International Journal Of

Recent Scientific Research

ISSN: 0976-3031

Volume: 6(12) December -2015

URBAN RESOURSE UTILIZATION FOR FEEDING PURPOSE BY HOUSE CROW (*CORVUS SPLENDENS*)

Shabanam K. Saiyad., Soni V.C and Bhupat Radadia

THE OFFICIAL PUBLICATION OF
INTERNATIONAL JOURNAL OF RECENT SCIENTIFIC RESEARCH (IJRSR)
http://www.recentscientific.com/ recentscientific@gmail.com

ISSN: 0976-3031

Available Online at http://www.recentscientific.com

International Journal of Recent Scientific Research
Vol. 6, Issue, 12, pp. 7933-7935, December, 2015

International Journal of Recent Scientific Research

RESEARCH ARTICLE

URBAN RESOURSE UTILIZATION FOR FEEDING PURPOSE BY HOUSE CROW (*CORVUS SPLENDENS*)

Shabanam K. Saiyad[1]., Soni V.C[2] and Bhupat Radadia[3]

[1,3]M & N Virani Science College, Rajkot -360005, Gujarat
[2]Department of Biosciences Saurashtra University, Rajkot-360005, Gujarat

ARTICLE INFO

Article History:

Received 15th September, 2015
Received in revised form 21st October, 2015
Accepted 06th November, 2015
Published online 28st December, 2015

Key words:

House crow (*Corvussplendens*), Junagadh, anthropogenic food, Urban land utilization.

ABSTRACT

The manner in which House crow uses different urban components is the reason of their survival. We aimed to understand how they use the urban resources for feeding purpose. Total count method was followed and each feeding site was visited twice in a month at 8h00 to 10h00 am. Study was conducted at twenty-nine feeding sites in Junagadh. Total five land use categories i.e. residential area, public park, slaughter houses, commercial area and agricultural land were drawn to estimate the utilization of anthropogenic food derived from each land use category. Significant differencewas found in urban lands utilization among five land types(F=3.179> F crit, 0.01>P) in which 52% of population was found to be dependent on resources derived from only slaughter houses followed by commercial land(15%) and public parks (14%).House Crow were found to feed significantly (F=3.162> F crit, 0.01>P) more on slaughter wastes (49 %) and secondly on food offered by man on regular basis (21%).House Crows preferredregular macro feeding sites compare to micro feeding (smaller feeding opportunities)as food was available on daily basis and in larger amount at macro feeding sites.(t=39.27 > t crit, 0.01>P).A positive correlation was observed between increased anthropogenic food and increased crow count within study area (R^2 = 0.9592).

INTRODUCTION

Understanding of how birds utilize their environment is helpful to identify the characters of the environment which are essential for their survival. House Crow is very well adapted in the urban areas(Kurosawai *et al.* 2003, Ueta *et al.* 2003) where ample food resources and suitable nesting and roosting sites are available there for it is a common bird of rural as well as urban areas (Ali 1983, Whistler 1986). It eats anything which is edible; encompassing to man's garbage, rodents, fruits (Nyari *et al.* 2006), fish, small animals like insects, crabs, lizards (Roberts 1992, Inskipp1985, Ali 1989, Richard 1993, Thirumurthy and Annamalai1994). Food subsidies appear in the form of human refuse as well as opportunities from anthropogenic surfaces such as parks, residential areas and other urban landforms (Kristin and Boarman 2007; Liu *et al.* 2008; Marzluff and Neatherlin 2006). The generalist nature of crows allows them to use areas with road kill and fresh refuse as prime foraging territory (Coates and Delehanty, 2010). Crows within urban areas were also found feeding directly on garbage from picnic areas, dumpsters and parking lots (Yaremych *et al*, 2004). Such types of their food make them omnivorous, opportunistic feeder and important scavengers of the environment.

