



**Riparian Rule:
Analyses and Considerations for Board Decisions**

**Board of Forestry
23 July, 2015**

Outline of Presentation



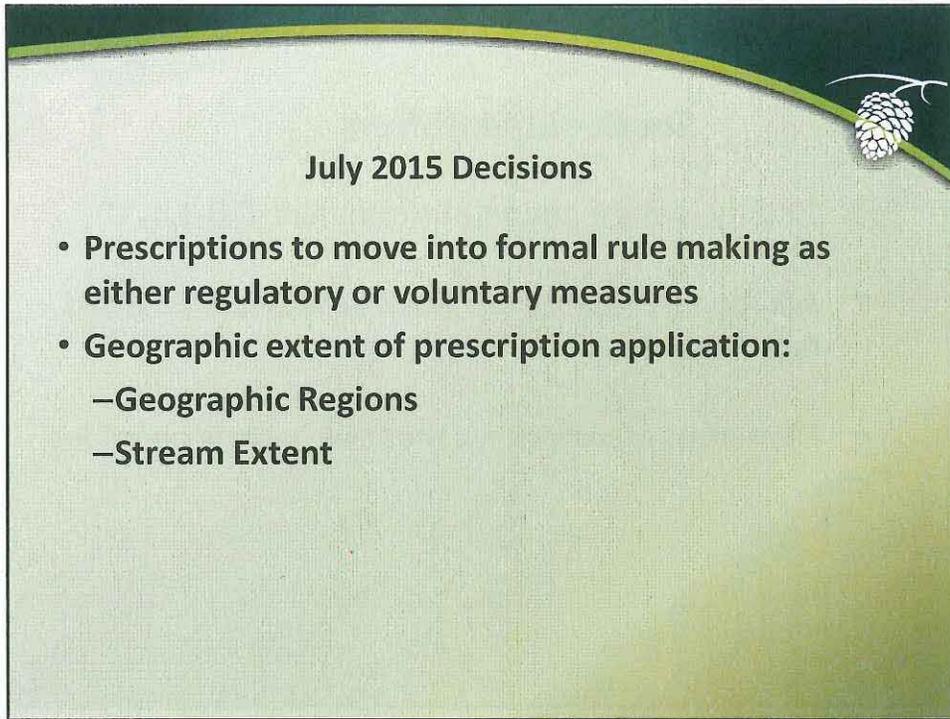
- **Overview: context and background**
- **Analysis:**
 - Additions to the Decision Matrix
 - Additional Analyses
 - Considerations for Board Decisions and Policy Analysis Framework
 - Riparian Prescription Packages
 - Recommendations

Outline of Presentation (cont.)

- Governor's Natural Resources Office
- Board Advisory Committees
- Public comment
- Board Discussion
- Wrap up, next steps

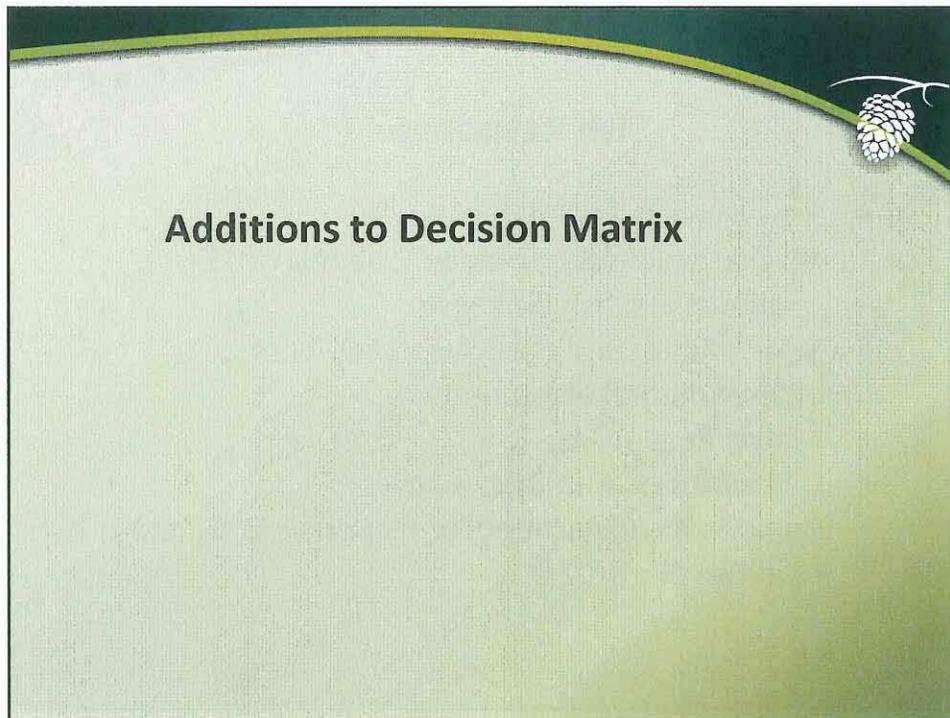
Context

- **Rule Analysis for Protecting Cold Water criterion**
Establish riparian protection measures for small and medium fish-bearing streams that maintain and promote shade conditions that insure, to the maximum extent practicable, the achievement of the Protecting Cold Water criterion
- **Decision timeline on findings, "informal checklist" to be made at each step of the process**
- **July 2015: presents additional analyses of prescriptions and lays out considerations for Board decisions**



July 2015 Decisions

- Prescriptions to move into formal rule making as either regulatory or voluntary measures
- Geographic extent of prescription application:
 - Geographic Regions
 - Stream Extent



Additions to Decision Matrix

South-sided Buffers

- 1 study, 3 sites; temperature change: 0.0-1.4 °C
- Additional Encumbered Acres & Value, large wood recruitment
- Numerous assumptions, thus put bounds on values

