

Periodic Status Review of the Northern Spotted Owl in Washington

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Periodic Status Review: Process & Timeline

Listing Process Guided by WAC 220-610-110

- Last Northern Spotted Owl PSR 2016
- February 2020: solicit data and information from the public prior to work on initial draft
- April 2023: 90-day public comment period on Draft
- December 2023: PSR finalized
- Listing "...solely on the basis of the biological status of the species being considered, based on the preponderance of scientific data available."
- Endangered wildlife is "... seriously threatened with extinction throughout all or a significant portion of its range within the state"



Listing status

1988: Endangered - Fish & Wildlife Commission

1990: Threatened - USFWS ESA

2020 & 2022: Threatened (Endangered warranted) – USFWS CNOR

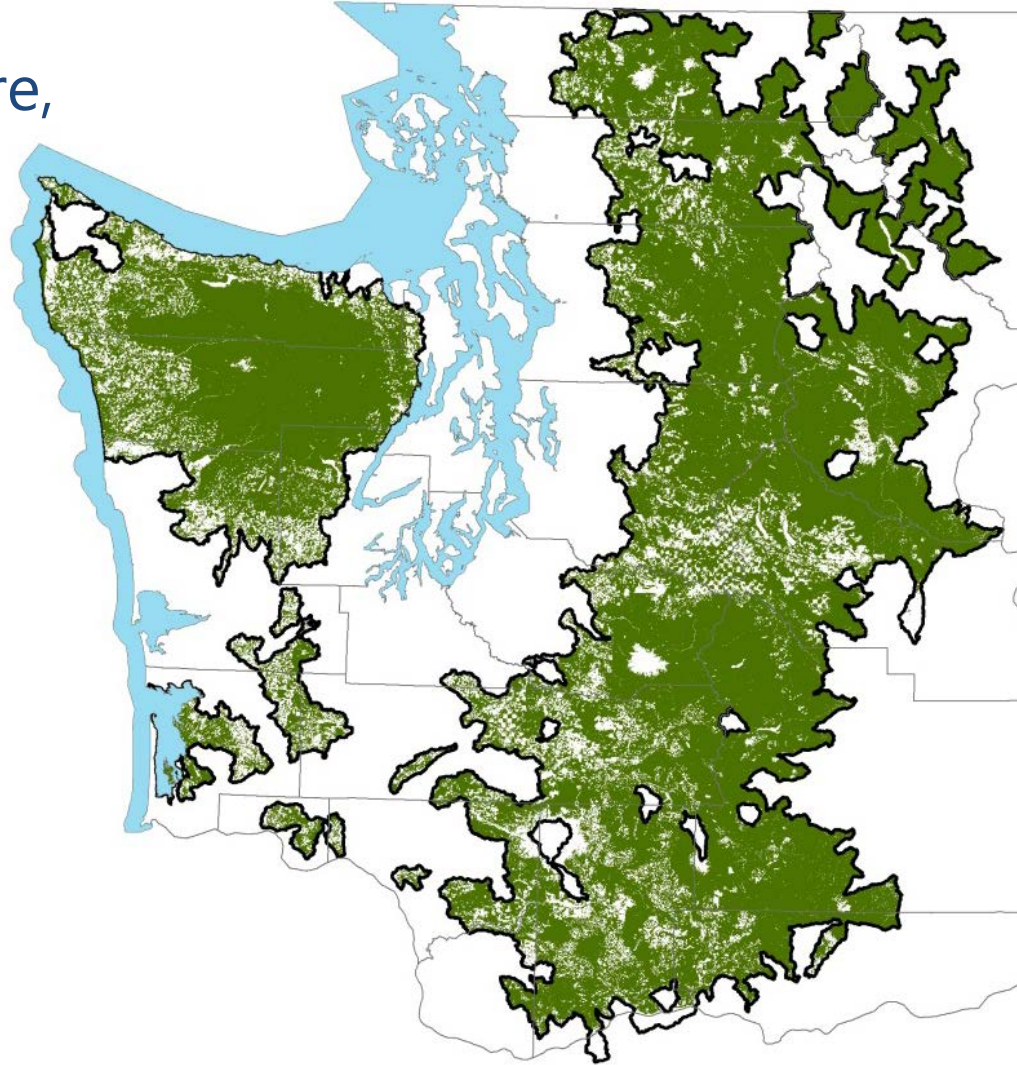
2023: Endangered (maintain status recommended) – WDFW PSR

