

Cooperative fishing by Great Cormorants (*Phalacrocorax carbo*)

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On 21st December 2008, we (Raju and Tarique) were birding at the Paradgaon tank in Nagpur district of Maharashtra. Our aim was to locate the Mongolian collared Bar-headed Goose (*Anser indicus*). Around 400 Bar-headed Geese arrived at the tank in small flocks flying low at around 0840 hrs to 0900 hrs.

A big flock of around 140-150 Great Cormorants (*Phalacrocorax carbo*) flying low alighted on the tank, when the Geese were alighting. While landing they flew erratically for some distance. Then they all landed in a line in the tank. And immediately they started fishing. All the Cormorants moved fast in one line herding the school of fish forward and catching them. What we observed that the fish were literally jumping out of water or coming to surface in front of the line of the Cormorants as if cornered. The Cormorants were getting lot of fish. While the line or formation of Cormorants moved forward, the Cormorants at the tail end flew and dropped at the leading front of the fast moving line. It was like fishermen pulling a net that they were moving.

Looking at the success they achieved in getting the fish by this cooperative effort we wondered.

Then, something very unusual happened. A flock of five River Terns (*Sterna aurantia*) arrived at the site and started diving in the middle of the Cormorants, where lots of fishes were coming to the surface to escape the Cormorants. The River Terns also got lot of fish in this way.

As the flock moved towards the reservoir wall, the fishes started jumping. Here many Little Egrets (*Egretta garzetta*) gathered at the bank and merrily picked up the fishes herded towards the bank by the efforts of Cormorants.

From here again the flock flew to deeper waters and fell in line, as it did in the previous attempt. Here, though it was quiet deep here the Little Egrets jumped among the Cormorants and caught the fish. The Little Egrets jumped up to the belly in the water and picked up the fish. But they did not swim. They were clumsily flying over the waters. Probably, looking at the tactics of the Little Egrets, one Indian Pond Heron (*Ardeola grayii*) also joined the flock for fishing. It clumsily flew over the flock of Cormorants and tried to pick the fish with its legs. The Little Egrets and Indian Pond Heron laboriously kept flying over the surface in front of the Cormorants.

It was observed that every Cormorant wants to be at the leading edge of the hunting formation. So, the last one keeps flying to the front position. And when this kept happening in so much of quick succession, the flock moved ahead faster than the speed with which they would otherwise swim across.

The Cormorants flew to the bank at around 0945 hrs. They rested here and dried and preened their wings.

At 1230 hrs in the afternoon the Cormorants again resumed the fishing in the same cooperative manner. This time also two River Terns and two Little Egrets arrived and joined the fishing frenzy. We have never seen, Cormorants getting so much of fish in such a short time. Probably the success in getting the fish was because of their cooperative effort. We stopped our observations at 1230 hrs when the Great Cormorants were still fishing in the same manner.

According to Donald Redfield Griffin “Sometimes hunting groups succeed in surrounding or concentrating prey that would otherwise be more likely to escape. This type of simple cooperation has been observed when pelicans, cormorants, South African Otters, Dolphins or killer whales are pursuing fish (Curio, 1976, 199-201). The behaviour of large cooperating groups is quite different from that of individuals pursuing fish on their own or in smaller groups. For example, Bartholomew (1945) observed that Double Crested Cormorants (*Phalacrocorax auritus*) fished in different type of formation when in very large groups of 500 or more than when only 50 or so were pursuing fish together. In such cases the individuals modify their behaviour only enough to maintain an appropriate position in the formation. Cormorants in the Netherlands vary their fishing tactics according to the distribution of fish and the turbidity of water as analysed by Van Eerden and Voslamber (1995) and Voslamber, Platteuw and Van Eerden (1995).”

According to Halliday, “Seabirds also cooperate to increase their success rate. Blue-eyed Cormorants form huge “rafts” of birds over schools of fish. The rafts dive in unison, maximizing the confusion in the school they are attacking, each cormorant eats its fill. Pelicans in contrast to the Cormorant frenzy sedately encircle a school of fish, drawing the school into a more tightly bunched group as if they were being concentrated in slowly closing purse-seine fishing net. Once the school is concentrated the Pelicans simultaneously scoop the tightly packed fish into their pouched beaks”.

However, we did not find any references on cooperative hunting by birds in Indian literature. Hence we think this worth reporting.

References:

Griffin, Donald Redfield (2001): Animal minds: Beyond Cognition to Consciousness. University of Chicago Press. Pp.74

Halliday, Tim (1994): Animal Behavior. University of Oklahoma Press. Pp.45.

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