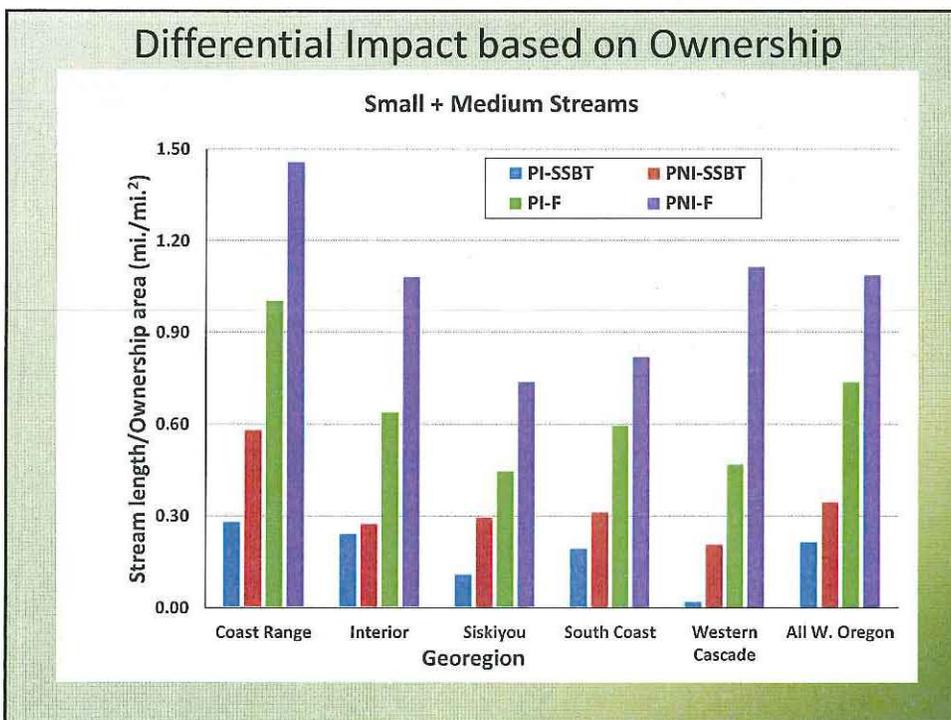
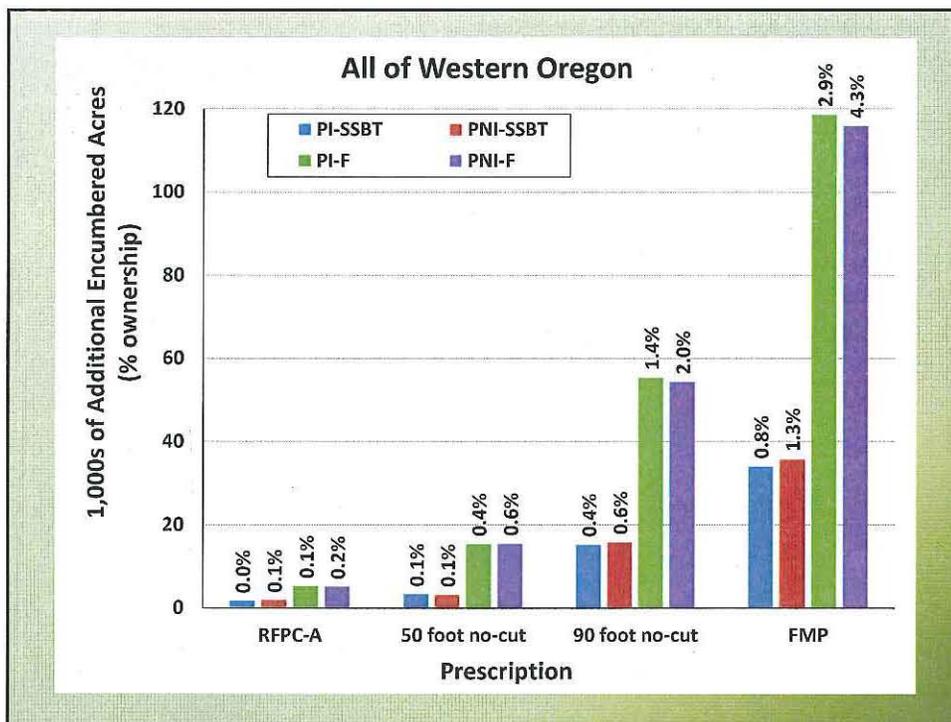
Fish Response

- Responses from 5 fish biologists
 - One biologist convened 2 panels of 12 additional fish biologists
- State and federal agencies, landowners, environmental community
- Matrix Responses: { + - 0 ? }
- Different assumptions, metrics
- Complexity, uncertainty of response at stream reach level