Photo: Jared Hobbs



Life History

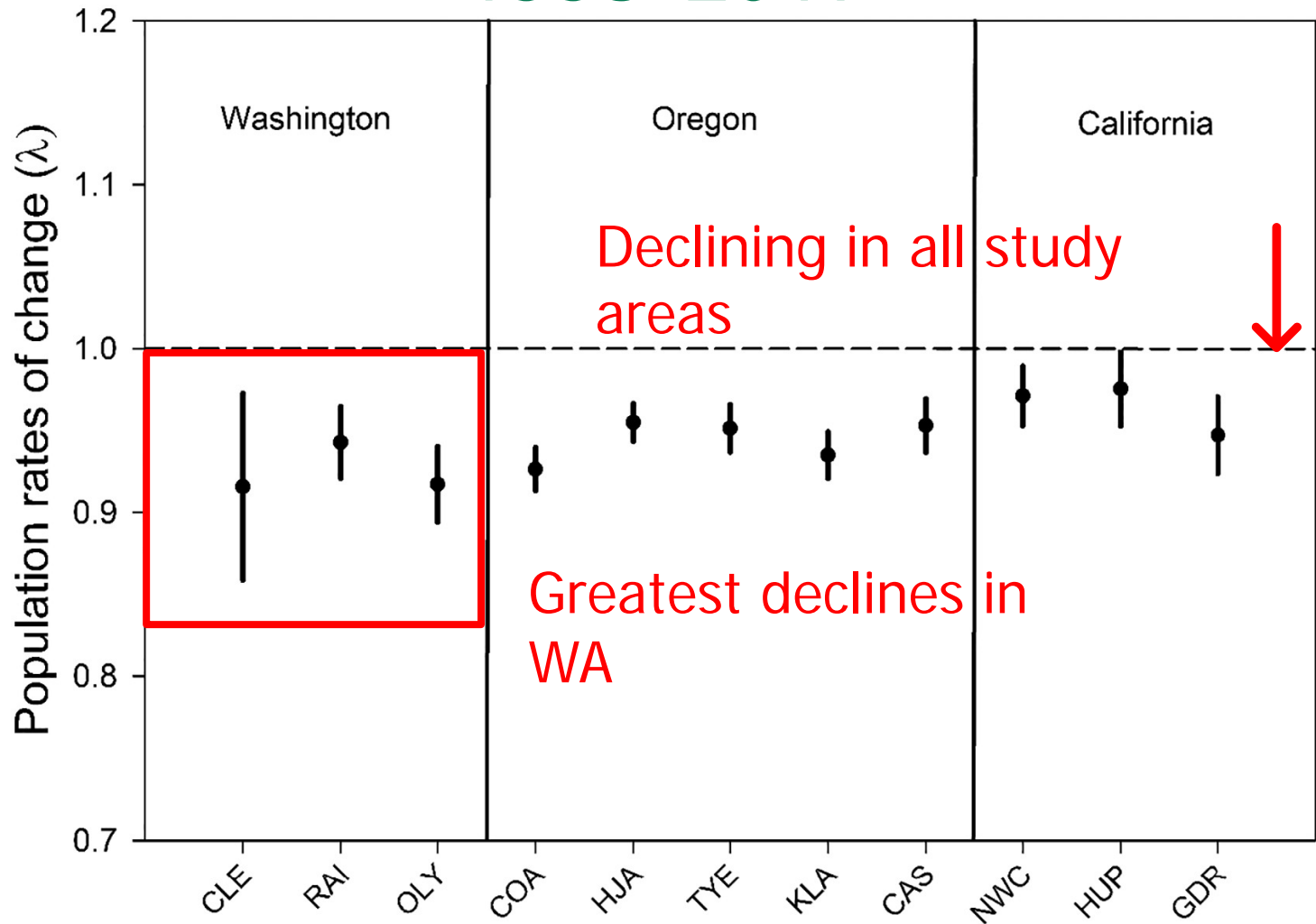
- Structurally complex mature, old forest
- Home range is largest in WA ($\mu = 6,500-8,900$ ac)
- Long lifespan
- Low reproductive rate
 - 1-3 eggs
 - Do not breed every year
- Low juvenile survival



