
WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Sustainable Harvest Level

A Presentation to the Board of Natural Resources

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November 5, 2019

Today's Agenda

Two Parts

- Part 1 – The decisions options
- **Part 2 – The environmental and financial analysis**

Part 2 Outline

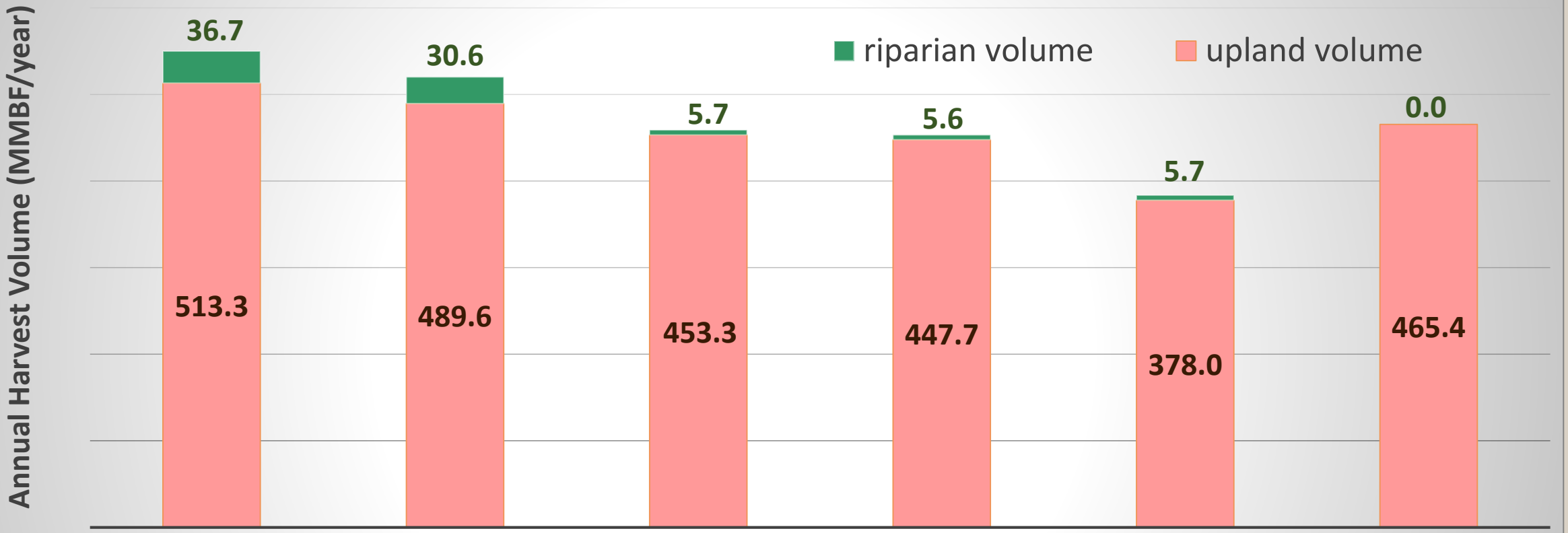
- Sustainable Harvest Level
  Final Environmental Impact Statement
- Public comment summaries and actions
- Financial Analysis
- More public comment summaries and actions

Environmental Analysis

Sustainable Harvest Level FEIS – The Alternatives

Alternative	Arrearage *(harvest would only occur in Sustainable Harvest Units with arrearage)*	Riparian Harvest	Marbled Murrelet Strategy
Alternative 1 (no action)	None	Thin up to 10% of riparian areas / decade	Alt. A
Alternative 2	702 MMBF over 5 years	Thin up to 10% of riparian areas / decade	Alt. B
Alternative 3	462 MMBF over 10 years	Thin up to 1% of upland harvest	Alt. D
Alternative 4	462 MMBF in 1 year	Thin up to 1% of upland harvest	Alt. E
Alternative 5	Arrearage included in inventory	Thin up to 1% of upland harvest	Alt. F
Alternative 6	382 MMBF over 10 years	Riparian volume not included when setting sustainable harvest level, but any riparian harvest counts towards the sustainable harvest level	HCP Amendment

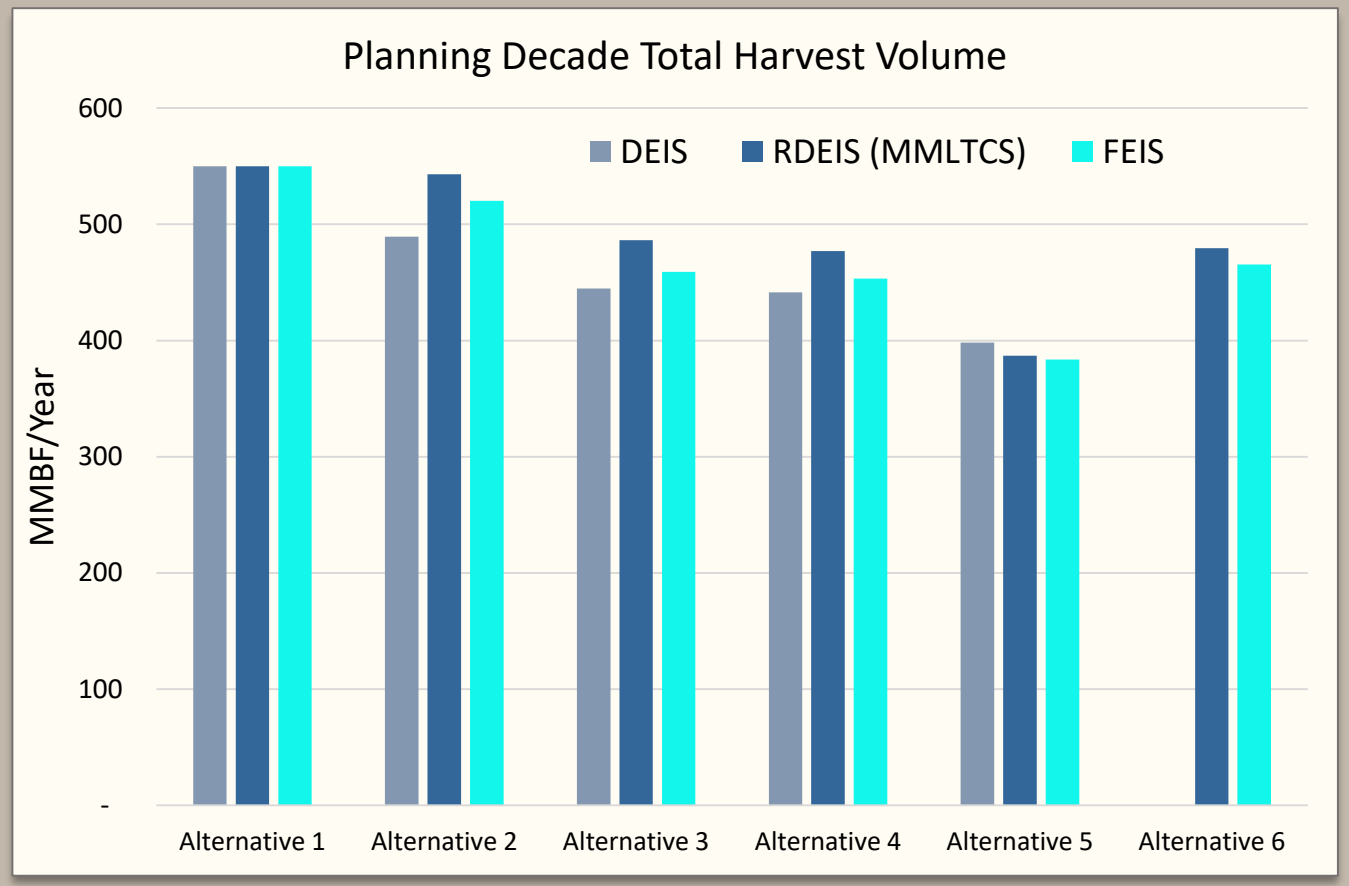
Annual Harvest Volume - Planning Decade



Alternative	1	2	3	4	5	6
Total Annual Volume (MMBF)	550.0	520.2	459.0	453.3	383.7	465.4

Data and Modeling Updates* between DEIS and FEIS

*More details in Appendix F of the FEIS



Model accuracy updates based on:

- *A review by University of Washington*
- *Public comments*
- *DNR operational field staff review*

Relevant Updates:

Forest inventory

Yields

Northern spotted owl habitat

Changes to land class areas
(e.g. riparian, potentially unstable slopes, marbled murrelet conservation areas)

Public comment summary:

Marbled Murrelet Habitat & Conservation

Why does a release of acres resulting from approval of the HCP Amendment not result in an increase in harvest?

DNR has held the following marbled murrelet specific conservation acres over the course of the 1997 HCP interim strategy:

- Habitat identified in the interim strategy (1997-~2008)
- Re-delineated occupied sites by Science Team (2008)
- USFWS to DNR: "do not foreclose long-term conservation strategy options" within Marbled Murrelet Management Areas (2011)
- DEIS Alternatives A-F (2016)
- RDEIS Alternatives A-G (2018)

In total, ~195,000 acres of murrelet specific conservation currently held

If the Board of Natural Resources approves the HCP Amendment, over 150,000 currently held acres will be made available for management.

Public comment summary:

Marbled Murrelet Habitat & Conservation

Why does a release of acres resulting from Board of Natural Resources approval of the HCP Amendment not result in an increase in harvest?

~195,000 acres of marbled murrelet specific conservation administratively 'held' during interim strategy

Total Managed Land Base

1.47 million acres

2011-18 average annual delivered harvest

454 MMBF/year

Previous calculation based on total managed land base, but administratively limited from operating on lands held during the interim strategy

Sustainable Harvest Level Preferred Alternative

465 MMBF/year

Based on total manageable land base, including released acres

Sustainable Harvest Level
Draft Environmental Impact Statement
Public Comment Themes and Actions

Alternatives

Financial Analysis

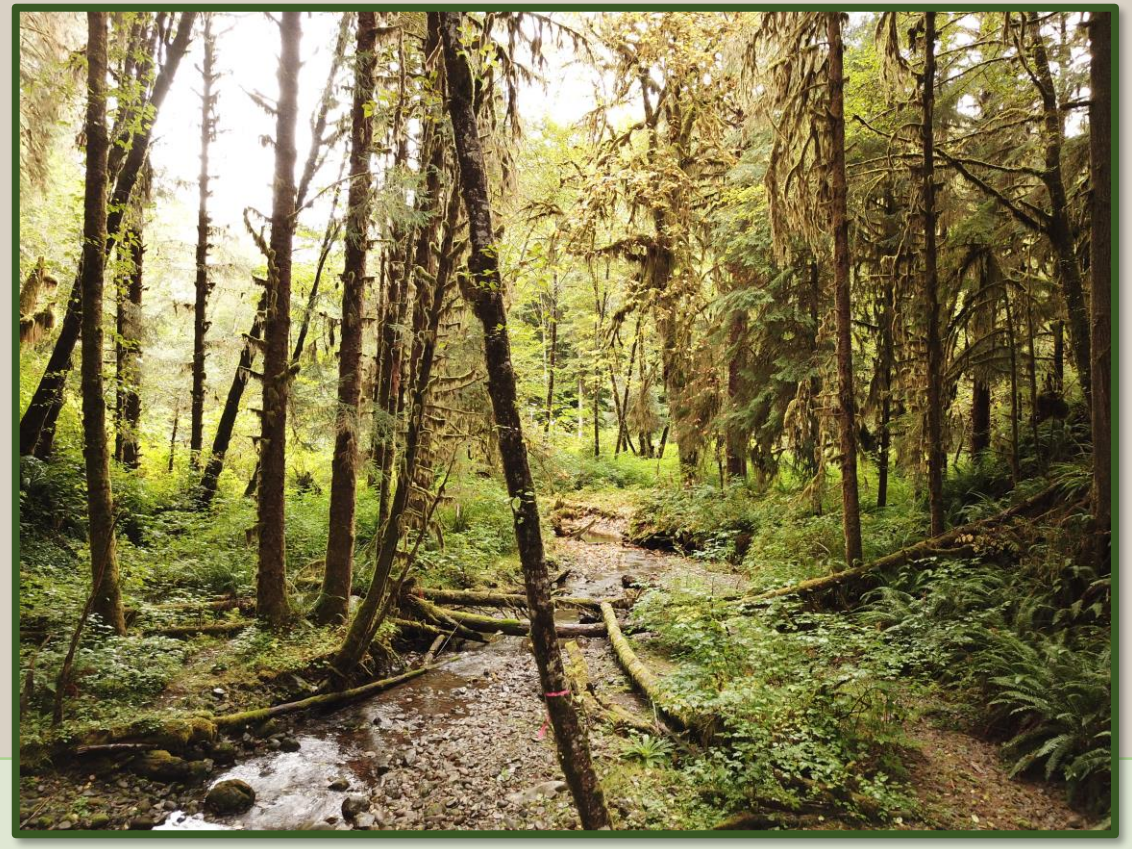
Data

Habitat and Marbled Murrelet Conservation

Public Comment Summary

Alternatives

Comment:
Whether or not riparian harvest should even be performed; setting a level will lead to unsustainable harvest of riparian areas.



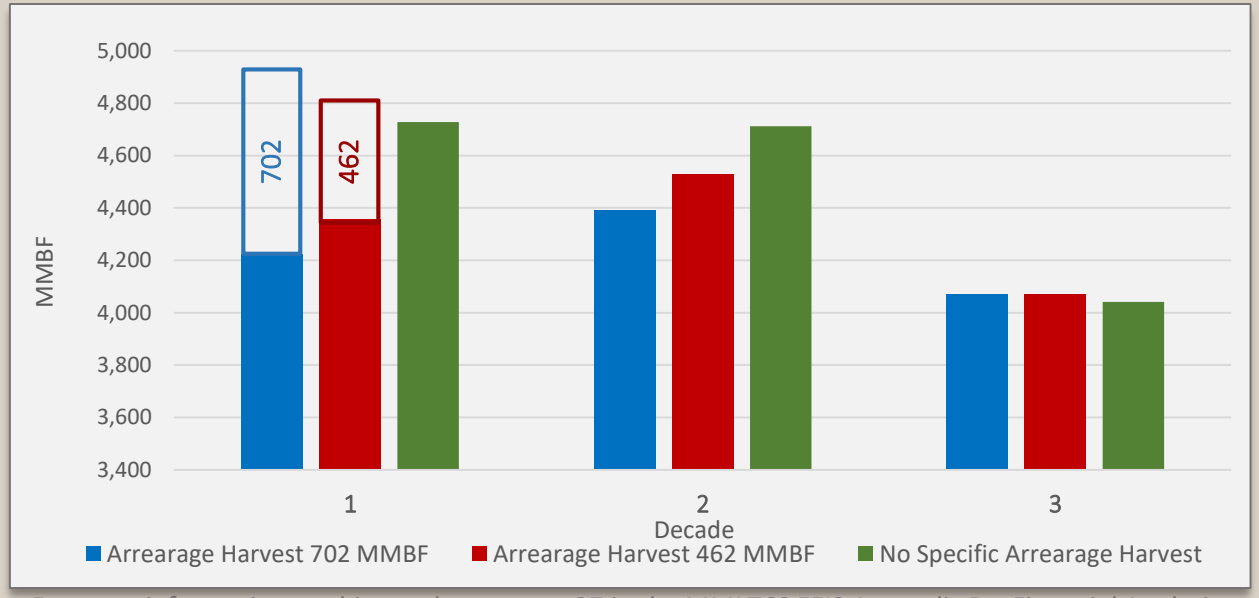
Action:
The FEIS added and analyzed a “riparian harvest not included” alternative

Public Comment Summary

Alternatives

Comment:
Questions about how arrearage is calculated and why it has so little impact on harvest levels.

Figure 6. Sustainable Harvest Level (solid bars) and Arrearage Harvest (hollow bars) in western Washington



For more information on this graph, see page 27 in the MMLTCS FEIS Appendix P – Financial Analysis

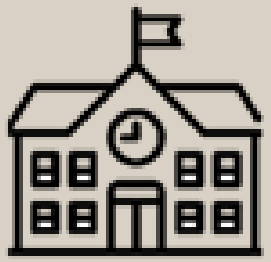
Action:
Following review of the forest estate model by University of Washington Professor Sándor Tóth, DNR removed the flow constraint from arrearage, resulting in arrearage volume being more identifiable in the model results.

Public Comment Summary

Data

Comment:
The 2 percent discount rate is too low.

Trust Mandate
DNR's legal duty to produce long-term income for the trust beneficiaries. The trust mandate is grounded in four tenets: the prudent person doctrine, undivided loyalty to the trusts, intergenerational equity versus maximizing current income, and avoiding foreclosing future options.

