

Sustainable Forestry: Maintaining Balance Between Economic and Ecological Values

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Topics for Today's Talk

- Define sustainability
- What is sustainable forestry
- Describe how sustainable forestry is being practiced on Washington State's forest trust lands

What Is Sustainability?

- A set of activities or processes that produce desired products and services over long periods of time
- Rational approach that seeks a dynamic equilibrium
- Uses interdisciplinary set of social, ecological and economic sciences in an integrated fashion
- Future generations have the opportunity to enjoy the same products and amenities

Definitions

- Sustainable forests are the desired goal
- Sustainable forestry is the means to the desired end

Sustainable Forestry

- Managing a forest to meet all existing regulations such that environmental, social and economic factors are balanced to meet the needs of the present without compromising the ability of future generations to meet their needs

Sustainable Forestry

- A **land stewardship ethic** that **integrates** reforestation, growing, and harvesting trees for useful products while **conserving** soil, air, and water quality, wildlife and fish habitat and aesthetics, and **protecting**: a) the resource from fire, pests, and diseases and b) lands of **special** significance

Source: American Forest And Paper Association

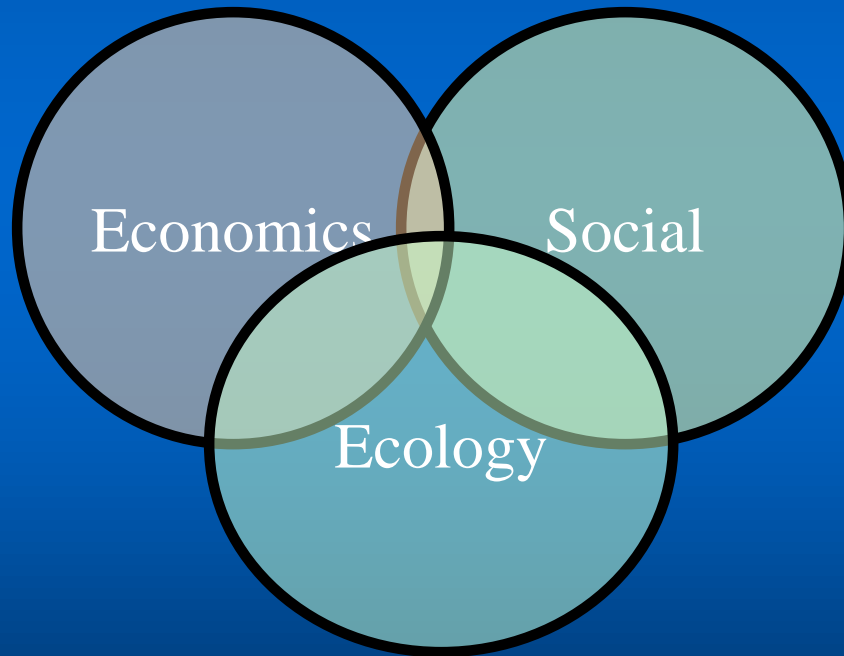
Sustainable Forestry

- Consider key values:
 - biodiversity
 - habitat protection and enhancement
 - riparian/wet land protection
 - protection of productive capacity
 - protection of endangered plants and animals
 - protection of cultural, spiritual, and historical sites

Sustainable Forestry

- Definition conveys the notion that sustainability:
 - applies to many resources in addition to timber
 - considers the needs of future generations as well as those of the present
 - is concerned with ecological functions and condition, and
 - is as much a social and economic as a bio-physical process

Sustainability Occurs at the Intersection



Observations and Comments

- A balance of ecological and economic values in a socially acceptable fashion
- The use of proper science is absolutely necessary to find the proper balance but is by no means sufficient

Sustainable Forestry

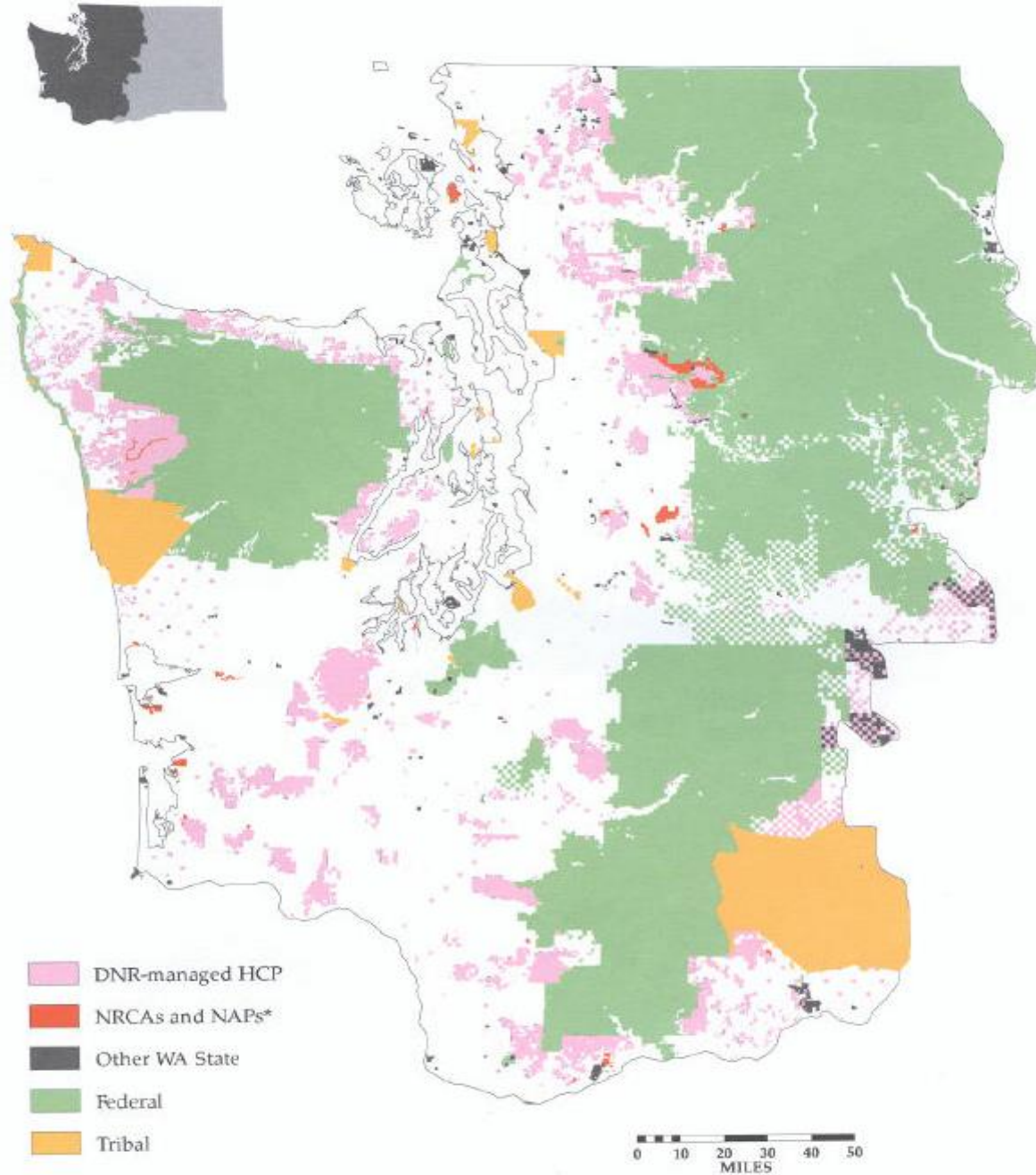
- Requires that we adopt an integrated approach that simultaneously considers utilitarian values as well as ecological and social values
- Value preferences expressed through the economic, political, and legal systems will largely determine the ultimate balance
- Requires that we adopt an integrated, holistic, adaptive approach that simultaneously considers all values

