

Urban Naturalist

No. 13

2017

New Records of White- Crowned Pigeon Nesting in Urban Key West and Miami, Florida

Ricardo Zambrano and Thomas F. Sweets



The *Urban Naturalist* . . .

- ◆ A peer-reviewed and edited interdisciplinary natural history science journal with a global focus on urban areas (ISSN 2328-8965 [online]).
- ◆ Featuring research articles, notes, and research summaries on terrestrial, fresh-water, and marine organisms, and their habitats. The journal's versatility also extends to publishing symposium proceedings or other collections of related papers as special issues.
- ◆ Focusing on field ecology, biology, behavior, biogeography, taxonomy, evolution, anatomy, physiology, geology, and related fields. Manuscripts on genetics, molecular biology, anthropology, etc., are welcome, especially if they provide natural history insights that are of interest to field scientists.
- ◆ Offers authors the option of publishing large maps, data tables, audio and video clips, and even powerpoint presentations as online supplemental files.
- ◆ Proposals for Special Issues are welcome.
- ◆ Arrangements for indexing through a wide range of services, including Web of Knowledge (includes Web of Science, Current Contents Connect, Biological Abstracts, BIOSIS Citation Index, BIOSIS Previews, CAB Abstracts), PROQUEST, SCOPUS, BIOBASE, EMBiology, Current Awareness in Biological Sciences (CABS), EBSCOHost, VINITI (All-Russian Institute of Scientific and Technical Information), FFAB (Fish, Fisheries, and Aquatic Biodiversity Worldwide), WOW (Waters and Oceans Worldwide), and Zoological Record, are being pursued.
- ◆ The journal staff is pleased to discuss ideas for manuscripts and to assist during all stages of manuscript preparation. The journal has a mandatory page charge to help defray a portion of the costs of publishing the manuscript. Instructions for Authors are available online on the journal's website (www.eaglehill.us/urna).
- ◆ Co-published with the *Northeastern Naturalist* (Print ISSN # 1092-6194, Online ISSN # 1938-5307), the *Southeastern Naturalist* (Print ISSN # 1528-7092, Online ISSN # 1938-5412), and *Caribbean Naturalist* (ISSN # 2326-7119 [online]). Together these journals provide an integrated publishing and research resource for all of eastern mainland North America and the offshore waters and islands from Canada south to the Caribbean region, as well as urban areas worldwide.
- ◆ Available online in full-text version on the journal's website (www.eaglehill.us/urna). Arrangements for inclusion in the BioOne database (www.bioone.org, a collaborative effort of Allen Press, AIBS, et al.), EBSCOhost product line, and the Proquest Information and Learning databases (www.il.proquest.com) are being pursued.
- ◆ May be ordered through any major subscription service.

Cover Photograph: *Patagioenas leucocephala* (White-crowned Pigeon) nesting in a *Cocos nucifera* (Coconut Palm) in Key West, FL, USA, in 2015. Photograph © Susan Walker Allen.

