

**Western Riverside County
Multiple Species Habitat Conservation Plan
Biological Monitoring Program**

2021 California Spotted Owl Survey Report



Adult California Spotted Owl photographed north of Fern Valley, CA in 2013. Photo by Lynn Miller.

April 2022

TABLE OF CONTENTS

INTRODUCTION	1
Goals and Objectives	4
METHODS.....	4
Survey Design.....	4
Field Methods	5
RESULTS	5
Detections of Focal Species	5
DISCUSSION	6
Detections of Focal Species	6
Recommendations.....	7
ACKNOWLEDGMENTS.....	8
LITERATURE CITED	8

LIST OF FIGURES

Figure 1. California Spotted Owl survey points (2021) within the three Bioregions identified by the MSHCP as being historically occupied by the species.....	2
Figure 2. Locations of California Spotted Owl detections by BMP biologists (2007-2013) and Tanner Environmental Services biologists (2021), as well as historical records of California Spotted Owls submitted to the California Natural Diversity Database (CNDDB) (1908-2020).	3

LIST OF APPENDICES

Appendix A. 2021 California Spotted Owl data sheet.....	11
Appendix B. Avian species detected during 2021 California Spotted Owl surveys.....	12

NOTE TO READER:

This report is an account of survey activities conducted by the Biological Monitoring Program for the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP was permitted in June 2004. Reserve assembly is ongoing and is expected to take 20 or more years to complete. The Conservation Area includes lands acquired under the terms of the MSHCP and other lands that have conservation value in the Plan Area (called public or quasi-public lands in the MSHCP). In this report, the term “Conservation Area” refers to these lands as they were understood by the Monitoring Program at the time the surveys were conducted.

The Monitoring Program monitors the status and distribution of the 146 species covered by the MSHCP within the Conservation Area to provide information to Permittees, land managers, the public, and the Wildlife Agencies [i.e., the California Department of Fish and Wildlife (CDFW, formerly California Department of Fish and Game) and the U.S. Fish and Wildlife Service]. Monitoring Program activities are guided by defined conservation objectives for each Covered Species, other information needs identified in MSHCP Section 5.3 or elsewhere in the document, and the information needs of the Permittees. A list of the lands where data collection activities were conducted in 2021 is included in Section 8.0 of the Western Riverside County Regional Conservation Authority (RCA) Annual Report to the Wildlife Agencies.

The primary author of this report was the 2021 Avian Program Lead, Nicholas Peterson. This report should be cited as:

Biological Monitoring Program. 2022. Western Riverside County MSHCP Biological Monitoring Program 2021 California Spotted Owl Survey Report. Prepared for the Western Riverside County Multiple Species Habitat Conservation Plan. Riverside, CA. Available online: <https://www.wrc-rca.org/species-surveys/>.

While we have made every effort to accurately represent our data and results, the reader should recognize that data management and analysis are ongoing activities. Anyone wishing to make further use of the information or data provided in this report should contact the Monitoring Program to ensure that they have access to the best available or most current data.

Please contact the Monitoring Program Administrator with questions about the information provided in this report. Questions about the MSHCP should be directed to the Executive Director of the RCA. Further information on the MSHCP and the RCA can be found at www.wrc-rca.org.

Contact Information:

Executive Director
RCA/Riverside County
Transportation Commission
4080 Lemon Street, 3rd Floor
P.O. Box 12008
Riverside, CA 92502
Ph: (951) 787-7141

Monitoring Program Administrator
Western Riverside County MSHCP
Biological Monitoring Program
1835 Chicago Ave., Suite C
Riverside, CA 92507
Ph: (951) 320-2168

INTRODUCTION

The California Spotted Owl (*Strix occidentalis occidentalis*; Spotted Owl) is one of 45 bird species covered by the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP; Dudek & Associates 2003) and is a Species of Special Concern (year-round) in the State of California (Davis and Gould 2008). California Spotted Owls are one of three subspecies of Spotted Owl, and their range generally extends from the southern Cascade Range of northern California, south along the mountains of central and southern California to the Mexican border (Davis and Gould 2008; Gutiérrez et al. 2020). The statewide population is considered moderately reduced ($>20\%$ to $\leq 40\%$) since population estimates reported by Grinnell and Miller (1944), with an estimate in 2008 of 1000–10,000 birds (Davis and Gould 2008). Additionally, the range size of California Spotted Owls in California is stable ($\leq 10\%$ reduced) or increasing since the publication of Grinnell and Miller (1944). Habitat loss, habitat degradation, or other human-induced threats are projected to moderately reduce ($>10\%$ to $\leq 15\%$) the species' population in California by 2028 (Davis and Gould 2008).

