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Status and Reproduction of the Peregrine Falcon at a Coastal Lagoon in Baja California Sur, Mexico

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The peregrine falcon (*Falco peregrinus*) is considered an endangered species worldwide (King 1981). Its status is not well known in Mexico (Banks 1969, Fyfe et al. 1976). Peregrine distribution has been considered to be restricted to the north and northwest of Mexico (see Thelander 1978), with the largest numbers in the Gulf of California and the Baja California peninsula (Banks 1969, Porter et al. 1988). Banks (1969) estimated the Gulf of California and the Baja California peninsula peregrine populations to contain about 66 nests, 38 of them on the Pacific side. However, later reports show the population on the west coast of the peninsula to be very small, declining drastically, or even disappearing (Anderson 1976, Porter et al. 1978, 1988). This decline was apparently at least partly caused by high levels of organochlorine pesticides (Porter et al. 1978, 1988, Kiff 1988).

Since 1977, when only one peregrine nest site was known on the Pacific side of Baja California, little additional information has been obtained for the west coast (Porter et al. 1988). During 1993, we found several active nests in the Ojo de Liebre (Scammon's) Lagoon, a location without historical nesting records. Here, we report on the peregrine status at this location, and provide information on nesting chronology and reproductive success.

Study Site and Methods

Ojo de Liebre Lagoon is located on the west coast of the middle Baja California peninsula, about 650 km south of the United States/Mexico border (Fig. 1). It is the largest of three lagoons (360 km^2) that open to the Vizcaino Bay. Descriptions of the lagoon can be found in Lewis and Ebeling (1974) and Saunders and Saunders (1981).

To locate peregrine nests, we explored potential sites, such as man-made structures located on the lagoon by boat, and investigated the islets on foot. Each nest found was checked directly at least four times between the third week of March and the third week of June. A nest where eggs were laid was considered active; a nest where at least one young fledged was considered productive.

Results and Discussion

We found three breeding peregrine pairs in the lagoon. Two nests were on top of metallic, 3-m high, channel markers in the water near the sand dunes on the coast. These towers were constructed after 1967 (J. Peralta pers. comm.). The third nest was on the ground, in a small conical rocky cavity (40 × 60 × 120 cm), on a low islet. This islet was visited by coyotes (*Canis latrans*) which periodically eradicated the ground-nesting ospreys (*Pandion haliaetus*) there (Kenyon 1947, Jehl 1977, Henny and Anderson 1979, Castellanos 1983).

According to Banks (1969), no breeding peregrines were sighted at the Ojo de Liebre Lagoon. Since then, there have been no additional peregrine sightings or reported nests in this area (see Banks 1969, Porter et al. 1988, Wilbur 1987). However, there are several unpublished sightings of resident peregrines and nesting pairs in this area for 1977 (C. Henny and D. Anderson pers. comm.), 1984, and 1992 (F. Jaramillo and F. Heredia pers. comm.)

Nesting occurred between the first part of March, when the eggs were laid, to late June, when all the young had abandoned their nests or were able to fly. Laying seems to have occurred between February and March, which is consistent with previous reports of egg laying dates (Porter et al. 1988). Eggs apparently hatched between the last week of March and the third week of April. The young fledged between the second week of May and the third week of June.

The clutch size averaged 3.3 eggs. The occurrence of two sets of three eggs is consistent with Bancroft (1927) who explained that on the Baja California peninsula, three egg clutches are more frequently laid than clutches of four An average of 3.0 nestlings and 2.6 fledglings was produced in each active nest; both values are greater than those reported (nestlings = 2.17, fledglings = 1.74) for the Gulf of California peregrines during 1976–1984 (Porter et al. 1988). There was no significant difference between the average number of fledglings produced on the Gulf of California and this study ($t = 1.76$, df = 28, $P > 0.05$)

Our exploration revealed a limited number of potential nesting sites such as cliffs or relatively secure man-made structures in the study area. Indeed, we believe that the observed peregrines represented the total number of resident breeding pairs in the Ojo de Liebre Lagoon. Two of the nests were located on towers constructed in the late 1960s and the third was in a site which had been visited by coyotes for several years, presumably preventing peregrine nesting. Thus, we believe that peregrine falcons have been nesting in the lagoon for no more than 20 yr

Our data suggest that Ojo de Liebre Lagoon is an important peregrine breeding location in the middle west coast of Baja California. However, commercial fishing, tourism and channel markers maintenance activities are the primary threats to the peregrines in the area. The ground nest is accessible by walking visitors and fishermen who use the islet as a base. Nests on towers can be disturbed by fishermen operating around the towers or by the maintenance workers. Consequently, we believe that a special

