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Where do Northern ("Baltimore") Orioles spend the winter?

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The forested dune ridge that separates Lake Manitoba from Delta Marsh, Manitoba, has been the focus since 1974 of an ongoing investigation into the ecology of a community of densely nesting species of insectivorous birds and one dove species (study area and bird community described by Sealy 1980a, b; MacKenzie 1982; MacKenzie *et al.* 1982). Since this work began, 2,191 Northern Orioles of the "Baltimore" subspecies (*Icterus galbula galbula*) have been banded, and in most cases uniquely color marked. Two of these orioles were encountered off the forested dune ridge. One recovery offers a clue to where individuals of this population spend the winter. The other recovery, supported by observations of color-marked individuals and mist-net captures during the late nestling and post-breeding periods on the study area, suggests that SY males leave the study area in mid-summer, presumably destined for their wintering grounds, up to one month before the ASY males and AHY females migrate southward.

The recoveries mentioned above are detailed in the present paper. In addition, the records of the encounters of banded "Baltimore" Orioles (Table 1), furnished by the Migratory Birds Branch, Canadian Wildlife Service, which date back to 1924, provide additional information on where "Baltimore" Orioles spend the winter. I have broken down these encounters as follows: (1) orioles banded during spring migration or the breeding season and recovered within the subspecies' known wintering range (see Fig. 1) during the following or a subsequent winter, (2) birds banded in the wintering range and recovered during the following or a subsequent breeding season, and (3) birds banded on the wintering grounds which repeated at the same site or returned there in a subsequent winter. Recoveries of orioles from the eastern United States where their relatively recent presence in winter apparently has been influenced by the provisioning of food at feeding stations (see Erickson 1969) have been ignored in this analysis.

Results and Discussion

An SY male (861-03529), banded and color marked on the dune-ridge study area on 20 June 1977, was found dead by N. Hanson on 10 July 1977, near Goodridge, Minnesota, about 245 km southeast of the study area. The implication of this recovery is that SY males leave the breeding grounds not long after their prebasic molt has begun (see Sealy 1979), presumably destined for their wintering areas. The lack of mist-net captures, repeats, and sightings of SY males on the study area after mid-July (Table 2) also suggests strongly that these males leave the study area, whereas it is known that the ASY males and AHY females complete their prebasic molts before migrating south in late August (Sealy 1979). It is not known whether the prebasic molt of SY males is interrupted while they migrate south, and completed after they arrive on the wintering grounds. Why do SY male "Baltimore" Orioles leave the breeding grounds about one month or more before the adults? As such, the early departure of these males from the dune-ridge forest, and probably also other areas, occurs before the collapse of the food supply (see Sealy and Biermann 1983). Thus, it is unlikely that such early fall migration southward is directly related to food availability on the breeding ground (see also Rappole *et al.* 1979). Sealy (1979) argued that because at least some SY males nest successfully on the study area, with their numbers varying from year to year (Sealy, unpub. data), it is possible that those that move southward early and while molting did not breed or were failed breeders. The continued absence of SY males after mid-July (Table 2) suggests that indeed all of these males leave early. Such early departure from the breeding ground should mean that these males arrive first on the wintering ground, but confirmation of this is needed. Sealy (1979) believed that the less experienced males may be better able to compete for food and space on the wintering grounds if they arrived before the ASY males, as Morton (1976) argued for the early-migrating Yellow Warbler (*Dendroica petechia*). Age-related differences in the ability to hold territories on the wintering grounds have been found in Yellow Warblers (Morton 1976) and Dark-eyed Juncos (*Junco hyemalis*) (Ketterson and Nolan 1979) and are probably common in many passerine species (see also Ewald and Rohwer 1980).

Figure 1. Breeding and wintering distributions of the "Baltimore" Oriole. Distributional data upon which this map is based are from: A.O.U. Check-list (1983), Bond (1960), Dickey and van Rossem (1938), Paynter (1955), Godfrey (1966), Johnsgard (1979), Land (1970), Meyer de Schauensee (1970), Monroe (1968), Edwards (1972), Ridgely (1976), Rising (1970, 1983), Salt and Salt (1976), and Slud (1964). This subspecies is a rare transient through the western portion of the West Indies (Bond 1960) and apparently an occasional winter resident (Lack 1976). Inset: Major portion of the wintering range of the "Baltimore" Oriole showing where and how many recoveries (numbers in circles) have been obtained of individuals of this subspecies banded on their breeding grounds (see also Table 3). One of the two Mexican recoveries was obtained in the south central part of the country, where this subspecies is known to occur in winter. The exact location in Mexico of the the other recovery is not known.

