



Northern Spotted Owl

(Strix occidentalis)

STATUS

SARA **ENDANGERED**
 Alberta **ABSENT**

British Columbia **RED**
 Saskatchewan **ABSENT**

PRIMARY HABITAT

Old Coniferous (Douglas fir)

TERRITORY SIZE

2,000–3,000 ha

NEST TYPE

Cavity/broken top

NEST REUSE

Common

STAND LEVEL

Retention of large-diameter trees/
 snags with broken-tops, cavities,
 mistletoe brooms, etc.

LANDSCAPE LEVEL

Establishment of protected areas,
 particularly on wetter, less fire-prone
 sites.

BREEDING WINDOW



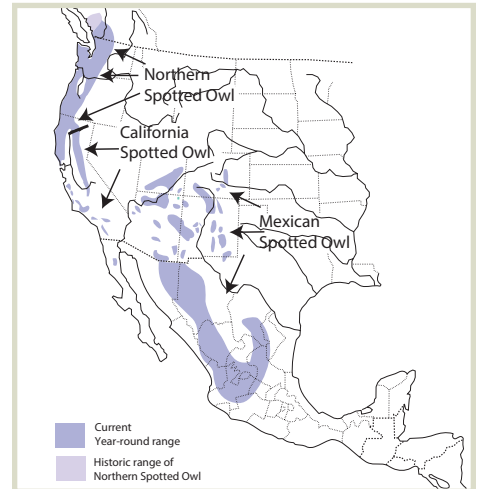
Wild Spotted Owl populations in British Columbia have fallen from about 1,000 (historical population estimate) to less than 30 individuals due to extensive habitat loss, fragmentation, and competition with Barred Owls. The province has undertaken several direct actions for their recovery including establishing extensive protected areas and a captive breeding program.

Photo by US Fish & Wildlife Service

HABITAT ECOLOGY

- Spotted Owls reside in >100-year-old forests, and forest >140 years old is considered “superior.” Superior habitats are also conifer-dominated (preferably Douglas fir), multi-species stands with high stand complexity. Superior habitat is characterised by the following habitat features:¹
 - Canopy closure >70% provides thermal cover and protection from bad weather.
 - Broken-topped snags, cavities, mistletoe brooms, and in some cases abandoned raptor nests for nesting.
 - Vertical and horizontal structural diversity (i.e., 3 or more shrub/canopy layers) and perches at several heights.
- Patchy understory vegetation totalling >40% cover, over a quarter of which is shrubs.¹
- Large-diameter trees (>75 cm dbh) and large snags, logs, and other downed woody material.
- Barred Owls have been expanding into the Spotted Owl’s range. Although closely related, the Barred Owl consistently out-competes Spotted Owls, and is thus considered a significant threat.^{2,5}

RANGE MAP



RESPONSE TO FOREST MANAGEMENT

- Habitat loss, fragmentation, and replacement of old forests with dense, even-aged forests are among the primary threats to the Spotted Owl.²
- Fragmentation makes it more difficult for juvenile owls to safely disperse and establish new territories.²
- Spotted Owls appear to avoid hard habitat edges but favour diffuse edges created by low-severity fire.⁶
- Spotted Owl responses to stand thinning have been mixed; some studies have found negative effects of intensive thinning, while others have observed Spotted Owls in 10–50 year-old thinned and selectively harvested stands.⁵
- In California and Oregon, Spotted Owls were observed using variable retention harvest units, irregular shelterwoods, and seed-tree harvests. This response was attributed to high woodrat densities within these harvest blocks, but the authors cautioned that a different response was expected in Douglas fir/western hemlock forests where northern flying squirrel is a more important prey item.⁷

STAND-LEVEL RECOMMENDATIONS

- Within-block retention should be employed to promote the long-term structural diversity of harvested stands, including a combination of patches and dispersed retention,⁸ with an emphasis on large-diameter trees and snags with broken-tops, large horizontal branches, forks, cavities, mistletoe brooms, and evidence of decay.^{1,9}
 - The above features should also be retained during salvage logging following low- and medium-severity fires.⁵
 - Large retention areas should be located in wetter areas and northern aspects, as these are more naturally resistant to fire.⁵
 - See Blackburn and Godwin (2004) for retention targets within management zones for different BEC subzones.³
- Variable-density stand thinning may have short-term negative effects on northern flying squirrel abundances, but may provide long-term benefits to habitat quality and prey abundance (the oldest, largest trees and trees with deformities should be retained and snags should be created if not naturally available).⁵