

Marbled Murrelet Workshop



Photo: Martin Raphael, USFS

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Presentation Overview

- Marbled Murrelet General Biology
- Current Listing Status
- Oregon ESA Reclassification decision framework

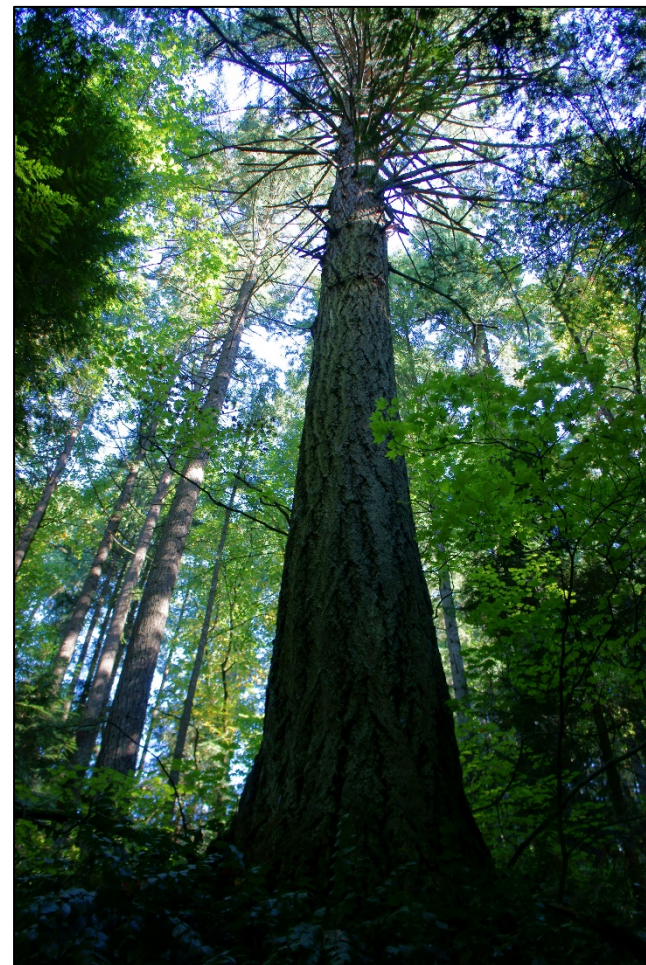


Photo: David Patte, USFWS

Biology of the Marbled Murrelet



Photo: Martin Nugent ODFW

Description

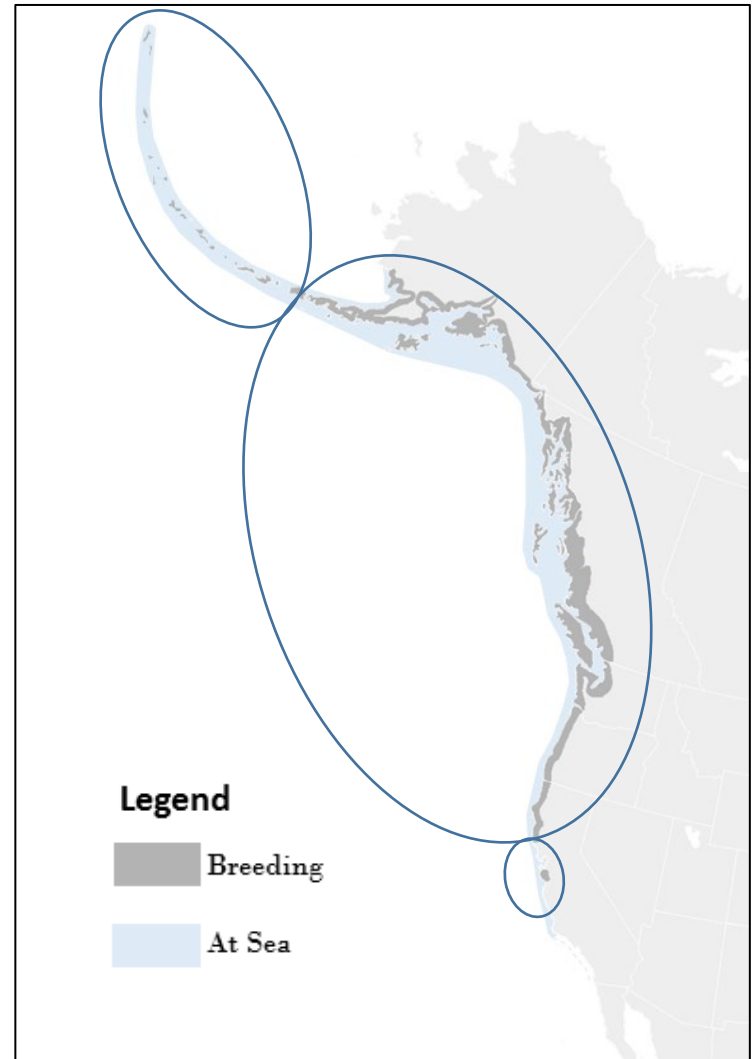
- Small, diving seabird in Alcidae family
- Short wings and rapid flight
- Grayish-brown breeding plumage, black/white nonbreeding plumage
- Spends most of life at sea but flies inland for nesting in older forests throughout much of its range
- “Enigma of the Pacific”



