSF)**:

> A forest in the 'botanically diverse' 'niche diversification' or 'fully functional' stage of stand development. Forests in these phases have varying sizes of trees, understory vegetation and lichen, downed wood and snags, etc.

*Only definition of structurally complex forest recognized by DNR

Stand Characteristics

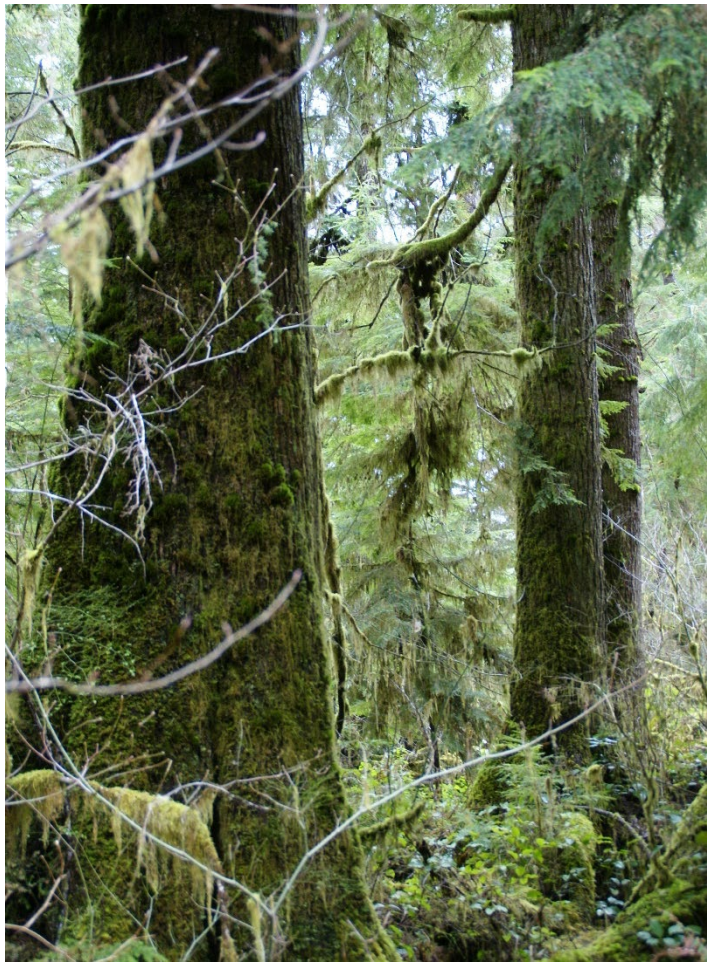
Botanically diverse ➔ Niche diversification ➔ Fully functional

- Snags, large pieces of down woody material, and gaps in upper tree canopy form as original trees die out.
- Understory develops and diversifies in species and tree diameter.
- Shade-tolerant trees eventually reach upper tree canopy.

Stages			Stand-level Variable and Associated Threshold Value									
							Management Activity					
Summarized	Detailed		QMD	Canopy Layer	RD	Stand Age	BioThin Age	Years Since BioThin	Thin Age	Years Since Thin	Snag Ratio1	CWD
Ecosystem Initiation	Ecosystem Initiation		<2									
Competitive Exclusion	Sapling Exclusion		>=2									
	Pole Exclusion		>5									
		or							>0	>=0		
	Large Tree Exclusion		>11									
		or	>11						>0	>=0		
	Understory Development		>=2	>1								
		or	>=2		>=MaxRD							
		or	>=2			>MaxRD Age						
		or	>=2				>0	>=0				
Structually Complex	Botanically Diverse		>=2	>1								
		or	>=2	>1		>=MaxRD Age+60						
		or	>=2	>1			>0	>=0				
		or	>=2	>1	>=MaxRD							
		or	>=2		>=MaxRD	>=MaxRD Age+60						
		or	>=2		>=MaxRD		>0	>=0				
		or	>=2			>=MaxRD Age+60	>0	>=0				
		or	>=2				>0	>5				
		or	>=2	>1		>MaxRD Age						
		or	>=2			>=MaxRD Age+60						
		or	>=2			>MaxRD Age	>0	>5				
	Niche Diveris-ification		>=2	>1		>=MaxRD Age+80					>0.07	>2400
		or	>=2	>1		>=MaxRD Age+80	>0	>0				
		or	>=2	>1			>0	>5				
		or	>=2		>=MaxRD	>=MaxRD Age+80					>0.07	>2400
		or	>=2		>=MaxRD	>=MaxRD Age+80	>0	>0				
		or	>=2		>=MaxRD		>0	>5				
		or	>=2			>=MaxRD Age+80					>0.07	>2400
		or	>=2			>=MaxRD Age+80	>0	>0				
		or	>=2			>MaxRD Age	>0	>5				
		or	>=2			>=MaxRD Age+80	>0	>=0			>0.07	>2400
		or	>=2			>=MaxRD Age+80	>0	>0				
		or	>=2				>0	>5			>0.07	>2400
	Fully Functional		>=2	>1		>=MaxRD Age+160					>0.07	>2400
		or	>=2	>1		>=MaxRD Age+160	>0	>0				
		or	>=2	>1			>0	>40				
		or	>=2		>=MaxRD	>=MaxRD Age+160					>0.07	>2400
		or	>=2		>=MaxRD	>=MaxRD Age+160	>0	>0				
		or	>=2		>=MaxRD		>0	>40				
		or	>=2			>=MaxRD Age+160					>0.07	>2400
		or	>=2			>=MaxRD Age+160	>0	>0				
		or	>=2			>MaxRD Age	>0	>40				
		or	>=2			>=MaxRD Age+160	>0	>=0			>0.07	>2400
		or	>=2			>=MaxRD Age+160	>0	>0				
		or	>=2				>0	>40			>0.07	>2400

More on Deferrals

- Deferred from stand replacement harvest indefinitely.
- May be thinned for forest health or other ecological objectives if needed.
- Forests not already deferred for other objectives.
- Excludes the 2,000 acres being deferred under Section 1 (b) of this budget proviso.



Scenarios at a Glance

Scenario	Components							
	Scenario 2 (lengthen rotations)	Scenario 2 Amended (lengthen rotations)	Scenario 3 (shorten harvest rotations)	Scenario 4 Revised (increase thinning)	Scenario 4 Amended (increase thinning)	Scenario 6 (deferrals)	Scenario 7 (deferrals)	Scenario 9 (increased silviculture)
Scenario with "friendly amendments"								
Scenario 8 (2a+4a)		✓			✓			
Scenarios pending from April 10 meeting								
Scenario 10 (2+4r+7)	✓			✓			✓	
Scenario 11 (4a+9)					✓			✓
New scenarios developed since the April 10 meeting to address concerns of work group members								
Scenario 12 (2a+4a+6+9)		✓			✓	✓		✓
Scenario 13 (2a+4a+7+9)		✓			✓		✓	✓
Scenario 14 (3+6+9)			✓			✓		✓
Scenario 15 (2a+4a+9)		✓			✓			✓
Scenario 16 NEW (3+4a+9)			✓		✓			✓



Scenario with Friendly Amendment

Scenario 8

2a

Lengthen harvest rotation

+

4a

Significantly increase thinning



Scenario 8 (2a+4a)

