House Crow Habitats and Habits: A Suez Governorate (Egypt) Baseline Long-Term Study

Saleh, A.M.; Eldnasory, M. A. and Anany*, A. E.
Agricultural Zoology and Nematology Department, Faculty of Agriculture, Al-Azhar University, Cairo, Egypt.
E-mail*: aanany@azhar.edu.eg

ABSTRACT

The house crow has a notorious reputation for being a problem species in both native and foreign countries because of its multiplicity of approaches to adaptation and the consequent economic damage. In this context, the purpose of the current study is to elucidate the daily habits and population fluctuations of the house crow community in Suez Governorate, Egypt. The results indicated a substantial variation in the daily activity of the house crow based on the differences in the nature of the habitat. The highest numbers were recorded during the summer months (July to August) in parking and buildings during the sunset period, highlighting the drop in the first season's overall average compared to the second season. It is noted that the semi-annual average for the period from June 2020 to December 2021 significantly increased from the general average for the same period during the second season (60 and 49), respectively.

INTRODUCTION

House crow, *Corvus splendens* considers one of the most common and adaptive Corvidae family (Passeriformes, Aves), (Monirul and Midzhanur, 2017 and Behrouzi-Rad, 2010). It has a steady population through an enormous range (Iqbal et al., 2022). Its native countries include Nepal, Bangladesh, India, Pakistan, Sri Lanka, the Maldives, the Laccadive Islands, South West Thailand, and coastal southern Iran. It is widely distributed throughout southern Asia (Antony, 2016). It was brought to Australia (currently beginning to become smaller) by ship after being introduced to Africa in about 1897. Being an omnivorous scavenger has enabled it to thrive. It is connected to all types of human habitation, from rural to city areas (Radadia, 2013). This species has increased proportionally as the human population has increased in the locations it inhabits. The house crow can utilize resources very adaptable, appears to be connected with people, and no populations are known to live without humans (Krzemińska et al., 2018 and Fraser et al., 2015). The invasive potential for the species is great all over the tropical and subtropical regions (Jayamanne and Jayamanne, 2012 and Brook et al., 2003).

In Egypt, it was first recorded around the Northeast region (Peter et al 1980 and Goodman et al. 1986). Some previous studies have been conducted on the house crow,
both from the agricultural view; attacking crops (Khattab et al., 2002); used as a bio-agent to reduce the number of some types of rodents and insects (Kamel, 2014, Issa, 2019, Shivambu et al., 2020 and Ndimuligo et al., 2022).

In addition to some studies on the biology of the house crow (Ali, 2008, Ranjan and Kushwaha, 2013), and its transmission to many micro-pathogens to humans and their domesticated animals (Nyari et al., 2006; Fadel and Afifi, 2017)

Where, these studies indicated the diversity and difference in the distribution of the crow and the different nature of its habitats, as well as the difference in the nature of the population and the extent and type of its daily activity, according to the human activities prevalent in the area under study (Archer, 2001 and Alias and Hashim, 2016).

On the other hand, the current study areas have significant economic and geographical importance. Its coast is located on the northern edge of the Gulf of Suez, where the southern entrance to the Suez Canal is located, and its area is 9,002 km². It is distinguished by its unique location, as it is considered a gateway to Africa and southwestern and eastern Asia, making it a crossroads for global trade and a fortress for industry and industrial investment. With the urban expansion in this area, the house crow has become a notable example of a well-known species that has become a nuisance to birds (Ryall, 2016 and Chakraborty et al., 2020).

According to Peter et al., (1980). The house Crow was introduced to Egypt from India in the last 30 years and now mostly breeds in the towns near the Suez Canal and Gulf of Suez. Therefore, the purpose of the current study is to elucidate the population fluctuations and daily habits of the house crow community in Suez Governorate.

**MATERIALS AND METHODS**

The daily activities and the population fluctuations of house crows were studied monthly during daytime (Sunrise and Sunset) at two locations each of them containing three different habitat locations nearby (landscapes, gardens and buildings) in Suez district during the period from June 2020, to May 2022 at Suez Governorate to find the relationship between the population of birds and different locations and seasons of the year. Daily activities and population fluctuations of house crows were studied monthly, in the three different habitats chosen as mentioned before from June 2020, to May 2022.