In general, California Spotted Owls prefer microhabitats containing trees with a diameter at breast height of 52–90 cm and canopy closures $>40\%$ (Call et al. 1992; Gutiérrez et al. 2020). From sea level to about 1000 m in elevation, California Spotted Owl habitats are dominated by hardwoods, primarily oak (*Quercus* spp.); at higher elevations, conifers (Class Pinopsida) dominate (Gutiérrez et al. 2020). Within San Bernardino County, California, California Spotted Owls occurred from 885–2560 m in elevation and more often nested in conifers (71% of nests) rather than hardwoods (29%). Most nests were platform nests and were constructed an average of 16.1 m above ground. The owls preferred sites with great structural complexity, and these sites had more variation in tree size, higher canopy closure, and greater basal area of large trees compared to areas unused for nesting (LaHaye et al. 1997).

California Spotted Owls may begin laying eggs by early March and can be caring for nestlings as late as mid-June. Clutches typically contain 1–4 eggs and females are the only sex to incubate the eggs. The average incubation period is 30 d and nestlings typically fledge 34–36 d post-hatching. Both parents will provide care for the fledglings through August, after which the young will be independent (Gutiérrez et al. 2020).

The MSHCP states that Spotted Owls are sparsely distributed within the Plan Area in montane coniferous and oak deciduous woodlands and forests of the Santa Ana, San Bernardino, and San Jacinto mountains Bioregions (Figure 1). The Biogeographic Information and Observation System (BIOS), however, does not identify any locations within the Santa Ana Mountains in the Plan Area where California Spotted Owls have been detected. BIOS data further indicate that the species has been detected at 13 locations within the San Jacinto Mountains from 1908–2017. Additionally, California Spotted Owls have been detected at one general location within the portion of the San Bernardino Mountains in the Plan Area, most recently in 2016 (Keiser 2020; Figure 2). Finally, our Program's biologists have detected California Spotted Owls at seven locations within the San Jacinto Mountains Bioregion since 2007, and all of these locations overlap with locations identified in the BIOS dataset (Figure 2).

