



## NOTES ON NATURAL HISTORY

# An overview of Great Cormorant *Phalacrocorax carbo* in the Indian Himalayan Region, with information on Recent Records

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Study Area: Maneri Dam, Uttarkashi, Uttarakhand, India  
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## Introduction:

*Phalacrocorax carbo*, commonly known as great cormorant are sighted along the water-bodies is generally distinguished from little cormorant (*Microcarboniger*) in reference to their body size. Only during the breeding season, great cormorants are prominently distinguishable from the later for its breeding plumage. The breeding adults are glossy black, with orange facial skin, white cheeks and throats, white head plumes and white thigh patches, noticeable only during flight. The white head plumes and thigh patches are not present in the blackish-brown non-breeding birds which are easily identifiable from its yellow gular pouch.

Usually seen in small flocks or single, great cormorant generally inhabits inland waters bodies, tidal lagoons, sand banks, etc., and also reported to be found occasionally in the high-altitude Himalayan lakes up to 3450 m (Ali, 1996). These birds breed throughout the year, but its breeding time varies geographically. In tropics, their breeding coincides with the rainy season in July- August, while in the temperate regions of the Northern Hemisphere it peaks between April and June. They generally breed in mixed-species colonies of 10-500 pairs occasionally up to 1000 pairs, depending on the proximity to the nearby feeding zone.

## Past records of *Phalacrocorax carbo*:

A detailed review of past records revealed that the great cormorants were sighted in different points of the states in the Indian Himalayan Region (IHR) (Figure 1). In Arunachal Pradesh, the bird has been sighted from seventy-seven mile base and Ramnagar, Tirap district (Dutta & Basu, 2006); Wakro, Lohit district (Dutta & Basu, 2006); D' Ering Memorial Wildlife Sanctuary, East Siang district; and Namdapha, Changlang district. In Himachal Pradesh, these bird has been recorded from Kulu, Bhuin to Larji, in Tirthan below Manglaur (Whistler, 1926) and Bilaspur to Suket (Jones, 1919). In Jammu and Kashmir these bird has been reported from Kishenganga River (Bates, 1936); Jhelum River at Domel, Tithwal gorge; Keran, Salkalla (Bates, 1936; Osmaston, 1927; Ward, 1907)

and Leh (Meinertzhagen, 1927).

In IHR of Uttarakhand the great cormorants were sighted in Pindar, Chamoli district; Augstiyamuni (ZSI Survey, 2004), Mandakini, Alakananda, Rudrapur district (Osmaston, 1921); Pauri, Pauri Gharwal district (Tak, 1995); Naini Tal, Naini Tal district (Tak, 1995); Gori river basin, Pithoragarh district. Although, the record of the sighting of the species from the districts of Uttarkashi, Almora and Tehri Gharwal were not found. In area outside the IHR these birds has been recorded from the Asan Barrage (Singh, 2000), Clement Town Tank (Singh, 2000), Shiwalik range of south-west Dehra Dun (Tak & Sati, 2007), and, Yamuna and Ganges (Tak, 1995) in Dehradun District; Bhimgoda and Jhilmil Jheel CR (ZSI Surveys, 2004-06) in Haridwar District; Rajaji National Park, Corbet Tiger Reserve (ZSI Surveys, 2002-05).

Sighting records of this species in different parts of Himalaya (Bageshwar district of Uttarakhand, the Pong wetland in Himachal Pradesh, Nameri National Park in Assam, Langtang National Park in Nepal, Pokhara in Nepal) with photographs were also found in different websites available on the internet.

## Recent sighting in Uttarkashi, Uttarakhand:

Great cormorant flocks and forages around lakes, ponds, rivers, dams and other water bodies. They are often seen to visit dams or reservoirs due to the availability of rich food resources. Maneri dam, situated at 1305 m above sea-level on river Bhagirathi with a reservoir spreading approximately over a square kilometre is not an exception. It's visited by migratory species of birds and is a paradise for riparian birds like white-capped water redstart, yellow wagtail, white-browed wagtail and water birds like the little grebe, northern pintail, garganey, common pochard. During our ten months survey from June 2015 to March 2016,



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Figure-1: Sighting locations of great cormorant in the Indian Himalayan Region.

Figure-2: Recent and reported sighting locations of great cormorants in Uttarakhand.

it was only in late February when the great cormorants arrived in the Maneri dam reservoir. The emergence was noticed with the first rainfall in winter. It was a small flock of three adult males in their breeding plumage. According to locals, who refers to it as Pan-kowwa, these birds are seen in the water bodies of Uttarkashi (1112m asl) to Harsil (2492m asl) for two-three months from late winters (around February to April). Analysing the information from past records and personal observation, it was assumed that these birds are non-residential or migratory breeders of this part of the Western Himalaya (Bhagirathi river basin). Although, no record of the birds breeding in the IHR were found but the recent sighting of the birds in breeding plumage indicated that they may breed in the region. Long-term observations may reveal their breeding grounds. They maybe non-residential breeders but their migration routes are still unknown. The great cormorants observed in Maneri dam might have migrated from the low-altitude water bodies of Uttarakhand or somewhere from peninsular, central, western or eastern India as they are widespread residents in these regions. In the year 1975, four great cormorant was observed in Boat club, Kolkata, West Bengal which was ringed from Russia and eight different such records were reported to the Ringing centre, Moscow from different parts of India (Abdulali, 1976). Hence, there is a fair chance that these birds migrate from other parts of the globe and breed in the Himalaya.

### Great cormorants as indicators of environmental changes:

Great cormorants' diet is dependent on fishes. Temperature change has a significant effect on the fertilisation and hatchability of fish eggs that directly affects the productivity of the water bodies where the water birds breed on winters or stop-over. Reduced resource availability on a particular season would negatively affect the emergence of the birds in the same spot next season. This could be a significant evidence of variations in the environmental variables in the aquatic ecosystem. Thereby, Great cormorants' may be treated as an indicator of water quality and productivity of water bodies.

### Path ahead:

Telemetry study of the migratory routes of these birds

possibly indicates us more on the background of their life history and accurate distribution range map. It may also reveal unknown capture or hunting pressure in parts of India or the world, where there are conflicts with the fisherman or they are being used for fishing or as the protein source. The migratory routes and distribution of great cormorants in the IHR needs to be studied to assess the effect of changing environmental variables on the yearly assemblage, population, breeding or wintering or stopover sites of this migratory species. Any change in these variables will reflect the negative intricacies of the region and in-turn will be supportive in decision making for sustaining the Himalayan ecosystem and devising mitigating efforts for protecting this species of migrants from any possible threats to their existence.

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