URBAN NATURALIST

Board of Editors

Myla Aronson, Rutgers University, New Brunswick, NJ, USA
Joscha Beninde, University of Trier, Trier, Germany
Andrea Larissa Boesing, Universidade Estadual de Londrina, Parana, Brazil
Sabina Caula, Universidad de Carabobo, Naguanagua, Venezuela
Sylvio Codella, Kean University, Union New Jersey, USA
Julie Craves, University of Michigan-Dearborn, Dearborn, MI, USA
Rebecca W. Dolan, Friesner Herbarium and the Center for Urban Ecology, Butler University, Indianapolis, IN ... Managing Editor
Ana Faggi, Universidad de Flores/CONICET, Buenos Aires, Argentina
Keith Goldfarb, GoldRush Science Services, Steuben, ME, USA ... Editor-in-Chief
Chad Johnson, Arizona State University, Glendale, AZ, USA
Madhusudan Katti, North Carolina State University, Raliegh, NC, USA
Erik Kiviat, Hudsonia, Bard College, Annandale-on-Hudson, NY, USA
Sonja Knapp, Helmholtz Centre for Environmental Research–UFZ, Halle (Saale), Germany
David Krauss, City University of New York, New York, NY, USA
Mark Laska, Great Ecology, San Diego, CA, USA
Susannah Lerman, University of Massachusetts, Amherst, MA, USA
Joerg-Henner Lotze, Eagle Hill Institute, Steuben, ME, USA ... Publisher
Kristi MacDonald, Hudsonia, Bard College, Annandale-on-Hudson, NY, USA
Ian MacGregor-Fors, Insituto de Ecología Mexico, Veracruz, Mexico
Brooke Maslo, Rutgers University, New Brunswick, NJ, USA
Mark McDonnell, Royal Botanic Gardens Victoria and University of Melbourne, Melbourne, Australia
Mike McKinney, University of Tennessee, Knoxville, TN, USA
Mitchell Pavao-Zuckerman, University of Arizona, Tucson, Arizona, USA
Joseph Rachlin, Lehman College, City University of New York, New York, NY, USA
Travis Ryan, Center for Urban Ecology, Butler University, Indianapolis, IN, USA
Michael Strohbach, Technische Universität Braunschweig, Institute of Geoecology, Braunschweig, Germany
Katalin Szlavecz, Johns Hopkins University, Baltimore, MD, USA
Paige Warren, University of Massachusetts, Amherst, MA, USA
Jill Weber, Eagle Hill Institute, Steuben, ME, USA ... Production Editor
Alan Yeakley, Portland State University, Portland, OR, USA
Iriana Zuria, Universidad Autónoma del Estado de Hidalgo, Hidalgo, Mexico

The *Urban Naturalist* (ISSN # 2328-8965) is published by the Eagle Hill Institute, PO Box 9, 59 Eagle Hill Road, Steuben, ME 04680-0009. Phone 207-546-2821, FAX 207-546-3042. E-mail: office@eaglehill.us. Webpage: www.eaglehill.us/urna. Copyright © 2017, all rights reserved. Periodical postage paid in Steuben, ME and additional mailing offices. **Special issue proposals are welcome.** On-line secure subscription ordering: rate per year - \$20 regular, \$15 students, \$80 organizations. **Authors:** submission guidelines are available at www.eaglehill.us/una. **Co-published journals:** The *Northeastern Naturalist* (ISSN 1092-6194 [print], ISSN 1938-5307 [online]), the *Southeastern Naturalist* (ISSN 1528-7092 [print], ISSN 1938-5412 [online]), and the *Caribbean Naturalist* (ISSN 2326-7119), journals with separate Boards of Editors. The Eagle Hill Institute is a tax exempt 501(c)(3) nonprofit corporation of the State of Maine (Federal ID # 010379899).

New Records of White-Crowned Pigeon Nesting in Urban Key West and Miami, Florida

Ricardo Zambrano^{1,*} and Thomas F. Sweets²

Abstract - *Patagioenas leucocephala* (White-crowned Pigeon) in Florida nest on remote mangrove islands in the extreme southern portion of the state. In 2013, 2 flightless young were found on a sidewalk close to a busy tourist area in Key West. In 2014, several active nests were found on palm trees located within the grounds of beach-front hotels, also close to the main tourist section of Key West. In 2015, 1 flightless chick was found in urban central Miami. Prior to these occurrences, White-crowned Pigeons had never been confirmed nesting in heavily urbanized and commercial areas. Hurricanes that hit South Florida in 2005, destroyed much of the species' historic nesting habitat. The habitat damaged by the hurricanes has yet to recover completely, which may be a factor influencing the observed nesting by the species in areas with high levels of human disturbance.