Photos (top to bottom): Roy Lowe, USFWS; David Patte, USFWS

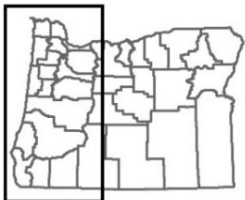
Range & Distribution

- Breeds along Pacific Coast from Aleutian Islands to central CA
- Winters throughout breeding range and as far south as Baja California, Mexico
- 3 genetically distinct units
- Most Marbled Murrelets in AK and BC





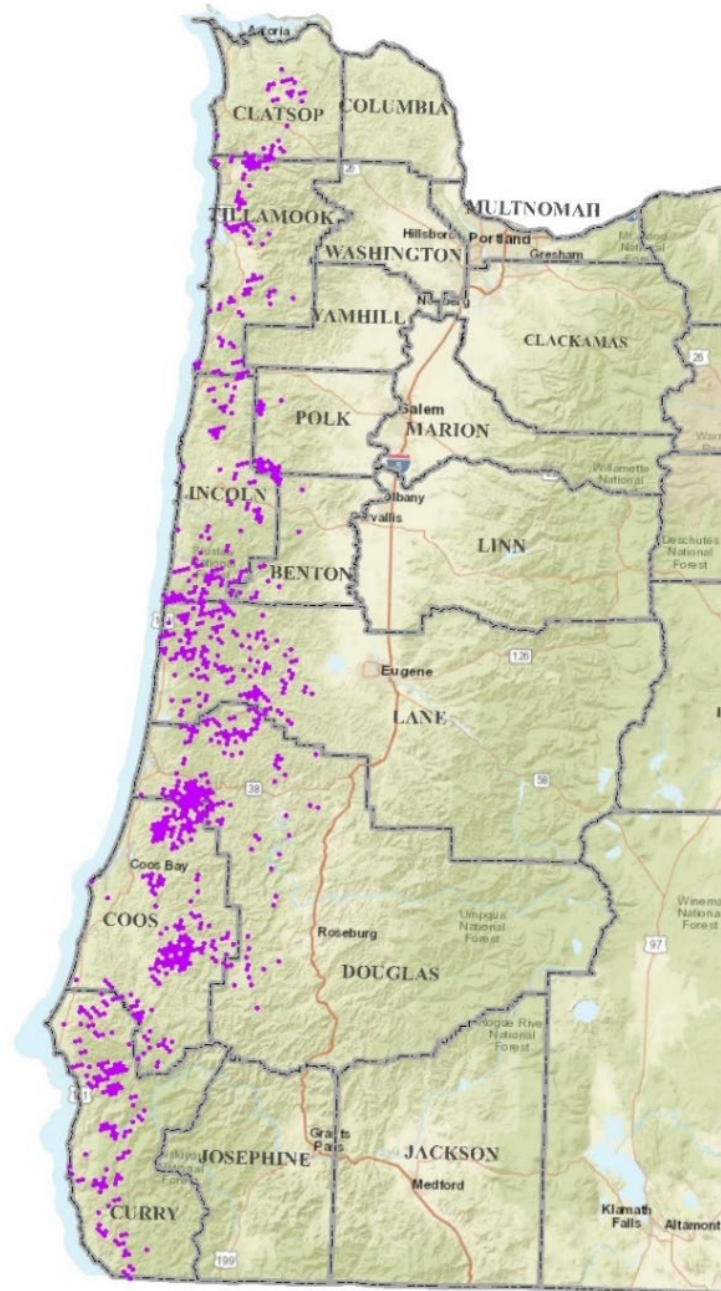
Range & Distribution

- No systematic inland surveys
- Murrelets nest up to ~50 miles inland
- Most breeding behaviors indicative of occupancy in OR recorded within ~40 miles of salt water



