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# Nesting of an Alien Invasive House Crow *Corvus splendens* in Verges along Arterial Roads in Dar es Salaam, Tanzania

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**Abstract**

In most cities where little of the original natural vegetation remains, road verges act as home to many urban wildlife. However, the use of road verges for alien avifauna such as House Crow (*Corvus splendens*) has not been fully documented. This study, conducted between June and July 2021 investigated nesting preferences of the House Crow with particular regards to different verge subdivisions of arterial roads and tree species in Dar es Salaam, Tanzania. Nests were searched in 1813 trees (=42 species) along a stretch of 20 km, and 159 trees (=15 species) were nested with *C. splendens*. Overall, a total of 257 nests were found on site of which 127 were active. The mean number of nests per tree crown did not vary significantly among the road subdivisions. Nests were positioned between 4 and 16 m above ground in trees with 7.71±2.56 m canopy spread and a mean height of 9.97±2.28 m. For nesting, three tree species were dominant, eight were common, and 31were rare. However, majority of the tree species with the highest nest use ratio were not dominant indicating nesting preference. It is therefore important to consider the influence of tree species on the population of the House Crow during planning for urban verge development. Additionally, managing tree crown is among the best practices to discourage House Crow nesting in urban road verges.

**Keywords:** Alien species; Arterial roads; House Crow; Nest tree preference; Road verges subdivisions

## Introduction

Verges are formed by plants mostly found at the hedges and edges to mark boundaries. Road verges are vegetated strips which often form distinctly managed borders that separate road reserve from adjacent land use (Phillips et al. 2020). The purpose of road verges includes ornamental, increasing safety and comfort of footway users, protection from spray resulting from passing vehicles, and a space or shade for benches and public transport users. Verges are also often part of the management of urban runoff and control of erosion on road banks. Consequently, road reserves and associated verges are public property, usually managed by the municipal authorities or abutting property owners and are usually dominated by exotic plant species (Kendle and Rose 2000, Kuruneri-Chitepo and Shackleton 2011, Shackleton 2016). Verges along roads are usually planted by state departments or municipal authorities, individuals residing adjacent to road reserves and by business owners. In many developed countries, urban road reserves are well managed forming well wooded habitats (Fernández-Juricic 2000, Phillips et al. 2021) and are associated with improved quality of life (Santa Monica 2017). The size and plant species composition of the road reserves depend on the size of the road and management plans, respectively. Many arterial roads in large cities have multiple traffic lanes divided by a central or median

reservation. Some of the roads have footways and beyond which there is a verge boundary.

In most cities where little of the original natural vegetation remains, road verges together with urban parks and gardens act as home to many urban wildlife (Kociolek et al. 2011, Peris and Montelongo 2014, Barr et al. 2021). The wooded road reserves provide nesting (Zhou et al. 2020) and roosting sites (Peh and Sodhi 2002) for local avifauna, act as corridors for canopy bird species (Fernández-Juricic 2000) and foraging sites for a variety of organisms (Lepczyk et al. 2017, Wood and Esaian 2020). Both generalist and opportunistic residents and migratory bird species use wooded road strip corridors when appropriate (Gray and van Heezik 2016, Pena et al. 2017). However, the invasion of problematic bird species such as House Crow *Corvus splendens* in urban areas has resulted into the decline in use of the urban verges by native wildlife (Baker and Baker 2002, John and Kagembe 2022). The House Crow is indigenous to the Indian Subcontinent including India, Myanmar, Bangladesh, Nepal, Sri Lanka and Pakistan (Ali 2008). In the areas where the House Crow is present, its density is much higher in cities than in rural areas because of its association with human settlements (Dutta and Raut 2015). Introduced in Africa in the 1890s (Long and Tingay 1981), the House Crow has now spread over the entire eastern coast of Africa from Suez (Egypt) to Cape Town (South Africa) (Ryall 2016). The House Crow is aggressive, and it scares off other birds from feeding, roosting and nesting sites (Chongomwa 2011, Kaur and Khera 2020). Due to its negative ecological and socioeconomic impacts, it has been subjected to population control programmes in its alien range (Suleiman and Taleb 2010).

