

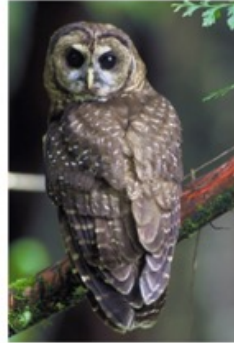


"Saga of the Spotted Owl."

<https://www.americanforests.org/magazine/article/saga-of-the-spotted-owl/>

The Struggling Spotted Owl

By:



"Spotted Owl."

https://en.wikipedia.org/wiki/Spotted_owl

Introduction

The spotted owl is a resident of North American forests. Once a thriving species, their population has reached the status of “threatened”. The spotted owl population has been decreasing due to a plethora of problems. The increase in wildfires, the introduction of invasive species and of course things like deforestation and more. The species has been on the decline since 1992 and a critical habitat had to be designated. It took until 2008 for a recovery plan to be enacted and we can only hope that this beautiful species can survive their dilemma.

The Basics

- Three main species of Spotted Owl
 - Northern Spotted Owl (NSO), California Spotted Owl (CSO) and the Mexican Spotted Owl (MSO)
- Population affected by climate change, wildfires, logging and invasive species
- Each of the three subspecies have their own habitat range with some small overlap

Increasing Percent Area Burned

- MSO has the largest projected amount of their habitat burned.
- MSO annual percent area burned reaching as high as 0.7 and 2.7% in the 2040s and 2080s
- Even CSO (the lowest projected affected) still has an annual percent area burned of 0.2 and 0.5%



"Keepers of the Spotted Owl."

<https://www.wildernesscommittee.org>

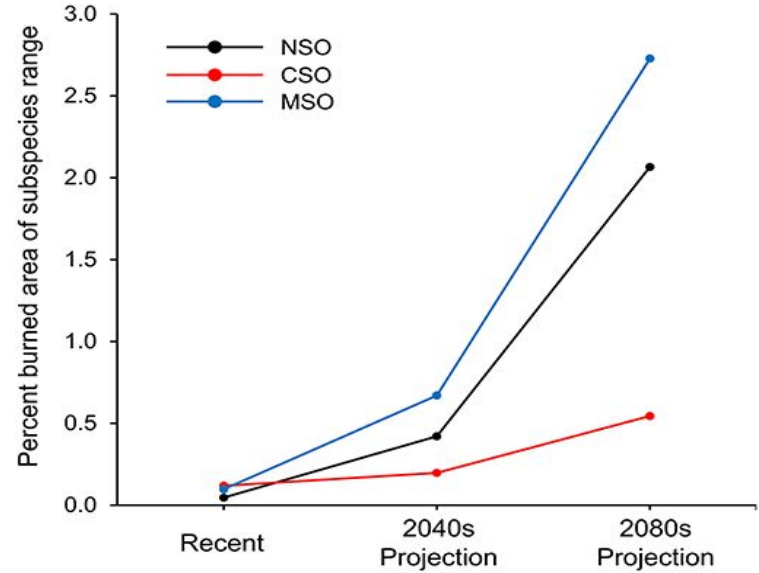


Figure 1: Trends in total percent of the range of the spotted owl burned annually by subspecies and time period. NSO, Northern spotted owl; CSO, California spotted owl; MSO, Mexican spotted owl.

Climate-Fire Model

- In data from climate-fire models, CSO is affected the highest
- While percentage values seem extremely low, due to this species being exclusive to these habitats, any little bit of lost habitat over time hurts them a lot.
- Losing 10% of land in some portions of their home by 2080 is extremely harmful