Recent range of the Spotted Owl in Washington, as depicted by the spatial extent of multiple ecological systems that have supported territorial owls at any point in time since the 1970s.



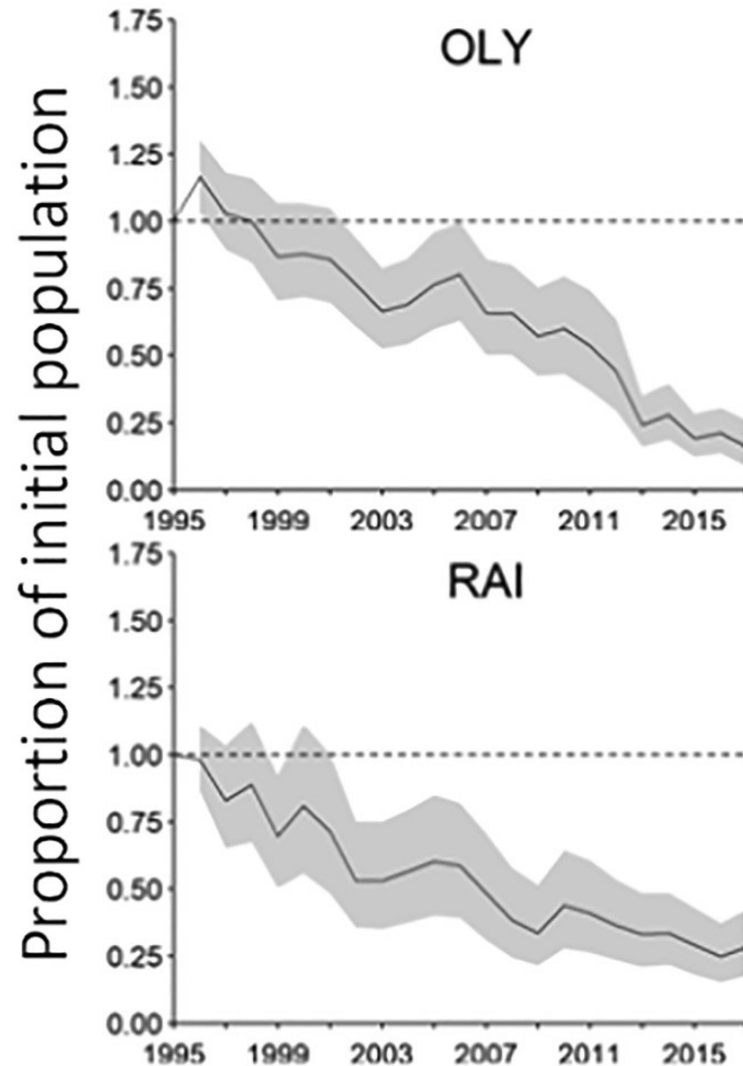
Mean rate of population change 1995-2017



Study area (Franklin and others 2021)



Annual rate of change in WA study areas



NSO population declined between -5% and -9% from 1995 through 2018

(Franklin and others 2021)



Limiting factors

- Competition with Barred Owls
- Habitat loss
 - Climate change
 - Fire risk in dry forests
- Adequacy of regulatory mechanisms
- Small population vulnerability

