

Note
**Mixed Flocks of White-winged Terns and Whiskered Terns
in the Southern Mariana Islands**

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Terns of the genus *Chlidonias* are rare migrants to the Mariana Islands in western Micronesia, with two species recorded in the archipelago (Reichel & Glass 1991, Stinson 1994). White-winged Terns (*C. leucopterus*) are observed in very small numbers in most years, while Whiskered Terns (*C. hybridus*) have been documented on only five previous occasions (Glass et al. 1990; G. J. Wiles, pers. observ.; D. W. Stinson, unpubl. data). Both species are typically encountered as individuals or in small groups of several birds at freshwater ponds and wetlands (Glass et al. 1990; Wiles et al. 1993; G. J. Wiles, pers. observ.; D. W. Stinson, unpubl. data).

During late September and October 1994, several mixed flocks of *C. leucopterus* and *C. hybridus* were observed on the islands of Guam (13°28'N, 144°45'E) and Rota (14°10'N, 145°12'E). Three of the flocks first appeared during a 3-day period that coincided with strong westerly winds associated with the passage of several tropical depressions through the region in the last half of September. Two smaller flocks of *Chlidonias* were also seen on Saipan (15°10'N, 145°45'E) in late December 1994. These sightings are significant because of the unusually large numbers of birds involved and the normal rarity of *C. hybridus* in Micronesia.

One flock of about 30 terns was first seen at the west end of the Naval Air Station airfield in central Guam on 25 September. The birds foraged over extensive open fields and rested intermittently on several large concrete pads holding shallow pools of rainwater. The terns were viewed at distances of 30–75 m with 7x binoculars and a 15–60x spotting scope. Nearly equal numbers of *C. leucopterus* and *C. hybridus* were present. A maximum of 21 birds stood on the pads at once, 11 of which were *C. leucopterus* and 10 were *C. hybridus*.

Flock size declined to 12 terns (7 *C. leucopterus*, 5 *C. hybridus*) by 1 October. Birds were not seen at the site thereafter, once the pools of water dried out. The

fields and concrete pads attracted a number of other migrant species during the same period, including nine species of shorebirds, a flock of 60 Cattle Egrets (*Bubulcus ibis*), and a probable Gull-billed Tern (*Sterna nilotica*).

A similar flock of terns was first noted in fields adjacent the main runways of Andersen Air Force Base in northeastern Guam on 26 September. Reports indicated that anywhere from 20–50 birds were present. The terns were viewed only in flight and mostly at distances greater than 100 m, making identification somewhat difficult. However, several individuals of both species were recorded. This flock also declined rapidly in size after the initial viewing, but at least 10 birds remained through 13 October.

A third flock comprised of 10–20 individuals was seen feeding heavily on fairway lawns at the Mangilao Golf Course in east-central Guam on 13 October (J. McConnell, pers. observ.). It is unknown how long this flock was present, but no birds were seen on a subsequent visit on 17 October. Species composition of the flock was not determined.

A mixed flock of the two species was also observed on Rota. More than 20 birds were first seen at the 3-ha sewage treatment ponds and water hazards of the Rota Country Club Golf Resort on 24 September. The flock was comprised primarily of *C. hybridus*, but at least one *C. leucopterus* was also present. Most of the terns were observed in the sewage treatment area, where they roosted on the concrete pond dividers and foraged over the water. Generally only two or three birds were seen over the water hazards. Unlike the birds observed on Guam, these were not seen foraging over land. Terns were last seen on the island on 30 October, when one *C. hybridus* remained. These sightings represent the first records of both species for Rota. Three *C. hybridus* were collected on 26 September for documentation (B.P. Bishop Museum 179970-71). The newly constructed water hazards and treatment ponds represent the only significant bodies of freshwater on the island, and are likely the reason these birds remained on Rota during this time. As on Guam, numerous species of shorebirds were observed at the treatment ponds in association with the flock.

On 31 December, two flocks of *Chlidonias* terns were seen on eastern and southern Saipan. Eleven terns comprised mostly of *C. hybridus*, but with two or three *C. leucopterus* also present, were found feeding at a 0.5-ha artificial pond on Hakmang (= Kagman) peninsula. Additionally, four *C. hybridus* were recorded at the freshwater catchment of the Saipan airport. These birds foraged in the mowed fields of the airport and perhaps at the catchment pond.