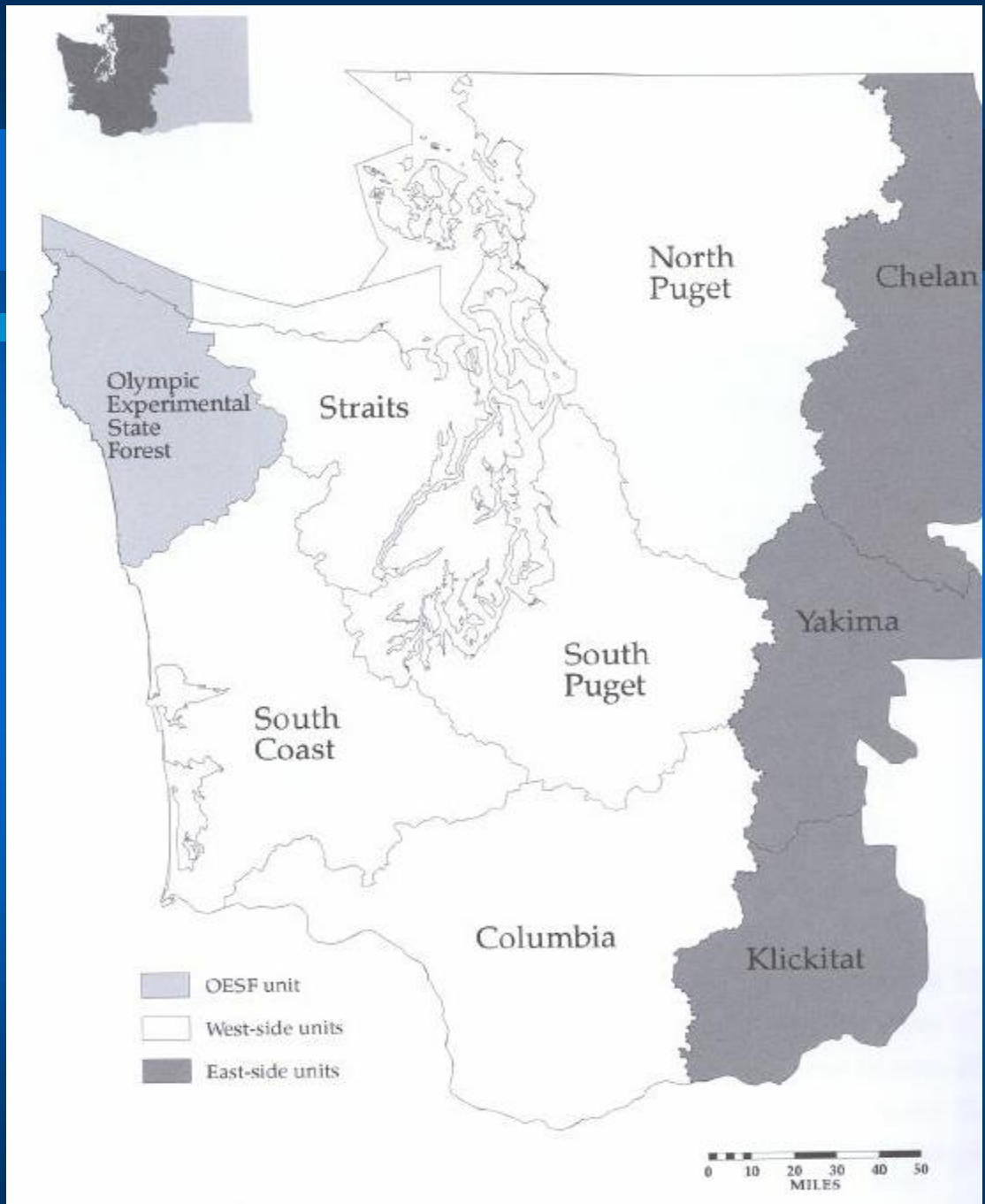
Observations and Comments

- The challenge to actually define and implement sustainable forestry is tremendous
- It is a big challenge for educators, resource managers, scientists, and policy makers at the start of this Century

Case Study

- Case study involves the Washington State forest trust lands that are managed by the Washington State Department of Natural Resources
- We consider the 1.4 million acres lying west of the crest of the Cascade Mountains





Purpose and Need

Purpose

- To incorporate new information into a new model to recalculate the sustainable timber harvest level

Need

- State law (RCW 79.68.040) requires the Department to periodically adjust the acres designated for inclusion in the sustained yield management program and calculate a sustainable harvest level

Key Statutes: **Multiple Use**

- The management and administration of state-owned lands under the jurisdiction of the department of natural resources to provide for **several uses simultaneously** (on a single tract and/or planned rotation) of **one or more** uses **on** and **between** specific portions of the total ownership (RCW 79.68.020)

