



Status and Conservation of Raptors in and Around Navegaon National Park Maharashtra India

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Abstract

Navegaon National Park is one of the key conservation areas for wildlife and well known for its avian diversity. In the avifaunal composition the Raptors as top predators have most integral part to maintain the ecosystem proper. Due to the various threats found in and around the park, their status survey was done and the conservation measures according to their conservation needs were discussed. In the present investigation, 38 species of the Raptors were recorded from the Park and surrounding area. In total recorded 38 species, 10 species were common, 11 were uncommon, 05 were occasional, 04 were rare and 08 species were found to be winter visitors. Various threats like sporadic fire, cattle grazing and illegal NTFP (Non Timber Forest Product) collection by local communities affecting the safe nesting, roosting sites and prey base and ultimately the population size.

Keywords: Raptor, status, Navegaon National Park, threat, conservation.

Introduction

Raptors, the top predatory birds comprising hawks, eagles, vultures, falcons and owls are essential components of the ecosystem. Most of the species were affected due to urban development. The term “raptor” is from the Latin word *rapere* meaning “to take by force”. Predators kill the animals they eat. Scavengers find and eat animals that are already dead or nearly dead. Raptors typically hunt and kill their prey, though some species regularly scavenge too. Raptors are equipped with sharp talons (claws) and a hooked beak that assist them in their predatory way of life. Sharp talons assist with the capture and holding of prey, while the beak helps tear flesh and other tissues. Falcons, hawks, vultures, and eagles are active primarily during daylight hours, whereas owls are mainly active at night¹. Raptors are found all over the world and in all types of habitats, which are considered as the indicator of the health of the forest². Raptors have exceptional hearing capacity, hooked beak, sharp talons used for catching and killing prey and well supported by excellent vision. They also have different body shapes, although all of them are built for speed and efficient hunting. In Indian culture raptors always have a special position as ‘Garuda’ usually the “Vahanum” of the God Vishnu. They were also mentioned in the great Hindu epic ‘Ramayana’ as Jatayu and Sampathi which were mainly the vultures. Among raptors vultures are one of the special group which feed solely on dead carcasses and primary consumers carrion in India and elsewhere. Socio-eco-cultural significance of vultures in India may be summed up as feed on animal carcasses to keep environment clean³. Raptors are efficient scavengers therefore their conservation is needed.

Being flagship species they have the potential to influence public and elicit their support for wildlife conservation. Birds of prey (Raptors) are among the most dramatic of all the avian species and represents by 313 species from whole world⁴. Their remarkable appearance, spectacular hunting skills have inspired generations of bird watchers. As top predators they are keys to our understanding and conservation of various ecosystems they inhabit, such as forest, grassland and wetland. Changes in their status can reflect changes in the availability of their prey species; including detrimental environmental changes may be chemical contamination or heavy metal toxicity. Regular monitoring of population status of raptors is essential in proper management of any natural resources. The area needed to sustain a genetically viable population of raptors often extends to several square kilometers and therefore their conservation can indirectly contribute to conservation of many threatened floral and faunal species. In the present study, authors recorded the diversity of raptors, report baseline data and suggest the conservation measures for their conservation needs.

Material and Methods

Study Area: Navegaon National park is situated in Gondia district of eastern Maharashtra. It lies between 20 45’ to 21 2’ NL and 80 5’ to 80 15’ EL. The study area is located in Gondia Wildlife division and surrounded by small villages. Villagers graze their cattle on the available grassland and forest area. Predominant species are Teak, Khair, Palas, Arjun, Mahuwa, Bija, Tendu, Mowasai, Saja, Lendia, Bamboo, and Katang Bamboo. Navegaon National Park is one of the well-known nature reserves in Vidarbha. The sighting of endangered and threatened species of mammals like Gaur, Mouse deer,

Chausingha, Ratel, Tiger, Leopard, Sloth bear, Wild dog, and Indian wolf.

Methodology: Raptors were observed by using binocular (07x50). They were identified using guides and reference books. Birds were identified up to species level^{5,6,7,8}. Observations were

made every Sunday throughout the year during 2010 to 2013 from morning 5 am to 6 pm. Bird watching was done from representative areas like all wetlands, grasslands and forest. They were marked as C =Common, O = Occasional, R = Rare and W = winter migrant, U = Uncommon.

