

First North American record of Black-bellied Storm-Petrel (*Fregetta tropica*)

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ABSTRACT

This paper documents the first North American record of Black-bellied Storm-Petrel (*Fregetta tropica*), a single bird photographed off North Carolina 31 May 2004, provides context for this record in the North Atlantic Ocean, and summarizes field identification of *Fregetta* storm-petrels.

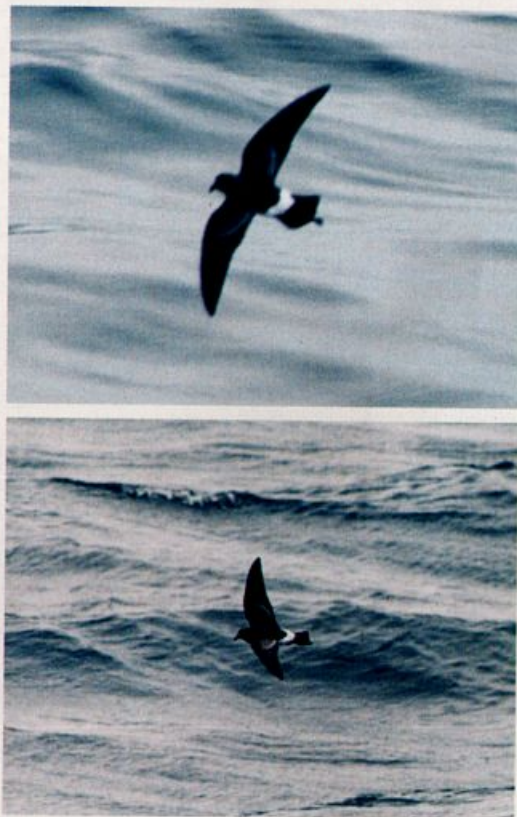
FIELD ENCOUNTER

On 31 May 2004, the authors and 16 other observers aboard the sport-fishing boat *Country Girl* observed a Black-bellied Storm-Petrel (*Fregetta tropica*) approximately 77 km southeast of Oregon Inlet, North Carolina. The bird was observed from 1420 to 1450 EDT, at distances as close as 30 m while it flew and fed amongst 135 Wilson's (*Oceanites oceanicus*), five Leach's (*Oceanodroma leucorhoa*), and two Band-rumped (*Oceanodroma castro*) Storm-Petrels over a

slick of fish oil we had set out to attract birds. The location of the initial discovery was approximately 35° 22.5' N, 74° 47.5' W (LORAN-C 26777, 40511). The water depth here is approximately 1566 m (870 fathoms; 5220 feet). The seawater temperature in the vicinity of the observation was approximately 72° F. Seawater of this temperature and color is usually called "green water" by local fishermen, in contrast to the "blue water" of the nearby Gulf Stream, which is warmer and clearer. The water in this general area is often a mixture of warmer Gulf Stream and cooler Labrador Seawater Current water.

The Black-bellied Storm-Petrel was first noted by the boat's mate, John Gallop. The bird stood out among the surrounding Wilson's Storm-Petrels due to its stockier build, dark hood, white belly, black undertail coverts, and white underwing coverts. At the time of observation, we identified this individual as a White-bellied Storm-Petrel (*F. grallaria*), as we were not able to discern the black belly stripe. Fortunately, several on board managed to obtain videotape footage and still photographs (Figures 1–9), some of which clearly show the ventral stripe (e.g., Figures 3, 4, 8) and thus leave no doubt as to the identification. Although the blackish ventral stripe would seem an obvious field mark, it was not clearly observed, probably owing to unfavorable angles of observation and the bird's low flight profile. Moreover, when the bird was observed in profile, the stripe probably "disappeared" against the dark seawater, leaving the impression of a white belly (Figure 9; see comparative illustration by P. Burke, in Jaramillo 2003). Several observers who thought they saw this stripe in the field discounted it as shadow while the bird was under observation. Our collective impressions of the bird in the field, as well as from photographs and videotape studied subsequently, are digested below. The marks described are clearly discernable in Figures 1–9.

"Proportions and body rather stocky compared to Wilson's Storm-Petrel. In slow feeding flight, wing shape appeared broad, not particularly long, with a gently rounded carpal joint. In direct flight, wing appeared longer than the accompanying Wilson's but still showed a rounded carpal angle. Feet appeared black, extending beyond tail. Mantle, scapulars, and back dark charcoal gray-brown. Flight feathers black. Upperwing coverts dark gray-brown, with paler tan-brown tips to greater coverts forming a distinct pale carpal bar. Median upperwing coverts with much narrower pale tips, apparently indicating fresh plumage. Upper-tail coverts white. Tail blackish.



Figures 1, 2. Black-bellied Storm-Petrel, off Oregon Inlet, North Carolina 31 May 2004 (all figures). The dorsum of the storm-petrel showed blackish flight feathers that contrasted with brownish upperwing coverts, a thin paler brown carpal bar formed by the tips of the greater uppersecondary coverts, white uppertail coverts, a blackish tail, and feet that projected well beyond the tail. Most sources note that the feet of Black-bellied project about one centimeter beyond the tail but do not project beyond the tail in White-bellied. Photographs by Rick Wiltraut.