In Florida, *Patagioenas leucocephala* L. (White-crowned Pigeon) is declining and listed as a threatened species (Florida Fish and Wildlife Conservation Commission 2016a). With few exceptions, White-crowned Pigeons nest in remote or undeveloped areas. In Florida, the pigeon nested historically almost exclusively on remote, tidally inundated *Rhizophora mangle* L. (Red Mangrove) and *Avicennia germinans* L. (Black Mangrove) islands in the Key West National Wildlife Refuge (KWNWR), Great White Heron National Wildlife Refuge (GWHNWR), Florida Bay, Barnes Sound, Card Sound, and Biscayne Bay (Bancroft and Bowman 2001, Florida Fish and Wildlife Conservation Commission 2013). A few recent observations have confirmed nesting on the Florida mainland (Florida Fish and Wildlife Conservation Commission 2016b). The White-crowned Pigeon is a habitat generalist in its breeding range in Puerto Rico, Cayman Islands, Dominican Republic, and the Bahamas. The pigeon feeds on the fruits and seeds of a wide variety of plant species and nests semi-colonially or individually in mangrove forests, subtropical moist and dry forests, or offshore islands with dry seasonal forest vegetation (Arendt et al. 1979, Bancroft and Bowman 2001, Wiley 1979, Wiley and Wiley 1979). Wiley and Wiley (1979) recorded nesting White-crowned Pigeons on remnant coastal rainforest on the grounds of a resort in Puerto Rico and Strong et al. (1991) found 1 nest in 1990, in a development in northern Key Largo, but gave no details regarding the proximity of the nest to residential or commercial areas. We report here the details of at least 5 nesting attempts documented during 2013–2015, in urban areas in southern Florida.

¹Florida Fish and Wildlife Conservation Commission, 8535 Northlake Boulevard, West Palm Beach, FL 33460. ²Key West Wildlife Center, 1801 White Street, Key West, FL 33040.

*Corresponding author - ricardo.zambrano@myfwc.com.

On 13 June 2013, two flightless White-crowned Pigeon young were found on a sidewalk in the busy tourist section of Key West, Florida, 1 block from the intersection of Wall Street and Duval Street. No nests were found on nearby trees despite intensive searches. The nearest known nesting colony to this site is located 5 km offshore on a mangrove island in the KWNWR. The young were rehabilitated and released once capable of flying. On 7 May 2014, a near-flight-capable juvenile was found on the ground at a beachfront hotel on Front Street, Key West, about 0.25 km from Wall Street. During a search of the surrounding trees, we detected an adult White-crowned Pigeon on a nest atop a *Cocos nucifera* L. (Coconut Palm) and on 22 May 2014, we found nesting adults on 3 different Coconut Palms situated around the swimming pools of this hotel and one adjacent to it. We discovered 2 more flightless young below Coconut Palms at these 2 hotels on 16 June 2014 and 4 July 2014. The young were rehabilitated until they could fly and feed on their own and then were released. On 10 April 2015, a White-crowned Pigeon was turned over to the Florida Fish and Wildlife Conservation Commission (FWC) by a Miami resident through the Pet Amnesty program. The resident found the pigeon as a downy nestling outside her residence on SW 23rd Street, Miami, and had cared for it for 6 months after it was misidentified as a guan (Cracidae), a family of birds not native to Florida.

The observed nesting behavior in urban areas is unusual for several reasons. White-crowned Pigeons commonly nest semi-colonially on tidally inundated mangrove islands in Florida, which provide some protection from predators such as *Procyon lotor* L. (Raccoon) (Bancroft and Bowman 2001, Strong et al. 1991). All of the Key West nests were found on individual trees, with only 1 nest per tree. Further, White-crowned Pigeons are extremely skittish and easily flushed from both nesting and foraging areas (Bancroft 1996, Bancroft and Bowman 2001). All of the nests found in Key West and the nestling found in Miami were in heavily trafficked streets and sidewalks, recreation areas, or in densely populated residential areas. One possible explanation for the observed nesting behavior may be the loss of nesting habitat that occurred in the KWNWR and GWHNWR as a result of Hurricane Dennis and Hurricane Wilma in 2005 (Wilmsers 2011). Counts of White-crowned Pigeon nests within the KWNWR and GWHNWR during 2000–2011 were lowest shortly after the hurricanes in 2006 (Wilmsers 2011). The nesting habitat in the GWHNWR has recovered more quickly than the mangrove islands in the KWNWR, but foraging areas are readily available in the Key West area (Wilmsers 2011). Thus, behavioral adaptations to human disturbance coupled with greater availability of food resources may also play a role in urban nesting.