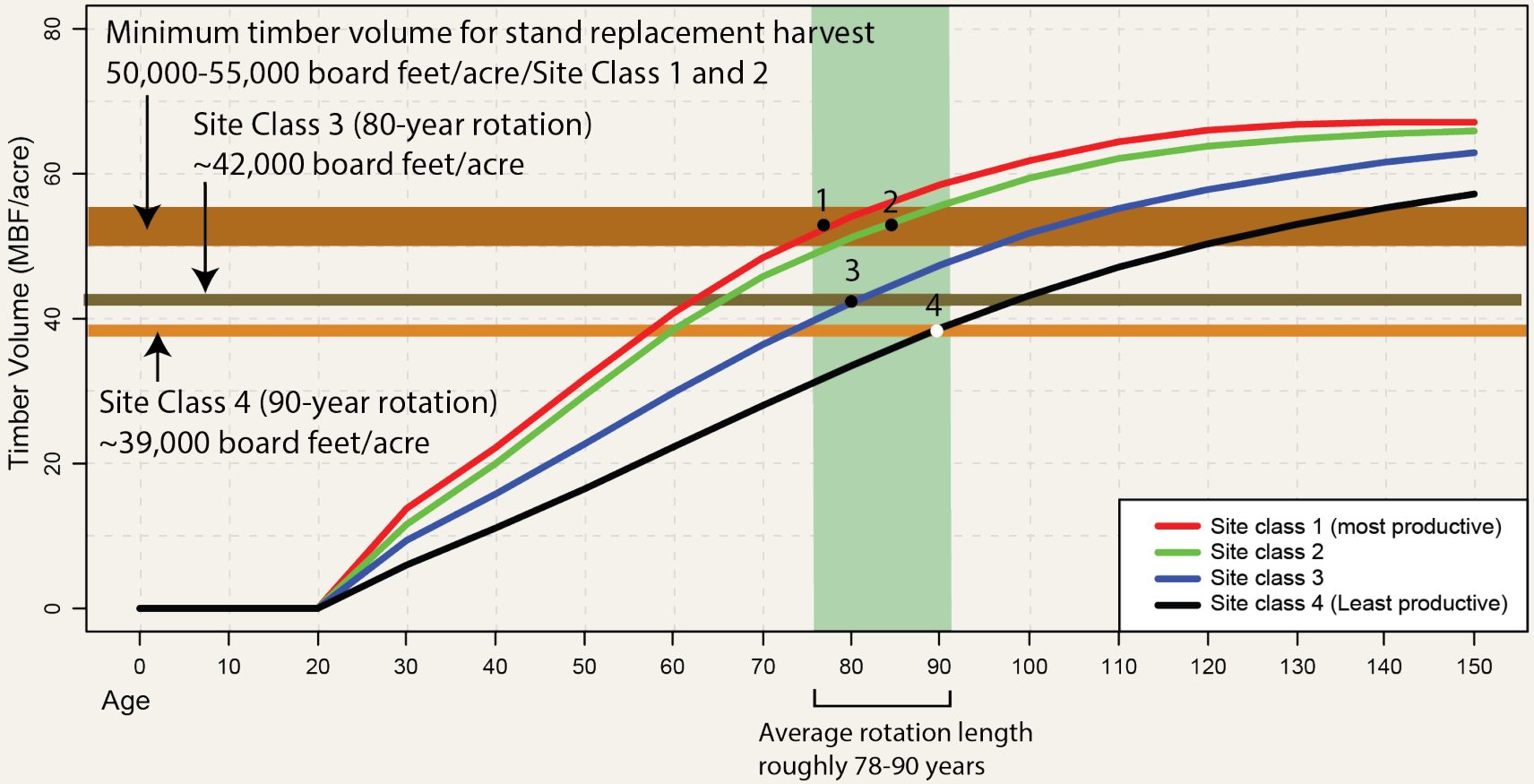
Lengthen harvest rotation (Scenario 2a)

Site Class 1 and 2 rotation based on minimum timber volume

Site class 3 and 4 rotations based on AGE

Sample Douglas-fir yield curve, western Washington

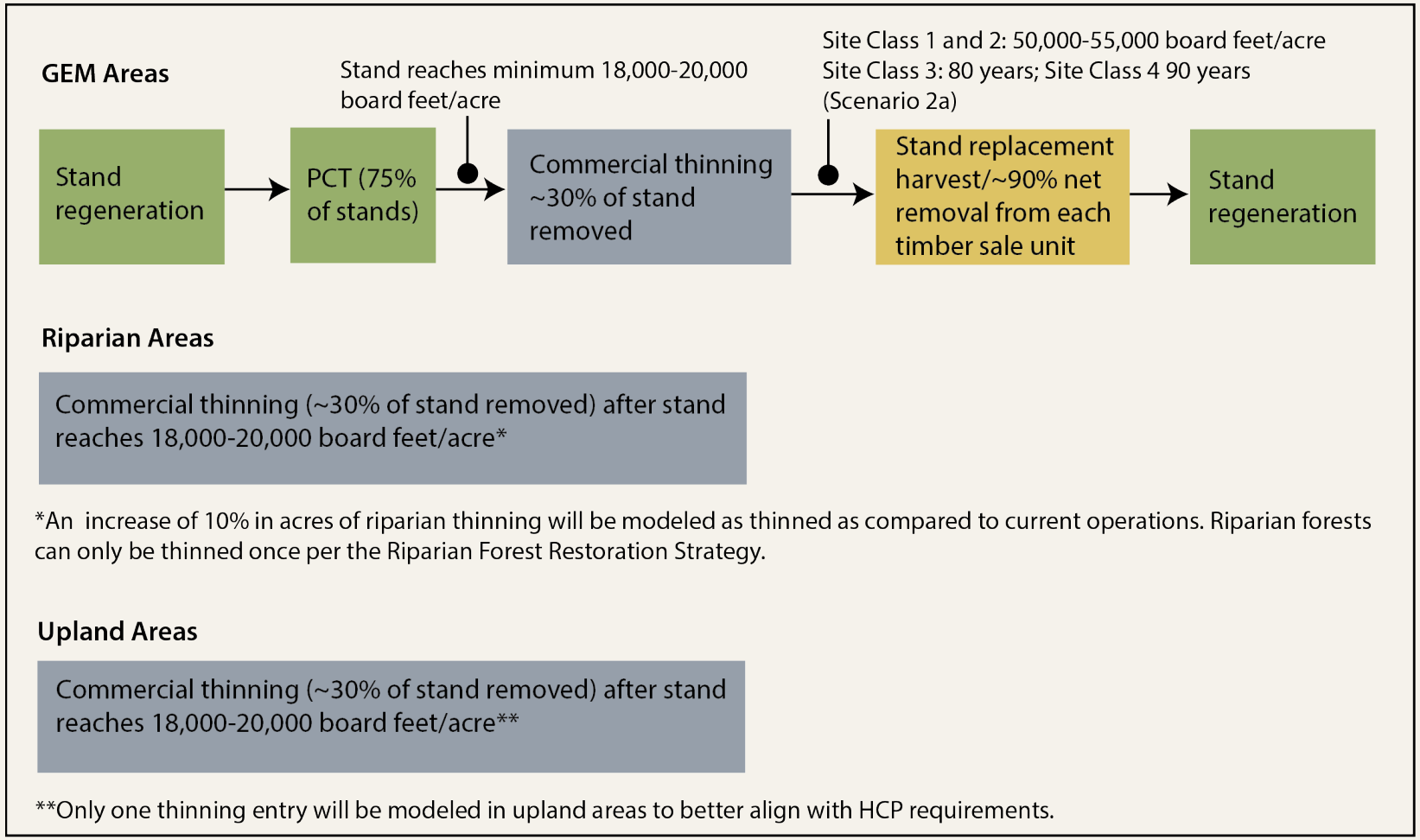
Yield curve generated from RSFRIS inventory plots and stratified using information from DNR's inventory



Scenario 8 (2a+4a)

Significantly increase thinning (Scenario 4a)

- Riparian thinning 10% increase in acres from current management
- One thinning entry in uplands