We used a number of plumage features and other traits to identify the terns. All *C. leucopterus* were in winter plumage, having white underparts, gray backs and upperwings, dark wing tips, white rumps, and black legs. Head markings included black bills, white foreheads, black caps, and a black facial mark extending behind and below the eye.

In contrast, most *C. hybridus* in September and October were transitional between breeding and winter plumages. Many displayed full black caps, white lower cheek patches, gray upperparts and rumps, and various amounts of gray and white flecking on the breast and belly. Some birds showed small amounts of

white in the forehead, but none had black ear covert markings below and behind the eye. One individual at Andersen Air Force Base was in full breeding plumage. Birds seen at rest had longer and heavier bills than *C. leucopterus*. Leg and bill coloration appeared blackish on birds seen at a distance, but at least one bird on Guam had red legs. *C. hybridus* observed in December displayed full winter plumage, with reduced black caps and white underparts.

The Guam flocks resided at large mowed fields with grass and weed heights ranging from 4–25 cm tall. Terns in these flocks foraged in a similar manner. Birds were normally loosely aggregated and cruised back and forth over fields, typically flying 0.3–2.5 m above the ground. They watched the ground for prey, usually while headed into oncoming winds. Upon locating a food item, they dipped quickly to the grass and almost always snatched it without landing.

Flocks appeared almost simultaneously at the airfields on Guam and the golf course on Rota on 24–26 September. Neither of the Guam flocks was present on 24 September when both sites were visited by observers. Flock sizes on Guam diminished soon after arrival, suggesting that some birds continued their migration or dispersed to other locations on the island. *Chlidonias* terns were seen individually or in small numbers through early November at a number of wetlands in southern Guam, but by mid to late December only two birds were found during extensive observations around the island. The arrival period of the terns on Saipan is unknown. Similar flocks of these species were not observed there (A. Marshall, pers. comm.) or on nearby Tinian (D. O'Daniel, pers. comm.) in late September and October. Data are also lacking for Palau, Yap, and Chuuk in the western Caroline Islands, where the birds might also be expected to appear. Of these island groups, *C. hybridus* has been previously recorded only once in Yap (Clapp & Laybourne 1983).

C. leucopterus and *C. hybridus* range widely in temperate and tropical regions of the Old World (Harrison 1985). The nearest breeding populations of both species to the Mariana Islands occur in eastern China and southeastern Siberia (Wild Bird Society of Japan 1982, Flint et al. 1984, Meyer de Schauensee 1984). These populations presumably migrate to wintering grounds in Southeast Asia, the Philippines, Indonesia, and Australia (Harrison 1985, MacKinnon & Phillipps 1993). It is likely that the birds seen on Guam and Rota were part of this migration and were carried further eastward than normal by stormy weather.

These flocks represent the largest numbers of *C. leucopterus* and *C. hybridus* ever recorded in Micronesia. Coultas (1931) is the only other observer to have documented a flock of similar size in the region. He reported an aggregation of 14 *C. leucopterus* in Palau, which appeared soon after the passage of a typhoon in mid-October 1931. In comparison, observations of both species in the Marianas during the last 12 years appear to consist entirely of one to a few birds seen per occasion (G. J. Wiles, unpubl. data; D. W. Stinson, pers. comm.). Baker (1951) noted a group of four *C. leucopterus* from Palau. Typhoon activity is also implicated in the very rare occurrence of large flocks of both species in Japan (Brazil 1991).

Migrant birds frequently arrive in Micronesia in poor physical condition. Coultas (1931) reported that the four birds he collected in Palau were emaciated.

Our observations in 1994 suggest that most of the terns were in fairly good condition. Carcasses were not located at any of the flocks' sites and an examination of the three birds collected on Rota found them to have good breast muscle mass.

Acknowledgments

We thank R. E. Beck, Jr., M. Bradley, J. M. Sharkey, E. M. Taisacan, J. McConnell, and C. Davison for reporting their sightings to us.

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