

Wader numbers and the use of high tide roosts at the Hemispheric Reserve "Costa Atlántica de Tierra del Fuego", Argentina - January and February 1995

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Tierra del Fuego, Argentina, was visited in the latter half of February 1995 by an international team. In addition, intensive surveys were carried out during January 1995 by a team from Wetlands for the Americas. Detailed counts and observations on wader roosts were made in the vicinity of the town of Río Grande. Additionally, the Bahía San Sebastian and the Auricosta sector were visited twice. The Río Grande area harboured internationally important numbers of non-breeding Magellanic Oystercatchers *Haematopus leucopodus* (2,500), Red Knots *Calidris canutus* (3,000), Sanderlings *Calidris alba* (550) and White-rumped Sandpipers *Calidris fuscicollis* (10,000), the latter species which seems to have been missed during an aerial survey 10 years earlier. A single Surf-bird *Aphriza virgata* was new to the area. The waders were found at five roosting areas, the most important of which (Punta Popper) suffered from considerable disturbance by people and dogs. The international importance of the Bahía San Sebastian was confirmed with estimates of almost 20,000 Hudsonian Godwits *Limosa haemastica*, 1,000 Red Knots, 30,000 White-rumped Sandpipers and >3,000 Two-banded Plovers *Charadrius falklandicus*. Surprisingly, we also encountered 40 American Golden Plovers *Pluvialis dominica*.

Conteos de aves playeras y el uso de dormideros durante la marea alta en la Reserva Hemisférica "Costa Atlántica de Tierra del Fuego", Argentina - Enero y Febrero 1995.

Tierra del Fuego - Argentina - fue visitada en la segunda quincena de Febrero 1995 por un equipo internacional de expertos. Además, intensos relevamientos fueron realizados por Humedales para las Américas en el mes de Enero. Conteos detallados y observaciones sobre dormideros de aves playeras fueron realizados en los alrededores de la ciudad de Río Grande. Por otro lado, la Bahía San Sebastián y el sector Auricosta fueron visitados en dos oportunidades. Las costas de Río Grande albergan importantes poblaciones del Ostrero Austral *Haematopus leucopodus* (2.500), Playero Rojizo *Calidris canutus* (3.000), Playero Blanco *Calidris alba* (550) y Playerito Rabadilla Blanca *Calidris fuscicollis* (10.000), esta última especie no registrada durante los censos realizados diez años antes por el CWS. El Playero de Rompiente *Aphriza virgata* fue observado por primera vez para la zona. Las aves playeras utilizaron 5 áreas de dormideros, el más importante de los cuales (Punta Popper) sufre constantes disturbios por los pobladores locales y perros. También se confirmó la importancia internacional de la Bahía San Sebastián, que según nuestras estimaciones albergaría 20.000 becacas de mar *Limosa haemastica*, 1.000 playeros rojizos, 30.000 playeritos de rabadilla blanca y más de 3.000 chorlitos doble collar *Charadrius falklandicus*. Sorpresivamente fueron observados unos 40 chorlos pampa *Pluvialis dominica*.

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INTRODUCTION

The Atlantic shorelines of the southernmost tip of the South American continent are unique in providing the southernmost and most remote (relative to northern breeding areas) intertidal nonbreeding habitat for shorebirds in the world. Despite this feature, preciously little information on wader abundance and distribution has hitherto been assembled from Tierra del Fuego. Early reports of Devillers & Terschuren (1976), Harrington & Morrison (1980) and Williams & Pringle (1982) indicated that the area was of considerable importance for Red Knots *Calidris canutus rufa* and Hudsonian Godwits *Limosa haemastica*, and this was confirmed during the extensive coastal aerial surveys of South America by Morrison & Ross (1989). Since then, the natural values of these shores have been recognized by the local government, and a survey of the waders of Río Grande was commissioned (Benegas & Ramírez 1994). The international importance of this area was recognized by the creation of the Western Hemisphere Shorebird Reserve Network (WHSRN) Hemispheric Reserve "Costa

Atlántica de Tierra del Fuego", in May 1991.