Scenario Pending from April 10 Meeting

Scenario 10

2

Lengthen harvest rotation

+

4r

Significantly increase thinning

+

7

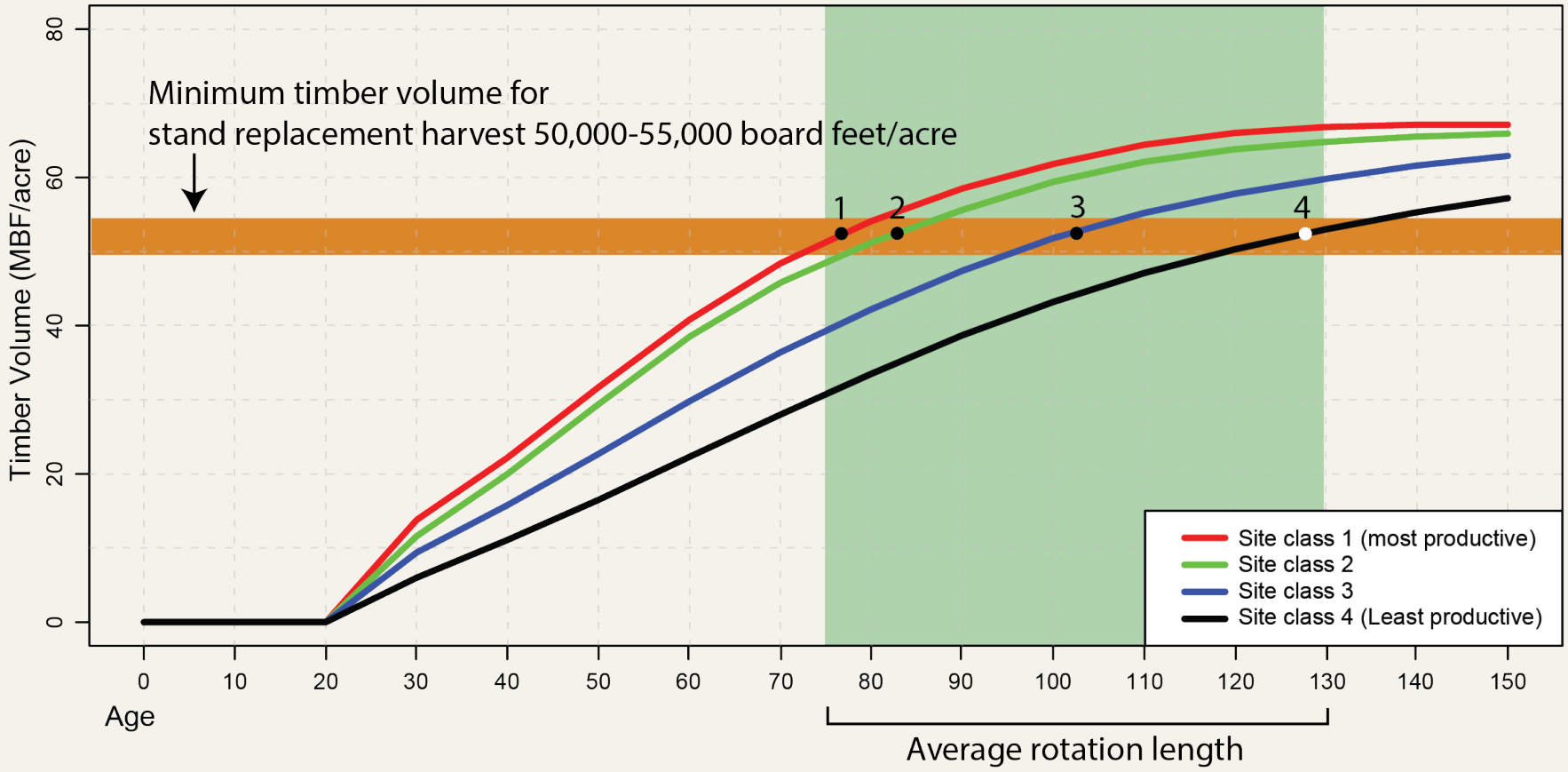
Deferrals

Scenario 10 (2+4r+7)

Lengthen harvest rotation (Scenario 2)

Sample Douglas-fir yield curve, western Washington

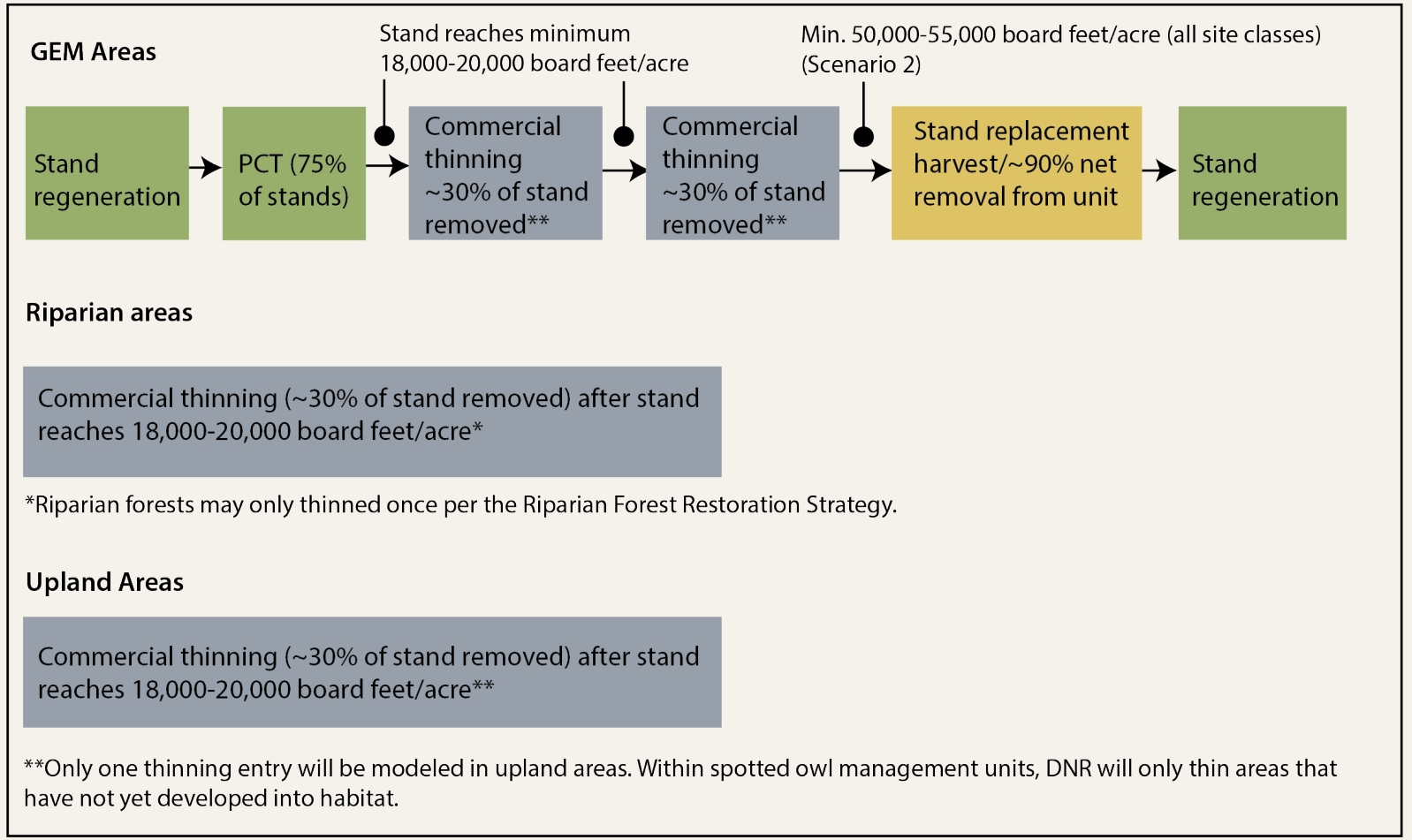
Yield curve generated from RSFRIS inventory plots and stratified using information from DNR's inventory



Scenario 10 (2+4r+7)

Significantly increase thinning (Scenario 4r)

- More than one thinning entry per harvest rotation in GEM areas.
- In spotted owl management units, thin stands that are not in habitat condition.



