

Lint

OVERVIEW OF FINDINGS FROM MONITORING THE STATUS AND TREND OF NORTHERN SPOTTED OWL POPULATIONS AND HABITAT FOR THE NORTHWEST FOREST PLAN

Joseph Lint¹

The ten-year spotted owl monitoring report for the Northwest Forest Plan (Plan) presents information on the status and trend of northern spotted owl populations and their habitat, and reviews results of selected research on owl movement, barred owls and development of predictive models (Lint, in press).

Analyses of population data from ten demographic study areas associated with lands managed under the Plan estimated an average (weighted) rate of population decline of about 3.4 percent annually. Estimated rates of decline varied from 0 to 10 percent among the study areas. Results from three demographic study areas in the southern portion of the range indicated stationary population trends. The largest average rate of decline (7.1 percent annually) occurred in four study areas in the northern portion of the range. Presence of barred owls, weather, past and present harvest of habitat, wildfire and insect infestations that alter habitat are all possible contributors to the noted declines.

Maps depicting owl habitat conditions for each physiographic province across the range of the owl were produced by using habitat suitability models. Range wide, about 74 percent of the federal land acres were habitat-capable. Fifty-seven percent of the habitat-capable federal acres had a habitat conditions similar to those used by territorial spotted owls. Fifty-one percent of the habitat-capable federal acres occurred in large, reserved blocks intended to support clusters of reproducing owls. About 62 percent of the habitat-capable acres inside the blocks had habitat conditions similar to those used by territorial spotted owls.

By using the average habitat suitability range that encompassed the conditions where 90 percent of the owl pairs in our sample were found, we estimated that there were 9,300,000 acres of owl habitat across the range when the Plan was implemented in 1994. This differs from the 7,409,500 acres of owl habitat estimated in the Plan's environmental impact statement, and is due, in part, to a difference in estimation methods and the omission of a portion of the federal lands in the earlier estimate. The largest difference was in California. Although we are reasonably certain there were more acres of owl habitat in California than estimated in 1994, we are uncertain of the magnitude of the number. It is probably one million-plus acres.

Range wide, timber harvest and wildfire resulted in stand replacement on about 1.5 percent of owl habitat since 1994. More acres were impacted by wildfire than by stand-replacing timber harvest. The Klamath Province in Oregon was the most heavily impacted, losing about 7.0 percent of its owl habitat to stand-replacing harvest and wildfire. Wildfire accounted for 94 percent of the loss and the Biscuit Fire was the primary contributor to the loss.

From the review of studies on owl movement, barred owls and predictive modeling we learned that:

- Movements of juvenile owls from outside to inside reserved blocks, from one reserved block to another and within individual reserved blocks accounted for 51 percent of all juvenile movement records.
- Fifty-eight percent of the juvenile owls that were fledged inside reserves were resighted inside reserved blocks.
- The barred owl now overlaps most of the range of the northern spotted owl.
- Spotted owls are more likely to abandon a site if barred owls take up residence close to that site.

- For both survival and productivity, a mixture of early seral and non-forest with mid- and late seral forest seemed to provide better habitat conditions for spotted owls in some portions of the range.
- Although there was a positive relationship between the amount of edge and productivity of spotted owls the importance of edge for spotted owls is not well understood.

In conclusion, the question remains...will implementing the Plan reverse the declining population trend and maintain the historical geographic range of the northern spotted owl? Based on the results of the first decade of monitoring we cannot answer this question simply because not enough time has passed to provide the necessary measure of certainty. However, the results from the first decade of monitoring do not provide any reason to depart from the objective of habitat maintenance and restoration as described under the Plan. The Plan's contribution to habitat management remains a cornerstone of the conservation and recovery of the spotted owl, but future spotted owl conservation efforts may need to address more than habitat management. The "maintain and restore [habitat] and they will come" approach seemed to be the straight-forward solution a decade ago when habitat loss was a primary reason for listing the owls as a threatened species. We recognize other stressors, some already in action (barred owl) and some yet to be realized (West Nile virus), may complicate the conservation and recovery of the spotted owl. Habitat maintenance and restoration, as currently envisioned under the Plan, remain essential to owl recovery, but in the near term, new partners, old partners with new roles, new discussions and new initiatives must address the other stressors and how they may change our

STATUS AND TREND REPORTS

¹ Bureau of Land Management- 777 Garden Valley Blvd. NW, Roseburg, OR