

# Observations on North American Breeding Peregrines *Falco peregrinus* on the Non-breeding Grounds in South America

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## ABSTRACT

Between November 1979 and March 1980 surveys for the breeding North American Peregrine Falcon *Falco peregrinus* that migrates to South America during the non-breeding season were made in Colombia, Ecuador, Peru, Uruguay, Argentina and Brazil. Seventeen people were involved in the study. Coastal flats, interior agricultural lands and major cities received the most intense observations. Urban areas contain many migrant Peregrines and they were seen as follows: Porto Alegre, Brazil (7); Buenos Aires (4); Neochea, Argentina (1); Montevideo (1); Lima (4) (elsewhere in Peru they have been seen in seven cities); Barranquilla, Colombia (1). They have been reported in major cities in most of the countries through which they pass on migration or where they spend the non-breeding season.

Habitats examined in the countries mentioned and their use by Peregrines are outlined and Peregrines were most often seen either in coastal areas or in cities. A minimum total of 55 individual Peregrines were seen in coastal Ecuador and Peru, which proved to be the best localities. Habitat may be partitioned by sex, as most observations in coastal areas were of females. Migrant North American Peregrines in South America are not easy to find and observe, and their differential use of the habitat is not well defined. Habitat use and their numbers are discussed.

## INTRODUCTION

This was the first organised effort to survey the migrant Peregrine Falcon *Falco peregrinus*, that breeds in North America, on the non-breeding grounds of South America. We reasoned that, since the Peregrine showed different rates and degrees of decline on the breeding grounds, there might be a differential use of the non-breeding grounds with certain populations of breeders passing the non-breeding season in specific locations (see White & Cade 1976). Further, more than 600 Peregrines had been banded in North America in the summer and autumn of 1979, and we hoped to retrap some on the non-breeding grounds in Latin America. We also anticipated locating regions of high falcon concentrations and then planned to compare these with areas of high synthetic agricultural chemical use. Overall, our aim was to learn something of possible influences of contaminants or of falcon habitats in the Latin American non-breeding grounds that might help explain the falcon's decline on the North American breeding grounds. A detailed analysis of this study has been prepared for publication in a South American journal.

## MATERIALS AND METHODS

Several observation teams with a total of 17 people were used. Most observations were made between November 1979 and March 1980, while others by team members were in earlier or later years, as follows: Surinam - R. W. Fyfe; Venezuela - M. N. Kirvin (1975); Colombia - S. A. Temple, M. N. Kirvin, N. J. Schmitt; Ecuador - S. A. Temple, D. G. Roseaneau, A. M. Springer; Peru - S. A. Temple, P. H. Bloom, C. G. Thelander and B. A. Luscombe (mid to late 1970s); Uruguay - A. M. Springer, D. G. Roseaneau; Brazil - C. M. White, R. Brimm, J. L. B. Albuquerque (and 1981, 1982), M. Sanders (1981, 1982), R. W. Risebrough (1981, 1982), A. M. Springer (1982); Argentina - C. M. White, J. L. B. Albuquerque, W. G. Vasina. Observers usually travelled in pairs or more, making observations from a vehicle. When possible, falcons were trapped and fat biopsies were taken for later analysis.

## RESULTS

Two major habitats clearly had large concentrations of Peregrines: urban centres and coastal areas. This does not mean that Peregrines were not more widely distributed, perhaps rather uniformly across a variety of habitats where they might even have high concentrations, but only that in those two areas they were more easily found and thus observed. For example, about 4,000 km of road were travelled in Rio Grande do Sul State, south-eastern Brazil, and only one Peregrine was seen, although Peregrines are known to occur widely there, whereas in Porto Alegre, the capital of Rio Grande, 2-3 Peregrines can be found on most days and as many as 6-8 may regularly occur within the city limits (J. L. B. Albuquerque, pers. obs.). Their presence in such cities as Rio de Janeiro (Sick 1961) and Buenos Aires (Pereyra 1938) has long been known.

### Observations in cities:

During the course of this study Peregrines were seen in cities as follows:- *Brazil*: Porto Alegre (7 birds); *Argentina*: Buenos Aires (4 sightings), Quilmes (1 bird), Nechochea (1 bird); *Uruguay*: Montevideo (1 bird); *Peru*: Lima (4 birds); *Colombia*: Barranquilla (1 bird). Elsewhere, but not as a part of this specific study, cities where North American breeding Peregrines were seen by our collaborators, sometimes in numbers, were:- *Argentina*: Rosario, Cordoba, Mar del Plata and Bahia Blanca; *Uruguay*: Montevideo and Colonia del Sacramento; *Peru*: Cuzco, Arequipa, Trujillo, Chiclayo, Cab Blanco and Hucho; *Surinam*: Paramaribo; *Brazil*: Cruz Alta and Fazenda do Cadeado. A survey of cities where North American breeding Peregrines have been seen or collected would probably include most of the cities along their migration or austral non-breeding grounds.