Scenario 10 (2+4r+7)

In GEM areas, defer 100% of the following forest types (Scenario 7):

- Older, "carbon-dense," structurally complex forest as DNR defines them within its *Policy for Sustainable Forests**
- Less complex forest stands as selected by the work group

*Only definition of structurally complex forest recognized by DNR

Scenario 11

4a

Significantly increase thinning

+

9

Increased emphasis on silviculture

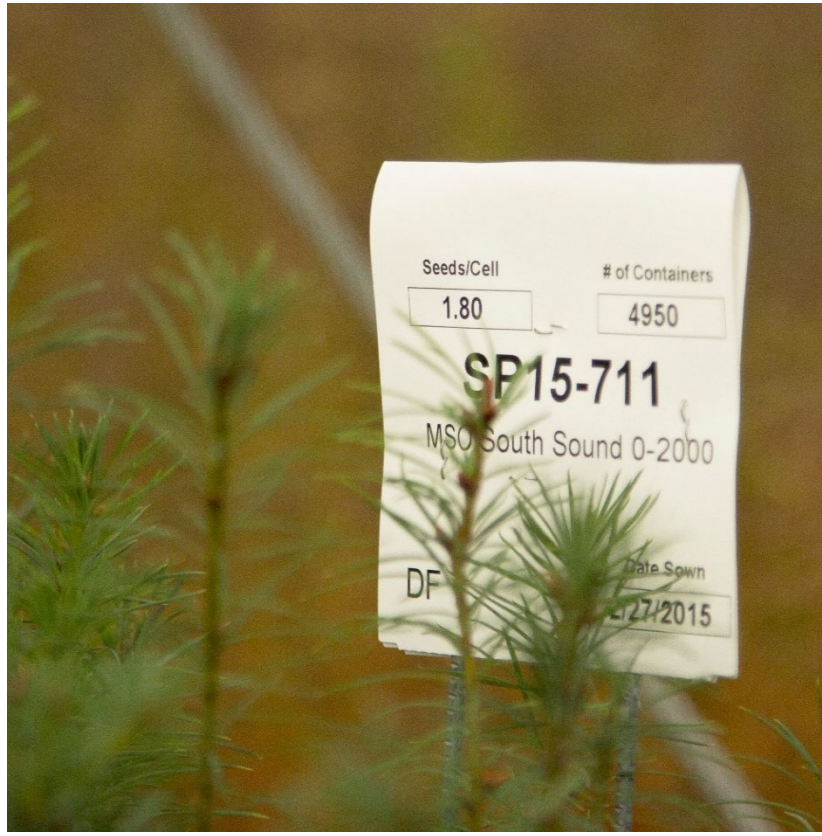


Scenario 11 (4a+9)

Increased Emphasis on Silviculture (Scenario 9)

- Roughly 80 percent of the seedlings DNR plants will be grown from improved seed stock (current percentage roughly 60 percent)
- Vary planting density by species:
  - Coastal low elevation sites: 400 TPA western hemlock
  - Mixed species stands: 275 Douglas-fir and 50 western hemlock
  - High elevation sites: 440 TPA noble fir

All sites will also experience infill from natural regeneration



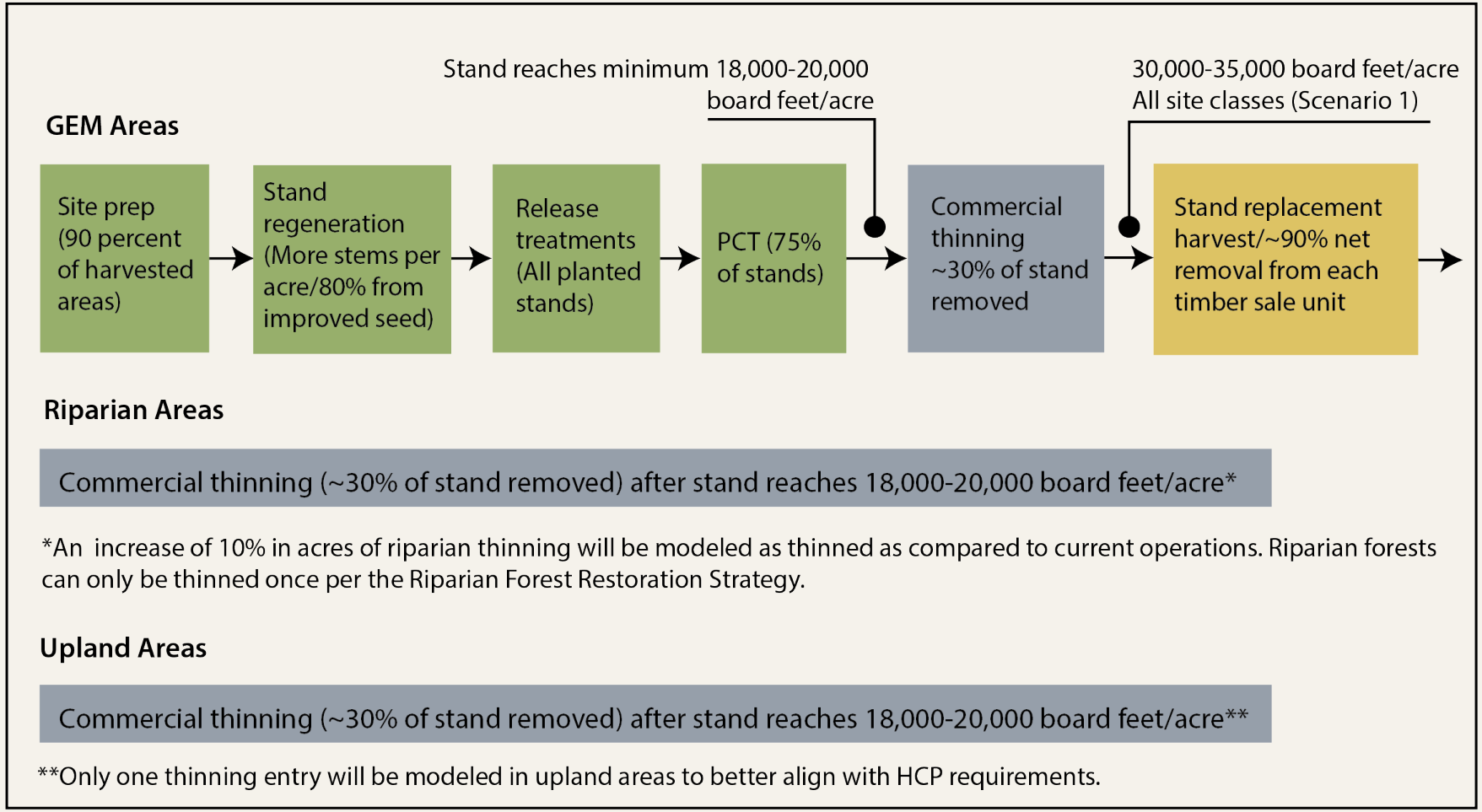
Scenario 11 (4a+9)

- Increase site preparation from 75 to 90 percent of planted acres.
- Increase release treatments from 75 to 100 percent of planted acres.
- Conduct PCT on 75 percent of forest stands.

