



GEOGRAPHIC VARIATION IN SOUTHWESTERN U.S. AND MEXICAN SPOTTED OWLS, WITH THE DESCRIPTION OF A NEW SUBSPECIES

ROBERT W. DICKERMAN¹

ABSTRACT.—Populations of the Spotted Owl (*Strix occidentalis*) from the southern Rocky Mountains to central Mexico have generally been referred to the subspecies *S. o. lucida* (Nelson 1903), or the Mexican Spotted Owl. However, my recent examination of specimens reveals three subspecies occurring in this region, including this first report of a population from the State of Mexico described here as new. Birds from the southwestern U.S. (and presumably adjacent Chihuahua and Sonora) are assignable to *S. o. huachucae* Swarth (1910), which may be called the Southwestern Spotted Owl. The name *lucida* should be restricted to Mexican populations now confirmed in the states of Nuevo Leon, San Luis Potosi, Jalisco, Guanajuato, and Michoacan.

The Spotted Owl, *Strix occidentalis* (Xantus), is a polytypic species that ranges from British Columbia and the southwestern United States to central Mexico (Gutierrez et al. 1995). Nelson (1903) described *Syrnium occidentale lucidum* from a single specimen from Cerro Tancitaro, Michoacan. Although he had available a second specimen in the U. S. National Museum (USNM) from Guanajuato, it was not used in the description. In describing *lucida*, Nelson only compared the type with an unstated number of specimens of "*S. [o.] occidentale*." Swarth (1910) split the Arizona population of this species out as *S. o. huachucae* (type locality Huachuca Mts., Cochise Co., Arizona). In describing *huachucae*, Swarth compared it only to *S. o. occidentalis* of southern California. However, four years later (1914) he compared his type to three other Arizona specimens confirming his original diagnosis. Ridgway (1914) accepted *huachucae* as valid, applying the name to birds from Arizona and New Mexico east to the Guadalupe Mountains of Texas, and restricting *lucida* to Mexican populations represented by the two USNM Mexican specimens cited above. This usage was followed by Cory (1918).

Oberholser (1915) using many of the same specimens examined by Ridgway used, arrived at the contrary conclusion that *huachucae* was a synonym of *lucida* (note that he did not mention wear, fading or molt on the specimens examined in reaching this conclusion). The A.O.U. Check-list Committee (of which Oberholser was secretary) accepted his opinion (A.O.U. 1923), and it has been followed without question by most workers since then for the southwestern populations (e.g., A.O.U. 1931, 1957; Friedmann et al. 1950, Gutierrez et al. 1995, etc). However, Allan R. Phillips (*in* Monson and Phillips 1981:73), recognized *huachucae* for Arizona (and no doubt other southwestern) populations of this owl—noting it as being paler than *lucida*. Although not so stated by Phillips, his assessment was based on comparisons of series from the Southwest with the two USNM specimens from Michoacan (type) and Guanajuato.

Whatever the subspecies involved, published occurrences of the Spotted Owl in Mexico are relatively few in number and limited in range. For example, Howell and Webb (1995) and Gutierrez et al. (1995) give the range as montane areas in northern Baja California and from Sonora, Chihuahua, and Coahuila southward to Jalisco, Michoacan, and San Luis Potosi. Williams and Skaggs (1993), in an unpublished report, listed only eight specimens from the range of *lucida* as defined here [Fig. 1].

In early 1995, I found three previously unpublished specimens in the collection of the Texas Cooperative Wildlife Unit (TCWC) at Texas A. & M. University. These are

