





Marbled Murrelet Long-Term Conservation Strategy

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September 3, 2019

FALL BNR SCHEDULE

MARBLED MURRELET AND SUSTAINABLE HARVEST LEVEL

September

- 🦅 What is DNR's HCP?
- 🦅 Why are we amending the HCP now?
- 🦅 Overview of the development of the HCP amendment / LTCS

October

- 🦅 Development of the EIS Alternatives and Amendment
- 🦅 Overview of marbled murrelet Final EIS (released in September)

November

- 🌲 Why do we calculate a sustainable harvest level?
- 🌲 Arrearage and Riparian – What are these decisions and how are they related to the sustainable harvest calculation?
- 🌲 Overview of USFWS take permit decision and SHL Final EIS (both released in October)

December

Decision on 🦅 HCP Amendment and 🌲 Sustainable Harvest Level

Agenda for Today

- **Status of the marbled murrelet and the ESA**
- Trust responsibilities and the HCP
- Tools to help with decision making



The ESA and the Marbled Murrelet





The Marbled Murrelet is listed as “Threatened” under the Endangered Species Act (ESA)

DNR needs to comply with the ESA in carrying out trust management responsibilities



The Endangered Species Act of 1973 (*ESA*)

- Conserves imperiled animals and plants that may become extinct
- Classifies species as endangered or threatened
- Designates habitat that is considered critical for persistence of the species
- Prohibits “take” of imperiled species without a permit

“Take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct.



The image shows two Marbled Murrelets in flight over a vast expanse of blue water. The birds are positioned on the left and right sides of the frame, with the text 'Marbled Murrelet' centered between them. The water is a deep, vibrant blue with gentle ripples. The birds have dark bodies with white mottled patterns on their wings and backs. The text is in a clean, black, sans-serif font.

Marbled Murrelet

Marbled Murrelet Biology

- A small marine bird that spends most of its life at sea, but nests in mature and old-growth conifer forests.
- Flies inland to seek out nest locations (NW Forest Plan range = 55 mile)
- Feeds primarily on small fishes such as herring, sand lance, and anchovies, but will also feed on marine invertebrates such as krill.
- Once egg has hatched, they take turns feeding the chick, flying in from the sea at dawn and dusk.



Photo: PNW Research Lab



Photo: PNW Research Lab



Photo: Peter Halasz



Marbled Murrelet Range



Permanent Resident



Breeding Resident



Nonbreeding resident

*Map created by Terry Sohl
Data from NatureServe*

Range Wide Population Estimates

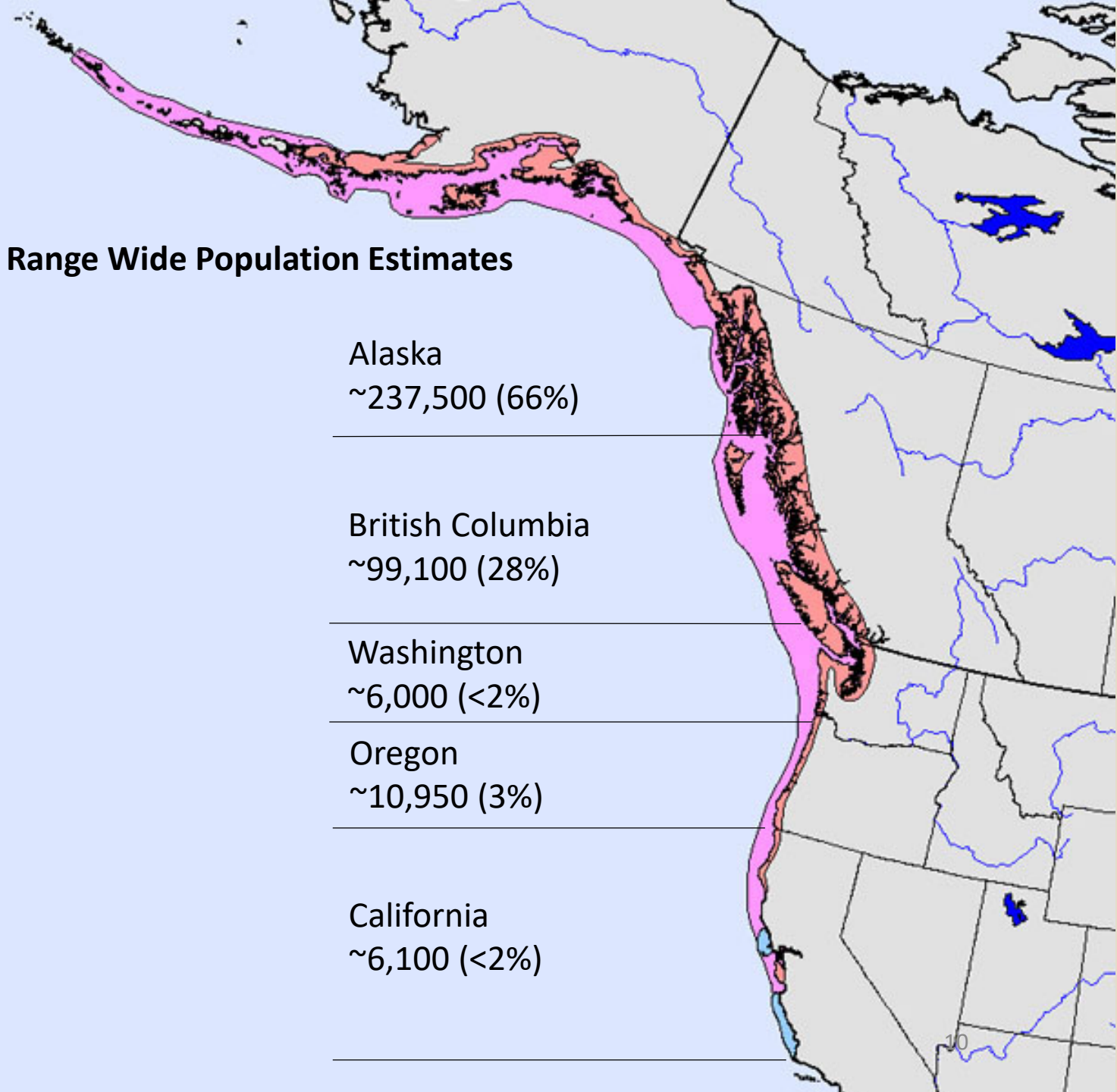
Alaska
~237,500 (66%)

British Columbia
~99,100 (28%)

Washington
~6,000 (<2%)

Oregon
~10,950 (3%)

California
~6,100 (<2%)



Marbled Murrelet Status

WDFW – Endangered (2017)

Population Trend

NWFP Area (2001-2016)

- 0.15% annual rate of change

Washington State (2001-2017/2018)*

- - 3.9% annual rate of change
 - Zone 1*: - 4.9%
 - Zone 2: - 3.0%

Habitat Trend (1993 – 2012)

