

Northern Spotted Owl Monitoring

The Question: What are the long-term trends in the number of northern spotted owl sites and number of spotted owl young produced in Marin County?

The National Park Service has been monitoring the federally threatened northern spotted owl (*Strix occidentalis caurina*) population at Point Reyes National Seashore, Golden Gate National Recreation Area, and Muir Woods National Monument in Marin County, California since 1998 as part of a long-term vital signs monitoring program. Marin County represents the southern limit of the northern spotted owl's range which extends from British Columbia into Northern California.

While Marin County does not face large scale habitat alterations more common in the Pacific Northwest as a result of commercial logging, the spotted owl habitat of Marin County is under continual pressure from urban development along open space district boundaries, intense recreational pressures, and habitat change as a result of diseases such as Sudden Oak Death. In addition, possible genetic isolation, West Nile Virus, and the continued range expansion of the barred owl (*Strix varia*) which displaces spotted owls, are all biological threats to the continued existence of Marin County's northern spotted owl population.

The Project: Use standard monitoring protocols to determine annual occupancy rate at historic spotted owl activity sites and to measure the productivity rate through determining the number of young fledged per nest.

During the 2005 breeding season, Marin County's survey teams made 289 visits to a total of 46 spotted owl activity sites designated as long term monitoring sites. Of the 46 sites, a subset of 30 sites was selected to determine reproductive status. At the remaining 16 long-term monitoring sites, researchers confirmed spotted owl occupancy status, at a minimum, including age and band identification of any owls that were observed. An additional 15 sites were monitored based on resource management needs of the land management agencies involved in the project.



Northern spotted owls have been listed as federally threatened since 1990



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Northern spotted owl adult and fledgling perch on a branch. Individuals such as these may be identified through tail feather maturity and ankle bands (not shown above).

Preliminary Results: The 2005 breeding season was an average reproductive year for spotted owls locally. Pairs of spotted owls occupied 83% or 38 of the 46 long-term monitoring sites.

Offspring: Data collected during the 2005 breeding season show that northern spotted owl pairs attempted nesting at 69% of the 30 sites monitored for reproductive status in Marin County. Seventy-two percent (13) of the owl pairs nested successfully, yielding a total of 21 offspring. The 2004 breeding season generated similar results with a total of 21 offspring produced at 12 successful nests. Fecundity for 2005 in the

study area was 0.46 (SE 0.096) which reflects the average fecundity of 0.46 (SE 0.078) for the years 1998-2005 (Figure 1). Fecundity (\pm SE) is defined as the number of female young fledged per territorial female.

Nests: A total of 26 nests were located in 2005. Twenty-two nests were new and the four nest structures (three platforms and one cavity) were reused. Of the 195 unique nests documented from 1997 to 2005, 19 (9%) were cavities and 176 (91%) were a type of platform nest. This ratio is the opposite of owl nests in older forests where 80-90% of the nests are in cavities, but closely resembles the ratio in other parts of the range where forests are younger.

The long-term northern spotted owl monitoring program in Marin County provides valuable information for environmental reviews, resource management, maintenance, and fire management projects on park lands and for neighboring agencies.

Acknowledgement

Partners in the joint monitoring program include locations where northern spotted owls occur throughout Marin County (Point Reyes National Seashore, Muir Woods National Monument, Golden Gate National Recreation Area, PRBO Conservation Science, Marin Municipal Water District, and Marin County Open Space District).

Additional Resources

Golden Gate National Recreation Area
www.nps.gov/goga

Point Reyes National Seashore
www.nps.gov/pore

Marin County Open Space District
www.marinopenspace.org/

PRBO Conservation Science
www.prbo.org

Marin Municipal Water District
www.marinwater.org/

SFAN I&M Program website
www.nature.nps.gov/im/units/sfan

Muir Woods National Monument
www.nps.gov/muwo

US Fish and Wildlife Service: Endangered Species Information
www.fws.gov/endangered/i/B6K.html

For More Information

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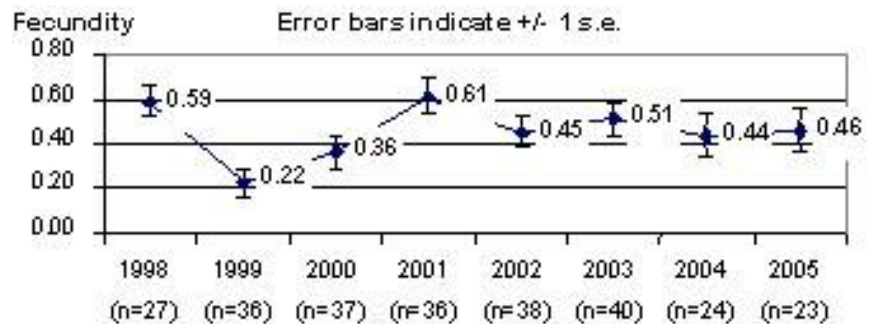


Figure 1. Northern spotted owl fecundity rates at long-term monitoring sites in Marin County, California from 1998-2005. (SE= standard error).