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**Abundance and Population Characteristics of Northern Spotted Owls (*Strix occidentalis caurina*) in Olympic National Park, Washington**

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Abstract.—We monitored the threatened Northern Spotted Owl (*Strix occidentalis caurina*) in Olympic National Park from 1992 through 1996. We used a stratified random sampling scheme to survey 35 plots totalling 236 km<sup>2</sup>, approximately 10 percent of the forested area of the park. We used mark-resight statistics to correct density estimates for owl pairs that were not detected on surveys. The east side of the park supported higher densities (0.15 pairs km<sup>-2</sup>) than the west side (0.08 pairs km<sup>-2</sup>) or the high elevation habitat (0 pairs km<sup>-2</sup>). Park densities were twice as high as densities reported for surrounding harvested landscapes (USDA National Forest lands). Densities were significantly higher in the park interior than near the edge. The estimated park population is 230 pairs ( $\pm 71$ , 90 percent CI). We monitored reproductive success at approximately 60 territories annually. Fecundity fluctuated greatly; 3 years had high reproductive success and 2 years had no observed reproduction. Most monitored sites produced no fledglings in 2 to 5 years of monitoring. Fecundity in the national park was equal to or greater than fecundity reported for the surrounding national forest lands in all years. Analysis of owl pellets showed similar diets to those determined by other studies, flying squirrels (*Glaucomys sabrinus*) being the dominant prey item.

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