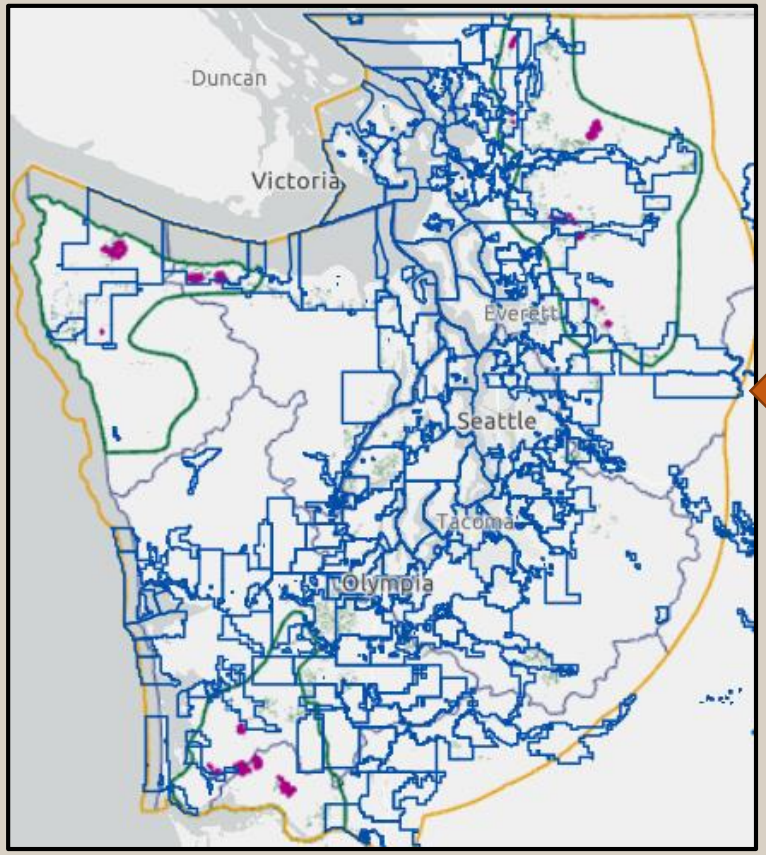


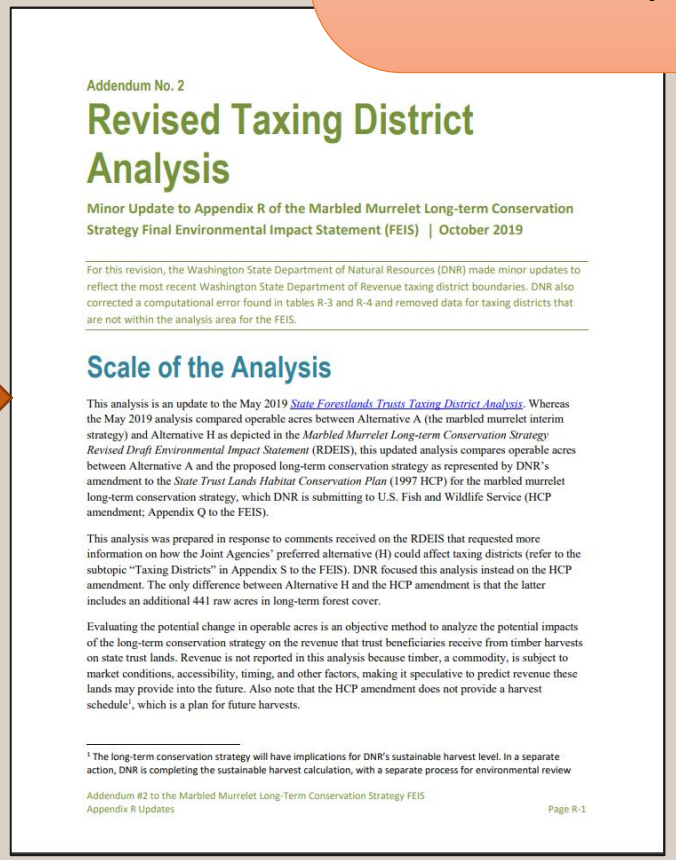
Action:
The FEIS used a 3% discount rate instead of the 2% used in the DEIS. The change was driven by analysis of the rate of return from the Common School permanent fund and the effect of different discount rates on the values they place on future beneficiaries.

Public Comment Summary

Financial Analysis

Comment:
Need to understand the economic effect on the junior taxing districts.





Addendum No. 2

Revised Taxing District Analysis

Minor Update to Appendix R of the Marbled Murrelet Long-term Conservation Strategy Final Environmental Impact Statement (FEIS) | October 2019

For this revision, the Washington State Department of Natural Resources (DNR) made minor updates to reflect the most recent Washington State Department of Revenue taxing district boundaries. DNR also corrected a computational error found in tables R-3 and R-4 and removed data for taxing districts that are not within the analysis area for the FEIS.

Scale of the Analysis

This analysis is an update to the May 2019 *State Forestlands Trusts Taxing District Analysis*. Whereas the May 2019 analysis compared operable acres between Alternative A (the marbled murrelet interim strategy) and Alternative H as depicted in the *Marbled Murrelet Long-term Conservation Strategy Revised Draft Environmental Impact Statement* (RDEIS), this updated analysis compares operable acres between Alternative A and the proposed long-term conservation strategy as represented by DNR's amendment to the *State Trust Lands Habitat Conservation Plan* (1997 HCP) for the marbled murrelet long-term conservation strategy, which DNR is submitting to U.S. Fish and Wildlife Service (HCP amendment; Appendix Q to the FEIS).

This analysis was prepared in response to comments received on the RDEIS that requested more information on how the Joint Agencies' preferred alternative (H) could affect taxing districts (refer to the subtopic "Taxing Districts" in Appendix S to the FEIS). DNR focused this analysis instead on the HCP amendment. The only difference between Alternative H and the HCP amendment is that the latter includes an additional 441 raw acres in long-term forest cover.

Evaluating the potential change in operable acres is an objective method to analyze the potential impacts of the long-term conservation strategy on the revenue that trust beneficiaries receive from timber harvests on state trust lands. Revenue is not reported in this analysis because timber, a commodity, is subject to market conditions, accessibility, timing, and other factors, making it speculative to predict revenue these lands may provide into the future. Also note that the HCP amendment does not provide a harvest schedule[1], which is a plan for future harvests.

[1] The long-term conservation strategy will have implications for DNR's sustainable harvest level. In a separate action, DNR is completing the sustainable harvest calculation, with a separate process for environmental review

Addendum #2 to the Marbled Murrelet Long-Term Conservation Strategy FEIS
Appendix R Updates
Page R-1

Action:
The taxing district analysis was published as Appendix R to the Marbled Murrelet Long-Term Conservation Strategy Final Environmental Impact Statement.

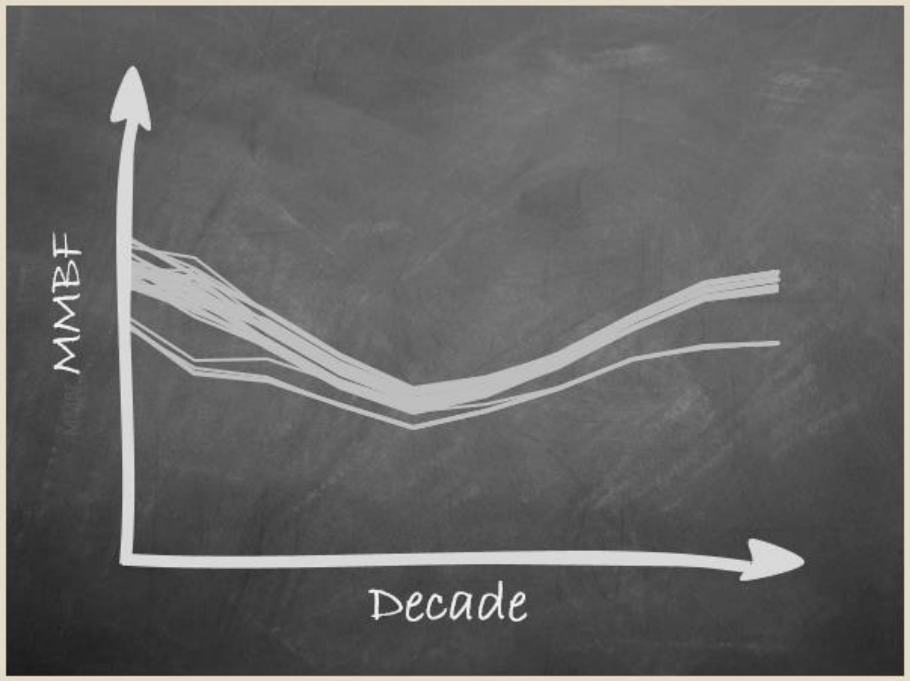
Public Comment Summary

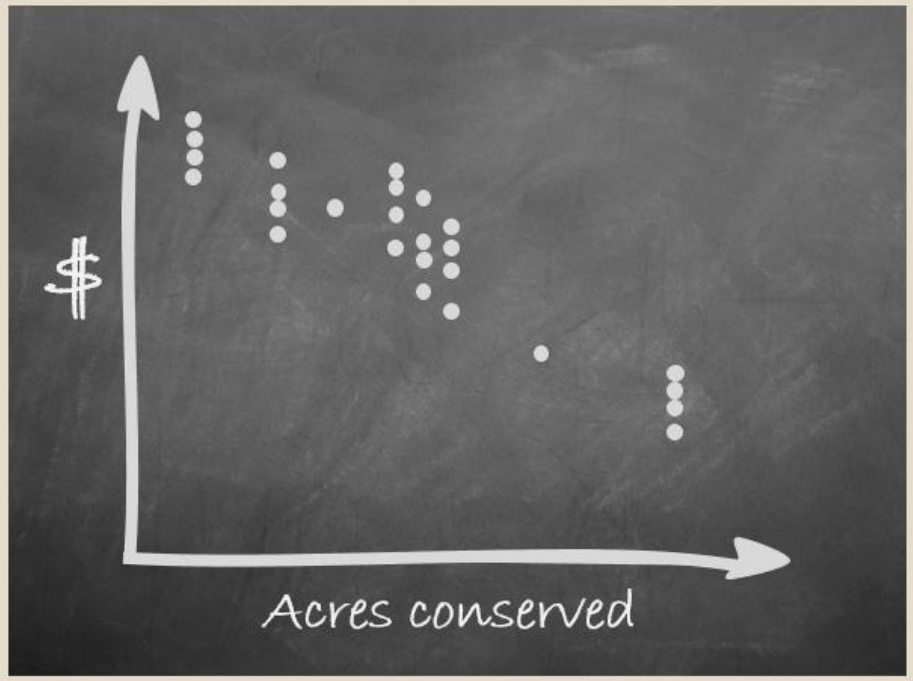
Financial Analysis

Comment:

DNR must undertake a financial analysis and include this in the FEIS.

The DEIS lacks an financial analysis of arrearage and the specific impacts of arrearage to the sustainable harvest level.





Action:

The 2017, 2018, and 2019 Financial Analyses all include different options for arrearage harvest across the scenarios and the effects of these options on 10-decade net present value and planning decade harvest levels.

Financial Analysis

Policy for Sustainable Forests…

The department will analyze **the financial characteristics of forest stands in order to optimize the economic value of forest stands and timber production over time**, in calculating the sustainable harvest level, in planning and scheduling timber harvests, in making investments in forest growth, and in searching for the least-cost methods of achieving other forest management objectives.

Policy on Definition of Sustainability for the Sustainable Harvest Calculation (PSF 2006)

Decision Combinations Examined in the Financial Analysis

Decision Options	Possible decision combinations in	
	Draft EIS	Final EIS
Arrearage *(including timing options)*	4	**5**
Riparian	2	**3**
Marbled Murrelet	6	**8**
Total Potential Combinations	48	**120***
Number of Alternatives Analyzed in EIS	5	**6**
Number of Scenarios Analyzed in Financial Analysis	36	**38**

**Alternative 1 in the Sustainable Harvest Level FEIS is in addition to the above options*

Which Combinations have been Analyzed?

**Alternative 1 in the Sustainable Harvest Level FEIS includes additional considerations not shown here*

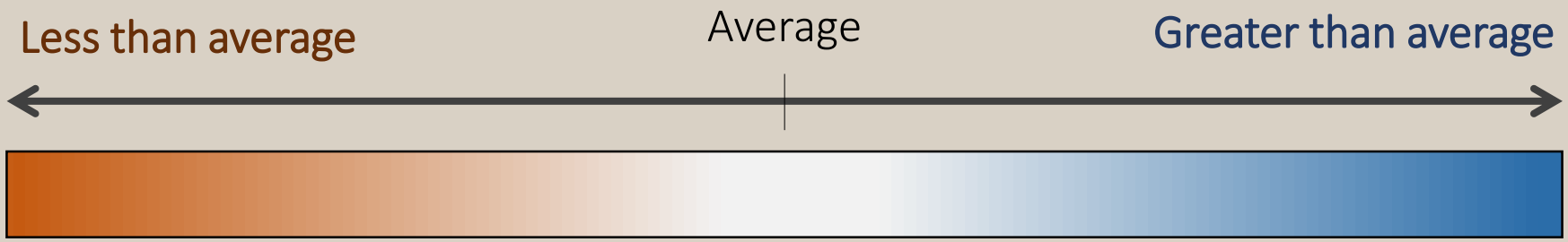
Marbled murrelet strategy	Arrearage harvest					
	702 MMBF		462 MMBF		No specific level	
	Riparian thinning					
	10%	1%	10%	1%	10%	1%
Alt. A					Alternative 1*	
Alt. B	Alternative 2					
Alt. C						
Alt. D				Alternative 3		
Alt. E				Alternative 4		
Alt. F						Alternative 5

Alt. G – 382 MMBF arrearage volume – Riparian not included	
HCP Amendment – 382 MMBF arrearage volume – Riparian not included	Alternative 6

(The numbers in the table represent 1 though 38 combinations and have no real world value)

How data are presented:

Color gradient corresponds to relative relationship between cells.



Example:

	Factor 1	Factor 2	Factor 3
Factor A	1	5	5
Factor B	2	5	8
Factor C	9	7	3

10-Decade **Net Present Value** ($ Billions)

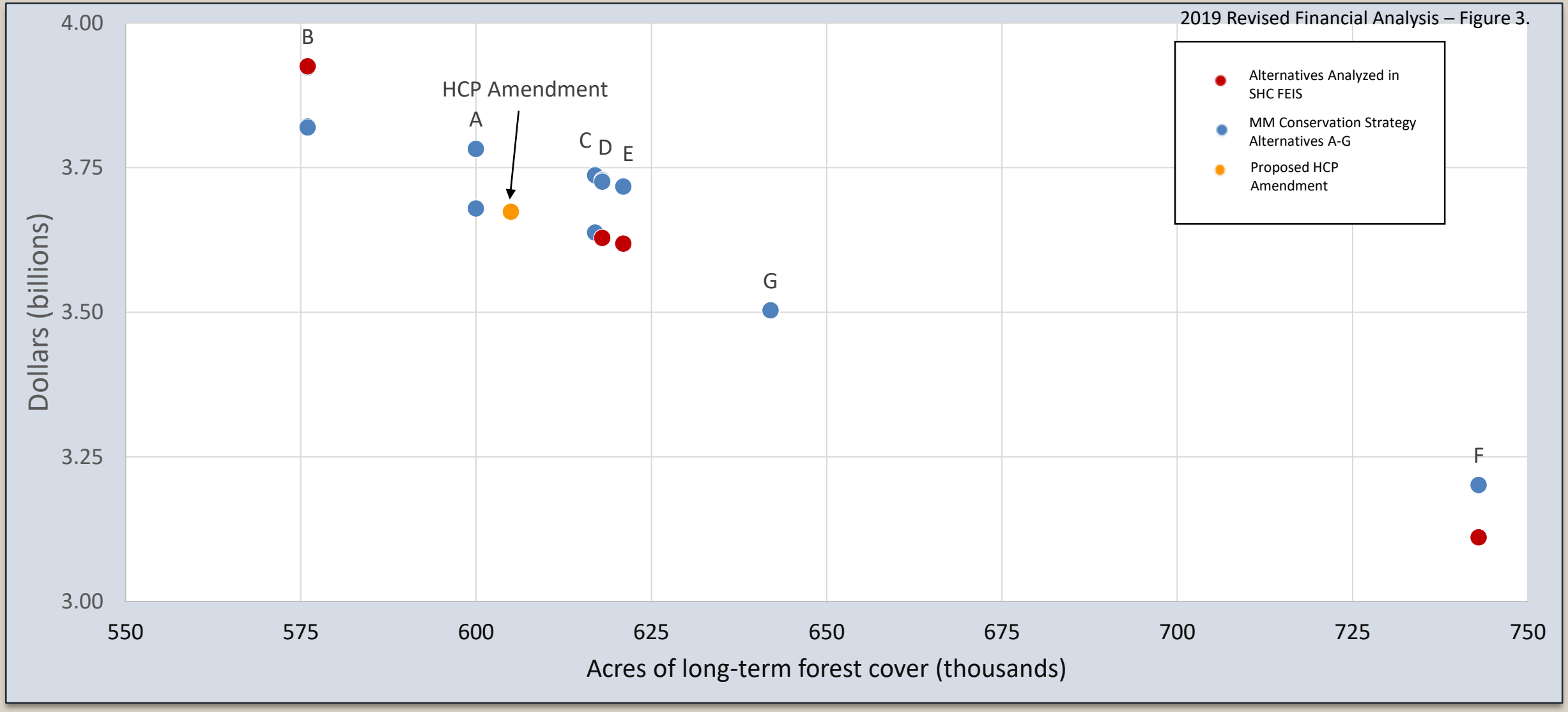
Western Washington

2019 Revised Financial Analysis – Table 4.

Marbled murrelet strategy	Arrearage harvest					
	702 MMBF		462 MMBF		No specific level	
	Riparian thinning					
	10%	1%	10%	1%	10%	1%
Alt. A	3.78	3.68	3.78	3.68	3.78	3.68
Alt. B	3.92	3.82	3.92	3.82	3.92	3.82
Alt. C	3.74	3.64	3.74	3.64	3.74	3.64
Alt. D	3.73	3.63	3.73	3.63	3.73	3.63
Alt. E	3.72	3.62	3.72	3.62	3.72	3.62
Alt. F	3.20	3.11	3.20	3.11	3.20	3.11