Legend

-  County Boundary
-  Subcanopy Detection within Square Mile Hexagon



Nesting Habitat

- Nests primarily in late-successional and old-growth forests
- Presence of platforms with nesting substrate is a particularly important habitat feature
- Lays egg in a depression in moss, lichen, or tree litter on large limbs

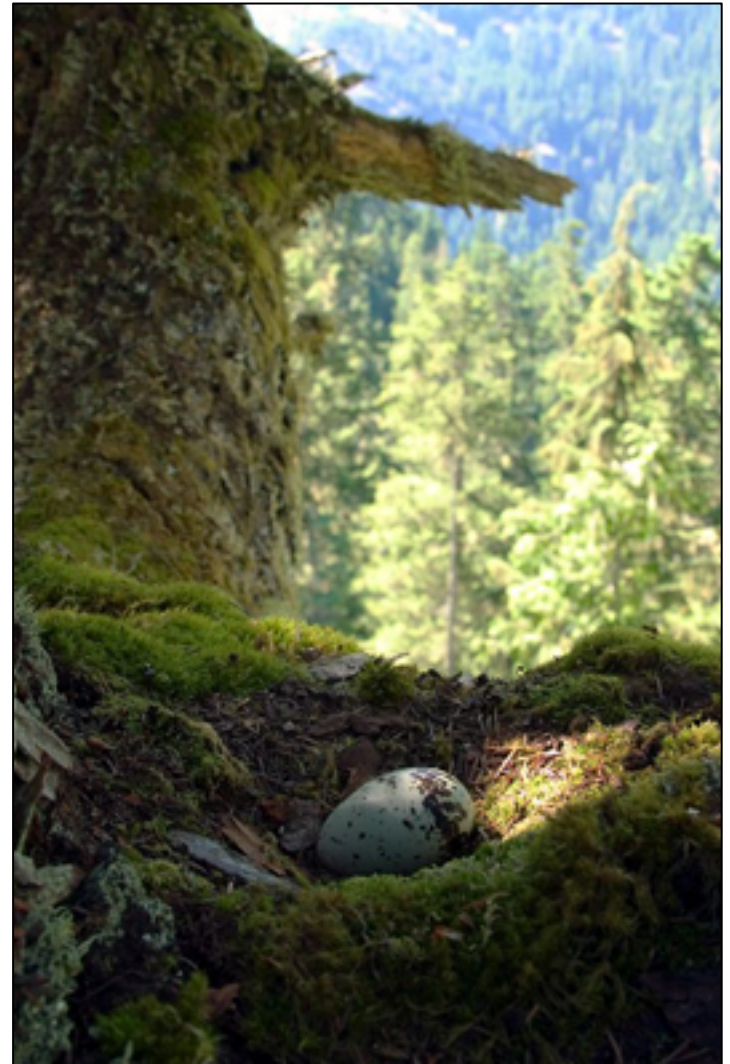


Photo: Nick Hatch, USFS

Nesting Habitat

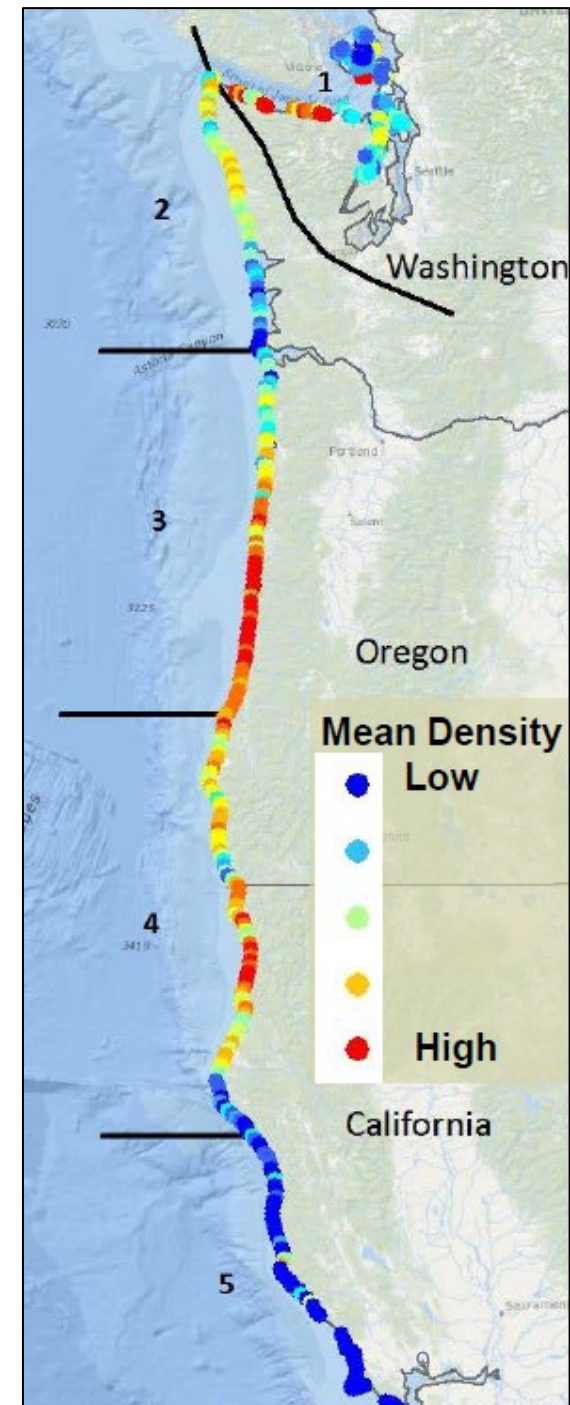
- High densities of large trees with platforms, multiple canopy layers, and natural canopy gaps appear important
- Most OR nests found in trees >80 years old, though nesting recorded in some younger or mature trees with structural elements characteristic of older trees
- Key selective pressures: predator avoidance, flight access



Photo: Nick Hatch, USFS

Marine Habitat

- Inhabits nearshore marine waters
- Highest murrelet densities observed during breeding season offshore of large blocks of potential habitat
- Likely more dispersed during winter



Foraging Behavior & Diet

- Wing-propelled pursuit diver
- Feeds on small schooling fish and invertebrates
- Prey quality and availability affected by a combination of local and large-scale oceanographic processes



Photo: NURP-NOAA



Photo: Aaron Barna, USFWS

