

90-DAY FINDING ON A PETITION TO LIST THE CALIFORNIA SPOTTED OWL AS THREATENED OR ENDANGERED UNDER THE ACT

Background

Section 4(b)(3)(A) of the Endangered Species Act (Act) requires that we make a finding on whether a petition to list, delist, or reclassify a species presents substantial scientific or commercial information indicating that the petitioned action may be warranted. Our standard for substantial scientific or commercial information within the Code of Federal Regulations (CFR) with regard to a 90-day petition finding is “that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted” (50 CFR 424.14(b)).

Petition History

On January 9, 2015, we received a petition dated December 22, 2014, from the Wild Nature Institute and the John Muir Project of the Earth Island Institute, requesting that the California spotted owl (CSO) be listed as threatened or endangered and to designate critical habitat under the Act. The petition clearly identified itself as such and included the requisite identification information for the petitioner, required at 50 CFR 424.14(a). In a February 12, 2015, letter to the petitioners, we responded that we reviewed the information presented in the petition and did not find that the petition warranted an emergency listing. Since receiving the petition from John Muir Project of Earth Island Institute and Wild Nature Institute in December, 2014, we received a petition dated August 19, 2015, from Sierra Forest Legacy and Defenders of Wildlife to list the California spotted owl as endangered, and it requests that we designate critical habitat for the species. This finding addresses the petition.

Evaluation of a Petition to List the California Spotted Owl as a Threatened or Endangered Species Under the Act

When citation lists are provided, the use of the “+” sign to string a series of citations together indicates that the information in these citations, when combined, provide substantial information.

Species and Range

Does the petition identify an entity that is eligible for listing (i.e., is the entity a species, subspecies, or DPS)?

Yes

No

California Spotted Owl CSO (*S. occidentalis occidentalis*); California

Information in the Petition

Factor A

1. Does the petitioner claim the entity warrants listing based on the present or threatened destruction, modification or curtailment of the species habitat or range (Factor A)?

Yes

No

- a. If the answer to 1 is yes:

Do the sources cited in the petition provide substantial information to support the claim?

Yes

No

Timber Harvest (Green tree harvest, thinning, and post fire salvage logging)

- Seamans and Gutierrez 2007a, pp. 573–575, + Temple *et al.* 2014c, p. 34. Over a 14 year period CSO habitat use was positively correlated with mature conifer forest and negatively correlated with younger logged forests and CSO decreased in forest with lower canopy and cover.
- Appendix B (pp. 8–10) of the petition provides data on timber harvest levels by county and timber company.
- Temple *et al.* 2014c, pp. 2, 103. Suggests that forest “thinning” has “short-term negative impacts”...on CSO.
- Bond *et al.* 2009, pp. 1116–1117, 1119–1123; + Keane *et al.* 2010; + Bond 2011, pp. 11–23; + Lee *et al.* 2012, pp. 792, 797–801; + DellaSala *et al.* 2014, p. 315. Recent research has focused on use of burned forests by CSO and has concluded that unlogged burned areas may be important to reproductive success and continued occupancy.

Urbanization

- Verner *et al.* 1992a, pp. 188–189. Correlates urban interface development and decreased use by CSO.

- b. Provide additional comments, if any.

- The petitioner cites over 150 references, a number of which are related to all timber harvest types, decreased use by CSO and data driven measurement of curtailment of the range and/or reduction in reproducing owl pairs.

Factor B

2. Does the petitioner claim the entity warrants listing based on overutilization for commercial, recreational, scientific, or educational purposes (Factor B)?

Yes

No

a. If the answer to 2 is no:

Do sources cited in the petition provide substantial information indicating the entity may warrant listing based on factor B, even though the petitioner does not make this claim?

Yes

No

Factor C

3. Does the petitioner claim the entity warrants listing based on disease or predation (Factor C)?

Yes

No

a. If the answer to 3 is yes:

Which does the petitioner claim is a threat such that listing may be warranted

Disease

Predation

b. If the answer to 3 is yes:

Do the sources cited in the petition provide substantial information to support the claim?

Disease

Yes

- Rogers 2014. Documents mortality in two CSO from avian trichomonosis in 2012. Avian trichomonosis is passed from infected avian species (mostly known in pigeons and doves). The author states that the two CSO may have contracted the disease by consuming infected prey.

No

- Rogers 2014. The same author also states that CSO are known to prey primarily on mammal species, so the author suspects this infection is a rare occurrence as CSO do not normally prey upon avian species.

c. Additional Comments:

The petitioner cites Rogers 2014 to support its disease claim; however, Rogers 2014 also qualifies that the level of impact of disease is small. The Petitioner does not provide any information on predation.

Do sources cited in the petition provide substantial information indicating the entity may warrant listing based on factor C, even though the petitioner does not make this claim?

Yes

No

Factor D

4. Does the petitioner claim the entity warrants listing based on the inadequacy of existing regulatory mechanisms (Factor D)?