Fig. 1

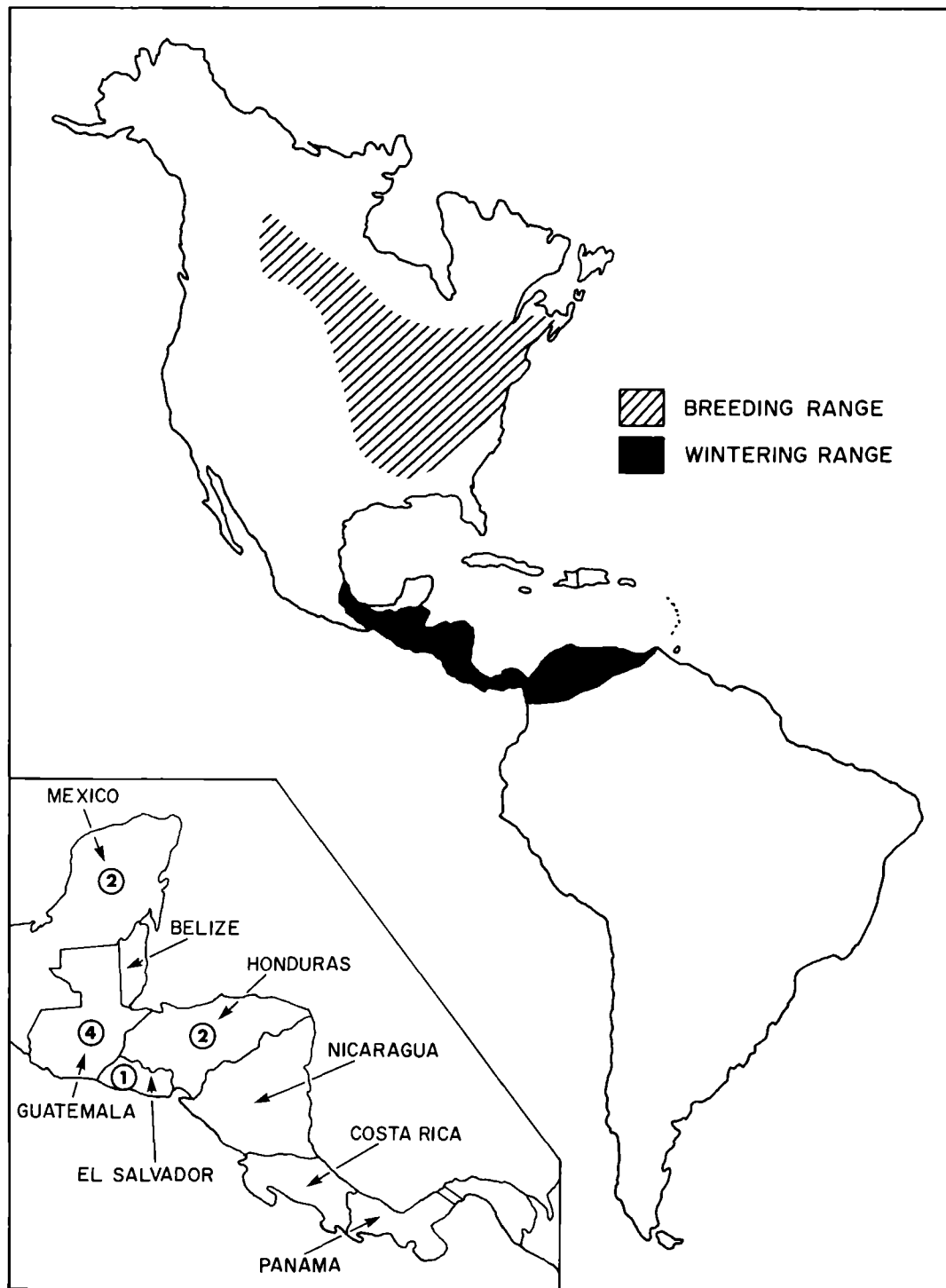


Table 1. Encounters with banded Northern Orioles, 1924-1979.

