## MIGRATION PATTERNS OF NORTHERN IDAHO AND EASTERN WASHINGTON OSPREYS

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The migration patterns of Ospreys (*Pandion haliaetus*) in North America are best known for eastern populations where banding has been in progress for more than 50 years. These Ospreys move through the West Indies to winter in South America (Worth, 1936; Henny and Wight, 1969; Henny and Van Velzen, 1972; Kennedy, 1973). Nesting populations in the Midwest winter in Panama, Colombia and Ecuador. Yearling Ospreys remain on the wintering grounds while those two years old return for the first time to northern nesting areas. Although two-year-olds form pairs and build nests they do not lay eggs. Hence Ospreys attain reproductive maturity at the age of three (Henny and Van Velzen, 1972).

Only casual banding was conducted in the western United States until recently. Active banding programs are in progress in several western states including Idaho and Washington where we have banded 254 nestlings during the past seven seasons (1970–1976). In addition to the U.S. Fish and Wildlife Service band, we have placed 2-inch plastic leg streamers, color-coded by year, on most of these birds. Although the number of recoveries is small, they are well-spaced seasonally and geographically so that we can make some general statements regarding the migration patterns, the wintering areas, and the nest-area philopatry of these Ospreys. Recoveries made prior to the first fall migration are excluded from our analysis.

Ospreys depart northern Idaho throughout September and early October. They apparently move south rapidly because recoveries are known from southern Texas as early as 4 October (No. 1, Table 1) and from central Mexico as early as 14 October (Nos. 2–4). We have attempted to observe color-marked birds at Kino Bay, Sonora, in early October and mid-November without success. Ospreys reach the wintering grounds as early as 12 November (No. 5). Most Ospreys from northern Idaho and eastern Washington are found on the Pacific coastal portions of El Salvador, Honduras, and Costa Rica (Nos. 5–8). Hence there appears to be little if any overlap in the wintering area of this population with those from the Midwest and East.

As with other North American populations and those of Fennoscandia (Österlöf, 1977), yearling birds do not return to the nesting grounds (Nos. 9 and 10). The recovery of a yearling (No. 11) from Sinoloa in March may indicate that these young birds have migratory tendencies or that they winter farther north than we suggest. Birds two years of age return to the nesting grounds (No. 12) as confirmed for other populations (Henny and Van Velzen, 1972; Österlöf, 1977). Regional philopatry is also demonstrated by recovery No. 13. Its recovery in a decomposed state does not allow us to determine whether the bird died during the nesting season or during migration.

TABLE 1. Recovery records of northern Idaho and eastern Washington Ospreys.

No.	Banding site and date		Recovery site and date		How obtained
_	Newport, WA	07-19-75	Corpus Christi, TX	10-04-77	Found dead
2	Usk, WA	07-19-75	Tulancingo, Hidalgo	10-14-75	Shot
3	Harrison, ID	07-13-74	Tecoman, Colima	10-28-74	Unknown
4	Medimont, ID	08-07-74	Mascota, Jalisco	11-08-74	Shot
5	Harrison, ID	06-25-71	Rio Canas, Costa Rica	11-12-73	Shot
9	Harrison, ID	07-17-73	Jucuaran, El Salvador	11-19-73	Found dead
7	Usk, WA	07-19-75	Metapan, El Salvador	01-24-76	Shot
œ	Harrison, 1D	07-19-74	Zacate Grande, Honduras	03-09-75	Shot
6	Harrison, ID	07-18-72	Isla Tigre, Honduras	06—73	Unknown
10	Harrison, ID	06-25-71	San Salvador, El Salvador	06-20-72	Shot
11	Harrison, ID	07-12-75	San Rafael, Sinaloa	03-12-76	Shot
12	Coeur d'Alene, ID	07-18-72	Cataldo, ID	09-15-74	Found dead
13	Usk, WA	07-15-72	Black Lake, ID	10-25-75	Found dead
14	Sandpoint, ID	07-16-73	Mexicali, Baja Calif.	04-27-76	(decomposed) Shot

Ospreys arrive in northern Idaho in late March and early April. Spring migration is not reflected in the recovery date of bird No. 14 since there was a delay in reporting its recovery (A. Garcia-Miranda, pers. comm.). Egg laying had already begun on the nesting grounds at the time of this report (27 April).

Although we have not observed streamer-marked birds following their return to the natal area, we have confirmed streamer retention for nearly a year through correspondence with people reporting recoveries. As with other populations (Henny and Van Velzen, 1972; Kennedy, 1973), shooting is the principal cause of death (Table 1). Birds reported as "Found dead" may have been shot also.

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