

The Journal of Caribbean Ornithology

RESEARCH NOTE

Vol. 31:65–67. 2018

Atypical foraging habitat use by Piping Plovers (*Charadrius melodus*) in The Bahamas

Scott Johnson Pamela Loring David Jones Shannan Yates



Photo: David Jones

Atypical foraging habitat use by Piping Plovers (*Charadrius melodus*) in The Bahamas

Scott Johnson¹, Pamela Loring^{2,3}, David Jones⁴, and Shannan Yates⁵

Abstract Migratory birds often use different habitats on their wintering grounds than they do on their breeding grounds. The Piping Plover (*Charadrius melodus*) is a migratory shorebird with all populations listed as either Threatened or Endangered in the United States. This species winters in the southern United States, Mexico, and the West Indies. Although Piping Plovers typically use sand and mud flats and sand beaches as foraging and roosting habitats, in February 2016 we observed Piping Plovers foraging among the roots of red mangrove (*Rhizophora mangle*) and black mangrove (*Avicennia germinans*) and on rocky shores on Andros Island, The Bahamas. This behavior adds not only to our understanding of Piping Plover ecology, but also highlights the importance of conserving important habitats like wetlands as foraging sites for threatened shorebirds.

Keywords *Charadrius melodus*, mangroves, Piping Plover, wetlands

Resumen Uso de un hábitat de forrajeo atípico por *Charadrius melodus* en Las Bahamas—Las aves migratorias a menudo usan hábitats diferentes en sus áreas de invernada que aquellos que usan en sus áreas de reproducción. *Charadrius melodus* es un ave playera migratoria cuyas poblaciones figuran como Amenazadas o En Peligro de Extinción en los Estados Unidos. Esta especie inverna en el sur de los Estados Unidos, México y las Indias Occidentales. Aunque los individuos de esta especie suelen usar planicies arenosas o con lodo y playas arenosas como sus hábitats de forrajeo y descanso; en febrero de 2016 observamos varios individuos entre las raíces de *Rhizophora mangle* y *Avicennia germinans* y en las costas rocosas de la isla de Andros, Las Bahamas. Este comportamiento se suma no solo a nuestra comprensión de la ecología de *Charadrius melodus*, sino que también resalta la importancia de conservar hábitats importantes, como los humedales, como sitios de forrajeo para las aves costeras amenazadas.

Palabras clave *Charadrius melodus*, humedales, manglares

Résumé Utilisation d'un habitat d'alimentation atypique par le Pluvier siffleur (*Charadrius melodus*) aux Bahamas—Les oiseaux migrants utilisent souvent des habitats différents sur leurs aires d'hivernage et sur leurs aires de reproduction. Le Pluvier siffleur (*Charadrius melodus*) est un limicole migrant dont toutes les populations sont répertoriées comme étant Menacées ou En danger aux États-Unis. Cette espèce hiverne dans le sud des États-Unis, au Mexique et dans les Antilles. Bien que les pluviers siffleurs utilisent généralement des zones sableuses, des vasières et des plages de sable comme habitats d'alimentation et de repos, nous les avons observés en février 2016 se nourrissant parmi les racines de palétuviers rouges (*Rhizophora mangle*) et de palétuviers noirs (*Avicennia germinans*) et sur les côtes rocheuses de l'île d'Andros, aux Bahamas. Ce comportement améliore notre compréhension de l'écologie de l'espèce, mais souligne également l'importance de conserver des habitats importants tels que les zones humides en tant que sites d'alimentation pour les limicoles menacés.

Mots clés *Charadrius melodus*, mangroves, Pluvier siffleur, zones humides

The Piping Plover (*Charadrius melodus*) is a migratory shorebird of high conservation concern, with one population listed as Endangered and remaining populations listed as Threatened under the United States Endangered Species Act (U.S. Fish and

Wildlife Service 2018). This species spends most of the year on its wintering grounds, which include the southern United States, Mexico, and the West Indies (Haig 1987, Plissner and Haig 2000). Piping Plovers use a variety of sites for foraging, including intertidal sand flats, beaches with ephemeral pools, mud flats, algal flats, bays, lagoons, and man-made impoundments (Elias *et al.* 2000, Fraser 2001, Elliott-Smith and Haig 2004). The Bahamas has been shown to be an important wintering site for Piping Plovers (Elliott-Smith *et al.* 2009, Gratto-Trevor *et al.* 2016), with over 1,000 birds found throughout The Bahamas (Elliott-Smith *et*

¹The Bahamas National Trust, Nassau, Bahamas; e-mail: sjohnson@bnt.bs. Full list of author information is available at the end of the article.