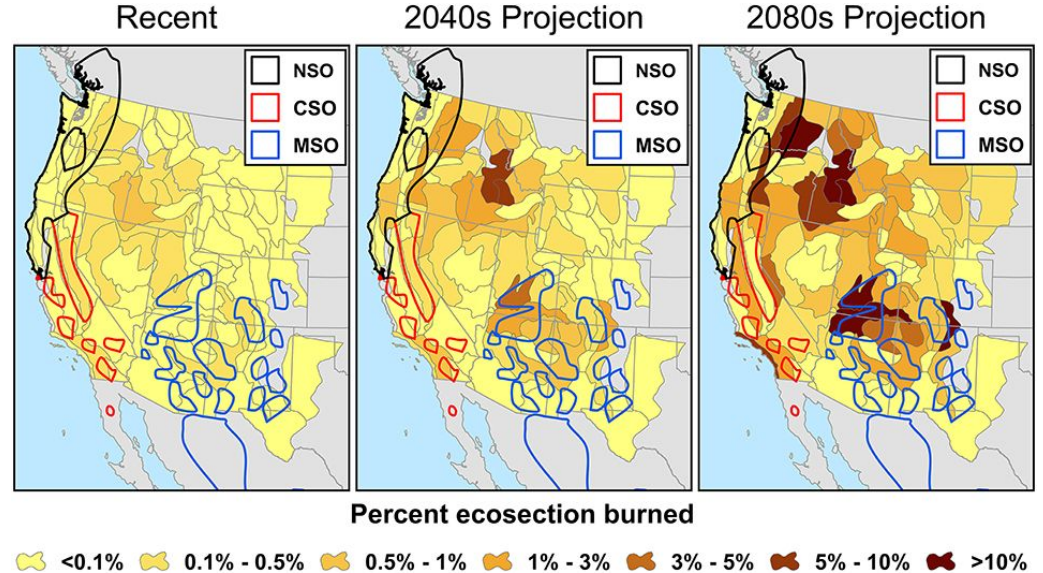


Figure 2: Increasing trends in percent area burned across the western United States by Bailey's ecoregions (Bailey, 1995) based on predictions from non-stationary climate-fire models by Littell et al. (2018)

What's the Importance?

- The increase in land burned raises many concerns regarding the safety of these species.
 - The increase in burned land leads to a drier habitat and a loss of food sources
 - From 1994-2013, 191,900 hectares of land on federal lands were lost to wildfires
 - This is four times the land lost to logging and timber harvests
 - The MSO habitat has been hit quite greatly
 - “Since the beginning of this millennium, over 527,000 hectares in Arizona and New Mexico were burned by merely three fires” (Wan et al., 2019)
 - Can see species like the exclusive spotted owl becoming threatened or even extinct in the future
-
- Note: 1 hectare = 107639 square feet
- Which means A LOT OF LAND BURNED

How Does The Increasing Fire Risk Affect the Spotted Owl

- Some locations surprisingly not affected (in the short term)
- Other locations suffer from 3-5 year increased extinction probability
- Short term, most of these fires serve as roosting grounds for the spotted owls
 - Still suffer from an increased extinction probability



"A New Normal."

<https://www.hoover.org/research/>

Invasive Species: The Barred Owl

A NEW OWL MOVES IN

Limited to the eastern United States in 1900, the barred owl has spread north into Canada and westward over the past century, moving most recently into California. Tree planting in the Great Plains and improved suppression of forest fires may have facilitated the barred owl's spread.



*Includes the northern, California and Mexican spotted owl
Source: J. David Wiens of U.S. Geological Survey BAY AREA NEWS GROUP

Northern Spotted Owl

Strix occidentalis caurina

Length: 1.5 feet

Weight: 1.5 pounds

Wingspan: up to 48 inches

Life Span: up to 20 years



Barred Owl

Strix varia

Length: 1.5 to 2 feet

Weight: 1.3 - 1.75 pounds

Wingspan: 40 - 50 inches

Lifespan: up to 10 years



Origins of the Barred Owl



Northern Barred Owl (Adult)

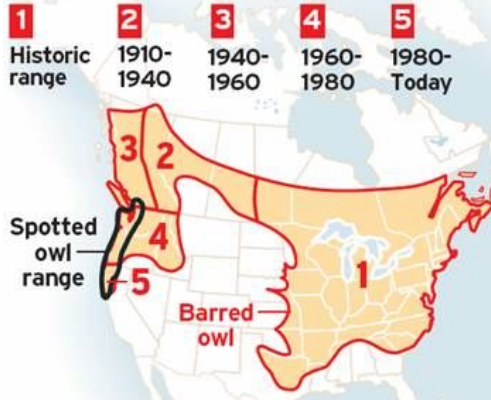


Northern Barred Owl (Juvenile)

Range Expansion: Causes

Barred, spotted owl range

Barred owls were overwhelmingly eastern until moving in along the Pacific Northwest coast.