Subspecies*	Number banded	Number** of encounters	Encounters***	
			number within same 10' grid of latitude and longitude where banded (% of total)	number outside 10' grid of latitude and longitude where banded (% of total)
Baltimore	45,981	700	627 (89.6)	73 (10.4)
Bullock's	4,434	199	197 (99.0)	2 (1.0)
Totals	50,415	899	824 (91.7)	75 (8.3)

*"Baltimore" Oriole (*Icterus galbula galbula*); "Bullock's" Oriole (*I. g. bullockii*).
**An encounter is defined in *North American Bird Banding Techniques*, Vol. 1, 1977, appendix A-4, as an observation of a previously banded bird. Encounters occur through hunting or finding birds dead (recoveries), trapping (repeats, returns, retraps), or sightings by observers (not included in the present analysis).
***Encounter rate: Baltimore, 1.52%; Bullock's, 4.49%; both subspecies, 1.78%.

Table 2. Mist-net captures, repeats and returns, and sightings of color-marked AHY "Baltimore" Orioles during the late nestling and post-breeding periods on the forested dune-ridge, Delta Marsh, Manitoba, 1976-1983.

7-DAY PERIODS	MALES		FEMALES
	SY	ASY	
Jun 28-4	30*	64	143
Jul 5-11	6	41	62
12-18	3	10	17
19-25	1	4	27
26-1	0	14	13
Aug 2-8	0	15	11**
9-15	0	12	9
16-22	0	5	3
23-29	0	2	2
30-5	0	1	0
Sep 6-12	0	0	1***

*Includes single SY males collected on 30 June and 5 July 1978.
**Includes three mist-net mortalities.
***AHY female (74-180909), banded on the dune-ridge study area on 16 July 1974, was recaptured on 9 September 1975 still on study area. When recaptured, its ninth primary was about 90% grown.

An SY male (861-03511), banded and color marked on 18 June 1977, was reported by Alfredo Garcia at Desconocido, Guatemala, in January, 1981. This male was about 5½ years old when reported and had not been recaptured during the intervening years on the Manitoba study area. I did not ascertain whether it nested in 1977, although many SY males did that year on the study area (Sealy 1980a). This is the only Manitoba-banded "Baltimore" Oriole that has been recovered in winter (Table 3).

Rogers *et al.* (1982) presented three criteria for designating a species as a winter resident: (1) frequency of repeats (recaptures during the same wintering season), (2) the time lapse between repeats, and (3) recaptures of individuals during subsequent years, implying that an individual is more likely to be a return if it is a winter resident than if it is a transient. These authors considered 3 weeks to be an adequate interval between repeats for designating an individual a winter resident. The recovery in Guatemala of the Manitoba-banded oriole therefore does not constitute, by the criteria of Rogers *et al.* (1982), a record of a resident wintering bird. On the other hand, this individual probably was resident when and where it was recovered, although it is not known whether the wet and dry seasons influence the areas this species chooses over the wintering period (e.g., Karr 1971, Morton 1980). The return of migrant passerine birds to the same locality in winter has been reported from Central and South America (e.g., Schwartz 1963, Loftin 1977, Thurber and Villeda 1980, McNeil 1982, Rogers *et al.* 1982) and the West Indies (Diamond and Smith 1973). Rogers *et al.* (1982) banded 8 Northern Orioles (of the "Baltimore" subspecies, D.T. Rogers, *in litt.* 4 January 1984) in Guatemala in March and April, 1979, but only one repeated, 3 days after it was banded, and none was recaptured at the same locality during the same period in 1980. Evidence from Honduras (Table 3) suggests, however, that "Baltimore" Orioles do indeed return to the same locality in winter (see also Nickell 1968). One male banded there in May, 1964, was recovered in December of the same year; 1 of 3 males banded between 13 and 20 December 1964 returned there the following March, the other two one year and about 18 months later, respectively; one male banded in early December, 1966, repeated the following March, and a male banded in late March, 1965, was recovered there about 6 years later. Observations of "Baltimore" Orioles in Costa Rica and Panama suggest that they are not only resident on their wintering grounds but also territorial (e.g., Timken 1970, Leck 1974, Schemske 1975).

The single recovery of a Manitoba-banded oriole on its presumed wintering grounds obviously does not tell us where the dune-ridge population overwinters. It is not known whether individuals that nest and show year-to-year fidelity to the same tract of habitat winter together, in fact, available evidence suggests otherwise (Ramos and Warner 1980). Also, the two Ontario-banded orioles (Table 3), banded during the breeding season at the same locality, were recovered in Guatemala and Honduras (reported by Nickell 1968).