Fig. 1. Piping Plover foraging in mangrove wetlands on Big Wood Cay, The Bahamas. Photograph by David Jones.

al. 2015). Most of the population in The Bahamas is concentrated in the Joulter Cays and the Berry Islands, both groups of small islands north of Andros Island which have large expanses of sand flats and mud flats.

During the course of our surveys of Piping Plovers in The Bahamas, we found this species foraging in habitats in which it has not been previously documented. Articulating habitat preferences for this species on The Bahamas wintering grounds is needed to design censuses and identify conservation areas for habitat protection. Here we report observations of Piping Plovers foraging in habitats other than sand or mud flats in The Bahamas in an effort to better understand the breadth of habitats used by this at-risk species during its wintering period in the Bahamas archipelago.

Observations

Between 30 January and 6 February 2016, Piping Plovers were censused on Andros Island, The Bahamas. During the census,

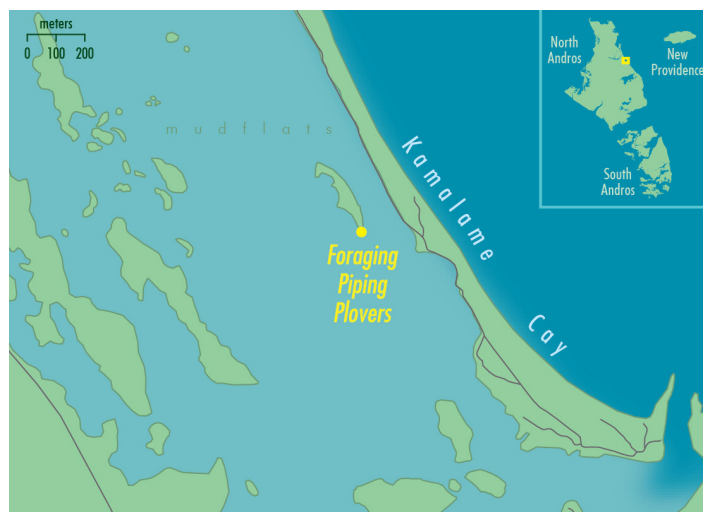


Fig. 2. Location where Piping Plovers were seen foraging in mangrove wetlands on Kamalame Cay, The Bahamas. Map credit to Aly DeGraff Ollivierre.

Piping Plovers were found foraging in atypical habitats including mangrove wetlands in several locations in central Andros and a rocky shore habitat in northern Andros. On 1 February, at Young Sound, Central Andros ($24^{\circ}39'47''\text{N}$, $77^{\circ}45'08''\text{W}$), 38 Piping Plovers were seen foraging in a mangrove wetland about 100 m west of open sandy shore habitat with exposed sand flats, and 32 were seen south of this location foraging on exposed mud flats interspersed with red mangroves (*Rhizophora mangle*) and black mangroves (*Avicennia germinans*). During low tide on 2 February, on a small island called Big Wood Cay ($24^{\circ}23'37''\text{N}$, $77^{\circ}44'53''\text{W}$), a flock of 15 Piping Plovers was observed foraging among the pneumatophores of black mangroves and the prop roots of short red mangroves < 1 m tall (Fig. 1), as well as on open mud flats. On 4 February, 19 individuals were seen foraging in and around the pneumatophores of black mangroves and the prop roots of red mangroves at Kamalame Cay ($24^{\circ}51'2''\text{N}$, $77^{\circ}54'0''\text{W}$; Fig. 2). Other plover species, such as Wilson's Plover (*Charadrius wilsonia*) and Semipalmated Plover (*C. semipalmatus*), were seen roosting among the pneumatophores of the black mangroves around Kamalame Cay. Finally, on 5 February, at 0945, five Piping Plovers were seen foraging on a rocky shore in Mastic Point, North Andros ($25^{\circ}5'27''\text{N}$, $77^{\circ}59'8''\text{W}$; Figs. 3 and 4). Low tide had been at 0743 and there were exposed sand flats just a few hundred meters south of the rocky shore location.

Foraging in mangrove wetlands may be beneficial to shorebirds like the Piping Plover; the tall pneumatophores of black mangroves and prop roots of red mangroves could provide cover and protection from aerial predators such as Peregrine Falcons (*Falco peregrinus*) and Merlins (*F. columbarius*) that could take advantage of avian prey exposed on open sand and mud flats. Piping Plovers may derive nutritional benefits from foraging on rocky shore substrate where invertebrate prey items are likely washed ashore by the tides.