Reproduction & Survival

- Long-lived, delayed sexual maturity
- Lays a single large egg per clutch
- May not breed every year
- Limited data on vital rates for OR
 - Nest success: 36% ($n = 22$ nests, data from S. K. Nelson)



Photo: Tom Hamer

Factors Affecting the Species

Key Threats

- Forest habitat alteration
- Large-scale disturbances
- Small population size
- Predation by corvids (jays, crows, ravens) and other species
- Oil spills
- Adverse oceanic conditions and other threats in the marine environment
- Climate change effects
- Cumulative and synergistic effects



Photo: Rich MacIntosh, USFWS

Forest Habitat Alteration

- Historic nesting habitat loss
 - Reduced quantity of available nesting habitat
 - Reduced quality of habitat



Photo: OSU, Flickr

Large-scale Disturbances

- Fires, windstorms, disease outbreaks, etc.
impacts to otherwise protected habitat



Photo: Chetco Bar Fire, InciWeb Incident Information System

Adverse Oceanic Conditions

- Cold-water conditions linked to higher prey availability, breeding success

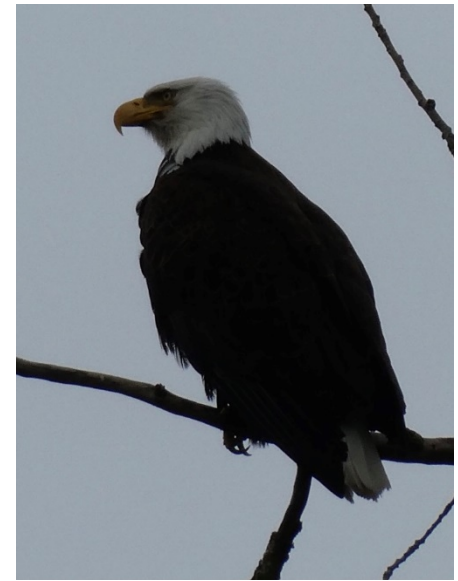


Photo: David Ayers, USGS

- Centennial shifts toward lower quality prey types
- Harmful algal blooms, low-oxygen “dead zones”, biotoxins, contaminants, and fishing pressures also potential threats