Alt. G – 382 MMBF arrearage volume – Riparian not included	3.50
HCP Amendment – 382 MMBF arrearage volume – Riparian not included	3.67

10-Decade **Net Present Value** by Long-Term Forest Cover Area



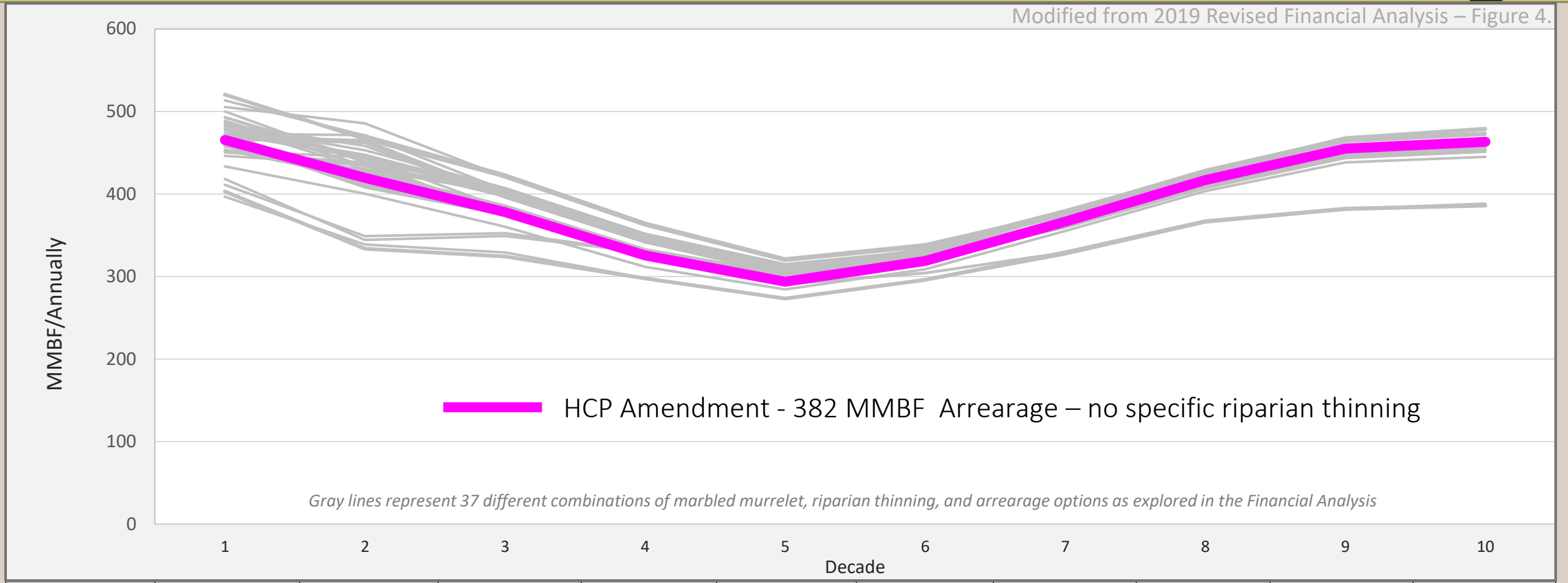
Planning Decade **Harvest Volume** (MMBF/Decade)
Western Washington

2019 Revised Financial Analysis – Table 9.

Marbled murrelet strategy	Arrearage harvest					
	702 MMBF		462 MMBF		No specific level	
	Riparian thinning					
	10%	1%	10%	1%	10%	1%
Alt. A	4,926	4,731	4,819	4,596	4,728	4,522
Alt. B	5,202	5,001	5,134	4,931	5,054	4,847
Alt. C	4,872	4,687	4,769	4,575	4,699	4,504
Alt. D	4,887	4,692	4,788	4,590	4,718	4,516
Alt. E	4,838	4,652	4,733	4,533	4,661	4,461
Alt. F	4,182	4,029	4,111	3,965	4,007	3,837
Alt. G – 382 MMBF arrearage volume – Riparian not included						4,333
HCP Amendment – 382 MMBF arrearage volume – Riparian not included						4,654

10-Decade **Harvest Volume**

Modified from 2019 Revised Financial Analysis – Figure 4.



Decade	1	2	3	4	5	6	7	8	9	10
HCP Amendment Volume MMBF/Annually	465	419	378	325	294	319	366	417	455	463

Arrearage Influence on Volume

2019 Revised Financial Analysis – Figure 7.

702 MMBF

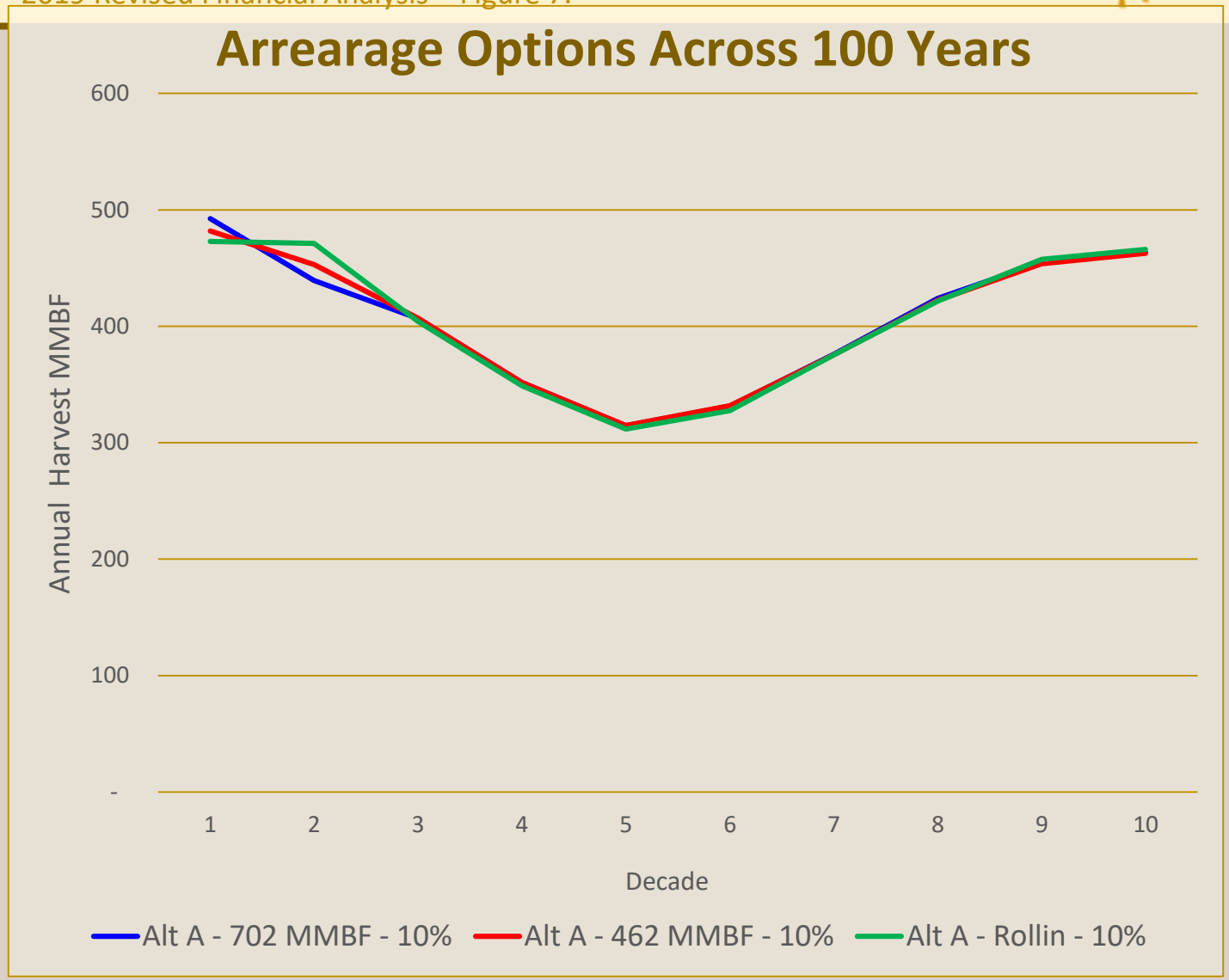
Provides approximately 493 MMBF annually for the first decade. The 10-decade average = 405 MMBF annually.

462 MMBF

Provides approximately 482 MMBF annually for the first decade. The 10 decade average = 405 MMBF annually

Rolled In

Provides approximately 473 MMBF annually for the first decade. The 10-decade average = **406** MMBF annually



Riparian Influence on Volume

(five west-side planning units)

2019 Revised Financial Analysis – Figure 8.

Up to 10% of riparian area

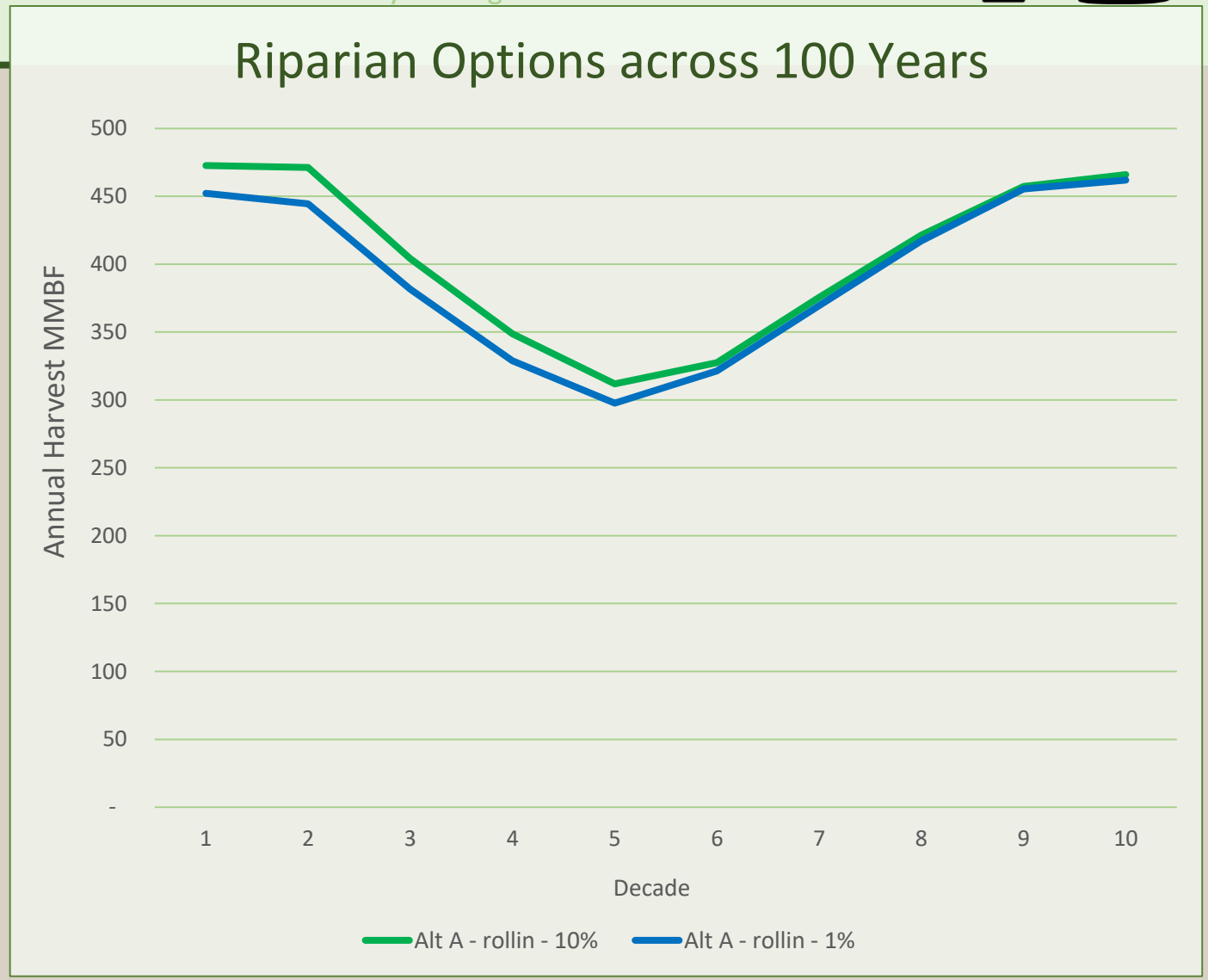
Riparian areas cover ~334,000 acres. This option would set riparian thinning area maximum at 33,400 acres for the decade.

Up to 1% of upland harvest

E.g. If DNR harvests 100,000 acres outside of riparian areas, this option would set the riparian thinning maximum at 1,000 acres for the decade.

Not included in calculation

Thin riparian areas consistent with 1997 HCP and Riparian Forest Restoration Strategy, but don't include riparian volume when setting the Sustainable Harvest Level.

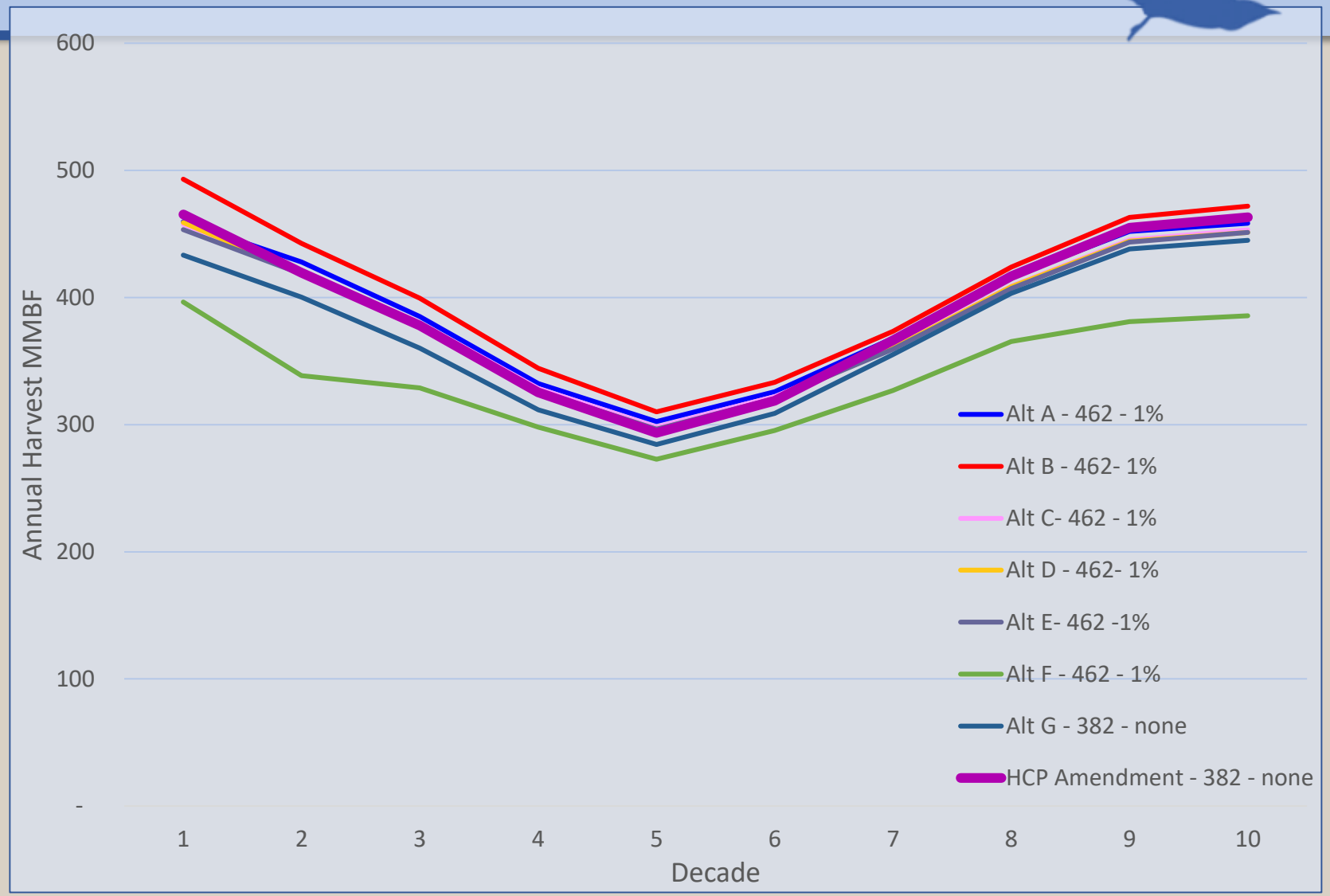


Marbled murrelet strategy influence on volume

Alternative B
Highest 1-decade volume

HCP Amendment
3rd highest 10-decade average volume
(behind Alt B and Alt A)