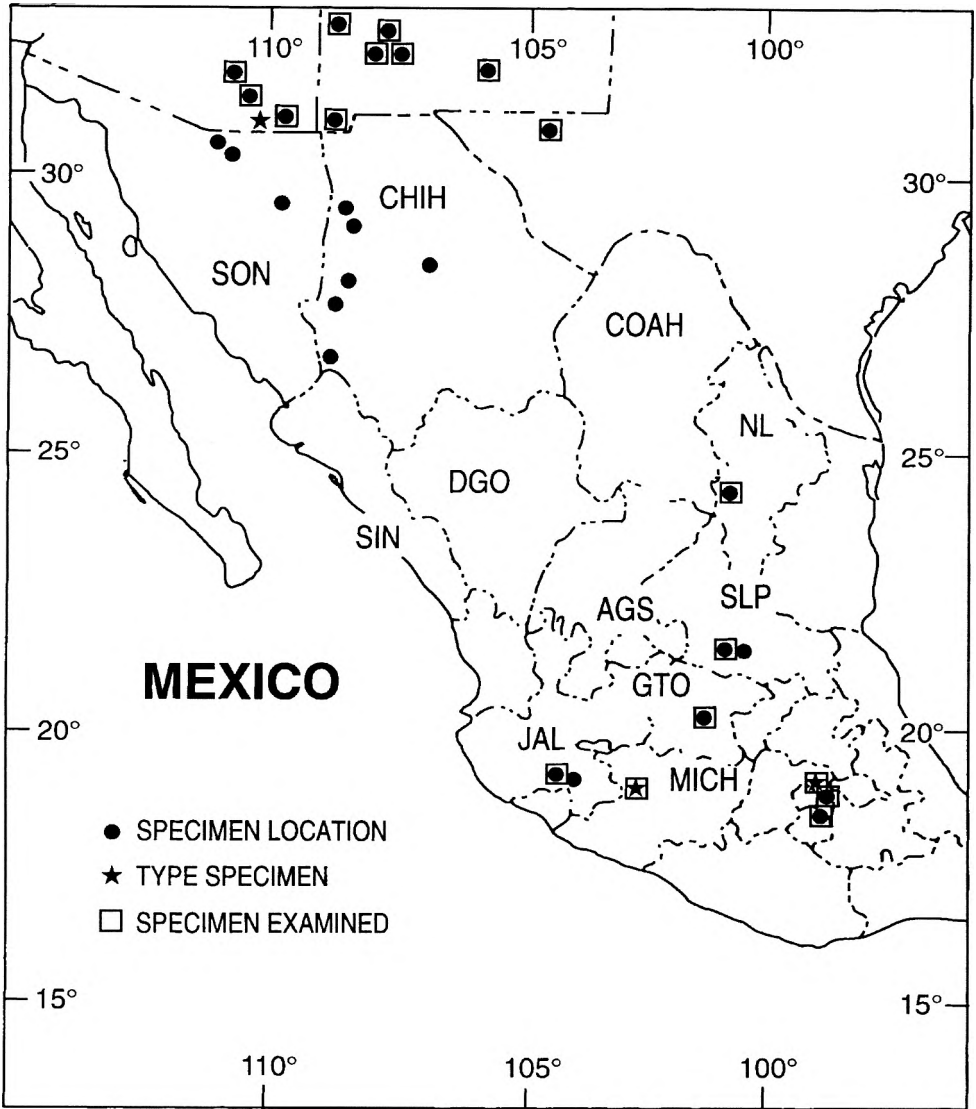


FIG 1. Distribution of specimens of *Strix occidentalis* in southern Arizona and New Mexico, western Texas, and Mexico. Map adapted from Williams and Skaggs (1993).

two adults and one young taken on 27 June 1941, during a summer field trip to "Monte Rio Frio," State of Mexico, a locality approximately 42 km E of Mexico City. I compared those adults with two TCWC specimens from the Guadalupe Mountains in western Texas and found them notably different. I then borrowed the three Rio Frio specimens plus three others from eastern and central Mexico and compared them at the USNM with the two specimens cited above and a large series from Arizona and New Mexico: *lucida* and *huachucae* indeed proved to be distinct (see below), with the latter name applying to all populations in the southwestern U.S. east of California (and presumably to those of adjacent Chihuahua and Sonora). Mexican specimens from farther south are assignable to two other subspecies, one being *lucida* (to date based on eight specimens. Williams and Skaggs 1993, five examined in this study) from Michoacan, Jalisco, Guanajuato, Nuevo Leon and

San Luis Potosi. The three specimens from the State of Mexico (TCWC) comprise another form, which may be known as the Volcano Spotted Owl or:

Strix occidentalis juanaphillipsae, new subspecies

TYPE SERIES: Holotype—TCWC 2343, adult female, Monte Rio Frio, ca. 42 km E of Mexico City, State of Mexico, Mexico, collected on 27 June 1941 by R.W. Mulholland (RWM 13). Paratypes—TCWC 2344, adult male (collected by E. A. Moseler, field no. 12) and TCWC 2345, large young (EAM 13), same location and date.