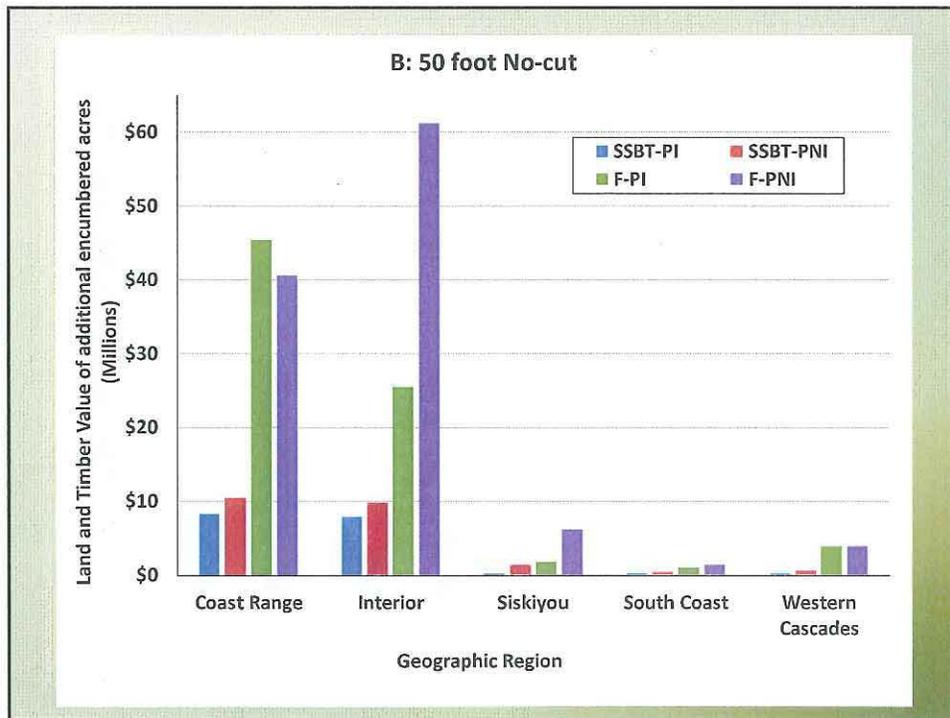
Fish Response

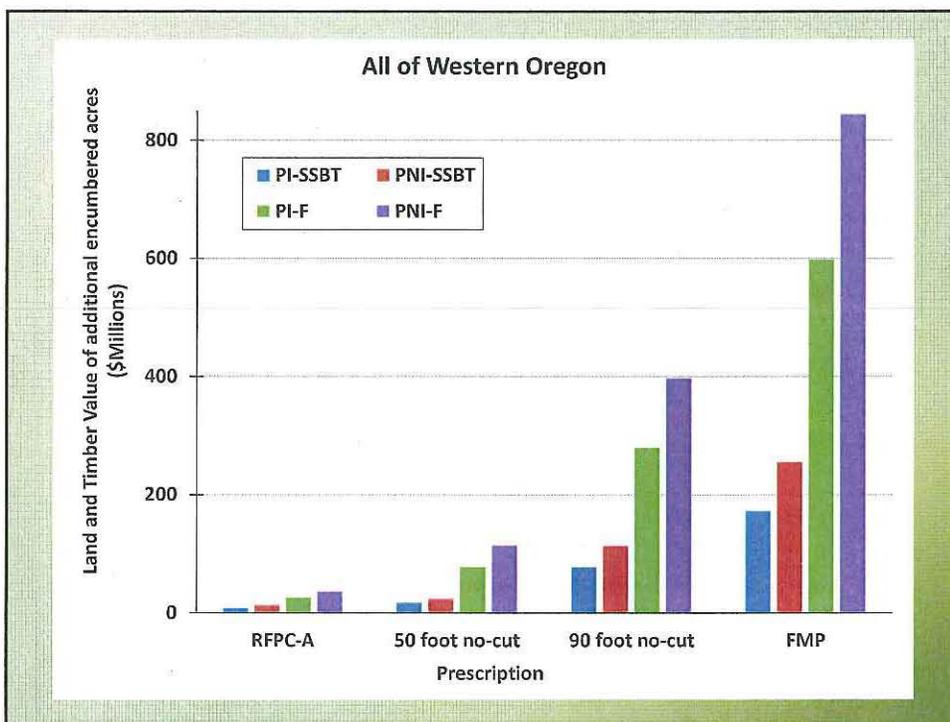
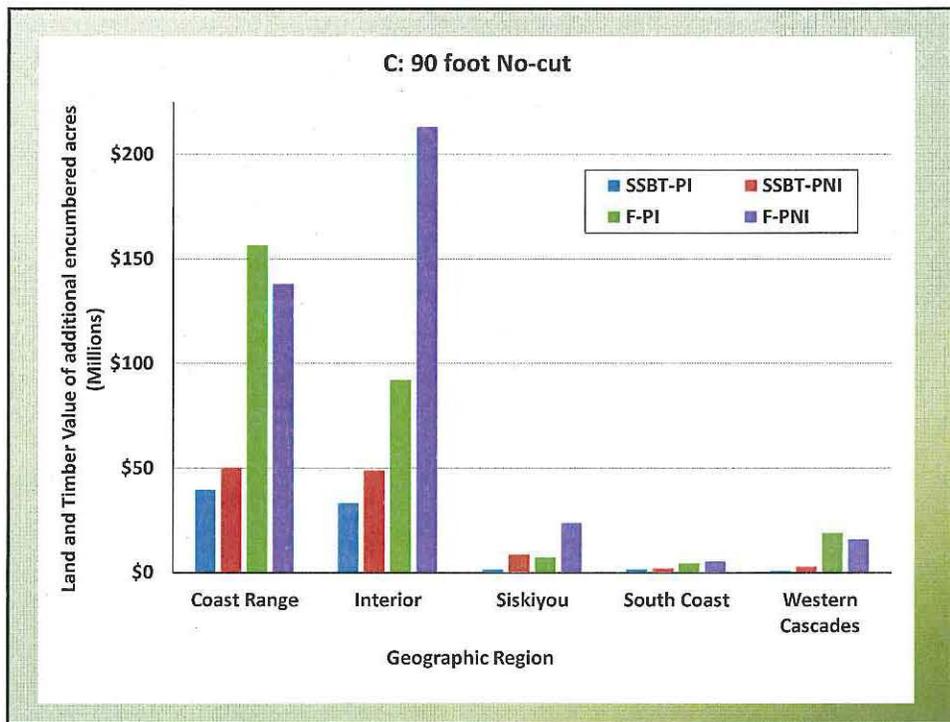
- Common themes:
 - Existing temperatures matter
 - Different starting points affect responses
 - Complex issue, particularly when not taking into account other factors
(large wood availability, climate change, cumulative effects, other stream characteristics)