Although the breeding ecology of the House Crow in non-native urban areas in Africa has been studied, e.g., South Africa (Allan and Davies 2005), Kenya (Chongomwa 2011) and Tanzania (Shimba and Jonah 2017, Kimario et al. 2020), little is known about the use of arterial road verges for nesting. Allan and Davies (2005) found very few nests of House Crow (4.3%, *n*=93) in Durban Road verges. Even though the House Crow shows affinity to certain species of trees for nesting in its native range (Dutta and Raut 2015) and some of its introduced range (Soh et al. 2002), such information is limited in Tanzania (Shimba and Jonah 2017). Moreover, there is no published information on the use of trees in different verge subdivisions of road reserves. It can be hypothesized that the central reservations, which are considered to have little human influences, are safer and thus more preferred for nesting birds than road verge boundaries. The main goal of this research was to learn more about the nesting preferences of House Crow with particular regards to different road verge subdivisions and tree species in urban settings. Knowing the specific locations and tree species preferred by these invasive corvids during nesting can be a very important starting point to develop successful management plans in the affected areas. This contribution reports on the nesting of the House Crow in arterial road verges in a fast-growing city in East Africa region. The study also presents some House Crow nest-site selection parameters.

## Materials and Methods

### Study area

Dar es Salaam city is found in eastern Tanzania at 6°51'S and 39°18'E. It covers a total area of 1800 km$^2$, of which 1350 km$^2$ is landmass including its offshore islands; the remainder of the area is covered by water (Baker and Baker 2002). It occupies 0.19% of Tanzania mainland, stretching about 100 km along the coast. Due to its proximity to the equator and the warm Indian Ocean, the city experiences tropical climate, typified by hot and humid weather with seasonal and daily variation throughout much of the year. The area experiences a bimodal pattern characterised by short rains from November to December and long rains during March and April. Annual mean rainfall is about 1050 mm and air temperature of 30 °C while air humidity usually ranges from 67 to 96 % (Ndetto and Matzarakis 2015).

The human population of Dar es Salaam has increased from 2.5 million in 2002, 4.36 million in 2012 to 5.38 million in 2022 (NBS

2022). Although the rate of population increase has declined from 5.6% in 2012 to 2.1% per annum in 2022, the high human population in Dar es Salaam is still of concern. Development statistics place Dar es Salaam metropolitan as the most industrialised and urbanised city in Tanzania, as well as one of the top ten fastest growing cities globally (Ndetto and Matzarakis 2015). The high human population in Dar es Salaam has created an urban sprawl, with very small remnants of natural habitats for biodiversity (Mkalawa 2016). Nonetheless, due to the presence of the Indian Ocean coast, and remnants of the original coastal thickets, Dar es Salaam is very rich in bird species. About 500 species have been recorded in Dar es Salaam and its environs (Harvey and Howell 1987), and the coastline supports about thousands of waders during the northern winters (Baker and Baker 2002). Some of the bird species occurring in Dar es Salaam are introduced species that have arrived in different ways: some have escaped from the controversial bird trade while others such as the House Crow were probably introduced intentionally. It is believed that British colonial authority introduced the House Crow from Bombay, hoping that as scavengers they would help in Zanzibar town cleanliness. The population of the House Crow has increased to undesirable level since its introduction (Harvey and Howell 1987, Baker and Baker 2002), and by 2009, the Dar es Salaam population was estimated to 1,000,000 individuals (MNRT 2010).

**Study sites**

Two arterial roads were selected: Julius Nyerere and Nelson Mandela, hereafter, named as Nyerere and Mandela, these are among the six multi-lane arterial roads in Dar es Salaam (John and Kagembe 2022). However, due to the ongoing roads expansion for Bus Rapid Transit (BRT) in Dar es Salaam, the median reservation verges of the rest of the arterial roads have recently been cleared for construction, and the verge boundaries are currently disturbed or with young trees. Each of the two selected arterial roads has two traffic lanes divided by a median reservation, with footways between the carriageways and service lane (especially along the Nyerere Road) and a verge boundary. Along the Mandela Road, a strip of 10 km from Kijazi Interchange to Benjamin Mkapa Stadium, and for the Nyerere Road, an equal length of 10 km from Mnazi Mmoja to Julius Nyerere International Airport were investigated (Figure 1). Mandela Road runs from the Central Business District (CBD) towards northwest direction whereas Nyerere Road runs from the City Centre/CBD to southwest of Dar es Salaam.