DIAGNOSIS: Adults of *juanaphillipsae* are most similar to *huachucae*, but they are darker and redder; both *huachucae* and *juanaphillipsae* differ from *lucida* in being redder, not coldly chocolate-brown as in that form; *juanaphillipsae* is redder across the breast, whereas *lucida* is dark brown and *huachucae* much paler, near buff; *huachucae* is much paler throughout than *lucida*. Interestingly, the *lucida* specimen from Cerro Campanario, San Luis Potosi (Louisiana St. Univ. 11038) shows some approach to *huachucae* in having a paler breast band than other examples of the former. The nestling *juanaphillipsae* was compared to three similarly-aged *huachucae* (no young *lucida* were available), with the former having the barring on the emerging remiges and rectrices somewhat redder. In addition, the barring on the downy plumage is more distinct in the *juanaphillipsae*, although this could be the result of differences in age or exposure to sunlight.

The comparisons of *juanaphillipsae* and *lucida* were based on two worn and five less-worn specimens, respectively. Thus, if the type series were in fresher plumage, *juanaphillipsae* would be even more distinct from *lucida*. Oberholser's (1915) apparent failure to segregate his specimens by freshness of plumage and wear may account for his not discerning the differences between *lucida* and *huachucae*. On the other hand, little or no foxing appears to affect Spotted Owl specimens, so that older material (e.g., Duges' specimen of *lucida* from Guanajuato) are comparable in color with more recent ones.

MEASUREMENTS OF TYPE: Holotype—wing chord 320 mm, tail 195, culmen from base 34.

RANGE: Known only from the type series, which is from a locality along highways M150/M190 in the State of Mexico just west of the Puebla boundary [Fig. 1]. The elevation is approximately 3150 m, and habitats in the area are forests dominated by pines (*Pinus* spp.) and oaks (*Quercus* spp.), with firs (*Abies religiosa*) and other trees on more mesic sites. The type locality lies just north of the Parque Nacional Iztaccihuatl-Popocatepetl, which features volcanoes rising to 5296 and 5141 m, respectively. This and other upland areas in the vicinity may well provide habitat for this owl, including in the states of Mexico, Puebla, Tlaxcala, and Morelos.

ETYMOLOGY: I am extremely pleased to name this subspecies for Juana Farfan Bautista de Phillips, the kind and loving wife of my late friend and colleague Allan R. Phillips. In addition to being a mother and major overseer of the Phillips home and family, she has always been a wonderful field companion, provider, and supporter of Allan and his circle of friends and acquaintances.

SPECIMENS EXAMINED: *S. o. juanaphillipsae* 3: Estado de Mexico, type locality (see above) – adult female (type), adult male, and large young. *S. o. lucida* 5: Nuevo Leon, Cerro Potosi 1; San Luis Potosi, Cerro Campanario 1; Jalisco, Cerro Nevado de Colima 1; Michoacan, Mt. Tancitaro (type) 1; Guanajuato 1. *S. o. huachucae* 34: Arizona – Apache Co., White Mts. 1; Cochise Co., Chiricahua Mts. 3; Cochise Co., Huachuca Mts. 7 (but not the type); Pima Co., Santa Rita Mts. 1; Pinal Co., Santa Catalina Mts. 5. New Mexico – Catron Co., Reserve area 5; Hidalgo Co., Animas Mts. 1; Otero Co., Sacramento Mts. 8; Socorro Co., San Mateo Mts. 8. Texas, Culberson Co., Guadalupe Mts. 2.

S. o. juanaphillipsae has the most restricted range of the three forms discussed here, being known from one collection of three birds. In fact, this is the only record of the Spotted Owl in Mexico south of Michoacan, even though from a locality that has been frequented by birders for decades. This suggests these owls are quite rare in the area, although surveys are needed to ascertain this. Whatever its status, this form could well be threatened by habitat destruction, although populations in nearby national parks or reserves may be more secure.

The Spotted Owl populations of the southwestern United States and adjacent Mexico should now be referred to as *S. o. huachucae*, for which the name Southwestern Spotted Owl would be appropriate.

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¹ Museum of Southwestern Biology, Biology Department, University of New Mexico, Albuquerque, N.M. 87131.