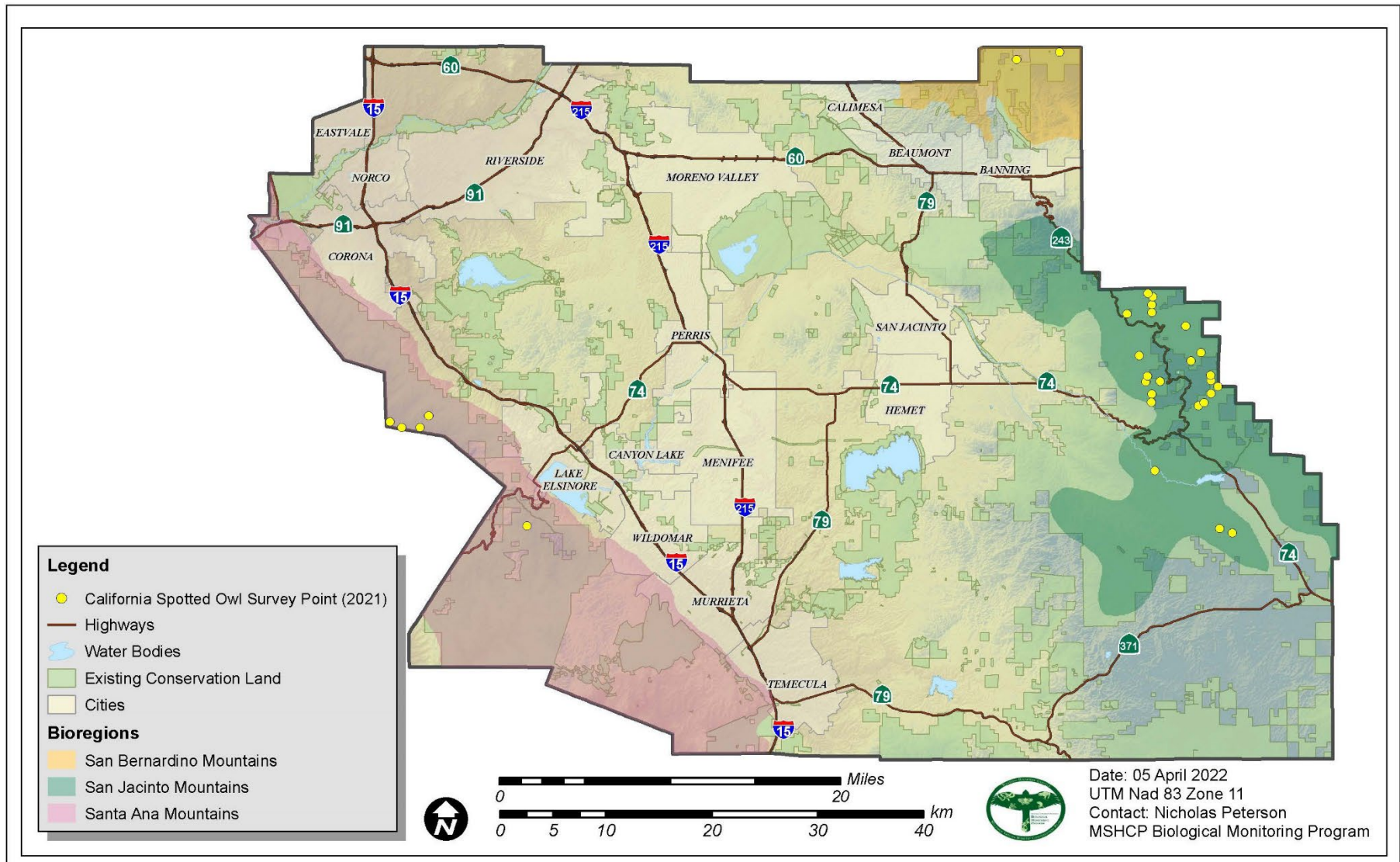


Figure 1. California Spotted Owl survey points (2021) within the three Bioregions identified by the MSHCP as being historically occupied by the species.