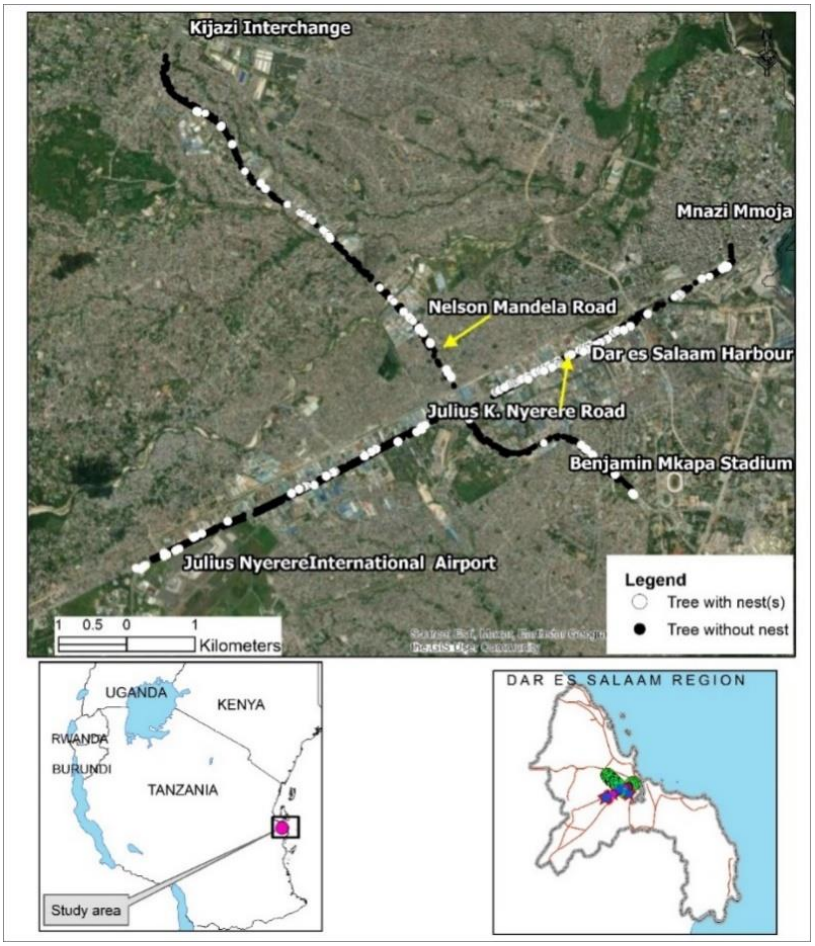


**Figure 1:** Distribution of trees (including House Crow nested trees shown by white circles) along the arterial roads in Dar es Salaam, Tanzania

**Data collection**

Nests were searched in the canopy of all plants above 3 m (hereafter termed as trees) in a strip of 10 km in each road between June and July 2021. A canopy less than 3 m high is too low for House Crow to nest especially in urban areas. Nests were searched in three road verge subdivisions; median reservation (Me), between carriageways and footways/service road (CVS) and in verge boundary (VBD). The width of Me varied from 1-4 m, CVS ranged from 1-3 m, and VBD ranged from 3-7 m depending on the lane width, lateral clearance, road side parking, presence of walkways and feeder roads. For nested trees, all nests were counted; tree height as well as nest height and the tree crown/canopy spread were estimated. Canopy was measured by a 50-m tape as an average of two diameters for tree canopy spread as an index. Tree height as well as nest height were estimated/measured in reference to a 12-m graduated pole. Nests were examined from the ground with the aid of binoculars [Bushnell, 10x42] to determine nest status. House Crow nests are large and most of them are transparent/see through from below. A nest was termed active if it possessed egg(s), chick(s) or an adult crow attending it. All trees with and without nests were geo-referenced by using hand-held Garmin GPSMAP 64*S* and plotted on a map (Figure 1).