Ten years after Morrison & Ross' aerial survey, an international expedition worked again in Tierra del Fuego, Argentina, with a focus on the conservation biology of Red Knots (see companion report by Baker *et al.* 1996). Ground counts of waders, especially at high tide roosts, were made along the shores in the vicinity of the town of Río Grande, over a continuous 13 day period in late February 1995. In addition and partly in preparation, during January 1995 a team from Wetlands for the Americas conducted intense surveys within the reserve, with funds from the World Bank. The large and famous Bahía San Sebastián, 80 km northwest of Río Grande (Figure 1A), was visited during both months. The results of February counts are compared with those of Morrison & Ross (1989). The variation in the numbers observed near Río Grande and their roosting locations - depending in part on tide height and time, disturbance and weather - are also detailed. These results represent the first extensive ground-based investigations to complement the earlier aerial and brief surveys.

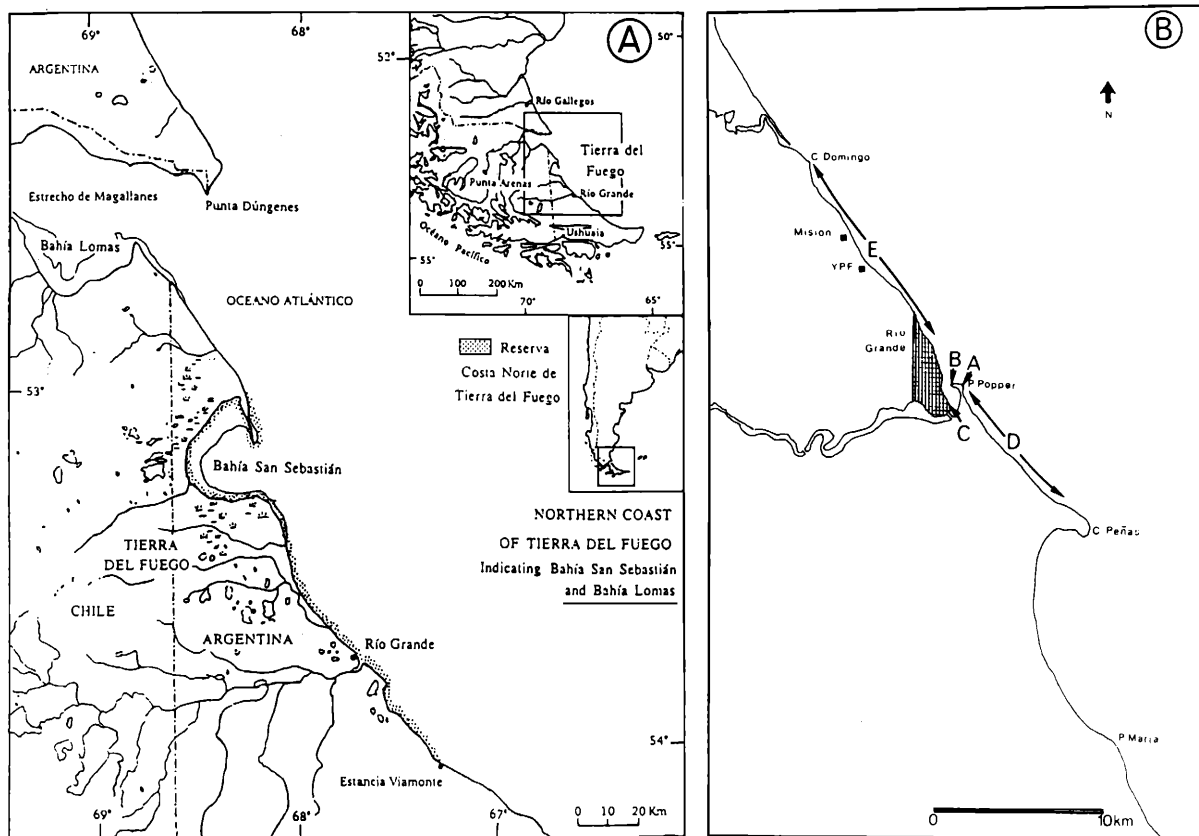


Figure 1. The Argentine part of Tierra del Fuego and its location in southernmost Argentina (A), and the Río Grande area between Cabo Domingo and Cabo Peñas studied in detail in February 1995 (B). Wader roosts are indicated by the letters A through E (see text). In A, the shore close to Estancia Viamonte is the Auricosta part of the coast. In B, YPF indicates the Police Academy.

