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NEW GOLDEN EAGLE RECORDS FROM BAJA CALIFORNIA

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ABSTRACT.—The Golden Eagle (*Aquila chrysaetos*) has been little studied in Mexico so that this species' population status in the southern extreme of its range is unknown. We present new records of the species for the mid and southern portion of Baja California. We describe the recovery of an eagle banded in Oregon and found dead in the Vizcaíno Desert, approximately 2000 km south of the banding location. Based on sightings and recoveries of dead eagles, we suspect that a resident breeding population exists in the region and that this population is augmented by migrants in winter.

Nuevos registros de Águila Real en Baja California

EXTRACTO.—El Águila Real (*Aquila chrysaetos*) ha sido muy poco estudiada en México, y prácticamente se desconoce la situación de sus poblaciones en el extremo más al sur de su distribución en América. Nosotros presentamos nuevos registros de la especie en la porción media y sur de la península de Baja California, México, así como el registro de un águila anillada en Oregón y que fue encontrada muerta en la zona del Desierto de Vizcaíno, aproximadamente a 2000 km de su lugar de origen. Finalmente se discute sobre el estatus del Águila Real en Baja California en relación a los individuos residentes e invernantes.

The Golden Eagle (*Aquila chrysaetos*) in North America is widely distributed, ranging from northern Canada and Alaska to north-central Mexico (Bent 1937, Brown and Amadon 1968); however, there is little information on the distribution and status of this eagle in Mexico (Le Franc and Clark 1983). Nothing appears to be published about breeding and migrant Golden Eagles in Baja California, particularly south of Sierra San Pedro Mártir (Grinnell 1928). There are no museum specimens in Mexico or the United States from Baja California (P. Unitt, and P. Escalante, pers. comm.). We report on observations of Golden Eagles in the Peninsula of Baja California, and contribute new information on the distribution of these eagles at the southern end of their range.

Our observations consisted mainly of individuals from the mountains of the Vizcaíno Biosphere Reserve, although some individuals also were recorded farther south, on the tip of the Peninsula. We particularly surveyed the higher (San Francisco and La Higuera) and the lower (San Jose de Castro and Santa Clara) sierras, including the isolated mountains of El Pinacate and Cerro Prieto (Fig. 1). Elevations in the surveyed area range from 550–600 m in the lower mountains to 1400–1600 m in the higher mountains. Lower mountains are characterized by low precipitation (up to 100 mm annually) with a winter rainy season and a mean annual temperature of 22°C. High mountains receive 200–300 mm of annual precipitation with a summer and winter rainy season and have a mean annual temperature of 20°C (García and Mociño 1968). Vegetation of the area is desertic thicket, comprised mainly of mesquite (*Prosopis* spp.), Adam's Tree (*Fouquieria diguetti*), Palo Verde (*Cercidium microphyllum*), Cardons (*Pachycereus pringlei*) and several other cacti species (León de la Luz et al. in press). Potential prey for eagles are Black-tailed Jackrabbits (*Lepus californicus*), the endemic ground squirrel (*Spermophilus atricapillus*), California Quail (*Callipepla californica*) and Pronghorn Antelope (*Antilocapra americana peninsularis*). All of these species are locally common, except the pronghorn, which is endangered in the Vizcaíno desert (Wilcox 1988).

During April, July and October 1984, November 1987, February–March 1988 and October 1989, 13 Golden Eagles (10 adults, 1 subadult, and 2 immatures; see Clark and Wheeler 1987 for a description of age classes) were observed at different sites (Table 1). All were flying over mountains and valleys surrounded by hills. We did not observe evidence of reproductive activity, but in 1988, two probable Golden Eagle nests, one on the Sierra San Francisco

