

REPRODUCTIVE BEHAVIOUR OF THE YELLOW-WATTLED LAPWING, *VANELLUS MALABARICUS* (BODDAERT)

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ABSTRACT

Birds belong to class Aves of subphylum Vertebrata. These feathered bipeds are described by Dr. Gadow as oviparous, warm blooded, winged flying animals. The breeding biology of the Yellow-Wattled Lapwing, *Vanellus malabaricus* from Baramati, was studied. It is observed that Yellow-Wattled Lapwings breed during dry season and peak breeding was found in the months of March to May. Females lay three to four eggs in clutches. They found to be enough bold when there was human presence (observer) near the nest. Time required for incubation was 27 to 30 days. Both the parents participated in nest formation, incubation and other duties. The Present study was undertaken to know the influence of urban development on the breeding behavior of the Yellow-Wattled lapwing.

KEY WORDS: Breeding behavior, urbanization, *Vanellus malabaricus*, Yellow-Wattled lapwing.

INTRODUCTION

Morphologically Yellow-Wattled Lapwing, *Vanellus malabaricus* has dull grey body colouration. There is the presence of a triangular Yellow-Wattle at the base of the beak and the legs are yellow in colour.

Worldwide human activities are responsible for environmental challenges of the twenty first century (Virtousek *et. al.*, 1997). An especially in Urban areas barren land is getting used for constructing new houses, industries, etc. which considerably alters the ecological processes and biodiversity and thus leads to destruction of natural habitats. Lapwing shows courtship behavior, nest building, mating, incubation of eggs, and parental care. They produce alarming sounds. Vocalizations helps in communication, which plays an important role in the sociobiology of the birds, parent-offspring interactions, also as cohesive force among the flock of birds and for signaling about the threat or danger (Catchpole and Slater, 1995).

Geographical areas are affected in large amount due to urbanization (Brown, *et. al.*, 2005) but the impact of urbanization on wildlife and biodiversity is little known. Bird's response to urbanization has been well documented. Several studies have paid attention on the bird diversity in and around the cities, Beissinger and Osborne (1982); Palomino and Carrascal (2005) and Ortega- Alvarez R. and MacGregor-Fors- (2009).

Present study provides general insight and the negative consequences of urban development on Lapwings, as lapwings are ground-breeding birds. The aim of our study is to know, urban development and its impact on the breeding behaviour of the yellow-wattled lapwing,

MATERIALS AND METHODS

Yellow-Wattled Lapwing, *Vanellus malabaricus* (Boddaert) belongs to order- Charadriiformes and family- Charadriidae. It is a common spread resident of the Indian subcontinent. For present study, two sites were selected- Pragatinagar dry land and other Near Cremation Ground, which were near to the human vicinity. These two study areas were used as reference points which were under urban development. We collected the data of lapwings at each location by using a fixed (50m) radius. The survey of the birds was done by point count with observation of randomly placed localities, especially during breeding season. The Surveys were performed during sunrise and sunset. Each location was surveyed for more than three times and as per the need of observations. For photography, Pentax K 1000 camera was used. The behavior of the lapwings was observed with the help of 7 x 50, field binocular.

RESULTS AND DISCUSSION

Details of nests were studied at two selected locations in Baramati- Pragatinagar dry land and near the Cremation Ground, in order to study and understand the breeding behavior of the Yellow-Wattled Lapwings. Few nests were observed during rainy season too. The Yellow-Wattled Lapwings look for suitable nesting places near human habitat. Both, males and females take part in the nest formation and this process requires about 6 to 10 Days. It is observed that March to July is the peak breeding season of Lapwings.

Some of the Common observations: At both the locations, it was observed that they laid one to four eggs in a slightly depressed area in the ground (Mean 3, S.D. ± 1 , the number of observed eggs were 62 and the number of nests surveyed were 19). Generally, the nests were made up of thorns, small sticks, cattle droppings or cryptically coloured pebbles,. Eggs were creamish in colour with irregular brown patches on each- cryptically coloured and those were perfectly matching with the background. Both male and female were alternately involved in the process of incubation of eggs. It is also seen that, birds during hot days showed belly-soaking behavior especially three or four times in an hour for maintaining the temperature of the eggs. Such behavior has been reported by (Sundararaman, 1989; Anil Kumar and Romesh Kumar Sharma, 2011 and Jaykar and Spurway, 1965). Hatchlings were well camouflaged to the nest background. Average incubation period was about 27 to 29 days (Mean 28, S.D. ± 1 , the number of nests surveyed were 20). After hatching, both the parents were seen participating in performing the parental duties. Similar observations were made by Ali and Ripley, 1987.