Predation pressures may also be influencing this shift in nesting habitat. Strong et al. (1991) found that Raccoons influenced White-crowned Pigeon nesting locations in Florida Bay. The presence and abundance of mammalian predators in the KWNWR and GWHNWR is not known, but if predation is high it may explain why the White-crowned Pigeons have started nesting in urban areas. Urban areas tend also to have high abundance of Raccoons (Prange et al. 2003); but the pigeons may avoid predation in Key West by nesting on Coconut Palms, which average 6–9 m in

height and have smooth trunks that are difficult for Raccoons to climb. Wiley and Wiley (1979) similarly reported that the majority of White-crowned Pigeon nests at the resort in Puerto Rico were on *Roystonea borinquena* O.F. Cook (Royal Palm). In contrast, White-crowned Pigeon nests on mangrove islands are 1–2 m above ground (Strong et al. 1991).

National Audubon Society personnel, FWC staff, and breeding-bird survey volunteers have all done extensive field work in the mainline Keys and had not detected any additional urban nesting prior to these observations (Florida Fish and Wildlife Conservation Commission 2016b, Strong et al. 1991). Similarly, wildlife rehabilitators in the Florida Keys and in mainland Florida had never admitted any flightless White-crown Pigeon young to their facilities. More surveys are needed in southern Florida to determine if nesting in urban areas is an increasing trend or an anomaly. If the former is the case, future research should examine productivity of urban nests and their vulnerability to predation and human disturbance. This information may assist wildlife managers in adequately protecting White Crowned Pigeons in urban areas and may help with the management and recovery of this species.

Acknowledgments. We thank C. Faulhaber, K. Miller, A. Strong, and anonymous reviewers for their comments on an earlier version of the manuscript.

Literature Cited

- Arendt, W.J., T.A. Vargas Mora, and J.W. Wiley. 1979. White-crowned Pigeon: Status rangewide and in the Dominican Republic. *Proceedings from the Annual Conference of Southeast Associations of Fish and Wildlife Agencies* 33:111–122.
- Bancroft, G.T. 1996. White-crowned Pigeon (*Patagioenas leucocephala*). Pp. 258–266, *In* J.A. Rodgers Jr., H.W. Kale II, and H.T. Smit (Eds.). *Rare and Endangered Biota of Florida, Volume V. Birds*. University Press of Florida, Gainesville, FL. 688 pp.
- Bancroft, G.T., and R. Bowman. 2001. White-crowned Pigeon. No. 596, *In* A. Poole (ed.). *The Birds of North America online*. Cornell Lab of Ornithology, Ithaca, NY. Available online at <http://bna.birds.cornell.edu/review/species/596/articles/introduction>. Accessed 5 February 2016.
- Florida Fish and Wildlife Conservation Commission. 2013. A species action plan for the White-crowned Pigeon. Tallahassee, FL. 27 pp.
- Florida Fish and Wildlife Conservation Commission. 2016a. Florida's endangered and threatened species. Available online at <http://myfwc.com/media/1515251/threatened-endangered-species.pdf>. Accessed 30 January 2017.
- Florida Fish and Wildlife Conservation Commission. 2016b. White-crowned Pigeon (*Columba leucocephala*) Breeding Bird Atlas. Available online at http://legacy.myfwc.com/bba/docs/bba_WCPI.pdf. Accessed August 22, 2016
- Prange, S., S. Gehrt, S., and E. Wiggers. 2003. Demographic factors contributing to high Raccoon densities in urban landscapes. *The Journal of Wildlife Management*, 67:324–333.
- Strong, A.M., R.J. Sawicki, and G.T. Bancroft. 1991. Effects of predator presence on the nesting distribution of White-crowned Pigeons in Florida Bay. *Wilson Bulletin* 103:415–425.

- Wiley, J.W. 1979. The White-crowned Pigeon in Puerto Rico: Status, distribution, and movements. *Journal of Wildlife Management* 43:402–413.
- Wiley, J.W., and B.N. Wiley. 1979. The biology of the White-crowned Pigeon. *Wildlife Monographs* 64:3–54.
- Wilmers, T. 2011. Flight-line counts of nesting White-crowned Pigeons (*Patagioenas leucocephala*) and the impact of hurricanes in the Florida Keys National Wildlife Refuges, 2000–2011. Technical report to the US Fish and Wildlife Service. Big Pine Key, FL. 34 pp.