Information about the distributional extent of the corridor perpendicular to the coast is even sparser. The data from Atkasook define a known southerly limit , but the belt probably ends much closer to the coast than this. Work in the Prudhoe Bay area indicates a decrease in numbers only 25 km south from the coast and virtually no build-up only 50 km south (S.G. Jones pers. comm.).

In conclusion, the data available on this post-breeding movement suggest a massive accumulation of shorebirds spreading east-west along much of the Alaskan coastal plain tundra but restricted to a narrow belt adjacent to the Arctic Ocean. Why this movement occurs is unclear. It may be a response to some seasonal deterioration of feeding conditions in the interior or an improvement along the coast. Alternatively, it may simply be a part of the migration route for different wader species without regard to special stopover conditions along the coast. This raises the question of individual turnover rates for these transients, about which, regretably we have no data. Whatever the cause, however, it is clear that this corridor has important implications for the commercial development of the region's energy resources: By mid-July and early August virtually the entire annual production of waders on Alaska's North Slope may be compressed within a very tight belt smack within areas currently undergoing the most intensive development for oil.

Acknowledgements

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NOVEMBER NESTING OF THE COLLARED PLOVER Charadrius collaris IN WESTERN MEXICO

by Ralph S. Widrig

During the winter of 1977-1978, I spent some months in San Blas, Nayarit, Mexico, pursuing the abundant bird life in this remarkable area. Having a particular interest in shorebirds, I wanted to find the tiny Collared Plover which has been reported as occasional there (Clow 1977). For several days I searched feeding flocks of Semipalmated Plover Charadrius semipalmatus, Wilson's Plover Charadrius wilsonia and Snowy Plover Charadrius alexandrinus on the outer beaches and estuary bars, but could not find a bird which I felt was a candidate for C. collaris. On 30 November 1977, I was scanning an extensive area of drying mud, or marisma, about 3 miles inland when I picked up a small plover feeding alone. While approaching the bird for a better view, a second bird appeared which seemed to be executing a rodent run. At this point I had decided that the first bird was, beyond question, C. collaris. I retreated and concentrated on observing the second bird. After about 20 minutes it retraced its course, bobbed its head, and settled in the incubating posture typical of small plovers. As I rose to approach, the bird bolted away and ran at least 200 feet with no display. The nest was in a cattle track in damp but firm mud, sparsely lined with dry grass, and contained 3 tan-coloured eggs, dotted and scrawled with dark brown. Meanwhile, the first bird had taken a position approximately 350 feet from the nest site and remained motionless, with no display.

On 1 December I again approached the nest, and again the incubating bird (I could not tell the sexes apart) departed without any display. I then did a careful float check of one of the eggs, using luke-warm water. The egg floated with 10 mm exposed on its larger end, suggesting that incubation was well progressed and that hatching would probably occur within a few days.

On 2 December the nest was again checked. An adult was incubating the 3 eggs, the second adult was present some 300 feet from the nest site, and neither bird gave any display.

The nest was visited again on 4 December. One of the adults was incubating, and the second adult was about 150 feet from the nest when I approached. The incubating bird departed as usual, but the second adult commenced a slow, continuous run with head and tail low, as if concealing its departure, not the short, rapid runs observed the previous days. I checked carefully for chicks which might have been following, but could see none. The nest contained one egg, there were no shell fragments or evidence of predation, and I believe the second adult was tending 2 chicks, which must have hatched, away from the nest site when I approached. I could not find them near the nest, and assume that the second bird had hidden them in depressions before commencing its 'concealed departure'. I did not approach the area where the chicks may have been hidden for fear of stepping on them. Again, no display by either adult.

I returned to the site on the morning of 5 December. No adults could be found, and the remaining egg was cold. I assume that the adults had taken the chicks to a different area for feeding and rearing. I could not find them again. I collected the remaining egg, which measured 30 by 21 mm, and it has been deposited with the Western Foundation of Vertebrate Zoology in Los Angeles. There it was found to have been fertile and contained a well-developed embryo (L. Kiff, pers. comm.).

