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Exploitation of Indian Rose-Ringed Parakeet (*Psittacula krameri manilensis* Scopoli, 1769) from Panvel, Navi Mumbai, India

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Abstract: This paper presents information on exploitation of Indian Rose-ringed parakeet (*Psittacula krameri manilensis* Scopoli, 1769) in a botanical garden of an undergraduate college in Panvel, Navi Mumbai. Results of the study reveals that even though measures designed to protect the birds by Wildlife Protection Act (1972) of India, still the birds are caught and kept as companion pets or traded. It is suggested that strict legal action must be taken against the culprits practicing the exploitation of Rose-ringed parakeets or any other wild life mainly for live companion pets or any other purposes. Awareness about ecological role of regional biodiversity among local community and regular surveillance by mobile squads of forest personnel will also minimize the trapping, illegal hunting and global trade of Rose-ringed parakeets to a greater extent. The study recommends further research to understand and minimize the exploitation of endangered species of wild life for conservation of the regional biodiversity.

Keywords: Biodiversity, Exploitation, Panvel, Pets, Rose-ringed Parakeet

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Introduction

Biodiversity is declining across the world, with unsustainable development degrading natural habitats and driving species to extinction. This in turn is reducing the capacity of our planet to sustain us into the future. Unsustainable hunting for food or sport and trapping for the cage-bird trade has been implicated in the extinction of many bird species and remains a significant threat today. Overexploitation is a particular problem for some bird families, including parrots, pigeons and pheasants, and is most prevalent in Asia (BirdLife International, 2018).

Sekercioglu (2006) documented that birds are one of the most diverse group and provide important ecosystem services such as meat for food, garments and fertilizer; scavenging carcasses and waste, control populations of invertebrate and vertebrate pests, pollinating and dispersing the seeds of plants; cultural services, bird watching; cycling nutrients and contribute to soil formation. Birds are also valued in many ways such as culturally, artistically, philosophically, economically and ecosystem services (Tabur and Ayvaz, 2010).

In India there are more than 1300 species of birds which is over 13% of the world bird species but, unfortunately India is the third among the countries having the largest number of threatened and rare species followed by Brazil and Indonesia (Dey *et al.*, 2013; Rajashekara and Venkatesha, 2015; Pawar *et al.*, 2020).

Ahmed (1999) noted that birds have been trapped and kept as pets and served as food and sustenance for the rich as well as poor. Various parts of the birds have been used in traditional medicines and some of these winged creatures have been used in black magic and horoscope. Some species of birds are more popular than others and there is a specific demand for them. Bagla (2002) stated that despite measures designed to protect the birds by Wildlife Protection Act (1972) of India, as many as 300 of birds are caught and traded with impunity.

Taxonomically, rose-ringed parakeet/ring-necked parakeet (*Psittacula krameri* Scopoli, 1769) belongs to the family Psittaculidae and the order Psittaciformes. It is native to Asia and Sub-Saharan Africa and has been a popular cage bird for many centuries (Parau *et al.*, 2016). Chavan *et al.* (2017) reported that parrots are one of the beautiful birds on the earth and well known for their pet value as cage birds, voice mimicking ability and one of the most significant pests of agricultural crop in India. Rose-ringed parakeet is considered as a pest as they invade crops and destroy horticultural gardens and orchards to cause property and economic losses. They primarily feed on citrus fruits, guava, mango, almonds, nuts, acorns as well as buds and flowers (Bilal *et al.*, 2020; Mukherjee *et al.*, 2020).

Psittacula krameri (Scopoli, 1769) exhibits four subspecies, two each from African and Asian continent. African subspecies includes African rose-ringed parakeet (*Psittacula krameri krameri*) and Abyssinian rose-ringed parakeet (*Psittacula krameri parvirostris*) whereas Asian subspecies consists of Indian rose-ringed parakeet (*Psittacula krameri manillensis*) and Boreal rose-ringed parakeet (*Psittacula krameri*) (Chavan *et al.*,

2017). African rose-ringed parakeet (*Psittacula krameri krameri*) is distributed in western Africa in Guinea, Senegal, Mauritania, Uganda, Sudan and north to Egypt. Abyssinian rose-ringed parakeet (*Psittacula krameri parvirostris*) is found in Somalia, Ethiopia and Sennar state, Sudan. Indian rose-ringed parakeet (*Psittacula krameri manillensis*) originates from the southern Indian subcontinent and also found in Australia, Great Britain, United States and other western countries. Boreal rose-ringed parakeet (*Psittacula krameri borealis*) is distributed in Bangladesh, Pakistan, northern India and Nepal to central Burma (BirdLife International, 2016; Joshi *et al.*, 2021).