**Data analyses**

Shapiro-Wilk test was first used to determine if the mean nest per tree crown data were normally distributed. Since the data were not normally distributed, Kruskal-Wallis test was used to examine variation in mean nest per crown along Me, CVS and VBD. Nest-site selection parameters; tree height, canopy spread and nest height were represented by means ± standard deviation (Mean ± SD). A multiple regression linear model was used to test the effect of tree height and canopy spread on the number of nests in tree crowns. To determine tree preference by nesting House Crow, the nested tree ratio, nest use ratio, species ratio, and species dominance were calculated as follows (Zhou et al. 2020):

- Nested tree ratio $= \frac{\text{No. of nested trees of a particular species}}{\text{Total No. of nested trees}}(\%)$,
- Nest use ratio $= \frac{\text{No. of nested trees of a particular species}}{\text{Total No. of trees of that perticular species}}(\%)$,
- Species ratio $= \frac{\text{No. of trees of a particular species}}{\text{Total No. of road lining trees}}(\%)$.

Tree species dominance refers to the degree of commonness of a particular species among all tree species along the study arterial road verges with a species ratio of ≥10% indicating dominant species, a species ratio of 1-9% indicating a common species, and a species ratio of ≤1% indicating a rare species. All statistical data analyses were performed using PAST vers 4.03 software (Hammer et al. 2001).

**Results**

**Nests in road verges**

From a total of 1813 trees examined for House Crow nests; 216 (22 nested) in Me, 611 (67 nested) in CVS and 986 (70 nested) in VBD, only 159 individual trees were nested. Overall, 257 nests (see Figure 1 for distribution) were recorded of which 127 (49.4%) were active. Most nests were found in VBD (128 nests) followed by CVS (92 nests) and Me (37 nests), respectively. However, there was no significant difference in mean number of nests per tree crown among the three road verge zones/subdivisions ($H$=2.661, $p$=0.142, Figure 2). The overall mean number of nests per tree crown was 1.62±1.26 ($n$=159) with a maximum of 12 nests in *Ficus benjamina* tree.

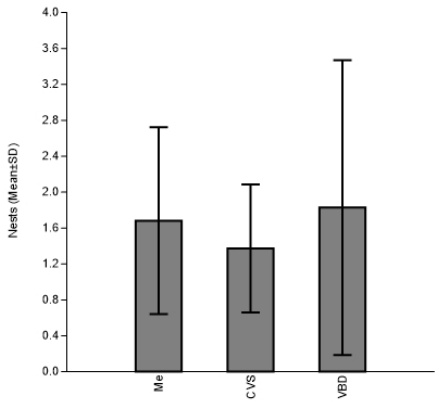


**Figure 2:** Distribution of House Crow nests and mean number of nests per tree crown in arterial road verge subdivisions in Dar es Salaam, Tanzania. Me; median reservation, CVS; between carriageways and footways/service road and VBD; verge boundary (VBD), and the bars represent standard deviation

**Nest-site characteristics**

The height of nested tree ranged from 6 to 17 m, the tallest being *Mangifera indica* and the shortest were *Peltophorum pterocarpum* and *Hura crepitans*, while nests were located between 4 m in *Terminalia mantaly* and 16 m in *Mangifera indica*. Of all the nested trees, *Azadirachta indica* had the widest average canopy spread of 12.5 m and the smallest was measured under *Polyalthia longifolia*. The means for tree heights, canopy spread and nest heights for nested trees are shown in Table 1. Neither tree height ($t$=0.921, $p$=0.359) nor tree canopy spread ($t$=0.441, $p$=0.659) correlated with the number of nests per tree crown, and the combined effect of both factors in determining the choice of the House Crow nesting was not significant ($F$=0.551, $p$=0.578).

**Table 1:** Dimensions of the nest-site characteristics of House Crow in verges along arterial roads in Dar es Salaam, Tanzania

| Nest-site characteristics | Mean±SD | Range | *n* |
|---|---|---|---|
| Tree height (m) | 9.97±2.28 | 6-17 | 159 |
| Canopy spread (m) | 7.71±2.56 | 1-12.5 | 159 |
| Nest height (m) | 8.21±2.02 | 4-16 | 257 |

Note: SD=Standard Deviation and n=total number of observations

**Nesting-tree species preference**

Overall, 1813 trees of 42 species were counted, including three dominant species, eight common species and 31 rare species, and the road verges in the study area were dominated by alien species, most of which are of tropical America and Asia origin (Table 2). Among the nested plant species, only two were native; *Tamarindus indica* and *Spathodea campanulata*.