In a search of the literature, I have been unable to find any previous nest record of this species north of South America, although evidence of breeding in Mexico and Honduras has been reported. A fledgling hardly old enough to fly was collected on 13 May 1952 at the Isthmus of Tehuantepec, and very small chicks were observed with their parents in Chiapas on 20 May 1952 (Amadon and Eckelberry 1955). In Honduras, downy young accompanied by adults were found on the beach at Tela on 18 August 1962 (Monroe 1968).

Later in December I located two more adult pairs of this plover Both were in similar habitat - drying mud with shallow water nearby - and both pairs were exhibiting what I believe was courtship behaviour This consisted of one bird approaching the other, puffing out its breast feathers and, with head rather erect, chasing the other bird in a continuous

run for a distance of up to 150 feet. Both birds would then stop abruptly and the chase would be repeated in the opposite direction. After perhaps 2 minutes of this performance the birds would resume their feeding, together. Other species present in these display areas included Semipalmated Plover and Wilson's Plover, which C. collaris appeared to tolerate. I was not able to locate another nest, and feel that the 2 displaying pairs possibly nested in other marismas nearby. By the end of December they had left the areas where I had been observing them.

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THE SHOREBIRDS OF LEADBETTER POINT

by Ralph S. Widrig

(The following material has been adapted and extracted from THE SHOREBIRDS OF LEADBETTER POINT, A Twelve Month Census with Notes on Other Records from Willapa Bay, Washington, by Ralph S. Widrig, 63 pp., Published Independently, 1979. This publication consists of an introductory description and ornithological history of the Leadbetter Point and Willapa Bay area, which form one of the most important estuaries on the south coast of Washington State an overview of the migration seasons, extensive species accounts for the 38 species using estuarine habitat, and a summary and conclusion section assessing the importance of the area and discussing its future conservation. The report is well illustrated with maps, figures and tables, including the data from all censuses carried out between 8 June 1978 and 4 June 1979: reproductions of drawings of shorebirds by Frank L. Beebe enhance the report. Also included are a plant species list, a bird check-list and an index, as well as an addendum of shorebird records. The report is well produced, well written and well researched, and provides an admirable account of shorebird migration on the south Washington coast. - RIGM)

Introduction and Description of the Area

Since the initial description of the area by British explorer John Meares in 1788, Willapa Bay has retained much of its pristine quality and today is the only major unpolluted estuary remaining in the United States (USF&WS 1975). It is also one of the shallowest. Twenty-five miles in length, more than 65sq.mi.(170km^2) of mud flats, oyster beds, clam beds, tidal pools, eelgrass, gravel beaches, broad sandy beaches, and salicornia marshes are exposed at low tide creating an incredibly rich and diverse feeding habitat for migrant shorebirds. Warm bay temperatures ranging from 40 to 70 ^{o}F (4-21 ^{o}C) together with year-round input from freshwater tributaries and a tidal range of 12'(3.7m) stimulate the production and reproduction of a spectrum of shorebird food (Washington State Parks & Recreation Commission 1974, Shotwell 1977, C.S. Sayce pers. comm., pers. obs.). Higher stretches of sand and meadows are available for roosting, making a complete habitat for transient shorebirds and providing the opportunity for migratory staging. Six shorebird species winter regularly at the estuary in substantial numbers, and smaller populations of eight other species winter there occasionally.