Additional Encumbered Acres

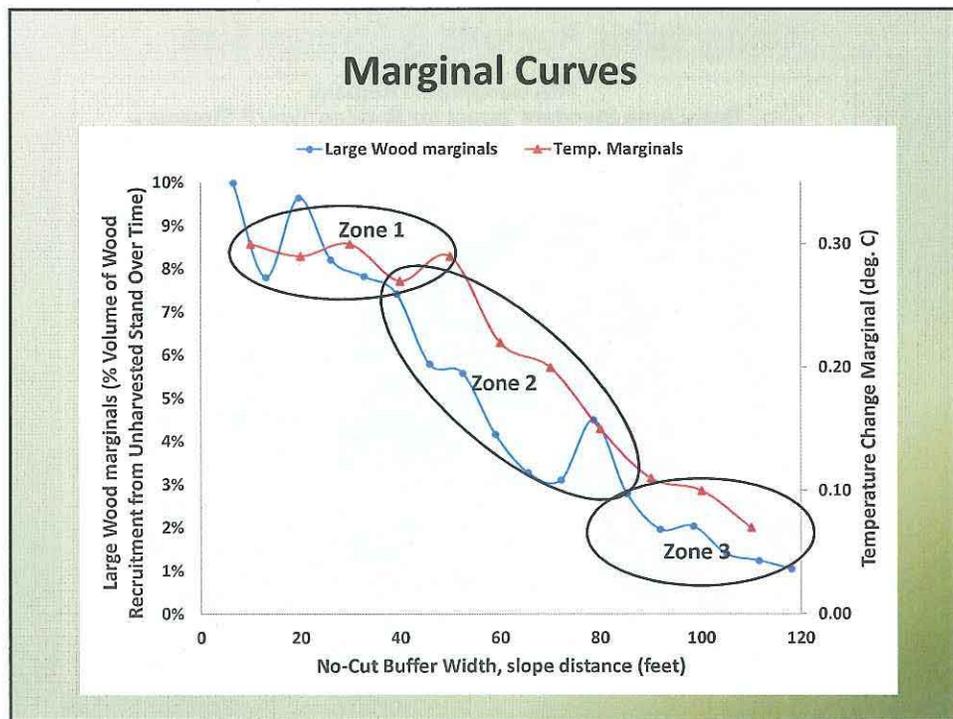


Land and Timber Values of Additional Encumbered Acres



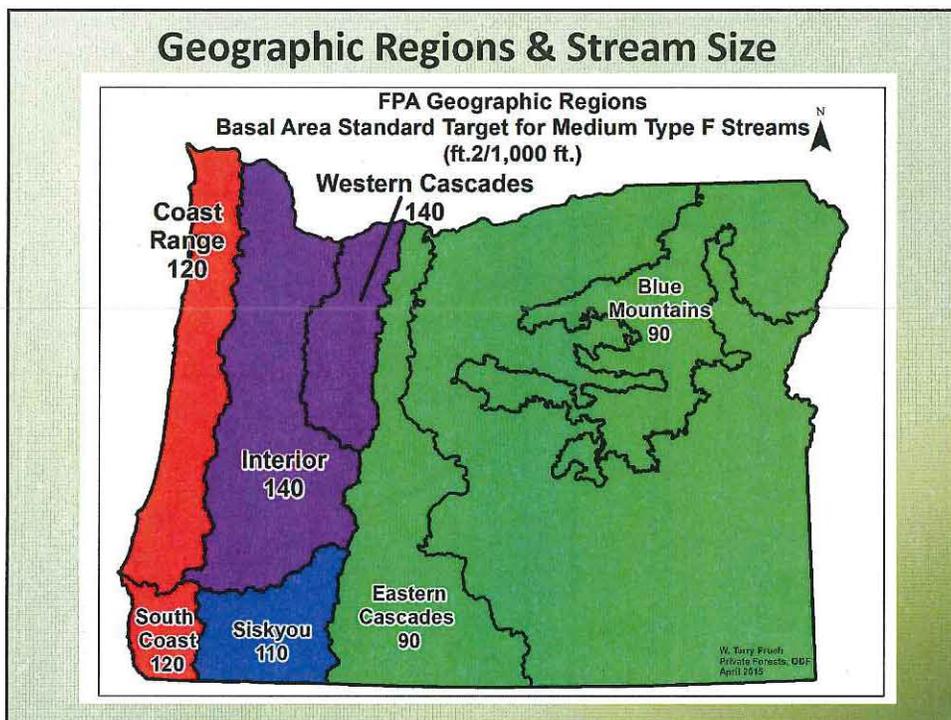


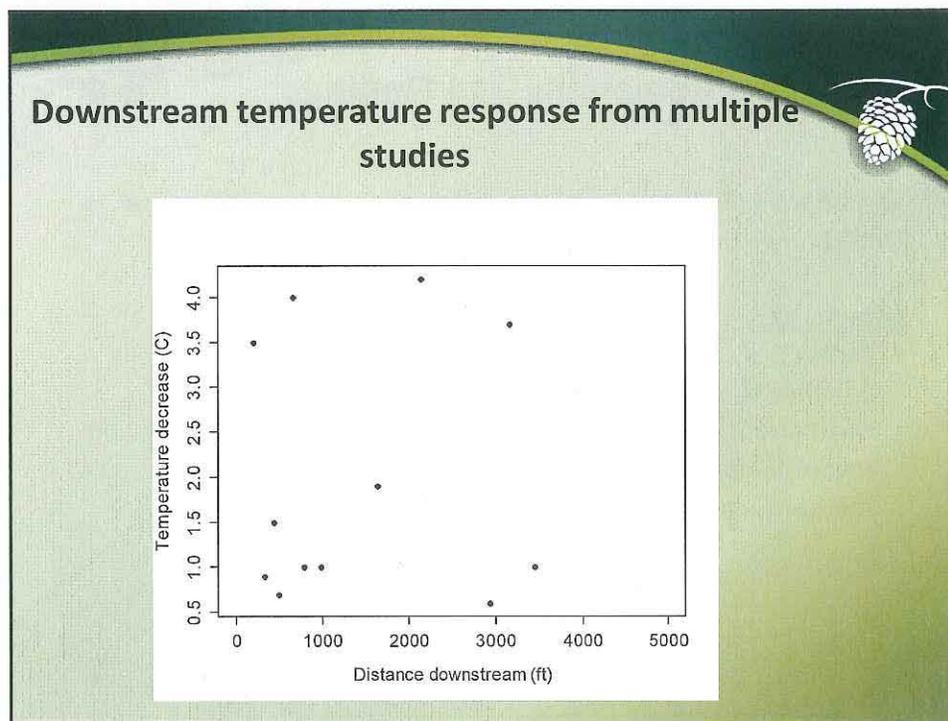
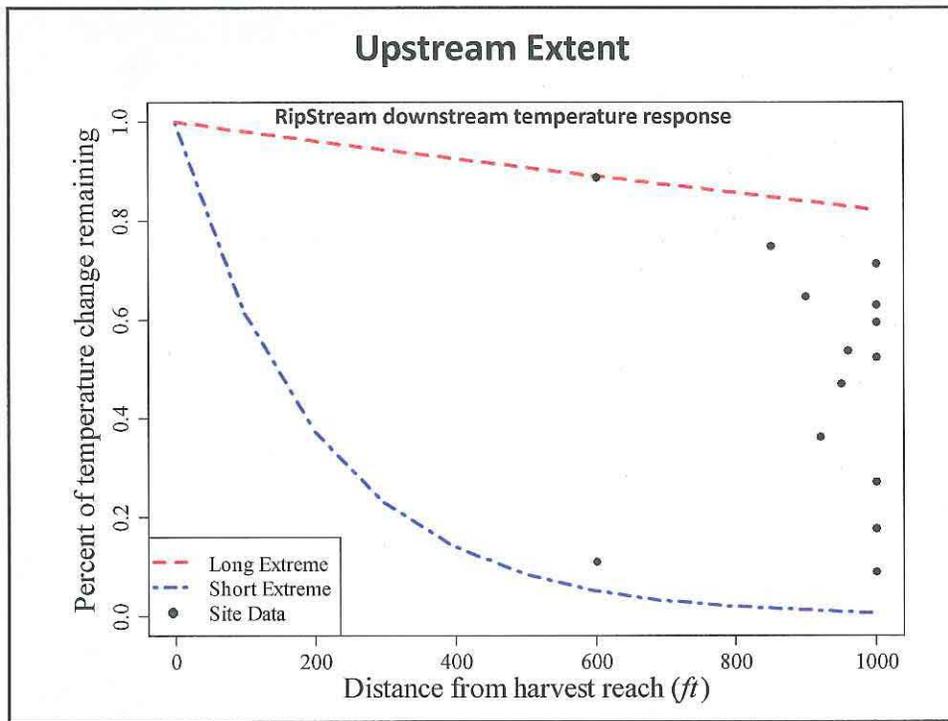
Questions on Matrix