METHODOLOGY

Junagadh (Lat.21^0 31'N to Long.70^0 36' E) is in Gujarat state located in western India, at the foot of the Girnar hills having area of 57.16 sq.km. The study area was selected because of high amount of diverse feeding opportunities for urban birds. The study area was surveyed before and twenty-nine feeding sites were identified. Total count method was followed and each feeding site was visited twice in a month at 8h00 to 10h00 am during 15 October 2012 to 17September 2013. In order to availability of food regularity and amount of food, these sites were classified in to two categories i.e. micro and macro feeding sites. Macro feeding sites were sites where food was available regularly and visited by house crows on daily basis. Micro feeding sites were small food dumps where kitchen waste and cooked left over were thrown irregularly and visited by house crows infrequently. Total five land use categories i.e. residential area, public park, slaughter houses, commercial area and agricultural land were drawn to estimate the utilization of anthropogenic food derived from each land use category. To

Corresponding author:* **Shabanam K. Saiyad
M & N Virani Science College, Rajkot -360005, Gujarat

assess food type preference derived from urban subsidies, the food was classified in five types i.e. kitchen waste or cooked left over from residential and domestic areas (residential waste), human refuse from public parks (human refuse), plant products from agricultural land (plant products), slaughter waste from mutton markets and slaughter houses (slaughter waste) and specific food offered by human on regular basis (human offer) and percentage preference was calculated. Amount of food was recorded where it was possible to quantify (slaughter west and food offered by humans in regular basis) to evaluate whether quantity of food was affected crow population to feed upon. The feeding areas were categories in different land use categories with the help of Q-GIS Software. 10X50 Binoculars were used to record observations where ever food item was not possible to see clearly.

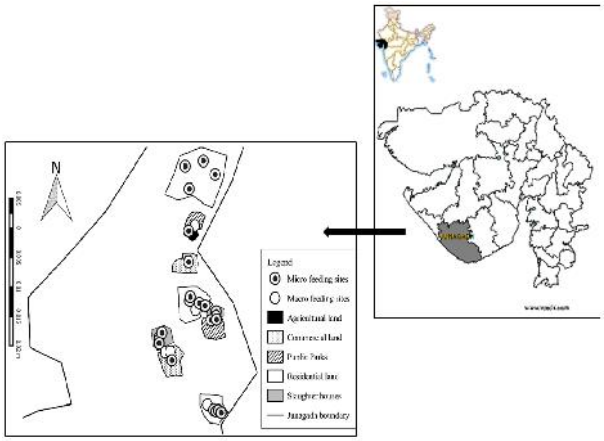

Figure 1 Feeding sites with land use categories

RESULT

Even though number of micro feeding sites was higher, crows were observed to feed significantly more on macro feeding sites (707 individuals) compare to micro feeding sites (359 individuals) (t=39.27 > t crit, 0.01>P) (Fig 2).As amount of food increases numbers of crows' increases as well. R^2 value of 0.959 shows very strong relationship between food quantity and crow count (Fig 3).No positive correlation was found with house crow count to the increased numbers of feeding sites in each land use category (R^2 = 0.0209) (Fig 4).Among type of food, House Crows were found to feed significantly more on slaughter wastes (49 %) (F=3.162> F crit, 0.01>P) followed by feeding on specific food offered by human (21%) and kitchen waste (15%) (Fig 5).

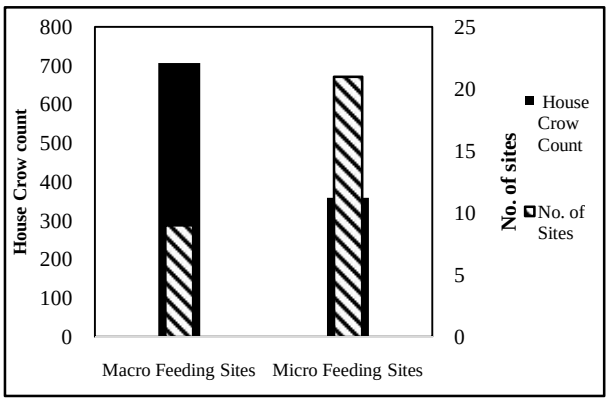

Figure 2 House crow count and numbers of micro and macro feeding sites. Type and amount of food

Maximum (58 % area) percentage from the total land use was occupied by the area of and around residential zone followed by public parks (12% area) while very least house crows were observed to feed at agricultural land was of only 2% from the total area. (Fig 6).