Alternative F
Lowest 10-decade volume



Potential Magnitude of Change for each Decision Point

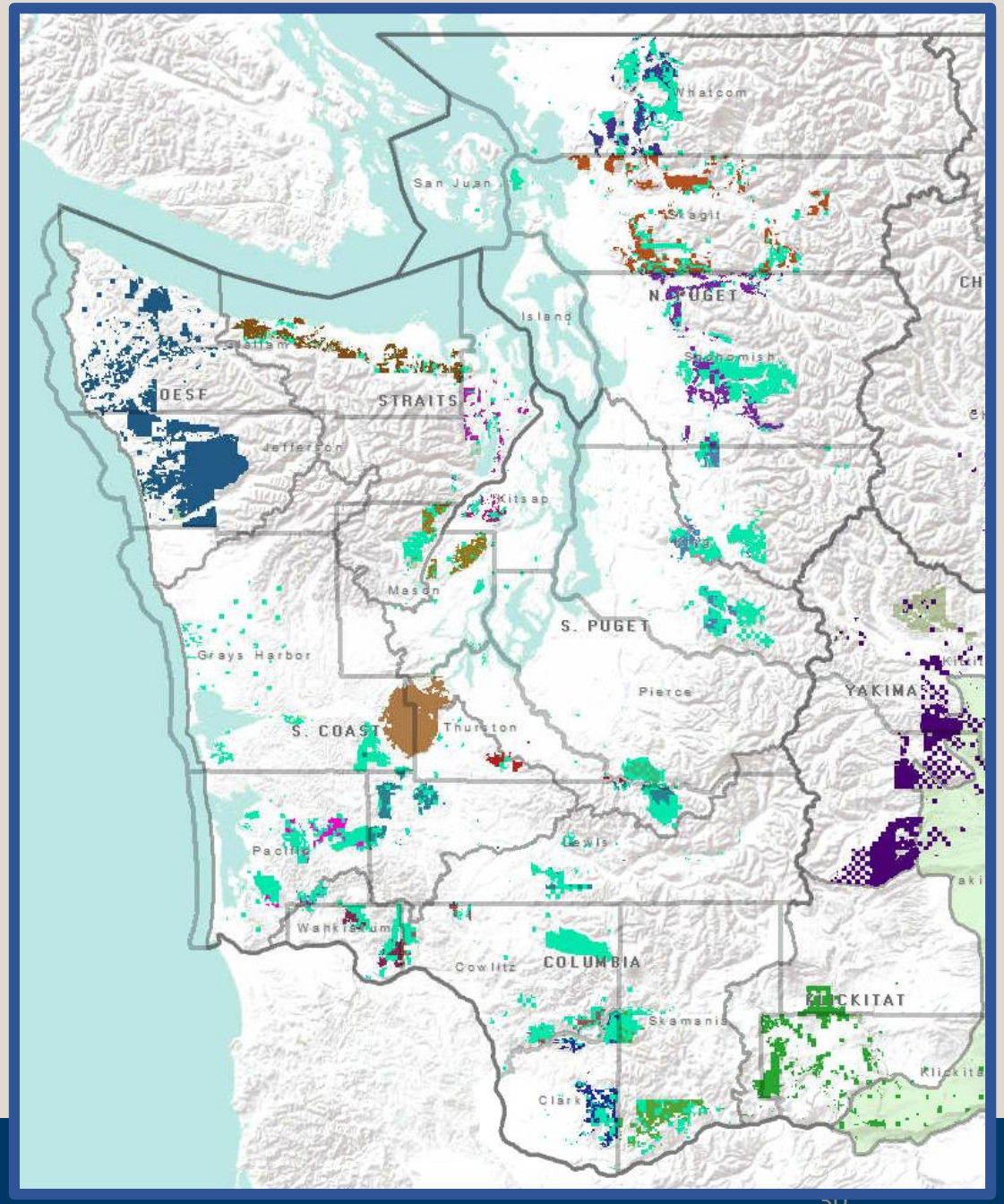
Variable	Maximum magnitude of change between scenarios (MMBF/annual)	% change of maximum magnitude
Marbled Murrelet	105	20.7%
Arrearage	21	4.4%
Riparian	22	4.6%

Public Comment:

DNR needs to provide revenue estimates of impact to taxing districts

POLICY ON DEFINITION OF SUSTAINABILITY FOR THE SUSTAINABLE HARVEST CALCULATION

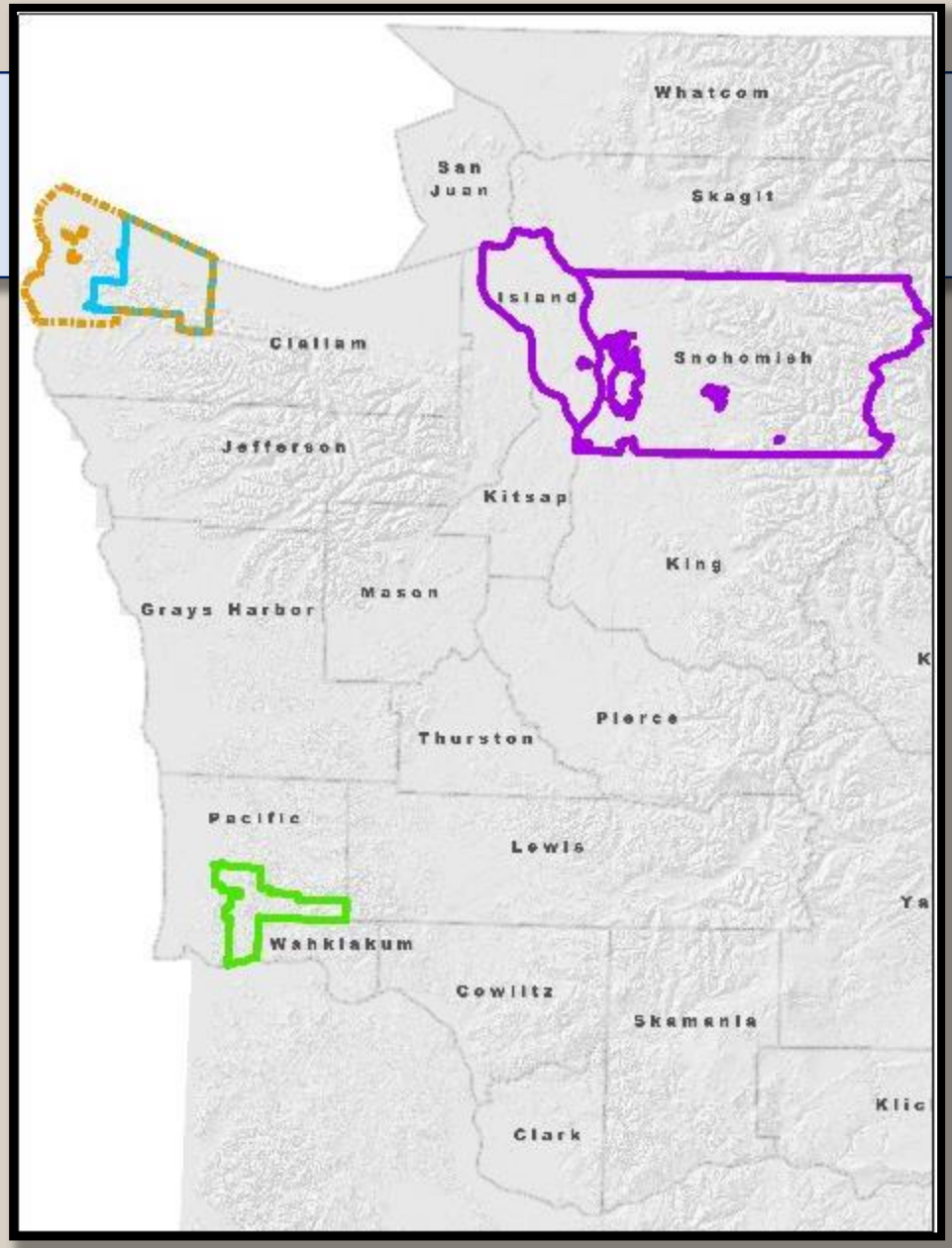
- The department will calculate, and the Board of Natural Resources will adopt, a separate long-term decadal sustainable harvest level for each of several distinct sustainable harvest units. The department will express the sustainable harvest level for a given unit as mean annual timber volume for a planning decade.
- In Western Washington, the sustainable harvest units (a total of 20) are as follows:
  - The Olympic Experimental State Forest, regardless of trust.
  - The Capitol State Forest, regardless of trust.
  - Each of the 17 county beneficiaries of State Forest Transfer lands separately (excluding those lands in the Olympic Experimental State Forest or Capitol State Forest).
  - All of the federally granted trusts and State Forest Purchase lands in Western Washington together, with the exception of the Olympic Experimental State Forest and Capitol State Forest.



Sustainable Harvest Units in Western Washington

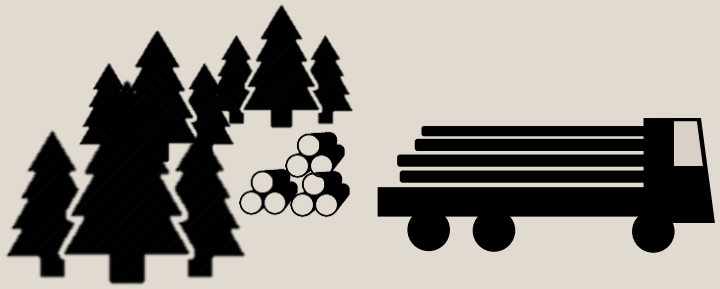
Taxing District Case Studies

1. Clallam County Fire District No. 5
2. Snohomish and Island Counties
   Sno-Isle Library
3. Naselle-Grays River Valley School District
4. Cape Flattery School District



How is timber revenue distributed to taxing districts?

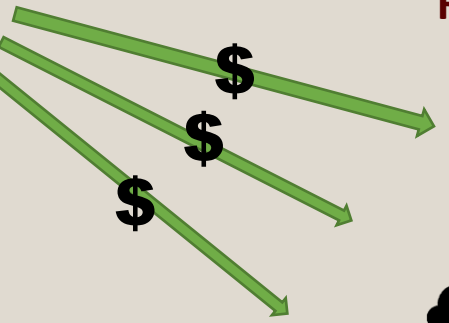
Timber harvest on State Forestlands



Office of the State Treasurer

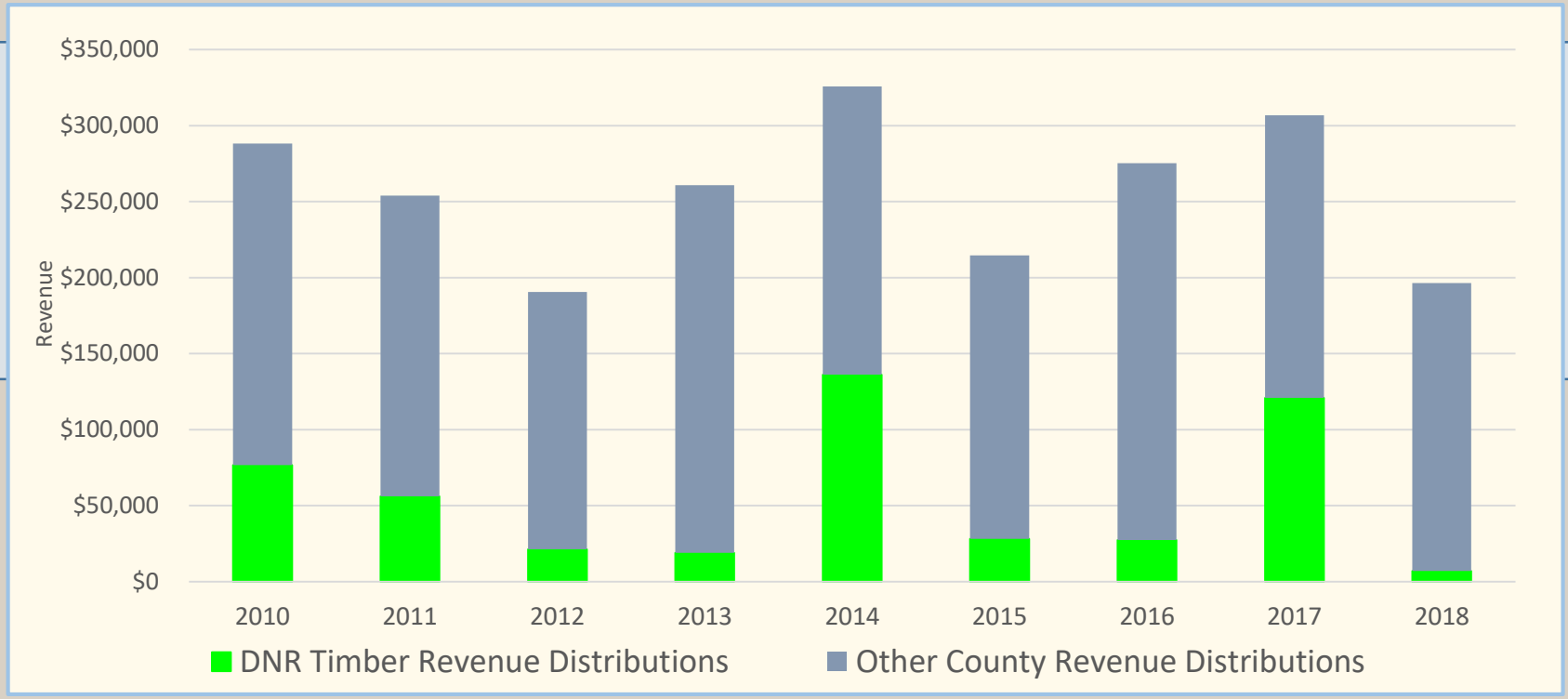
County Treasurer(s)
(where State Forestlands are located)

Treasurer further distributes the revenue to taxing districts within the county in accordance with **RCW 79.64.110.**



Case Study #1
Clallam County Fire District 5

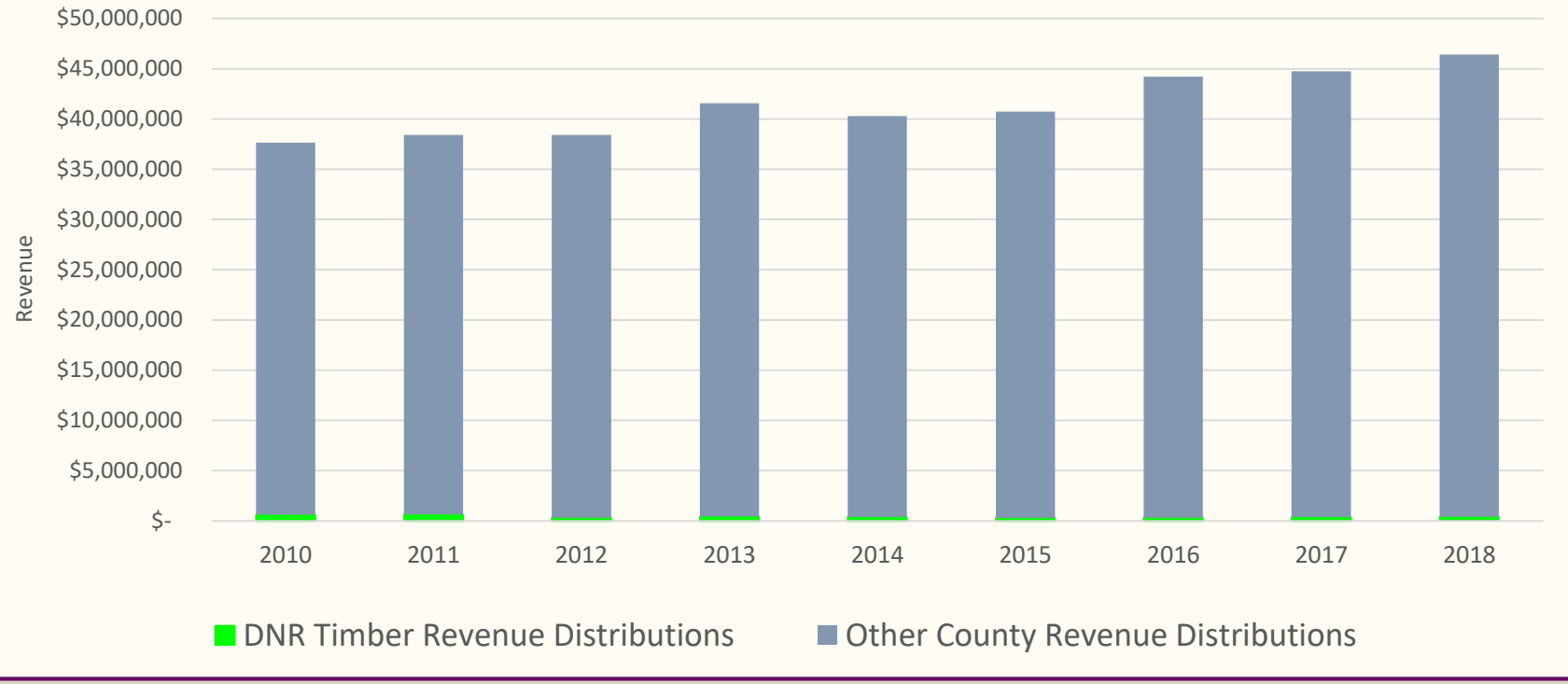
% change in operable acres under the HCP Amendment = -14.1%



Description	2010-2018 **Total**	2010-2018 **Annual Average**
County distribution of DNR Timber Revenue to taxing district	$492,779	$54,753
Total Revenue county distributed (includes DNR Timber Revenue) to the taxing district	$2,312,242	$256,916
DNR Timber Revenue as a % of **Total Revenue**	21%	21%
Potential $ change under HCP Amendment – 14.1% reduction to DNR Timber Revenue	($69,482)	($7,720)
Potential % change to **Total Revenue** county distribute to taxing district under HCP Amendment	(3%)	(3%)

