

Comparing Habitat Preference and Diet Composition of Sympatric



Owls in the State of Washington

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Northern Spotted Owl



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Introduction

In the Pacific Northwest United States, specifically Washington, Oregon and Northern California, a conflict has arisen between the native species of owl, the Northern Spotted Owl (*Strix occidentalis caurina*) and the invasive Barred Owl (*Strix varia*). The traditional range of the Barred Owl extends from the southern end of James Bay in Canada, down into the eastern and central portions of the United States, and continues southward across the Mexican border (Peeters 2007). However, beginning in the 1960s, the Barred Owl has begun to move consistently westward, moving through Montana and Canada and into the Pacific Northwest states normally occupied by the Northern Spotted Owl, which is traditionally found throughout Washington, extending south into Oregon and into the northernmost regions of California (Peterson and Robins 2003, Peeters 2007).

Beginning in 1989 and continuing to 2008, the Northern Spotted Owl population has declined by 40-60% (Singleton 2015). There is growing concern that Northern Spotted Owls will become critically endangered and possibly suffer extinction if conservation efforts are not made. While the downward trend of Northern Spotted Owl populations has been recorded, the cause, or causes, of this decline are not clear. Several biologists and researchers have hypothesized that the invasion of the Barred Owl is the leading cause of this decline (Gutierrez et al. 2007, Iverson 2004, Wiens et al. 2014). However, in the studies that have been conducted recently, most researchers have been unable to find direct evidence that Barred Owls are the reason for the Northern Spotted Owl's decreasing population (Gutierrez et al. 2007).

Habitat structure and prey preference are two factors that can be used to determine whether the presence of the Barred Owl could be affecting the Northern Spotted Owl. By investigating the differences in habitat structure and diet preferences of the Northern Spotted Owl and Barred Owl, a framework can be developed that can be used to define the ecological niches of the two species and then predict whether the two species will proceed to compete directly with one another in areas of sympatry or if they will resort to some form of coexistence through resource partitioning or another ecological strategy. Ultimately, this comparison can be used to either include or exclude conservation actions involving the Barred Owl, and will help focus research on other possible causes of the decline in Northern Spotted Owl populations.

	Habitat Preference	Diet Composition
Barred Owl	Old growth forests with a mix of Grand Fir and Douglas Fir	Northern Flying Squirrel Deer Mouse Southern Red-Backed Vole
Northern Spotted Owl	Old growth	Northern Flying Squirrel Common Shrews Snowshoe Hare

Methods

To determine the habitat preferences and diet compositions of the Northern Spotted Owl and Barred Owl in Washington, Oregon and northern California I gathered several articles and field guides that included information on these two species and performed a close-reading of these materials

Discussion

In the state of Washington, which is now an area of sympatry for the Barred Owl and the Northern Spotted Owl, a comparison of their habitat preferences and diet composition can determine whether these two species have overlapping ecological requirements.

Based on the results gathered in this study on diet composition, it can be seen that both species of owl prey upon Northern Flying Squirrels as their primary source of nutrition. However, it should not be immediately concluded that the two species will directly compete. Barred Owls bolster their diet with various other species – mostly acting as food generalists. Therefore, it is possible that, as the two species face the beginnings of competition, the Barred Owl will shift its diet more toward other sources of prey.

Based on the results for habitat preference, it can be seen that both species prefer old growth forests. This could become an issue of competition in the future if habitat loss were to continue in the state of Washington. However, if both species change their habits they could possibly create overlapping home ranges and therefore not directly compete for space.

Barred Owl



Contact

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