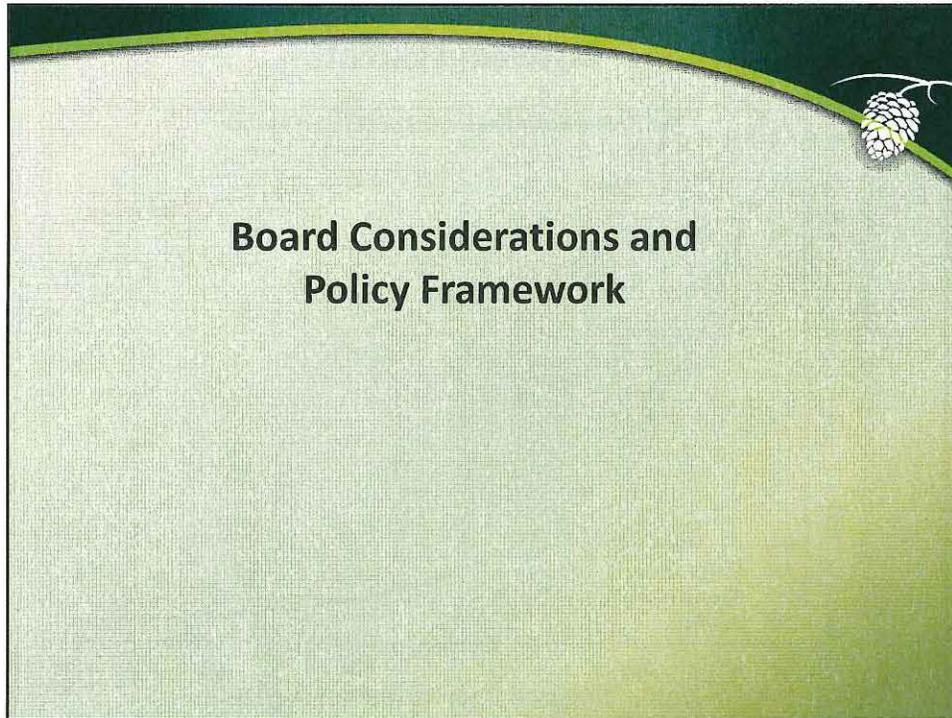


Additional Analyses

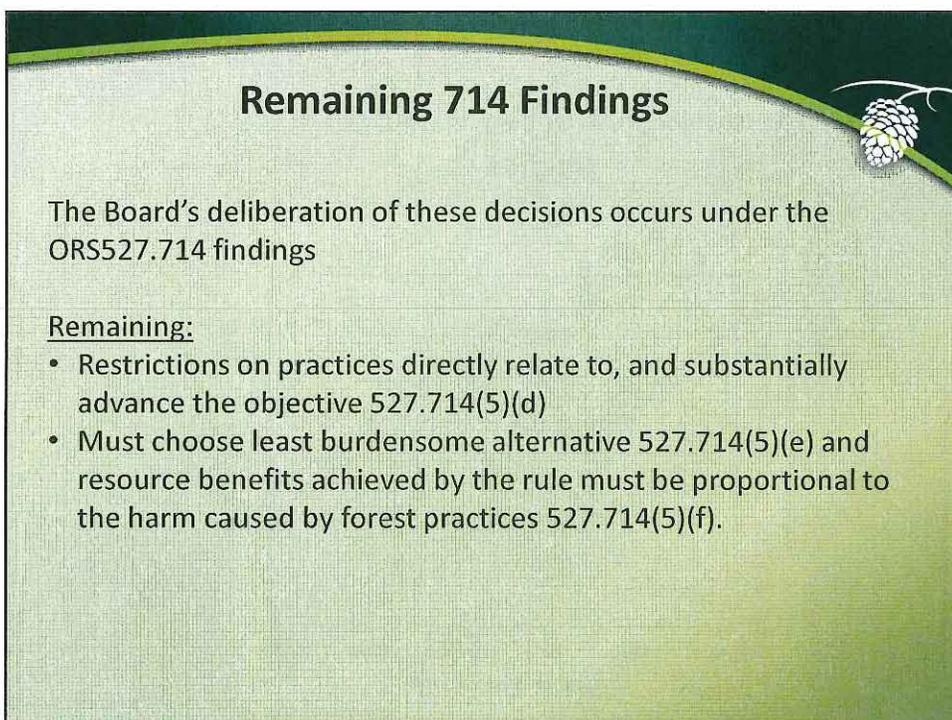
- RipStream Results and Other Scientific Studies
 - Consistent with the body of temperature science in the systematic review.
 - Consistent with stream-reach results on small and medium fish streams from the Hinkle Creek and Alsea watershed studies.
- Effective shade from north-sided buffers
 - Medium streams with orientations between 60 and 120 degrees azimuth would gain less than 1 percent shade from north-side buffers wider than current FPA buffers.
 - For small streams gain is less than 3 percent shade.







Board Considerations and Policy Framework



Remaining 714 Findings

The Board's deliberation of these decisions occurs under the ORS527.714 findings

Remaining:

- Restrictions on practices directly relate to, and substantially advance the objective 527.714(5)(d)
- Must choose least burdensome alternative 527.714(5)(e) and resource benefits achieved by the rule must be proportional to the harm caused by forest practices 527.714(5)(f).

ORS 527.765 Factors to Consider



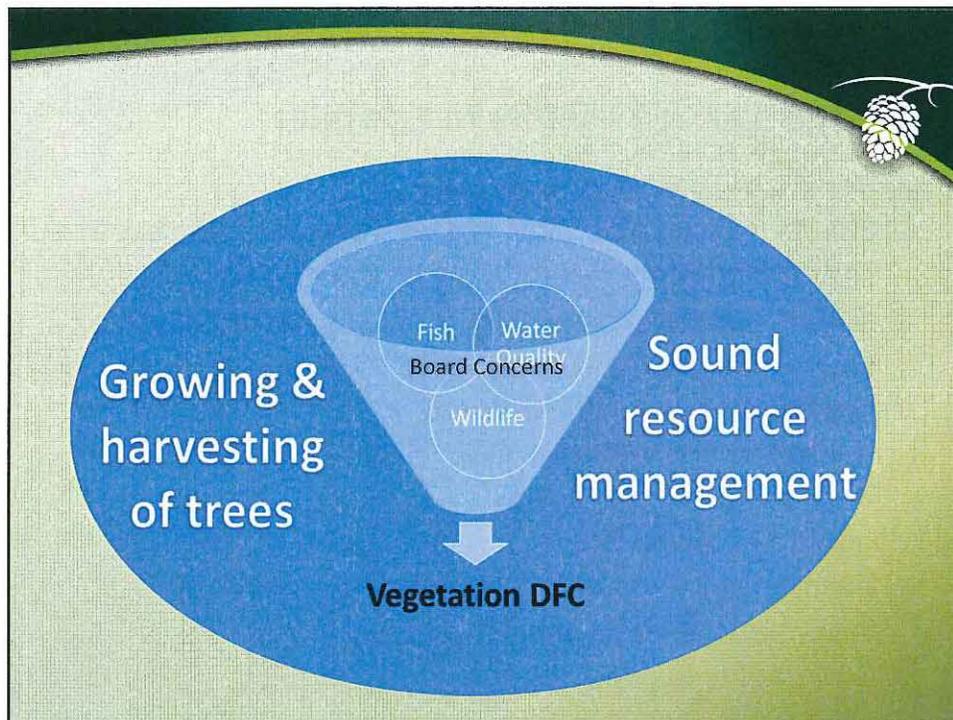
- a) Beneficial uses of waters: SSBT
- b) Effects of past practices on beneficial uses: RipStream sites were second growth; WRC results
- c) Appropriate practices of other forest managers: other states, Oregon State Forests, Systematic Review
- d) Feasibility
 - i. Economic: info from ODF
 - ii. Institutional: ODF staff
 - iii. Technical: RFPCs
- e) Natural variations in geomorphology, hydrology: Systematic Review, breadth of RipStream sites, Geographic Regions

Board Considerations



Balance:

- Meet Protecting Cold Water Criterion to Maximum Extent Practicable
- Attain Desired Future Conditions
- Avoid unintended consequences



