

Breeding Performance and Nest Site Selection of the House Crow (*Corvus splendens*) Across the District Haripur, KPK, Pakistan

Kamal Ahmed Khan¹, Aroosa Shabir²

¹College of Life Sciences, Shandong Normal University, Jinan 250014, P.R. China

²Department of Zoology, Hazara University Mansehra, Pakistan

*E-mail: khan_kamal98@yahoo.com

ABSTRACT

Introduction: The house crow (*Corvus splendens*) is a well-adopted bird species living close to human settlement. It is the representative of the order Passeriformes, belonging to the family Corvidae and the genus *Corvus*. There are three species included in the genus *Corvus* i.e. *Corvus Splendens* usually identified as House crow, *Corvus monedula* as Jackdaw crow, and the *Corvus corone* recognized as Carrion crow (Grimmett et al., 1998).

Objectives: Therefore the present study was planned to investigate nest building, and nest reusing behavior along with effects of anthropogenic activities and another feeding resource on nest formation, at Tehsil and District Haripur, Khyber Pakhtunkhwa.

Methodology: This study was conducted in the District Haripur, Khyber Pakhtunkhwa. In June the maximum temperature of 45 °C while the lowest humidity of 19% was recorded and in January minimum temperature of 3°C and the highest humidity of 70% was recorded. The Natural resources consist of forests, agriculture fields, rangelands, and water bodies in District Haripur (Ahmad et al., 2014). For the collection of data, the field surveys were conducted twice about the use and reuse of the nest by a crow. Some introductory surveys were done before the breeding season and during the breeding season, detailed surveys were conducted. 106 nests were spotted during the field survey, out of which 96.22% nests were old, whereas few nests (3.77%) were found new. The information related to habitat, nest direction, disturbance factor, tree height, treewidth, the distance of nest from water and food resources, and disturbance factor were collected. GPS (matrix 30s Garmin) was used to collect coordinates information of nesting sites. For statistical analysis R v.4.1.1 was used.

Conclusion / Results: The highest number of old nests were documented from Agriculture land (n=75), followed by Forest (n=17), and scrub (n=3), However, roadside (n=2), and houses (n=2) respectively, while new nests were from Agriculture land (n=3) and forest (n=1). Non-significant relationship ($P>0.05$) was found between the type of nest and habitat (Chi-Square Test= 0.551, $P>0.05$). It was found that house crows mostly preferred for reusing old nests (92.54%), which might play an important role in energy conservation for breeding success, although few nests were found empty (7.54%), which were not reused by crows during the breeding season. Our study also reported that the poplar (*Populus*) tree was the most (32.07%) favorite tree species used to build a nest by house crow. The maximum number of the nests were directed toward the West (n=34) followed by North (n= 27) East (n=23), and the lowest number of nests were faced towards South (n= 19). However, no significant relationship ($P>0.05$) was noticed between nest type and direction of the nest. Mostly old nests were found in high disturb areas (n= 43), followed by Normal (n=39), and low disturbed areas (n=20), whereas, most of the new nests (n=3) were found in High disturbed locations, and only a single nest was found in a low disturbed condition. Most of the active nests of house crow were identified on the agricultural land (n=71), followed by forest (n= 18), scrub (n= 3), house (n=2), and barren

land ((n= 1), whereas inactive nests, were mostly from agriculture land (n=7), and only single nest from roadside respectively. Most house crows preferred to reuse nests at highly disturbance areas (n=40), followed by medium (n=20) and low (n=20) an area where disturbance factors were low. However non-significant associations ($P>0.05$) were found between nest reuse and disturbance factor. The poplar (*Populus*) tree (32.07%) was frequently used to build nests followed by *A. modesta* (15.09%), Sheshum, *Morus alba*, Paper mulberry, *Melia azedarach*, *Batkurer*, *Chinaar*, *Eucalyptus*, and Soap tree as previously reported by Allan and Davies, (2005) that 12 trees species were used by house crows Dutta (2007) found that 13 different plant species, while (Ali, 2008) found that house crow used 23 types of trees used to build nests in Islamabad, Pakistan.

This study recommended that a detailed study regarding the impact of house crow on human health and the population of other bird species be needed. The phenomenon of reusing the nest is a significant mechanism adopted by birds especially noticed in house crow as this behavior helps them to conserve energy and improves breeding proficiency. It is suggested that the destruction of the old nests might be used to control the invasive bird species.

Keywords: House crow, Nest site selection, reuse of old nest, breeding season, breeding success.

REFERENCES

1. Ahmad, Waqas, et al. "Optimization of waste water treatment process in industry "a case study of Hattar Industrial Estate Haripur"." *Pakistan Journal of Analytical & Environmental Chemistry* 15.1 (2014): 7.
2. Ali, Habib. Behavior and ecology of the house crow (*Corvus splendens*) in Islamabad-Rawalpindi and adjoining areas. Diss. UNIVERSITY OF AGRICULTURE, FAISALABAD PAKISTAN, 2008.
3. Allan, David G., and Greg B. Davies. "Breeding biology of house crows (*Corvus splendens*) in Durban, South Africa." *Ostrich-Journal of African Ornithology* 76.1-2 (2005): 21-31.
4. Dutta, SK "Nest site selection of House Crows on Diamond harbor road in Kolkata, India." (2007).
5. Grimmett, Richard, Carol Inskipp, and Tim Inskipp. *Birds of the Indian Subcontinent: India, Pakistan, Sri Lanka, Nepal, Bhutan, Bangladesh, and the Maldives*. Bloomsbury Publishing, 2016.
6. R Core Team, R: A Language and Environment for Statistical Computing. Retrieved from. 2021.