

# Pelagic surveys in the Colombian Caribbean reveal changes in marine bird distribution patterns during the migration period

*Estudios pelágicos en el caribe de Colombia demuestran cambios en la distribución de las aves marinas durante periodos de migración*

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## Abstract

Records at sea in the Colombian Caribbean are presented for October and November 2015. This coincided with the migratory period. We observed five major "falls" of Nearctic migratory passerines, each one dominated by a single species: first Blackburnian Warblers *Setophaga fusca*, next Blackpoll Warblers *Setophaga striata* and finally American Redstarts *Setophaga ruticilla*. In comparison to surveys during non-migratory periods, large numbers of raptors, particularly Peregrine Falcon *Falco peregrinus* and Merlin *Falco columbianus* were observed at sea, which preyed on the passerines. In contrast, highly marine species such as Storm-Petrels (Hydrobatidae) or Shearwaters (Procellariidae) were absent, perhaps vacating to more remote sea areas to escape these predators. We found the same pattern of abundance between Brown Boobies *Sula leucogaster* and Masked Boobies *Sula dactylatra*, the former dominating south of 11°N and the latter dominating north of this latitude. Interesting records of rare species in Colombia such as Bridled Tern *Onychoprion anaethetus*, Pomarine Skua *Stercorarius pomarinus* and Red-footed Booby *Sula sula* were also recorded.

**Keywords:** Migration, sea, Nearctic, migrant, predation, petrel, shearwater.

## Resumen

Se presentan registros de aves del Caribe Colombiano para los meses de Octubre y Noviembre de 2015, coincidiendo con el periodo de migración. Nosotros observamos cinco grandes 'caídas' de aves migratorias Neárticas cada una dominada por una sola especie, primero *Setophaga fusca*, luego *Setophaga striata* y finalmente *Setophaga ruticilla*. En comparación a los resultados de monitoreo durante los periodos no migratorios, se observaron en el área grandes cantidades de aves rapaces, particularmente *Falco peregrinus* y *Falco columbianus* sobrevolando el mar, recogiendo y comiendo a los Passeriformes. En contraste, las especies marinas como miembros de las familias Hydrobatidae y Procellariidae fueron totalmente ausentes, posiblemente escapándose a zonas de mar más remotas en donde no hay tantas aves rapaces en este periodo. Encontramos el mismo patrón de abundancia entre *Sula leucogaster* y *Sula dactylatra*, el primero dominando hacia el sur 11°N y el último al norte de esta latitud. Registramos también observaciones interesantes de especies raras en Colombia como *Onychoprion anaethetus*, *Stercorarius pomarinus* y *Sula sula*.

**Palabras clave:** Migración, mar, depredación, ave migratoria, Hydrobatidae, Procellariidae.

## Introduction

Our knowledge of the pelagic birdlife of Colombia's Caribbean remains limited. We previously undertook a long-term seabird survey in the Colombian Caribbean during June-August 2014 and December 2014-February 2015, which resulted in quantitative data on the occurrence of several species and a number of first confirmed national records (Digby *et al.* 2015). In this study, further observations from follow-up work during 2015 are presented. This study, in contrast to the previous surveys of winter and summer periods, focused during the migratory period.

## Methods

We returned to carry out further pelagic bird surveys in the Colombian Caribbean during October and November 2015. Each day of the survey, 12-hour long observations were carried out offshore from a 60m vessel around 50-80km offshore and from 10° 30'N to 12°10'N and from 73°20'W to 76°00'W.

## Results

Previously published records from 2014 and 2015 coordinated by the same observers (Digby *et al.* 2015) took place during the boreal summer and winter periods and were typified by strong easterly trade winds. In October and November 2015, the weather conditions were very different. Although easterly winds still predominated, they were often light. Occasional northerly breezes heralded falls of migrants on to the vessel. More significantly, the period of observation took place during the height of the southwards migration period for Nearctic migrants returning to South America.

Apart from the passage of migrants, detailed below, there were also differences in the composition of seabird species and families observed in general. Especially notable was the complete absence of Storm-Petrels (Hydrobatidae) or Shearwaters (Procellariidae), although an increased number of Terns (Sternidae) were seen.



Figure 1. Top row, left to right: (i) Pomarine Skua on 22 October 2015. (ii) American Redstart on 17 November 2015. Second row: (iii) Merlin on 18 November 2015; (iv) Yellow-billed Cuckoo on 17 November 2015. Bottom row: Caspian Tern on deck on 17 November 2015. Carolina González & Laura Pinillos.

### Seabirds

As in the summer and winter periods, the most regular observations were of Brown Boobies *Sula leucogaster* and Masked Boobies *Sula dactylatra*. As in the previous observations, Masked Boobies were most common north of 11°N and Brown Boobies were most common south of

that latitude. North of 11°N, Masked Boobies were seen on 11 of 17 days with 25 individuals whilst Brown Boobies were seen on 10 of 17 days with 15 individuals. South of 11°N, Masked Boobies were seen on just 4 of 20 days with six individuals whilst Brown Boobies were seen on 18 of 20 days with 45 individuals.