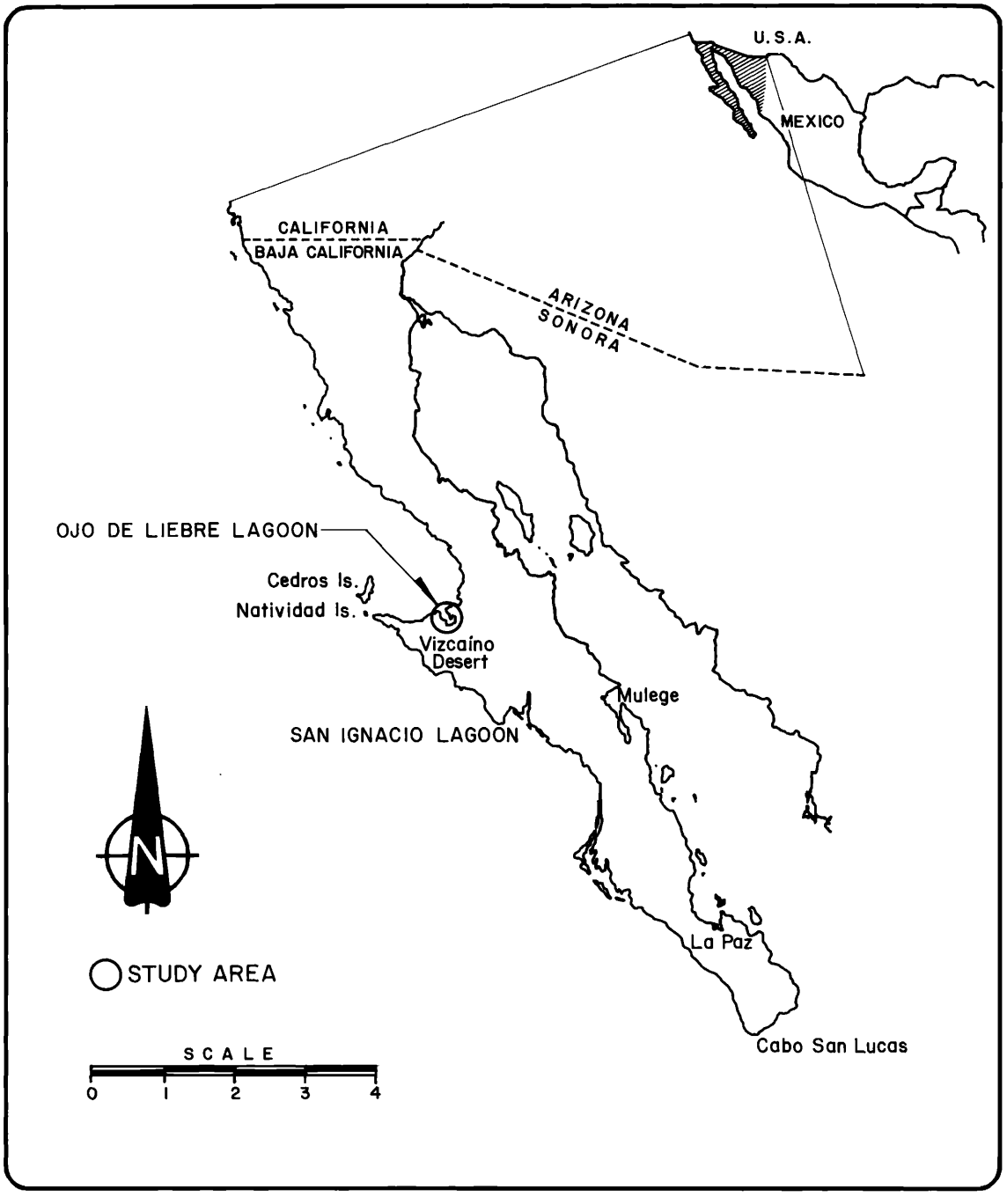

Figure 1. Location of the Laguna Ojo de Liebre (Scammon's Lagoon), Baja California Sur, Mexico.

effort needs to be made by government agencies to protect these nesting sites.

RESUMEN.—El halcón peregrino (*Falco peregrinus*) está considerado mundialmente en peligro y su estatus en México es poco conocido. En recientes reportes se considera a la población anidante en la costa del Pacífico de la península de Baja California desapareciendo o muy reducida en números. Durante 1993, nosotros encontramos tres parejas de peregrino en la laguna Ojo de Liebre, en la costa del Pacífico de la península, donde no había registros previos de anidamiento. Los nidos estaban ubicados uno directamente en el suelo y dos sobre torres de señalamiento marítimo dentro del agua. El anidamiento ocurrió entre la primera mitad de marzo y finales de junio. El número promedio de volantones producido por nido activo fue de 2.6. La principal fuente de amenaza para los peregrinos en el área de estudio es la perturbación humana. Recomendamos la protección efectiva de los sitios de anidamiento.

[Traducción Autor]

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