

Ecosystem Services by the Indian Courser bird, *Cursorius coromandelicus*

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Indian Courser *C. coromandelicus* is one of the resident breeder in India which inhabits sparse grasslands. It is called as 'Dhavik' in Marathi. The name *Dhavik* is derived from its fast walking style on open countryside plains. Of course, it's a member of sporadic family Glareolidae. Its various habitats include wetlands as well as savannahs.

Indian Courser is characterized by its brown crown, chestnut coverts and chalky white long legs and sharp curved bill adapted to insectivorous diet predominantly (Ali, 1996). Both male and female are alike but adults, juveniles and sub-adults occur in flocks often. Despite its long history, adapted for omnivorous feeding habit composed with various insect orders Lepidoptera, Orthoptera, Coleoptera are major preferred groups (Vanjari, 2015). Fascinating natural history of this beautiful winged creature also provide crucial ecosystem services which made a resilient acquaintance with human being. A fragile ecosystem has been precariously balanced alive with the species like Great Indian Bustard *Ardeotis nigricaps*, Yellow-wattled Lapwing *Vanellus malabaricus*, Rain Quail *Coturnix coromandelica* with Indian Courser *Cursorius coromandelicus*.

Ecosystem services are the processes and conditions by which natural ecosystem and species composed it up, sustain and fulfill human life (Daily, 1997). They are integral aspects of human lives. It is mainly composed by its indicators, drivers and values. Conceptually they are classified as Provisioning services, Regulating services, Cultural services and Regulating services (MA, 2005). Expanding built up areas, urbanization, and increasing land conversion into agricultural practices had huge decline in natural habitat. Human well-being, poverty and development index and conservation of life on earth are interlinked. In order to meet the biodiversity conservation and its management, there is necessity to understand services provided by a species.

Many flagship bird species such as Great Indian Bustard *Ardeotis nigricaps*, Lesser Florican *Sypheotides indica* are critically endangered (Birdlife International, 2001). Presently, ornithologists and ecologists do not have enough popu-

lation of these species to assess their services and ecological functions in depth. On the other hand, Bush Quails *Perdica* sp., Buttonquail *Turnix* sp., Courser *Cursorius* sp., Sandgrouse *Pterocles* sp., Larks *Calandrella* sp. and *Alauda* sp. these are few dwellers of same habitat which are least concern (Prasad, 2003). Hence, this could be best opportunity to investigate ecosystem services in grassland ecosystem and their economical impact on agriculture at species level.

Study region

Solapur is a semi arid province, situated in southern Maharashtra. It lies in drought prone area at 455mt from MSL. Adulating land pattern with southern tropical thorny forest type is major texture of this land. Climatic condition were average during field visits with temperature 19°C-38°C and 54-86% respective humidity. Vegetation is covered potentially with grasses and herbs, but also rich in arboreal flora. Grasses are second largest rich family contribute to land cover (Garad et al., 2015). Four study plots were selected on the basis of representative numbers of individuals at each site. i.e. Hiraj (17°42'33"N, 75°49'20"E), Kumbhari (17°65'72"N, 75°98'45"E), Gangewadi (17°50'02"N, 76°00'14"E) and Mulegaon (17°40'09"N 75°59'14"E). Behavioural observations were recorded on field in morning and late evening. Vanjari et al. (2014) suggested that it has fair population density in the district. Perhaps, this is a preliminary assessment which has an open end to develop into further extent. This could be more relevant accessory tool for planning of habitat and management of reserves.

Provisioning service: Game birds of India fascinated passionate hunters as well as poachers. Indian Courser was

Table 1. Amount of Guano of Indian Courser.

Dropping analysis	Indian Courser	Surrounding
Total weight	4.842 gm	9.706 gm
Number of samples(n)	8	11
Mean weight of a drop	0.674gm	0.856gm

Source : Vanjari (2015)

one of the favorite in its family. Though in recent years or even during present investigations, author did not come across with such illegal hunting of Indian Courser in Solapur so far.

Cultural services: Recent days there is an increasing trend of exploring the dried trails of pristine protected area of Deccan plateau. On immense tract of tropical thorny forests, which exceptionally rich in spectacular wildlife, Indian courser is one of the favourite bird species. Not only for professionals but also amateur photographers and film makers which keenly observed during field trips. This species also allows huge number of nature lovers to serve its cultural essence through creating amuse to have an exposures and documentaries. This practice has a high potential to improve economic through tourism for well being of local tribe and Fishermans. However, this leads to common public awareness about wild life.

Regulating Services: Birds are predominantly regulating agro ecosystem and health of human population by controlling pest surveillance. Indian courser was recorded while feeding on ants, most Common Weevil, Beetle, Cockroach and Scale insects on juvenile crops Jowar, Maize and Wheat. Few plots were grown vegetables like Tomato and Toor pulse where five to six individuals spreaded over four acres of cultivated land. During off cultivation season as well as on fallow lands coursers spend their day time to grab the food from below top soil. On country side landscapes where flower and rich grass species were pecked during insect catching. Faecal analysis shows the presence of unbroken seeds of grasses. It composed of Calcium, Seeds and chitin skeleton of insects.

Supporting Services: Indian Courser form the linkage of food chains in better words in grassland as well as agro ecosystems. Generally, native species support other native species more effectively than non-native. Faecal analysis revealed that, it rich in Calcium. It helps to keep soil highly nutritious. Dropping of *C. coromandelius* contains high density of chitinous material (Table 1), which made up of exoskeleton of insects and worms. At present study site top soil layer exposed with very harsh and desiccated conditions often, in results, it become deficient of organic matter which can be nourished by this manure.

Above results are in accordance with the ground work by Whelan et. al. (2008).

Recommendations

Empirical evidences are much demanded in order to conserve the biodiversity. To achieve that, this context clearly indicates that, *C. coromandelicus* contributes its function to regulate the ecosystem by unique diet preferences. These efforts support valuation to ensure benefits from species to

humans (Wenny et al., 2011). Eye catching beauty and behavior have marginated the group of naturalists through developing a culture towards nature and species. It is more important to consider that an assessable population of species can give significant service than bottle necked one. Birds are resource linkers, but ecological functions and services of *C. coromandelicus* could help stakeholders and decision makers predict, prepare for and possibly prevent the economical consequences population declines of species in Peninsular India.

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