Predation

- Predation by corvids is a primary cause of nest failure
- Forest fragmentation and anthropogenic food sources may contribute to elevated predation rates



Photos (left to right): Peter Pearsall, USFWS; Tom Koerner, USFWS; Martin Nugent, ODFW

Oil Spills

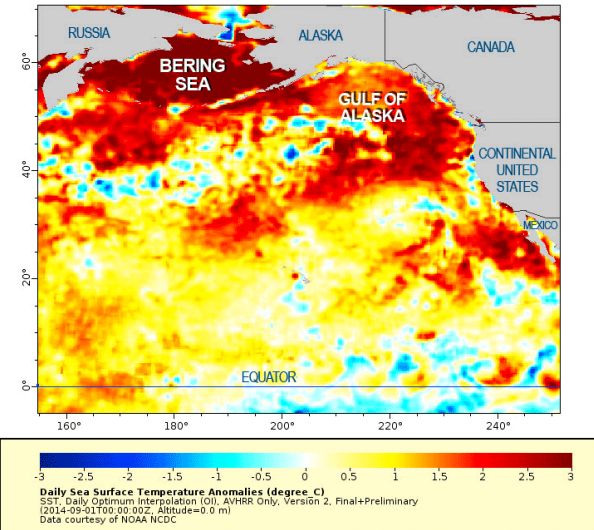
- Oil exposure can have lethal or sub-lethal effects for murrelets, prey
- 1999 New Carissa spill on OR coast killed or injured approximately 2,465 seabirds, including 262 murrelets
- High risk of spills from tanker and shipping traffic along West Coast and Columbia River as well as ports, oil facilities, and oil trains



Photos (top to bottom): NOAA; USCG

Climate Change Effects

- Marbled Murrelets highly sensitive to climate change
- Warmer, drier conditions may lead to vegetation shifts, greater impacts from wildfire and disease, reduced growth of moss and other epiphytes
- Changes in marine environment expected to exacerbate conditions unfavorable to murrelets



Sea Surface Temperature Anomalies Graphic, NOAA



Photo: Swiss Needle Cast, Robbie Flowers, USFS

Legal Status

- Federally-threatened across the DPS (WA, OR, and CA) since 1992
 - Reviewed in 2019
- State-threatened in OR since 1995
- Primary reason for federal and state listings
 - Loss and modification of older forest nesting habitat
 - Declining population



Photo: David Patte, USFWS

Current Status Review

- Commission direction in December 2019



Photo: David Patte, USFWS

Effects of the Oregon ESA

- Directly affects management decisions on state-owned, managed, and leased lands only
- Oregon ESA requires affected state agencies to develop plans for endangered species and to comply with survival guidelines for threatened species
- Survival guidelines requirement was not in effect when the Marbled Murrelet was listed as state-threatened in May 1995
- Advisory survival guidelines for murrelets adopted in 2018

Reclassification Decision Framework



Photo: Roy Lowe, USFWS

Threatened & Endangered Species *Definitions*

Threatened Species: any native wildlife species the Commission determines is likely to become an endangered species within the foreseeable future throughout any significant portion of its range within this state (ORS 496.004(17)(a))

Endangered Species: any native wildlife species determined by the Commission to be in danger of extinction throughout any significant portion of its range within the state (ORS 496.004(6)(a))

Uplisting Criteria for Marbled Murrelet

- 1) The Commission must determine whether the likelihood of survival of the species has diminished such that the species is in danger of extinction throughout any significant portion of its range within Oregon (OAR 635-100-0111(1))



Photo: David Patte, USFWS

1. Risk of Extinction

- Life history traits
- Population status and trend
- Habitat quality and quantity
- Evaluation of threats and stressors
- Likelihood of survival of the species has diminished such that the species is in danger of extinction throughout any significant portion of its range within Oregon

