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Raúl A. Pérez-Rivera

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Unusual sightings and displacement of birds in Puerto Rico after Hurricane Maria

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Abstract On 20 September 2017, Hurricane Maria passed over Puerto Rico with intense winds causing habitat alteration and destruction, which produced unusual displacement of birds. A carcass of a Parasitic Jaeger (*Stercorarius parasiticus*) was reported from the beach of Palmas del Mar, Humacao, becoming one of the few valid records of this species in Puerto Rico. Puerto Rican Parrots (*Amazona vittata)*, Yellow-shouldered Blackbirds (*Agelaius xanthomus*), and a Lesser Antillean Pewee (*Contopus latirostris*) were reported outside their usual habitats and ranges. Large groups of Glossy Ibis (*Plegadis falcinellus*) were observed at Isabela, Dorado, and Humacao, 30–105 km from their core populations in Arecibo. A month after the hurricane passed, large numbers of Scaly-naped Pigeons (*Patagioenas squamosa*) were observed in the dry, semi-deciduous woodlands of southern Puerto Rico, a region from which they had previously been rarely reported. These unusual sightings and displacement of birds should be attributed to Hurricane Maria.

Keywords bird displacement, Hurricane Maria, Puerto Rico, songbirds

Resumen Avistamientos inusuales y desplazamiento de aves en Puerto Rico después del Huracán María—El 20 de septiembre de 2017, el Huracán María pasó sobre Puerto Rico con vientos intensos que causaron la alteración y destrucción de hábitat que a su vez causó el desplazamiento inusual de aves. Se encontró una carcasa del Págalo Parasítico (*Stercorarius parasiticus*) en la playa de Palmas del Mar, Humacao, que resulta ser uno de los pocos registros válidos de esta especie en Puerto Rico. Fueron reportados Cotorras de Puerto Rico (*Amazona vittata*), Mariquitas (*Agelaius xanthomus*), y un Bobito (*Contopus latirostris*) fuera de su hábitat natural y distribución usual. Grupos grandes de Ibis Lustrosos (*Plegadis falcinellus*) fueron observados en Isabela, Dorado y Humacao, a unos 30–105 km de distancia del núcleo de la población en Arecibo. Un mes después de haber pasado el huracán, se observó un gran número de Palomas Turcas (*Patagioenas squamosa*), en el hábitat xerofítico de la parte sur Puerto Rico, lo que se considera como un evento raro. Estos avistamientos y desplazamientos inusuales de aves deberían atribuirse al Huracán María.

Palabras clave aves cantoras, desplazamiento de aves, Huracán María, Puerto Rico

Résumé Observation inhabituelle et déplacements des oiseaux à Porto Rico après l'ouragan Maria—Le 20 septembre 2017, l'ouragan Maria a traversé Porto Rico avec des vents violents qui ont dégradé et détruit les habitats, entraînant des déplacements inhabituels des oiseaux. Un cadavre de Labbe parasite (*Stercorarius parasiticus*) a été signalé sur la plage de Palmas del Mar, Humacao, ce qui constitue l'une des rares mentions fiables de cette espèce à Porto Rico. Des Amazones de Porto Rico (*Amazona vittata*), des Carouges de Porto Rico (*Agelaius xanthomus*) et un Moucherolle gobemouche (*Contopus latirostris*) ont été signalés en dehors de leur aire de répartition et de leurs habitats habituels. De grands groupes d'Ibis falcinelles (*Plegadis falcinellus*) ont été observés à Isabela, Dorado et Humacao, de 30 à 105 km du noyau de leur population à Arecibo. Un mois après le passage de l'ouragan, un grand nombre de Pigeons à cou rouge (*Patagioenas squamosa*) ont été observés dans les forêts sèches semi-décidues du sud de Porto Rico, une région dans laquelle ils avaient rarement été signalés auparavant. Ces observations inhabituelles et ces déplacements des oiseaux sont à attribuer à l'ouragan Maria.

Mots clés déplacement des oiseaux, oiseaux chanteurs, ouragan Maria, Porto Rico

Hurricanes are known to transport birds from their normal habitats to new unusual habitats and locations (Thurber 1980, Wunderle *et al.* 1992, Wiley and Wunderle 1993). In Puerto Rico there have been numerous accounts of this occurring over the past century. Danforth (1936) observed Puerto Rican Plain Pigeons (*Patagioenas inornata wetmorei*) in Añasco, approximately 80 km from their native habitat in east-central Puerto Rico, after Hurricane San Felipe II passed in 1928. Biaggi (1974) attributed the first presence of the American Kestrel (*Falco sparverius*) on Isla de Mona, Puerto Rico, to Hurricane San Zenón, which passed through eastern Hispaniola on 3 September

Department of Biology, University of Puerto Rico-Humacao, PR-908, Humacao, PR 00792, USA; email: raul.perez8@upr.edu

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1930. A Puerto Rican Tanager (*Nesospingus speculiferus*), normally a mountain species, was observed in 1998 at the Humacao Campus of the University of Puerto Rico after Hurricane Georges (Pérez-Rivera 1998). And after the same hurricane event, Tossas (2006) reported White-winged Doves (*Zenaida asiatica*), a lowland open-habitat species, in the Maricao State Forest.