Indian Rose-ringed parakeet is a medium-sized parrot with average length of 40-42 cm and are sexually dimorphic. Adult male has black throat, red and black neck ring, yellowish-white eyes, red bill with blackish lower mandible, no maroon-red shoulder patch, narrow black loreal line, lighter green scapulars and wing-coverts and yellowish to greenish-grey legs and feet. Adult female has dark green collar, no black loreal line and short tail streamers. Juveniles of both sexes are like female with paler bill, greyish eyes and short tail. Both sexes have green colour and are noisy with squawking call. They are herbivorous, non-migratory and in captivity, can be taught to speak. Ring-necked parakeet feeds on buds, fruits, vegetables, nuts, berries and seeds. Wild flocks fly miles to forage in farmlands and cause extensive damage. Breeding season lasts from February to May, loosely colonial and prepare nests in excavated or existing holes in tree, rock-face and is 3 - 10 m above the ground. They lay 3 - 5 white eggs and young ones fledge before the monsoon (Fig. 1) (Ahmad *et al.*, 2012; Chavan *et al.*, 2017; SoIB, 2020).

Price (2008) reported that major threats for decline in bird population include habitat loss and degradation, climate change, invasive species, collisions with other structures, collisions with glass and pesticides and other toxics. Ali and Khan (2020) documented that trapping of wildlife for marketing is as old as the world civilization and



Male parakeet
(Thin rose ring around neck and black bibb below bill)

Female parakeet
(Without rose ring and black bibb)

Fig. 1: Indian Rose-ringed parakeet (*Psittacula krameri manilensis* Scopoli, 1769).

use of birds as a pet made them vulnerable to illegal trade which in turn poses threats to birds' population. Parrot species with larger sizes, more colour morphs, and those in the Least Concern category of the IUCN Red List, were being traded internationally in large quantities (Chan *et al.*, 2021).

In line with above considerations, the present study was undertaken to document illegal trapping of rose-ringed parakeets which is reported for the first time from Panvel, Navi Mumbai, Maharashtra, India.

Materials and Methods

Study Area:

Navi Mumbai/New Bombay is a planned city situated in the Konkan region of Maharashtra, India and has a population of 1,119,477 as per the 2011 census. Navi Mumbai was established in 1971 as a new urban township of Mumbai by the Government of Maharashtra under City and Industrial Development Corporation (CIDCO) and is situated across Thane and Raigad districts. It covers an area of about 150 kilometres of the

Konkan coast with 86 villages covering 15,954 hectares within the present limits of Navi Mumbai. The Navi Mumbai International Airport (NMIA) is being constructed in southern Panvel area near Ulwe through Public Private Partnership.

Panvel (18°59'19.61" N 73°06'36.47" E) is a mega city and includes the area from Kharghar to Uran, including Taloja and Old Panvel nodes. Panvel is the most populated city due to its closeness to Mumbai (population of 1,80,464; Census India 2011) and is located in Raigad district in Maharashtra, India. River Kalundre flows across the city in the south-west region and opens up into Panvel creek. The average annual temperature in Panvel is 27.0 C with rainfall of about 3267 mm (128.6 inch) and average annual percentage of humidity is 75.0%.

Study Location:

The present study on exploitation of Indian Rose-ringed Parakeet (*Psittacula krameri manilensis* Scopoli, 1769) from Panvel, Navi Mumbai was carried out during January 2021 to April 2021 in the botanical garden of an undergraduate college

in Panvel, Navi Mumbai. The study site was visited regularly thrice a week for monitoring of pairing, nesting, laying and parental care in Indian Rose-ringed Parakeet. Observations were made for a period of four months with the aid of 10 X 50 Olympus binocular and Cannon 1100 D Zoom camera. For correct identification of parakeets, field guides and books of Ali and Ripley (1989), Ali (1990) and WCCB (2011) were followed.