Key Statutes: Sustained Yield

- Management of the forest to provide harvesting on a continuing basis without major prolonged curtailment or cessation of harvest (RCW 79.68.030)

Timber Harvest Policy

- The Department manages state forest lands to produce a sustainable even flow harvest of timber subject to economic, environmental and regulatory considerations (Forest Resource Plan, 1992)

Forest Planning Is Complex

- Multiple objectives and players (tradeoffs)
- Long time horizons and uncertainty
- Hierarchical in nature
 - Strategic (long term sustainability plans)
 - Tactical (landscape plans)
 - Operational (project plans)
- Challenging to coordinate levels of planning (time, space, data)

Four Guiding Steps for All Alternatives

- Accurately represent the goals and model constraints
- Use a reliable forest inventory
- Develop an appropriate land classification
- Ensure the link between strategic planning process and implementation

Recap of the Six Alternatives

- Alternative 1
 - No Action Alternative : Current Operations
- Alternative 2
 - *HCP intent*
- Alternative 3
 - Combined Ownerships

Recap of the Six Alternatives

- Alternative 4
 - Passive Management Approach
- Alternative 5
 - Intensive Management Approach
- Preferred Alternative
 - Innovative Silvicultural Management

Key Outcomes

- Gross & Net income (timber harvest)
- Variability of income
- Forest Structure and Older Forest-dependent species
- Implementation considerations

Key Policy Choices for the BNR

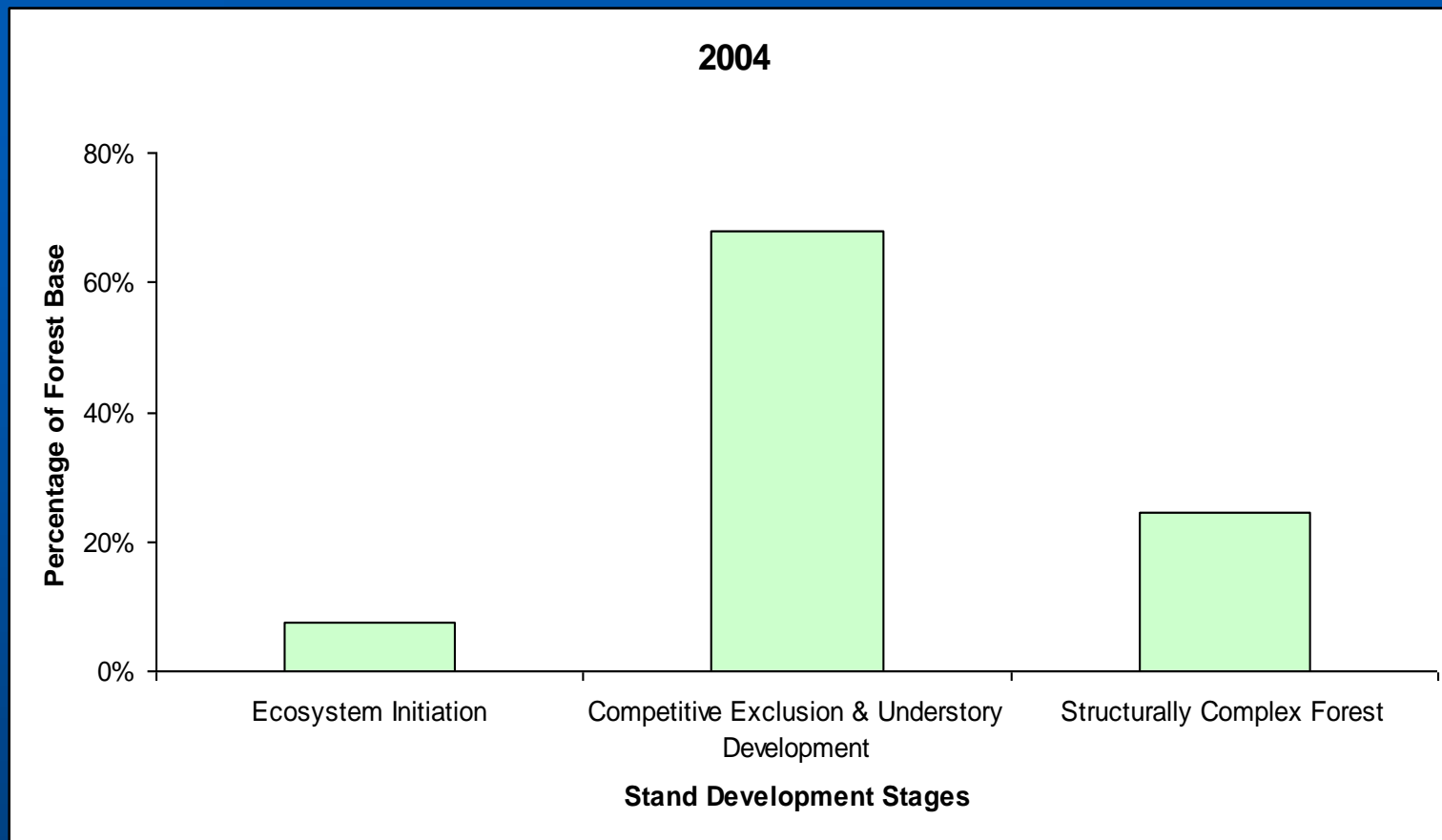
- Active vs. Passive
- Area to Manage
- Ownership Groups
- Even Flow Approach
- Old Growth Protection
- Volume vs. Value Regulation