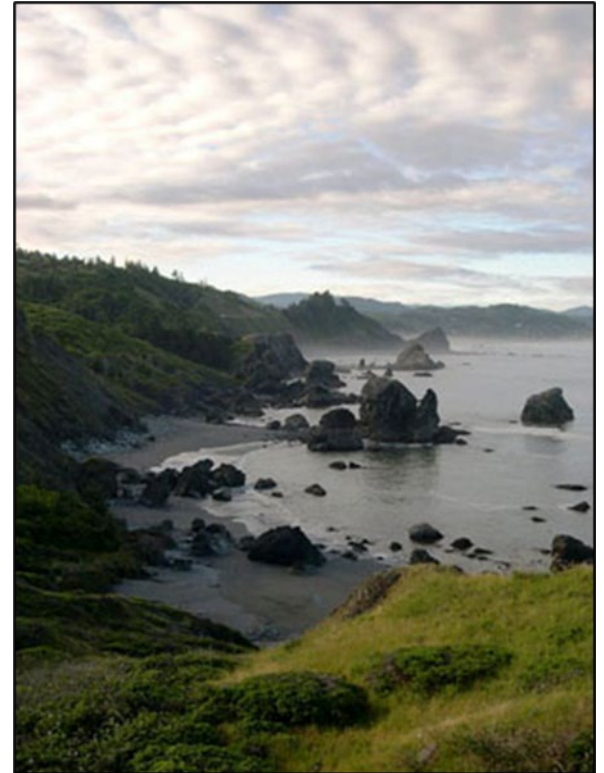


Photo: OPRD

1. Risk of Extinction

- Regarding the range of the species, the commission shall consider:
 - a) The total geographic area in this state used by the species for breeding, resting or foraging and the portion thereof in which the species is or is likely within the foreseeable future to become in danger of extinction;
 - b) The nature of the species' habitat, including any unique or distinctive characteristics of the habitat the species uses for breeding, resting or foraging; and
 - c) The extent to which the species habitually uses the geographic area.

Decision Framework

1. Has the likelihood of survival of the species diminished such that the species is in danger of extinction throughout any significant portion of its range within Oregon?

No to 1.

Species remains state-threatened

Yes to 1.

Step 2.

Uplisting Criteria for Marbled Murrelet

1. Risk of Extinction – *if YES*

Then, must determine whether

2. At least one of the following three factors exists:

a) Most populations are undergoing imminent or active deterioration of their range or primary habitat in Oregon.

OR

b) Overutilization of the species or its habitat for commercial, recreational, scientific, or educational purposes is occurring or is likely to occur.

OR

c) Existing state or federal programs or regulations are inadequate to protect the species or its habitat.

(OAR 635-100-0111(1) and 635-100-0105(6))

Decision Framework

1. Has the likelihood of survival of the species diminished such that the species is in danger of extinction throughout any significant portion of its range within Oregon?

No to 1.

Species remains state-threatened

AND

2. Does at least one of the following three factors exist?

a) Most populations are undergoing imminent or active deterioration of their range or primary habitat in Oregon.

OR

b) Overutilization of the species or its habitat for commercial, recreational, scientific, or educational purposes is occurring or is likely to occur.

OR

c) Existing state or federal programs or regulations are inadequate to protect the species or its habitat.

No to 2.

Species remains state-threatened

Yes to both 1. and 2.

Species qualifies for reclassification as state-endangered.

Decision Not to List a Species that would Otherwise Qualify for Listing

3. The Commission may decide, under certain circumstances, not to list a wildlife species that would otherwise qualify to be so listed.

a) Is the future of the species secure outside this state?

OR

b) Is it true that the wildlife species is not of cultural, scientific, or commercial significance to the people of this state?

OR

c) Has the species been listed as threatened or endangered pursuant to the federal ESA?

Decision Framework

1. Has the likelihood of survival of the species diminished such that the species is in danger of extinction throughout any significant portion of its range within Oregon?

No to 1.

Species remains state-threatened

AND

2. Does at least one of the following three factors exist?

No to 2.

Species remains state-threatened

Yes to both 1. and 2.

Species qualifies for reclassification as state-endangered.

Optional

a) Most populations are undergoing imminent or active deterioration of their range or primary habitat in Oregon.

OR

b) Overutilization of the species or its habitat for commercial, recreational, scientific, or educational purposes is occurring or is likely to occur.

OR

c) Existing state or federal programs or regulations are inadequate to protect the species or its habitat.