The hurricane season of 2017 deserves special attention. On 7 September 2017, Hurricane Irma passed just north of Puerto Rico, impacting the island with tropical storm winds of nearly 100 km/hr (65 mph). Although some trees were blown down, most of the vegetation only suffered broken branches. A short 2 weeks later, on 20 September 2017, Hurricane Maria traversed Puerto Rico as a category 5 hurricane with sustained winds of 250 km/hr (155 mph) and gusts of nearly 322 km/hr (200 mph) (NWS 2018). The hurricane caused severe damage to the vegetation and habitats of many bird species. Afterwards, a series of unusual bird sightings were made and are discussed in detail here.

Species Accounts

***Patagioenas squamosa* (Scaly-naped Pigeon)**

On 22 October 2017, while driving along Rd. 52 from Salinas to Guánica (a total distance of 83.5 km) through lowland dry, semi-deciduous forest, I observed an unusually high number of Scaly-naped Pigeons. Groups of 5 to 10 individuals were observed crossing the road and perching on bayahonda (*Prosopis juliflora*), gumbo-limbo or almácigo (*Bursera simaruba*), and royal palms (*Roystonea borinquena*). In total, I observed at least 50 individuals along the route. Doves (*Zenaida* spp.), which are common in semi-deciduous forests of southern Puerto Rico, were outnumbered (3:1) by Scaly-naped Pigeons. It should be mentioned that most photographs of Scaly-naped Pigeon flocks posted on Facebook (www.facebook.com) after Hurricane Maria were of birds photographed in southern Puerto Rico.

Although the Scaly-naped Pigeon has recently been known to invade urbanized habitats, it is typical of montane, moist forests (Biaggi 1974, Ortiz Rosas 1980, Raffaele 1983, Oberle 2010). The species is considered uncommon in the dry zone of southern Puerto Rico (Moreno-Brillón *et al.* 1986, Rivera-Milán 1992), where Rivera-Milán (1992) detected the species only twice after conducting 1,080 point counts throughout the region.

Whereas Hurricane Maria impacted the entire island, my observations suggest that vegetation in the south sustained less damage than that in the north. By the end of October, the south appeared more foliated and with a greater abundance of fruiting trees (e.g., royal palms). This could account for why such large numbers of pigeons were observed during my trip.

***Stercorarius parasiticus* (Parasitic Jaeger)**

On 23 September 2017, a Parasitic Jaeger was found dead at Palmas del Mar beach in Humacao. The bird was approximately 50 cm long and had conspicuous, long tail feathers and a dark band across the upper breast—both diagnostic traits in adults of this species. There was no attempt made to collect the specimen due to a lack of electricity, and thus freezing capability, in Puerto Rico at this time. The Parasitic Jaeger has been reported from the U.S. Virgin Islands and in some of the Lesser Antilles islands (Raffaele *et al.* 1998). Reports of this species in Puerto Rico have been documented in eBird, but these are not substantiated with clear photographic evidence (eBird 2018). My colleague, Sergio Colón, provided me with a high quality photograph taken by Gabriel Lugo on 17 September 2011 in Arecibo to identify the species. Thus, this constitutes one of the few valid records of the species in Puerto Rico and the first written documentation.

***Plegadis falcinellus* (Glossy Ibis)**

On 29 October 2017, a flock of 20–25 individuals crossed Rd. 22 (Autopista de Diego) at km 24.2 in the municipality of Dorado, about 32 km east of Arecibo where the core population is known to reside. The small ponds and lagoons created by the heavy rains after Hurricane Maria appear to have provided additional habitat for the species in Dorado, as Glossy Ibis have only been reported in small numbers from one locality in Dorado prior to this observation.

Shortly after the hurricane, José Chavert, a retired ornithologist from the Department of Natural Resources of Puerto Rico, observed roughly 100 Glossy Ibis at the Costa Isabella Resort (Isabela), about 32 km west of Arecibo (J. Chavert pers. comm.). Here also, the birds appear to have been using ponds created by the heavy rains after the hurricane.

One week after Hurricane Maria, my colleague, Lesbia Montero, informed me of a flock of "black birds" observed at the Humacao Wildlife Refuge. I found that the flock consisted of around 35 Glossy Ibis foraging alongside Cattle Egrets (*Bubulcus ibis*). Humacao is located in southeastern Puerto Rico, about 105 km from Arecibo. The flock was observed for the last time on 18 November 2017. Glossy Ibis have been observed at the Humacao Wildlife Refuge before, but never in these large of numbers (Pérez-Rivera 2009).