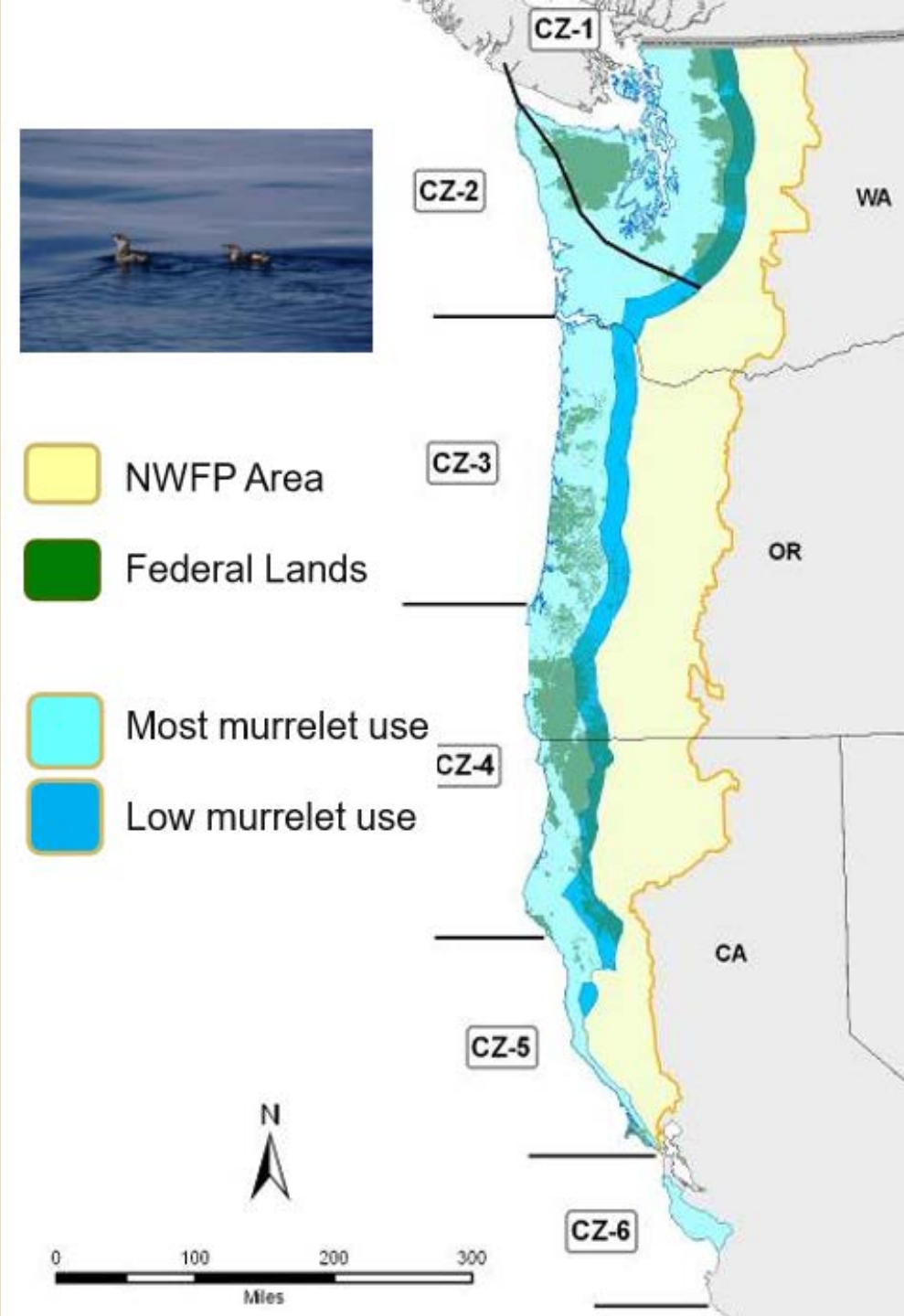
NWFP Area

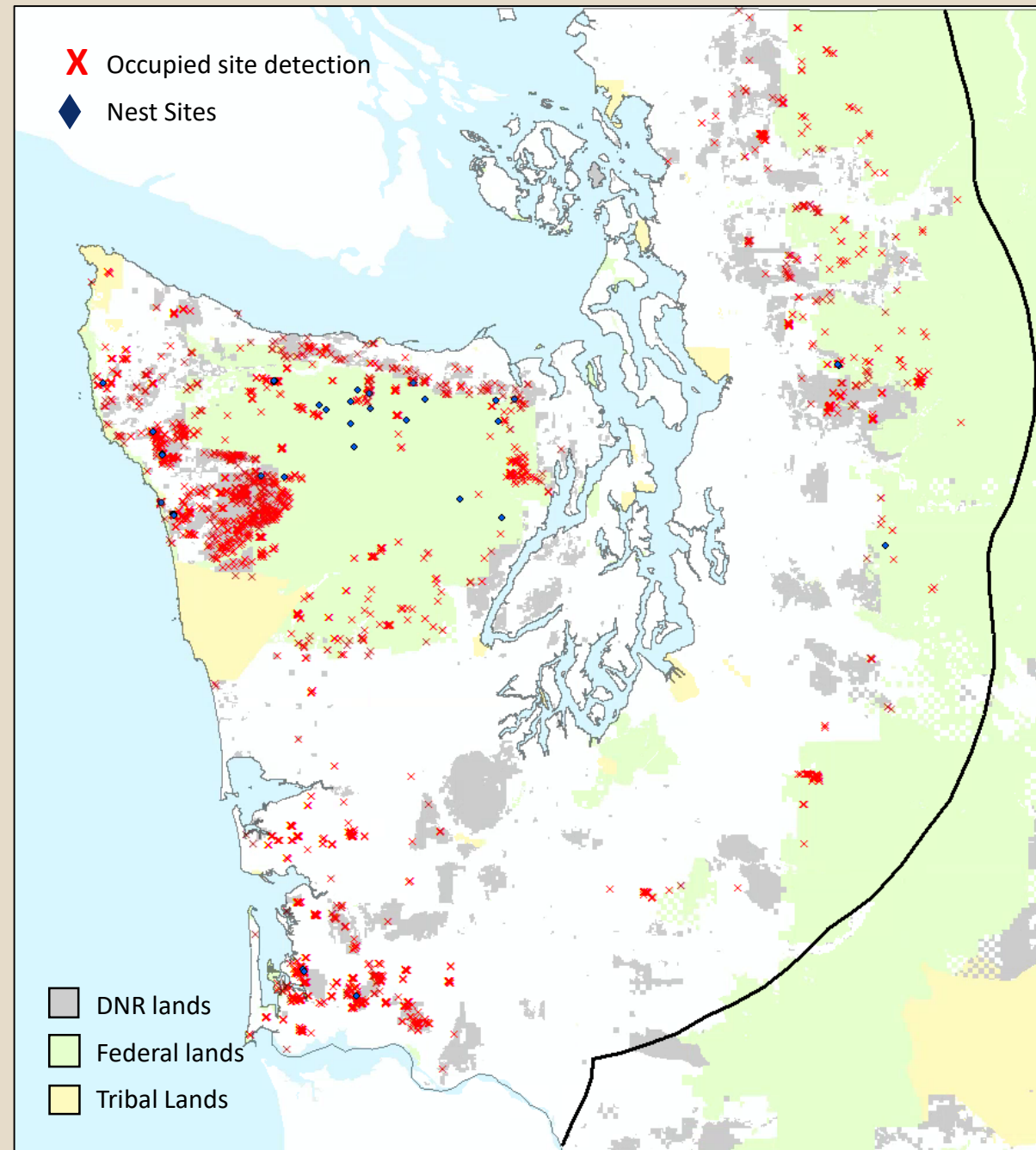
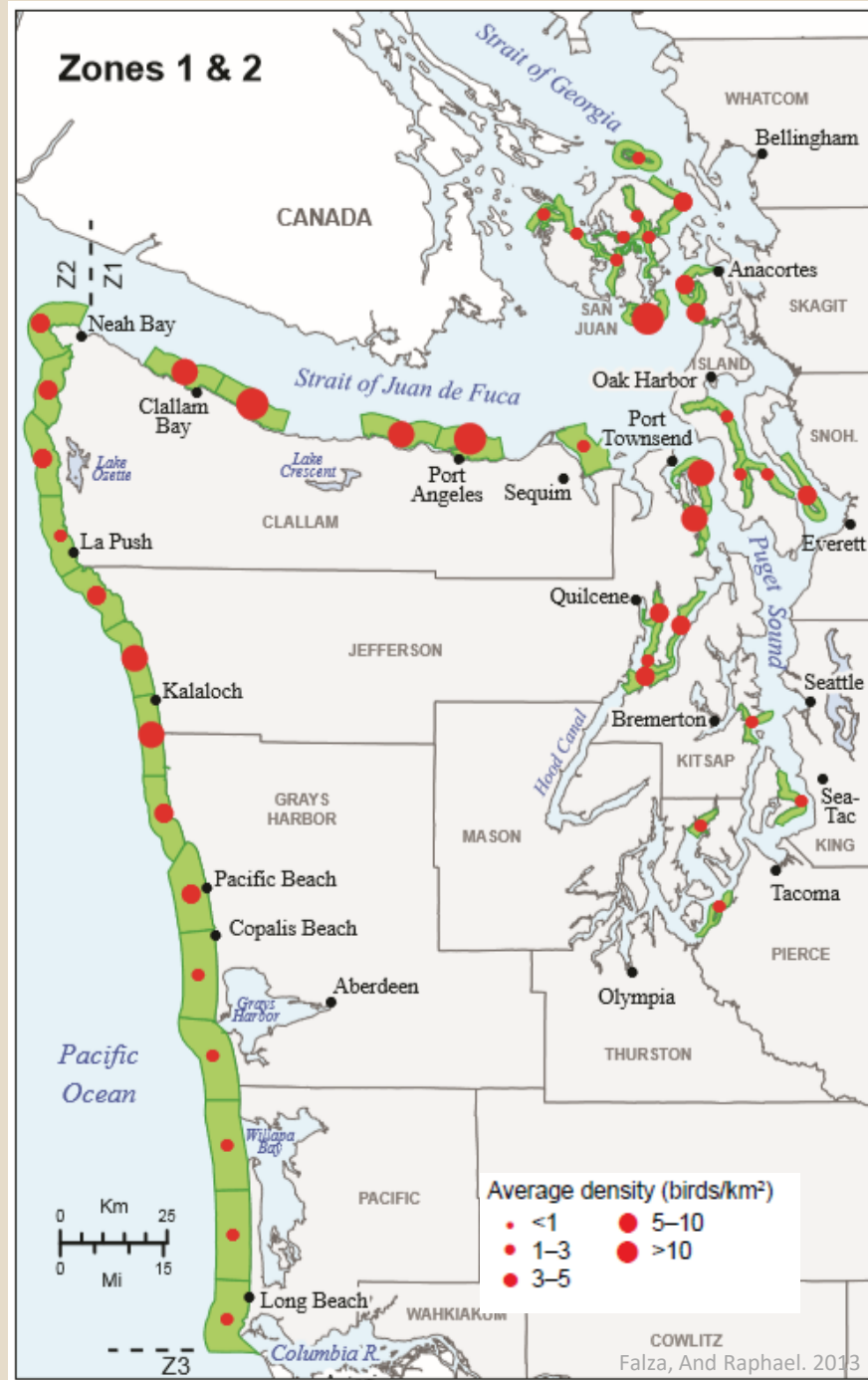
- - 12.1%