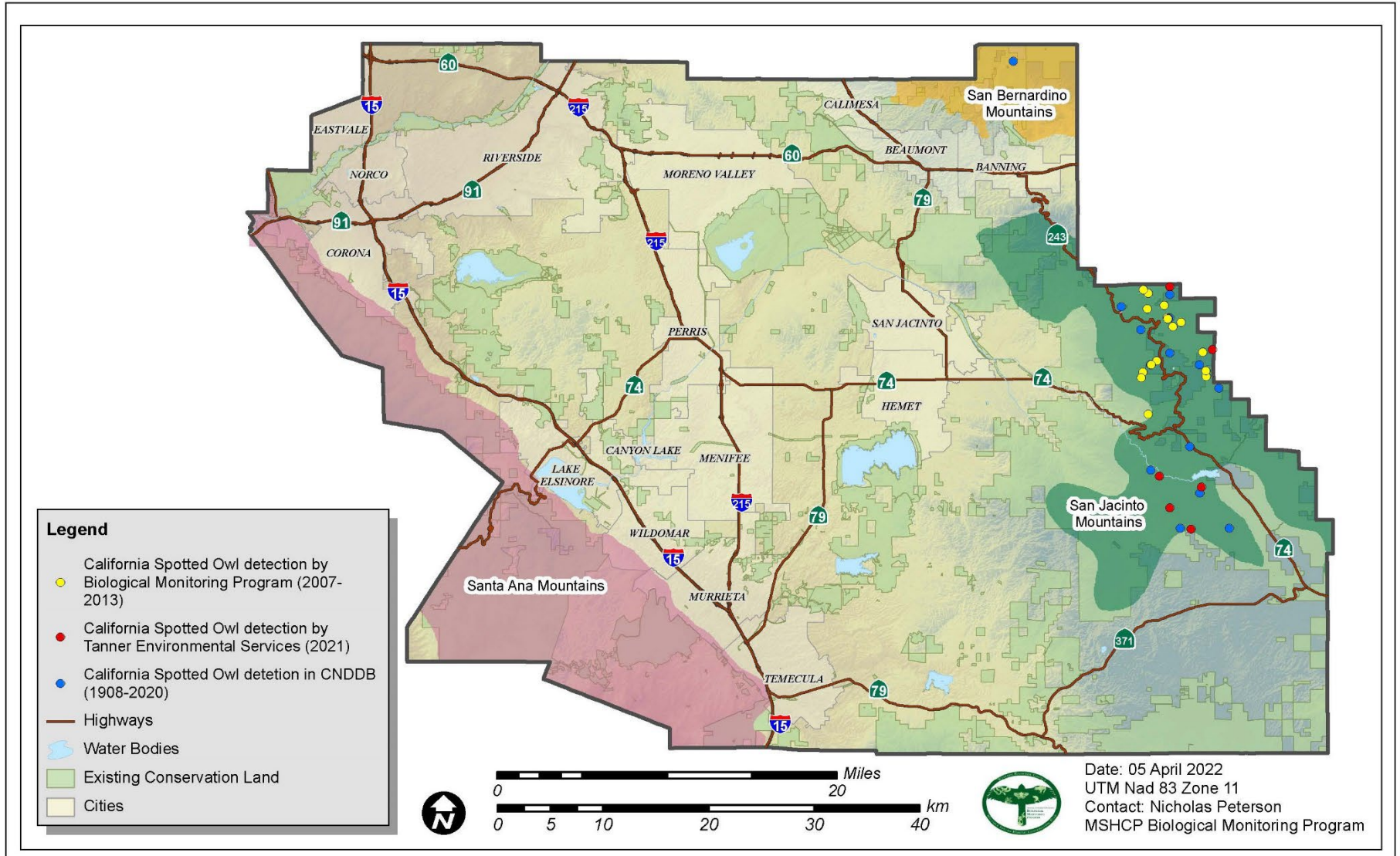


Figure 2. Locations of California Spotted Owl detections by BMP biologists (2007-2013) and Tanner Environmental Services biologists (2021), as well as historical records of California Spotted Owls submitted to the California Natural Diversity Database (CNDDDB) (1908-2020).

The MSHCP identifies two species objectives for California Spotted Owls. Objective 1 requires the conservation of $\geq 41,370$ ac ($\geq 16,742$ ha) of montane coniferous and oak deciduous woodland and forest within the Plan Area, including 7350 ac (2974 ha) in the Santa Ana Mountains, 1620 ac (656 ha) in the San Bernardino Mountains, and 32,400 ac (13,112 ha) in the San Jacinto Mountains. Objective 2 requires the conservation of any nesting locations within the Santa Ana, San Bernardino, and San Jacinto mountains (Dudek & Associates 2003). Because it is not explicitly stated in the species objectives, we assume that we must document that California Spotted Owls are using $\geq 75\%$ of the aforementioned Bioregions at least once every eight years (*see* Volume I, Section 5.0, Table 5-8 of the MSHCP; Dudek & Associates 2003).

Goals and Objectives

1. Determine whether California Spotted Owls are using any of the Bioregions identified in the MSHCP.
 - a. Conduct repeat-visit call-playback surveys within appropriate habitat in the three aforementioned Bioregions.

For this project, we surveyed for California Spotted Owls by broadcasting conspecific vocalizations within apparently suitable habitat in the three Bioregions identified by the MSHCP. We visited each survey point five times between mid-March and late August 2021.

METHODS

Survey Design

We began study site selection by selecting California Spotted Owl habitats that were identified as suitable for breeding, foraging, wintering use, and dispersal movement (i.e., montane coniferous forest, and oak deciduous woodland and forest) by the MSHCP (Dudek & Associates 2003) within our ArcGIS (ESRI 2019) vegetation layer (CDFG et al. 2005). After we identified appropriate California Spotted Owl habitat in GIS, we clipped that layer to a separate GIS layer consisting of the three Bioregions identified by the MSHCP. Next, we generated regularly-spaced survey points separated from one another by at least 600 m within the aforementioned survey areas. We then selected a subsample of these points that were near hiking trails or U.S. Forest Service roads, and ultimately moved the points on to the trail or road (Franklin et al. 1996; USFWS 2011), maintaining the minimum 600-m spacing. Finally, we did not conduct surveys in the San Bernardino National Forest (NF) in 2021 near the survey locations of Tanner Environmental Services, who was conducting California Spotted Owl surveys on behalf of the U.S. Forest Service in the spring and summer of 2021 (Tanner Environmental Services 2021).