Key Policy Choices for the BNR

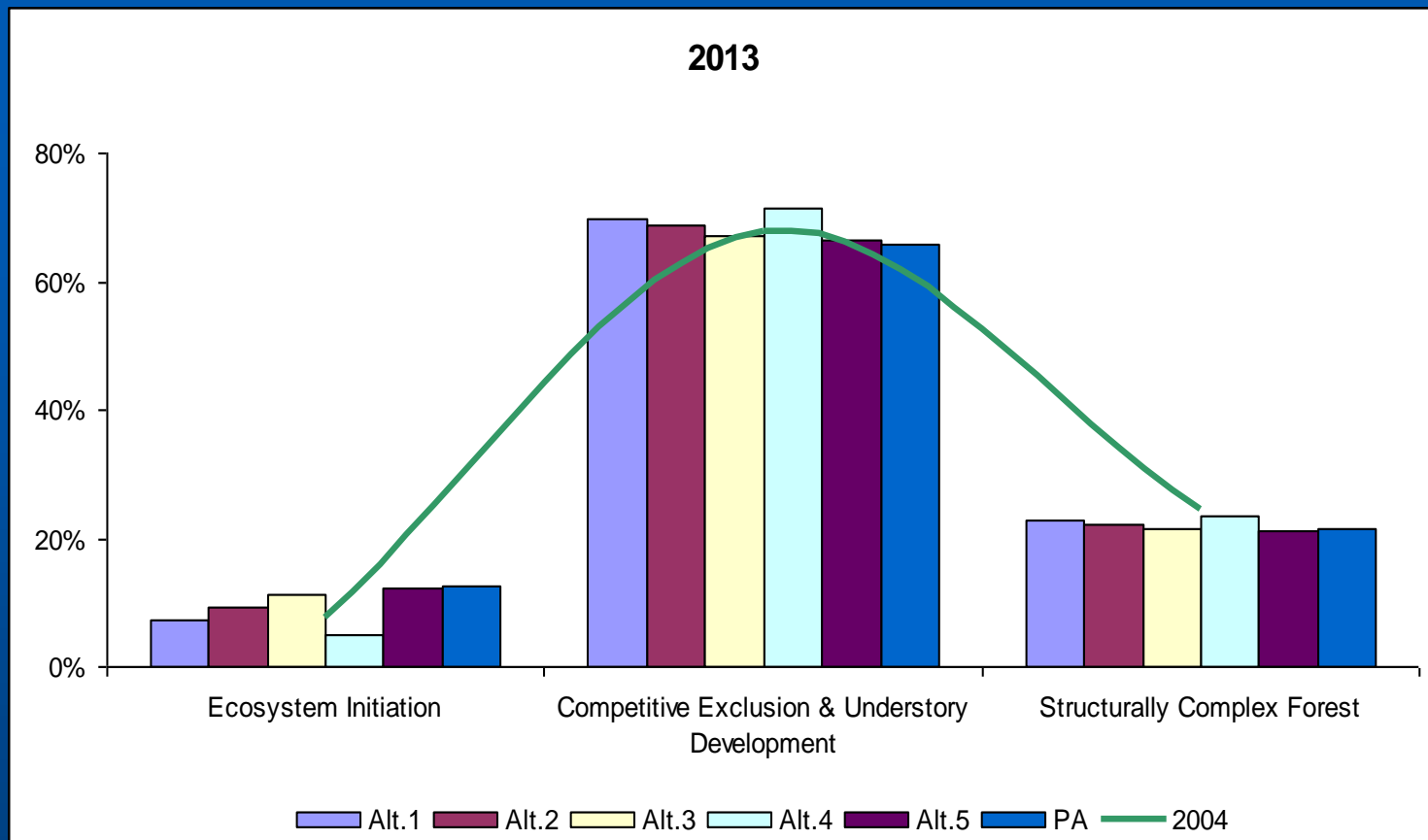
- Riparian Management
- Northern Spotted Owl Management
- Legacy and Reserve Tree