Identification of house crow was done based on Ali’s field guide (Ali, 2002). The population counts were carried out by the field glass binoculars, in the three locations which were mentioned above according to methods described by Redinger and Libay (1979). Habits and behavior of house crow were expressed by counting individuals for one hour during different intervals i.e. at sunrise and sunset according to methods described by Reynolds et al., (1980).

**Data Analysis:**

The experiment was designed with a randomized complete design. All the data were subjected to Analysis of Variance (ANOVA) using the IBM SPSS package. The means were compared according to Duncan’s multiple range tests at \( P \leq 0.05 \) (Duncan, 1955).

**RESULTS AND DISCUSSION**

The data indicates a substantial variation in the daily activity of the house crow based on the differences in the nature of the habitat. Data presented in Tables (1 and 2) and illustrated in Figures (1,2 and 3), generally revealed that the daily activity recorded the largest population during the sunset period in parking and buildings, with a monthly
average for the period from June to December during 2020–2021 (78 and 78) and (66 and 63) respectively during the same period during 2021–2022. Noting the drop in the first season’s overall average compared to the second season (fig.3), where, it is noted that the semi-annual average for the period from June 2020 to December 2021 significantly increased from the general average for the same period during the second season (60 and 49), respectively.

Also, data recorded that the high number of individuals of House crow during June 2020-2021 recorded in August with 407 followed by 394 during July and Sep. while the low number individuals recorded during December and October with 306 and 314 individuals, compared to the same period during June at May 2021-2022, the high population recorded during June followed by Sep. with 320 and 315 individuals. While the low number of individuals was recorded during Apr. and May with 188 and 193 individuals. On the other hand, the high numbers were recorded nearby parking, buildings and landscapes during 2020-2021, (1845, 1836 and 561) respectively, and at buildings, parking and landscapes (1346, 1326 and 374) during 2021-2022, respectively.

The values (1216 and 1195) nearby buildings and parking (936 and 880) nearby parking and buildings were recorded as high numbers at sunset during (2020-2021) and (2021-2022) respectively. These results agree with Meininger et al., (1980), Behrouzi-Rad, (2010) and Attia, (2013). Moreover, our findings concur with Hassan, (2018) and Tan et al., (2020) who indicated that house crows are distributed with high numbers in the inhabited area, public parks, and hospital areas and with a low number downtown.

Author’s Contribution
All authors are equal across all phases of this manuscript

Funding
This research did not receive any funds.

Availability of data and materials
All data regarding this study are shown in the manuscript.

Conflict of interest
The authors have declared no conflict of interest.

Table 1: Population fluctuation and daily activities of House crow, Corvus splindens at Suez Governorate from June 2020 to May 2021.

<table>
<thead>
<tr>
<th>Months</th>
<th>Buildings</th>
<th>Landscape</th>
<th>Parking</th>
<th>Total</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>June, 2020</td>
<td>51</td>
<td>113</td>
<td>82</td>
<td>21</td>
<td>33</td>
</tr>
<tr>
<td>July</td>
<td>53</td>
<td>120</td>
<td>87</td>
<td>22</td>
<td>32</td>
</tr>
<tr>
<td>August</td>
<td>57</td>
<td>103</td>
<td>80</td>
<td>26</td>
<td>32</td>
</tr>
<tr>
<td>September</td>
<td>63</td>
<td>105</td>
<td>84</td>
<td>24</td>
<td>29</td>
</tr>
<tr>
<td>October</td>
<td>51</td>
<td>95</td>
<td>73</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td>November</td>
<td>50</td>
<td>95</td>
<td>73</td>
<td>19</td>
<td>26</td>
</tr>
<tr>
<td>December</td>
<td>49</td>
<td>85</td>
<td>67</td>
<td>17</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>374</td>
<td>716</td>
<td>545</td>
<td>145</td>
<td>200</td>
</tr>
<tr>
<td>Mean</td>
<td>53</td>
<td>102</td>
<td>78</td>
<td>21</td>
<td>29</td>
</tr>
<tr>
<td>June, 2021</td>
<td>44</td>
<td>103</td>
<td>74</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>February</td>
<td>51</td>
<td>95</td>
<td>73</td>
<td>21</td>
<td>26</td>
</tr>
<tr>
<td>March</td>
<td>48</td>
<td>108</td>
<td>78</td>
<td>19</td>
<td>28</td>
</tr>
<tr>
<td>April</td>
<td>54</td>
<td>93</td>
<td>74</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>May</td>
<td>44</td>
<td>103</td>
<td>74</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>241</td>
<td>502</td>
<td>373</td>
<td>95</td>
<td>120</td>
</tr>
<tr>
<td>Mean</td>
<td>48</td>
<td>100</td>
<td>74</td>
<td>19</td>
<td>24</td>
</tr>
</tbody>
</table>

