The Spotted Owl (*Strix occidentalis*) is one of the most researched owls on a global level (Verner et al. 1992, Gutiérrez et al. 1995). A particularly large amount of research has been conducted by agencies of the United States government because of the effects of logging in the northern part of the species’ range (Verner et al. 1992, Roberts and North 2012, Keane 2014). The Spotted Owl’s current metapopulation distribution ranges from the northwestern United States to central Mexico, with 3 nominal subspecies: the Northern Spotted Owl (*S. o. caurina*), found in southern British Columbia, Canada, and the mountain ranges of Washington, Oregon, and northern California; the California Spotted Owl (*S. o. occidentalis*), found in the Sierra Nevada and, intermittently, from central and southern California to the Sierra San Pedro Mártir (SSPM) in Baja California, Mexico (Bryant 1889, Verner et al. 1992); and, lastly, the Mexican Spotted Owl (*S. o. lucida*), found in the mountain ranges of the U.S. states of Utah, Colorado, and Texas, and in Mexico from the Sierra Madre Occidental and Sierra Madre Oriental to farther south in the states of Michoacán and Jalisco (Howell and Webb 1995, Gutiérrez et al. 1995).

The SSPM is considered part of the Peninsular Mountain Ranges that extend southward from the Sierra Nevada in California, USA. The current annual average temperature is 7 °C, while the daily average temperature is 10 °C. The SSPM is characterized by a subhumid climate with annual average rainfall of 400 mm, falling mainly in the
winter (December to March) (Reyes-Coca and García-López, 1991, Delgadillo 2018). Elevations in the SSPM range from 500 to 3095 m. Coniferous Forest begins at about 1900 m with Pinus jeffreyi, Abies concolor, and P. lambertiana and rises to 2300 m, where Calocedrus decurrens, Cupressus montana, P. contorta, and P. coulteri occur (Delgadillo 2018).

Visual records of Spotted Owls in the SSPM were documented at the end of the 19th century (1893) by W. Anthony (Anthony 1893), who reported the following: “One seen on a brushy cañon [sic] in July near the base of San Pedro Mártir, elevation 3,000 feet” (Bryant 1889, Grinnell 1928). Grinnell (1928) mentioned a captured specimen, but there is no confirmation of this record. Subsequently, both Chester C. Lamb in La Grulla from 26 to 27 May 1925 and thereafter Lloyd F. Kiff at the same location in May 1972 described having observed a Spotted Owl individual (Wilbur 1987). It should be noted that Unitt (2004) states that these records are well substantiated, as the corresponding authors were experienced naturalists and observers, and Garrett and Dunn (1981) registered observations of this owl species in the northern mountains of Baja California (Sierra de Juárez).

During the last 3 decades, auditory vocalizations of Spotted Owl have been recorded sporadically in the SSPM. W.S. LaHaye heard an individual Spotted Owl at La Grulla on 22–29 May 1989 (Gutiérrez et al. 1995). Later, biologists from the California Condor Project reported visual records of this owl at Vallecitos Meadow in November 2004 (M.C. Porras-Peña and J. Vargas-Velazco personal communication), and recently, Rodríguez-Hernández et al. (2022) reported a 2-note call at the Torre de Piedra area west of the Sierra de San Pedro Mártir National Park (SSPMNP).

We add to these prior observations with our recent record of a Spotted Owl supported by a recording of a complete vocalization at a site named Vallecitos (2600 m) within SSPMN on
We first recorded this Spotted Owl at 22:10 at the edge of a meadow that is surrounded by conifers *P. contorta* and *P. jeffreyi*. We used a Sony ICD-PX470 digital recorder fitted with Skype VoIP portable microphones (100–1500 Hz), which we placed on a Jeffrey pine (*P. jeffreyi*) with the microphones facing northeast. We then made 2 additional recordings at 00:01 and 00:07 on 28 April, which were of lower intensity presumably owing to the distance of the owl from the recording device.

We believe this owl to be a male based on song characteristics of the final 3 notes of the species’ “four-note” hoot (Fig. 2, Table 1). We measured the frequency of the 3 notes (559 Hz) and the time between them (0.19 and 1.41 s) with Raven Pro 1.6.5 (K. Lisa Yang Center for Conservation Bioacoustics). We then compared these values to those of 932 recordings of males of the subspecies *S. o. occidentalis* from the Sierra Nevada in California (Wood et al. 2020); we found that all 3 frequency and time values for a male recorded in the SSPM fall within the known values for this subspecies (Fig. 3).

A second search effort was undertaken from 29 to 30 April 2023 in the same location, using 3 recording devices (Sony ICD-P470, ZOOM H1N, and TASCAM DR-44WL). The devices were placed 1 km apart. Spotted Owl recordings from the Sibley Bird app were played back through a Bose SoundLink speaker (with an average radial reach of 30 m) at a volume of 44.100 Hz. The call playback lasted for 120 s and was followed by 60 s of silence. This sequence was repeated for 20 min at each site (total combined duration of 60 min for the 3 sites). Following the call playback, the 3 recording devices remained active for 7 hours (22:00 to 06:00). Although the sampling effort did not register any Spotted Owls, the devices recorded vocalizations for 2 courting Flammulated Owl (*Psiloscops flammeolus*) individuals and 2 Great Horned Owl (*Bubo virginianus*) individuals (a juvenile and an adult).

The nearest known Spotted Owl populations in Southern California are declining substantially, with a >50% decrease over 28 years observed in the San Bernardino Mountains, California, an area nonetheless considered to be a regional population stronghold (Tempel et al. 2022). Spotted Owl dispersal among mountain ranges is thought to be limited in southern California (Gutiérrez et al. 2017), so the persistence of a possible subpopulation in SSPM suggests the existence of a potentially important reservoir of intact habitat.

In summary, our vocalization recordings verify that Spotted Owls continue to reside in the

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**Table 1. Spectrogram measurements for the last 3 notes of Spotted Owl “four-note” calls for the recording made in this study in the Sierra de San Pedro Mártir (SSPM), Baja California, Mexico, and the mean values of 932 male Spotted Owls recorded in the Sierra Nevada, California.**

<table>
<thead>
<tr>
<th>Location</th>
<th>Note 2 (Hz)</th>
<th>Note 3 (Hz)</th>
<th>Note 4 (Hz)</th>
<th>Pause 2 (s)</th>
<th>Pause 3 (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSPM</td>
<td>559.8</td>
<td>559.8</td>
<td>559.8</td>
<td>0.19</td>
<td>1.41</td>
</tr>
<tr>
<td>Sierra Nevada</td>
<td>578.1</td>
<td>569.3</td>
<td>567.7</td>
<td>0.13</td>
<td>1.48</td>
</tr>
</tbody>
</table>

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![Fig. 2. Spectrogram of a male Spotted Owl (*Strix occidentalis*), 27 April 2023, at Vallecitos, Sierra de San Pedro Mártir, Baja California, Mexico. Black boxes denote the bounding boxes used to measure the frequency of each note; dotted lines denote time measurements.](image_url)
SSPM, which rules out its posited extirpation (cf. Erickson et al. 2018). We recommend additional monitoring efforts to evaluate the status of Spotted Owls in the SSPM (including Sierra Juárez) by deploying autonomous recording units (ARUs) throughout suitable habitats (areas dominated by old-growth Jeffrey pines). The escarpment on the east side of the SSPM, where livestock grazing pressure is practically absent and more prey for owls is likely available, should be a top priority for such efforts.

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**LITERATURE CITED**