Washington State

- - 13.3% (all land ownerships)

30% loss of higher quality habitat on non-federal lands in Washington (mostly from timber harvest)





Habitat Status

DNR manages 1.4 million acres within the planning area

(That's ~9% of the planning area)

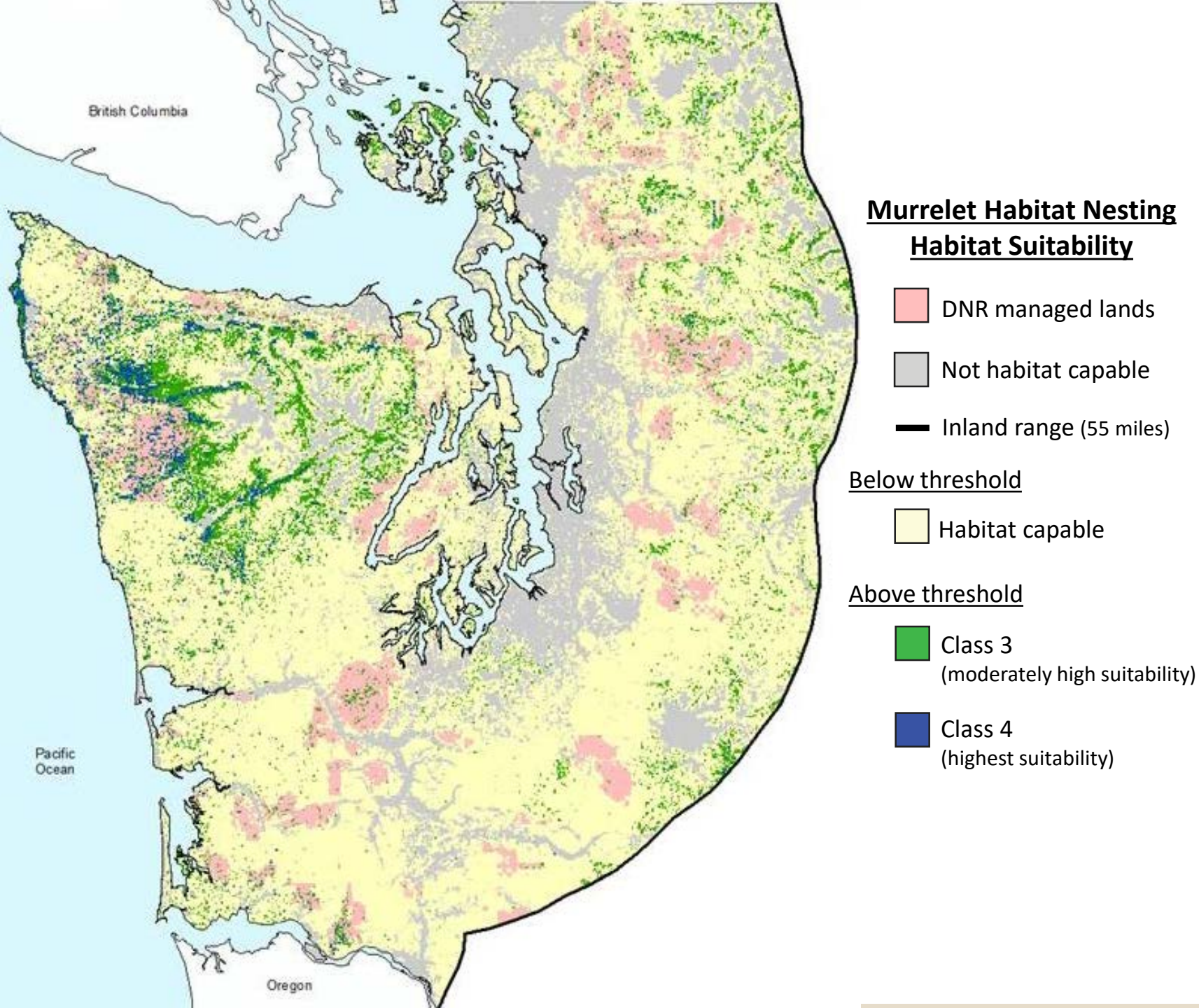
% of WA habitat by ownership

DNR | 14%

Federal | 65%

Tribal Government | 2%

Other Ownerships | 19%



— What is known



Washington's **population is declining**, especially in southwest Washington



Murrelets need **forested habitat** for nesting.



Federal lands are key to recovery, and in **southwest WA**, state lands will play a critical role.