3. The Commission may decide, under certain circumstances, not to list a wildlife species as endangered that would otherwise qualify to be so listed.

a) Is the future of the species secure outside this state?

OR

b) Is it true that the wildlife species is not of cultural, scientific, or commercial significance to the people of this state?

OR

c) Has the species been listed as threatened or endangered pursuant to the federal ESA?

Next Steps for the Commission and Affected State Agencies in the Event of an Uplisting Decision



Photo: David Patte, USFWS

Effect of the Oregon ESA on Private Land

The Oregon Endangered Species Act does not, by itself, require an owner of any commercial forestland or other private land to take action to protect a threatened or endangered species, or impose requirements or restrictions on the use of private land.

(ORS 496.192(1))

Mitigation of Adverse Impact on Local Economies

The Commission shall work with private landowners, affected cities, affected counties, and affected local service districts to mitigate the adverse impact on local economies when the Commission adds a species to the list of threatened or endangered species.

(ORS 496.182(2)(b))

Survival Guidelines

OAR 635-100-0137

- Definition in rule reflect as advisory, but would be mandatory through reclassifying murrelets as Endangered
- Only applicable to actions proposed on lands owned and/or managed or leased by state agencies
- Outlines conservation goals for terrestrial and marine habitats
- Attempts to minimize duplication of efforts
- Addresses survey efforts and occupied sites
- Limits disturbance activities
- Reduces nest predation risks
- Consult on conservation measures



Drawing: Brian Woodbridge, OSU Flickr

Role of State Lands

Endangered Species Management Plans

- Commission determines if state land can play a role in conservation of the species
- ‘Role’ is determined by the land-managing agency in consultation with ODFW
 - ODFW provides information on conservation needs of species
 - Agencies balance statutes, rules, policy, social-economic impacts, and conservation needs of the species
- State land-owning/managing agencies develop their own endangered species management plans

Endangered Species Management Plans

- OAR 635-100-0140 requires development of endangered species management plans which when approved, supersede survival guidelines
- Plans provide for long-term opportunities for species' conservation
- Federal ESA protections still apply everywhere



Photo: Tony Andersen, ODF

Role of Other State Agencies (non-land owning)

- Commission shall determine whether agencies other than land-owning and managing agencies can play a role in conservation of the species
- Role is determined by the agency in consultation with ODFW
- Agency actions consistent with survival guidelines
- No statutory or rule timeframe

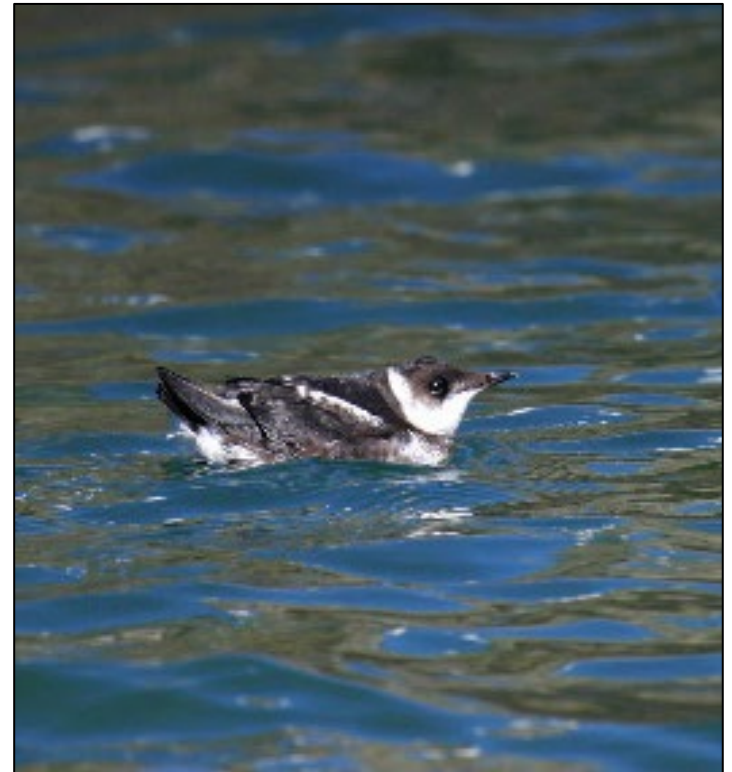


Photo: Roy Lowe, USFWS

Questions



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