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## Population and distribution of river lapwing (*Vanellus duvaucelii*) in Melghat region (Kutanga to Rangubeli)

Ujjwala Shivaji Deshmukh, Darshan Dudhane and Amey Thakare

### Abstract

Present study was designed with an aim to study Population and Distribution of River Lapwing (*Vanellus duvaucelii*) in Melghat region (Kutanga to Rangubeli). River Lapwing is near to threatened species, mostly found on the bank of large rivers in India. The river Tapi flows through Melghat Tiger Reserve. The survey was carried out at selected stretches 5838.65 m. between Kutanga (21.714079, 77.087527) and Rangubeli (21.719593, 77.139037) on the Tapi river bank to estimate population of River lapwings and foraging and social behavior. 12 individuals were observed during all the 4 visits at Kutanga and 6 individuals were observed at Rangubeli. Activities of the individuals was at peak during early hours of the day and lowest during noon time. The River lapwings were observed comfortably interacting with other species of birds like River tern, Red-wattled lapwing, Grey wagtail, White browed wagtail, little ringed plover, small pratincole and common sandpiper. At Rangubeli the river lapwings were observed roosting in rock crevices during noon hours of the day.

**Keywords:** River lapwing, Tapi River, population and distribution

### Introduction

River Lapwing *Vanellus duvaucelii* has most recently been assessed for The IUCN Red List of Threatened Species in 2016. *Vanellus duvaucelii* is listed as Near Threatened under criteria A3cde.

The River lapwing or spur-winged lapwing (*Vanellus duvaucelii*) is near to threatened (IUCN 3.1) species of insectivore bird. River lapwing occurs in the northern Indian Subcontinent and much of South-East Asia, including India, Nepal, Myanmar, Thailand and Vietnam. (Bird Life International), n.d.). River lapwing are mostly found on the bank of large rivers in India. Including Ganga, Narmada, Tapi, Godavari, Wainganga etc., specifically, in Maharashtra on the banks of Godavari, Wainganga, Tapi and Wardha.

The river lapwing *Vanellus duvaucelii* belongs to the family Charadriidae. (River Lapwing-Wikipedia, 2021). This family includes Plovers, dotterels and lapwings, about 64 to 68 species. *Vanellus* is a genus which provisionally contains all lapwings except Red-kneed dotterel. In Maharashtra four species of lapwings are found out of which River lapwing, Red-wattled lapwing and Yellow-wattled lapwing are residents and Grey-headed lapwing is migratory one. (Birds of Indian Subcontinent by Grimmett and Inskipp 1998) [4]. The Yellow wattled lapwing is the only species which is not found near the water bodies, unlike Red wattled which is found almost in all type of habitat. The name River lapwing itself clearly indicates that the primary habitat of this species are banks of rivers. This bird is 29-32 cm long and has a black crest, crown, face and a central throat having grey white neck sides and nape. The back is brown, rump is white and the tail is black. Adults of both sexes are similarly plumaged but males are slightly larger than females. The call of River lawing is a sharp tip-tip or did-did-did. (Birds of Indian Subcontinent by Grimmett and Inskipp 1998) [4].

The field study was performed by Mishra *et al.* (2018) [6], along the River Ganges in the district Raebareli, Uttar Pradesh (India). The River Ganges provides a wintering and staging ground for a number of migratory waterfowl and breeding ground for resident birds, numerous adults and chicks of river lapwings were observed during August 2015 to November 2017.

Bibby *et al.* (2000) [2], surveyed to estimate the population density of River Lapwings, for the six-day period along the Gorai and Padma rivers of Kushtia district and Padma river of Chapai Nawabganj sub-district.

According to Wagh *et al.* (2020) [8], along with the population estimation of River lapwing it was necessary to study the chosen habitat of Tapi river banks in Melghat region.

The habitat was found to be suitable and provides ample resources of food to sustain River lapwing (*Vanellus duvaucelii*).

River lapwings inhabit fresh water habitats and are largely confined to the banks of larger riverine systems, but they are also found in other fresh water bodies such as ponds, lakes, etc., although they were fairly widespread along the banks of River Ganges. Mostly they were observed in flocks which firmly indicated that their distribution pattern is clumped. The size of flocks was differing according to the habitat at the particular study location. (Mishra *et al.* 2018) [7].