Three orioles, banded during spring migration or the breeding season in Connecticut, Illinois and Ontario, also have been recovered in Guatemala in winter (Table 3). The remaining recoveries during winter are from Mexico, Honduras and El Salvador (Table 3). Interestingly, none has been recovered from the southern portion of this subspecies' winter range (Fig. 1), that is, in Nicaragua, Costa Rica, Panama, Colombia, or Venezuela. This may support the pattern that is emerging which suggests that most long-distance migrants winter in the northern regions of Central America and the West Indies with the number of wintering species and individuals decreasing progressively from Mexico toward the equator (Terborgh 1980).

Table 3. Recoveries of Northern ("Baltimore") Orioles banded: (1) during spring migration or the breeding season and recovered within the subspecies' known wintering range, (2) within the wintering range and recovered during the breeding season, and (3) on the wintering grounds and repeated at the same site later the same winter or returned there in a subsequent winter.

BAND NUMBER (age/sex)	BANDING LOCATION	BANDING DATE	RECOVERY LOCATION	RECOVERY DATE
501-28253 (ASY-M)	Minnesota	16 May 1955	Honduras	10 Oct 1957
651-50426 (AHY-F)	Ontario	9 May 1965	Guatemala	17 Feb 1966
1041-63412 (ASY-M)	Connecticut	19 May 1967	Guatemala	3 Mar 1972
691-62221 (AHY-F)	Michigan	16 May 1969	El Salvador	8 May 1972
761-91661 (ASY-M)	Massachusetts	22 May 1971	Mexico	17 May 1971
761-85227 (ASY-M)	Illinois	11 Jun 1971	Guatemala	21 Feb 1972
761-36245 (ASY-M)	Ontario	13 May 1972	Honduras	26 Jan 1973
731-17315 (AHY-F)	Connecticut	15 May 1972	Mexico	9 Sep 1973
861-03511 (SY-M)	Manitoba	18 Jun 1977	Guatemala	Jan 1981
641-26200 (ASY-M)	Honduras	8 Dec 1963	Ontario	25 Jun 1964
641-26233	Honduras	14 Jan 1964	Michigan	May 1965
681-11734 (AHY-F)	Honduras	22 Nov 1964	Wisconsin	May 1965
751-56268 (AHY-F)	Mexico	10 Nov 1970	Pennsylvania	8 Jun 1973
651-93413 (ASY-M)	Honduras*	12 May 1964	Honduras*	16 Dec 1964
681-36612 (ASY-M)	Honduras	20 Dec 1964	Honduras	21 Mar 1965
681-11793 (ASY-M)	Honduras	13 Dec 1964	Honduras	12 Dec 1966
651-92503 (ASY-M)	Honduras	20 Dec 1964	Honduras	Jun 1966
681-49268 (ASY-M)	Honduras	23 Mar 1965	Honduras	14 Feb 1971
681-36718 (ASY-M)	Honduras	2 Dec 1965	Honduras	24 Mar 1966

*Banding and recovery sites in Honduras are the same (15.2-087.5).

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Tree Swallows as Foster Parents to Barn Swallows

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The Red Schoolhouse Nature Center located in North eastern Illinois in Cook County has had a wildlife rehabilitation program as part of its ongoing natural history activities. Many young wild creatures are brought in each year by the general public and we do our best to try and help with their survival. On July 11, 1979 five young Barn Swallows (*Hirundo rustica erythrogaster*), whose nest was destroyed, were brought into the center as orphans. These young swallows were in good condition and were thought to be about nine to eleven days old. We fed them and placed them in a warm cage overnight.

The next day they were placed in the nest of a Tree Swallow (*Iridoprocne bicolor*) that contained young of the same approximate age and size. This nest was chosen because of the size similarity of the young though there was some concern as this nest had five young, in it already. The nest was checked every two days until July 20 when all of the Tree Swallow young fledged along with two of the Barn Swallows. Three of the Barn Swallow young were found dead in the nest, one on July 14 and two on July 16, these were apparently too weak to survive. All of the young were banded with U.S. Fish and Wildlife Service Bands. Since the original nest site of the Barn Swallows was destroyed it cannot be checked for the return of the young birds raised by the Tree Swallows and they have not been heard from since.