Case Study #2
Snohomish-Island Inter-County Rural Library District

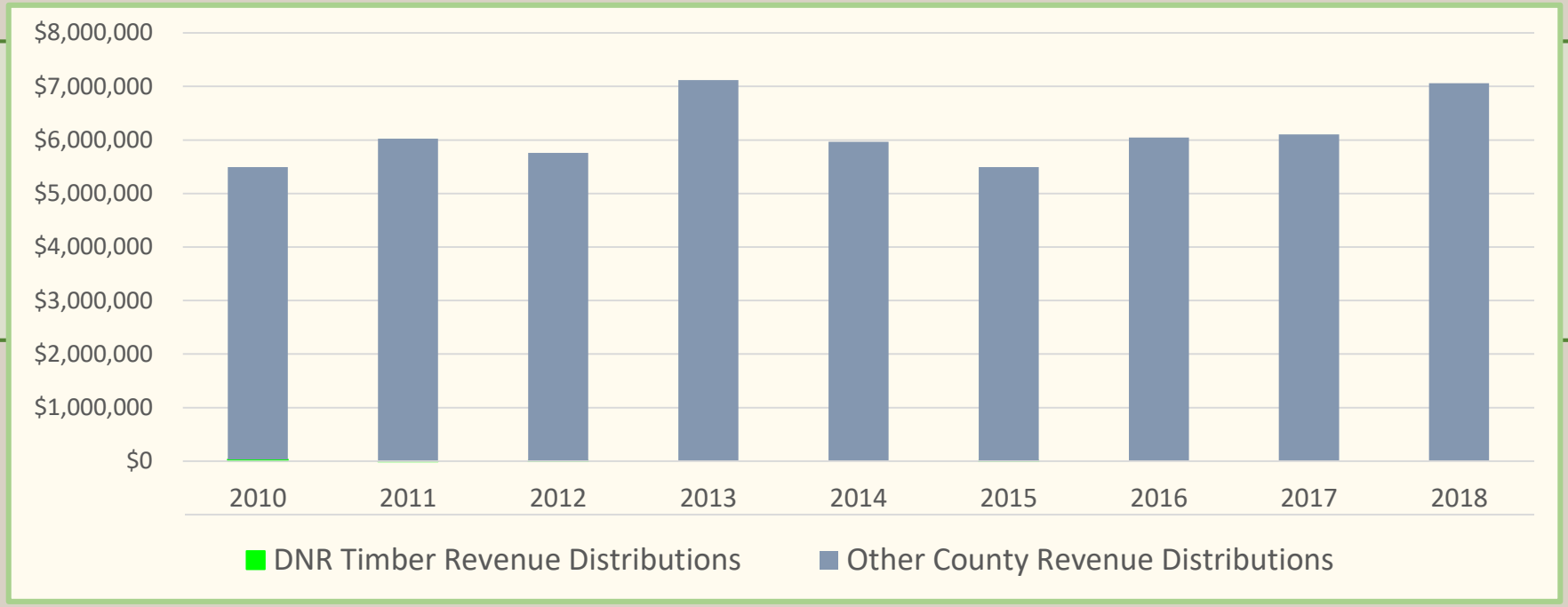
% change in operable acres under the HCP Amendment = <1%



Description	2010-2018 **Total**	2010-2018 **Annual Average**
Snohomish County distribution of DNR Timber Revenue to taxing district	$3,554,733	$394,970
Total Revenue from both counties distributed (includes DNR Timber Revenue) to the taxing district	$372,324,350	$41,369,372
DNR Timber Revenue as a % of **Total Revenue**	<1%	<1%
Potential $ change under HCP Amendment - 1% reduction to DNR Timber Revenue	($35,547)	($3,950)
Potential % change to **Total Revenue** the counties distribute to taxing district under HCP Amendment	(<0.01%)	(<0.01%)

Case Study #3
Pacific County Naselle-Grays River Valley School District

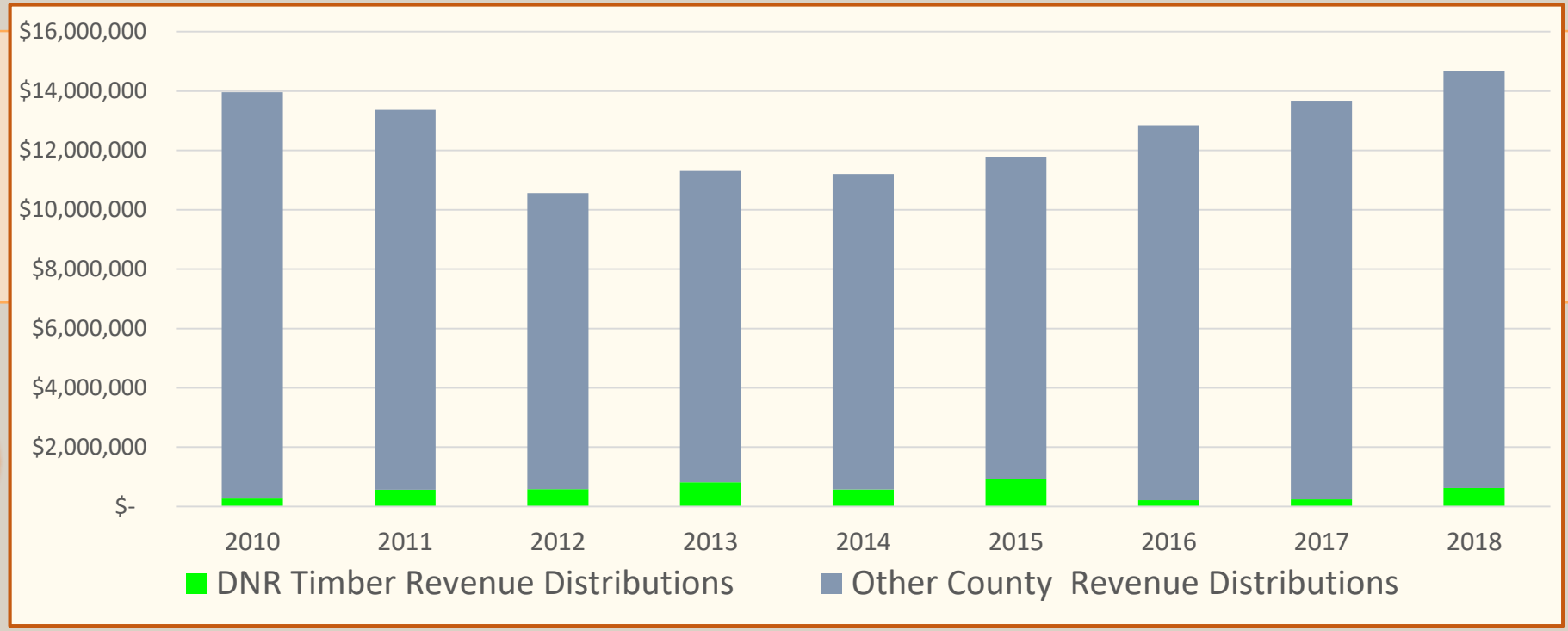
% change in operable acres under the HCP Amendment = -19.7%



Description	2010-2018 **Total**	2010-2018 **Annual Average**
County distribution of DNR Timber Revenue to taxing district - General	$1,288	$143
County distribution of DNR Timber Revenue to taxing district - Bond	$33,356	$3,706
Total Revenue county distributed (includes DNR Timber Revenue) to the taxing district	$54,646,452	$6,071,828
DNR Timber Revenue as a % of **Total Revenue**	0.06%	0.06%
Potential $ change under HCP Amendment - 19.7% reduction to DNR Timber Revenue	($6,825)	($758)
Potential % change to **Total Revenue** county distribute to taxing district under HCP Amendment	(<0.001%)	(<0.001%)

Case Study #4
Cape Flattery School District

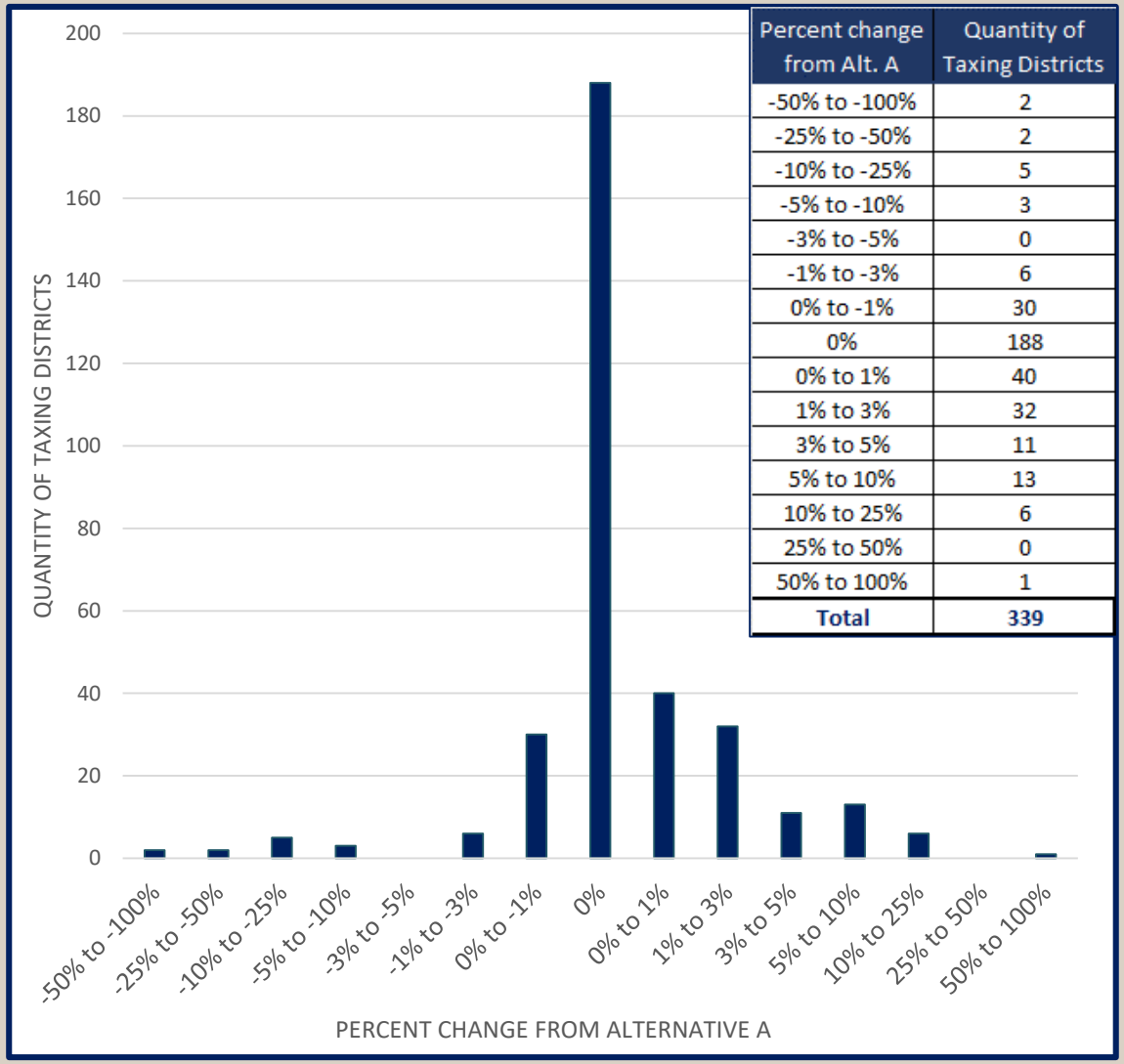
% change in operable acres under the HCP Amendment = -13.9%



Description	2010-2018 **Total**	2010-2018 **Annual Average**
County distribution of DNR Timber Revenue to taxing district - General	$3,143,964	$349,329
County distribution of DNR Timber Revenue to taxing district - Bond	$1,753,268	$194,808
Total Revenue county distributed (includes DNR Timber Revenue) to the taxing district	$116,486,238	$12,942,915
DNR Timber Revenue as a % of **Total Revenue**	4%	4%
Potential $ change under HCP Amendment – 13.9% reduction to DNR Timber Revenue	($680,715)	($75,635)
Potential % change to **Total Revenue** county distribute to taxing district under HCP Amendment	(<1%)	(<1%)

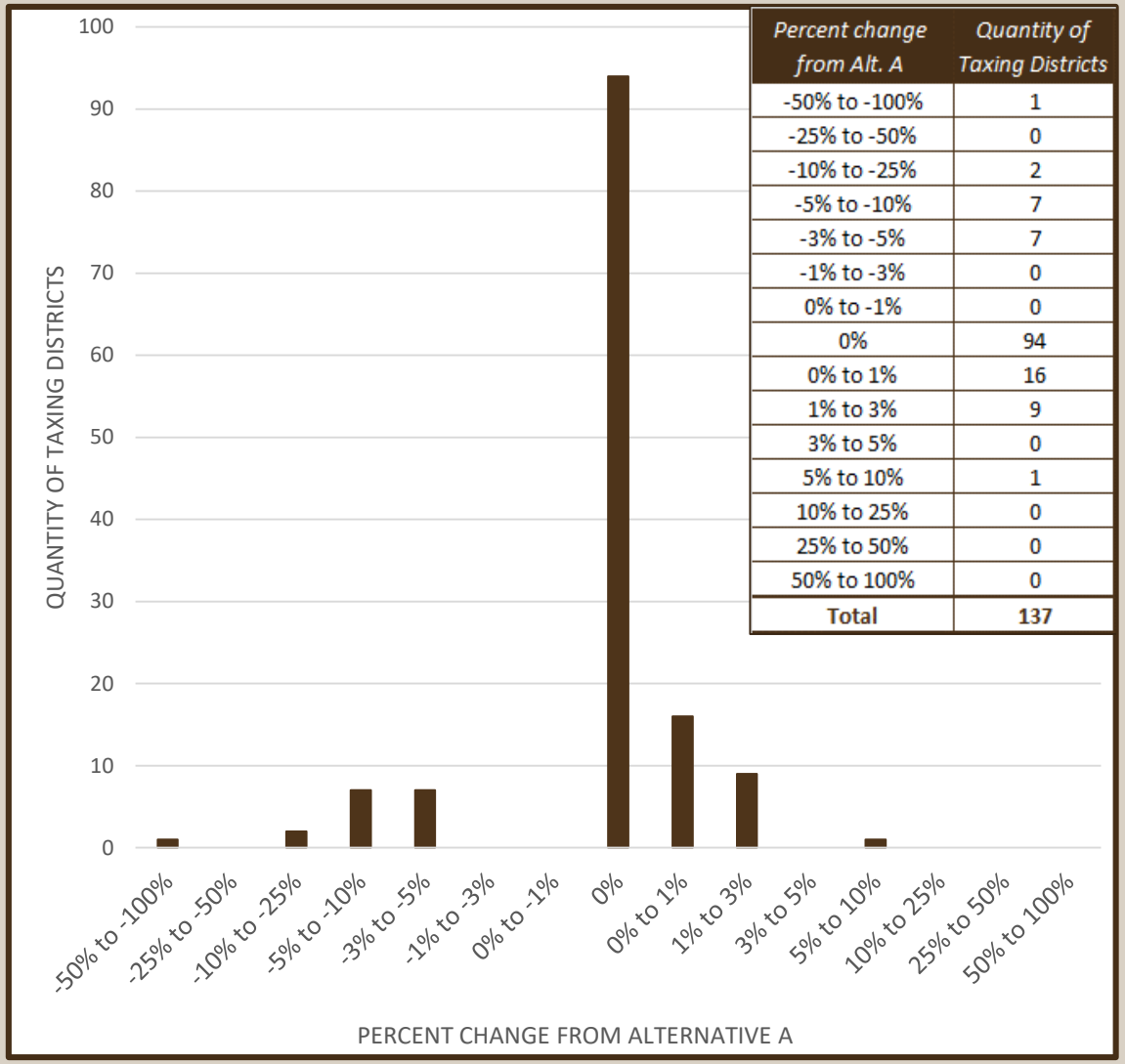
Impacts to Taxing Districts

State Forest Transfer Trust



Percent change from Alt. A	Quantity of Taxing Districts
-50% to -100%	2
-25% to -50%	2
-10% to -25%	5
-5% to -10%	3
-3% to -5%	0
-1% to -3%	6
0% to -1%	30
0%	188
0% to 1%	40
1% to 3%	32
3% to 5%	11
5% to 10%	13
10% to 25%	6
25% to 50%	0
50% to 100%	1
Total	**339**

State Forest Purchase Trust



Percent change from Alt. A	*Quantity of Taxing Districts*
-50% to -100%	1
-25% to -50%	0
-10% to -25%	2
-5% to -10%	7
-3% to -5%	7
-1% to -3%	0
0% to -1%	0
0%	94
0% to 1%	16
1% to 3%	9
3% to 5%	0
5% to 10%	1
10% to 25%	0
25% to 50%	0
50% to 100%	0
Total	**137**

Sustainable Harvest Level
Draft Environmental Impact Statement
Public Comment Themes and Actions

Alternatives

Financial Analysis

Data

Marbled Murrelet Habitat & Conservation

Public Comment Summary

Marbled Murrelet Habitat & Conservation

Comment: What habitat marbled murrelets really occupy?

Comment: Why conserve non-habitat in Special Habitat Areas?