The biodiversity survey undertaken for the PEACE Institute Charitable Trust, New Delhi and Thames Rivers Trust, UK in December 2012 (at around 10:30 am), a pair of River Lapwing were sighted foraging on the Kanalsi (30.148165, 77.389058), Somb River. (Gupta 2013).

Maximum six individuals of River Lapwings spotted at the Tapi River from Rangubeli village to Bairagadh. A pair of River Lapwings was feeding on the bank of the river near the flowing water. (Wagh *et al.* (2020) [8].

At the northern extreme part of Amravati district of Maharashtra, on the border of Madhya Pradesh lies the Melghat, in the Satpura mountain ranges. Total area of the forest is around 2768 sq.km. It is among the first 9 Tiger reserves of India and the 4<sup>th</sup> largest reserve of India. Which was notified in 1973 under Project Tiger. Melghat means “meeting of the ghats” which describes the area as a large tract of unending hills and jagged cliffs and steep climbs. The forest is tropical dry deciduous in nature. The reserve is a catchment area for 5 major rivers: Khandu, Khapra, Sipna, Gadga and Dolar. These all rivers are tributaries of the river Tapti.

Melghat is deciduous forest, rich in biodiversity of flora and fauna. Melghat hosts the critically endangered Forest owl (*Athene blewitti*) which was back from extinction, Melghat is also a home of flying squirrel. (Melghat-Wikipedia, 2010). Wide river basins and sandy banks with gravels, the comfortable habitat required for River Lapwing is available in Melghat which allow River Lapwings to maintain their population and distribution.

River lapwings were observed in the Melghat region, ranging from Rangubeli to Kutanga. (21°42'50.8"N 77°05'14.2"E).

The survey was carried out at selected stretches 5838.65 m. between Kutanga (21.714079, 77.087527) and Rangubeli (21.719593, 77.139037) on the Tapi river bank to estimate population of River lapwings and foraging and social behavior.

### Materials and Methods

At the northern extreme part of Amravati district of Maharashtra, on the border of Madhya Pradesh lies the Melghat, in the Satpura mountain ranges. Total area of the forest is around 2768 sq.km.

Survey was carried out during December 2022 to March 2023, the visits were scheduled to observe the River lapwing population completely from dawn to dusk. The area selected stretches 5838.65 m. between Kutanga (21.714079, 77.087527) and Rangubeli (21.719593, 77.139037) on the Tapi river bank. Running water streams were observed as the water streams were the major activity ground for River lapwing. The population count was taken at regular intervals

of 3 hours throughout the day. Such observation gives insights in population variation at different time across the whole identified habitat on Tapi river banks.

The site visits included extensive use of equipment like Binocular (Olympus 10x50 DPS 1), Cameras (Nikon P900 and Nikon D500 with 200-500 telescopic lens), Tripod stand, Camouflaged hides, etc.