All results shown are subject to change

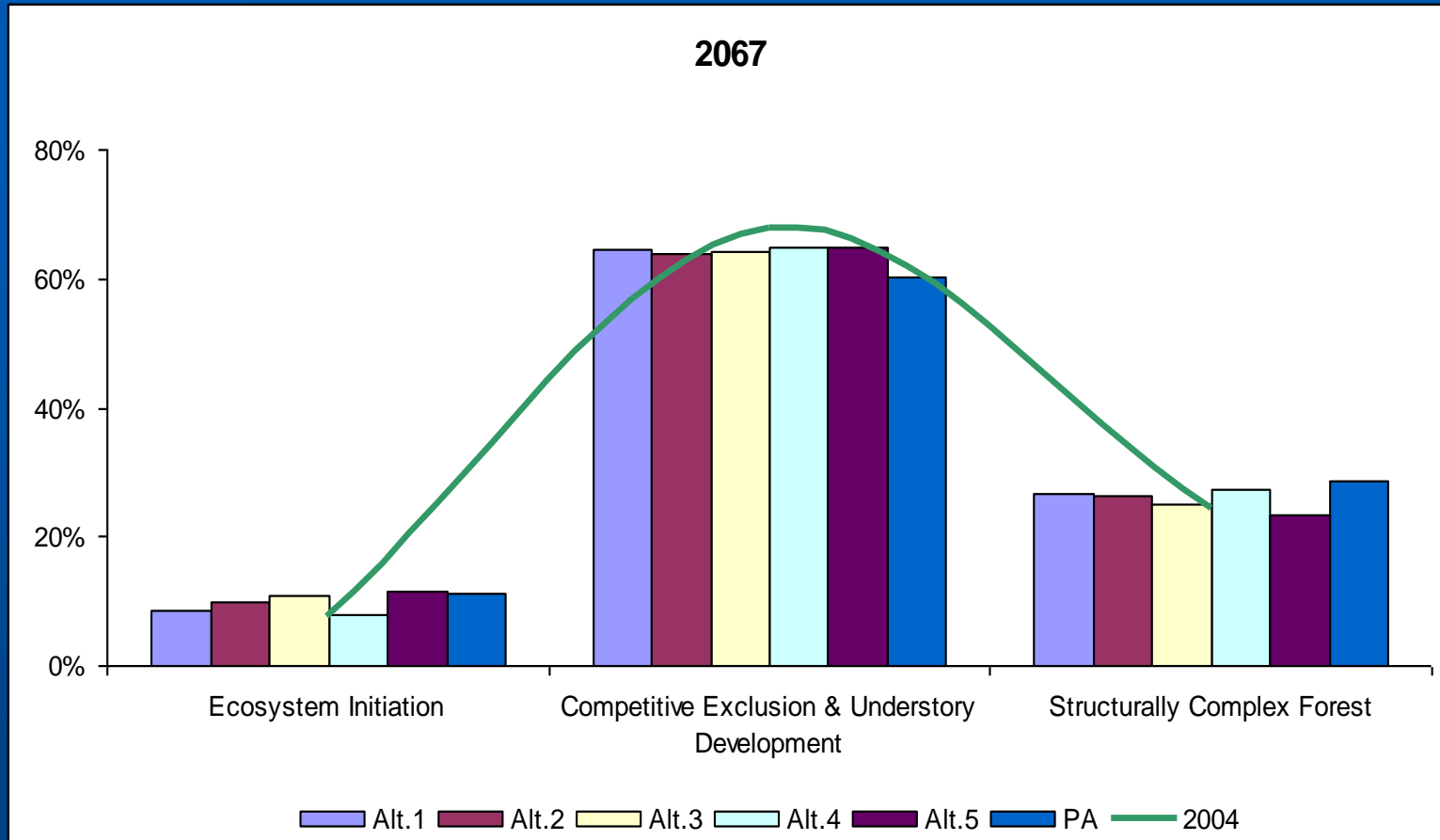
Stand Structure Distribution



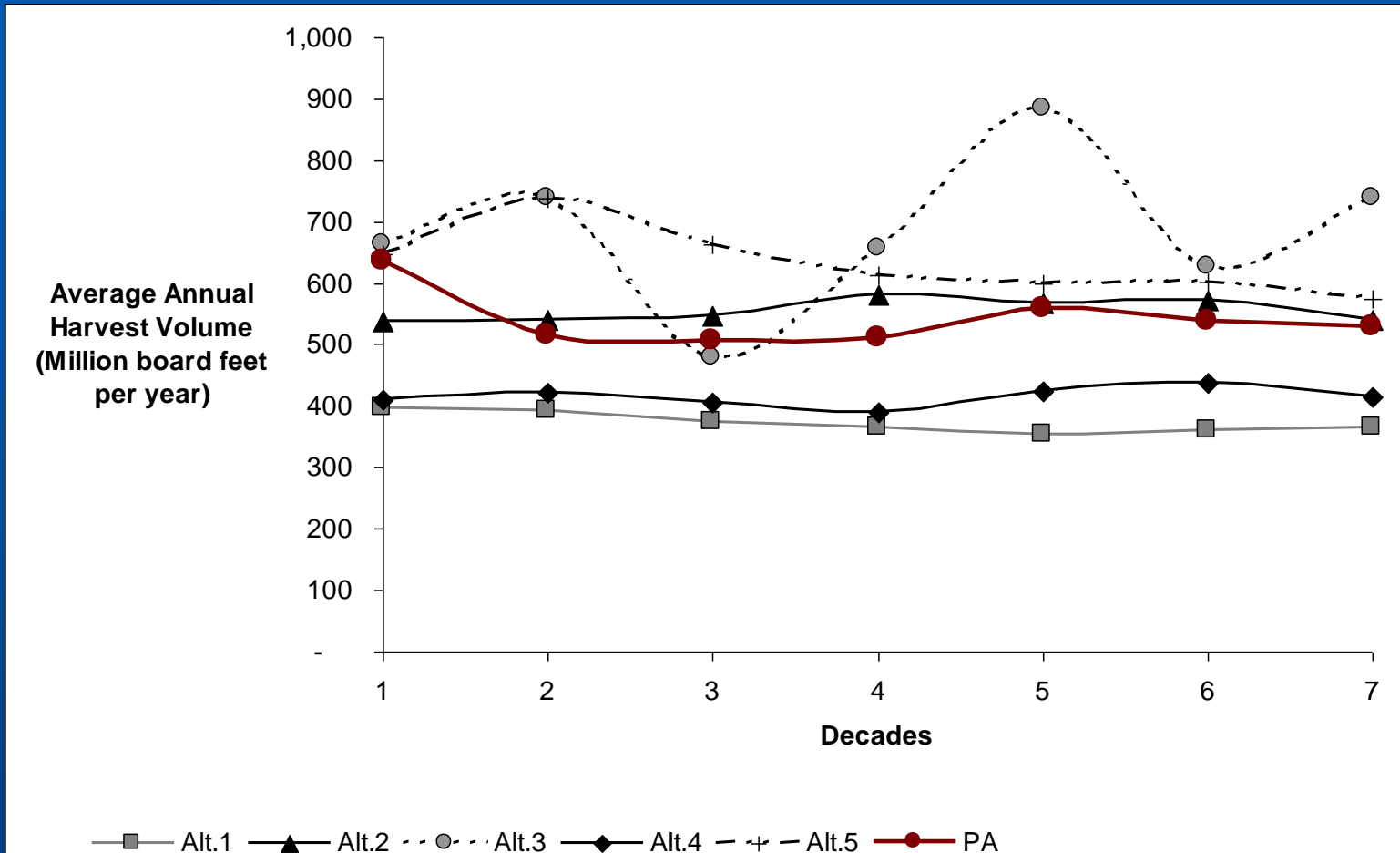