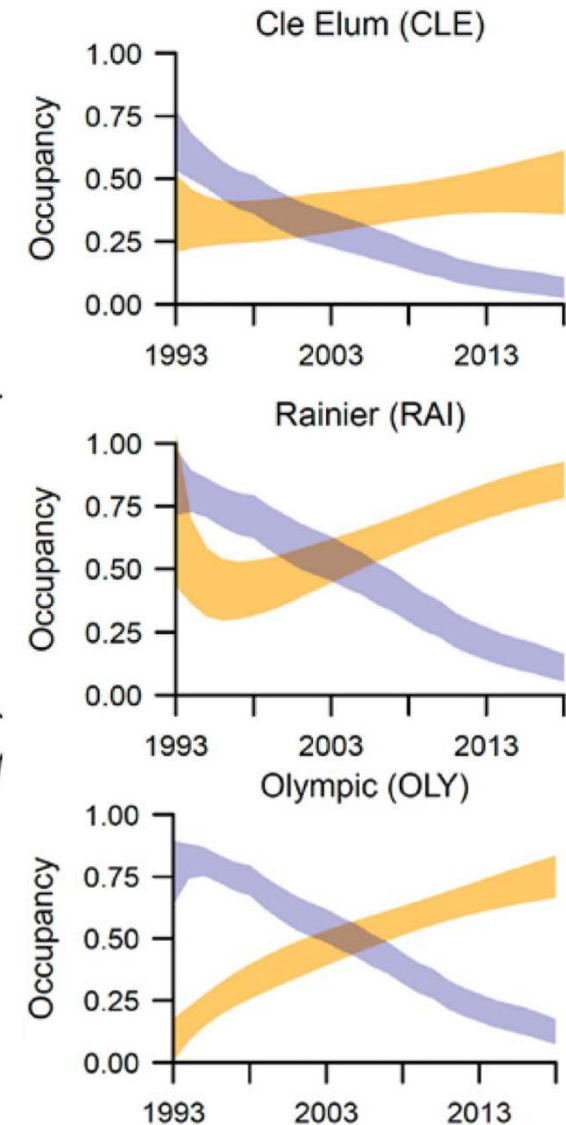


Negative effects of Barred Owls on Spotted Owls

- Increased extinction rates
- Decreased colonization rates
- Decreased occupancy
- Decreased survival
- Hybridization



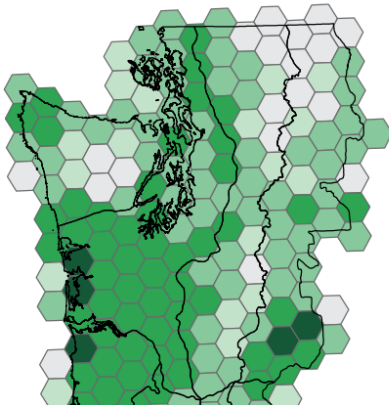
(Franklin and others 2021)