### Observation and results

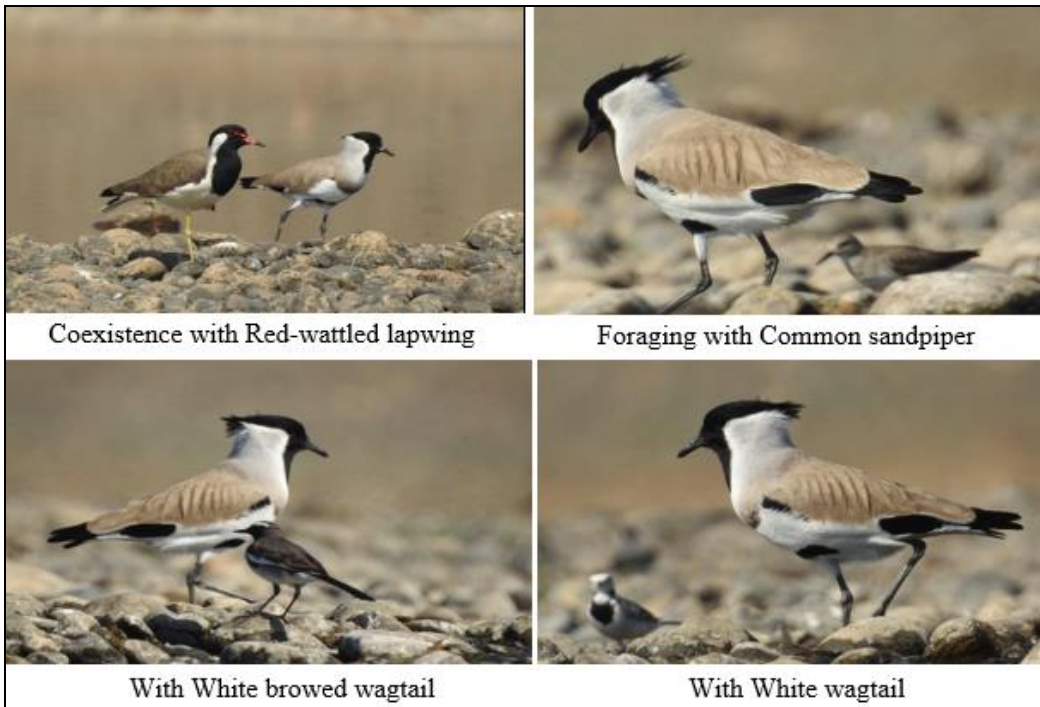
The Melghat reserve is a catchment area of 5 major rivers: Khandu, Khapra, Sipna, Gadga and Dolar. These all rivers are tributaries of the river Tapti. River lapwings were observed at selected stretches of Tapi river bank 5838.65 m. between Kutanga (21.714079, 77.087527) and Rangubeli (21.719593, 77.139037) at (21°42'50.8"N 77°05'14.2"E).

Survey was carried out during December 2022 to March 2023, the visits were scheduled to observe the River lapwing population completely from dawn to dusk. Running water streams were observed as the water streams were the major activity ground for River lapwing. The observation camps were setup at proportional distance on the whole stretch of 5838.65 m. to estimate the population of River lapwing. The population count was taken at regular intervals of 3 hours throughout the day for total of 4 visits. Such observation gives insights in population variation at different time across the whole identified habitat on Tapi river banks.

At the projected site of Kutanga, river bank holds sand, gravels and shallow water which provide necessary environment for algae formation. This alga is a food material for several insects and larvae which are major source of food for River lapwing. 12 individuals were observed during all the 4 visits; however, variation was observed in number of Lapwing sights during different time of the day, as after every 3 hours availability was recorded. The River lapwings were observed comfortably interacting with other species of birds like River tern, Red-wattled lapwing, Grey wagtail, White browed wagtail, little ringed plover, small pratincole and common sandpiper. No conflict among these species and River lapwing on common feeding grounds was observed. Activities of the individuals was at peak during early hours of the day and lowest during noon time. No special roosting site was found at Kutanga, and the individuals were mostly seen resting on the sand banks of the river.

Unlike at site Kutanga, almost half number of individuals of River lapwing were observed at site Rangubeli, during all the 4 visits 6 individuals were recorded. Similar activity was observed during different times of the day as at site Kutanga. Activities of the individuals were at peak during early hours of the day and lowest during noon time the social behavior of River lapwing showed no major difference with the other species of birds. At this site the river lapwing individuals were observed roosting in rock crevices during noon hours of the day.

At both the projected sites close human activity was observed. The human activities included washing clothes, vehicles, cattle and fishing in the shallow waters. The same shallow waters provide necessary foraging ground for River lapwing. Movement of stray dogs and cattles were also observed significantly throughout the day. Such movements are major reason for habitat destruction of River lapwing.



Roosting at river bank



Roosting site in rock crevices

## Conclusion

The River Lapwing (*Vanellus duvaucelii*), assessed as Near Threatened by the IUCN, is primarily found along major river banks in the Indian subcontinent and Southeast Asia. The field study conducted in the Melghat region of Maharashtra confirmed suitable habitats along the Tapi River, providing essential resources for the species. Observations indicate a clumped distribution pattern with flock sizes varying by location. Human activities such as washing, fishing, and the presence of stray dogs significantly threaten their habitats. Conservation efforts must focus on habitat protection and mitigating human disturbances to ensure the species' survival.

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