Yes

No

a. If the answer to 4 is yes:

Do the sources cited in the petition provide substantial information to support the claim?

Yes

No

Federal Regulations

- 2004a USDA. This amendment to the 2001 US Forest Service Forest Plans (USDA 2001) allowed increased or new timber harvest, thinning, fuels reduction, post fire logging, etc. in areas previously managed for CSO.
- USDA 2013b. Management in the Lake Tahoe Basin Management Unit allows clear cut timber harvest and removal of larger diameter trees (>30" dbh) in CSO habitat and previously occupied nest areas.

State Regulations

- California Public Resources Code Chapter 8. California Forest Practice Rules (CFPR) allows and in some cases exempts from regulation, the removal of timber (standing and down) post fire that is important for CSO foraging.
- CFPR allow removal of green trees important for breeding (both large diameter trees and trees with high canopy closure).
- CFPR do not provide explicit protection of CSO and does not require surveys for CSO.

Factor E

5. Does the petitioner claim the entity warrants listing based on other natural or manmade factors affecting its continued existence (Factor E)?

Yes

No

a. If the answer to 5 is yes:

Identify the other natural or manmade factors claimed by the petitioner to be a threat such that listing may be warranted.

- Climate change
- Small population dynamics

b. If the answer to 5 is yes:

Do the sources cited in the petition provide substantial information to support the claim?

Yes

No

Population Declines

- Since the early 1990's the CSO population has been monitored in "demographic" study areas in the Sierra Nevada and southern California. The demography data gathered over this 20+ year period are substantive. Various researchers have analyzed the data (meta-analysis) and published dissertations, peer and non-peer reviewed reports and studies (Franklin *et al.* 2004, + Seamans 2005, + Seamans & Gutierrez 2007b, + Blakesley *et al.* 2010, + Temple 2014a, + Temple *et al.* 2014 b&c, etc.) and with some degree of consensus conclude that the long-term decline of the CSO population, of recruitment, and of breeding pairs are statistically reliable.

Climate Change

- LeHaye *et al.* 1994, pp. 777–780. Links "environmental fluctuations" (below average rainfall) and population declines
- Franklin *et al.* 2000, pp. 576–583. The subject of this study published in *Ecological Monographs*, is climate variation (temperature and rainfall) and fitness in northern spotted owls. The study is complex and indicates additional climate models should be run, but that wet/dry climate variables show correlations (negative/positive respectively) in owl survival. In addition, habitat conditions (fragmented/poor quality) can exacerbate the effects of climate variation.
- North 2000, pp. 797, 800–805. The subject of this study is weather, not "climate change" per se, and as other researchers have noted with all three subspecies of spotted owls, weather variability can correlate with breeding success.

Small Population Dynamics

- Chi 2006, p. 32. This is a master's thesis on northern spotted owl and CSO genetics and suggests with the CSO having the smallest population of the three subspecies of spotted owls (Mexican, northern, and California) and an "impoverished gene pool", the subspecies is at significant risk and requires protection under the Act.

Cumulative Effects

6. Does the petitioner claim that the threats they have identified may have synergistic or cumulative effects such that the entity may warrant listing?

Yes

No

a. If the answer to 6 is yes: N/A

Do the sources cited in the petition provide substantial information to support the claim?

N/A

Yes

No

b. Provide additional comments, if any. N/A

Petition Finding

Based on our review of the petition and sources cited in the petition, we find that the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted for the California spotted owl (*Strix occidentalis occidentalis*) based on factors A, D, and E.

Author

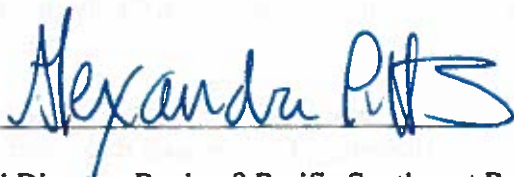
The primary authors of this notice are the staff members of the Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service.

FOR FURTHER INFORMATION CONTACT: Jennifer Norris, Field Supervisor, Sacramento Fish and Wildlife Office, 2800 Cottage Way W-2605, Sacramento, CA, 95825, by telephone (916-414-6700), or by facsimile (916-414-6712).

Regional Outreach Contact: Scott Flaherty (916) 978-6156, or Pam Bierce, (916) 414-6542.