### Coastal habitat:

Most of the coastal observations came from either Colombia, Ecuador or Peru. Habitat in Colombia and Ecuador was a mixture of open estuaries, mouths of rivers, mangroves, marshes, sand dunes and open mud flats. Coastal areas in Peru consisted primarily of sand dunes where numerous bays and lagoons occurred.

Coastal Colombia was also a major non-breeding area for large numbers of shorebirds and waterfowl (waterbirds in general) that breed both in North America and elsewhere in South America. Between 10-13 December 1979 at least 6 different Peregrines (5 females, 1 male) were seen. Between 4-12 January 1980, 10 sightings (all females - possibly 4 individuals) were made. The fact that females were on the coast and the one male seen was further inland suggests that some spatial habitat partitioning occurs.

For Ecuador and Peru, 92 sightings were made between December 1979 and February 1980 (Table 1) and probably represented a minimum of 55 individuals. Eighty-two of the sightings were of females and 10 were males, again suggesting spatial habitat segregation by sex.

## DISCUSSION

Above, we have perhaps overemphasised the use of certain habitats by non-breeding Peregrines. The field crews certainly did not spend equal amounts of time in all habitats. Rather, time

was spent in areas where the most Peregrines could be seen or trapped per unit of time. However, 4,000 km of road were travelled and over 200 hours spent in non-coastal areas of Rio Grande do Sul, Brazil, by 3 observers and only 1 Peregrine was seen. The falcon, an adult female, was on the ground sitting atop a termite mound in a palm-palmetto savanna about 7 km inland from the coast. Throughout Brazil and Argentina, at least, much of the survey time was spent in grasslands used by cattle grazing, croplands and agricultural lands or areas of native vegetation.

Such observations indicated the difficulty of seeing Peregrines except at specific concentration points or locations where they were conspicuous. This is not surprising when one considers the migration or banding data from North America, where Peregrines concentrate in specific habitats. In South American areas, where the Peregrine's habits or something about the habitat makes them conspicuous, they are more easily seen. For example, R. Straneck and W. G. Vasina (pers. comm.) have seen several Peregrines in one day over a stretch of 20 km of high tension power lines in Cordoba Province, Argentina, as the falcons sat on the steel towers. It was not known if the falcons were all North American breeding birds or if some were the South American breeding race *F. p. cassini*, since the latter breeds in the general proximity. Most were very pale-breasted like breeding North American birds, however.

A brief review of the literature (Blake 1977; Albuquerque 1978) or of the distributional origin of band recoveries and museum specimens taken in South America shows a very widespread distribution of breeding North American migrants in South America. Once again, much of this may represent where Peregrines are of easy access and thus perhaps not be a true distribution.

The impetus for our study was to find confirmation for the hypothesis put forth to explain the pattern of decline in the breeding grounds. White and Cade (1976) originally suggested that the North American pattern, which was to see falcons disappear from certain river systems or areas while seemingly little affected in some adjacent regions, was associated with, and caused by, differential geographical use of areas during the non-breeding sojourn in Latin America. This hypothesis assumed that falcons from certain areas in North America traditionally passed the non-breeding season in certain areas of South America and that the latter had different degrees of negative effect on the falcons owing to pesticide use in those areas. The data to confirm such a hypothesis still awaits support.

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Table 1: Observations of Peregrine Falcons in coastal Ecuador and Peru, excluding Lima, December, 1979 - February, 1980.

Location	Total no of sightings	HY-Fa	HY-M	HY-UNK	AHY-F	AHY-M	AHY-UNK	UNK-M	UNK-F	Minimum total
Peru										
Paracas Reserve <sup>b</sup>	47 <sup>b</sup>	10	3(T,T) <sup>c</sup>	-	3(T)	2	-	1	3	22
Mala	3	-	-	-	-	1	-	-	-	1
Puerto de Lomas	7	1	-	-	2(T,T)	1(T)	2	-	-	6
Asia	1	1	-	-	-	-	-	-	-	1
El Paraiso	12	3	-	-	2	-	1	-	-	6
N. of El Paraiso	2	1	-	-	-	-	-	1	-	2
Sechura	1	-	-	1	-	-	-	-	-	1
Near Matupe	1	-	-	-	-	1	-	-	-	1
Trujillo	1	1	-	-	-	-	-	-	-	1
Ecuador										
Atalamas	1	1	-	-	-	-	-	-	-	1
Bahia de Caraquez	2	2	-	-	-	-	-	-	-	2
Rio Esmeraldas	9	3	-	-	3(T)	-	-	-	-	6
Rio Clone	2	2	-	-	-	-	-	-	-	2
Machala	3	1	-	-	2	-	-	-	-	3

a HY-F: hatching year female; HY-M: hatching year male; HY-UNK: hatching year, unknown sex; AHY-F: after hatching year female; UNK-M: male, age not determined; UNK-F: female, age not determined.

b data are not normalised to observations per day; more time was spent at the Paracas Reserve than elsewhere.

c T: one bird trapped; T,T: two birds trapped.

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