We conducted call-playback surveys for California Spotted Owls (Franklin et al. 1996; LaHaye et al. 2001; USFWS 2011) by making repeat visits (n = up to five visits) to survey points (n = 30 points) within the three MSHCP-identified Bioregions (Figure 1). During the fall of 2020, we visited all potential survey points within the aforementioned areas to determine their suitability for California Spotted Owls, and to verify that they were accessible. Suitable points were in montane coniferous or oak woodland habitat and

had a relatively high degree of canopy closure by the dominant tree species (Call et al. 1992; LaHaye et al. 1997).

Field Methods

We conducted surveys from 17 March to 26 August 2021, which generally follows the egg-laying through nestling stages for California Spotted Owls (Gutiérrez et al. 2020). We defined individual survey efforts by a single survey point from which point any hatch-year California Spotted Owls would be independent (Gutiérrez et al. 2020). We surveyed each point up to five times during this project, with at least three visits occurring by 30 June 2021. Further, we separated subsequent visits to points by ≥ 7 d (USFWS 2011). We did not conduct surveys during periods of rain, heavy fog, or high winds (i.e., maximum wind speed >24 km/h; USFWS 2011).

Surveys began when a pair of observers reached a survey point. Upon arrival, observers recorded on the data sheet (Appendix A) the date, their initials, and the survey point number. Next, observers recorded the starting weather, temperature, and wind speed. After these initial data were recorded, observers set up the broadcasting equipment and then moved approximately 25 m away. Observers recorded on their data sheet the survey start time when the recorded vocalizations began broadcasting and recorded the end time at the conclusion of the broadcast period. The broadcast period lasted approximately 13 min, consisting of four complete cycles of the Spotted Owl broadcast sequence available at the USFWS Northern Spotted Owl Recovery website (USFWS 2013), followed by 2 min of silence. Observers turned the speaker 90° following each broadcast cycle, thereby ensuring the broadcast was evenly dispersed across the landscape. Observers were instructed to immediately terminate the broadcast sequence if they detected a California Spotted Owl. Finally, we did not broadcast any agitated or barking Spotted Owl vocalizations near suspected nest sites (USFWS 2011).

Observers recorded information on their data sheet for all bird species detected while at the survey point. For non-Covered Species, observers recorded the four-letter species code, age class information, and sex for only the first individual of that species detected, which provided species richness data for the site. For Covered Species, observers recorded the four-letter species code, age class, and sex for every individual detected during the survey. If observers were unsure whether they had already recorded data on an individual (i.e., they were double-counting), they erred on the side of caution and recorded information on that individual.

RESULTS

Detections of Focal Species

We did not detect California Spotted Owls during our 2021 survey effort, nor have our Program biologists detected the species within the current eight-year reporting period (2014–2021). Prior to the current reporting period, our Program biologists detected California Spotted Owls 25 times on Conserved Land within the San Jacinto Mountains Bioregion (Figure 2); three of these detections occurred incidentally in 2007, one occurred incidentally in 2013, and 21 occurred during our 2013 California Spotted Owl survey effort (Biological Monitoring Program 2014). We have never detected

California Spotted Owls within the Santa Ana Mountains Bioregion or the San Bernardino Mountains Bioregion. Finally, we detected 48 avian species during our 2021 surveys for California Spotted Owls (Appendix B); three of these are covered by the MSHCP.

DISCUSSION

Detections of Focal Species

Within the current reporting period (2014–2021) we did not detect California Spotted Owls using Conserved Land in any of the three Bioregions identified in the MSHCP species account. As a result, the objective requiring use of $\geq 75\%$ of designated Bioregions by California Spotted Owls does not currently appear to be met.

Seven of the points we surveyed in 2021 in the San Jacinto Mountains Bioregion were locations at which we detected California Spotted Owls during our 2013 surveys (Biological Monitoring Program 2014); generally, these locations were on Black Mountain, in Fern Valley, near Logan Creek, and on Marion Mountain (Figure 2). We did not collect any data that could address the causes for the apparent decline in occupancy at these sites, but an overall decline has been reported for the entirety of the San Bernardino NF, which includes the San Jacinto Mountains Bioregion. Specifically, from 1991–2019, overall mean occupancy rates at sites have declined from 82% to 39% (Tempel et al. 2022), with populations in the San Bernardino and San Jacinto mountains declining by about 50% from 1987–2011 (Gutiérrez et al. 2017). Tempel et al. (2022) further reported that high-severity wildfire accounted for just 9.6% of the decline in occupancy from 1991–2019, whereas wildfire fuel treatments effectively accounted for none of the decline, indicating that additional factors are likely adversely affecting southern California Spotted Owl populations and warrant further study. Some of these additional factors may include human recreation, drought, air pollution, mining, cannabis cultivation, invasive species, disease, or climate change (Gutiérrez et al. 2017), and are potentially contributing to the San Jacinto Mountains being a population sink for California Spotted Owls (Conlisk et al. 2021). None of our survey sites in the San Jacinto Mountains that were unoccupied in 2021 after being occupied in 2013 were within wildfire footprints during that period, nor did any wildfires occur within 4 km (FRAP 2022). As a result, decline of occupancy in our study was not likely a direct result of impacts from wildfires.