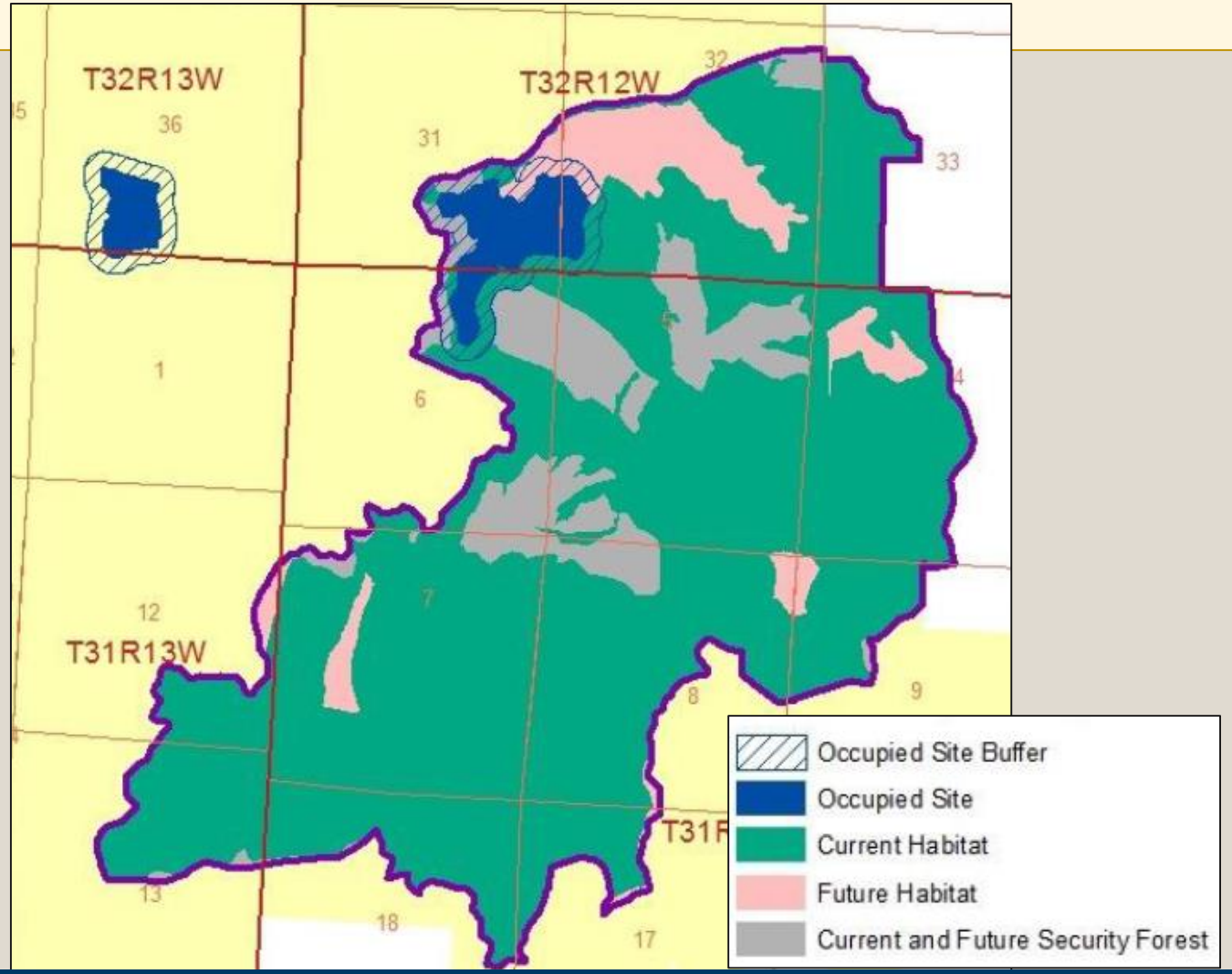
Comment: What qualifies as habitat?

Comment: Photos submitted illustrating concerns about proposed habitat conservation.

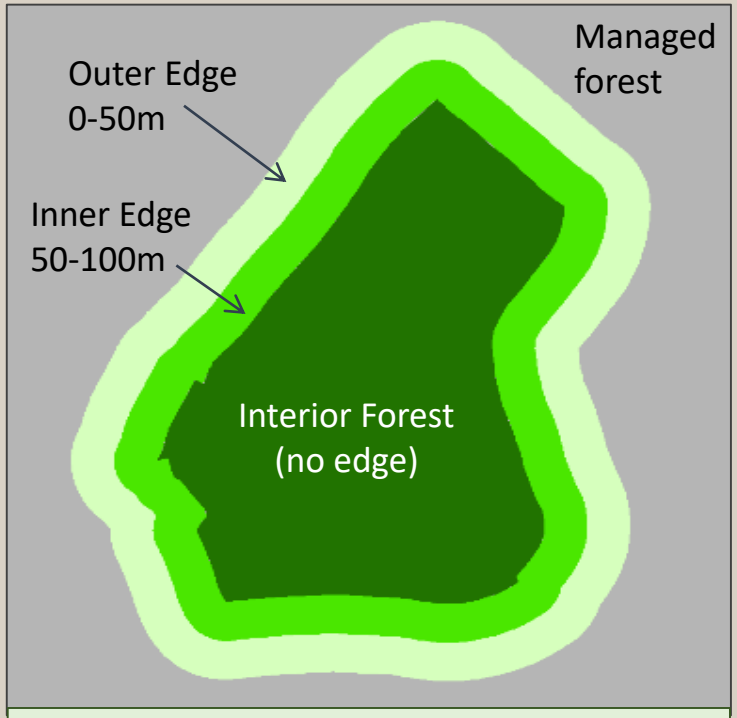
DNR Response:
Habitat security is important

When located adjacent to P-stage habitat, Security Forest protects the habitat from “edge effects”, including microclimate change, windthrow and predation* and other types of disturbances.

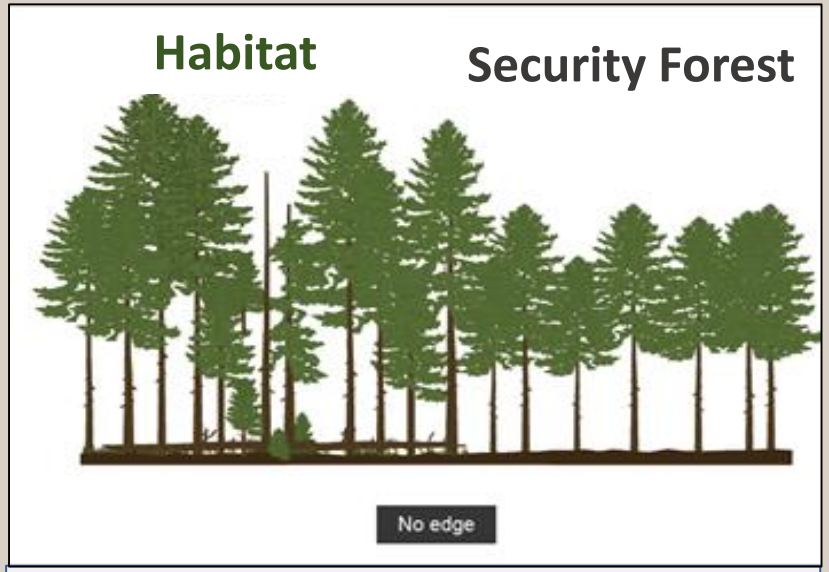
*Chen and others 1993, Van Rooyen and others 2002, Malt and Lank 2009



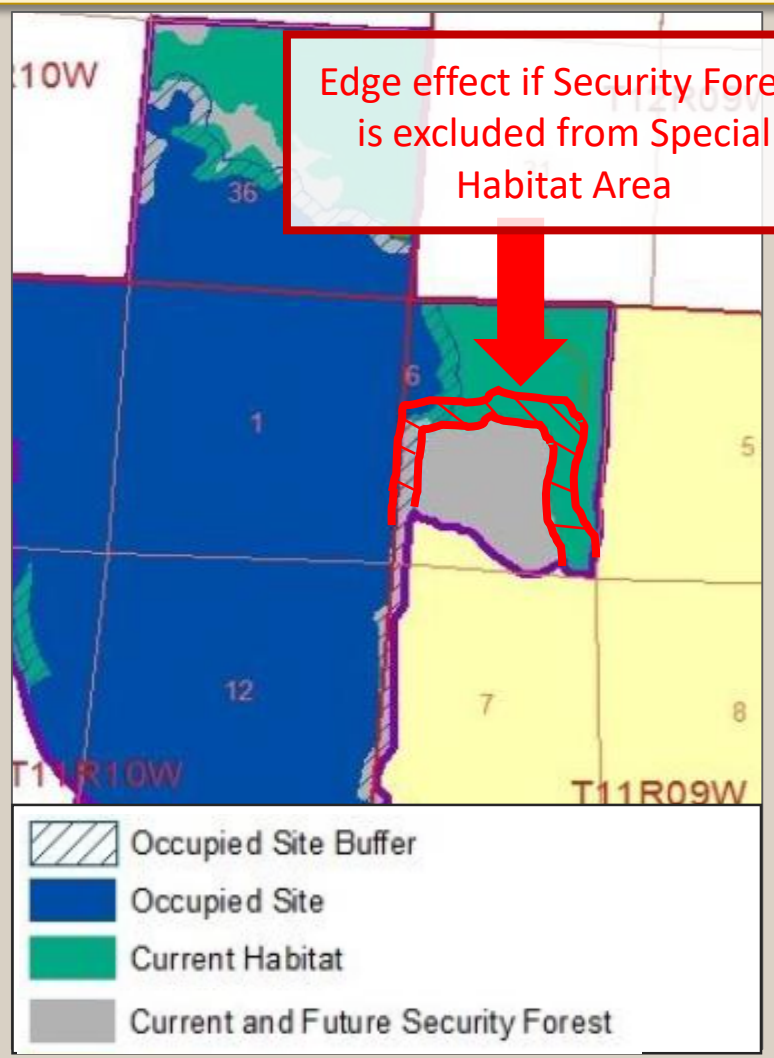
More about Security Forest and “edge effects”…



Mitigation value of habitat is reduced to account for edge effects



Security Forest ameliorates edge effects to habitat

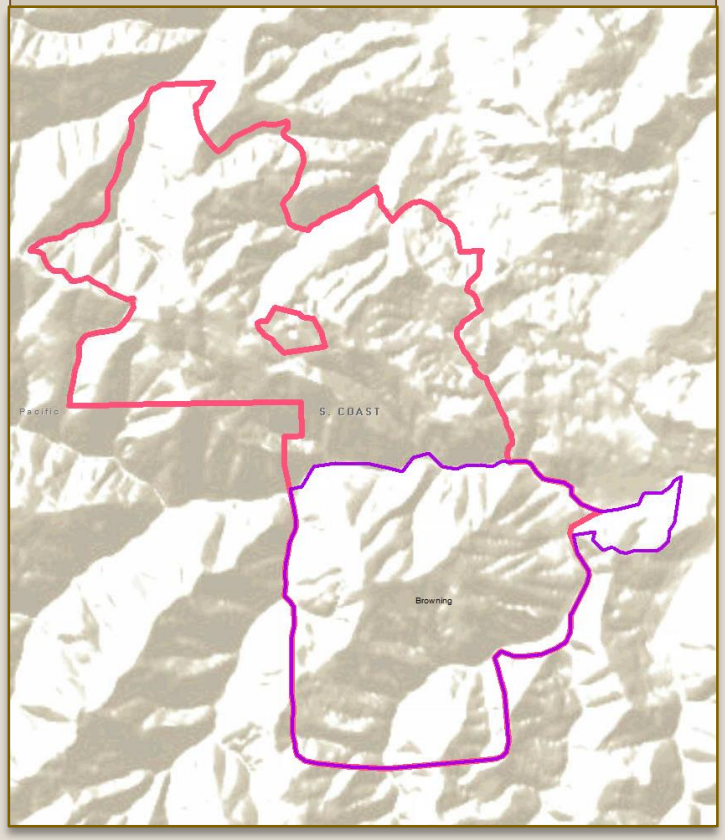


DNR Response:

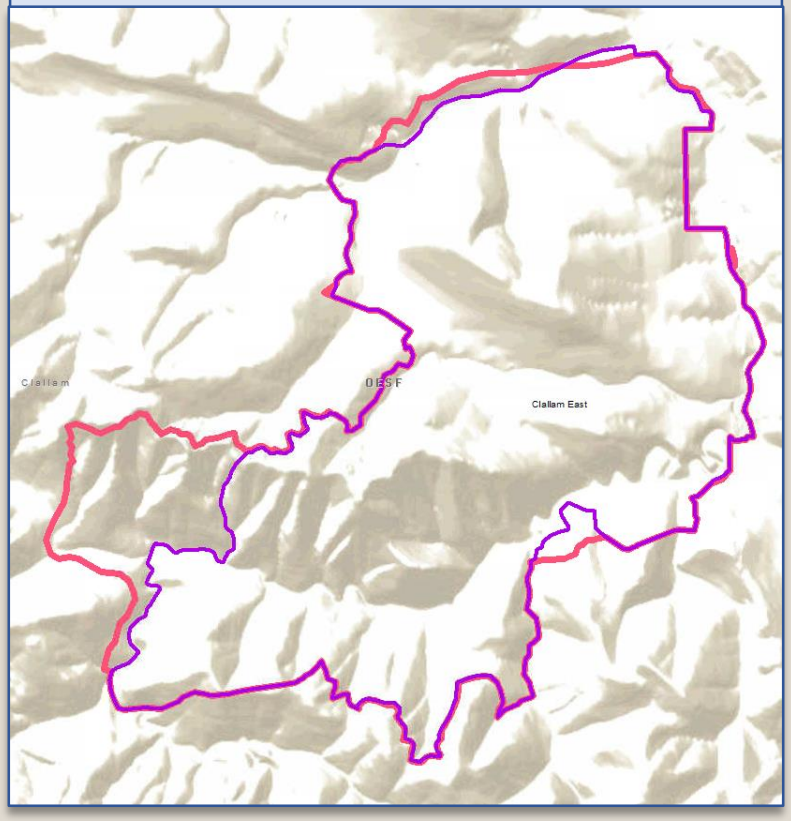
Decreased areas of inefficient conservation in Special Habitat Areas

Marbled Murrelet Habitat & Conservation

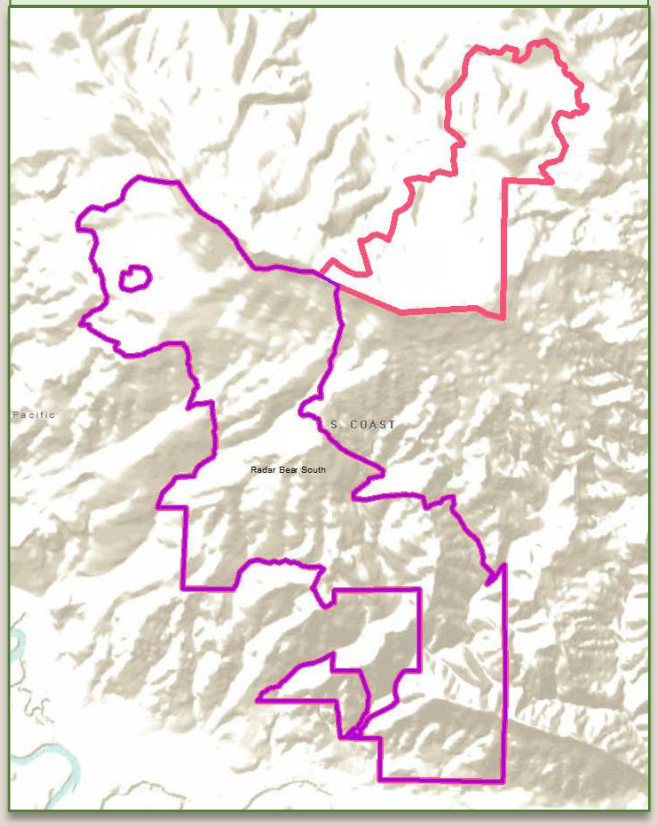
Browning Special Habitat Area



Clallam East Special Habitat Area



Radar Bear South Special Habitat Area



RDEIS Special Habitat Area Boundary

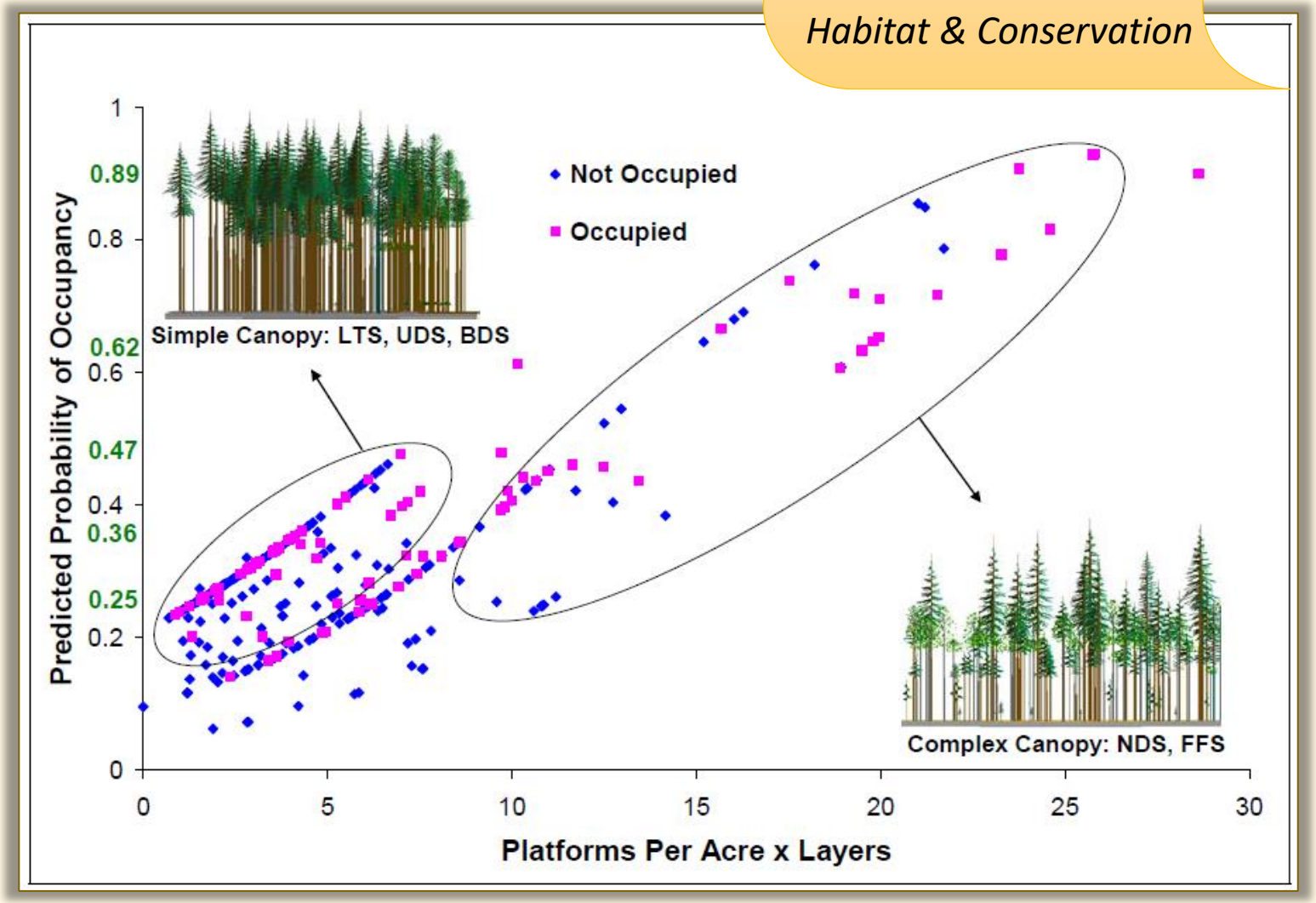
HCP Amendment Special Habitat Area Boundary

Marbled Murrelet Habitat & Conservation

DNR Response:

Marbled murrelets have been found to occupy both simple and complex stands

- ✓Occupancy is based on a Pacific Seabird Group protocol
- ✓P-stage habitat model is based on actual occupancy found on DNR managed lands
- ✓The Analytical Framework relies on p-stage model to calculate take and mitigation



Recommendations and Supporting Analysis of Conservation Opportunities for the Marbled Murrelet Long-Term Conservation Strategy. September 2008. (Science Team Report) Page 4-6, Figure 4-1.