Two Red-footed Boobies *Sula sula* were also observed, both in the northern transect. These records add to our first confirmed national records for Colombia from the previous surveys (Digby *et al.* 2015). The third most common seabird was Magnificent Frigatebird *Fregata magnificens*. These were more common than in the 2014-2015 studies, observed on seven days and usually in small groups of up to six birds.

The other observable contrast was the many more Terns seen. This included three Caspian Terns *Hydroprogne caspia*, seen on 15, 17 and 21 November and an immature Bridled Tern *Onychoprion anaethetus* that spent 17-18 November on the vessel. No Noddies were seen, unlike during the winter months. The commonest tern was Royal Tern *Thalasseus maximus* with flocks of up to 15 individuals observed on 10 of the 37 observation days. Common Tern *Sterna hirundo* and a Sandwich Tern *Thalasseus sandvichensis* (a dark-billed bird, so presumably of subspecies group *aculflavides*) were also seen, both in November. No gulls were observed and just one Pomarine Skua *Stercorarius pomarinus* was seen on 22 October.

### Herons

During the previous 2014-2015 surveys, Great Blue Herons *Ardea herodias* and Great Egrets *Ardea alba* were observed, but during October and November, the herons appeared more common and diverse. In addition to these two species, that were seen again here, we also observed Cattle Egret *Bubulcus ibis*, Snowy Egret *Egretta Thula* and Green Heron *Butorides virescens*. Cattle Egrets passed and occasionally rested on the boat on seven of the observation days.

### Raptors

Raptors were also seen more regularly. In previous studies, a single Osprey *Pandion haliaetus* was observed in August and was the only raptor seen, but from 18 October to 26 November, four Ospreys were seen, Peregrine Falcons *Falco peregrinus* were observed on four days and Merlin *Falco columbianus* on eight days. We suspect that the occurrence of Peregrine Falcon and Merlin over Colombian seas during this period was linked to the migration period. These raptors appear to forage for migrant birds over the Caribbean during October-November. It is also noteworthy that the uptick in raptors coincided with the absence of birds of the open seas, the Storm-Petrels (Hydrobatidae) and Shearwaters (Procellariidae). The lack of records of these groups here contrasts with the three species confirmed in the summer and winter observation periods in 2014-2015. We suspect that these more marine seabirds migrated deeper into the Atlantic to avoid the concentration of raptors found in coastal areas during this period.

### Passerines

During the observation period, we had at least five significant falls of migrants overnight, all coinciding with the calmer conditions following northerly breezes. The falls occurred on 19 and 26-28 October, 1-3 November, 9 November and 17-23 November. Each occasion was dominated by at least 20 individuals of a single species. The first three falls were dominated by Blackburnian Warblers *Setophaga fusca* and the last two by Blackpoll Warblers *Setophaga striata*. In November, American Redstarts *Setophaga ruticilla* were common. The other warblers seen were two Northern Waterthrushes *Parkesia noveboracensis* on 4 and 5 November and a single Prothonotary Warbler *Protonotaria citrea* on 18 November. One other record that could have been interesting was a grey warbler that looked like a female Cerulean Warbler *Setophaga cerulea*, which briefly stopped on 29 October before being taken by a Merlin, which unfortunately devoured too much of the bird to allow its identification.

Other passerines observed included three Swainson's Thrushes *Catharus ustulatus* on 21 October, 17 and 18 November, a Sulphur-bellied Flycatcher *Myiodynastes luteiventris*, which spent three days aboard from 21-23 October and a Grey Kingbird *Tyrannus dominicensis*, which spent all day on 4 November feeding on moths that had gathered overnight. An immature Great-tailed Grackle *Quiscalus mexicanus* spent the last 10 days aboard feeding on the moths that the Flycatchers had missed. Barn Swallows *Hirundo rustica* were present for 13 days, often with more than a dozen individuals at a time but these were the only Hirundine species observed. The only other landbird seen was a Yellow-billed Cuckoo *Coccyzus americanus* on 17 November.

### Waders

Two flocks of Lesser Yellowlegs *Tringa falvipes* were observed passing the boat, 10 on 18 October and 16 on 31 October. A flock of six Stilt Sandpipers *Calidris himantopus* and an individual Buff-breasted Sandpiper *Tryngites subruficollis* were both seen on 20 October. Two other waders seen were not identified with certainty.

### Waterbirds

Two flocks of Cinnamon Teals *Anas cyanoptera*, one of 27 individuals, were seen on the 24 and 25 of October and a single American Purple Gallinule *Porphyrio martinica* was observed on 19 November.

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### References

Digby, A., López, P., Ribeiro, I., Alarcón, J. & Gartner, A. 2015. Caribbean Colombia: Pelagic Bird observations in 2014 and 2015. *Conservación Colombiana* 23: 50-57.