Without a doubt the focal point of the Willapa estuary, from the standpoint of avian fauna, is Leadbetter Point. Situated at the tip of a long. sandy peninsula running north from the mouth of the Columbia River, the point hooks eastward into Willapa Bay to include Grassy Island, partially separated by a protected channel that winds through a 500 acre(200ha) salicornia marsh (Figures 1 and 2). Strong ocean currents constantly resculpture the shifting dunes and shoals, and heavy seas occasionally breach the spit which connects Grassy Island to the point. This in turn creates an extensive habitat of sand and drift which is mostly free of vegetation, and it is here that Snowy Plovers return each spring to nest

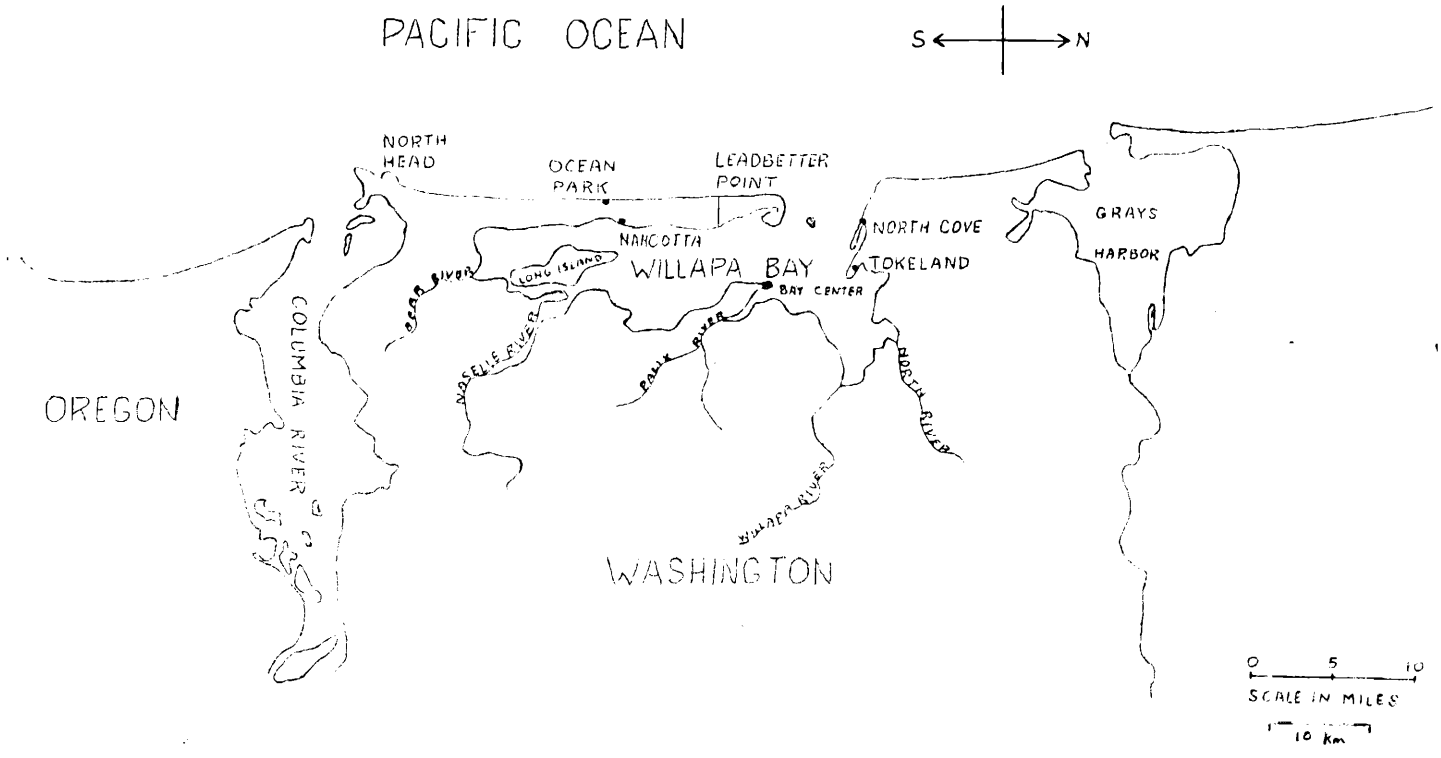

Figure 1 Estuaries of the south Washington coast