THE AREAS

On 11 January 1995, an aerial survey of the Atlantic coast of Tierra del Fuego, between Río Grande and Cabo Espíritu Santo, was made. As a result, two main areas for shorebirds concentration were identified: the town of Río

Grande and the northern sector of the Bahía San Sebastián. This information was used to plan the ground surveys.

The area covered in detail (Figure 1B), extended along the coast from Cabo Domingo (16 km northwest of Río

Grande) to Cabo Peñas (11 km southwest of Rio Grande), and included the lower section (up to 3 km) of the river (the Rio Grande) which flows into the sea at the town of Rio Grande. This corresponds to section 123 of Morrison & Ross (1989). It is an ideal location for counting, as the shores are easy to access and the wader population is discrete, being separated on both sides by large areas of less suitable wader habitat (steep beaches; no extensive intertidal sand or stony flats).

In the Rio Grande areas, the upper shoreline is a steep 20-40 m wide beach composed of coarse black sand and/or small pebbles, backed by grassland, small dunes or habitations. Heavy deposits of seaweed/tide wrack accumulated on the beach in front of the town of Rio Grande and to a lesser extent along the beaches to the northwest - but the extent of these was greatly reduced by the highest spring tides. Most of the beaches were relatively straight and featureless, and could be used for high tide roosting, but there was a marked point (Punta Popper) on the south side of the estuary mouth which was a prime roosting location. There is a 3-4 km wide area of rocky flat (restinga) in front and north of the town of Rio Grande over which the shorebirds dispersed during low water.

The Bahía San Sebastián was visited during three one-day trips in January and February, and was thus studied in much less detail. On 12 January and 21 February, we circled the bay by car and made a visit to the 18 km long and narrow peninsula (El Páramo), which closes off the north-eastern part of the bay (see Figure 1A), down to its southern tip, Punta de Arenas. There was no time left to visit at high tide the extensive flats on the western shores of the bay. On 27 February, Bahía San Sebastián was visited again, and this time we concentrated our efforts on the intertidal flats in the northwest of the bay. High tide was in the late afternoon, and we had a four-track all-terrain vehicle (ATV) available to approach, and thus to properly identify and count, the large wader flocks assembling far from the permanent shoreline of this huge expanse of mud and saltflat.

The Auricosta sector, located close to the southern limit of the reserve near Estancia Viamonte, was covered only during January. This place was visited during two half-day trips, on 11 and 13 January. During high tide we looked for roosting shorebirds. The area includes beaches composed of sand and/or small pebbles and rocky sectors, backed by grasslands and dunes.

TIDES

February observations covered both spring tides (peak of 8.0 m on 19 February) and neap tides (height of 6.9 m on 24 and 25 February). On some days both tides occurred in daylight, allowing extra observations.

OBSERVATIONS IN BAHIA SAN SEBASTIAN

El Páramo was first visited on 12 January during high tide.

Along a stretch of about 5 km we counted 270 Red Knots, 310 Sanderlings *Calidris alba* and two Turnstones *Arenaria interpres* on the outer beaches of the spit. The birds were roosting between the small pebbles in groups of 10 to 60 individuals. The same day we counted many hundreds of White-rumped Sandpipers *Calidris fuscicollis*, in groups of 3-50 birds, on the road that circled the Bahía San Sebastián and its surrounding grasslands.

