

On a Wing: Migration of Birds to India

The vision of winter in India brings to mind steaming cups of chai, warm sweaters and shawls and fog. It also heralds the arrival of at least 229 species of birds to the subcontinent, from around the world. This seasonal movement of animals from a region of low to high resources is called migration. Migration is primarily triggered by a need for food; it also coincides with the breeding season in many birds.

Migration, more often than not, is associated with long journeys halfway across the world. Case in point, the Arctic Tern that flies a distance of approximately 40,000 km from the North to the South pole and back, every year! Meanwhile the Bar-headed Goose is believed to make its journey to India by flying over the Himalayas! Some birds show short distance migration such as altitudinal movement. For example, the Rock Thrush migrates from the Himalayas to the Western Ghats during the subcontinent's winters.



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Bar-headed Geese at Bharatpur

In order to maximize the success of these arduous journeys, migratory birds show certain evolutionary adaptations. Migratory birds tend to have longer wings and pointed wing tips in order to enable them to overcome resistance caused by air currents. It is also a commonly known fact that most birds' skeletal systems are porous and light while their respiratory systems are extremely efficient in order to enable flight. In order to maintain and sustain their energy reserves during the course of their journey, birds tend to feed more before the onset of migration. Through this, they gain weight that is stored as fat reserves in their bodies, which is then converted to energy during flight. The amount of weight gained, depends on the size of the bird and the distance it travels. Birds are also highly sensitive to changes in the environment; this triggers their migratory instincts. For example, the Redstart flies to lower altitudes from its home in the upper reaches of the Himalayas just before the onset of snowfall.

In order to reach a destination, it's important to know the way. Without the help of external aids such as maps and compasses, how do birds know where to go—especially, first-timers that have to find their way to places they have never been to? Birds have been found to navigate using the sun, stellar constellations, visual clues as well as other chemical aids such as olfactory signals in order to continue onward in the right direction. Some birds are believed to orient themselves according to the position of the sun. They are thought to be able to detect polarized light as it is filtered through the atmosphere. Birds like passerines that migrate at night, use the stars as a means of finding the right direction. Some scientists are of the view that birds may be able to detect the earth's magnetic field and use it to map the right route. There appears to be a certain molecule called magnetite between their eyes that helps them orient themselves to the North-South direction according to the earth's magnetic field. These molecules gauge the strength of the magnetic field and help the birds determine their positions. Other research reveals that these molecules may also be photo-sensitive chemicals, which react to the earth's magnetic field and relay that information to the bird's brain.

Birds usually migrate along fixed paths or routes called flyways. In order to get through these arduous journeys, they rely on food supplies as well as conducive weather conditions. Hence, flyways are paths that fulfill these conditions. In India, most winter migrants enter the subcontinent through the Central Asian Flyway, which serves as the route for migrants that travel from the palearctic regions to the subcontinent. Birds like Pintails and Godwits mostly enter India through the Northwest. Some birds arrive in the swamps of the Brahmaputra, which is believed to be an important passage for birds flying in from Northeast Asia. Apart from this, the coastal region from Chilika in Orissa right up to Point Calimere in Tamil Nadu is believed to be a passageway for pelagic migrants.

In all, around 229 birds migrate to the subcontinent each year during winters and 26 during the summer. Many species are altitudinal migrants wherein they winter in the warmer parts of the subcontinent, spending the summer in the Himalayas.



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Greater Flamingos at the Rann of Kutch

Migratory birds tend to signal a shift in seasons. For example, the arrival of the Jacobin Cuckoo (alternately called the Pied-crested Cuckoo) in India, signifies the arrival of the Southwest monsoon on the subcontinent. They are thus thought to be important indicators of changes in the climate as well habitat degradation and other environmental issues. For example, Siberian cranes, which used to migrate to the subcontinent, last arrived here in 2002. Scientists attribute the loss partly to scarcity of food resources as well as increased levels of pollution in the habitat of the birds. Moreover, migratory birds also face the threat of hunting. While hunting is banned in India, locals in many parts continue to poach waterfowl and other birds for meat. However, there are many places outside the subcontinent along flyways where they are legally hunted and thus continue to be threatened through habitat destruction, scarcity of food resources and hunting.

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Siberian Cranes at Bharatpur

In spite of these dangers, many birds continue to migrate to India year after year. In many cases, their 'summer/winter homes' are accorded the status of protected areas (PAs), many of which are renowned world over for the strict levels of protection that is accorded to these habitats, and consequently to the birds. Among the popular ones are Keoladeo National Park in Bharatpur, Chilika Lake in Orissa, Point Calimere Sanctuary in Tamil Nadu,

However, one needn't always travel far in order to go birdwatching. Birds congregate wherever there is suitable habitat, and sometimes this is to be found in the middle of a bustling city. Consider the mudflats of Sewri in Mumbai which hosts flamingos and black-tailed godwits among other birds. Likewise, the Pallikarnai marsh in Chennai also plays host to numerous migratory waders. Many PAs like Guindy National Park and Sanjay Gandhi National Park, in Chennai and Mumbai respectively, lie in the midst of cities.

For those who like to travel in pursuit of these visitors, the subcontinent has a host of places on offer. Flying in from Eurasia, Demoiselle Cranes flock to the grasslands of Kheechan in Rajasthan where they are protected by the local communities. Likewise, Keoladeo-Ghana National Park in Bharatpur is a very popular PA, renowned for sightings of migrants like pelicans, Green-legged geese, Chinese coots etc. Down South, Point Calimere Sanctuary in Tamil Nadu is an important spot for migratory birds that fly in from as far as the Caspian Sea in Europe. Flamingos from the Rann of Kutch winter here; other waders like avocets, pelicans, Common and Cotton Teals also find their way here. The region is notable for being visited by the rare Spoonbill Sandpiper. Other popular regions for migratory birds in South India are Vedanthangal near Chennai and Kolleru Bird Sanctuary in Andhra Pradesh among others. The former is an important example of community conservation. On the eastern coast, lies Chilika Lake in Odisha, which is the largest wintering ground for birds in Asia. This brackish lagoon is popular for sightings of waders that fly in from Central Europe and the Himalayas. Further east of India, the swamps of the Brahmaputra play host to Bar-headed Geese, which can be seen in Manas and Kaziranga National Parks in Assam. The White-winged Wood Duck winters in Nameri National Park and is a must-see on most birdwatching lists. Amur Falcons migrate to Nagaland where they were found to be hunted by the locals. However, sustained efforts have been made to stop the massacre. Up North, is the Pong Dam, an important wetland listed under the Ramsar Convention known for sightings of Northern Lapwings, Bar-headed geese, Northern Pintails among others.



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White-winged Wood Duck at Nameri

This is hardly an exhaustive list of birdwatching sites-the subcontinent witnesses the arrival of

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scores of such birds. Not only are these birds of immense aesthetic value, but they are also important indicators of the state of our environment. India is a country renowned for its sense of hospitality, which must be extended to its avian visitors too.

-Kavya Chimalgi
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