Uncertainties remain

Potential factors causing recent population decline include:

- Loss of nesting habitat
(cumulative effects of habitat losses across the landscape over the past 20+ years)
- Changes in the marine environment reducing availability and quality of prey
- Increased densities of nest predators



Principles of Conservation

Key characteristics identified as effective habitat elements

- Strategically located
- Contiguous blocks
- Limited disturbance



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DNR's Trust Responsibilities and the HCP



Department of Natural Resources



Manages & Protects

Trust Lands

- Forests
- Agriculture
- Renewable energy and other leases

Conservation Lands









- Natural Area Preserves
- Natural Resources Conservation Areas

Aquatic Lands

State Trust Lands

Granted Trust Lands

Benefits the state's public schools, universities and other institutions

-  Common School, Indemnity & Escheat
-  Scientific School
-  University Original
-  University Transferred
-  Normal School
-  Agricultural School
-  Capitol Grant
-  Charitable, Educational, Penal & Reformatory Institutions


State Forest Trust Lands

Benefits schools, counties and local services

-  State Forest Transfer Trust
-  State Forest Purchased Trust

Other

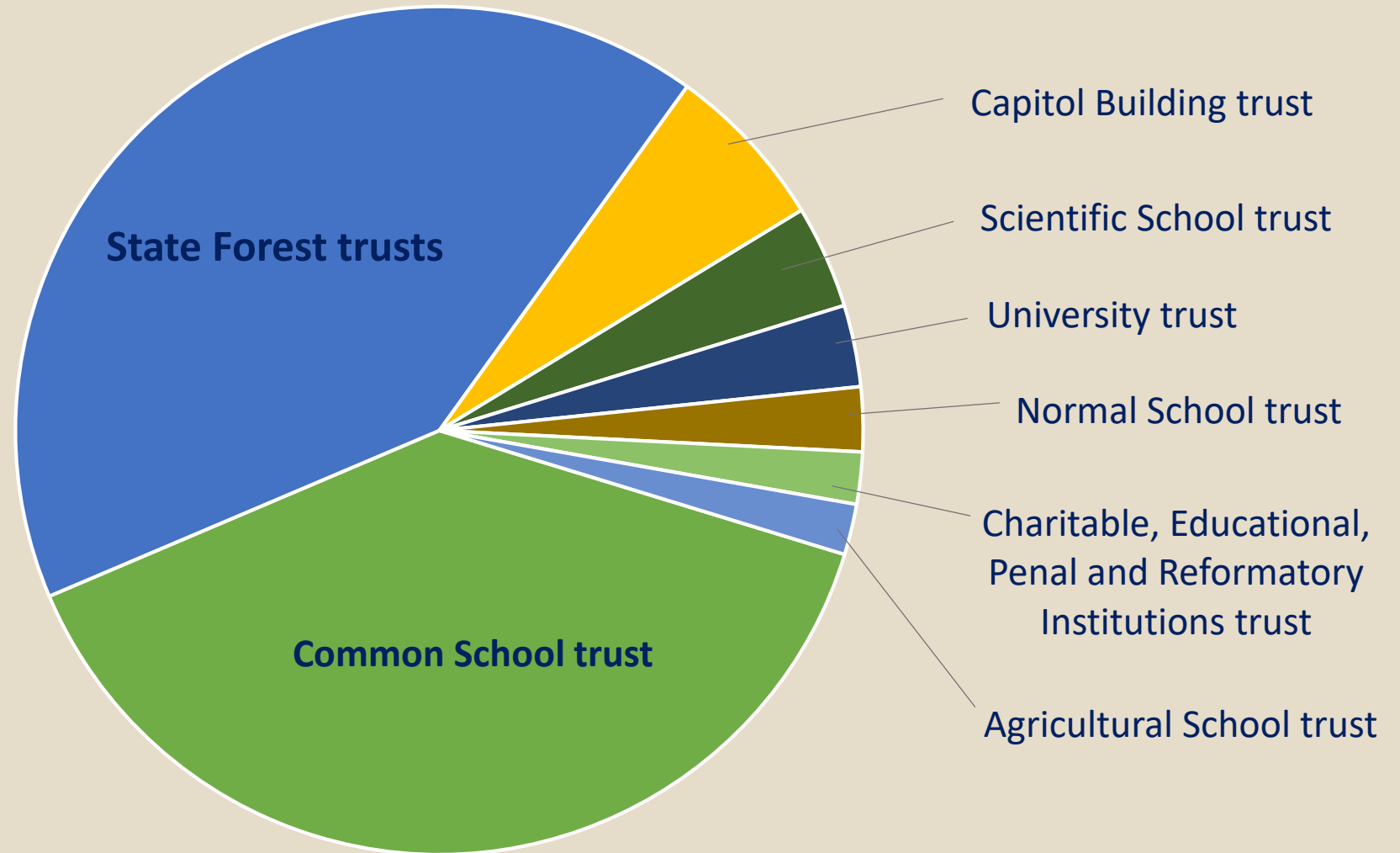
Benefits Community Colleges and others

-  Community College Reserve and other DNR-managed lands



Proportional Acreage of Major Trusts on the Westside of Washington

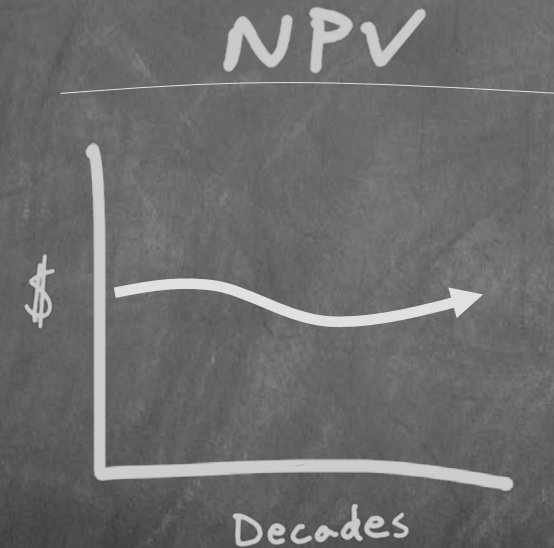
1.4 Million Acres of Forested Trust Lands within analysis area



Trust Mandate

As manager of state trust lands, DNR has legal fiduciary responsibilities under the State Constitution to:

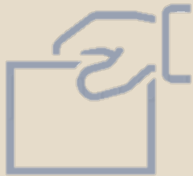
- Generate revenue and other benefits for each trust
 - Preserve the corpus of the trust
 - Exercise reasonable care and skill
- Act prudently to reduce the risk of loss for the trusts
 - Maintain undivided loyalty to beneficiaries
- Act impartially with respect to current and future beneficiaries



DNR's compliance with the ESA



- Habitat Conservation Plan



- Incidental Take Permit

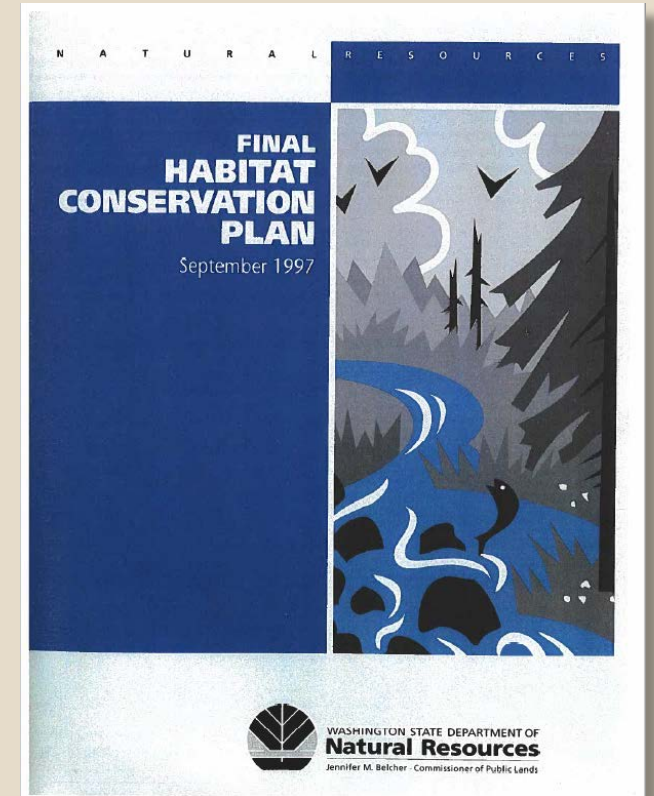


- Issuance criteria



What is a Habitat Conservation Plan (HCP)?