On 21 February our observations were confined to El Páramo. On the short saltmarsh vegetation at the base of the peninsula we encountered a dispersed flock of at least 30 Rufous-chested Dotterels *Charadrius modestus*. A few Baird's Sandpipers *Calidris bairdii* were also noticed. At the end of the spit (Punta de Arenas) we found about 40 American Golden Plovers *Pluvialis dominica*, feeding in three small flocks on a very short and sparse vegetation. Although previously observed locally (L.G. Benegas pers. comm.), the common field guides and handbooks do not acknowledge that American Golden Plovers usually spend the nonbreeding season so far south. Many hundreds of White-rumped Sandpipers were seen flying in flocks or roosting between the undulating barren shingle and gravel ridges that cover much of the spit of El Páramo. Here, Morrison & Ross (1989) encountered about 15,000 unidentified small shorebird species, which they also interpreted as White-rumped Sandpipers as indicated in a subsequent ground visit (R.I.G. Morrison pers. comm.). From the car and within the time available it was impossible to get a good estimate of their numbers. On the peninsula no roosting Red Knots, Bar-tailed Godwits *Limosa lapponica* or Magellanic Oystercatchers *Haematopus leucopodus* were seen.

On 28 February we attempted to make more comprehensive observations. Between 10.00 and 11.00 hr, a few hours after high tide, we saw 200 Hudsonian Godwits, 20 Red Knots and 300 Magellanic Oystercatchers on the mudflats in the south-west corner of the bay, near the village of San Sebastian. Five km further north we encountered a further 50 Two-Banded Plovers *Charadrius falklandicus*, 5 Rufous-chested Dotterels and 20 White-rumped Sandpipers on an open saltmarsh area along the shores. As far as we could oversee the 3-8 km wide mudflats in the southern half of the bay, they had no other waders on them. In the late afternoon we made observations from two manmade outposts in the extensive mudflats of the (north-)western quarter of the Bahía San Sebastian. The tide did not come very far in, but in the distance two large shorebird flocks were seen. These were then visited on the "four-track". The largest was a congregation of 14,000 Hudsonian Godwits and 1000 Red Knots which were assembled near the water-line, and which were continuously pushed westward by the incoming water. The smaller flock was also found at the water-line and consisted of 4,400 Hudsonian Godwits and 130 Magellanic Oystercatchers. Both flocks did not appear the least disturbed by two people and the ATV. The total of 18,400 godwits comes very close to Morrison & Ross' (1989) estimate of 19,340 birds in the same part of Bahía San Sebastian 10 years previously.

On the higher, and dry, extensive salt-encrusted mudflat,

large dispersed flocks of White-rumped Sandpipers with smaller numbers of Two-banded Plovers, gradually assembled. In total, we saw at least 20,000 White-rumped Sandpipers and 3,000 Two-banded Plovers. Given that we can add the numbers for El Páramo and the western mudflats, Bahía San Sebastian must have had at least 20,000 Hudsonian Godwits, 1,000 Red Knots, 30,000 White-rumped Sandpipers (assuming that there were approximately 10,000 on El Páramo), 3,000 Two-banded Plovers and almost 500 Magellanic Oystercatchers. Even on the basis of these incomplete counts, it is clear that this is a very important area indeed, especially for worm-eating waders (godwits, sandpipers and plovers).

OBSERVATIONS IN AURICOSTA, NEAR ESTANCIA VIAMONTE

We counted a maximum of 650 Two-banded Plovers and 2,500 White-rumped Sandpipers, mainly roosting on the edges of the intertidal flats during visits on 11 and 13 January at high tide. In the surrounding grasslands we saw a dispersed flock of at least 15 Rufous-chested Dotterels and, on the small rocky islands, located 10-40 meters offshore, we observed 10 unidentified yellowlegs *Tringa* sp. Only 30 Red Knots were registered. We can confirm the observation by Morrison & Ross (1989) that the Auricosta area is another important area for shorebirds within the reserve.

