

Common Kingfisher (Courtesy: Arthur Morris, www.birdsasart-blog.com)

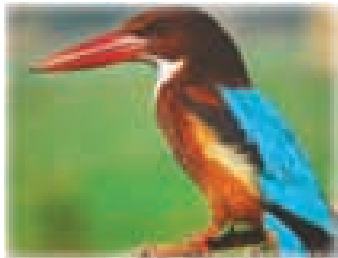


Colourful Kingfisher

KINGFISHERS are among the most colourful representatives of the bird community. They have very attractive plumage, imbued in contrasting colours. The common Kingfisher, for example, has its breast covered with orange-coloured feathers, back decorated by cyan-coloured feathers and tail that has blue-coloured feathers.

Kingfishers as a group comprise of small to medium sized birds, and taxonomically belong to the order Coraciiformes. This order also includes birds such as hornbills, hoopoe and bee-eaters. Kingfishers are either placed in a single family Alcedinidae, or distributed in three families under suborder Alcedines (Wikipedia). The three families are: Alcedinidae, Halcyonidae and Cerylidae (Wikipedia).

Kingfishers are distributed throughout the world, except at the poles. Most of their species are found in tropical regions. They mostly colonise land areas adjacent to a freshwater body or areas in the vicinity of brackish-water estuaries. Shy by nature, these birds like to rest on tree branches hanging over open and clear water bodies which would facilitate capturing of prey. They have large heads with long, straight and strong beaks. Their legs are short.



The colouration of feathers in Kingfishers has long been a matter of curiosity among bird-lovers. For example, Stavenga et al. (2011) investigated the anatomical basis and optical characteristics of colouration in the feathers of Common Kingfisher *Alcedo atthis*. They wrote:

"Birds possess various pigment classes, for instance carotenoids, pterins, porphyrins, psittacofulvins and melanins (McGraw, 2006; Hill and McGraw, 2006), and various mechanisms of structural colouration, namely thin films, multilayers, photonic crystals, keratin spongy nanostructures and nanofibres (e.g. Durrer, 1977; Shawkey et al., 2003; Shawkey et al., 2006; Yoshioka et al., 2007; Doucet and Meadows, 2009; Prum et al., 2009; Stavenga et al., 2010; D'Alba et al., 2011). The predominant location of colouration is the feathers, often either the barbs or the barbules. The colour of *A. atthis* feathers has been attributed to spectrally selective pigment and to a spongy nanostructure in the barbs (Finger, 1995)".

Feeding: Many kingfishers, in particular the small ones, consume fish, often supplemented by aquatic and flying insects, crustaceans, amphibians etc. Asokan (2009) studied the diet pattern of white-breasted kingfishers (*Halcyon smyrensis*) and concluded that 83% of the diet was made up of arthropods. In fact, these birds

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have developed adaptations which provide them flexibility in terms of their feeding habits. For example, the stork-billed kingfisher (*Halcyon capensis*) has a long bill that aids the bird in capturing crabs.

Soud et al. (2010) even reported the feeding of common wolf snake (*Lycodon aulicus*) by white-breasted kingfishers (*Halcyon smyrensis*) in Assam. The mode of foraging is also typical in kingfishers. They plunge headlong into the water commonly from a perch above the stream, once they have spotted their prey. The prey is then captured and beaten to death before swallowing it. Though plants are lesser known to be eaten, it has been reported that blue-breasted kingfisher, *Elaeis guineensis*, feeds on oil palm fruits.

Social Life: Kingfishers are mainly solitary and monogamous. They are hole nesters and defend their territory tenaciously. Fish-eaters make burrows in river banks while the terrestrial feeders more often burrow in termite nests or make use of cavities in trees. In a study conducted by Ali et al. (2010), white-breasted kingfishers (*Halcyon smyrensis*) were observed to dig lengthy tunnels varying from 48-152 cm. The eggs, 2-7 depending on species, are pure white. Both parents take part in incubation and in taking care of the young.

Threats: Kingfishers have been found to be at the receiving end due to biomagnification problems. The ones consuming fishes are liable to accumulate potentially hazardous chemicals such as Mercury, Selenium and Brominated Flame Retardants (BFRs) that enter the food chain via aquatic pollution. Baron et al. (1997) reported potentially toxic concentrations of selenium and mercury in the samples of belted kingfishers (*Ceryle alcyon*) whereas Mo et al. (2012) assessed the biomagnification potential of BFRs in common kingfisher, *A. atthis*. It has been reported that piscivorous birds such as kingfishers, consuming fishes contaminated with higher doses of bioaccumulating substances may be at risk of reproductive abnormalities such as reduced hatchability and low chick survival rate.

The major threat to these colourful birds stems from habitat loss due to deforestation and environmental degradation.

Contributed by Ms Meeta Kumari, A-2/11, Department of Space Colony, Ahmedabad-380056, Gujarat; Email: meetak85@gmail.com