The concurrent Spotted Owl surveys conducted by Tanner Environmental Services (2021) indicated that 35% of the sites their biologists surveyed within the San Jacinto Mountains were occupied in 2021. This level of occupancy is relatively high for the San Jacinto Mountains, where occupancy rates from 2003–2021 have ranged from a low of 20% in 2015, to 41% in 2011 (Tanner Environmental Services 2021). Overall, Tanner Environmental Services (2021) detected Spotted Owls in six distinct locations within the San Jacinto Mountains Bioregion in 2021 (Figure 2). At one site along Strawberry Creek, only a single female owl was detected in 2021; this was a location in which we detected a Spotted Owl in 2013 (Biological Monitoring Program 2014). Tanner Environmental Services (2021) also detected two pairs of owls that did not nest, one of which was along Fuller Ridge, and the other was in Spillway Canyon; our Program has

never conducted Spotted Owl surveys within these locations. At a fourth site, within South Lion Canyon, Tanner Environmental Services (2021) detected a pair whose nest ultimately failed. We surveyed three points in this vicinity in 2013 and never detected any Spotted Owls. The final two sites in the San Jacinto Mountains in which Tanner Environmental Services (2021) detected Spotted Owls each contained a nesting pair that produced one fledgling. One of these locations was Steep Canyon and the other was Middle Rouse Ridge, and neither of these were locations we surveyed in 2013 or 2021.

We did not detect Spotted Owls within the Santa Ana Mountains Bioregion in 2021, nor have we ever detected them there. This Bioregion is generally lower in elevation than the San Jacinto Mountains Bioregion, meaning that Spotted Owls using the area would likely be within hardwood (i.e., oak) habitat (Gutiérrez et al. 2020). Despite the presence of apparently suitable low-elevation habitat, we do not have any records of Spotted Owls being detected within the Riverside County portion of the Santa Ana Mountains; however, Keiser (2020) data indicate that Spotted Owls have been detected within the Orange County portion of the mountain range. These data suggest that the west-facing slopes of the mountain range, on the Orange County side of the boundary, contain habitat that is more suitable to Spotted Owls than the east-facing slopes within Riverside County.

We also did not detect Spotted Owls within the San Bernardino Mountains Bioregion in 2021, nor has our Program ever detected them there. This may have resulted from the fact that we had only two survey points due to the scarcity of appropriate Spotted Owl habitat within the conserved portion of the Bioregion. Spotted Owls have used the area historically and as recently as 2015, specifically one site along Banning Canyon, which is just 360 m southeast of one of our 2021 survey points (Keiser 2020). Data from Keiser (2020) further indicate that Spotted Owls have used portions of Riverside County's San Bernardino Mountains that are east of the Plan Area and thus not surveyed by our Program. The portion of the mountain range that extends into San Bernardino County is also frequently used by Spotted Owls, including a nest site from as recently as 2016 that was within 3.5 km of one of our 2021 survey points (Keiser 2020). Unfortunately, the portion of the San Bernardino Mountains within western Riverside County may include suboptimal Spotted Owl habitat relative to what is within the adjacent portions of the mountain range, meaning that additional conservation of habitat within the Bioregion will not increase the likelihood of use by Spotted Owls.

Recommendations

Future Surveys

We recommend that future Spotted Owl surveys implement collection of data related to habitat at sites where we detect Spotted Owls during that particular survey effort, as well as any nest sites. These data might give us a better understanding of what habitat features may be preferred by local Spotted Owls and may also help to guide future surveys by allowing us to select survey sites based upon the presence of apparently preferred habitat features. We did not collect any of these data in 2021 because we did not detect any Spotted Owls.