DAv. = Dally Average number
Table 2: Population fluctuation and daily activities of House crow, *Corvus splindens* at Suez Governorate from June 2021 to May 2022.

<table>
<thead>
<tr>
<th>Months</th>
<th>Habitats</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Buildings</td>
<td>S.R.</td>
<td>S.S.</td>
<td>D. Av</td>
<td>S.R.</td>
<td>S.S.</td>
<td>D. Av</td>
<td>Total</td>
</tr>
<tr>
<td>January, 2021</td>
<td>53</td>
<td>73</td>
<td>14</td>
<td>26</td>
<td>20</td>
<td>47</td>
<td>88</td>
<td>68</td>
</tr>
<tr>
<td>July</td>
<td>42</td>
<td>83</td>
<td>63</td>
<td>17</td>
<td>22</td>
<td>20</td>
<td>48</td>
<td>95</td>
</tr>
<tr>
<td>August</td>
<td>41</td>
<td>77</td>
<td>59</td>
<td>15</td>
<td>19</td>
<td>17</td>
<td>42</td>
<td>80</td>
</tr>
<tr>
<td>September</td>
<td>39</td>
<td>95</td>
<td>67</td>
<td>15</td>
<td>19</td>
<td>17</td>
<td>47</td>
<td>100</td>
</tr>
<tr>
<td>October</td>
<td>45</td>
<td>83</td>
<td>64</td>
<td>12</td>
<td>18</td>
<td>15</td>
<td>47</td>
<td>88</td>
</tr>
<tr>
<td>November</td>
<td>39</td>
<td>73</td>
<td>56</td>
<td>15</td>
<td>21</td>
<td>18</td>
<td>47</td>
<td>57</td>
</tr>
<tr>
<td>December</td>
<td>42</td>
<td>75</td>
<td>59</td>
<td>13</td>
<td>22</td>
<td>18</td>
<td>51</td>
<td>83</td>
</tr>
<tr>
<td>Total</td>
<td>301</td>
<td>578</td>
<td>440</td>
<td>101</td>
<td>147</td>
<td>124</td>
<td>329</td>
<td>591</td>
</tr>
<tr>
<td>Mean</td>
<td>43</td>
<td>83</td>
<td>63</td>
<td>14</td>
<td>21</td>
<td>18</td>
<td>47</td>
<td>84</td>
</tr>
</tbody>
</table>

Av. = Dally Average number

Fig. 1. Average daily activity of House crow during summer season, 2020 and winter season, 2021 in different urban sites at Suez Governorate.

Fig. 2. Average daily activity of House crow during summer season, 2021 and winter season, 2022 in different urban sites at Suez Governorate.
Fig. 3. Population fluctuation of House crow during summer season, of 2021 and winter season, of 2022 in different urban sites at Suez Governorate.

REFERENCES


Peter, L.M.; Wim, C.M. and Bertel, B. (1980). The spread of the house crow, *Corvus*
splendens, with special reference to the occurrence in Egypt. *le gerfout de givervalk*, 70: 245 – 250


