

Figure 1. Map showing location of the Melville Peninsula (inset) and our Sarcpa Lake study area. Our camp is at the site of an abandoned DEW line station.

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THE 1980 DUTCH MINI-EXPEDITION TO SURINAME

by A. L. Spaans and C. Swennen

From 4-30 September 1980, a small expedition, consisting of Piet Duiven, Arie Spaans and Kees Swennen, visited the coastal area of Surinam, northeastern South America, to continue the longterm wader studies initiated in the early 1970's by the Surinam Forest Service and the Foundation for Nature Preservation in Surinam (STINASU) (Spaans 1979). The main objectives of the expedition were to assess the distribution of aquatic birds over the habitats, to obtain information on the biomass of the infauna of the intertidal flats and lagoons, and to relate this to the number of birds feeding on it. We also investigated the importance of webbing and toe length in waders exploiting the very soft intertidal mudflats. In this paper we will summarize some preliminary results.

The major areas visited were the tidal mudflat at Weg naar Zee, c. 10 km northwest of Paramaribo, the coastal area of Coronie in the west of the country, the near-by Wageningen rice polders, and the Matapica-Krofajapasi area east-north-east of the capital (Figure 1). We spent six days at Weg naar Zee, five days at Coronie-Wageningen, and 12 days in the Matapica-Krofajapasi area. Coastal habitats studied included soft tidal mudflats, firm tough clay banks, sandy beaches, and tidal and non-tidal muddy and shallow lagoons. For a detailed account of these habitats, see Spaans (1978). Areas visited have been dealt with in Morrison and Spaans (1979).

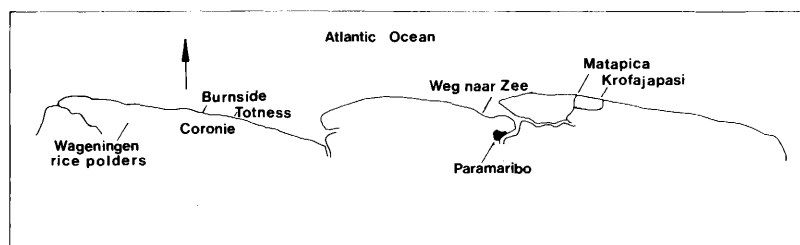


Figure 1. Map showing locations of study areas.

Results

Arctic and boreal waders formed the bulk of the aquatic birds we counted. Of the waders, the high numbers of Semipalmated Sandpipers *Calidris pusilla* must be mentioned especially. During spring high tide at the end of September, nearly 400,000 Semipalmated Sandpipers were censused at Krofajapasi, either roosting or flying between feeding and roosting area. This was the Atlantic coast of Suriname at its best! In September 1978, the firm mud banks of the Krofajapasi Creek regularly harboured 700-900 Red Knots *C.canutus* (Morrison and Spaans 1979). In 1980, however, we saw very few Knots. Mostly, only a few birds were observed, with a maximum of 50-100 birds at the Krofajapasi spit in the late evening of 20 September. The birds observed appeared to be in non-breeding plumage, and most probably were first-years. Indeed, three specimens shot under licence for other studies proved to be all in their first year. None of them showed any sign of active or suspended moult.

A high-light was the discovery of two Wilson's Phalaropes *Phalaropus tricolor* in a lagoon near Krofajapasi on 23 September, the first record of this species for Suriname. We also enjoyed the discovery of a Willet *Catoptrophorus semipalmatus* of the western subspecies *inornatus* (exposed culmen 66.8 mm, tarsus 72.0 mm, wing 220 mm), near Weg naar Zee on 6 September. The bird was found in the bag of a local hunter and provided the third record of this subspecies for Suriname (Haverschmidt 1968 and Spaans unpublished). The available data indicate that the tens of thousands of Willets migrating through or wintering in Suriname are nearly exclusively birds of the eastern subspecies *semipalmatus*.

Over 20 species of waders are known to occur along the Surinam coast, but only a few commonly feed in large numbers on the very soft intertidal flats (see also Spaans 1978). A preliminary analysis of the width of palmations and toe length, in living and freshly dead birds, indicates that these species have either significantly wider palmations, or longer toes, than their congeners that do not feed on these mudflats, or do so infrequently. This suggests that sizeable webbing and long toes may have evolved in order to facilitate the exploitation of the soft, otherwise inaccessible, mudflats in the wintering areas used by these birds.

Infauna

The infauna of the intertidal zone of the flats and lagoons consisted mainly of crustaceans (predominantly fiddler crabs and tanaids) and fish. Fiddler crabs inhabited only the higher parts of the tidal areas; tanaids were found everywhere where the substrate was soft. Biomass calculations were made for two tidal lagoons, one near Burnside, Coronie, and one near Krofajapasi, and for two tidal mudflats, one rather stable flat, which has existed for a long time, near Weg naar Zee, and one recently settled flat, still growing, near Totness. We also made biomass calculations for a firm mud bank along the Krofajapasi Creek. Ash-free dry-weight of the macrobenthos of the intertidal flats varied between 0.8 g/m², in the lowest parts, to 32.1 g/m² in the highest parts, where fiddler crabs form the main component of the macrobenthic invertebrates. For the high part of the firm mud bank along the Krofajapasi Creek, we found an ash-free dry-weight of 36.9 g/m². In the tidal lagoons, only the zone of soft mud was sampled. Here, tanaids were found nearly exclusively, and ash-free dry-weight ranged from 19.4 to 23.2 g/m². Although the biomass was much lower near Totness than near Weg naar Zee, the number of bird-hours was about the same in the two areas.