AM1

Board Considerations & Origin of Analysis Framework

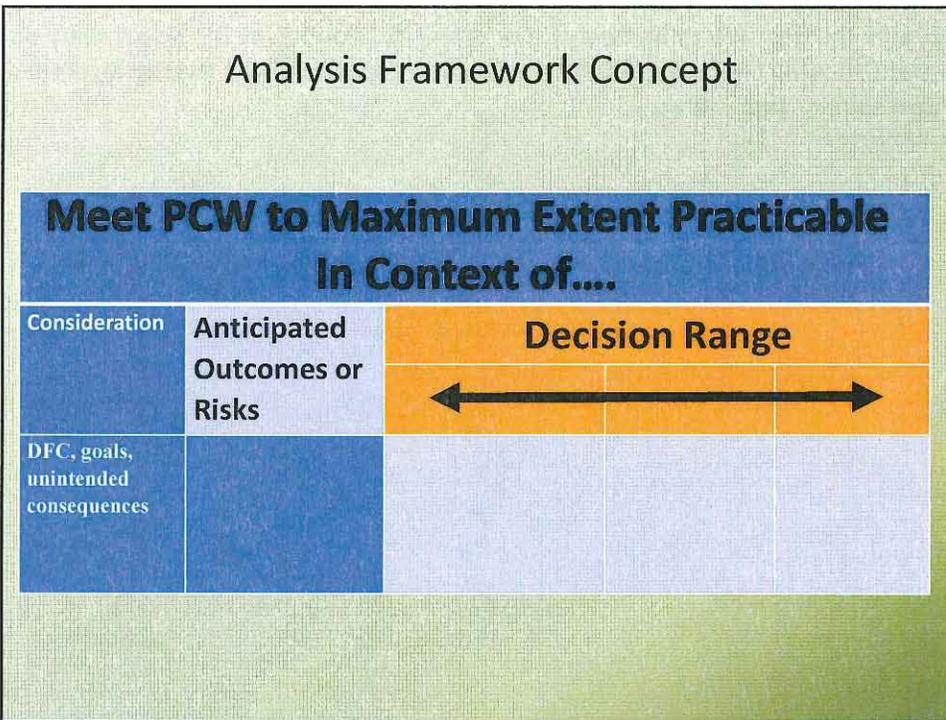
- Current FPA policy framework already intertwines
 - Meeting the PCW to the maximum extent practicable
 - Riparian desired future condition
- Board expressed desire to consider unintended consequences
 - Economic impacts
 - Active management of riparian areas & large wood placement
 - CZARA disapproval
 - Data extrapolation
 - Complex or layered scientific assumptions

Slide 28

AM1 I'm not sure the best way to frame this. For example, I don't think the Board ever publically discussed DFC AND the Board didn't come up with concerns about layered assumptions with the upstream extent - that was us.

ALLEN Marganne, 07/17/2015

Analysis Framework Concept



Consideration	Anticipated Outcomes	Decision Range		
		Unchanged or Small Temperature Performance	Improved Temperature Performance	Threshold Temperature Performance
Goal - Water Quality (Temperature)	Prescriptions with similar responses	No-Cut: ≤~70 feet FPA, OFIC-A, AOL-B, RFPC-A Variable: ≤~250 ft ² /1000 ft. Staggered-Harvest options	No-Cut: ~70-90 feet Variable: ~250-275 ft ² /1000 ft.	No-Cut: ≥~90 feet Variable: ≥~275 ft ² /1000 ft.
	Likelihood temp. change includes 0.3°C (PCW)	Low	Moderate to high	High
	Likelihood of temperature improvements	Zero - Moderate	Moderate to high	High
	Range of estimated mean temperature increases	0.64-1.45°C	0.29-0.64°C	0.2-0.33°C
	Marginal returns for temperature	Zone 1- high	Zone 2- moderate, starts diminishing	Zone 3- low /very low

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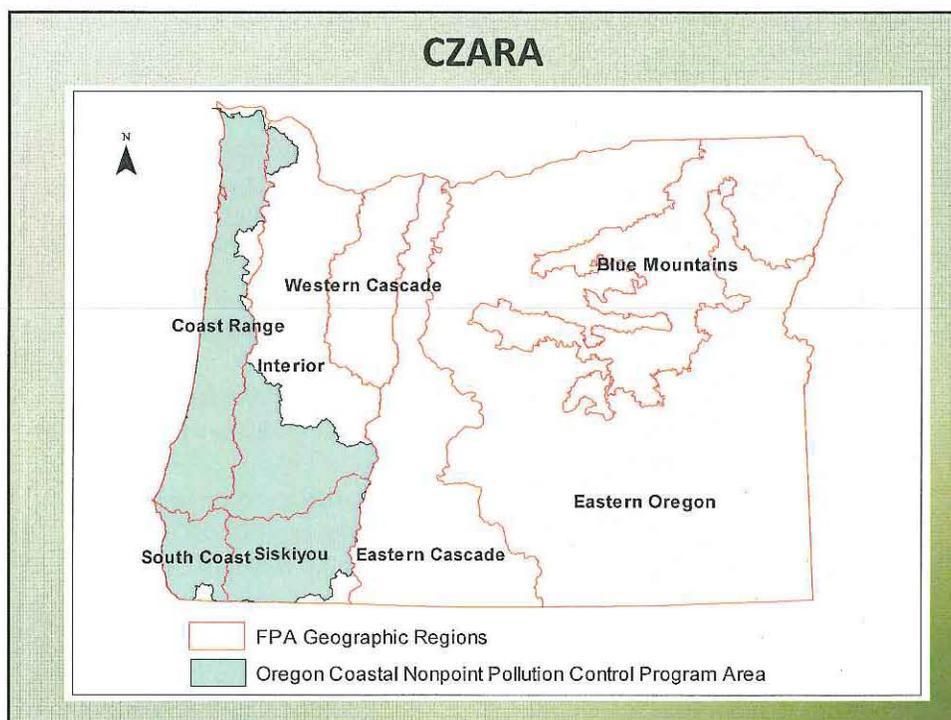
Consideration	Anticipated Outcomes	Decision Range		
		Unchanged or Small Temperature Performance	Improved Temperature Performance	Threshold Temperature Performance
Water protection rule purpose	Protect, maintain and improve fish resources	Unknown	Unknown	Unknown
Goal – Fish (Wood recruitment)	Range of wood recruitment rates relative to unharvested stands	Small: ~40-78% Medium: ~62-78%	Small: ~76-88% Medium: ~76-88%	Small: ~84-100% Medium: ~84-100%
	Likelihood of active wood placement	Moderate	Low	Low
Unintended consequence	Increasing encumbrance, economic cost to forest landowners	Lower	Moderate	High

(Continued)

Consideration	Anticipated Outcomes	Decision Range		
		Unchanged or Small Temperature Performance	Improved Temperature Performance	Threshold Temperature Performance
Vegetative Desired Future Condition (DFC)	Likelihood of meeting DFC	<ul style="list-style-type: none"> • Only FPA, FMP have goal, pathway to a DFC • Risk overstocking and/or insect and disease without flexibility for forest health treatments. • Increasing hardwood component in riparian targets may put DFC goal for increased conifer retention at risk 		