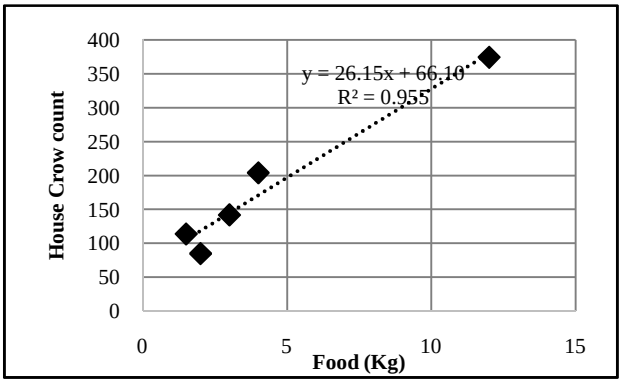

Figure 3 Amount of food Vs. House Crow Count at five feeding sites.

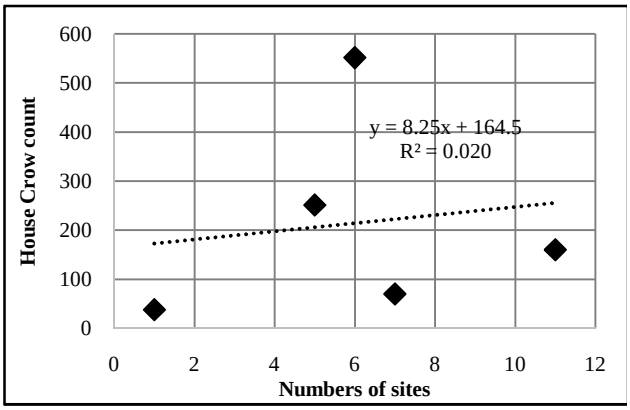

Figure 4 Numbers of feeding sites Vs. House crow count in five urban land use categories

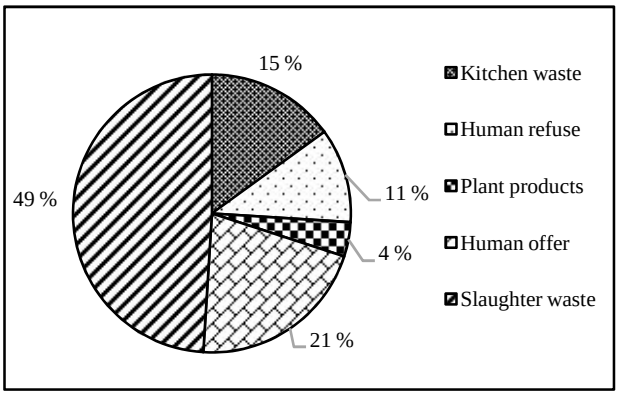

Figure 5 Present population depended on different Type of food

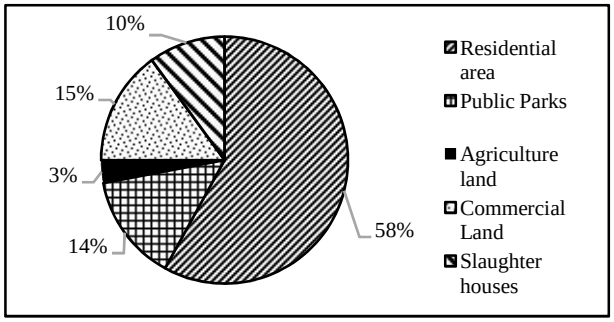

Figure 6 Area percentage of each land use category from total area used for feeding purpose