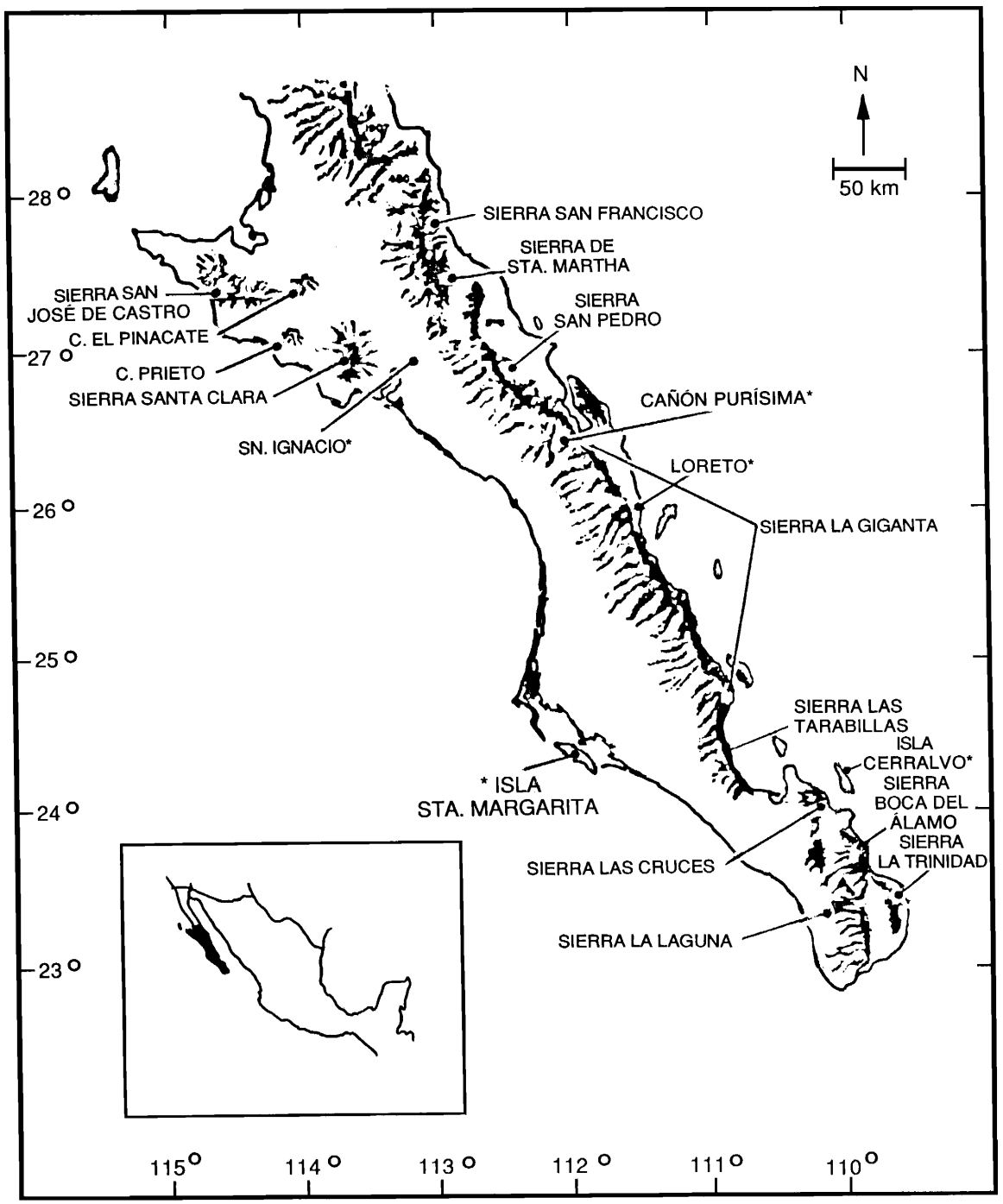

Figure 1. Golden Eagle records in Baja California Sur. Points show the locations where Golden Eagles were observed. Asterisks (*) indicate records from the literature.

Table 1. Golden Eagle records in Baja California. Records for this study were collected since 1984 in the southern end of the range of the Golden Eagle.

SITE	DATE	NUMBER OF INDIVIDUALS	SOURCE
North of Vizcaíno Desert			
Nachoguero (32°29′)	5 October 1946	1	Hill and Wiggins 1948
Ensenada (31°43′)	9 April 1967	1,[a] 1[a]	Short 1967
Laguna Hanson (31°39′)	21 October 1926	1[b]	Grinnell 1928
	7, 8 October 1946	1, 2	Hill and Wiggins 1948
Santo Tomás (31°31′)	16 October 1946	Several	Hill and Wiggins 1948
San Telmo (30°49′)	— 1893	2[c]	Anthony 1893 (cited in Grinnell 1928)
	21 October 1946	3	Hill and Wiggins 1948
San José (30°48′)	October 1946	Nest[d]	Hill and Wiggins 1948
	20 October 1946	1	Hill and Wiggins 1948
San Quintín (30°31′)	25 February 1925	1	Huey 1926
La Grulla (30°04′)	15 June 1923	1	Huey 1926
San Fernando (29°59′)	— 1895	1	Anthony 1893 (cited in Grinnell 1928)
El Mármol (29°48′)	26 October 1946	1	Hill and Wiggins 1948
Isla San Lorenzo (28°31′)	17 April 1977	1	Wilbur 1987
Vizcaíno Desert			
Cerro El Pinacate (27°32′)	7, 9, 10–12 July 1984	1, 1, 1, 2, 2	This study
Sierra San Francisco (27°31′)	11, 12 March 1988	1, 1	This study
	27 October 1989	2[a]	This study
Sierra Santa Martha (27°25′)	19 March 1988	1	This study
Sierra de la Cabra (27°24′)	17 November 1987	1	This study
Sierra de Santa Clara (27°08′)	14 October 1984	2	This study
San Ignacio (27°02′)	17 January 1985	1	Wilbur 1987
San Hipólito (26°59′)	13, 14, 17 April; 15 Oct. 1984	1, 2, 2; 2	This study
South of Vizcaíno Desert			
Cañón Purísima (26°20′)	17 November 1946	1	Hill and Wiggins 1948
Loreto (25°53′)	15 January 1985	1	Wilbur 1987
Isla Santa Margarita (24°24′)	25 April 1984	1	Amador 1985
Isla Cerralvo (24°12′)	26 October 1961	1	Banks 1963
Los Planes (24°05′)	June 1988	1	This study (see text)
La Rivera (23°31′)	November 1989	1	This study (see text)
Sierra de la Laguna (23°19′)	25 January 1990	1,[a] 1	This study

[a] Immature.
[b] Skeleton in the Museum of Vertebrate Zoology, University of California, Berkeley.
[c] Eagles nesting.
[d] A nest in good repair in a *Pinus ponderosa*.

and one on the Sierra de la Higuera, were found on cliffs with an ENE exposure. They were both unoccupied at the time.