Table-1
Status and diversity of Raptors recorded in and around Navegaon National Park

Sr. No	Common Name	Scientific Name	Local Status	IUCN Status	IWPA Status
01	Shikra	<i>Accipiter badius</i>	C	LC	I
02	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	U	LC	I
03	White- Eyed Buzzard	<i>Butastur teesa</i>	C	LC	I
04	Common Buzzard	<i>Buteo buteo</i>	U	LC	I
05	Short-Toed Snake Eagle	<i>Circaetus gallieus</i>	U	LC	I
06	Western Marsh Harrier	<i>Circus aeruginosus</i>	W	LC	I
07	Pallid Harrier	<i>Circus macrourus</i>	W	NT	I
08	Pied Harrier	<i>Circus melanoleucos</i>	W	LC	I
09	Black- winged Kite	<i>Elanus caereuleus</i>	C	LC	IV
10	White- rumped Vulture	<i>Gyps benalensis</i>	R	CR	IV
11	Long- billed Vulture	<i>Gyps indicus</i>	R	CR	IV
12	Booted Eagle	<i>Hieraaetus pennatus</i>	W	LC	IV
13	Grey-Headed Fish Eagle	<i>Ichthyophaga ichthyaetus</i>	U	NT	I
14	Pariah Kite	<i>Milvus migrans</i>	C	LC	I
15	Brahminy Kite	<i>Haliastur indus</i>	C	LC	I
16	Egyptian Vulture	<i>Neophron percnopterus</i>	O	EN	IV
17	Osprey	<i>Pandion haliaetus</i>	W	LC	I
18	Oriental Honey Buzzard	<i>Pernis ptilorhynchus</i>	O	LC	I
19	Crested Serpent Eagle	<i>Spilornis cheela</i>	C	LC	I
20	Changeable Hawk- Eagle	<i>Spizaetus cirrhatus</i>	U	LC	I
21	Bonellis Eagle	<i>Hieraaetus fasciatus</i>	O	LC	I
22	Red- necked Falcon	<i>Falco chicquera</i>	U	LC	IV
23	Laggar Falcon	<i>Falco juggar</i>	U	NT	IV
24	Peregrine Falcon	<i>Falco peregrinus</i>	W	LC	I
25	Shaheen falcon	<i>Falco p. peregrinator</i>	W	LC	I
26	Eurasian Hobby	<i>Falco subbuteo</i>	W	LC	IV
27	Common Kestrel	<i>Falco tinnunculus</i>	C	LC	IV
28	Eurasian Eagle Owl	<i>Bubo bubo</i>	C	LC	IV
29	Dusky Eagle Owl	<i>Bubo coromandus</i>	U	LC	IV
30	Spot- Bellied Eagle Owl	<i>Bubo nipalensis</i>	R	LV	IV
31	Brown Fish Owl	<i>Ketupa zeylonensis</i>	O	LC	IV
32	Spotted Owlet	<i>Athene brama</i>	C	LC	IV
33	Jungle Owlet	<i>Glaucidium radiatum</i>	U	LC	IV
34	Collared Scops Owl	<i>Otus bakkamoena</i>	U	LC	IV
35	Brown Wood Owl	<i>Strix leptogrammica</i>	O	LC	IV
36	Mottled Wood Owl	<i>Strix ocellata</i>	U	LC	IV
37	Brown Hawk Owl	<i>Ninox sscutulata</i>	E	LC	IV
38	Barn Owl	<i>Tyto alba</i>	C	LC	IV

Status Code: C=Common, U=Uncommon, O=Occasional, R=Rare, W=Winter migrant, LC=Least Concern, NT=Near Threatened, CR=Critically Endangered, EN=Endangered.

Results and Discussion

In the present study, 38 species of raptors were recorded, belonging to 04 families, grouped under 02 orders. The comprehensive list depicting their local as well as conservation status is given in the table 1. According to the IUCN Global Conservation Status⁹, 02 species are critically endangered (CR), 01 species under endangered (EN), 03 species under near threatened (NT) and 32 species are under least concern (LC) category. The National conservation status of the raptor species under Indian wildlife (Protection) Act 1972 was also studied and accordingly 18 species are under Sch. I, Sch. II- Nil, Sch. III- Nil, Sch. IV- 20 and Sch. V- Nil.

Discussion: Raptors are important to keep ecosystem healthy and valued to society in several ways like aesthetic, spiritual, recreational, educational and scientific values, ecological and economic values, etc. Total 312 species of birds were recorded from Navegaon National Park and its surroundings¹⁰. Among birds, the raptors are the indicators of healthy forest ecosystem and therefore it is necessary to monitor them for future conservation. On the basis of direct observations 38 species were recorded (table 1). Out of these 10 species are considered common, 11 uncommon, 05 occasional, 04 rare and 08 are winter visitor species. According to Birdlife International¹¹, *Gyps bengalensis* and *Gyps indicus* are considered as 'critically endangered' while *Neophron percnopterus* was classified as 'endangered' species¹². *Circus macrourus*, *Ichthyophaga ichthyaetus* and *Falco jugger* were categorized as 'Near Threatened' in IUCN Red list¹³. The nest or nesting site of vulture species was not recorded during study period but the colonies of long billed and white backed vultures have been noticed in the vicinity of park near Gandhari and Pratapgarh villages. Authors were observed about 50 vultures at Gidhad Pahad near Gandhari village in the year 2005, unfortunately authors fails to make scientific documentation of such¹⁴. Since their number has greatly reduced over the years, these sites need to be given special attention for the conservation of these birds.