Conservation and Management

The cause of decline in southern California Spotted Owl populations warrants further study because data indicate that the impacts of high-severity wildfire account for less than 10% of the recent decline in occupancy, and wildfire fuel management effectively accounts for none (Tempel et al. 2022). Despite this, investigators advocate for habitat management in southern California that attempts to replicate historical forest conditions, including maintaining large trees and canopy complexity (Gutiérrez et al. 2017). To this end, managers in southern California should seek to restore historical, high-frequency, low-severity fire regimes via fuel management, while preserving larger trees (Gutiérrez et al. 2017; Tempel et al. 2022).

ACKNOWLEDGMENTS

We thank the land managers in the MSHCP Plan Area, who in the interest of conservation and stewardship facilitate Monitoring Program activities on the lands for which they are responsible. Funding for the Biological Monitoring Program is provided by the Western Riverside Regional Conservation Authority and the California Department of Fish and Wildlife. Program staff who conducted surveys in 2021 were Masanori Abe, Jennifer Hoffman, Cristina Juran, Nicholas Peterson, Nathan Pinckard, Nicole Tomes-Orlale, and Taylor Zigelbaum. Additionally, William Hayes (Loma Linda University) participated in several surveys as a volunteer. Finally, we thank Kim Boss (U.S. Forest Service) for her assistance and for providing us with the data collected by Tanner Environmental Services (2021).

LITERATURE CITED

- Biological Monitoring Program. 2014. Western Riverside County MSHCP Biological Monitoring Program 2013 California Spotted Owl (*Strix occidentalis occidentalis*) Survey Report. Prepared for the Western Riverside County Multiple Species Habitat Conservation Plan. Riverside, CA. Available from <https://www.wrc-rca.org/species-surveys/> (accessed January 2022).
- Call DR, Gutiérrez RJ, Verner J. 1992. Foraging habitat and home-range characteristics of California Spotted Owls in the Sierra Nevada. *Condor* 94:880–888.
- [CDFG] California Department of Fish and Game, Aerial Information Systems, California Native Plant Society. 2005. Vegetation - Western Riverside Co. [ds170]. Publication Date: 2005-07-31. Available from <https://www.wildlife.ca.gov/Data/BIOS> (accessed November 2020).
- Conlisk E, Haeuser E, Flint A, Lewison RL, Jennings MK. 2021. Pairing functional connectivity with population dynamics to prioritize corridors for southern California Spotted Owls. *Diversity and Distributions* 27:844–856.

- Davis JN, Gould GI, Jr. 2008. California Spotted Owl (*Strix occidentalis occidentalis*). Pages 227–233 in Shuford WD, Gardali T, editors. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.
- Dudek & Associates. 2003. Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). Final MSHCP, Volumes I and II. Prepared for County of Riverside Transportation and Lands Management Agency, Prepared by Dudek & Associates, Inc. Approved June 17, 2003.
- [ESRI] Environmental Systems Research Institute ArcGIS: Release 10.7.1 [software]. 2019. Redlands, California: Environmental Systems Research Institute, 1999–2019.
- Franklin AB, Anderson DR, Forsman ED, Burnham KP, Wagner FF. 1996. Methods for collecting and analyzing demographic data on the Northern Spotted Owl. Pages 12–26 in Forsman ED, DeStefano S, Raphael MG, Gutiérrez RJ, editors. Demography of the Northern Spotted Owl. Studies in Avian Biology 17.
- [FRAP] Fire and Resource Assessment Program. 2022. Fire Perimeters. Available from <https://frap.fire.ca.gov/frap-projects/fire-perimeters> (accessed January 2022).
- Grinnell J, Miller AH. 1944. The distribution of the birds of California. Pacific Coast Avifauna 27.
- Gutiérrez RJ, Franklin AB, LaHaye WS. 2020. Spotted Owl (*Strix occidentalis*), version 1.0. In Poole AF, Gill FB, editors. Birds of the World. Cornell Lab of Ornithology, Ithaca, New York. Available from <https://doi.org/10.2173/bow.spoowl.01> (accessed November 2020).
- Keiser K. 2020. Spotted Owl observations [ds704]. California Department of Fish and Wildlife. Biogeographic Information and Observation System (BIOS). Available from <https://wildlife.ca.gov/data/BIOS> (accessed November 2020).
- LaHaye WS, Gutiérrez RJ, Call DR. 1997. Nest-site selection and reproductive success of California Spotted Owls. Wilson Bulletin 109:42–51.
- LaHaye WS, Gutiérrez RJ, Dunk JR. 2001. Natal dispersal of the Spotted Owl in southern California: Dispersal profile of an insular population. Condor 103:691–700.
- Tanner Environmental Services. 2021. Results of focused surveys for the California Spotted Owl on the San Bernardino National Forest during spring and summer 2021. Unpublished report. 466 pp.
- Tempel DJ, Kramer HA, Jones GM, Gutiérrez RJ, Sawyer SC, Koltunov A, Slaton M, Tanner R, Hobart BK, Peery MZ. 2022. Population decline in California Spotted Owls near their southern range boundary. Journal of Wildlife Management 86:e22168. Available from <https://doi.org/10.1002/jwmg.22168> (accessed March 2022).