Of the 1813 total trees investigated, the House Crow used only 159 trees from 15 species for nesting, with *A. indica* having the highest number of nested trees, and the highest nested tree ratio of 33.9% followed by *P. pterocarpum* and *T. mantaly* with nested ratios of 24.5% and 13.8%, respectively.

Only one tree for *Melia azedarach* and *S. campanulata* were recorded in this study, and each had one nest. All the tree species with the highest nest-use ratio (≥ 15%) except for the dominant *A. indica* (nest use ratio: 16%) were either common; *Pithecellobium dulce* (nest use ratio: 26%) and *T. mantaly* (nest use ratio: 15%) or rare; *F. benjamina* (nest use ratio: 60%), *Casuarina cunninghamiana* (nest use ratio: 38%) and *M. indica* (nest use ratio: 31%). The nest-use ratios and respective tree species ratios are shown in Table 2.

**Table 2:** Tree relative abundance and House Crow nesting in arterial road verges in Dar es Salaam, Tanzania. Ratios are used instead of percentage for clarity and the asterisk (*) indicates local native species, naturally occurring in the East Africa

| Tree species | Origin | Species ratio | No. of nested trees | Nested-tree ratio | Nest-use ratio |
|---|---|---|---|---|---|
| *Senna siamea* | South Asia | 0.1975 | 1 | 0.0063 | 0.0028 |
| *Azadirachta indica* | India and Sri Lanka | 0.1903 | 54 | 0.3396 | 0.1565 |
| *Polyalthia longifolia* | Asia | 0.1600 | 14 | 0.0881 | 0.0483 |
| *Terminalia mantaly* | Madagascar | 0.0811 | 22 | 0.1384 | 0.1497 |
| *Muntingia calabura* | Mexico south to Bolivia | 0.0767 | | | |
| *Cordia sebestena* | American tropics | 0.0684 | | | |

| **Tree species** | **Origin** | **Species ratio** | **No. of nested trees** | **Nested-tree ratio** | **Nest-use ratio** |
|---|---|---|---|---|---|
| *Peltophorum pterocarpum* | Indo-Malayan region | 0.0667 | 39 | 0.2453 | 0.3223 |
| *Pithecellobium dulce* | South America | 0.0254 | 12 | 0.0755 | 0.2609 |
| *Leucaena leucocephala* | Central America | 0.0243 | 1 | 0.0063 | 0.0227 |
| *Carica papaya* | Tropical America | 0.0177 | 1 | 0.0063 | 0.0313 |
| *Delonix regia* | Madagascar | 0.0171 | | | |
| *Mangifera indica* | India | 0.0088 | 5 | 0.0315 | 0.3125 |
| *Trichilia emetica** | East Africa | 0.0083 | | | |
| *Cananga odorata* | Southeast Asia and Australia | 0.0055 | | | |
| *Cocos nucifera* | Western Pacific | 0.0050 | | | |
| *Eucalyptus* spp | Exotic | 0.0050 | | | |
| *Casuarina cunninghamiana* | Eastern Australia and Pacific islands | 0.0044 | 3 | 0.0189 | 0.3750 |
| *Ficus thonningii** | East Africa | 0.0033 | | | |
| *Millingtonia hortensis* | South Asia and South East Asia | 0.0033 | | | |
| *Roystonea regia* | Mexico, Central America | 0.0033 | | | |
| *Terminalia superba* | Tropical Western Africa | 0.0033 | | | |
| *Acacia longifolia* | South-eastern Australia | 0.0028 | | | |
| *Ceiba pentandra* | Mexico, Central America, Northern South America, and West Africa | 0.0028 | | | |
| *Ficus benjamina* | Asia and Australia | 0.0028 | 3 | 0.0189 | 0.6000 |
| *Hura crepitans* | North and South America | 0.0028 | 1 | 0.0063 | 0.2000 |
| *Thevetia peruviana* | Central and South America | 0.0022 | | | |
| *Senna spectabilis* | South and Central America | 0.0017 | | | |
| *Albizia lebbeck* | Tropical Asia | 0.0011 | | | |
| *Tamarindus indica** | East Africa | 0.0011 | 1 | 0.0063 | 0.5000 |
| *Terminalia catappa* | Asia, Australia, Madagascar and Seychelles. | 0.0011 | | | |
| *Annona muricata* | America | 0.0006 | | | |
| *Citrus limon* | Asia | 0.0006 | | | |