Scenario 11 (4a+9)

Significantly increase thinning (Scenario 4a)

Increased emphasis on silviculture (Scenario 9)



New Scenarios

Scenario 12

2a

Lengthen harvest rotation

+

4a

Significantly increase thinning

+

6

Deferrals

+

9

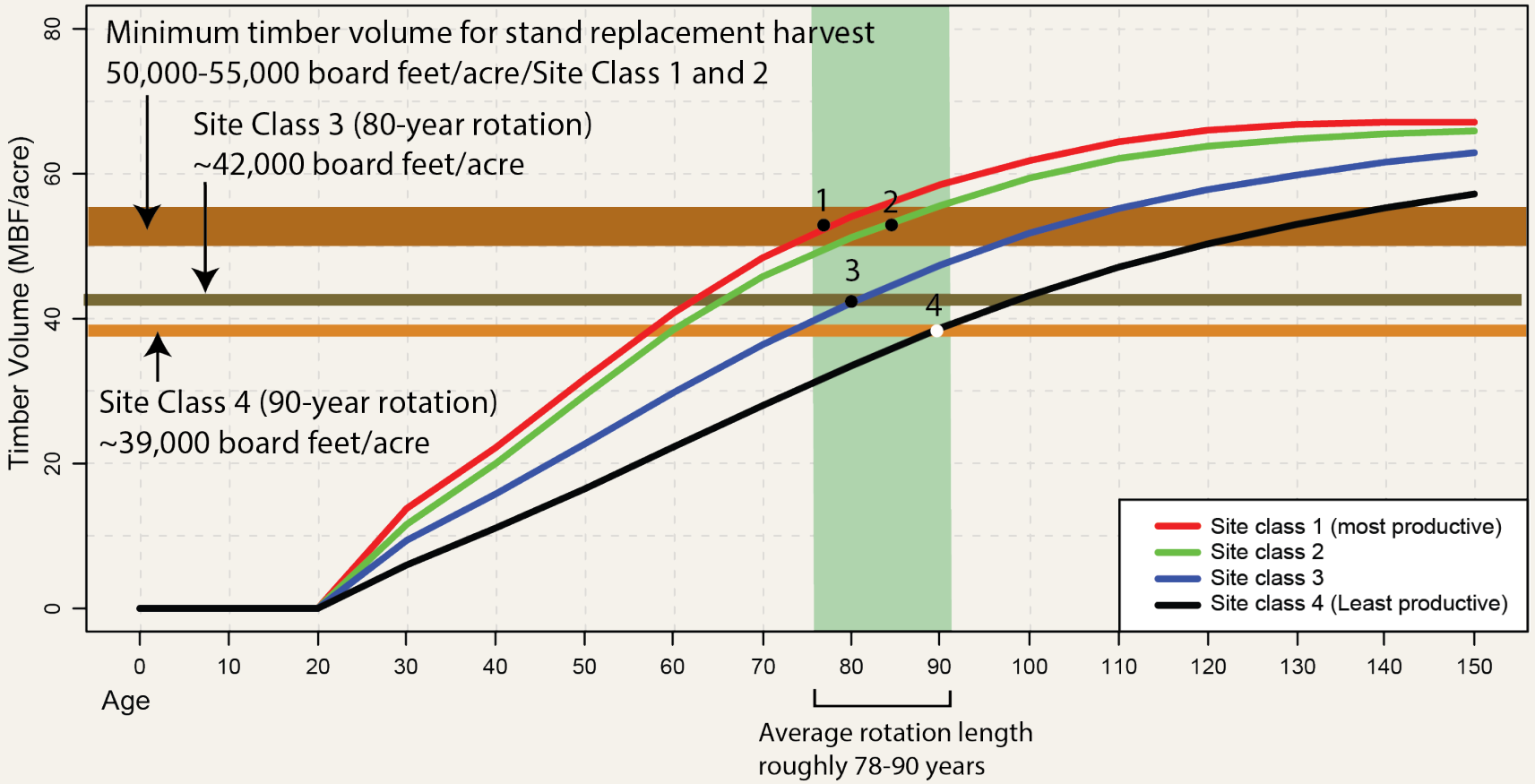
Increased emphasis on silviculture

Scenario 12 (2a+4a+6+9)

Lengthen harvest rotation (Scenario 2a)

Sample Douglas-fir yield curve, western Washington

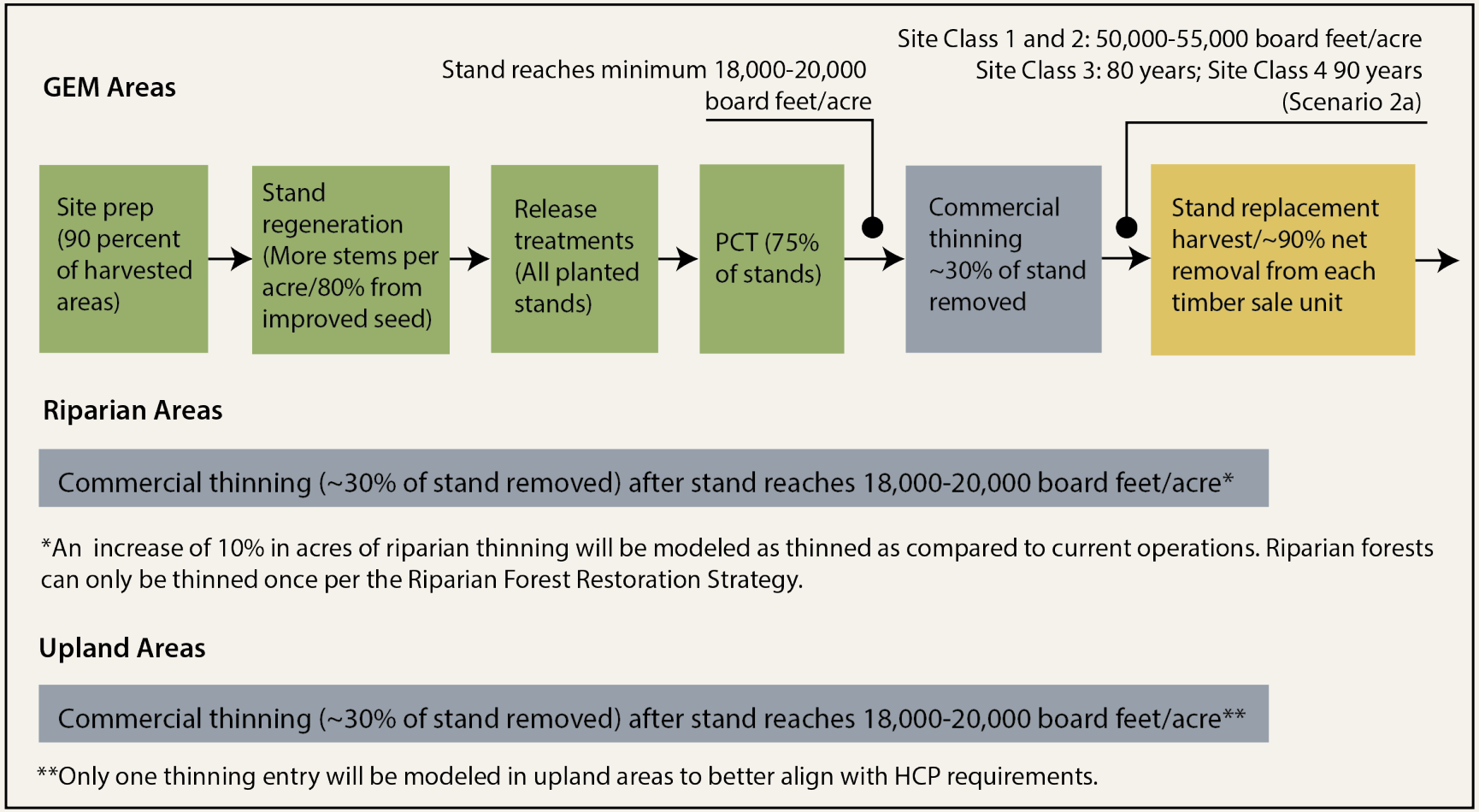
Yield curve generated from RSFRIS inventory plots and stratified using information from DNR's inventory



Scenario 12 (2a+4a+6+9)

Significantly increase thinning (Scenario 4a)

