

**IMPACT OF CYCLONE REMAL ON URBAN CROWS AT RAMNA PARK,
DHAKA, BANGLADESH**

Puja Mondal¹, Md. Fahim Muntasir² and Sajib Biswas^{3*}

Department of Zoology, Jagannath University, Dhaka-1100, Bangladesh

Urban birds inhabit highly modified environments that are shaped by human activities. Despite their ability to persist in this habitat, they remain vulnerable to multiple anthropogenic pressures, including poor air quality, reduced habitat availability, pollution, and human disturbances (Marzluff *et al.*, 2018; Aronson *et al.* 2014). These anthropogenic pressures can negatively affect urban bird populations by reducing survival rates (McKinney, 2008; Chace & Walsh, 2004). In addition to anthropogenic threats, extreme weather events such as hurricanes, cyclones, floods, and storms are increasingly recognized as major drivers of wildlife mortality worldwide (Association of Avian Veterinarians, 2021; Wiley & Wunderle, 1993). Cyclones can generate strong winds, heavy rainfall, debris falling, and sudden temperature changes, all of which can directly or indirectly affect birds (Wiley and Wunderle, 1993). Despite this, the combined impact of extreme weather and urban pressures on bird populations remains poorly understood. Ramna Park (23°44'15.4"N, 90°24'04.6"E), a key urban green space in Dhaka, Bangladesh, has experienced a decline in avian diversity from 50 to 34 species over the past six years, largely due to anthropogenic pressures such as pollution, construction activities, and human disturbance (Jaman *et al.*, 2021; Rajia *et al.*, 2015). In late May 2024, Cyclone Remal struck Bangladesh, bringing heavy rainfall and affecting coastal districts as well as inland central regions of the country (Omar & Matsuyuki, 2026; Mollah *et al.*, 2024). During Cyclone Remal, Dhaka experienced a minimum temperature of 21.7 °C, a maximum wind speed of 53.2 km h⁻¹, and 116 mm of rainfall recorded within hours during the peak of storm-associated precipitation on 27 May 2024 (Weather Underground, 2024; United News of Bangladesh, 2024) Here, we report observations of the impacts of Cyclone Remal on urban birds at Ramna Park, with particular attention to crows.

*Author for correspondence: <sajib07jnu@gmail.com>; ²Department of Economics, Jagannath University, Dhaka-1100, Bangladesh, ³Laboratory of Animal Behaviour and Conservation, College of Life Sciences, Nanjing Forestry University, Nanjing, Jiangsu, China
©2026 Zoological Society of Bangladesh DOI: <https://doi.org/10.3329/bjz.v54i1.92181>



Fig. 1. Mortality of urban birds at Ramna Park, Dhaka, following Cyclone *Remal* (30 May 2024). (A) Dead juvenile House Crows. (B) Dead juvenile Large-billed Crow. (C) Fallen tree branches with House Crow nest (yellow highlight), indicating nest collapse. (D) Dead juvenile Black Kite (Photo Credit: Sajib Biswas).

During a post-cyclone survey on 30 May 2024 at 1307 h, an unusual mortality event of urban birds was recorded at Ramna Park, Dhaka (Fig. 1). A total of 51 birds were found dead, including 45 House Crows (*Corvus splendens*), 5 Large-billed Crows (*Corvus macrorhynchos*), and 1 Black Kite (*Milvus migrans*). Species identification was based on external morphological characteristics following online database eBird (Sullivan *et al.*, 2009). Age class was determined from plumage characteristics and other morphological features, and all recorded individuals were identified as juveniles. Most of the carcasses were found under nesting trees, with no visible signs of predation or poisoning. Although other bird species and Indian flying fox (*Pteropus medius*) were present in that area, crow carcasses were more

frequently recorded, likely due to their exposed nesting in urban canopy trees and nest characteristics, which increase vulnerability of juveniles. Juvenile birds were particularly vulnerable during extreme weather events, probably due to limited flight capability, poor thermoregulation, and dependence on nest structures (Arct *et al.*, 2025). In addition, juvenile crows are relatively large conspicuous, making their mortality more detectible compared to smaller or cavity-nesting species and roosting flying mammals. Mortality was therefore most likely cyclone-related including nest collapse, falling branches, hypothermia, and exhaustion following prolonged exposure to heavy rain and wind (Wiley and Wunderle, 1993; Kennedy, 1970). Similar mortality has been observed during Cyclone Ilsa (April 2023) which has also been associated with severe avian losses, including an estimated 80–90% mortality in seabird populations on Bedout Island, Australia, underscoring the potential severity of cyclone impacts (Lavers *et al.*, 2024).

This report documents a rare instance of cyclone-induced mortality among urban corvids in Bangladesh and highlights the need for post-disaster wildlife monitoring in urban green spaces. With climate change expected to increase the frequency and intensity of cyclones in South Asia, such observations are important for understanding and mitigating the impacts of extreme weather on urban biodiversity.

Acknowledgment: We thank the park authorities for their support and cooperation during the study. We also sincerely acknowledge The Explorers Club, USA, for providing financial support that facilitated the fieldwork.