Stand Structure Distribution



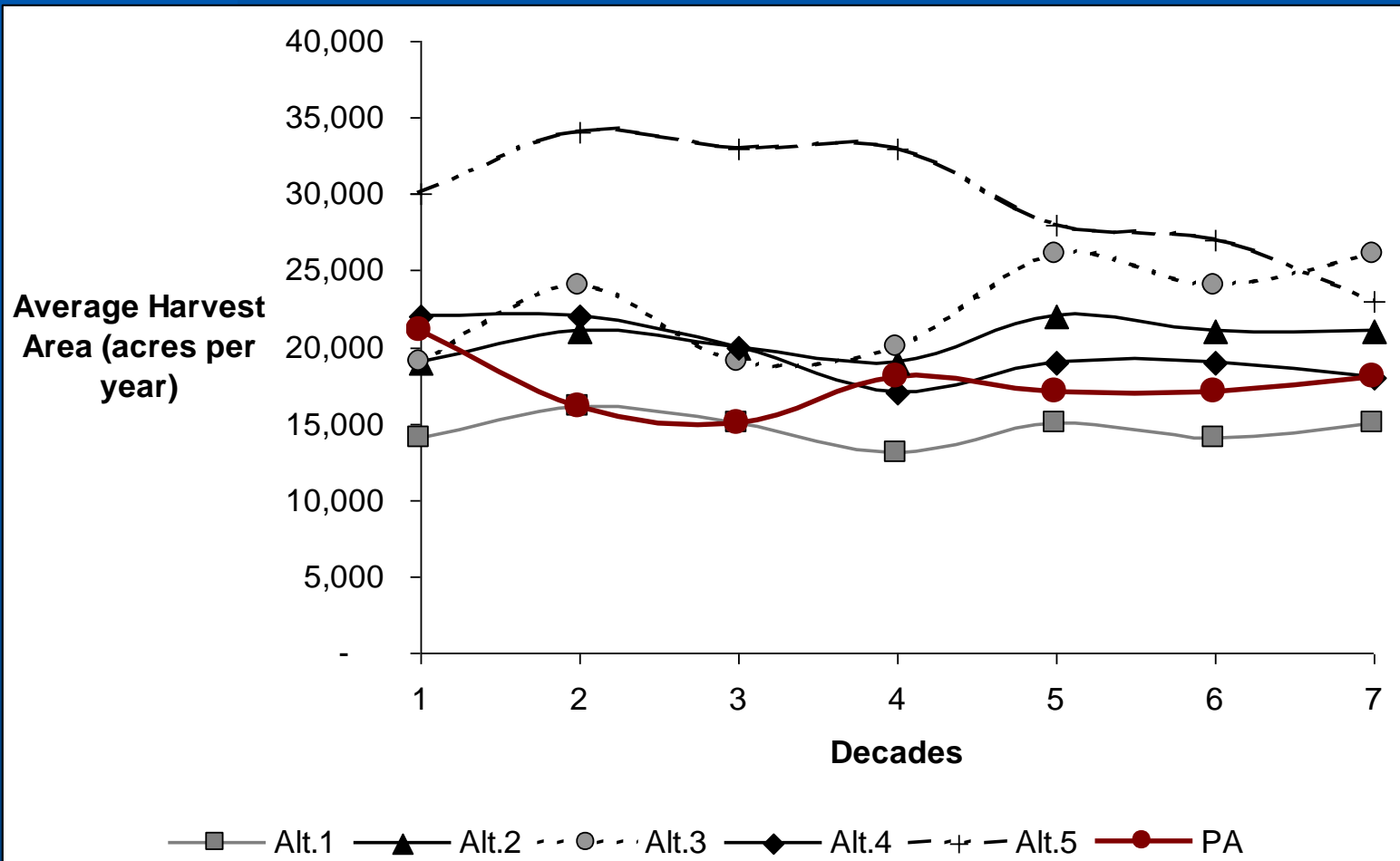
Stand Structure Distribution



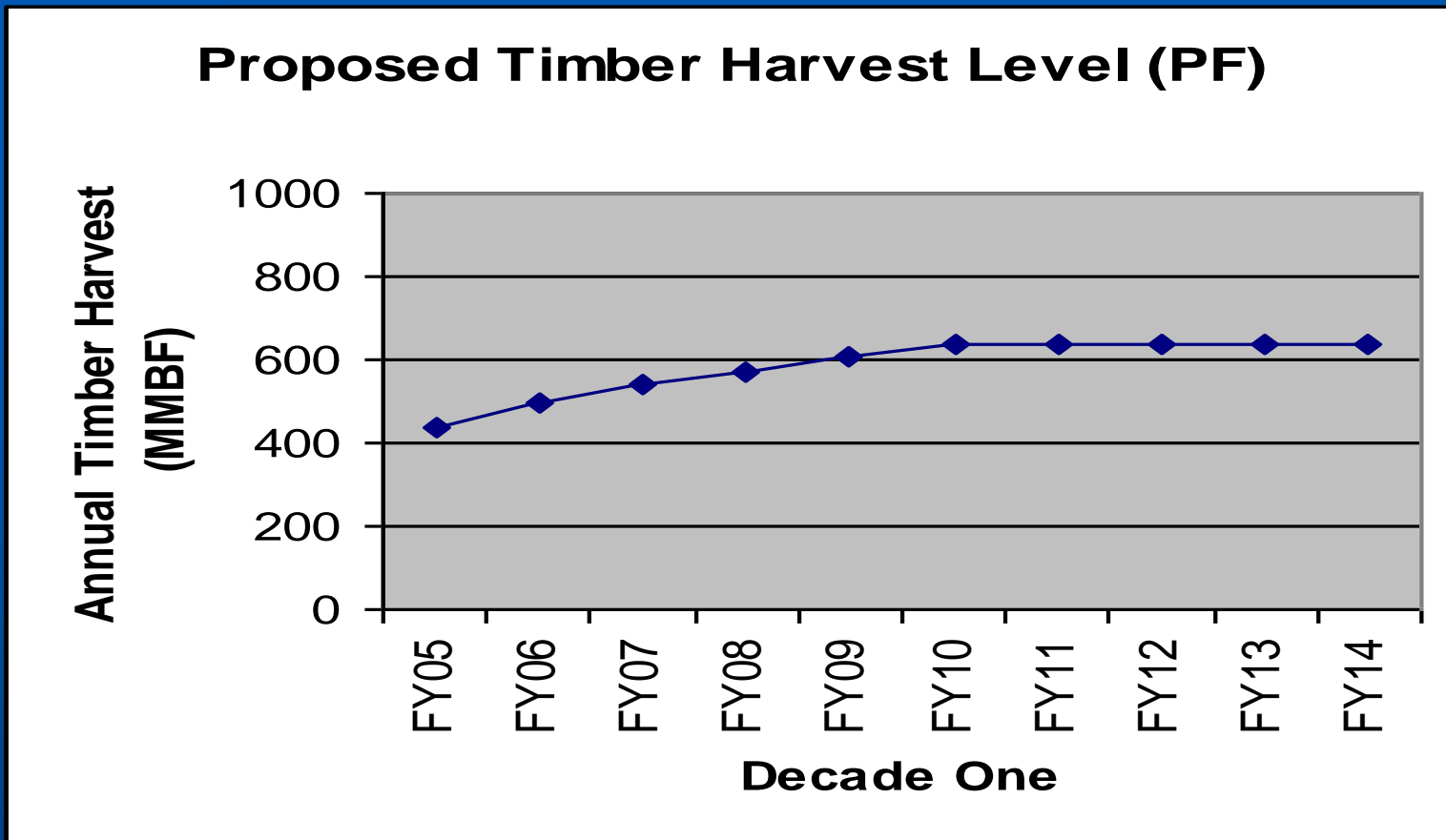
Timber Harvest Potential (MMBF/year)