Increased emphasis on silviculture (Scenario 9)



Scenario 12 (2a+4a+6+9)

In GEM areas, defer 100% of the following forest types (Scenario 6):

- Older, "carbon-dense," structurally complex forest as DNR defines them within its *Policy for Sustainable Forests**

*Only definition of structurally complex forest recognized by DNR



Scenario 13

2a

Lengthen harvest rotation

+

4a

Significantly increase thinning

+

7

Deferrals

+

9

Increased emphasis on silviculture

Scenario 13 (2a+4a+7+9)

Scenario 13 is the same as Scenario 12 except for deferrals (Scenario 7):

In GEM areas, defer 100% of the following:

- Older, "carbon-dense," structurally complex forest as DNR defines them within its *Policy for Sustainable Forests**
- Less complex forests as selected by the work group

*Only definition of structurally complex forest recognized by DNR



Scenario 14

3
Shorten harvest rotation

+

6
Deferrals

+

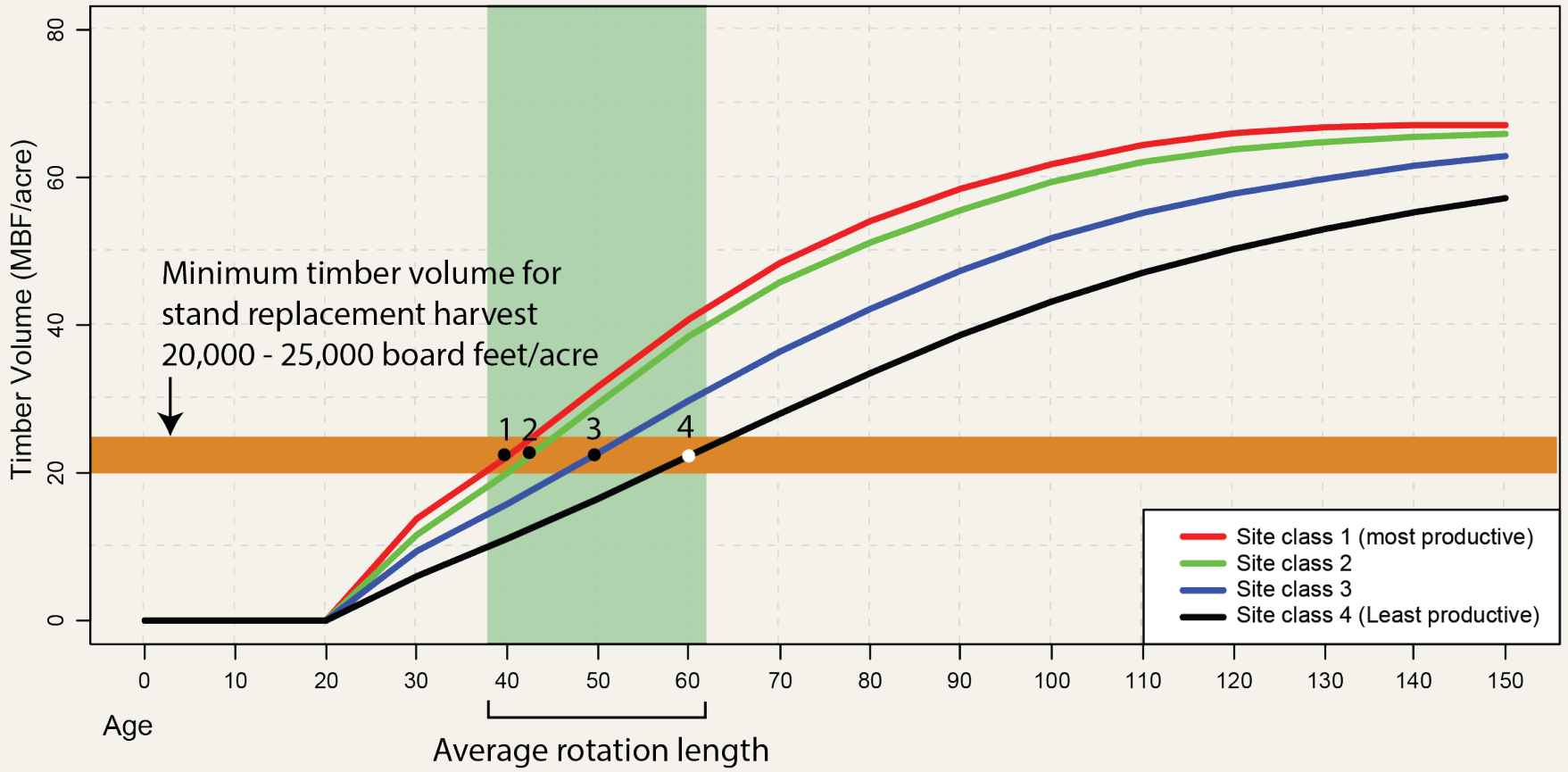
9
Increased emphasis on silviculture

Scenario 14 (3+6+9)

Shorten harvest rotation (Scenario 3)

Sample Douglas-fir yield curve, western Washington

Yield curve generated from RSFRIS inventory plots and stratified using information from DNR's inventory

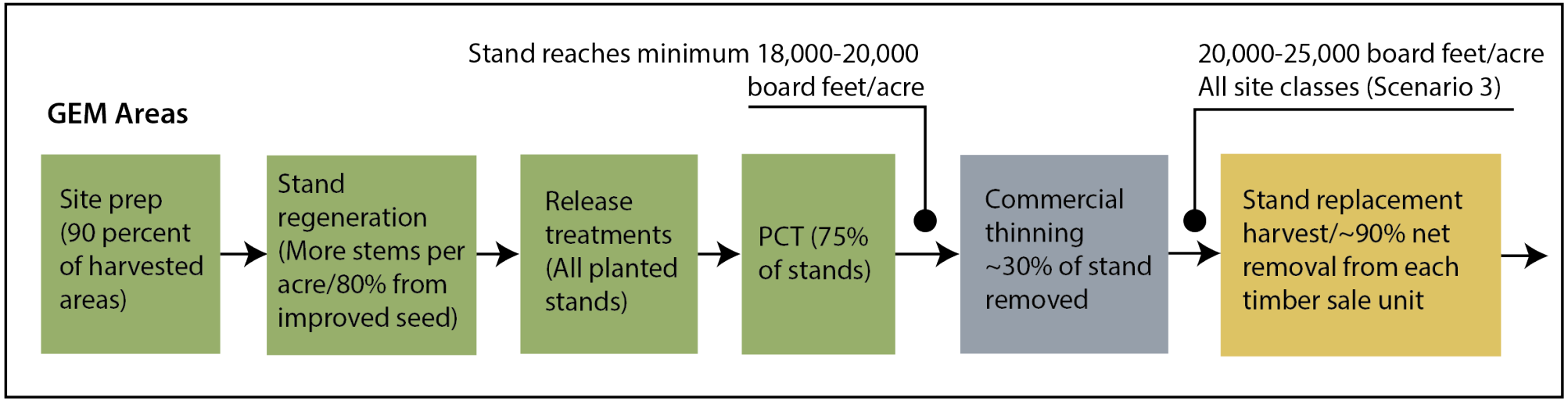


Scenario 14 (3+6+9)

In GEM areas, defer 100% of the following forest types:

- Older, "carbon-dense," structurally complex forest as DNR defines them within its *Policy for Sustainable Forests**