LITERATURE CITED

- ARCT, A., MARTYKA, R., MILER, K., SKORB, K., GUSTAFSSON, L., and DROBNIAC, S. 2025. The impact of weather conditions on avian breeding performance: insights from along-term study. *Frontiers in Zoology*. **22**: 23. <https://doi.org/10.1186/s12983-025-00569-z>
- ASSOCIATION OF AVIAN VETERINARIANS. As per 2021. <https://www.aav.org/blogpost/1525799/378939/Flooding-Hurricane-Season-and-Extreme-Weather-Impacts-on-Wild-Birds>.
- ARONSON, M.F.J., LA SORTE, F.A., NILON, C.H., KATTI, M., GODDARD, M.A., LEPCZYK, C.A., WARREN, P.S., WILLIAMS, N.S.G., CILLIERS, S., CLARKSON, B., DOBBS, C., DOLAN, R., HEDBLUM, M., KLOTZ, S., LOUWE KOOIJMANS, J., KÜHN, I., MACGREGOR-FORS, I., MCDONNELL, M., MÖRTBERG, U., PYŠEK, P., SIEBERT, S., SUSHINSKY, J., WERNER, P. and WINTER, M. 2014. A global analysis of the impacts of urbanization on bird and plant diversity reveals key anthropogenic drivers. *Proceedings of the Royal Society B*. **281**: 20133330. <https://doi.org/10.1098/rspb.2013.3330>
- JAMAN, M.F., SARKER, A.R., ALAM, M., RAHMAN, M., RABBE, M.F., RANA, M.A. SHOME, A. and HOSSAIN, M. 2021. Species diversity, distribution and habitat utilization of urban

- wildlife in a megacity of Bangladesh. *Biodiversity Journal*. **12**: 635-653p. <https://doi.org/10.31396/Biodiv.Jour.2021.12.3.635.653>.
- LAVERS, J.L., MEAD, T.M., FIDLER, A.L. and BOND, A.L. 2024. Cyclone Ilsa in April 2023 led to significant seabird mortality on Bedout Island. *Communications Earth & Environment*. **5**(1). <https://doi.org/10.1038/s43247-024-01342-6>
- MOLLAH, A.H., SHOYON, H.H. and ROY, A. 2024. Assessing socioeconomic vulnerability of cyclone remal-affected coastal communities in Bangladesh. *Natural Hazards*. 121(6): 6571–6596p. <https://doi.org/10.1007/s11069-024-07058-2>
- MARZLUFF, J.M., BOWMAN, R., and DONNELLY, R. 2018. Avian ecology and conservation in an urbanizing world. *Springer*. New York.
- MCKINNEY, M.L. 2008. Effects of urbanization on species richness: a review of plants and animals. *Urban Ecosystems*. 11(2): 161–176p. <https://doi.org/10.1007/s11252-007-0045-4>
- OMAR, M.A.I. and MATSUYUKI, M. 2026. Factors influencing evacuation timing during Cyclone Remal. *Urban and Regional Planning Review*. **13**(0), 113–138p. <https://doi.org/10.14398/urpr.13.113>
- RAJIA, S., ALAM, M.M., CHOWDHURY, G.W., AKASH, M. and ISLAM, M.A., 2015. Status and diversity of birds of Ramna Park, Dhaka, Bangladesh. *Bangladesh Journal of Zoology*, **43**: 291–301p. <https://doi.org/10.3329/bjz.v43i2.27399>.
- SULLIVAN, B.L., WOOD, C.L., ILFF, M. J., BONNEY, R.E., FINK, D. AND KELLING, S. 2009. eBird: a citizen-based bird observation network in the biological sciences. *Biological Conservation*. **142**: 2282–2292p. <https://doi.org/10.1016/j.biocon.2009.05.006>
- KENNEDY, R.J. 1970. Direct effects of rain on birds: a review. *British Birds*. **63**: 401-414p.
- UNITED NEWS OF BANGLADESH. 2024. Cyclone-induced rainfall causes waterlogging in Dhaka. United News of Bangladesh. As per 27 May 2024. <https://unb.com.bd/category/Bangladesh/cyclone-induced-rainfall-causes-waterlogging-in-dhaka/136313> United News Bangladesh
- CHACE, J.F. and WALSH, J.J. 2006. Urban effects on native avifauna: a review. *Landscape and Urban Planning*. **74**(1): 46–69p. <https://doi.org/10.1016/j.landurbplan.2004.08.007>
- WEATHER UNDERGROUND. 2024. Dhaka, Bangladesh weather history. As per 27 May 2024. <https://www.wunderground.com/history/daily/bd/dhaka/VGTJ/date/2024-5-28>
- WILEY, J.W. and WUNDERLE, J.M.JR. 1993. The effects of hurricanes on birds, with special reference to Caribbean islands. *Bird Conservation International*. **3**(4): 319–349p. <https://doi.org/10.1017/S0959270900002598>

(Manuscript received on 9 March 2026 revised on 25 April 2026)