FEBRUARY COUNTS IN THE RIO GRANDE AREA

The maximum number of each species recorded in the area during the 13-day period is given in Table 1, together with the previous estimates for the same area from aerial surveys by Morrison & Ross (1989) in February 1985. Locally breeding species and south-north migrants such as Magellanic Oystercatcher, Two-banded Plover and Rufous-chested Dotterel and other non-Nearctic shorebirds are not dealt with by Morrison & Ross (1989).

A total of about 17,000 waders were counted in the Rio Grande area in February 1995, a number which is three times as high as the 10-year old aerial estimate which did not include the ca. 3,000 resident waders. Numbers of Red Knots and Sanderling were fairly similar, but White-rumped Sandpipers seem to have been missed during the aerial survey, as discussed below. It was noticeable that whilst similar numbers of Red Knot, Hudsonian Godwit and Magellanic Oystercatcher were counted on many days during February, there were much wider variations in the daily numbers observed for White-rumped Sandpiper, Sanderling and Two-banded Plover, with the maximum figure given only being recorded on one occasion. This is also reflected in earlier accounts (Devillers & Terschuren 1976), and discussed further under the separate species accounts.

Table 1. Maximum numbers of waders recorded in the Rio Grande area (see text) in the period 16 February - 1 March 1995, in comparison with earlier aerial estimates from February 1985 published by Morrison & Ross (1989).

| Species | This study | Morrison & Ross (1989) |
|--|------------|------------------------|
| Magellanic Oystercatcher <i>Haematopus leucopodus</i> | 2,500 | - |
| Two-banded Plover <i>Charadrius falklandicus</i> | 350 | - |
| Rufous-chested Dotterel <i>Charadrius modestus</i> | 2 | - |
| Hudsonian Godwit <i>Limosa haemastica</i> | 300 | 0 |
| Whimbrel <i>Numenius phaeopus</i> | 35 | 0 |
| Ruddy Turnstone <i>Arenaria interpres</i> | 10 | 0 |
| Surfbird <i>Aphriza virgata</i> | 1 | - |
| Red Knot <i>Calidris canutus</i> | 3,000 | 5,100 |
| Sanderling <i>Calidris alba</i> | 550 | 150 |
| White-rumped Sandpiper <i>Calidris fuscicollis</i> | 10,000 | (250) |
| Total number of waders | 17,198 | 5,530 |
| * unidentified small waders | | |
| **includes 30 unidentified medium sized waders | | |

SPECIES ACCOUNTS FOR THE RIO GRANDE AREA

Magellanic Oystercatcher *Haematopus leucopodus*

The post-breeding congregations of this locally breeding species were easily observed and counted. The largest high tide concentrations close to Rio Grande were at Punta Popper (North Point - Site A and West Point - site B) and the north shore of the estuary in front of the Naval Police offices (site C). Some 1,000 to 1,500 birds roosted at these sites and moved freely between them - mainly depending on human disturbance. The remaining Magellanic Oystercatchers roosted on the beaches some 5 to 10 km north of Rio Grande (site E) in two or three flocks ranging from 100 to 1,200 individuals. At spring tides a greater proportion of these birds came to roost at sites A-C.

Assembly at pre-roost locations commenced three hours before high tide and major dispersal from the roost did not occur until 2.5-3 hours after high tide, as with other species of oystercatcher around the world.

Two-banded Plover *Charadrius falklandicus*

This species frequently associated with White-rumped Sandpipers at high tide. The main area for roosting was at Punta Popper (site A) and along the beach up to 3 km to the south (site D). Small groups (up to 15 birds) also occurred on the northern beaches (site E). The maximum count of 350 was made on 18 February - mostly at site D. More than 1,000 individuals were previously counted on 12 January feeding on the foreshore in front of the Town of Rio Grande, with the outgoing tide. Many birds adjourned from their primary feeding areas on the shore to 'top up' feeding areas some 1-3 km up the estuary as the tide rose, before eventually moving to their high tide roost site (see also under White-rumped Sandpiper). At neap

tides many birds remained on the mud banks in the estuary.