- Long-term management plan
- Partnership with USFWS
- The analysis of an HCP includes:
 - Effects of taking
 - Minimization and mitigation
 - How the HCP is funded
- An HCP is required to get an incidental take permit (ITP)



Incidental Take Permit Issuance Criteria

- A. The taking will be incidental
- B. Minimize and mitigate impacts of taking to maximum extent practicable**
- C. Adequate funding to implement murrelet strategy
- D. The taking will not appreciably reduce the survival and recovery of the species in the wild**
- E. Other measures the USFWS may require

State Trust Lands HCP

4 components

- Northern spotted owl
- **Marbled murrelet**
- Riparian-dependent species
- Other uncommon habitat



Interim Strategy

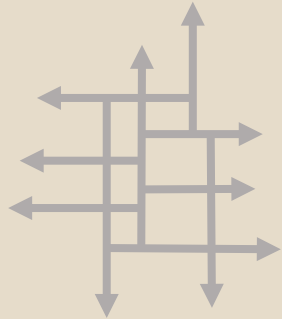


- Limited scientific information available in 1997
- **Interim Conservation Strategy**
 1. Identify and defer from harvest - suitable habitat
 2. Conduct habitat relationship studies
 3. Release marginal habitat for harvest
 4. Conduct inventory surveys to locate occupied sites
 5. **Develop a long-term conservation strategy**

Interim Strategy



- Temporary



- Complicated and costly



- Uncertain



———— A long-term strategy will... —————

- Better meet murrelet conservation needs
- Bring certainty under ESA, as the HCP intends
- Allow DNR to conduct sustainable forest management program with certainty





Ultimately, the applicant must develop a conservation program that includes both minimization and mitigation measures in a manner that **fully offsets the impacts** of the taking.

- HCP Handbook



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The Tools

Analytical Framework

Population Viability Analysis

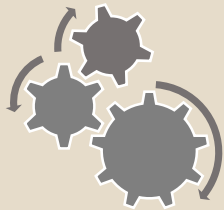
Financial Analysis



Development of Analytical Framework



Biological principles for the marbled murrelet



Methodology agreed upon by DNR and USFWS

Objective

Science-based

Repeatable



estimates of impacts and mitigation to marbled murrelet

Image: Birds of North America



How to offset impacts

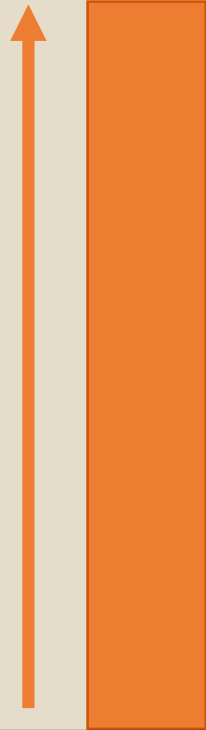
Minimize our
impact



Provide
mitigation

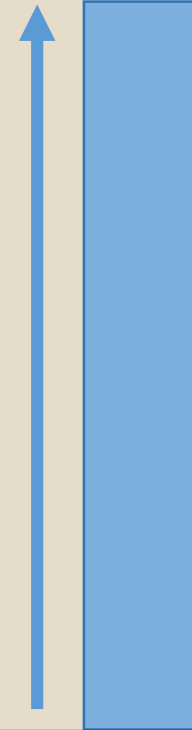


If our
impact
increases



Impact

So should
our mitigation



Mitigation

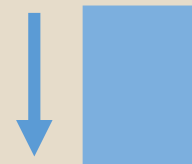


If we keep
impact
low



Impact

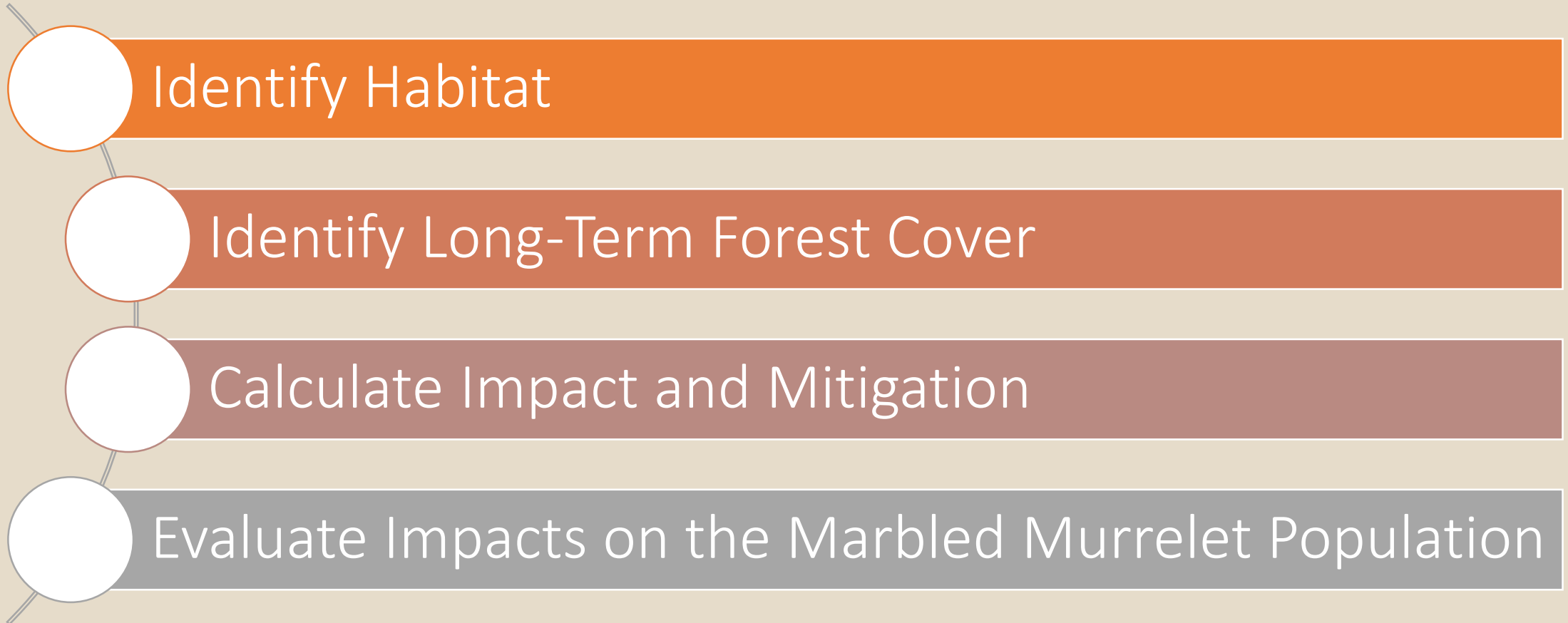
Mitigation can
stay low



Mitigation



Analytical Framework



Habitat vs. Non-habitat

P-stage Model

- Developed by the Science Team
- Based on forest inventory data – type, stand origin, stand age
- Result is estimate of location and quality of habitat