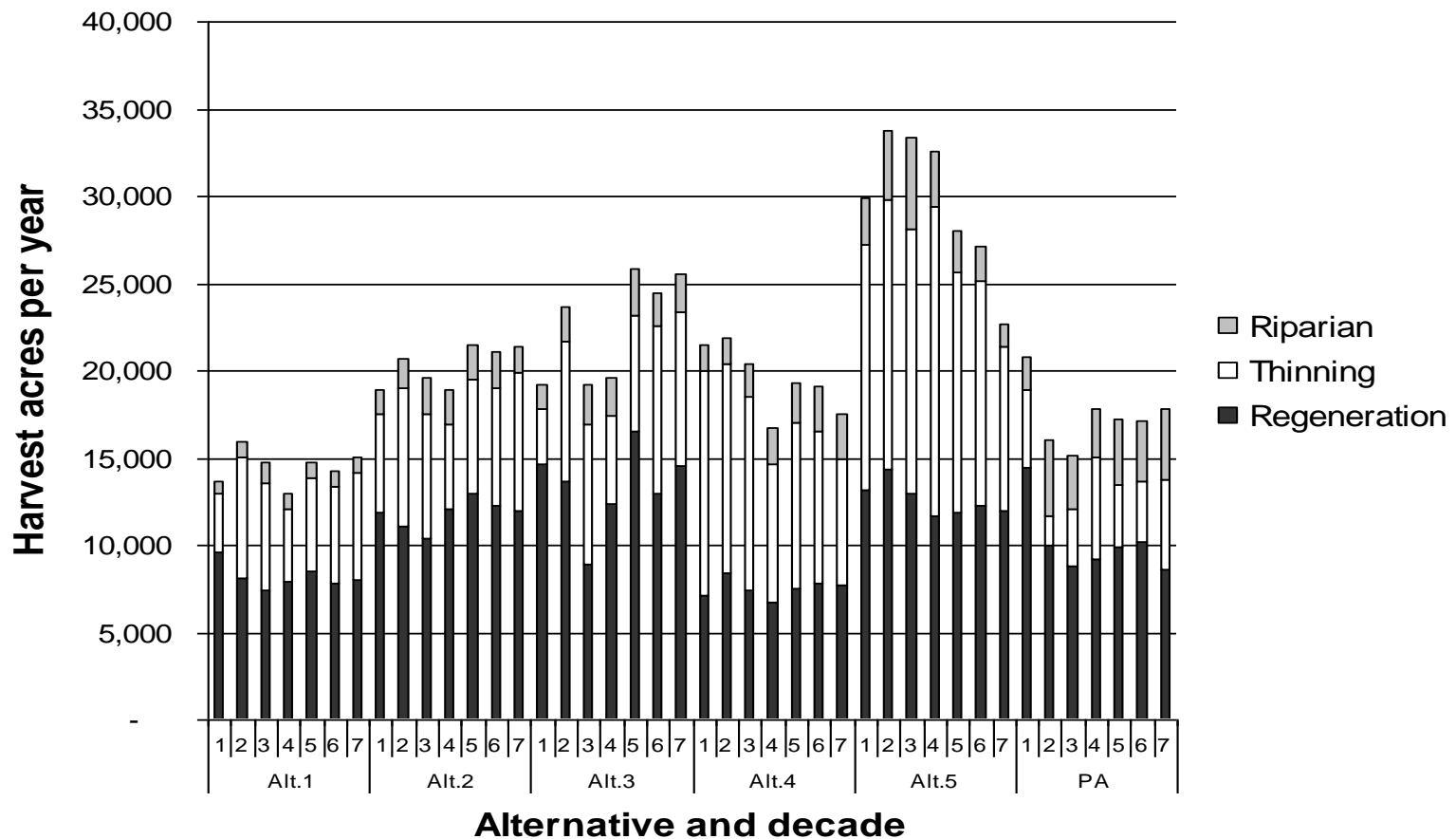
Harvest Area (acres/year)