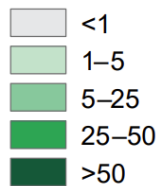
Habitat loss

- Net loss of 23.7% (2.9 million acres) 1993 - 2017
- ~ 24% of that loss in WA

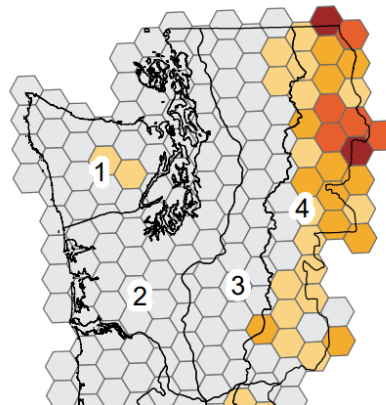
Timber harvest



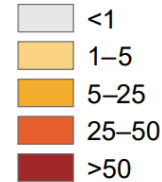
Percentage of forest harvested



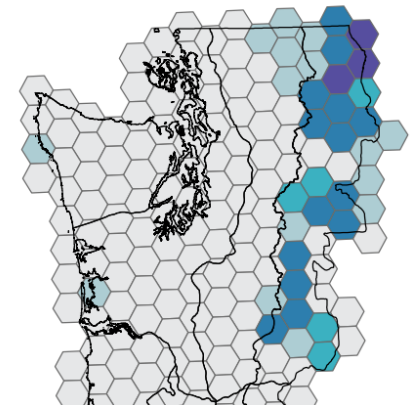
Wildfire



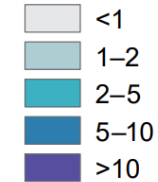
Percentage of of forest burned



Insect/disease



Percentage of forest infected



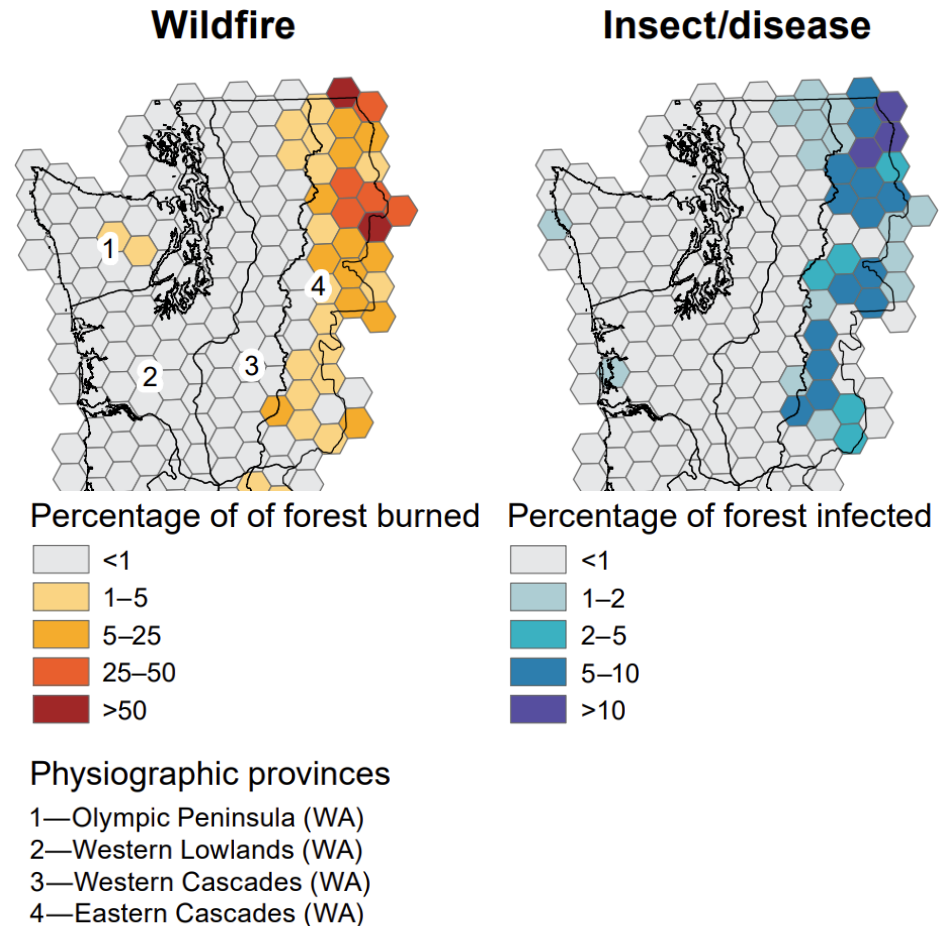
Physiographic provinces

- 1—Olympic Peninsula (WA)
- 2—Western Lowlands (WA)
- 3—Western Cascades (WA)
- 4—Eastern Cascades (WA)



Climate change alters habitat

- Changes in temperature, precipitation, and less snowpack
- Increased frequency and intensity wildfires
- Insects
- Disease