These observations add to the growing evidence that mangrove wetlands are important foraging and roosting sites for many shorebirds wintering in the Caribbean. For example, Short-billed Dowitchers (*Limnodromus griseus*), Ruddy Turn-



Fig. 3. Location where Piping Plovers were seen foraging on a rocky shore in Mastic Point, North Andros, The Bahamas. Map credit to Aly DeGraff Ollivierre.



Fig. 4. Piping Plover foraging on rocky substrate in Mastig Point, North Andros, The Bahamas. Photograph by David Jones.

stones (*Arenaria interpres*), Sanderlings (*Calidris alba*), Wilson's Plovers, and Semipalmated Plovers have been observed foraging and roosting in this habitat along with Piping Plovers even when large areas of exposed mud and sand flats are available for the birds during low tide (SJ pers. obs.). Although these observations show Piping Plovers foraging in previously unidentified habitat in The Bahamas, more research is needed to better understand the ecology of this species on its wintering grounds.

Acknowledgments

We would like to thank Dr. Dave Ewert, Dr. Joseph Wunderle, and Dr. Daniel Caitlin for reviewing this manuscript and for their critiques, and Aly DeGraff Ollivierre for making the map figures. We would also like to thank the U.S. Fish and Wildlife Service for their financial assistance for the 2016 Piping Plover Census.

Author Information

¹The Bahamas National Trust, Nassau, Bahamas; e-mail: sjohnson@bnt.bs; ²University of Massachusetts Amherst, Amherst,

MA 01003, USA; e-mail: ploring@eco.umass.edu; ³Mass Audubon, Lincoln, MA 01773, USA; ⁴45 Mt. Vernon St. Apt 5A, Boston, MA 02108, USA; e-mail: dbjones1899@earthlink.net; ⁵College of The Bahamas, Nassau, Bahamas; e-mail: shannanyates07@gmail.com

Literature Cited

- Elias, S.P., J.D. Fraser, and P.A. Buckley. 2000. Piping Plover brood foraging ecology on New York barrier islands. *Journal of Wildlife Management* 64:346–354.
- Elliott-Smith, E., and S.M. Haig. 2004. Piping Plover (*Charadrius melodus*). In *The Birds of North America* (A.F. Poole, ed.). Cornell Lab of Ornithology, Ithaca, NY. doi.org/10.2173/bna.2.
- Elliott-Smith, E., M. Bidwell, A.E. Holland, and S.M. Haig. 2015. Data from the 2011 International Piping Plover Census. Data series 922. U.S. Geological Survey, Reston, VA.
- Elliott-Smith, E., S.M. Haig, and B.M. Powers. 2009. Data from the 2006 international Piping Plover census. Data series 426. U.S. Geological Survey, Reston, VA.
- Fraser, J.D. 2001. Moist substrate habitats for Piping Plovers on the Atlantic and Gulf of Mexico coasts. Pp. 1–11 in *Proceedings of the Coastal Ecosystems and Federal Activities Technical Training Symposium* (T. Rice and C. Bohn, eds.). U. S. Fish and Wildlife Service, Atlanta, GA.
- Gratto-Trevor, C., S.M. Haig, M.P. Miller, T.D. Mullins, S. Mad-dock, E.A. Roche, and P. Moore. 2016. Breeding sites and winter site fidelity of Piping Plovers wintering in The Bahamas, a previously unknown major wintering area. *Journal of Field Ornithology* 87:29–41.
- Haig, S.M. 1987. Winter distribution and status of Piping Plovers on the Gulf of Mexico. *Provincial Museum of Alberta Natural History Occasional Paper* 9:251–257.
- Plissner, J.H., and S.M. Haig. 2000. Status of a broadly distributed endangered species: results and implications of the second international Piping Plover census. *Canadian Journal of Zoology* 78:128–139.
- U.S. Fish and Wildlife Service. 2018. Species profile for Piping Plover (*Charadrius melodus*). Environmental Conservation Online System. ecos.fws.gov/ecpo/profile/speciesProfile?spcode=B079#status.

Cite this article as:

Johnson, S., P. Loring, D. Jones, and S. Yates. 2018. Atypical foraging habitat use by Piping Plovers (*Charadrius melodus*) in The Bahamas. *Journal of Caribbean Ornithology* 31:65–67. <https://doi.org/10.55431/jco.2018.31.65-67>