Figures 3, 4. The ventral surface of the North Carolina Black-bellied Storm-Petrel showed a dark blackish-brown hood, blackish leading edge of underwing, dark flight feathers, white underwing coverts with tips of median and greater underprimary coverts dark, a heavy blackish line of uneven thickness running down the center of the belly and connecting with blackish undertail coverts, and blackish tail.

Photographs by Rick Wiltraut.

"Head, including chin, nape, throat, and breast blackish brown, ending in a distinct, irregular line at the lower breast, giving the bird a distinctly hooded look. Belly white, longitudinally divided by heavy blackish bar extending from the dark breast to the dark undertail coverts [the latter mark was noted first in photographs and videotape]. Underwing's leading edge and flight feathers blackish, remaining underwing coverts white, except for a thin black line near the base of the primaries (median underprimary coverts).

"Flight active and erratic, with some side-to-side rocking noted. The bird pattered and 'dragged' its feet on the water when feeding in flight and regularly 'slapped' the water's surface with its wingtips as well; it occasionally splashed its body against the water and pushed off with its feet."

DISCUSSION

IDENTIFICATION

The combination of dark upperparts, white rump, dark hood, and white belly rules out most species of the world's storm-petrels except the closely related White-bellied Storm-Petrel. Other remotely similar species are easily eliminated. For instance, White-throated (Polynesian) Storm-Petrel (*Neso-*

fregatta fuliginosa) is larger, with a narrower band of white in the uppertail coverts and a white throat. Gray-backed Storm-Petrel (*Garrodia nereis*) is much smaller and has pale gray lower back, uppertail coverts, and upperwing coverts. The recently rediscovered New Zealand Storm-Petrel (*Oceanites maorianus*) can apparently be ruled out by its small size, lack of longitudinal belly-stripe, and narrow dark streaks leading out of the dark breast onto the white belly (Saville and Stephenson 2004). Other dark-backed, pale-vented storm-petrels are far more different and would not be confusable with the North Carolina storm-petrel; a partially leucistic Wilson's Storm-Petrel would not differ structurally from conspecifics.

Identification of White-bellied and Black-bellied Storm-Petrels at sea is difficult. Much has been written, and rumored, about problematic plumages in individual *Fregatta*; nevertheless, Harrison (1985) and subsequent authors have noted that virtually all individuals closely and carefully observed can be confidently identified to species. We can unequivocally eliminate White-bellied Storm-Petrel in the case of the North Carolina bird by the presence of a black stripe

down the center of the belly that connects the dark breast with the blackish undertail coverts, especially in concert with other plumage characters (Marchant and Higgins 1990). Other supporting field marks for Black-bellied include darker upperparts than White-bellied (Harrison 1985, Shirihai 2002, Jaramillo 2003), a less "scaly" appearance of the upperparts in fresh plumage (Murphy and Snyder 1952, Shirihai 2002), and an irregular (rather than straight) border between dark hood and pale breast (Jaramillo 2003). The slightly more extensive dark borders of the underwing and the presence of dark feathers in the underprimary coverts favor Black-bellied (Bourne 1960, Shirihai 2002,

Jaramillo 2003), but at least one published photograph of an apparent White-bellied (Plate 243, Harrison 1987) shows a dark crescent of feathering in the underprimary coverts. Most sources (e.g., Marchant and Higgins 1990, Jaramillo 2003) state that the feet projecting beyond the tail can be used to separate Black-bellied from White-bellied in flight, but this has been questioned in some cases (Saville and Stephenson 2004), and Shirihai (2002) notes that the feet of Black-bellied project well beyond the tail but that at most just the tips of the toes project beyond the tail in White-bellied. The white bases to the feathers of the throat have sometimes been mentioned as a field character separating Black-bellied from White-bellied, presumably when exposed by wear (Harrison 1985, Marchant and Higgins 1990, Jaramillo 2003), but at least one author questions the value of this mark (Clancey 1981). Only one observer, Overton, noted a faintly paler chin (not throat) in his field notes, but this is not visible in photographs.

Although there exist intermediate and dark morphs of White-bellied Storm-Petrel (Marchant and Higgins 1990), these do not match the appearance of the North Carolina individual. Atypical Black-bellied Storm-Petrels that appear to show a reduced (or even absent) belly stripe have also been reported (Bourne 1960); this plumage also does not match the North Carolina individual. Confusion over a supposedly white-bellied subspecies ("*melanoleuca*") of Black-bellied Storm-Petrel breeding on Tristan and Gough Islands in the South Atlantic probably arose from the presence of White-bellied Storm-Petrels there (see discussion in Marchant and Higgins 1990). Given this, Black-bellied Storm-Petrel is probably best considered monotypic. We are not able to



Figure 5. The greater and median upperwing coverts of the Black-bellied Storm-Petrel showed very crisp, apparently fresh pale edges. We conclude that this individual is not a breeding adult, which would probably show more wear in the plumage and should be beginning complete post-breeding molt by June. Note that not all images of this bird depict the projection of the feet beyond the tail.