P-stage values

0

0.25

0.36

0.47

0.62 and 0.89

1



Non-Habitat

Low Quality
MM Habitat



High Quality
MM Habitat

Occupied Site



Long-Term Forest Cover

Existing Conservation

Lands already protected by

- HCP
- State laws
- DNR policy

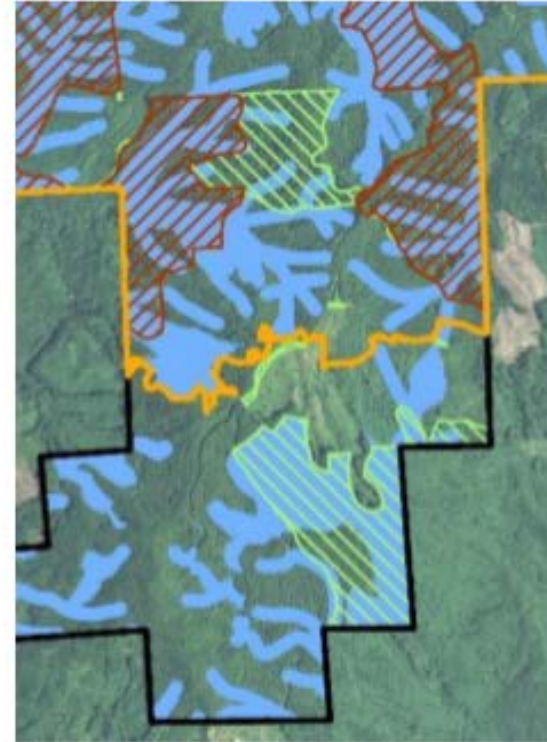
Marbled Murrelet-Specific Conservation

Vary by conservation alternative

- Location
- Size
- Quality



Block of DNR-managed land



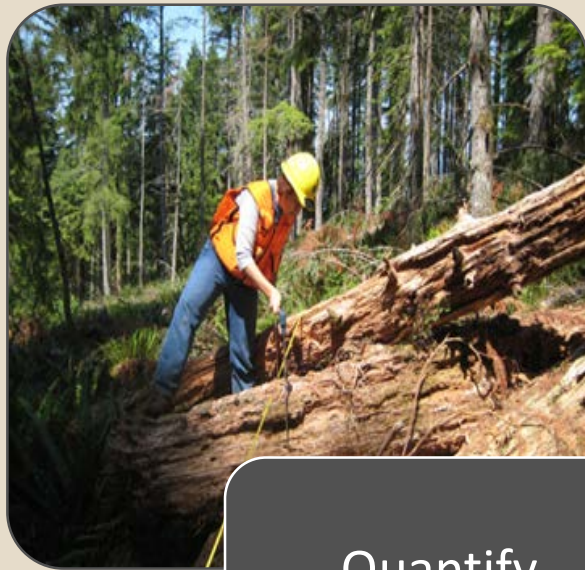
Occupied sites, riparian zones, other protected areas



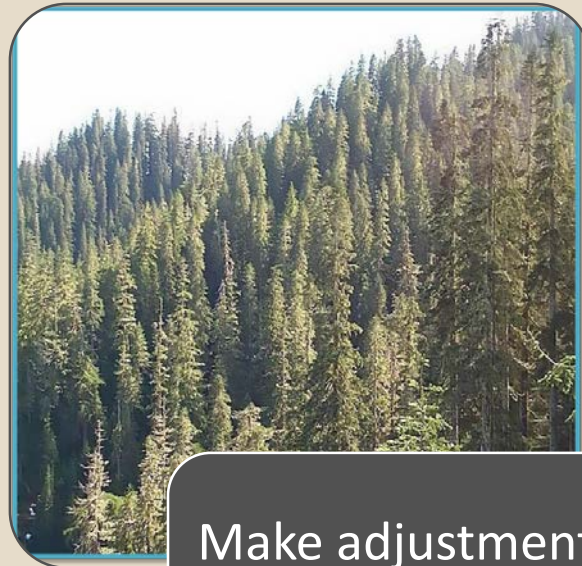
Areas layered together to form long-term forest cover
(interior forest in darkest green, edges in lighter green)



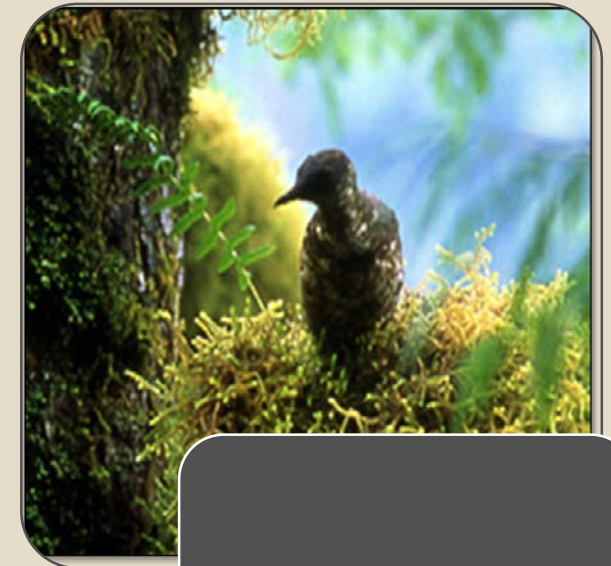
Conceptual Steps in Quantifying Impacts and Mitigation



Quantify impacts and mitigation



Make adjustments based on habitat quality, edge effects, location and time



Calculate impacts and mitigation



How do our actions affect the marbled murrelet?