Increased emphasis on silviculture



*Only definition of structurally complex forest recognized by DNR

Scenario 15

2a

Lengthen harvest rotation

+

4a

Significantly increase thinning

+

9

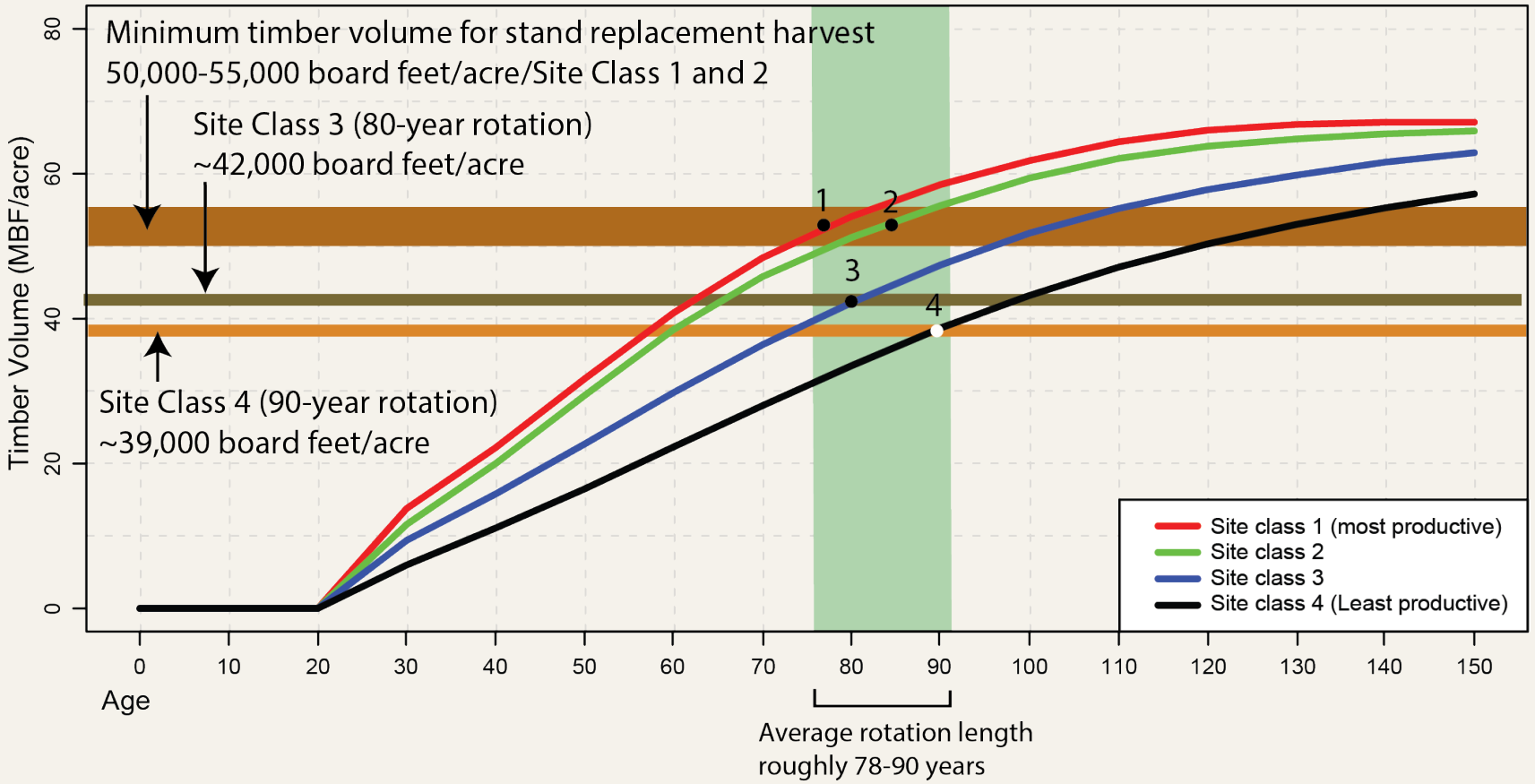
Increased emphasis on silviculture

Scenario 15 (2a+4a+9)

Lengthen harvest rotation (Scenario 2a)

Sample Douglas-fir yield curve, western Washington

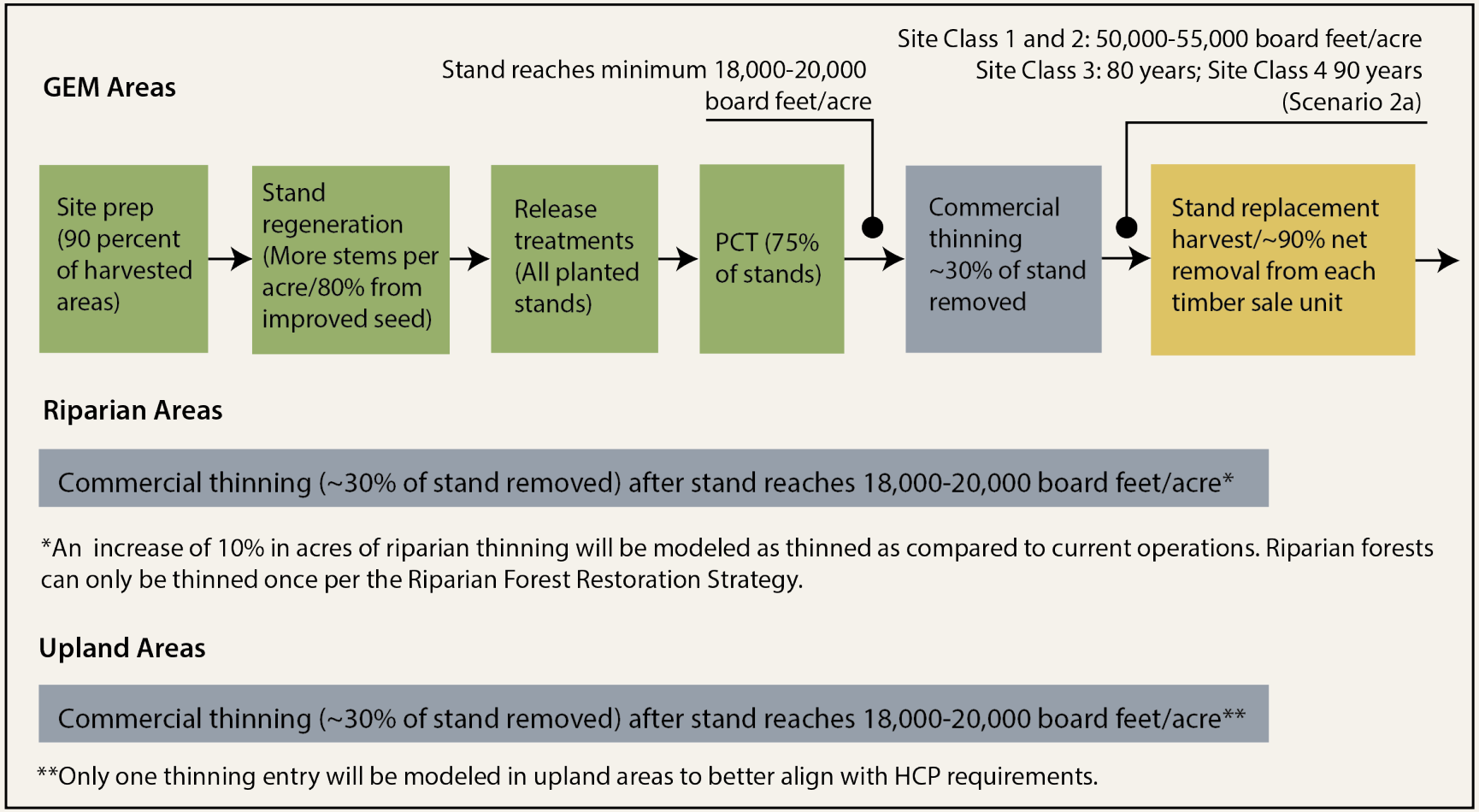
Yield curve generated from RSFRIS inventory plots and stratified using information from DNR's inventory



Scenario 15 (2a+4a+9)

Significantly increase thinning (Scenario 4a)

Increased emphasis on silviculture (Scenario 9)



Scenario 16 (NEW)