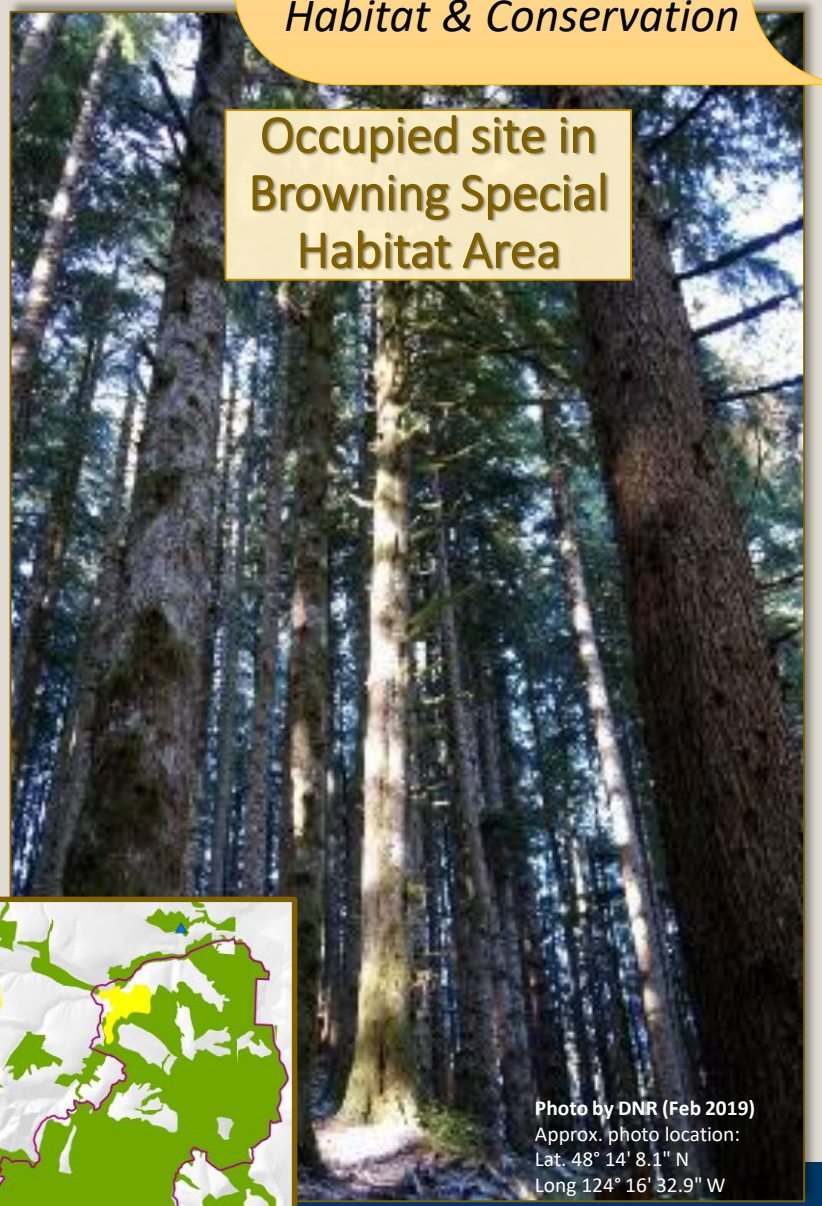
Public Comment Summary

Marbled Murrelet Habitat & Conservation

Comment: photos submitted to illustrate concerns about marbled murrelet habitat and conservation area delineation

DNR Response:

DNR staff visited and photographed specific areas of concern



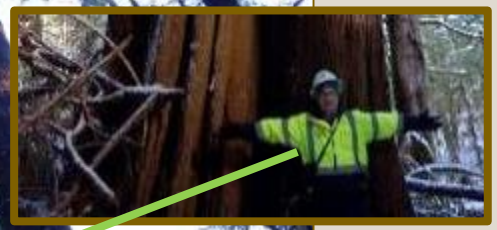
The locator maps on the following slides use this legend:

Occupied Site: Same stand, different locations

From the road

Feb 2019 Photo by DNR
Lat. 48° 13' 28.4" N
Long 124° 19' 19.9" W

Inside the stand



Feb 2019 Photo by DNR
Lat. 48° 13' 28.4" N
Long 124° 19' 19.9" W

Public Comment:

Clallam East Special Habitat Area P-stage 0.36 “Will not develop nest habitat characteristics until beyond the end of the HCP”

Photo location estimate based on comments submitted to DNR on December 6, 2018
Lat. 48° 12' 49.3" N
Long 124° 16' 22.5" W

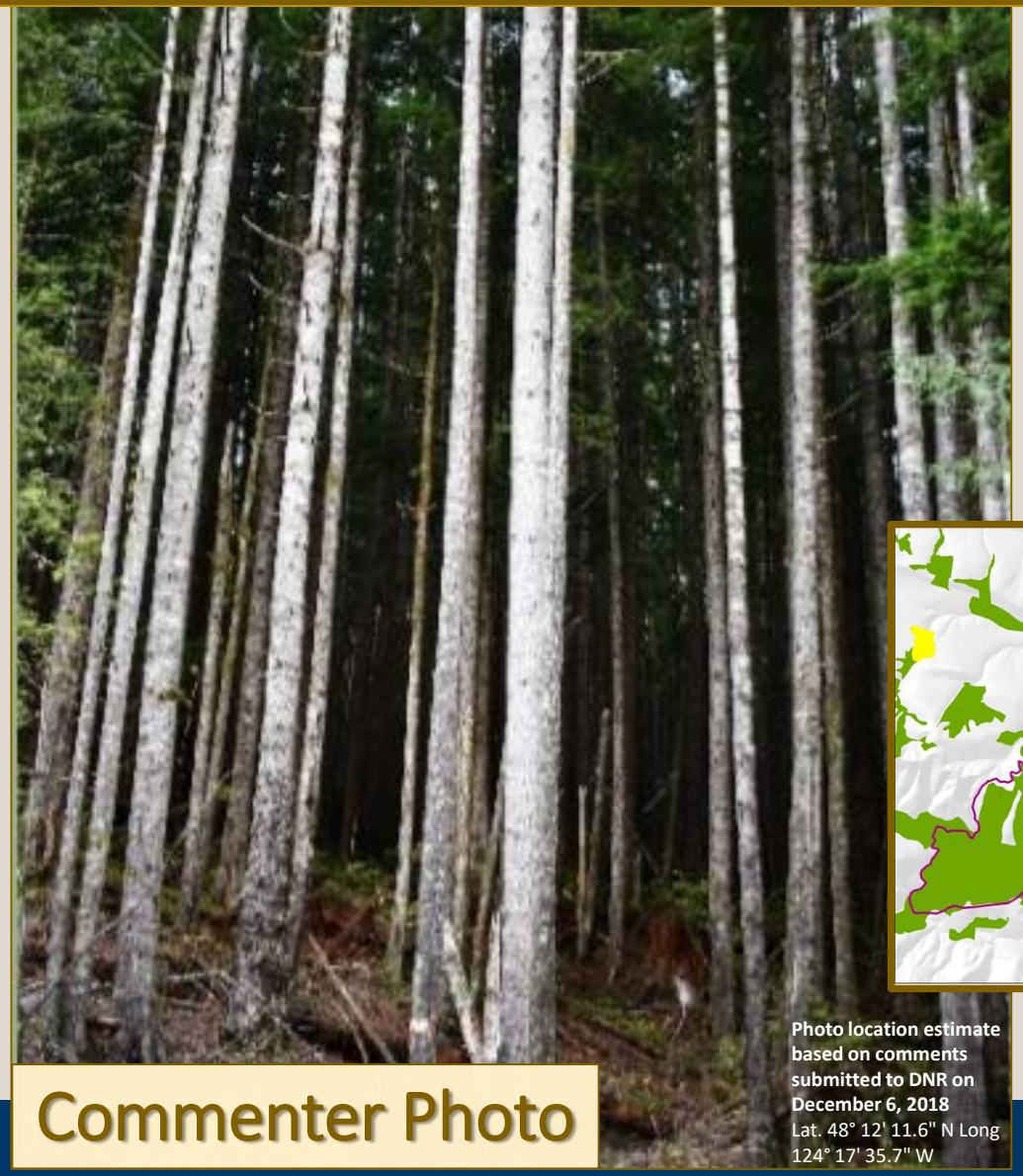
Commenter Photo

Feb 2019 Photo by DNR
Lat 48° 12' 51.7" N Long 124° 16' 13.8" W

Feb 2019 Photo by DNR
Lat 48° 12' 51.7" N Long 124° 16' 13.8" W

DNR photos of the same stand

Clallam East Special Habitat Area P-stage 0.47 “Dense Western Hemlock stand… Note the dense stocking and short crowns with small diameter limbs”



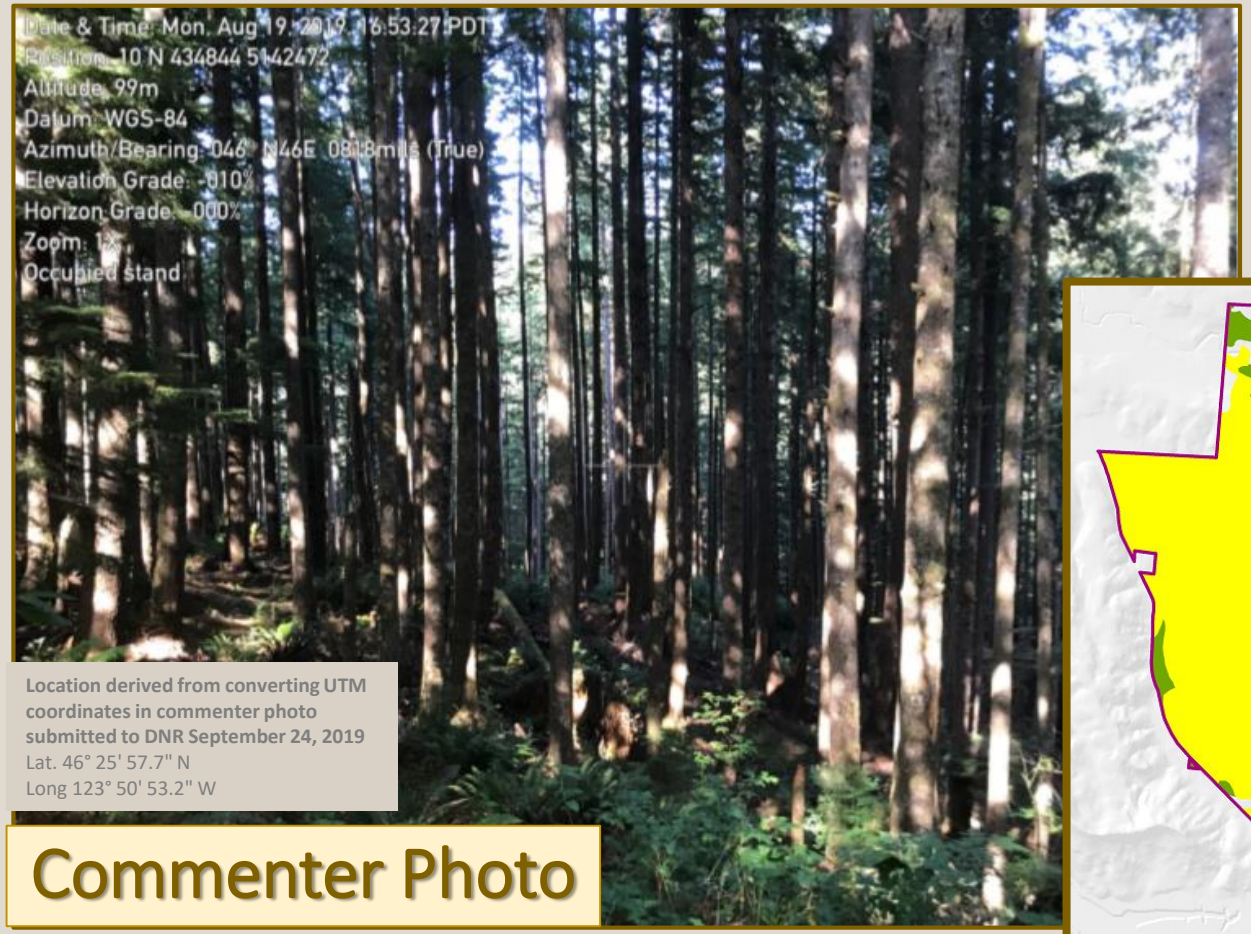
Commenter Photo

Photo location estimate based on comments submitted to DNR on December 6, 2018
Lat. 48° 12' 11.6" N Long 124° 17' 35.7" W

Feb 2019 photo by DNR
Lat. 48° 12' 18.8" N Long 124° 17' 36.4" W

DNR photo of the same stand

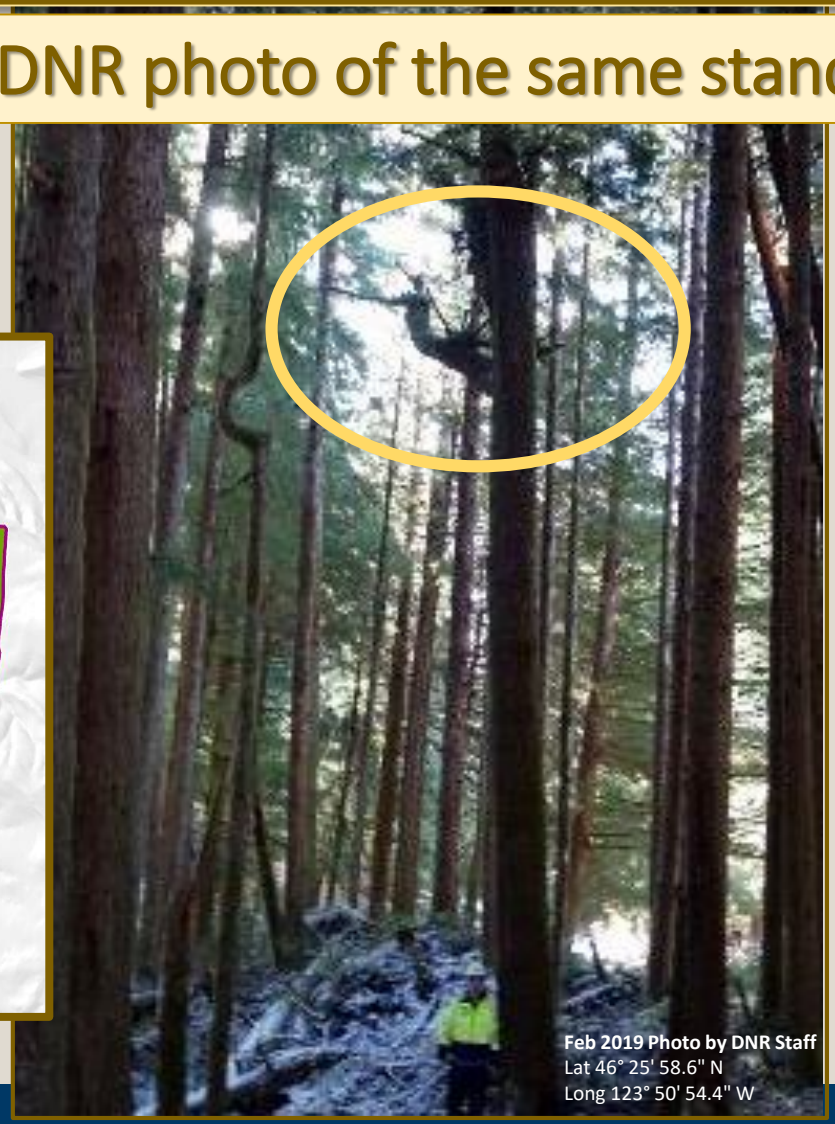
Radar Bear North Special Habitat Area Occupied Site “stand identified as ‘occupied’ but with little apparent value for nesting marbled murrelets”



Location derived from converting UTM coordinates in commenter photo submitted to DNR September 24, 2019
Lat. 46° 25' 57.7" N
Long 123° 50' 53.2" W

Commenter Photo

DNR photo of the same stand



Feb 2019 Photo by DNR Staff
Lat 46° 25' 58.6" N
Long 123° 50' 54.4" W


WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Follow up on October Board meeting questions.