Types of impacts

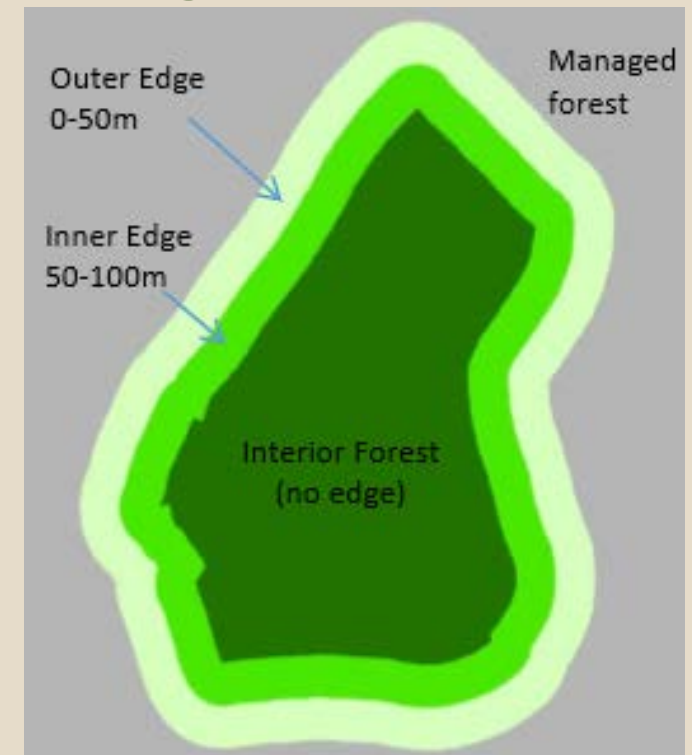
Habitat Removal



Disturbance



Edge Influenced



Calculating Mitigation in Areas of Long-Term Forest Cover

Future Habitat

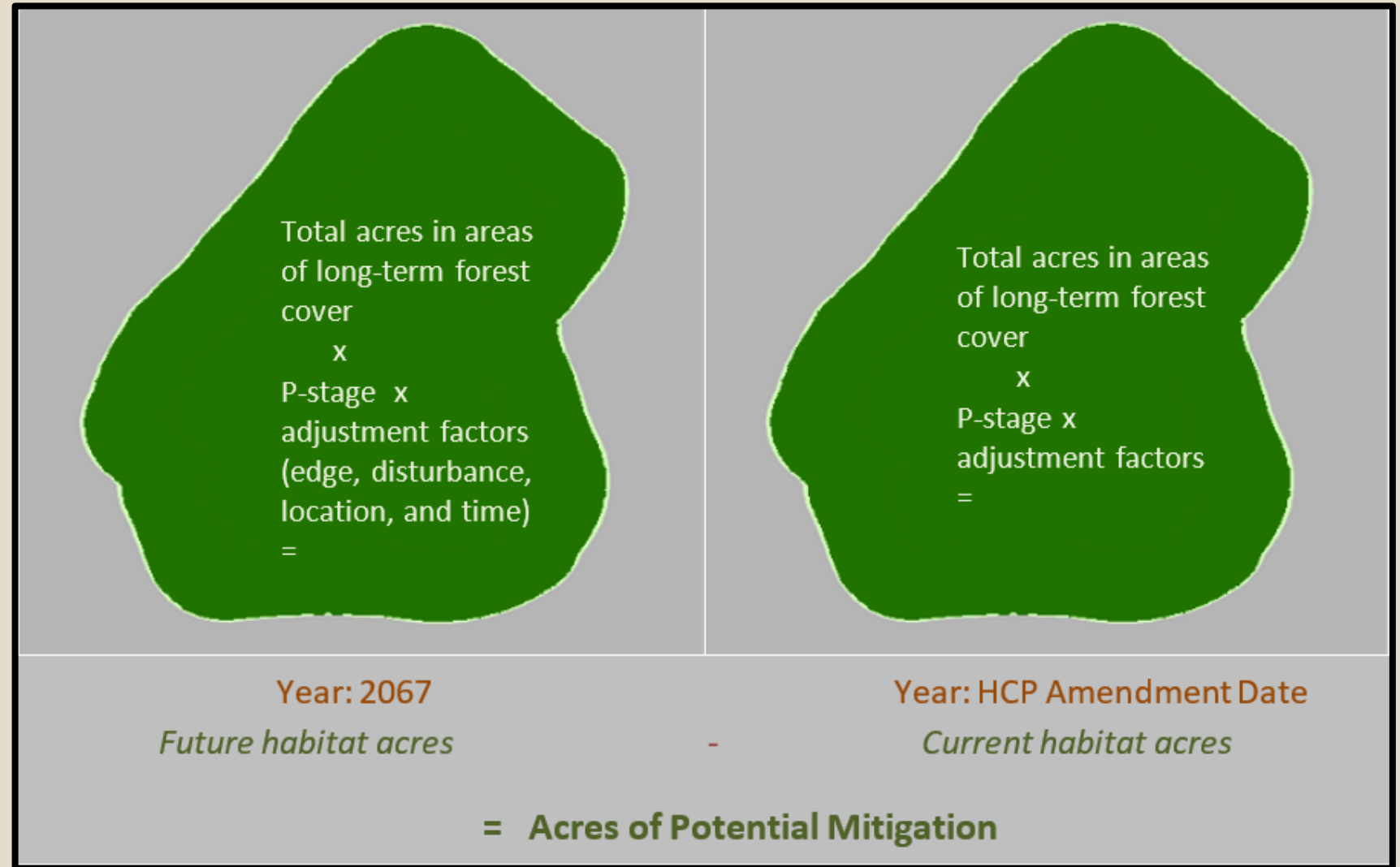
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Current Habitat

=

Mitigation Credit

*(growth of habitat over
life of HCP)*



Project Analysis Area

Within 55-miles of marine waters



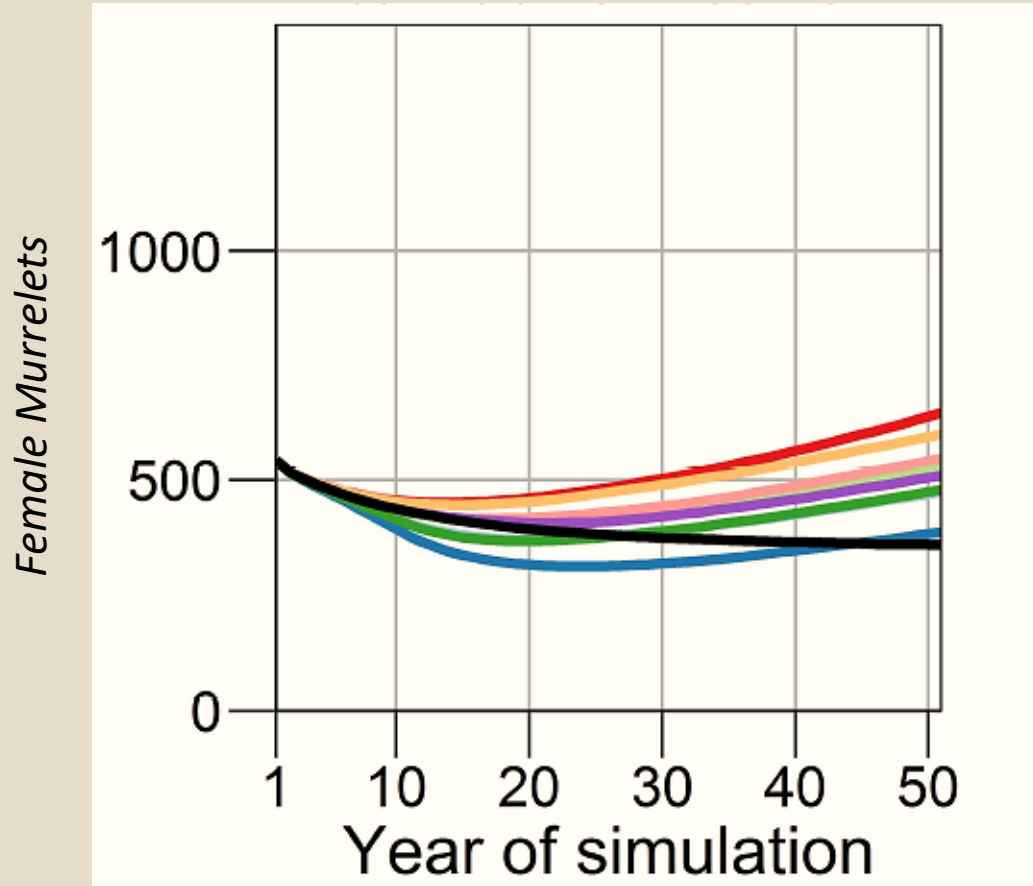
More than 16 million acres



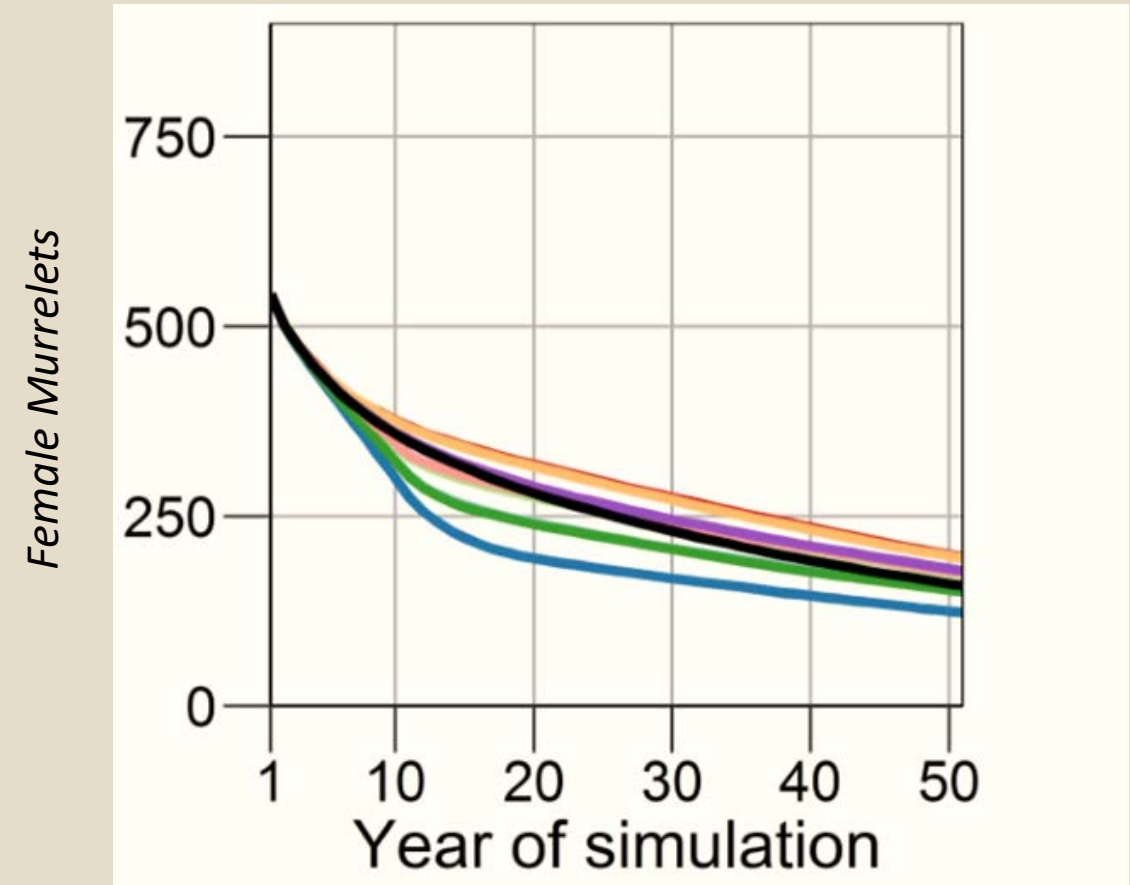
DNR lands = 1.38 million acres (~9%)



