

Identification of northern spotted owl critical habitat in British Columbia

British Columbia's approach to conserving and restoring habitat that's critical to the recovery of northern spotted owls is currently achieved through the updated Spotted Owl Management Plan (see Additional Information below). The plan is based on the best available information produced by species experts on the Canadian Spotted Owl Recovery Team (CSORT).

The recovery team clarified that the sustained *survival* of northern spotted owls in Canada requires a population of at least 100 owls, whereas the *recovery* (down-listing from "endangered" to "threatened" under the federal *Species at Risk Act*) of the species would be achieved once the population reached 250 mature owls in British Columbia. Suitable habitat required to sustain 50 spotted owl territories that each contain a male and female is about 116,000 hectares (survival target) and to sustain 125 spotted owl territories is about 290,000 hectares (recovery target). To understand what would be needed to meet these targets, a series of models were developed to identify and prioritize "critical habitat" areas for protection now and into the future.

The models used to identify spotted owl critical habitat within the province included:

- **Habitat supply models** project forest growth and stand-replacing natural disturbances (e.g., wildfires) and allow for timber supply analyses. These models enable projections of habitat supply over time under various management scenarios that can be evaluated, classified, and mapped.
- A **structural connectivity model** assesses suitable habitat for individual owl movement or potential population movement through connected habitats. The dispersal of owls between managed areas is essential to recover and sustain the population.
- A **potential owl territory model** identifies locations that can be ranked and prioritized based on various parameters (such as the amount of habitat or the presence of known nest sites).
- An **integrated habitat quality model** uses outputs from the previous models to identify relative habitat quality between locations and informed the selection of critical habitat now and into the future.
- A **final model** was used to determine where the best habitat capable of supporting 125 spotted owl territories would be located in 50 years.

In the draft amended Spotted Owl Recovery Strategy, models were adapted with different climate change scenarios and parameters associated with dispersal habitat, which resulted in critical habitat being identified outside of the existing areas that have protections. It is expected that science-based approaches to identifying critical habitat will adapt over time as new information is gathered. The B.C. government is proposing to standardize a long-term monitoring program, in partnership with interested First Nations, to assess its approach to recovering spotted owls specifically, and monitor improved ecosystem health and the climate resilience of landscapes more generally. Such monitoring is necessary to support "adaptive management" (i.e., taking new actions in response to new information) that ultimately increases the chances of recovering an endangered species or population.

New regulatory actions may be necessary to support adaptive management over the recovery timeframe (50 years). This may include expanding current actions that are voluntary (e.g., best management practices) or required under the *Forest and Range Practices Act* (e.g., expanding existing general wildlife measures). New regulatory options may be more appropriate, particularly given the concurrent work aimed at the protection of old growth forests and implementing a framework that prioritizes biodiversity and ecosystem health. Other existing regulatory options include establishing habitat objectives via the Forest Planning and Practices Regulation, expanding existing Wildlife Habitat Areas, and/or updating letters of expectations from district managers to forestry licensees. Other regulatory options exist under the *Land Act* and the *Wildlife Act*. Determining which regulatory actions may be necessary to support the adaptive management approach is a key outcome of the planned spotted owl engagement process.

The recovery of spotted owls is a priority for the B.C. government. In addition to recovery actions aimed at protecting critical habitat, other recovery actions include the Captive Breeding and Release Program and the removal of barred owls from priority spotted owl habitat.

Additional Information

The updated Spotted Owl Management Plan prioritizes habitat protection based on current and historical locations of spotted owls and creates large clusters of potential breeding territories around high-quality habitats that are spaced to facilitate the movement of owls between these clusters. The amount of suitable habitat protection within each potential breeding territory was increased from 67% retention in the older management plan to 100% retention within Long-term Owl Habitat Areas. Additionally, 53,000 hectares of Managed Future Habitat Areas were identified to act as replacement areas in the event of catastrophic loss of other important spotted owl habitats.

Under the updated Spotted Owl Management Plan, critical habitats are protected within: legally established Wildlife Habitat Areas called Long-term Owl Habitat Areas, provincial parks; Metro Vancouver watersheds; and other protected areas. Combined, this represents an area of 310,490 hectares of which 281,272 hectares are identified as suitable habitat for spotted owls.

It is estimated that these protected habitats could currently support up to 93 owl territories, greater than what's needed for the "survival" target of 50 breeding pairs. Over time as vegetation develops, all these protected areas will become suitable habitat and could support up to 132 spotted owl territories. Both estimates do not include an estimate of non-territorial owls, which will make up a significant portion of the total population. At full recovery, these protected habitats will in theory satisfy CSORT's minimum population target of 250 mature spotted owls.

The actual number of spotted owls that may occupy forests within the habitat plan is unknown. Many factors, such as predators, barred owls, and prey densities (as well as habitat quality and quantity) will influence the level of occupancy and density of territorial spotted owls.

SUMMARY

The protections that are currently in place for critical habitat were identified through the model's assessment of over one million hectares of forests within the range of spotted owls. The model identified where high-quality habitat exists today, and will exist over the next 50 years. Key points related to spotted owl recovery efforts include:

- 1) The Spotted Owl Management Plan applied the best available scientific information.
- 2) The Spotted Owl Management Plan used only biological criteria and known current and historical spotted owl locations to identify clusters of protected breeding territories to better protect high-quality habitats.
- 3) The Spotted Owl Management Plan protects habitats that, in theory, provide sufficient habitat for 250 mature spotted owls. Achieving this recovery target would result in down-listing the spotted owl from "endangered" status to "threatened" under the federal *Species at Risk Act*.
- 4) Territories identified within the Spotted Owl Management Plan include habitat that accounts for natural disturbance factors and dispersal.
- 5) The draft amended Spotted Owl Recovery Strategy included information that differed from that used by CSORT.
- 6) New information gathered through monitoring and research is expected to result in updates to the Province's existing approach to spotted owl recovery.
- 7) The B.C. government is committed to applying an adaptive management approach, based on new scientific information, to improve the Spotted Owl Management Plan and increase the chances of recovery.