The conservation of raptors presents unique problems because these birds are at the top of a food chain, where they often exist in low densities. Significant causes of raptor population decline include loss of habitat by degradation, fragmentation and the associated decrease in quantity and quality of hunting areas, nesting sites and food supplies. Intensive agriculture is rapidly eliminating the grassland, hedges, woodlands, orchards and fallow fields, where passerine birds, rodents, insects and other favored prey used to thrive. The drainage of wetlands which has accelerated in recent decades has been an important cause of decline of harriers everywhere. Increasing use of pesticides and other chemicals especially in the agricultural lands is also taking a heavy toll on the raptor populations. The state of India's environment is in upset at the hands of uncontrolled human activities, and these ecological ailments are affecting social growth potential. Decrease of land quantity, increasing air pollution, depletion of water resources, loss of indigenous species

of flora and fauna and the background of overwhelming poverty are depicted in the report to detract from the positive growth of Indian people and the country as a whole¹⁵. Thus, India's rapid growth is driving equally rapid environmental destruction¹⁶. Habitat degradation is today a major threat for avian species. The major threats faced by these birds were analyzed to be both environmental and anthropogenic¹⁷. Increased area of cropland and orchard was associated with reduced bird diversity, presumably because these land uses offer fewer trees and so support less diverse bird than forested area with greater vegetation structure¹⁸. From the conservation point of view Navegaon National Park appears to be one of the most successful spot, but the people around the forest area heavily depend upon forest resources. Sporadic fire and Cattle grazing are the two major threats to the park ecosystem that we observed during the study period, with illegal Non Timber Forest Product (NTFP) collection by local communities. Clearing forests for agriculture, ruthless exploitation of forest for timber, construction of major dams and development of holiday resort. They are playing a role in deterioration of the ecosystem of forest. Impact of such practices has increased the rate of fragmentation of forest ecosystems, which decreases richness of various species and biodiversity, ultimately making, maintain and forest extinction prone areas for every floral and faunal species¹⁹.

The raptors of Navegaon National park need a long term study in future to facilitate their conservation and management. To create awareness on avifauna and their habitat among all level of people it is necessary to establish training and exhibition programs especially among school students. An interpretation center is necessary for the park management to create awareness about wildlife importance among public including visitors. Some of the conservation measures are suggested like avoid loud noises and human activity in the park; minimize the disturbance to natural vegetation; keep machinery, people and pets away from important habitats including nesting, roosting and foraging areas; etc. Raptors are susceptible to a variety of contaminants like poisons ingested by their prey accumulate in the raptors' bodies. To minimize mortality of raptors due to pesticides, avoid use of chemical pesticides which can be lethal to raptors and other wildlife; use of traps rather than poisons for controlling rodents. To encourage the local residents near park to collect data and make observations on raptors for better conservation of raptors. Finally it is good to see that still viable population of different species of raptors are using the area of Navegaon National Park and flourish there, but if necessary steps are not taken in time, they might face the same fate of extinction as everywhere else in the country.

Conclusion

Navegaon National Park appears to be most successful spot for conservation of raptors but the population of raptors was found to be declined due to habitat loss. The long term study is essential to facilitate the conservation and management of Navegaon National Park. Awareness and conservation measures are recommended to avoid extinction of raptors in this region.



Figure-1
Grey headed fish eagle



Figure-4
Crested serpent eagle



Figure-2
Changeable hawk eagle



Figure-5
Long billed vulture

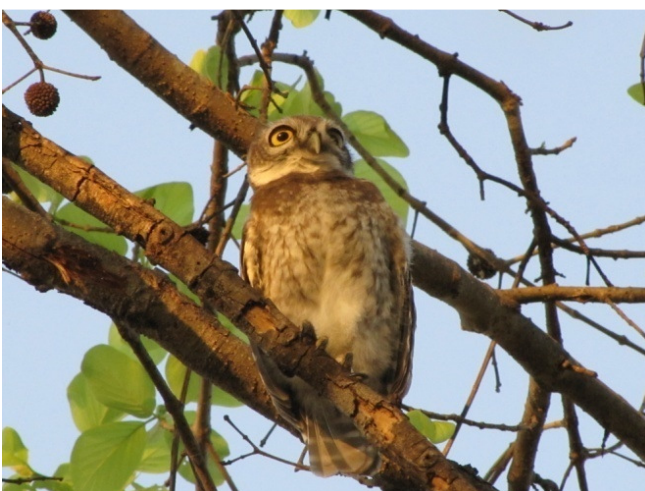


Figure-3
Mottled wood owl



Figure-6
Shikra

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