Population Viability Analysis (PVA)

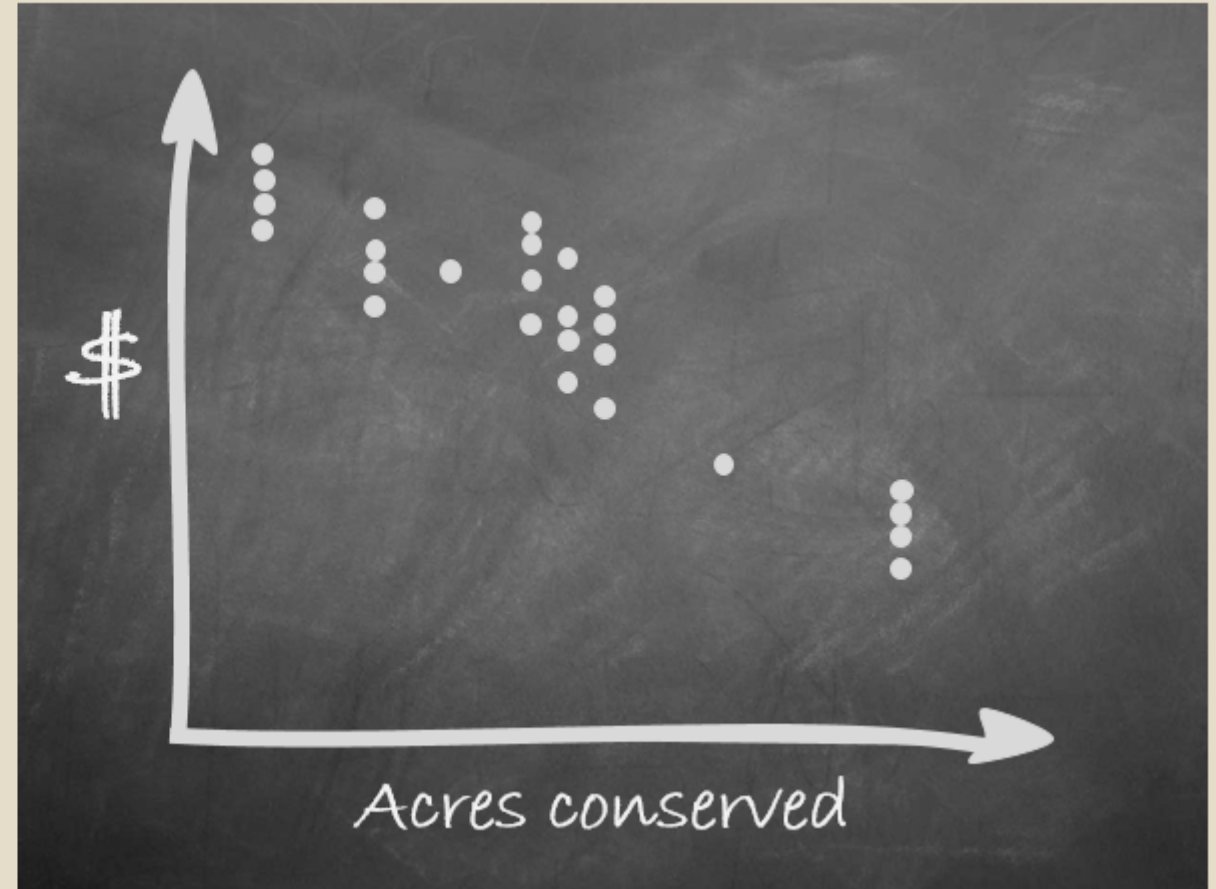
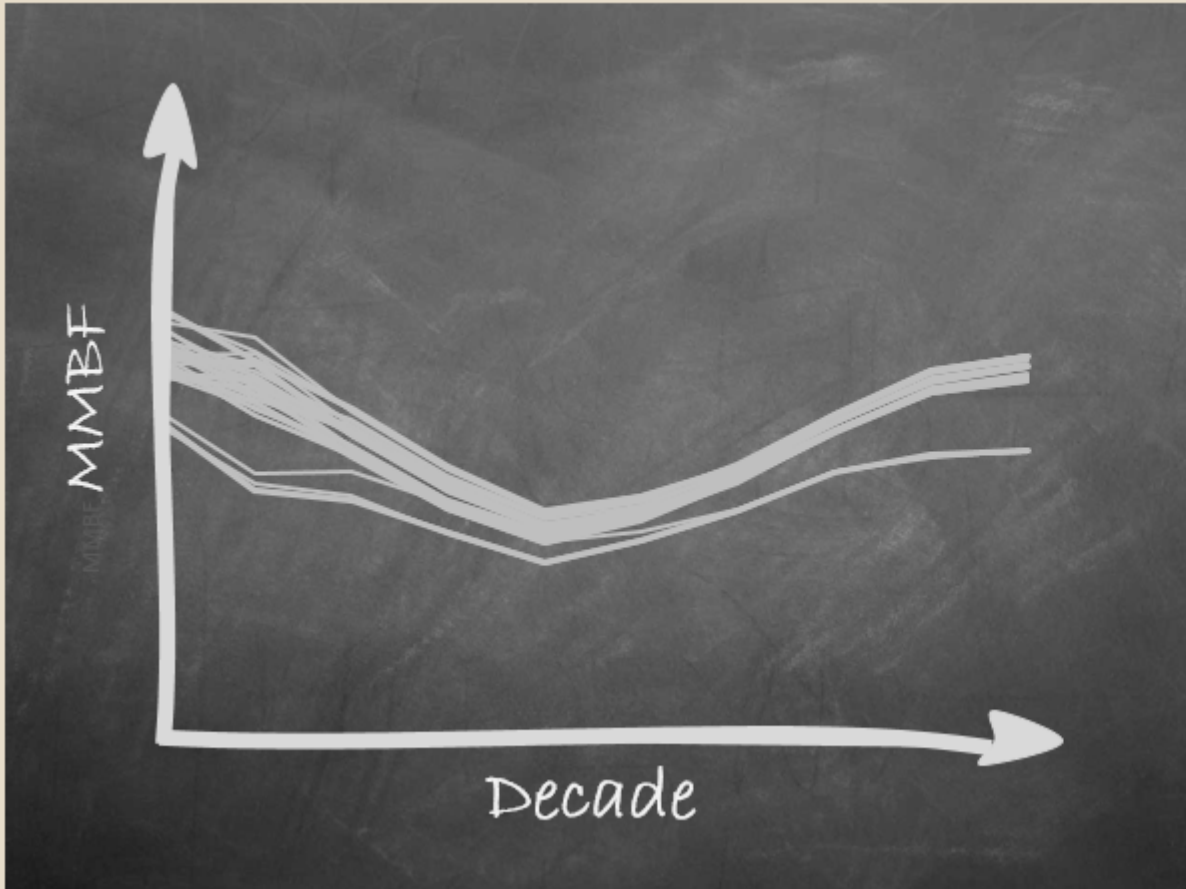


DNR - Enhancement



DNR - Risk

Financial analysis



In Summary

- The Board needs to decide on the Marbled Murrelet Long-Term Conservation Strategy
- DNR needs to comply with the ESA and the Trust Mandate
- Tools have been developed to help you make the decision



Next Steps...

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