Date: _____

7.27.15



Regional Director, Region 8 Pacific Southwest Region,
U.S. Fish and Wildlife Service

U.S. Fish and Wildlife Service Petition Review:
California spotted owl (*Strix occidentalis occidentalis*)

Date of Review: July 24, 2015

Conducted by: Sacramento Fish and Wildlife Office, Region 8

References Cited

- American Ornithologists' Union. 1957. Check-list of North American birds. 5th ed. Am. Ornithol. Union, Washington, D.C.
- Blakesley, J.A., M.E. Seamans, M.M. Conner, A.B. Franklin, G.C. White, R.J. Gutiérrez, J.E. Hines, J.D. Nichols, T.E. Munton, D.W.H. Shaw, J.J. Keane, G.N. Steger, and T.L. McDonald. 2010. Population dynamics of spotted owls in the Sierra Nevada, California. *Wildlife Monographs* 174:1–36.
- Bond M.L., D.E. Lee, R.B. Siegel, and J.P. Ward. 2009. Habitat use and selection by California spotted owls in a postfire landscape. *Journal of Wildlife Management* 73:1116–1124.
- Bond, M.L. 2011. A review of impacts of the 2004 Freds fire and 2005 Freds Fire Restoration Project, Eldorado National Forest, California, USA. April 6, 2011.
- Chi, T.Y. 2006. Genetic characterization of four populations in two subspecies of spotted owl. Master's Thesis, San Jose State University. San Jose, California.
- DellaSala, D.A., M.L. Bond, C.T. Hanson, R.L. Hutto, and D.C. Odion. 2014. Complex early seral forests of the Sierra Nevada: what are they and how can they be managed for ecological integrity? *Natural Areas Journal* (in press).
- Franklin, A.B., D.R. Anderson, R.J. Gutiérrez, and K.P. Burnham. 2000. Climate, habitat quality, and fitness in northern spotted owl populations in northwestern California. *Ecological Monographs* 70: 539–590.
- Franklin A.B., R.J. Gutiérrez, J.D. Nichols, M.E. Seamans, G.C. White, G.S. Zimmerman, J.E. Hines, T.E. Munton, W.S. LaHaye, J.A. Blakesley, G.N. Steger, B.R. Noon, D.W.H. Shaw, J.J. Keane, T.L. McDonald, and S. Britting. 2004. Population dynamics of the California spotted owls (*Strix occidentalis occidentalis*): A meta-analysis. *Ornithological Monographs* No. 54.
- USDA (Forest Service). 2004. Sierra Nevada Forest Plan Amendment, Final Environmental Impact Statement and Record of Decision. U.S. Forest Service, Pacific Southwest Region, Vallejo, CA.
- USDA (Forest Service). 2013. Lake Tahoe Basin Management Unit, Revised Land and Resource Management Plan, Final Environmental Impact Statement. U.S. Forest Service, Lake Tahoe Basin Management Unit, South Lake Tahoe, CA.
- Keane, J.J., C.V. Gallagher, R.A. Gerrard, G. Jehle, and P.A. Shaklee. 2010. California spotted owl module: 2010 annual report. Davis (CA): Pacific Southwest Research Station, U.S. Forest Service.

- LaHaye, W.S., R.J. Gutiérrez, and H. Reşit Akçakaya. 1994. Spotted owl metapopulation dynamics in Southern California. *Journal of Animal Ecology* 63:775–785.
- Lee D.E., M.L. Bond, and R.B. Siegel. 2012. Dynamics of breeding-season site occupancy of the California spotted owl in burned forests. *The Condor* 114:792–802.
- North, M., G.N. Steger, R. Denton, G. Eberlein, T. Munton, and K. Johnson. 2000. Association of weather and nest-site structure with reproductive success in California Spotted Owls. *Journal of Wildlife Management* 64:797–807.
- Rogers, K. 2014. Avian trichomonosis in great gray owls and California spotted owls. *The Wildlife Professional*, Spring 2014.
- Seamans M.E. 2005. Population biology of the California spotted owl in the central Sierra Nevada. PhD Dissertation University of Minnesota.
- Seamans M.E. and R.J. Gutiérrez. 2007a. Habitat selection in a changing environment: the relationship between habitat alteration and spotted owl territory occupancy and breeding dispersal. *The Condor* 109:566–576.
- Seamans M.E. and R.J. Gutiérrez. 2007b. Sources of variability in spotted owl population growth rate: testing predictions using long-term mark-recapture data. *Oecologia* 152:57–70.
- Tempel, D.J. 2014a. California spotted owl population dynamics in the central Sierra Nevada: an assessment using multiple types of data. PhD Dissertation, University of Minnesota, St. Paul, MN.
- Tempel, D.J., M.Z. Peery, and R.J. Gutiérrez. 2014b. Using integrated population models to improve conservation monitoring: California spotted owls as a case study. *Ecological Modelling* 289: 86–95.
- Tempel, D.J., R.J. Gutiérrez, S.A. Whitmore, M.J. Reetz, R.E. Stoelting, W.J. Berigan, M.E. Seamans, and M.Z. Peery. 2014c. Effects of forest management on California spotted owls: 129 implications for reducing wildfire risk in fire-prone forests. *Ecological Applications* 24:2089–2106.
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- Verner, J., K.S. McKelvey, B.R. Noon, R.J. Gutierrez, G.I. Gould Jr., T.W. Beck, Technical Coordinators. 1992. The California spotted owl: a technical assessment of its current status. Gen. Tech. Rep. PSW-GTR-133. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture; 285 p.