Nesting location 1: Pragatinagar dry land area- This area is covered with dried grass. Most of the nesting locations were at the road side. Yellow Wattled Lapwing is seen well camouflaged in the spiny herb with yellow fruits and found to be bold enough while incubating the eggs even in presence of observer while was aggressive to the predator, Lapwing with hatchlings, well camouflaged. The nest was lined with dried grass and pebbles, two eggs were laid and hatched successfully after 27 days.

From the nest, hatchlings were taken away by a crow one by one. During study few eggs were missing, which may be eaten by some unknown predator. Similar observations were made by Sethi *et. al.* (2010).

Nesting location 2: Near the Cremation Ground- The area in and near this Cremation ground comprises the patches of dried grass and small herbs. It was observed that some eggs were missing. They might have been eaten by a Rat Snake as a wavy trail was seen on the ground. Some hatchlings were found dead. They were severely attacked by the red ants. Next day, one of the parents elicited alarm calls for the risk.

All the nests were found on the ground. The eggs as well as hatchlings were well camouflaged to the nest background. The parents used various vocalizations.

Hatching success was about 45%; Though Lapwings show parental care, they do not show migration behavior but are capable of fast flight.

It is clear that due to urbanization and various activities the habitat of lapwings gets disturbed; which shows impact on reduction in the number of nests and the shifting of the nesting sites.

CONCLUSION

The Open-scrubs which have been a breeding ground for the lapwings are getting increasingly urbanized; resulting in the shift of nesting sites of the Yellow-Wattled lapwings by altering their abundance, species richness and community composition.

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REFERENCES

- Ali S. and Ripley S. D (1987).** Compact handbook of the birds of India and Pakistan. Oxford University Press, New Delhi.
- Anil Kumar and Romesh Kumar Sharma (2011).** Observations on breeding behavior and vocalizations in Red wattled lapwing from Northern India. *J. Exp. Zool. India.* 14(1):333-338.
- Beissinger and Osborne (1982).** Effects of urbanization on avian community organization. *Condor* 84: 75-83
- Birdlife International (2009).** *Vanellus indicus*. In: IUCN 2009 Red list of threatened species.
- Brown D. G., Johanson K. M., Oveland T. R. and Theobald D. M. (2005).** Rural landuse trends in the conterminous United States, 1950-2000. *Ecol. Appl.* 15: 1851-1863.
- Catchpole C. K and Slater P. J. B., (1995).** Bird Song: Biological Themes and Variations. Cambridge University Press, Cambridge.
- Jaykar S. D. and Spurvey H. (1965).** The Yellow Wattled Lapwing, *Vanellus malabaricus* (boddaert) a tropical dry season nester III. *J. Bombay Nat. Hist. Soc.* 65(2): 369-383.
- Ortega- Alvarez R and Macgregor- Fors, (2009).** Living in the big city: effects of urban land- use on bird community structure, diversity and composition. *Landsc. Urban Plan* 90: 189-195.
- Palomino D, Carrascal L. M. (2005).** Birds on novel island environments: case study with the urban avifauna of Tenerife (Canary Islands). *Ecol. Res.* 20: 611-617
- Sethi V. K., Dinesh Bhatt and Amit Kumar (2010).** Hatching success in Yellow Wattled Lapwing, *Vanellus malabaricus*, *Indian Birds.* 5(5): 139-142.
- Sundararaman V. (1989).** Belly soaking and nest wetting behavior of Red wattled lapwing *Vanellus indicus* (Boddaert), *J. Bombay Nat. Hist. Soc.* 86: 242.
- Virtousek P. M., Mooney H. A., Lubchenco J, Melillo J. M (1997).** Human Domination of Earth's ecosystems. *Science* 277: 494-499.



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