Some of the eagles observed in our study area may be from U.S.A. While interviewing ranchers, we found a banded foot of a Golden Eagle that had been killed by a shepherd in November 1986 at Sierra San Francisco (2 km east from Rancho Santa Ana at 950 m elevation). This eagle was 10 years old when killed, was of unknown sex, and it was near fledging when banded in Oregon. Conservatively, this bird moved a minimum of 2000 km to arrive in the Sierra San Francisco. According to the shepherd, the eagle was accompanied by a second Golden Eagle.

Some Golden Eagles have been recorded sporad-

ically farther south along the Baja peninsula (Hill and Wiggins 1948, Banks 1963, Amador 1985, Wilbur 1987). Our data suggest that Golden Eagles occur in the southern portion of the Baja peninsula more commonly than previously believed. One injured adult eagle was trapped by a rancher on June 1988 near Los Planes village (site: El Médano Alto 24°01'30"N 109°55'15"W), and a sub-adult eagle was trapped alive by a rancher on November 1989, near La Rivera village (23°33'36"N 109°30'40"W) (Fig. 1) when the individual tried to chase a duck and had descended to the ground. On January 1990, we observed one immature (2–3 years old) and one adult in the pine-oak forest of Sierra de la Laguna (1800 m elevation; Fig. 1).

The status and distribution of Golden Eagles in Baja California has not been clearly determined. For example, there could be two Golden Eagle populations in the Vizcaíno Biosphere Reserve, one local and nonmigratory, and another migratory. Non-migratory residents might breed in the area, but currently there are no published records of this eagle nesting south of latitude 30°N in Baja California (Grinnell 1928, Short 1967, Wilbur 1987). However, based on our discovery of two probable Golden Eagle nests, the presence of two immatures in Sierra San Francisco, and the presence of one immature in Sierra de la Laguna we suggest it may be occurring. Alternatively, the presence of one migrant eagle from the U.S.A. in the Reserve area, as well as the increase in Golden Eagle abundance during the winter (according to the shepherd's information and the literature; Table 1), suggests this area may well be an important wintering area for the Golden Eagles migrating to Baja California.

Clearly, more information is needed to document the relationship between Golden Eagle populations of the U.S.A. and Mexico, particularly with respect to dispersal and migratory movements. We also need to determine more accurately the breeding range of this species in the peninsula of Baja California.

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LITERATURE CITED

AMADOR, E.S. 1985. Avifauna de la Isla Santa Margarita, B.C.S., México. Memoria presentada para optar al título de Biólogo Marino. Universidad Autónoma de Baja California Sur. La Paz, B.C.S., México.

BANKS, R.C. 1963. Birds of Cerralvo Island, Baja California. *Condor* 65:300–312.

BENT, A.C. 1937. Life histories of North American birds of prey. (Part 1.) U.S. National Museum, Bull. 167.

BROWN, L. AND D. AMADON. 1968. Eagles, hawks and falcons of the world. Country Life Books, London, U.K.

CLARK, W.S. AND B.K. WHEELER. 1987. A field guide to hawks of North America. Houghton Mifflin Co., Boston, MA.

GARCÍA, E. AND P. MOCIÑO. 1968. Los Climas de la Baja California. Memoria 1966–1967 del Comité Nacional Mexicano para el Decenio Hidrológico Internacional. Instituto de Geofísica, Universidad Nacional Autonóma de México, Mexico City, Mexico.

GRINNELL, J. 1928. A distributional summation of the ornithology of Lower California. *Univ. Calif. Publ. Zool.* 32:1–300.

HILL, H.M. AND L. WIGGINS. 1948. Ornithological notes from Lower California. *Condor* 50:155–161.

HUEY, H. 1926. Birds of northwestern Baja California. *Auk* 43:352–353.

LE FRANC, M.N. AND W.S. CLARK. 1983. Working bibliography of the Golden Eagle and the genus *Aquila*. National Wildlife Federation, Washington, D.C.

LEÓN DE LA LUZ, J.L., J. CANCINO AND L. ARRIAGA. In Press. Asociaciones fisonómico-florísticas y flora. Pages 83–119 *in* L. Arriaga and A. Ortega [EDS.], La Reserva de la Biosfera "El Vizcaíno." Centro de Investigaciones Biológicas de Baja California Sur, La Paz, México.

SHORT, L.L., JR. 1967. Notes on the avifauna of northwestern Baja California. *Trans. San Diego Soc. Nat. Hist.* 14:281–300.

WILBUR, S.R. 1987. Birds of Baja California. University of California Press. Berkeley, CA.

WILCOX, B. 1988. 1988 Red List of Threatened Animals. International Union for Conservation of Nature and Natural Resources. Cambridge, U.K.

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