Rufous-chested Dotterel *Charadrius modestus*

Two birds (one adult and one juvenile) were observed roosting at high tide at Punta Popper (site A) with White-rumped Sandpipers and Two-banded Plovers on 16 and 17 February.

Ruddy Turnstone *Arenaria interpres*

Scattered individuals or very small groups (up to four) were seen at sites A, D and E during February. The estimated total population was only ten birds.

Whimbrel *Numenius phaeopus*

Small numbers of Whimbrel (estimated at 35 birds total) roosted with the Magellanic Oystercatchers. The most regular location was on the northern beaches near the Police Academy (about 7 km north of Río Grande). However, on the highest tides birds tended to come down to the estuary mouth and on 20 February almost all were at site C. Birds were also observed on the northern point of Punta Popper (site A).

Hudsonian Godwit *Limosa haemastica*

On 11 January, a maximum of 500 godwits was estimated roosting at high tide. In February around 300 individuals were seen on most tides. Morrison & Ross (1989) did not record Hudsonian Godwits in the Río Grande area.

Hudsonian Godwits roosted with Magellanic Oystercatchers and/or Red Knots. Punta Popper (site A) was the most frequently used location. The other "Río Grande" estuary/town sites (B and C) were also used, however, depending on disturbance. Prior to the peak spring tides, up to a third of the Hudsonian Godwits roosted on the northern beaches near the Police Academy (middle of site E).

Red Knot *Calidris canutus rufa*

In January the maximum estimated number of Red Knots in the Río Grande area was 4,000 individuals. In February we estimated that approximately 3,000 Red Knots used the area. Most of these Knots tended to roost in a single flock, in association with Magellanic Oystercatchers and Hudsonian Godwits. Quite often, large numbers of knots roosted literally between the legs of the larger oystercatchers and godwits, a behaviour never seen along the East Atlantic flyway (subspecies *canutus* and *islandica*), although occurring in Australia (subspecies *rogersi*). The preferred roost site was clearly the northern spit at Punta Popper (site A), but frequent disturbance there by humans, dogs, cars, birds of prey and even grey foxes resulted in the roost transferring to sites B and C on occasions. During fine weather in the weekend of 18-19 February, site C became the preferred location, presumably because it was almost undisturbed.

It was here that a cannon net catch (of 850 Red Knots) was made on 20 February.

Prior to the spring tides many Red Knot also roosted on the northern beaches (site E). They were sometimes difficult to locate (even though we usually searched the entire shore), and may even have roosted north of Cabo Domingo on occasions. Around 1,500 Red Knots used the site near the Police Academy on 17 and 18 February and all 3,000 did so on 26 February.

After 396 Red Knots had been colour-flagged/banded on 20 February (see Baker *et al.* 1996), 578 birds which started to feed with the outgoing tide were checked for colour-marks on 22 February: 61 (10.6%) carried colour-marks, suggesting a total population of $396/0.106 = 3736$ Red Knots, a figure intermediate between the January and February estimates (the calculations assumed no immigration or emigration from the area of colour-marked and other individuals). On 28 February 77 Red Knots were checked, 9 of them (11.7%) carrying the colour-marks.

All three estimates of numbers present were somewhat lower than the 5,100 recorded by Morrison & Ross (1989) and 3,000-5,000 reported in January by Devillers & Terschuren (1976).

Surfbird *Aphriza virgata*

A single Surfbird was observed on the Río Grande beach on 17 February, and again feeding in association with Red Knots, on the Río Grande foreshore on 22 February. This species normally only occurs on the Pacific coast of South America.

White-rumped Sandpiper *Calidris fuscicollis*

This was the most numerous and widely distributed wader in the Río Grande area, with an estimated total population in February of at least 10,000. In January the estimated population was lower, with a maximum count of 3,000 individuals at high tide. Roosts were present all along the ocean beaches (sites D and E), especially on the lower tides, but the greatest concentration was always at Punta Popper (site A), particularly at peak spring tides.