3
Shorten harvest rotation

+

4a
Significantly increase thinning

+

9
Increased emphasis on silviculture

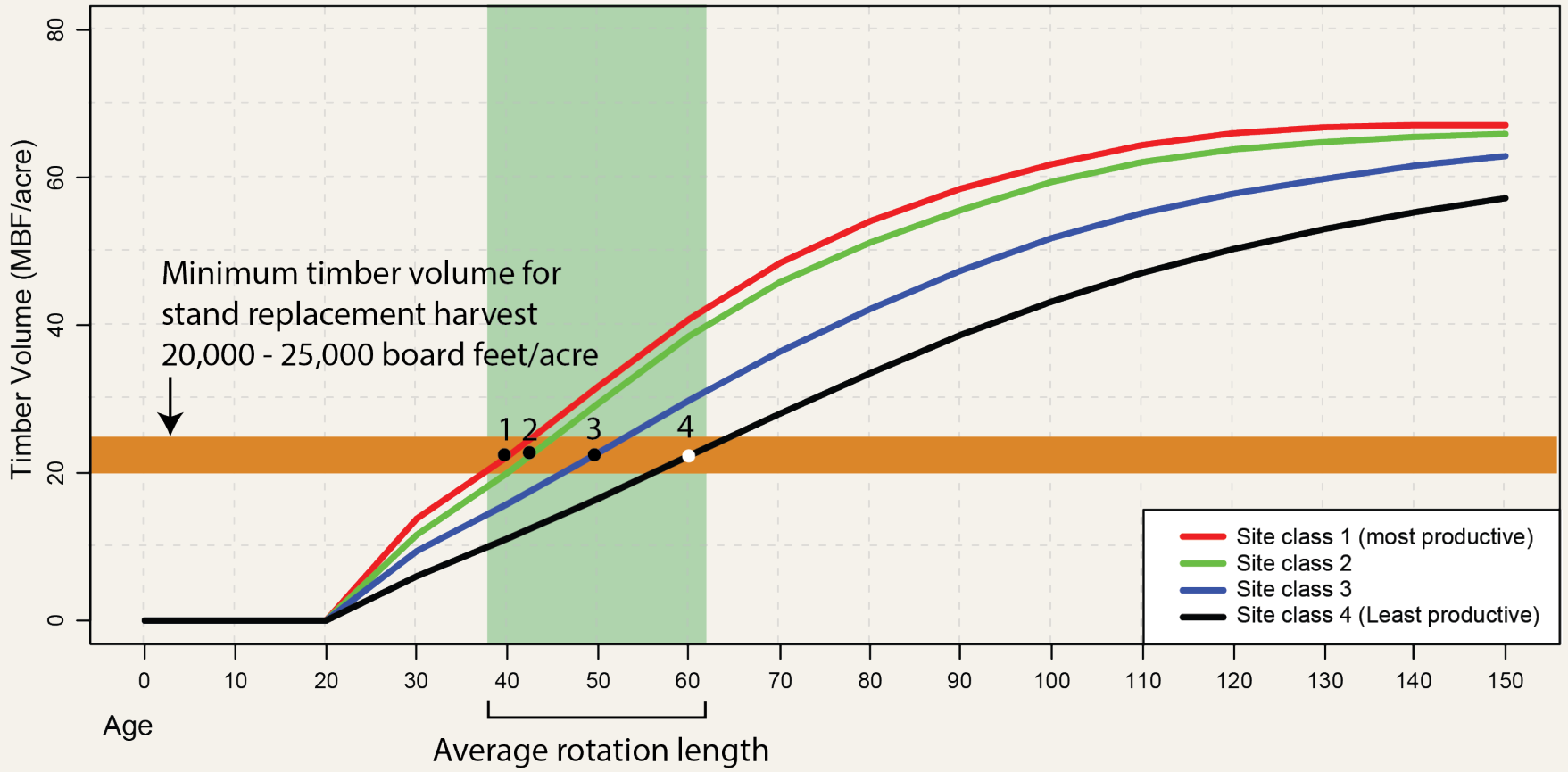


Scenario 16 (3+4a+9)

Shorten harvest rotation (Scenario 3)

Sample Douglas-fir yield curve, western Washington

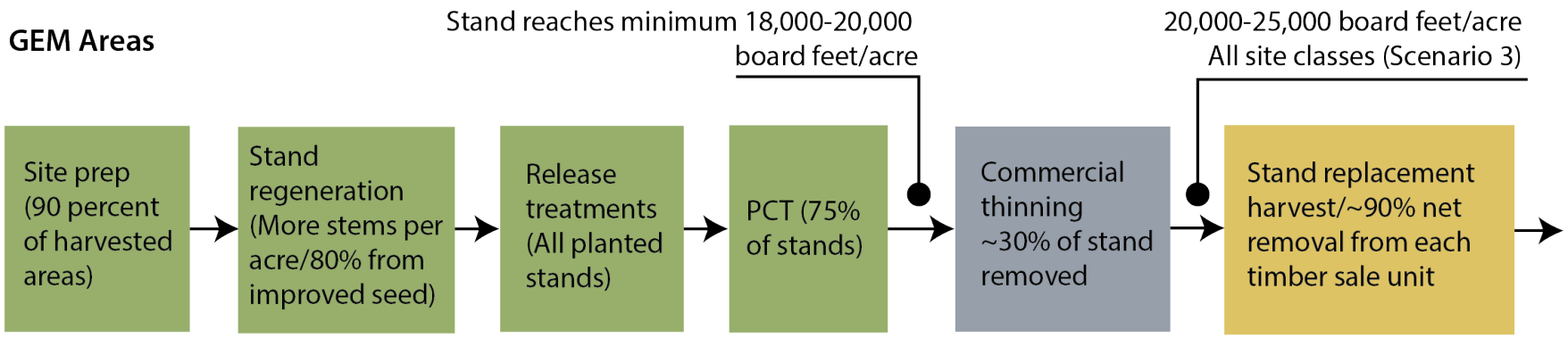
Yield curve generated from RSFRIS inventory plots and stratified using information from DNR's inventory



Scenario 16 (3+4a+9)

Significantly increase thinning (Scenario 4a)

Increased emphasis on silviculture (Scenario 9)



Riparian Areas

Commercial thinning (~30% of stand removed) after stand reaches 18,000-20,000 board feet/acre*

*An increase of 10% in acres of riparian thinning will be modeled as thinned as compared to current operations. Riparian forests can only be thinned once per the Riparian Forest Restoration Strategy.

Upland Areas

Commercial thinning (~30% of stand removed) after stand reaches 18,000-20,000 board feet/acre**

**Only one thinning entry will be modeled in upland areas to better align with HCP requirements.

Scenarios at a Glance (REVIEW)

Scenario	Components							
	Scenario 2 (lengthen rotations)	Scenario 2 Amended (lengthen rotations)	Scenario 3 (shorten harvest rotations)	Scenario 4 Revised (increase thinning)	Scenario 4 Amended (increase thinning)	Scenario 6 (deferrals)	Scenario 7 (deferrals)	Scenario 9 (increased silviculture)
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Scenario 8 (2a+4a)		✓			✓			
Scenarios pending from April 10 meeting								
Scenario 10 (2+4r+7)	✓			✓			✓	
Scenario 11 (4a+9)					✓			✓
New scenarios developed since the April 10 meeting to address concerns of work group members								
Scenario 12 (2a+4a+6+9)		✓			✓	✓		✓
Scenario 13 (2a+4a+7+9)		✓			✓		✓	✓
Scenario 14 (3+6+9)			✓			✓		✓
Scenario 15 (2a+4a+9)		✓			✓			✓
Scenario 16 NEW (3+4a+9)			✓		✓			✓

Next Steps

Next Steps

Meeting on May 8, 2024, 9am-3pm to vote on scenarios