[USFWS] U.S. Fish and Wildlife Service. 2011. Protocol for surveying proposed management activities that may impact Northern Spotted Owls. USDI Fish and Wildlife Service, Portland, Oregon.

[USFWS] U.S. Fish and Wildlife Service. 2013. Northern Spotted Owl recovery information site: Survey protocol. Available from <https://www.fws.gov/oregonfwo/Species/Data/NorthernSpottedOwl/SurveyProtocol.asp> (accessed December 2020).

Appendix A. 2021 California Spotted Owl data sheet.

[illegible]

Appendix B. Avian species detected during 2021 California Spotted Owl surveys. Species in bold are covered by the MSHCP.

COMMON NAME	SCIENTIFIC NAME
Acorn Woodpecker	<i>Melanerpes formicivorus</i>
American Robin	<i>Turdus migratorius</i>
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>
Bewick's Wren	<i>Thryomanes bewickii</i>
Black Phoebe	<i>Sayornis nigricans</i>
Black-chinned Sparrow	<i>Spizella atrogularis</i>
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>
Brown Creeper	<i>Certhia americana</i>
Bushtit	<i>Psaltirparus minimus</i>
California Quail	<i>Callipepla californica</i>
California Scrub-Jay	<i>Aphelocoma californica</i>
California Towhee	<i>Melospiza crissalis</i>
Common Poorwill	<i>Phalaenoptilus nuttallii</i>
Common Raven	<i>Corvus corax</i>
Dark-eyed Junco	<i>Junco hyemalis</i>
Great Horned Owl	<i>Bubo virginianus</i>
Hairy Woodpecker	<i>Dryobates villosus</i>
Hermit Warbler	<i>Setophaga occidentalis</i>
House Finch	<i>Haemorhous mexicanus</i>
House Wren	<i>Troglodytes aedon</i>
Lazuli Bunting	<i>Passerina amoena</i>
Lesser Goldfinch	<i>Spinus psaltria</i>
Lesser Nighthawk	<i>Chordeiles acutipennis</i>
Mallard	<i>Anas platyrhynchos</i>
Mountain Chickadee	<i>Poecile gambeli</i>
Mountain Quail	<i>Oreortyx pictus</i>
Mourning Dove	<i>Zenaida macroura</i>
Northern Flicker	<i>Colaptes auratus</i>
Northern Saw-whet Owl	<i>Aegolius acadicus</i>
Nuttall's Woodpecker	<i>Dryobates nuttallii</i>
Oak Titmouse	<i>Baeolophus inornatus</i>
Olive-sided Flycatcher	<i>Contopus cooperi</i>
Phainopepla	<i>Phainopepla nitens</i>
Pygmy Nuthatch	<i>Sitta pygmaea</i>
Rock Wren	<i>Salpinctes obsoletus</i>
Sharp-shinned Hawk	<i>Accipiter striatus</i>
Song Sparrow	<i>Melospiza melodia</i>
Southern California Rufous-crowned Sparrow	<i>Aimophila ruficeps canescens</i>
Spotted Towhee	<i>Pipilo maculatus</i>

Appendix B. Continued.

COMMON NAME	SCIENTIFIC NAME
Steller's Jay	<i>Cyanocitta stelleri</i>
Violet-green Swallow	<i>Tachycineta thalassina</i>
Western Bluebird	<i>Sialia mexicana</i>
Western Screech-Owl	<i>Megascops kennicottii</i>
Western Tanager	<i>Piranga ludoviciana</i>
Western Wood-Pewee	<i>Contopus sordidulus</i>
White-breasted Nuthatch	<i>Sitta carolinensis aculeata</i>
White-headed Woodpecker	<i>Dryobates albolarvatus</i>
Wrentit	<i>Chamaea fasciata</i>