Results and Discussion

During present investigation, exploitation of Indian Rose-ringed parakeets was studied in the botanical garden of an undergraduate college in Panvel, Navi Mumbai. On 15th Jan 2021 at 1.57 pm, it was observed that a pair of Indian Rose-ringed parakeets were leaving the nest (Fig. 2). Regular and systematic monitoring of the parrots indicate that the birds have just paired and are going to breed in a excavated or existing hole in tree.

When parrots left the nest, measurements of excavated hole in the tree were made. The nest hole is about 3.5 m above the ground and is with 3.5 inches (7.62 cm) in diameter and 1.5 m in depth. Bottom of the nest shows presence of feathers, young leaves and tender grass. Absence of eggs in the nest suggests that the parrots are going to breed very soon.

In present study, regular monitoring of parrots were done using Olympus binocular from January 2021 to April 2021. During routine observation, on 5th April 2021 up to 4.10 pm, it was noticed that full day, the noisy and squawking calls of parrots were not recorded. Also the pair of parrots has not visited towards the nest. As a result, the nest is visited from close and it was observed that the nest hole is widely enlarged by removing the tree bark using sharp weapons. Close observations indicated that the adult parrots along with eggs were exploited. Bottom of the nest has remnants of broken egg shell and a dead embryo along with nest material (Fig. 2).

According to Baker *et al.* (2013), use of wildlife as pets and for entertainment is a substantial

component and a major driver of the global wildlife trade. IUCN (2020) noted that Psittaciformes are now considered to be one of the most threatened taxa of birds, with 29% of extant species categorized as globally threatened and 58% as having a decreasing trend in their population sizes. Chan *et al.* (2021) reported that parrots are the most traded birds internationally, mainly to be used as companion pets, which threatens the global biodiversity.

Carrete and Tella (2008) reported that between 5 to 10 million birds are captured annually in the wild, mainly in developing countries, for export to the pet markets of the developed world. Nyhus (2016) documented that human-wildlife conflict for food and resources has led to the extinction and reduction of numerous species and uncountable human deaths and economic losses. According to Ali and Khan (2020) and Mori *et al.* (2020), trapping of wildlife for marketing is as old as the world civilization and the countless usage of birds including as a pet made them vulnerable to illegal trade which in turn poses threats to birds' population.

According to Furnell (2019), among avian orders, order Psittaciformes (parrots) is the most traded group (almost 90%), mainly for live companion pets, followed by Passeriformes (passerines), Falconiformes (falcons) and Columbiformes (pigeons and doves). The international parrot trade brought about a number of threats that could have adverse consequences on biodiversity conservation, economics, and public health (Can *et al.*, 2019).

Results of the present study demonstrated that even though measures designed to protect the birds by Wildlife Protection Act (1972) of India, still the birds are caught and kept as companion pets or traded. Also, a growing GDP increases the purchasing power of a human population; consequently, more people can afford to buy exotic pets for entertainment. Being some of the most long-lived, social, and intelligent animals, parrots are in higher demand in aging



Parakeet leaving the nest (Photographed on 15th Jan 2021, 1.57 pm)



Enlarged nest hole to capture the parakeets and eggs
(Photographed on 5th Apr 2021, 4.10 pm)



Inside of the nest with a broken egg shell and embryo
(Photographed on 5th Apr 2021, 4.10 pm)

Fig. 2: Exploitation of Rose-ringed parakeets from Panvel, Navi Mumbai.

communities because aged groups are usually more in need of companions and they have more spare time to take care of animals after retirement (Chan *et al.*, 2021).

Conclusion

Based on the present findings, it is suggested that stringent action must be taken against the culprits practicing the exploitation of Rose-ringed parakeets or any other wild life mainly for live companion pets or any other purposes. It is also recommended to create awareness among the local community regarding ecological role and conservation of endangered species and natural resources. Regular surveillance by mobile squads of forest personals will also minimize the trapping, illegal hunting and global trade of Rose-ringed parakeets to a greater extent. The study recommends further research to understand and minimize the exploitation of other endangered species of wild life for conservation of the regional biodiversity.

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