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STUDY OF NESTING PATTERN AND BREEDING BIOLOGY OF RED-WATTLED LAPWING *VANELLUS INDICUS* IN AGRICULTURAL FIELD NEAR TO ASNA RIVER BRIDGE, NANDED (MAHARASHTRA).

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ABSTRACT

According to IUCN Red-wattled Lapwing *Vanellus indicus* is a Least concern bird. The nesting of this bird has no protection as only if the eggs get camouflage then only such nests are protected. This is the first study on nesting pattern and breeding biology of Red-wattled Lapwing *Vanellus indicus* in Nanded region. The hatching percentage of this bird was 50% in this study. While it was observed that both parents were take care of the young ones till they flew away. Human beings, grazing cattle and dogs were the predators play a role in destructing the nest.

KEYWORDS

Vanellus indicus, clutch, Asna.

INTRODUCTION :

The Red-wattled Lapwing *Vanellus indicus* is a lapwing or large plover, a wader in the family Charadriidae. It has characteristic loud alarm calls which are variously rendered as Did he do it or Pity to do it. The Red-wattled Lapwing is classified as Least Concern. Red-wattled lapwings are large waders, about 35 cm long. The wings and back are light brown with a purple sheen, but head and chest and front part of neck are black. Prominently white patch runs between these two colours, from belly and tail, flanking the neck to the sides of crown. Short tail is tipped black. A red fleshy wattle in front of each eye, black-tipped red bill, and the long legs are yellow. In flight, prominent white wing bars formed by the white on the secondary coverts (Hayman et.al.1986). Males and females are similar in plumage but males have a 5% longer wing and tend to have a longer carpal spur (Symons, CT, 1917). It usually found

in pairs or trios in well-watered open country, ploughed fields, grazing land, and margins and dry beds of tanks and puddles.

The courtship involves the male puffing its feathers and pointing its beak upwards. The male then shuffles around the female. Several males may display to females and they may be close together (Vyas, Rakesh, 1997) About 3–4 black-blotched buff eggs shaped a bit like a peg-top (pyriform), 42x30 mm on average. Nests are difficult to find since the eggs are cryptically coloured and usually matches the ground pattern Ali and Ripley (1980).

The season is principally between March and August. The nest is merely a natural depression or scrape in the ground, unlined, sometimes margined with pebbles. It is situated on waste or fallow land, more or less water-logged in the rains and with deep imprints of cattle hoofs. The drying-up beds of village tanks also offer suitable sites. The eggs normally 4, broad at one end, abruptly pointed at the other are some shade of stone or grey-brown in colour, blotched with blackish. They, as well as the newly hatched downy young harmonise with the soil to perfection and it is difficult to locate the eggs or chicks even in a circumscribed area except by patiently watching the movements of the parents. Both sexes guard the young assiduously and launch fierce attacks upon other birds and mammals straying into their proximity Ali and Ripley (1980).

The incubation period ranges from 28 to 30 days and both sexes perform incubation duties (Desai & Malhotra 1976, Ali & Ripley 1998). Desai & Malhotra (1976) studied the nesting success of ground-nesting Red-wattled Lapwing and observed that out of 74 eggs laid 39 (52.70%) hatched successfully, and ultimately 30 young fledged, leading to an overall nesting success of 40.54%. Additionally, this species has occasionally been observed to nest on flat pebbled roofs in urban environments (Gole & Mundkur 1980, Patnaik 1980, Tehsin & Lokhandwala 1982, Mundkur 1985, Grimmett et al. 1998).

No studies have so far been conducted to study the Nesting Pattern of Red-wattled Lapwing in Nanded region; hence this paper aims to study of Red-wattled Lapwing's ground nest.

OBSERVATIONS

COURTSHIP BEHAVIOR

The birds were spotted moving in pairs between 18-20 June, 2017 at agricultural farms nearby Asna river. The male initiated the courtship. Male reaches first towards the female with its fanned tail and then stood erect keep the neck in stretched position. Male produce songs for call and for mating. Female responded to these antics of the male by giving short, quickly repeated calls. The pair usually calls repeatedly without any interrupt.

TERRITORY

The breeding pair maintained a territory in the surrounding of their nest. It is treated as a special area and intrusion in this area by strangers is protected by parents. Male first acquires a territory and then gives a call note to the female, female gives response to male at the same time. These birds give alarming calls for the protection; simultaneously they sing a territory song to get it distinguished and noticed to avoid strangers.

NEST CONSTRUCTION AND NESTING MATERIAL

The Male and Female Vanellus indicus constructed an unusual ground nest which get perfectly exact with the surrounding land color and texture. It is very difficult to locate the nest of this lapwing as

it camouflage to the surrounding environment; it needs careful observation by slow walking. Nest building started on 1 July 2017 in the farm near to Asna river bridge. The construction of Nest was started from early morning up to noon and then in mostly evening time between 5:00 to 6:30 pm on successive days. The construction of Nest is a joint effort of both the Male and female partners with almost equal shares. When the nest construction starts, the male and female partner gives their full time for collecting the nest material. The nest was prepared by using small pebbles; small sticks which was collected from Asna river and nearby farm respectively. The central depression was prepared by excavating the soil using toes and pebbles were carried in beak one by one and placed in the nest. The central part of the nest was prepared as a cup by the male. The collected pebbles were spread inside the cup followed by small sticks were spread.

SIZE OF CLUTCH

The size of clutch in Red wattle lapwing was observed to be of four eggs. The eggs were laid on alternate days starting from 6 July 2017 till 09 July 2017. Eggs were laid during evening hours. The eggs were so arranged by the bird that their small edges meet in the center, making for even sitting and easier incubation by the parent.

EGGS

The eggs of Red wattle lapwing were pear shaped with color varying from a pale olive green to a reddish buff. On the surface deep brownish black markings or spots were recorded all over the egg.

INCUBATION

Both the partners are incubated the eggs but most of the time in a day female did most the work of incubation. While male help to the female in some time. Red-wattled Lapwing needs water to soak their belly feather to cool the eggs during hot weather (Sundaraman, 1989). We sighted this nest in the agriculture field near to Asna river. The distance of nest and the river is near about 100 feet. The incubation process takes near about 24-25 days. We observed the nest whole period, unfortunately on 25th July 2017 we have recorded only two eggs were present in the nest, we are surprised because one day before we have sighted all four eggs in nest. We enquired to the farm owner about the eggs they told that dog may be lifted as the farm is near to road and bridge. We request to the owners to take care the eggs from the dogs, on 2/8/2017 the two eggs were hatch out successfully. After hatching the male and female Lapwing was observed to jointly take up the all responsibility of rearing the young ones.

Table No. 1 Detailed information of nesting and breeding biology of *Vanellus indicus*.

Sr. No.	Detailed information of Nest	Measurement in cm
1	Total width	24 cm
2	Depth of cup	3.7 cm
3	Small sticks	-----
4	Small pebbles	-----
5	Clutch Size	04
6	Color of the eggs	pale olive green to a reddish buff
7	Incubation period	24-25 days
8	Total number of eggs hatched	04
9	Percentage of hatching	50%
10	Soybean farm	



Fig. 1 Nesting Site and I

river with 4 eggs.

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