| Tree species | Origin | Species ratio | No. of nested trees | Nested-tree ratio | Nest-use ratio |
|---|---|---|---|---|---|
| *Dichrostachys cinerea** | East Africa | 0.0006 | | | |
| *Enterolobium contortisiliquum* | South America | 0.0006 | | | |
| *Melia azedarach* | Western Asia and Himalayas | 0.0006 | 1 | 0.0063 | 1.0000 |
| *Persea americana* | Tropical America | 0.0006 | | | |
| *Psidium guajava* | Central America and South America | 0.0006 | | | |
| *Pteleopsis myrtifolia** | East Africa | 0.0006 | | | |
| *Sesbania sesban** | East Africa | 0.0006 | | | |
| *Spathodea campanulata** | Africa | 0.0006 | 1 | 0.0063 | 1.0000 |
| *Syzigium cummnii* | India and Tropical Asia | 0.0006 | | | |
| *Tabernaemontana divaricata* | South Asia, Southeast Asia and China | 0.0006 | | | |

## Discussion

### Nests in road verges

The House Crow uses road verges for nesting, suggesting that breeding sites are unlimited in Dar es Salaam. Many nests were found in VBD than in CVS and Me, but the mean number of nests per tree crown did not vary significantly. This is an indication that the House Crow will nest in any road verge subdivisions provided there are suitable trees. This is also because House Crow are accustomed to human (Soh et al. 2002). The use of road verges by House Crow in the coast of Eastern Africa has also been reported; Shimba and Jonah (2017) informed of the House Crow nesting in feeder roads in Dar es Salaam while Allan and Davies (2005) found nests of this species in road verges in Durban, in South Africa. Both single and multiple nests up to 12 were found in tree canopies and no other bird species nest, active or inactive, was located during this study. In Dar es Salaam, local nesting birds are persecuted (mobbed, their nests destroyed, while eggs and chicks are predated) by the House Crow (Baker and Baker 2002) and the species does not tolerate any other bird at its nesting sites. Similar to this study, Kaur and Khera (2020) in Punjab (India), found nesting of the House Crow to be monospecific in tree canopies. Many studies on House Crow (Allan and Davies 2005, Behrouzi-rad 2010, Chongomwa 2011, Awais et al. 2015, Shimba and Jonah 2017) have suggested solitary nesting to be common and noted that multiple nests are found on large trees with dense canopies. Multiple nests per tree crown in House Crow has been related to the shortage of suitable nesting trees (Madge and Burn 1993).

### Nest-site characteristics

In this study, the mean canopy spread, and tree height were 7.7 m and 9.97 m, respectively, and nests were located at the mean height of 8.21 m. Other studies have reported higher mean nested tree height compared to this study: e.g. 14.8 m in Pakistan (Awais et al. 2015), and 12.2 m in Lamabad-Rawalpindi (Ali 2008) though none of these studies was conducted along roads. Trees along the roads are periodically trimmed or removed and replanted following construction. In this study area, roads occupied few old or mature trees compared to public and private gardens (Shimba and Jonah 2017). Although canopy height and spread

have been documented to influence nest-site selection in House Crow (Awais et al. 2015, Shimba and Jonah 2017) they are least important when considered separately (Soh et al. 2002) because many other variables contribute to nest site selection by this species. In Singapore, Soh et al. (2002) used 11 preselected variables to show that the House Crow selected more urbanised and open areas, with higher disturbances, near bin and food centres, and nested in trees that had large crown volume, density and diameter.