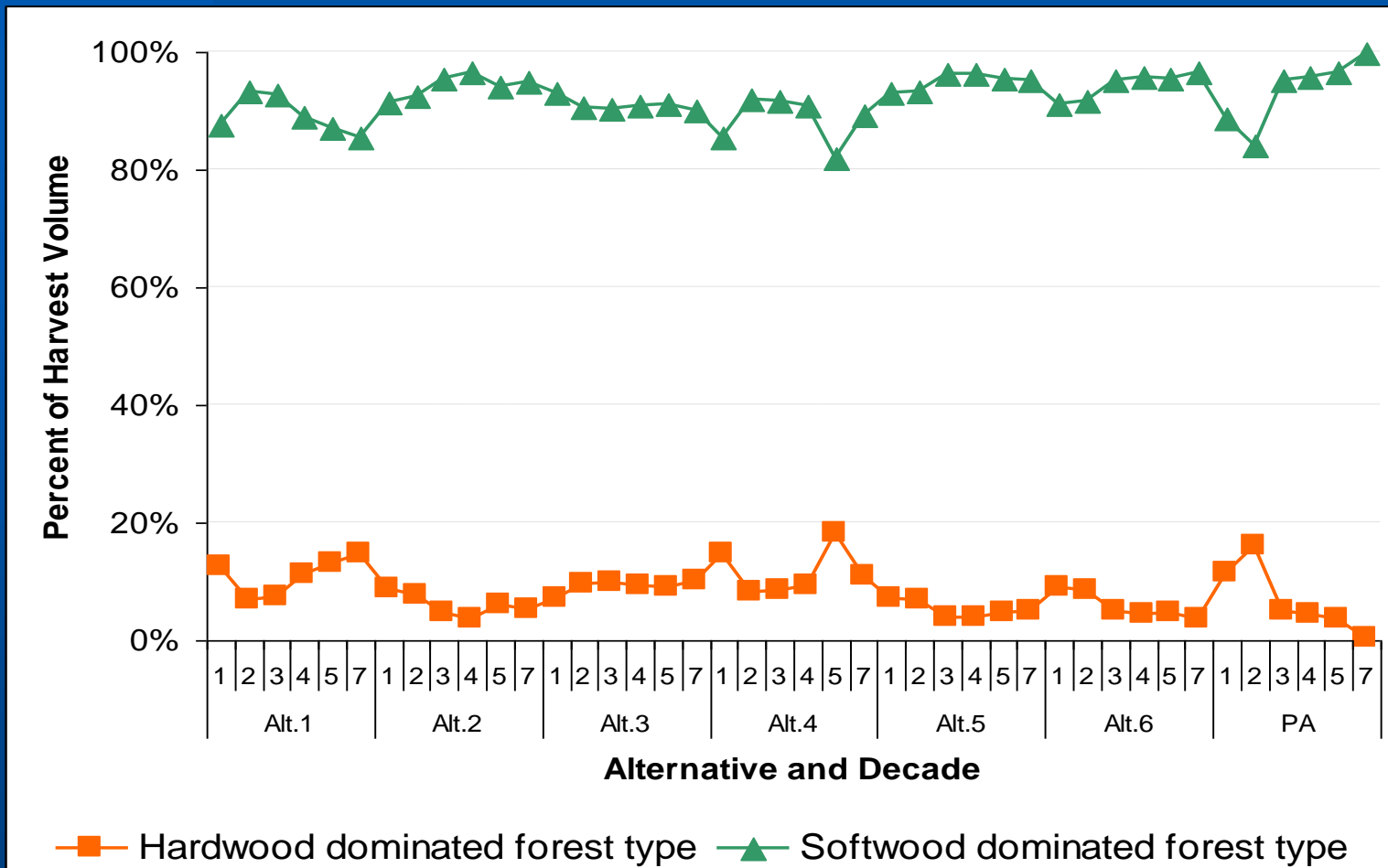
Proposed Timber Harvest Level



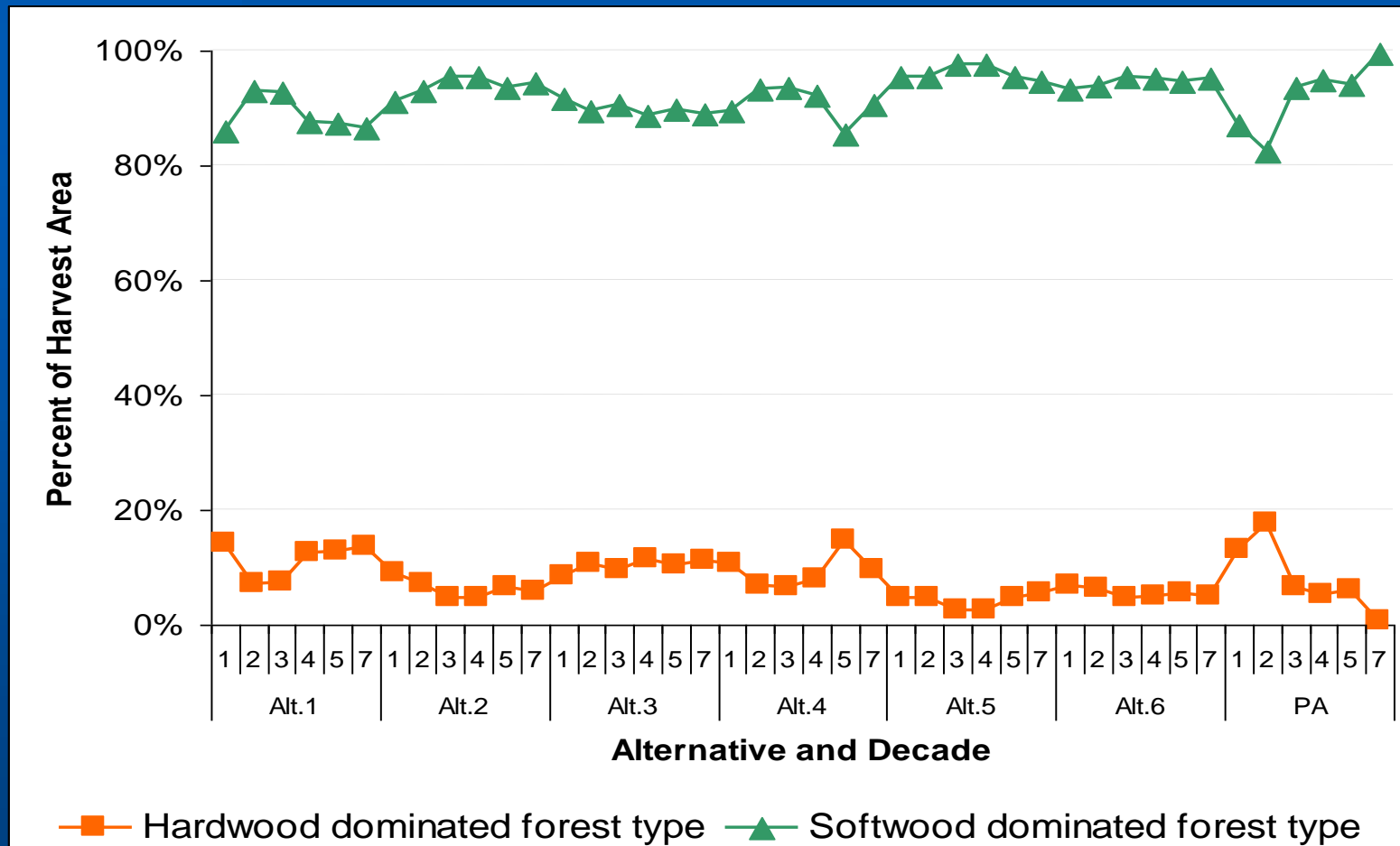
Harvest Type (area/year)



Percent of Harvest Volume by Wood Type



Percent of Harvest area by Wood Type



Summary Points

Revenue Generation

- Less constrained flow control provides significant opportunities for active management
- Ownership groups policy needs further discussion and a focus on individual Trust objectives
- Harvest regulated by value, and economically determined rotations in non-habitat areas provide greater returns

Conservation Benefits

- Longer rotations benefit more complex structures
- Active management has to be the “right type” of silviculture to accelerate the development of complex stand structures
- Passive management appears to be an option for developing complex forest structure, albeit a risky and expensive one (\$106 vs. \$208 million in gross revenues between Alts. 1 and 6)

The End