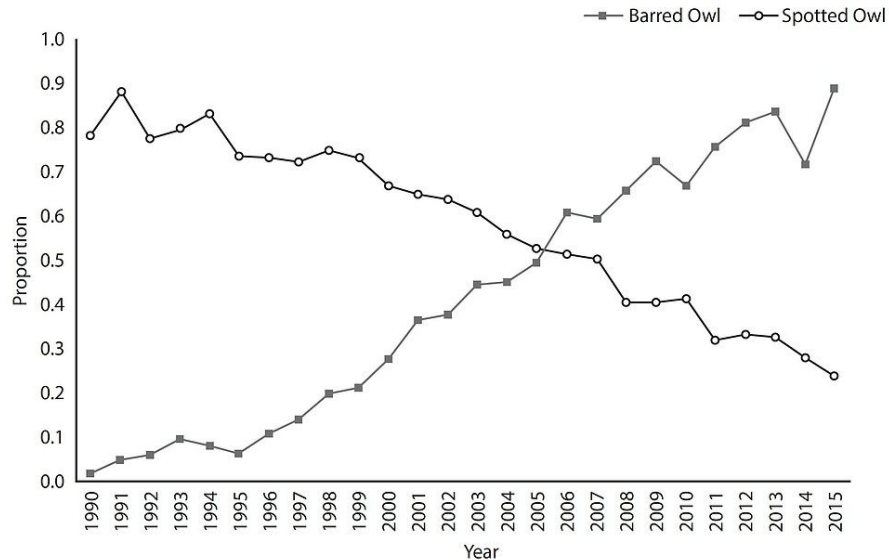


Source: University of Minnesota

MICHAEL MODE/THE OREGONIAN



Range Expansion: Effects and Solutions



Northern spotted owl study areas*

(Results for March 2015-Dec. 2016.)

Study area and treatment type	Area (acres)	Spotted owl sites	Barred owl sites
1. Cle Elum			
Treatment	149,250	46	113
Control	165,560	31	110
2. Coast Ranges			
Treatment	149,990	45	106
Control	268,105	58	176
3. Klamath/Union/Myrtle			
Treatment	193,480	84	144
Control	172,475	78	124

*A fourth study area is in Northern California where barred owls are being removed from Hoopa Valley tribal land.



The spotted owl was listed as threatened under the Endangered Species act in 1990. The two main threats to this owl are habitat loss and competition from the barred owl, a non-native species.

Sources: U.S. Geological Survey,
U.S. Fish & Wildlife Service

Alan Kenaga/Capitol Press



Local Spotted Owl Populations

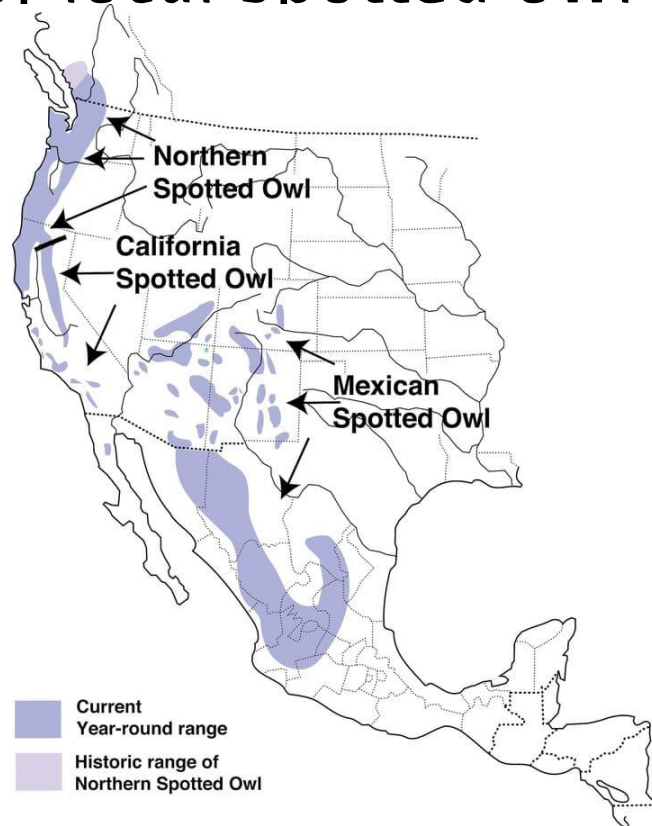


California Spotted Owl
(*Strix occidentalis*)



Northern Spotted Owl (*Strix occidentalis caurina*)

Locations of local spotted owl population



Summary



Since the Inclusion of the Spotted Owl on the endangered species list in 1990 increases in the loss of habitat due to wildfires, and the loss of resources by the invading Barred Owl have resulted in rapid decrease in the overall population of the Spotted Owl. It is Crucial that Californians in particular (since a large portion of the Spotted Owl's population resides in California) work to combat the threats faced by these creatures.

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