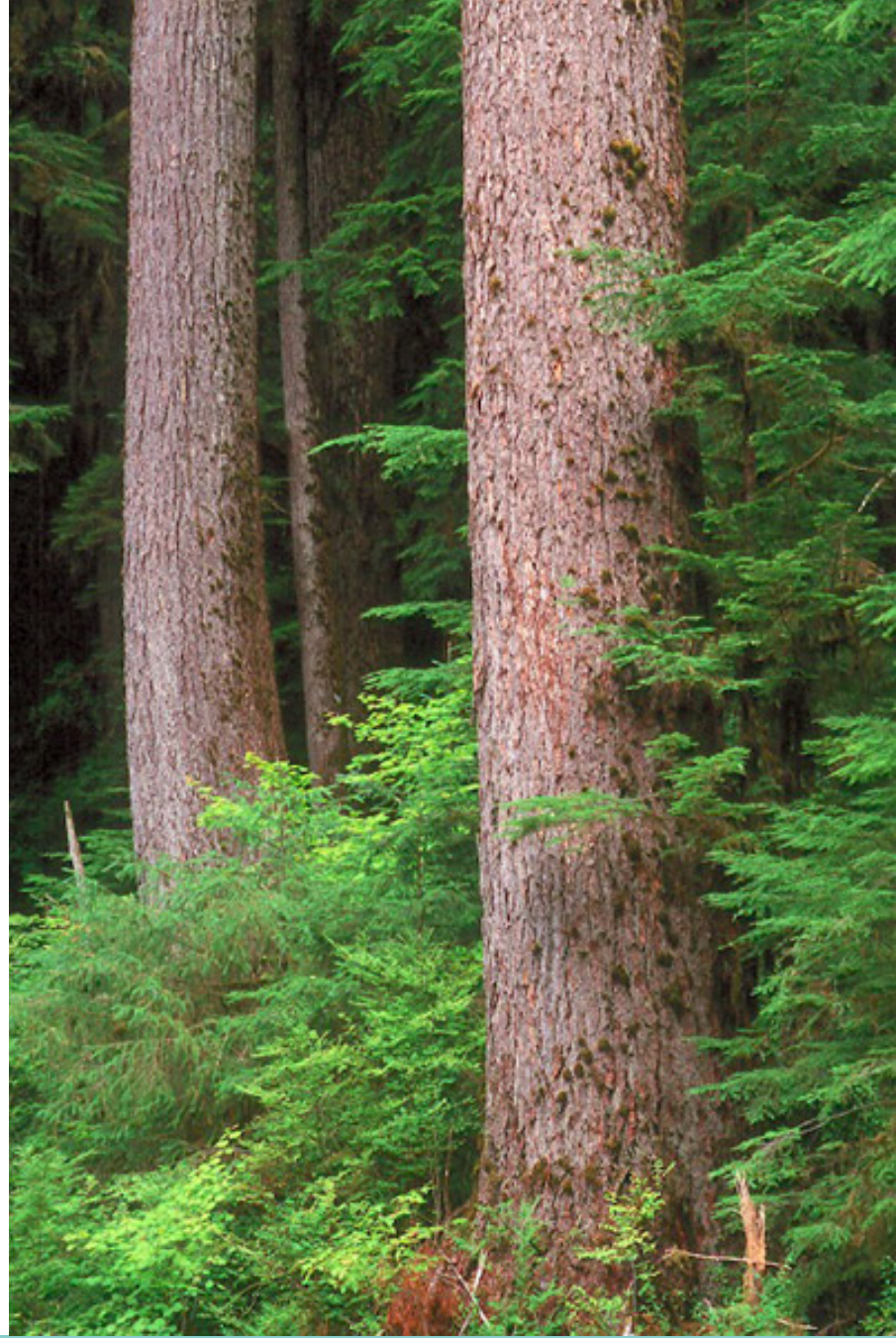


(Davis and others 2022)