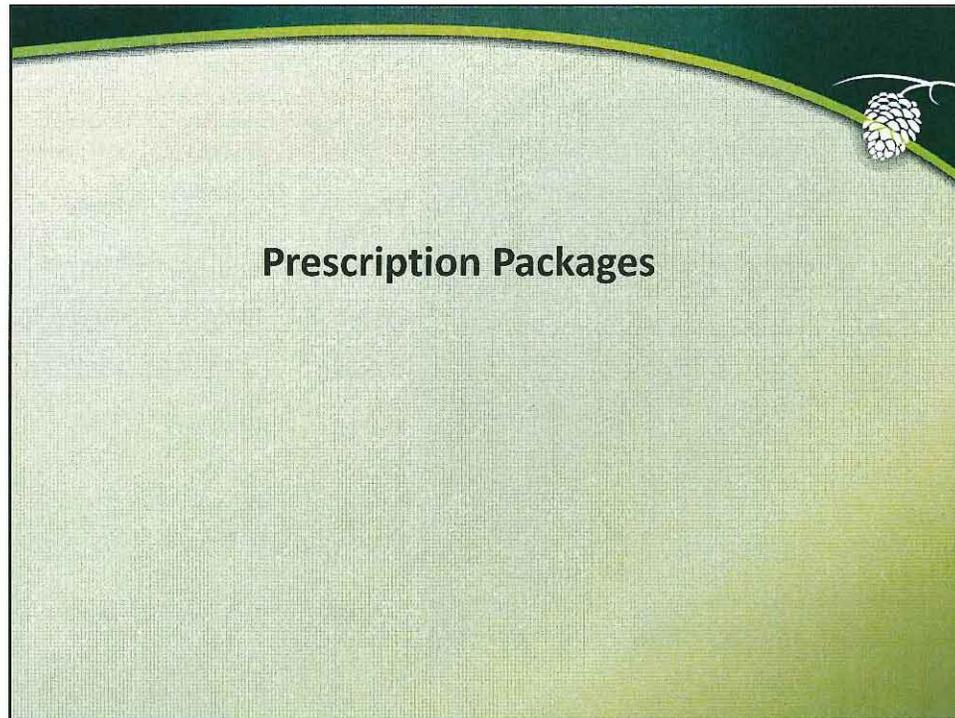
Geographic Extent Policy Considerations

- Insufficient science to support empirical Board decision
- Reaffirm or alter current policy re: rule specific to geographic region and stream size?
 - Reaffirm policy – Limit rule analysis to Coast Range, assume a risk-intolerant position re: extrapolating RipStream results.
 - Alter policy – Assume risk-tolerant position relative to RipStream results, include 2+ regions and/or define new region(s), and/or establish a single protection standard across all streams regardless of size.
- CZARA Disapproval



Decision	Consideration	Risk statement	Decision Range		
			Coast Range only	Two or more regions	Most or all regions
Geographic Region Extent	Goals - Water Quality and Fish	Areas with unaddressed temperature & wood recruitment concerns	Temperature - High Wood - High	Temperature - Moderate Wood - Moderate	Temperature - Low Wood - Low
	Water protection rule purpose	Outcome will protect/improve fish resources	Unknown	Unknown	Unknown
	Unintended consequence	Extrapolating RipStream results (Statistical perspective)	Low	Moderate	High
	Unintended consequence	Unaddressed CZARA temperature concerns	High	Moderate - High	Low
	Unintended consequence	Risk of increasing economic costs to forest landowners	Lower	Moderate	Higher

Decision	Consideration	Risk statement	Decision Range		
			Zero (0) feet Upstream	1000 feet Upstream	One mile Upstream
Stream Reach Extent (Above SSBT main stems and SSBT tributaries)	Goals - Water Quality & Fish	Significant portions of streams with unaddressed temperature, wood recruitment concerns	Temperature - High Wood - High	Temperature - Moderate Wood - Moderate	Temperature - Low Wood - Low
	Water protection rule purpose	Outcome will protect/improve fish resources	Unknown	Unknown	Unknown
	Unintended consequence	Incorrect and/or complex and layered assumptions, modeling, and difficult field implementation	Main stem - none Tributaries - none	Main stem - Moderate Tributaries - High	Main stem - High Tributaries - High
	Unintended consequence	Increasing economic costs to forest landowners	None	Moderate	Higher



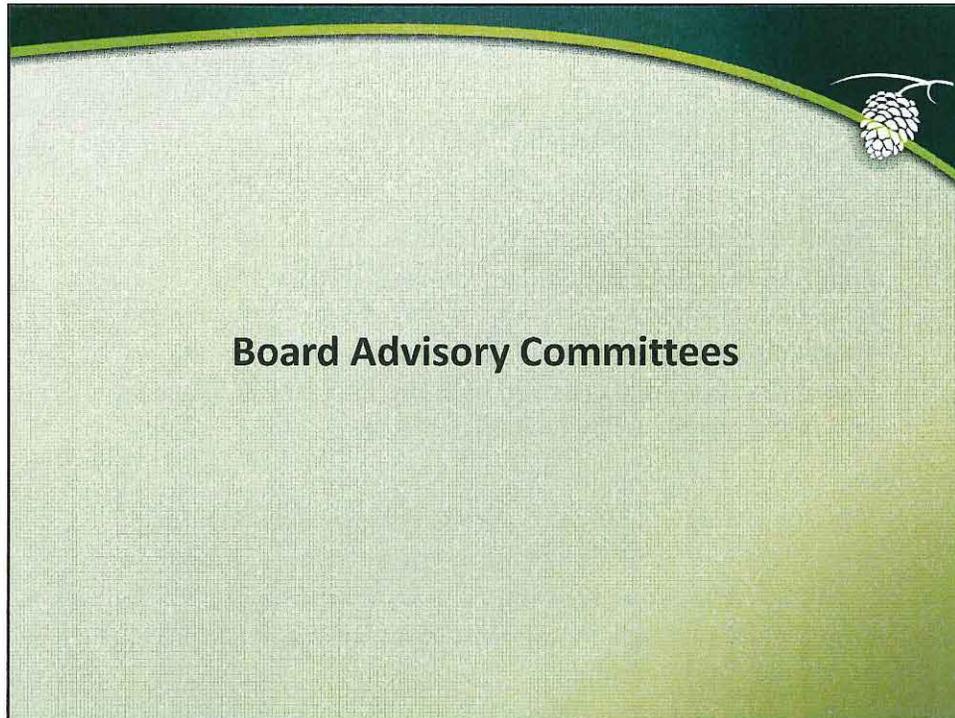
Prescription Packages

Prescription Package	Prescriptions	Temperature, LW response	Geographic Regions	Stream Extent
1. Minimize Temp. Concerns	NC: 90 feet VR: 275 ft.2/1,000 ft.	ΔT : ~0.3 °C LW: 89-91%	All W. Oregon	SSBT + 1,000 ft. Upstream
2. Mitigate Temp. Concerns	NC: 70 feet VR: 225 ft.2/1,000 ft.	ΔT : ~0.6 °C LW: 76-81%	All W. Oregon	SSBT
3. Balance Temp. with avoidance of Unintended Consequences	NC: 85 ft., 75 ft. with LW placement VR: lower, with distributional requirement	ΔT : ~0.3-0.4 °C	??	SSBT + 100s-1,000s ft. Upstream