After the first few days of counting, the population was originally estimated at 5,000-7,000. However, the spring tides of 18-20 February caused the many scattered flocks to amalgamate and, in particular, brought the flocks which normally remained up the river down to the coast. On 22 February an amazing 10,000 White-rumped Sandpipers were concentrated on Punta Popper (site A) at high tide.

As already mentioned under Two-banded Plover, the majority of the White-rumped Sandpipers which fed on the foreshore in front of the town of Río Grande (and for up to 5 km to the northwest) flew inland over the town or up the river estuary about 1-2 hours before high tide as their primary feeding areas were covered by the incoming tide. They settled, and carried out some supplementary feeding on the mudbanks in and beside the river some 1-3 km

from the river mouth (mainly inland, west, of the road bridge). On neap and medium height tides most birds would remain in this area throughout the high tide period. However, on the highest tides many birds would fly back down the estuary close to high tide and roost at Punta Popper (site A) or along the southern beaches (site D). The observations made in January suggest a lower use of inland wetlands during high tide. On 14 January we encountered small groups of 8 to 30 individuals in inland marshes and small lagoons close to the coast, in the surroundings of the town of Río Grande.

Morrison & Ross (1989) only recorded 250 small waders (excluding Sanderling) in their survey. It is probable that at the time they carried out their count the majority of the White-rumped Sandpipers were up the estuary and were therefore missed during the shoreline aerial survey. Morrison & Harrington (1980) reported flocks of 1,000 and 2,000 between Cabo Domingo and Punta Maria in December 1979. This study therefore adds significantly to the previous population estimate for this species and indicates that the Río Grande area is an especially important White-rumped Sandpipers nonbreeding area.

Sanderling *Calidris alba*

Around 150 Sanderling were seen roosting at Punta Popper (site A) and on the southern beaches (site D) on most tides (February). A further 150 were roosting near (1 km north of) Cabo Domingo on 17 February. Scattered small groups were seen elsewhere on the northern beaches (site E). However, the peak population was 550, seen feeding on the foreshore in front of Río Grande at low tide on 22 February.

CONCLUSIONS AND RECOMMENDATIONS

January and February 1995 counts have confirmed the existence of at least three important areas for shorebirds within the reserve "Costa Atlántica de Tierra del Fuego". These are the northern sector of the Bahía San Sebastián, the town of Río Grande and the Auricosta sector (near Estancia Viamonte). Ten years before, Morrison & Ross (1989) also identified these areas (sections 118, 119, 123 and 125) as the more important ones (see also Devillers & Terschuren 1976; Harrington & Morrison 1980).

This study confirms the great importance of the Río Grande area for waders, with over 17,000 individuals present in February 1995. Of these, over 14,000 were migrants from the northern hemisphere. The area is confirmed as being of international significance for Red Knot and White-rumped Sandpipers. Bahía San Sebastián is also confirmed as being of international significance for Hudsonian Godwit, White-rumped Sandpiper and Two-banded Plover. The bay hosts at least 37% of the Hudsonian Godwit total population justifying the status of a WSHRN "Hemispheric Site".

Disturbance of the high tide roosts occurs at all sites in the vicinity of Río Grande but is quite extreme in the area of Punta Popper - the preferred roosting location for most

species, especially on the higher tides. This could result in some waders eventually being driven away from the area; it could considerably reduce the effective carrying capacity of the area. We strongly recommend therefore that steps be taken as soon as possible to protect part of the Punta Popper area from disturbance. People and vehicles (and roaming dogs - a widespread problem) need to be kept away from the prime roosting area. It is suggested that initially the "northern point" becomes a protected reserve. The point itself and an area with a radius of at least 300 m should be included to allow sufficient undisturbed space for the birds. The development of the hemispheric reserve under the WSHRN network ("Reserva Costa Atlántica de Tierra del Fuego") should provide a good and appropriate instrument for implementing such management actions. Besides, Wetlands for the Americas in co-operation with the province of Tierra del Fuego is working to procure GEF funds to accomplish adequate area management.

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