In counties that have taxing districts that would experience a >10% increase in operable acres, are there other taxing districts that would be experiencing an overall decrease in operable acres?

↑ 10% operable acres	4 counties	**Grays Harbor**	**+15.9%**
		Jefferson	**+10.8%** **+10.8%** **+16%**
		Thurston	**+93.3%**
		Clallam	**+10.1%** (Sequim Parks & Rec) **+10.1%** (Sequim School District)

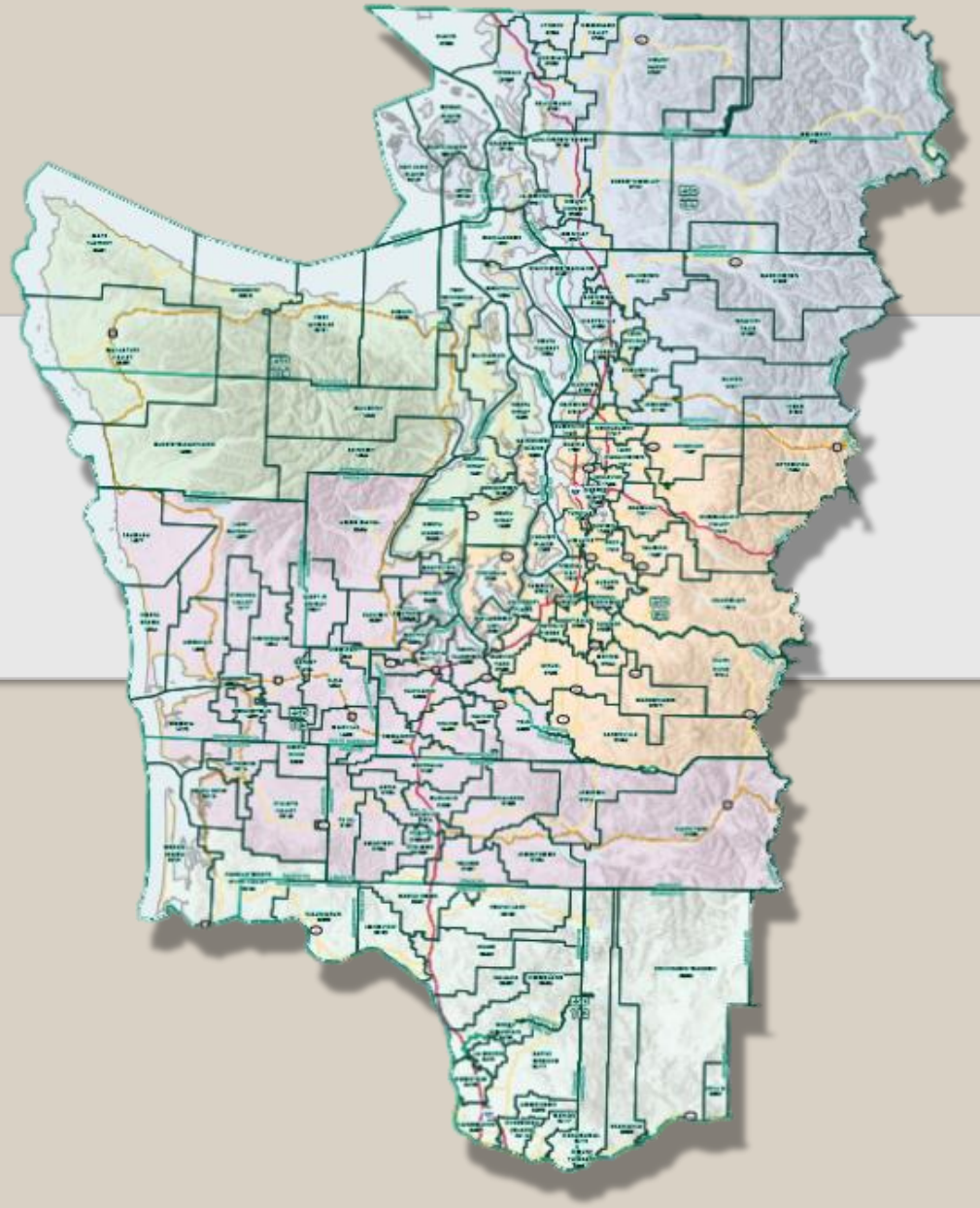
Of the 4 counties above only one also has taxing districts with a >10% decrease in operable acres

↓ 10% operable acres	1 county	**Clallam**	**-14.1% -** (Fire District #5) **-13.9%** (Cape Flattery School District)

Follow up on October Board meeting questions.

How many school districts are there in western Washington?

151



What percentage of high-quality habitat is included in Special Habitat Areas?

Alternative	C	D	E	G	H	Amendment
Acres of High Quality Habitat in SHA (decade 0)	10,007	22,557	16,239	16,239	15,506	15,860
% of Total Existing High Quality Habitat	10%	22%	16%	16%	15%	15%

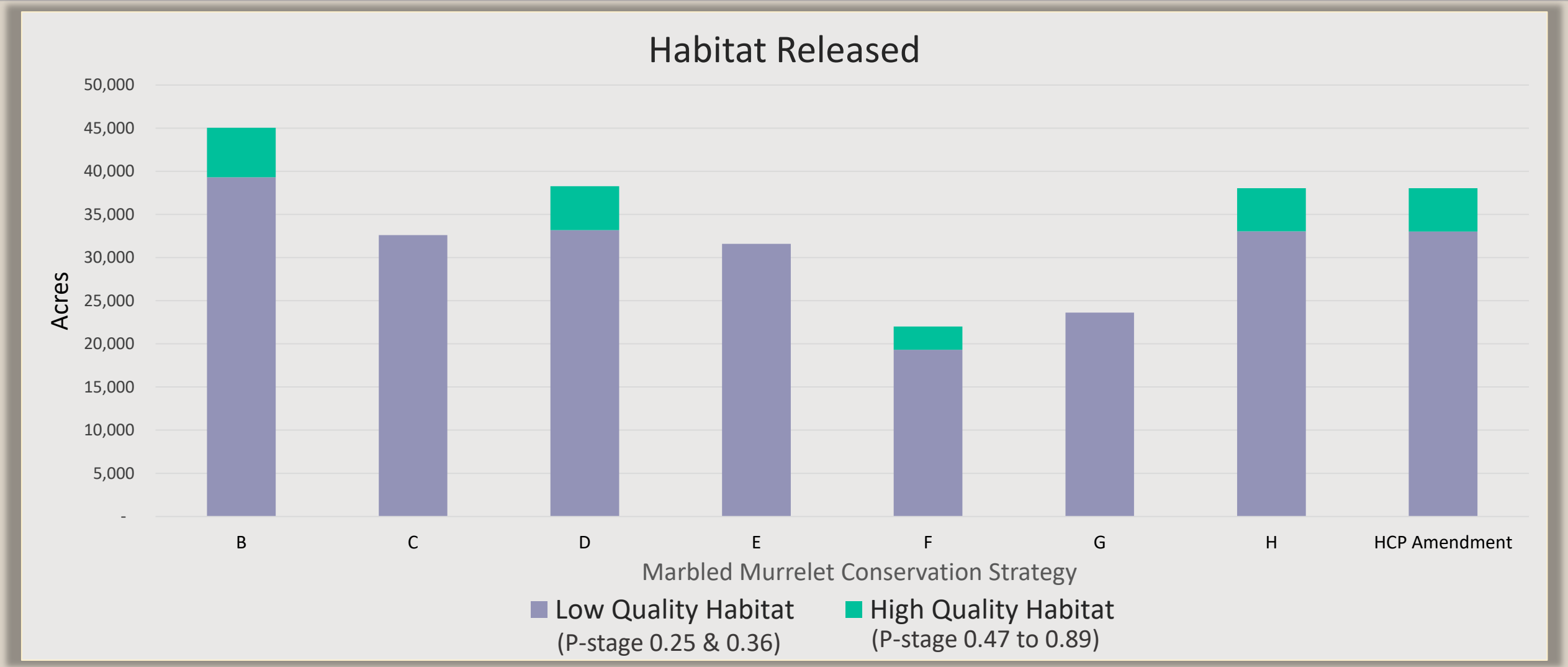
What percentage of high-quality habitat are we releasing that can be harvested?

Alternative	A	B	C	D	E	F	G	H	Amendment
Acres	4,240	5,754	0	5,090	0	2,697	0	5,017	5,017
% of Total Existing High Quality Habitat	4%	6%	0%	5%	0%	3%	0%	5%	5%

Per Table 4.6.2 in the MMLTCS FEIS, Alternative H proposes release of 5,017 raw acres of high-quality habitat.
High-quality habitat will be available for harvest, but subject to metering for the first decade of the Amendment.

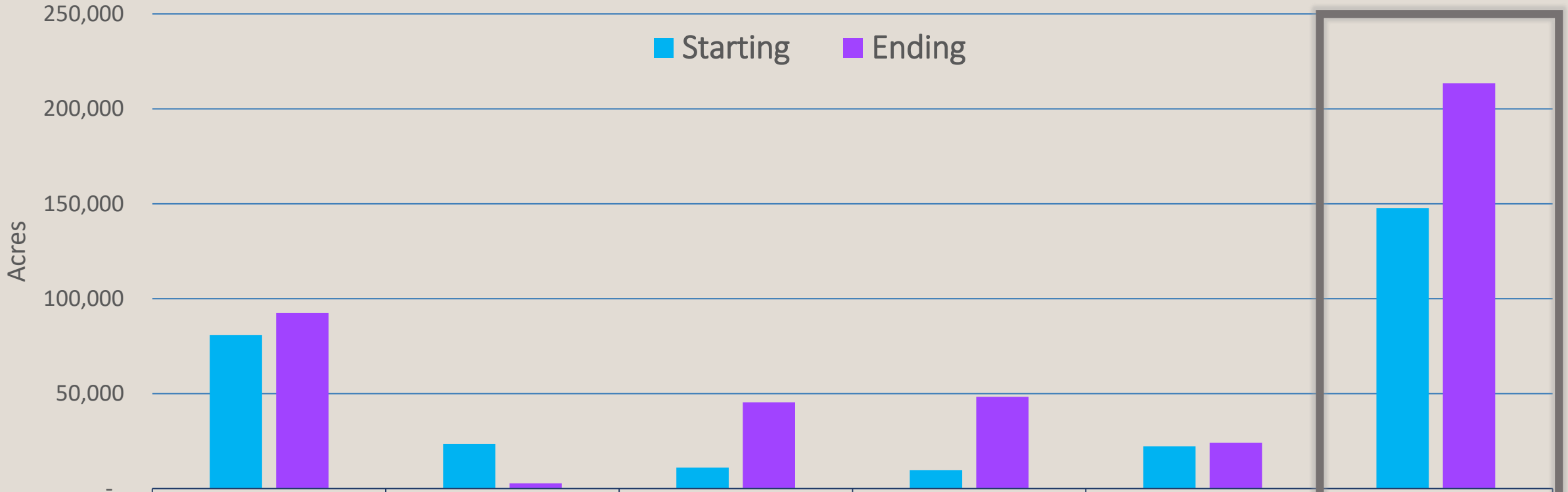
Follow up on October Board meeting questions.

What is the quality of the habitat that is released upon Board adoption?



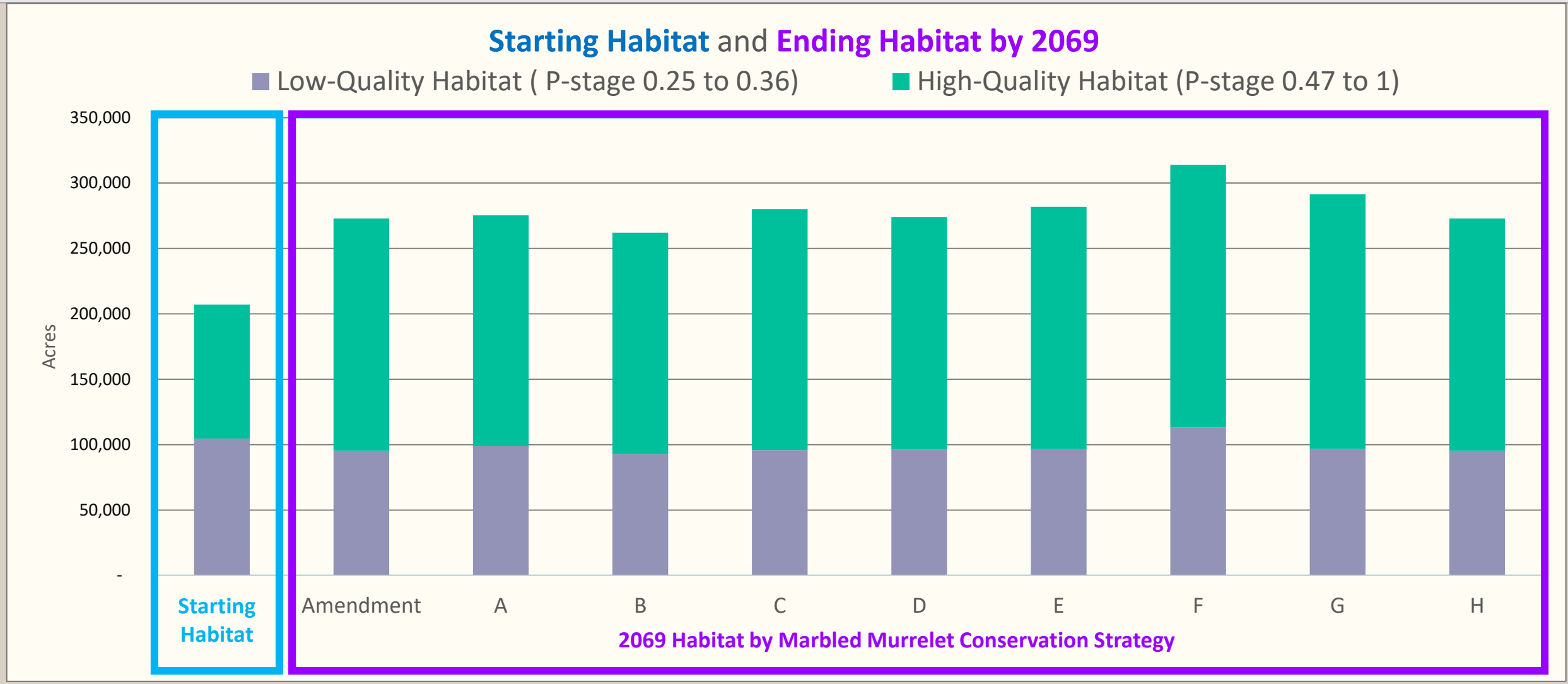
What is the distribution of the quality of the habitat that will be grown by 2069?

Habitat Development from Present Day to 2069 - HCP Amendment



P-stage	0.25	0.36	0.47	0.62	0.89	Total
Starting	80,998	23,560	11,091	9,739	22,347	147,736
Ending	92,524	2,870	45,505	48,377	24,232	213,508

What is the quality of the habitat that is grown?



What information is included in the Final EIS about carbon stored in forest products?

FEIS: Chapter 4, Page 4-9
Table 4.2.2. Pools of Carbon Stored in Harvested Wood (Adapted From Smith and Others 2006)

Harvested wood carbon pools	Description
Products in use	Wood that has not been discarded or destroyed, such as houses and other buildings, furniture, wooden containers, paper products, and lumber. Carbon stored in this pool is relatively stable but eventually is discarded in landfills.
Landfills	Wood that has been discarded and placed in landfills. Carbon is emitted to the atmosphere slowly because of slow decay rates.

Direct Link: https://www.dnr.wa.gov/publications/amp_sepa_nonpro_mmltcs_feis_ch4.pdf?iwu4u5d

What happens if the marbled murrelet recovers and is delisted?

- In the event that the species is delisted under the ESA, mitigation measures designed primarily to benefit the murrelet may be terminated.
- However, if all or parts of those mitigation measures are necessary for the conservation objectives of other HCP species, then the FWS may require those measures to be maintained (in support of the multi-species HCP).
- DNR may decide to continue with all or some of the HCP mitigation measures voluntarily for certain reasons; e.g.:
  - The murrelet remains state listed and those mitigation measures meet the Forest Practices Rules for state listed species.
  - The mitigation measures benefit other species conservation objectives (federal or state)