Banding results and recoveries

A total of 570 waders of 11 species was mist-netted and banded (Table 1). Four Western Sandpipers *C.mauri* were caught, all at the same spot in a tidal lagoon near Krofajapasi. This compares with 427 Semipalmated Sandpipers, a relatively favourable ratio for *mauri* (cf. Spaans 1978). In September 1978, Morrison and Spaans (1979) also trapped a relatively large number of Western Sandpipers in the Krofajapasi lagoons.

Among the 89 Least Sandpipers *C.minutilla* trapped, one had been banded in James Bay, as an adult bird on 17 July 1978 by R.I.G.Morrison. We also obtained a Ruddy Turnstone *Arenaria interpres* (out of seven handled!) that had been banded at the Cape May Peninsula, New Jersey, on 19 May 1980, by personnel of the Manomet Bird Observatory.

Table 1. Totals of birds captured, 10-24 September 1980.

		Newly-banded birds	Recaptures	Controls	Total
Semipalmated Plover	<i>Charadrius semipalmatus</i>	3	-	-	3
Black-bellied Plover	<i>Pluvialis squatarola</i>	1	-	-	1
Ruddy Turnstone	<i>Arenaria interpres</i>	1	-	-	1
Willet	<i>Catoptrophorus semipalmatus</i>	5	-	-	5
Spotted Sandpiper	<i>Actitis macularia</i>	13	-	-	13
White-rumped Sandpiper	<i>Calidris fuscicollis</i>	1	-	-	1
Least Sandpiper	<i>C.minutilla</i>	88	1	1	90
Short-billed Dowitcher	<i>Limnodromus griseus</i>	23	-	-	23
Semipalmated Sandpiper	<i>C.pusilla</i>	427	6	-	433
Western Sandpiper	<i>C.mauri</i>	4	-	-	4
Sanderling	<i>C.alba</i>	4	-	-	4
Total		570	7	1	578

In addition, a total of 41 colour-marked Semipalmated and Least Sandpipers could be identified, of which 25 Semipalmated Sandpipers were of North American origin, the others being locally marked birds. Twenty-two Semipalmated Sandpipers had been colour-dyed by R.I.G.Morrison in James Bay during the 1980 fall migration (Table 2); one bird had been colour-marked there in earlier years; one in Plymouth, Massachusetts, in 1980 on or before 4 August by B.A.Harrington, and one in the outer Cobscook Bay on the Maine/New Brunswick border in July-August 1980 by the University of Maine. Of the 11,010 Semipalmated Sandpipers looked at randomly, nine (one out of every 1223 birds) had been colour-dyed in James Bay. According to our estimates, a total of about two million Semipalmated Sandpipers may have been present along the Surinam coast in late September. This means that, at that time, over 1600 Semipalmated Sandpipers marked at James Bay during the summer of 1980 must have been present in Suriname, over 59% of the 2713 birds colour-dyed that year (R.I.G.Morrison, pers. comm.). These data again emphasize the importance of the Surinam coast for Semipalmated Sandpipers migrating through eastern North America. The 16 colour-banded Semipalmated and Least Sandpipers of local origin had been marked by Spaans (1979) in 1976-77. Of the 14 Semipalmated Sandpipers seen at Krofajapasi, 11 had been banded at Weg naar Zee, c. 40 km to the west (Table 3). We estimated that about 0.1% of all birds present at Krofajapasi at spring high tide bore Surinam bands. This means that at least several hundreds of the 7043 Semipalmated Sandpipers colour marked in 1976-77 were still alive at that time, suggesting a mean annual survival of at least 50%.

Table 2. Summary of sightings in Surinam (5-28 September 1980) of Semipalmated Sandpipers colour-marked in James Bay, Canada (1980). Probable sightings within brackets. In 1980, 1412 adult and 1301 juvenile birds were released in James Bay (R.I.G. Morrison, pers. comm.).

Date (Sept.1980)	Locality	Age	Date of banding ¹					Total
			a	b	c	d	e	
8	Weg naar Zee	Ad	1			(1)	1	3
10	Totness	-					2	2
14	Burnside						2	2
18	Krofajapasi	Ad		1				1
19	"	-					1	1
24	"	Ad			1			1
"	"	-					3	3
25	"	Ad	2	1				3
26	"	-				1	2	3
27	"	Ad			(1)			1
"	"	-				1	1	2
Total			1	3	3	1	2	12
No. of adult birds released in James Bay ¹⁾			400	468	482	62		

¹ a= 10-21 July; b = 22-31 July; c = 1-10 August; d = 11-20 August; e = previous year

Table 3. Sightings of Semipalmated Sandpipers colour-marked in Surinam in 1976-77, near Krofajapasi in September 1980.

Year of banding	Place of banding	Age at banding	
		Adult	First year
1976	Weg naar Zee	3	0
1977		6	2
	Krofajapasi	1	2
Total		10	4
No. of birds colour marked		5002	2039

Acknowledgements

We feel that this mini-expedition was a success and has greatly enlarged our knowledge about the importance of the Surinam coast for North American waders. We thank H.A. Reichart and B.H.J. de Jong of STINASU and L. Autar of the Surinam Forest Service for their help and cooperation. A.L.Spaans was partly subsidized (grant WR 87-20) by the Netherlands Foundation for Tropical Research (WOTRO), The Hague.

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