Dry forest fire risk

- Fire suppression created Spotted Owl habitat
- Forest conditions are susceptible to large fires, insects, disease
- Substantial areas of owl habitat in Late Successional Reserves have burned



Regulatory Mechanisms

- Impacts of timber harvest reduced, but not eliminated
- USFWS designated Critical Habitat
- Less timber harvest has occurred than anticipated
- Federal ESA uplisting to Endangered

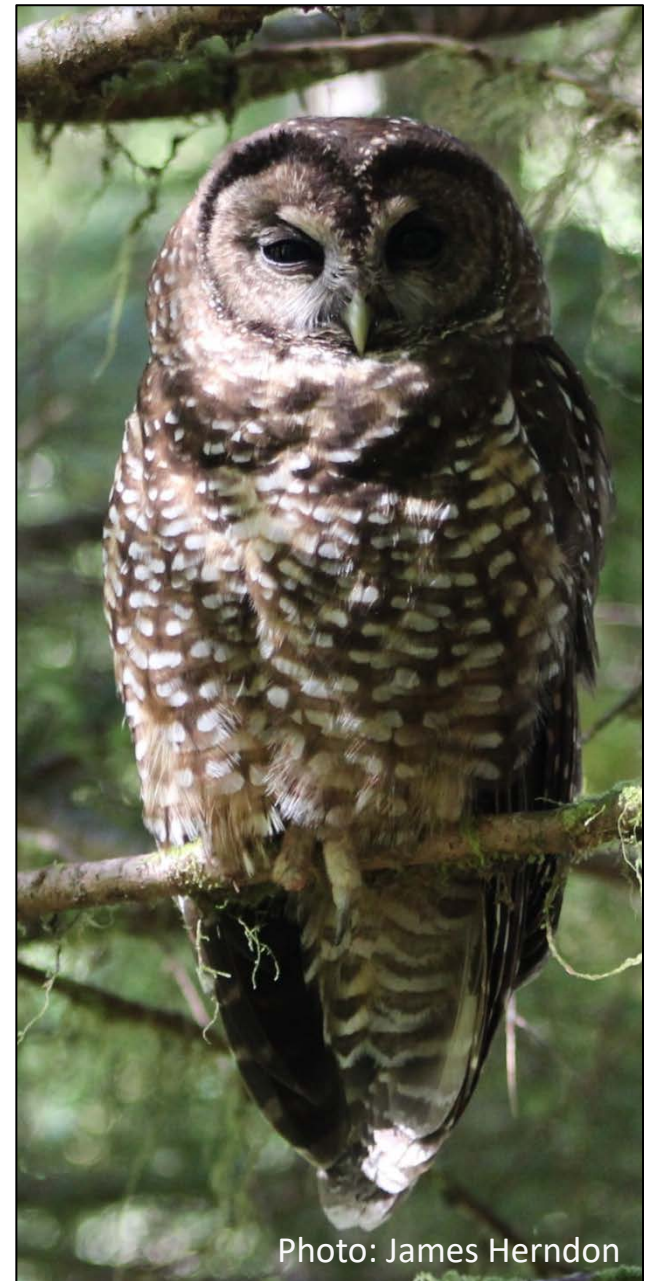


Photo: James Herndon



Small population effects

- More susceptible due to small population size
- Environmental contaminants
- Disease
- Predation
- Genetic variation and demographic isolation



Photo: James Herndon



Management activities

Demography monitoring

- Over three decades of monitoring: OLY (1987), CLE (1989), RAI (1992), WEN (1990)
- Discontinued: transition to passive acoustic methods