The Glossy Ibis is a recent colonizer of Puerto Rico. It was first observed in the wetlands of Caño Tiburones (Arecibo) in 1998 and found breeding in the same locality in 2005 (Pérez-Rivera 2009). Outside of Arecibo, its neighboring municipalities, and Boquerón (southwestern Puerto Rico), Glossy Ibis are observed infrequently and in low numbers. Hence, the large number of Glossy Ibis observed outside of their usual range should be attributed to Hurricane Maria.

***Amazona vittata* (Puerto Rican Parrot)**

On 23 September 2017, early in the afternoon, I observed a group of seven Puerto Rican Parrots perching in a tree without leaves (most likely *Albizia procera*) at km 14.4 of Rd. 30, near the entrance to the town of Juncos. About five kilometers from Juncos, at km 19.2 of Rd. 30 in the municipality of Las Piedras, I found two other individuals also resting on a bare tree.

On the afternoon of 12 October 2017, within the Valenciano Abajo neighborhood of Juncos at km 2.4 of Rd. 919, I observed five Puerto Rican Parrots feeding on the fruits of royal palms. By 19 October, the group had increased to eight individuals, and this time the birds were foraging on the ground. After 5 November, the parrots were not observed again, presumably because by this time the royal palms had lost their fruits.

On 21 October 2017, in the Arenas neighborhood near Cañaboncito (Rd. 1, Caguas), I observed an individual parrot within a group of Canary-winged Parakeets (*Brotogeris versicolurus*).

Although I was not able to distinguish fine details, the parrot's general color and size matched that of the Puerto Rican Parrot. Thereafter, parakeets were observed several times in the same locality; however, the parrot was not. Days before my observation, personnel of the Fish and Wildlife Service found a Puerto Rican Parrot in Aguas Buenas, a neighboring municipality of Caguas, reinforcing the probability that the parrot I observed was indeed a Puerto Rican Parrot.

Presently, there are two populations of Puerto Rican Parrots in Puerto Rico: one in Río Abajo (between Arecibo and Utuado) and another in Luquillo (Caribbean National Forest). The distance between these two forests is about 85 km. Meanwhile, the center of the Luquillo Mountains is approximately 15 km from Las Piedras and 18 km from the locality in Juncos where I observed the parrots. Therefore, it is likely that because of geographical proximity to the Luquillo Mountains, the parrots I observed were from the Caribbean National Forest population.

***Contopus latirostris* (Lesser Antillean Pewee)**

On 24 October 2017, more than a month after the hurricane had passed, a single Lesser Antillean Pewee was observed in a mahogany tree (*Swietenia mahogani*) on the University of Puerto Rico campus in Humacao. In eBird, two sightings of this species had been reported from the Humacao Wildlife Refuge by two continental birdwatchers (eBird 2018). Nevertheless, there are no records from professional ornithologists, and no written reports of this species from Humacao.

The Lesser Antillean Pewee can be observed in montane habitat, coffee shade forest, and the coastal shrub of southwestern Puerto Rico (Raffaele 1983, Oberle 2010). However, it is extremely rare east of Manatí, on the north coast, and east of Santa Isabel, in the south (RAPR pers. obs.).

***Agelaius xanthomus* (Yellow-shouldered Blackbird)**

On 30 September 2017, one of my students, Carlos A. Ortiz, observed a pair of Yellow-shouldered Blackbirds in the Jaguas neighborhood of Ciales (very close to downtown). At first glance, Ortiz thought the birds were a pair of female Greater Antillean Grackles (*Quiscalus niger*), until he noted a yellow spot on the shoulder of one of the birds, a diagnostic trait in Yellow-shouldered Blackbirds. The same characteristics were present on the second bird.

The Yellow-shouldered Blackbird is mainly restricted to the coast, particularly in southwestern Puerto Rico (Oberle 2010). However, the species has been occasionally observed in municipalities nearer to the center of the island (Perez-Rivera 1986). Nonetheless, the sighting in Ciales should be considered very rare and is likely attributed to Hurricane Maria.

Conclusions

This work has provided information regarding the displacement of birds in Puerto Rico after a severe hurricane. Changes in bird population estimates after hurricanes are sometimes attributed to the direct impact of the storms on individual birds (e.g., Puerto Rican Parrot; USFWS 1999). But caution is recommended when evaluating population changes after severe storms, such as Hurricane Maria, as some species or populations may evade the impacted locality (e.g., Puerto Rican Parrots from the Caribbean National Forest) or disperse to non-traditional habitats (e.g., Scaly-naped Pigeons from central montane, moist forests to lowland, dry, semi-deciduous woodland).

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Author Information

Department of Biology, University of Puerto Rico-Humacao, PR-908, Humacao, PR 00792, USA; email: raul.perez8@upr.edu

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