The nest height in this study was far lower than what is reported by Shimba and Jonah (2017) in Dar es Salaam, which was 15.6 m, presumably, because their study was conducted largely in public gardens with unmaintained old trees. Also in Shimba and Jonah (2017) the tallest nesting trees recorded were coconut trees, which are uncommon in road verges. Moreover, the study by Shimba and Jonah (2017) was conducted at a time when the birds were being exterminated. These birds are capable of learning to avoid lower branches, or the eradication team may have removed lower nests. Allan and Davies (2005) reported a mean nest height of 13.5 m in Durban while in Mauritius nests were usually at the height of 10 m above the ground (Feare and Mungroo 1989, Ryall 1990). In Pakistan, Awais et al. (2015) reported a mean nest height of 11.8 m, and in Ilamabad-Rawalpindi, (Ali 2008) reported a mean height of 9.5 m. In addition to shorter trees along the arterial roads in Dar es Salaam, the lower nest height in this study could be a result of lack of direct human disturbances. Although the House Crow prefers to nest in high trees with large crown to avoid human persecution and to spot food sources from afar (Dutta and Raut 2015), this can differ depending on local conditions including safety.

**Nesting tree species preferences**

The House Crow chose to nest in 159 trees of 15 species, despite the presence of many trees of different species. Without considering their relative abundance along the arterial roads, six tree species: *A. indica*, *P. pterocarpum*, *T. mantaly*, *P. longifolia*, *P. dulce* and *M. indica* were the most nested trees in Dar es Salaam. The aforementioned tree species have also been reported as preferred nesting sites in the species' alien range: Durban (Allan and Davies 2005), Mauritius (Feare and Mungroo 1989), Mombasa (Chongomwa 2011), Dar es Salaam (Shimba and Jonah 2017), Singapore (Soh et al. 2002); and in its native range: Pakistan (Awais et al. 2015), Punjab (Kaur and Khera 2020), and Kolkata, India (Dutta and Raut 2015).

With exception of the dominant *A. indica*, the House Crow nested in common and rare tree species meaning that some abundant tree species were avoided. Thus, the abundance of some trees was not the only factor that influenced House Crow nesting in arterial road verges in Dar es Salaam. Zhou et al. (2020) reported similar observations for Scaly-breasted Munia *Lonchura punctulata* in Hainan Island (China), where only three plant species (dominant: *Pterocarpus indicus* and *F. benjamina*; common: *F. altissima*) were selected among the 17-tree species in the study area. This shows that despite many qualities for nesting trees that may influence birds' choice to nest in a particular tree, there is a certain level of tree species preferences. The reasons for selecting particular trees by the House Crow have been documented elsewhere to include tall size and evergreen nature (Kaur and Khera 2020), large crown volume, density and diameter (Soh et al. 2002). With exception of *T. indica* and *S. campanulata*, the rest of nested tree species in this study were introduced and, many originating from the Indian Subcontinent (Dharani 2019), the native range of the House Crow (Meininger et al. 1980). In Durban, about seven exotic tree species (*M. indica* having 35% of all nests, $n$=93) were selected by nesting House Crow, and only a few nests (5.4%) were located on five tree species native to South Africa (Allan and Davies 2005).

Road verges in Dar es Salaam may be of less use to native avifauna especially for nesting, mostly due to the presence of the House Crow and the dominance of exotic plant species. Avian species composition in urban areas tends to shift in response to presence of introduced tree species (Mills et al. 1989, Pavlik and Pavlík 2000). In areas where alien

invasive species such as the House Crow are absent, urban habitats have been found to provide refuge for species whose natural habitats have been diminished (Gavareski 1976, Rosenberg et al. 1987, Mills et al. 1989) and local avifauna are usually maintained in urban areas where native vegetation is preserved e.g., in Tucson; (Chace and Walsh 2006).

**Conclusion**

This study provides an insight on the road verge habitat species composition in Dar es Salaam and their roles in House Crow nesting. The road verges were dominated by introduced tree species which hosted many of the House Crow nests. The House Crow showed preference to certain plant species during nesting. It is therefore useful that during planning for road verges in areas invaded by House Crow such as the eastern Africa coast, the influence of different tree species on their population be considered. A policy of selecting native plant species should be embraced. To this end; Outwater et al. (2019) provide guidance on gardening of native plants of coastal East Africa. Management of road verges should also include pruning or reducing number of tree branches. Pruning will not only reduce number of House Crow nests but also make the canopy open and enhance nest visibility by the population control teams.

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**Declaration of conflict of interest**

There is no conflict of interest to declare.

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