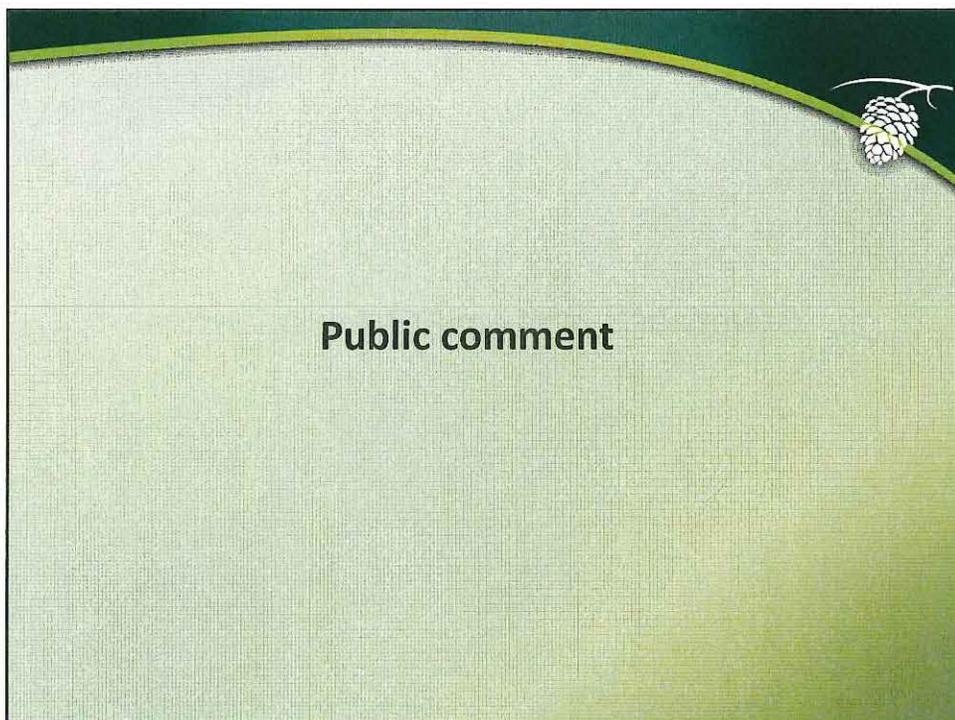
Recommendations

- The Department recommends that the Board discuss the policy issues, using the above framework and all the information it has received to develop a set of prescription components that meet the PCW criterion to the maximum extent practicable, consistent with the ORS 527.765 factors and required ORS 527.714 findings.
- The Department also recommends that the Board include more than one prescription choice, e.g., a no-cut prescription, a variable retention prescription, and/or alternate prescription approach to increase forestland owner flexibility and minimize unintended consequences.

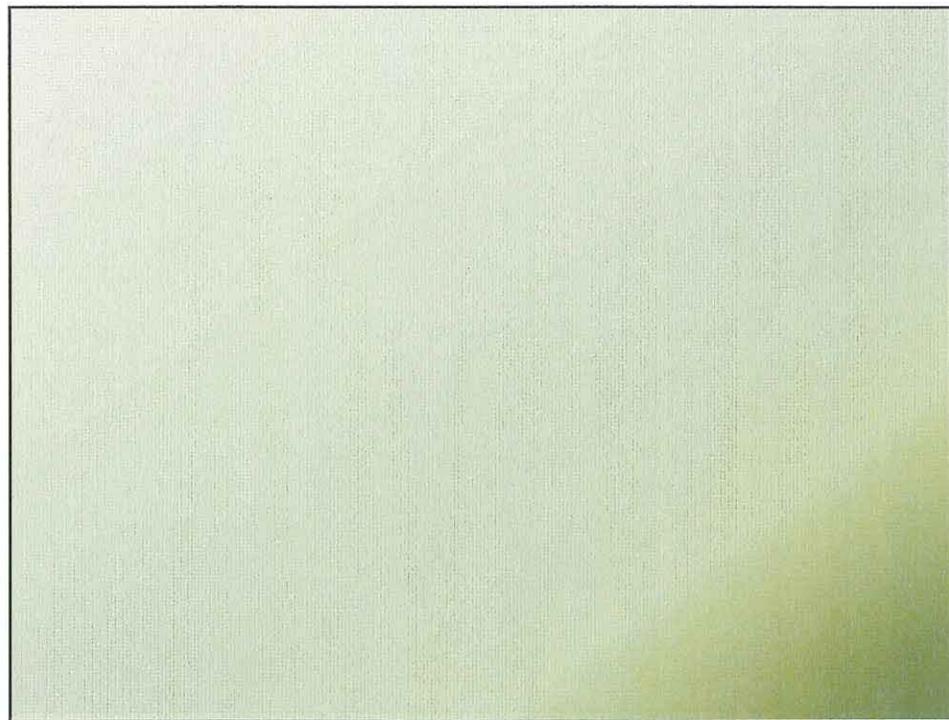
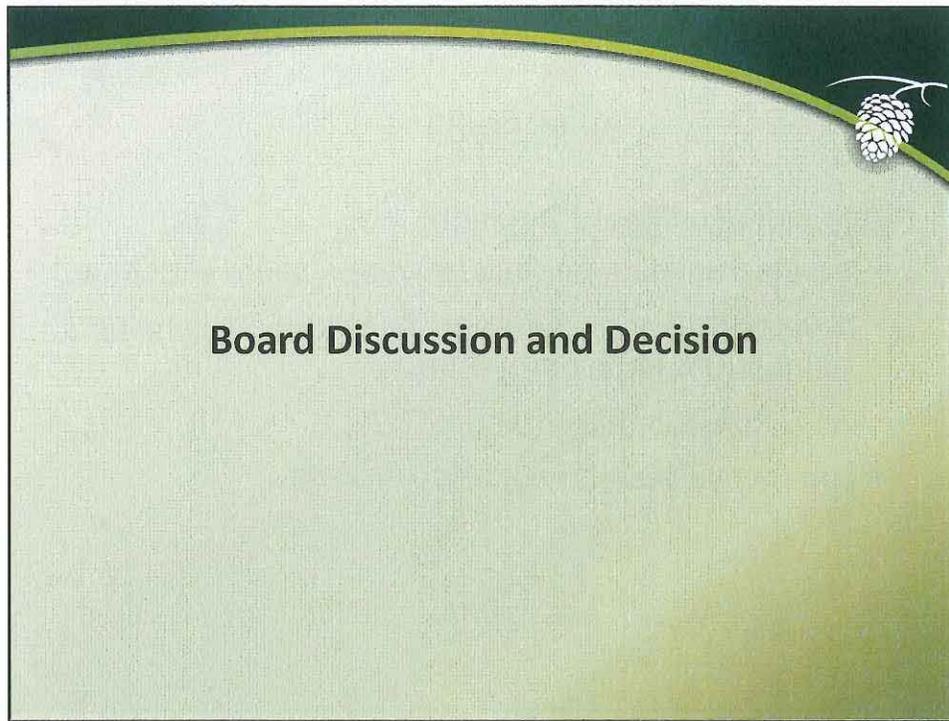
Governor's Natural Resources Office



Board Advisory Committees



Public comment



Next Steps

Depending on Board Decision:

- Develop timeline for Rule Language, share with Board
- Develop Rule Language with input from Stakeholders and Board Advisory Committees
- Bring Rule Language to Board
- Commence Secretary of State Process