Photo: James Herndon



Management activities

Barred Owl management

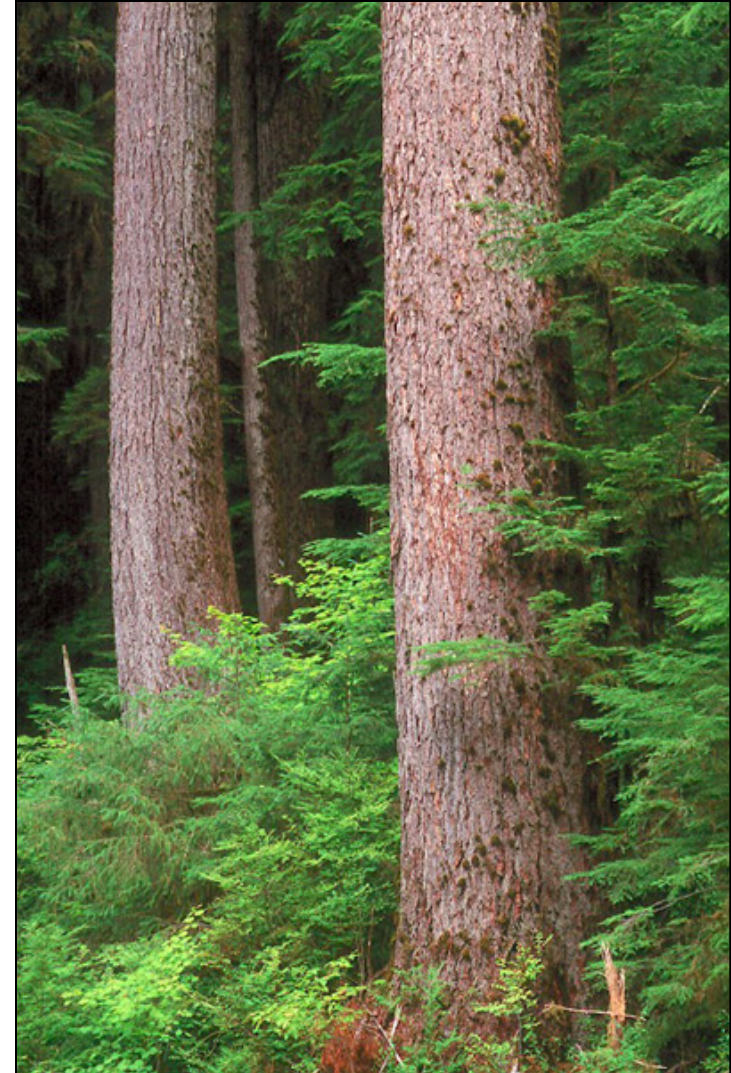
- Most effective approach is removal
- Positive response in experiments
- USFWS Draft EIS Barred Owl Management



Management activities

Dry forest management

- Key component of conservation efforts eastern Cascade Range
- Implementing practices to restore ecological conditions and reduce fire risk



Management activities

Incentives Program

- Recovery Action: develop voluntary initiatives to incentivize conservation
- Safe Harbor Agreement
- Northern Spotted Owl Implementation Team (NSOIT)
- Prioritize landscapes where voluntary conservation measures would be most beneficial



Photo: Emilie Kohler



Management activities

Population Augmentation

- BC NSO Breeding Program
- Both Barred Owl management and augmentation required
- Captive breeding and release, or translocation
- NSO population augmentation feasibility assessment



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Conclusions and recommendations

- WDFW recommends **no change** in endangered status: “Any wildlife species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state.” (WAC 220-610-110)
- Functional extirpation in the near-term
- Continued regulation of impacts to habitat
- Management to address Barred Owl competition



Public comments

COMMENT	RESPONSE
Barred Owls are native because they arrived in Washington state unassisted	Barred Owls arrived due to indirect anthropogenic assistance such as modification of habitat across the Great Plains.
How many Spotted Owls remain in the state?	There has never been a census; ~ 1000 territories exist; research indicates declines of 75-80% for the last three decades.
Delist Spotted Owls	The best available science suggests the Spotted Owl meets the definition of endangered, therefore, we cannot recommend delisting the species.
Editorial comments	Incorporated with thanks.



Questions?



Photo: James Herndon