DISCUSSION

Studies suggest that within urbanized areas there will be an increased amount of foraging crows due to the increased abundance of food sources (Higuchi 2006). Where ever the amount of food was plenty and regularly available i.e. slaughter houses and traditional man offering feeding sites, crow count was significantly high. House crows were depended mainly on slaughter waste among all anthropogenic food type. The food which was traditionally offered by humans at office compounds and terraces regularly was their second choice may be due to effortless availability. Parks and lawns provide great habitats for food (Withey and Marzluff 2009). But in Junagadh crows were not depended more on public parks (11% food preference) as food was occasionally available. House crow prefer urban environment due to the presence of refuse thrown away by humans in cities which provide them easy source of food (Kurosawai 2003).Human refuse from public parks and kitchen left over from residential areas were preferred less compare to slaughter waste and regular man offer sites because food was not regularly available and less in amount (micro feeding sites). Sufficient larger as well as smaller anthropogenic feeling opportunities were available in Junagadh however macro feeding sites were preferred compared to micro feeding sites as the food source was available regularly and larger amount as compare to micro feeding sites.

References

Ali, S. and Ripley S.D., 1983.Hand book of the Birds of India and Pakistan. *Oxford University Press, 53*: 125-125.

Ali, S. (1989).The Birds of Sikkim. *Oxford University Press,* 2:13-14.

Coates, P. S. and D. J. Delehanty. 2010. Nest predation of greater sage-grouse in relation to microhabitat factors and predators. *Journal of wildlife Management, 74: 240-248.*

Higuchi, H. 2006.Conflicts between humans and crows in Japan. *Journal of Ornithology.*147 (Suppl. 1):81.

Kurosawai, R., Kono, R., Kondo, T. and Kanai, Y. 2003.Diet of Jungle Crows in an Urban Landscape. *Global Environmental Res.,* 7(2): 193-198.

Kurosawai, R., Kanai Y., Matsuda M. and Okuyama M. 2003.Conflict between Humans and Crows in Greater Tokyo- Garbage Management as a Possible Solution. *Global Environ. Res.,* 7(2): 139-147.

Kristan, W. B. and Boarman, W. I. 2007. Anthropogenic developments on common Raven nesting biology in the west Mojave Desert *Ecological Applications* 17: 1703–1713.

Leu, M., Hanser, S. E. and Knick, S. T. 2008. The human footprint in the west: a large-scale analysis of anthropogenic impacts. *Ecological Applications* 18: 1119–1139.

Marzluff, J. M. and Neatherlin, E. 2006. Corvid response to human settlements and campgrounds: Causes, consequences, and challenges for conservation. *Biological Conservation* 130: 301–314.

Nyari, A., Ryall C. and Peterson, T.A. 2006. Global invasive potential of the House crow *Corvussplendens* based on ecological niche modelling. *Avian Biol.,* 37(4): 306-311.

Roberts, T.J. 1992.The Birds of Pakistan. Vol. II. *Oxford University Press,*14: 109-110.

Inskipp, C. and Inskipp, T. 1985.A Guide to the Birds of Nepal. *Croom Helm London,*12(2).

Richard 1993.The Collins Birds.*ATLAS.*

Thirumurthy, S. and Annamalai, R. 1994.Birds as pest controllers and depredators. *Newsletter for Bird watcher,* 34(2).

Ueta, M., Kurosawa, R., Hamao, S., Kawachi, H and Higuchi, H. 2003.Population Change in Jungle Crows in Tokyo. *Global Environ. Res.,* 7(2): 131-137.

Whistler H., 1986. Handbook of Indian Birds. *Cosmo Publications, New Delhi,* 13: 56-59.

Withey, J. C. and Marzluff, J. M. 2009.Multi-scale use of lands providing anthropogenic resources by American Crows in an urbanizing landscape. *Landscape Ecology* 24: 281–293.

Yaremych, S. A., Novak R. J., Raim, A. J., Mankin, P. C., and R. E. Warner 2004. Home range and habitat use by American Crows in relation to transmission of West Nile virus. *Wilson Bulletin* 116:232-239

****

How to cite this article:
Shabanam K. Saiyad *et al*. 2015, Urban Resourse Utilization for Feeding Purpose By House Crow (Corvus Splendens). *Int J Recent Sci Res* Vol. 6, Issue, 12, pp. 7933-7935.

ISSN 0976-3031