Photograph by Michael H. Tove.



Figures 6, 7. The flight behavior of *Fregetta* storm-petrels is usually distinctive for the genus. Depicted in Figure 6 (top) is the peculiar foot-skidding behavior, in which the bird flies while dragging one foot through the water. Figure 7 shows the bird launching itself with both feet from the water after retrieving a piece of beef fat. Photographs by Michael H. Tove.

age or sex the North Carolina Black-bellied confidently, as sexes and ages appear alike in the field identification; the very fresh plumage of the bird, however, suggested to us that it was not a breeding adult, which should be worn and commencing post-breeding molt after departing the breeding

The various flight behaviors observed in the field and subsequently seen on videotape are described for the species but also for its sibling White-bellied Storm-Petrel, including side-to-side rocking, splashing breast-first into the water (Harrison 1985, Marchant and Higgins 1990), and foot-

areas around mid-April (Marchant and Higgins 1990).

Several authors have stressed the difficulty of identifying extralimital *Fregetta* at sea (Bourne 1960, Chapman 1982, Marchant and Higgins 1990), particularly with regard to the visibility of the dark belly-stripe in *tropica* at even moderate distances (Bourne and Dixon 1975). Thus, many sight reports of *Fregetta* are treated with caution and not differentiated to species (e.g., Chapman 1984, Bourne 1989). This is especially true for sight records made from large vessels, where observations are from high vantage points. Even with the advantages of a comparatively small vessel, close views, and relatively shallow angles of observation, we were impressed with the challenge of this identification at sea.

dragging or -skidding (illustrated; Jaramillo 2003). Black-bellied Storm-Petrel is said to be attracted to ships but to "take little notice of scraps" of food (Marchant and Higgins 1990; but see Figures 6, 7); Leveque et al. (1989) describe the species as "strongly attracted to cod liver oil." The oil used to attract this bird was that of Atlantic Menhaden (*Brevoortia tyrannus*), with ground beef fat used as additional bait. Marchant and Higgins (1990) speculate that the species "may be associated with cool currents." All of these behaviors and circumstances fit the species identification.

Distribution

With an estimated world population of about 150,000 pairs, Black-bellied Storm-Petrel is a circumpolar breeder on islands in Antarctic and Subantarctic waters, dispersing northward in the nonbreeding months to subtropical and tropical waters in the Atlantic, Pacific, and Indian Oceans (Enticott and Tipling 1997). Much of what is known about the distribution of the species in the nonbreeding season has been gleaned from observers on naval and merchant-marine vessels, from which views are usually distant unless the birds come on board ships, as Black-bellieds occasionally do (Bourne 1997, Young 1985). The northern extent of the species' regular range in the northern hemisphere is 17.7° N in the Arabian Sea/Indian Ocean (Cheshire 1991, Bourne 1989, Bourne and Dixon 1975), 11° N in the Atlantic (Bourne and Dixon 1973), and northern Peru (about 2° S) in the Pacific (Marchant and Higgins 1990). As is the case for many seabirds, the occurrence of the species in the western North Atlantic has been predicted (Brinkley 2000) based on the species' distribution and dispersal in the



Figures 8, 9. These images clearly depict the importance of the angle of observation for the identification of *Fregetta* storm-petrels. Figure 8 shows the flying bird mostly perpendicular to the water, with ventral area mostly exposed to view; the heavy belly-stripe connecting the dark plumage of the breast to that of the ventral area is obvious. However, Figure 9 shows how quickly the dark stripe can disappear or be much less apparent against the underwing and ocean, almost an optical illusion. Note in both images, however, how uneven the border between the dark breast and white belly appears—a plumage character typical of Black-bellied rather than White-bellied. Photographs by Michael H. Tove.

nonbreeding season, on its large population, as well as on possible sight reports of the genus in the western North Atlantic. The nearest sight record of a bird of this genus, believed to be of a Black-bellied, was documented from 11 May 1968 at 32° N, 44.5° W by Captain P. W. G. Chilman, returning to Hamburg, Germany from the United States and the Caribbean (Bourne and Dixon 1973). This location is about 2900 km from Hatteras, North Carolina and 1900 km from Bermuda, well outside the territorial waters of both countries.

There is a previous enigmatic report of Black-bellied Storm-Petrel from North American waters, but in addition to the identification being uncertain, the locality is doubtfully correct. Seven birds were reportedly caught on hook-and-line from a vessel at anchor in the harbor at St. Marks, Florida. A single specimen was said to have been preserved and sent to the Academy of Natural Sciences in Philadelphia, but its present location is unknown (Lawrence 1851, in A.O.U. 1998; Howell 1932). Bourne (1962, 1964) inferred from the specimens' measurements reported by Lawrence (1851) that all pertained to White-bellied Storm-Petrel. Nevertheless, the difficulty in interpreting measurements made by different workers using different techniques precludes certainty in such cases, especially given the slight differences in size of the two species. It is difficult to imagine why Lawrence (1851) would ascribe these individuals to Black-bellied Storm-Petrels if all lacked the definitive plumage character of that species.

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