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Popular Article

Great Indian Bustard: India's most threatened avian species - Key perils and Conservation measures

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Abstract

The Great Indian Bustard (*Ardeotis nigriceps*), an iconic bird species endemic to the Indian subcontinent, is facing severe threats to its survival. It is classified as "Critically Endangered" by the IUCN Red List. The Great Indian Bustard is among the most threatened bird species in the world. As of the latest available data, the population of Great Indian Bustard in the wild in India is estimated to be fewer than 150 individuals. This majestic bird is renowned for its striking appearance and graceful demeanour. It has a distinctive appearance with a black crown, a white patch on its neck, and brown plumage with intricate patterns. As a sizeable ground-dwelling bird, the Great Indian Bustard plays a crucial role in its ecosystem. The Great Indian Bustard faces many threats to its survival, including habitat loss and fragmentation, power line collisions, poaching and hunting, disturbance and human encroachment, pesticide use and climate change. Various conservation initiatives are underway to save the Great Indian Bustard from extinction, including habitat restoration, captive breeding programs, community-based conservation initiatives, and efforts to mitigate threats.

Keywords: Great Indian Bustard, habitat fragmentation, endangered, conservation measures.

Introduction

Great Indian Bustard (GIB) is one of India's flagship bird species. It is listed as "Critically Endangered" in the International Union for Conservation of Nature (IUCN) Red List (BirdLife International, 2018). In Convention on International Trade in Endangered Species of Wild Fauna and

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Flora (CITES) is listed in "Appendix I". It has been listed in "Schedule I" of the Indian Wildlife Protection Act, 1972. The state bird of Rajasthan is called "Godawan" by locals. It is among the heaviest flying birds globally, with males typically weighing around 15 kilograms and females around 7 kilograms. In a study, 42 GIB were recorded in the Thar desert of Rajasthan from 2018 to 2020 (Gehlot *et al.*, 2021).

Morphology of species

The Great Indian Bustard is a large bird with a distinctive morphology suited for its grassland habitat. The body is robust and stocky, with long legs adapted for grassland walking and running.



Figure1: Adult male; Figure2: Adult Female; Figure3: Adult male in flight (Source: www.ebird.org)

Its long neck enables it to reach for food on the ground. The head is relatively small, adorned with black crown feathers that give it its distinctive appearance.

- The beak is stout and pointed, adapted for capturing insects, small vertebrates, seeds, and fruits. The wingspan is substantial, aiding flight over long distances.
- The plumage is predominantly brown and buff-coloured, providing effective camouflage in its grassland habitat. Males have a distinctive black breast band and white patches on the wings, while females are generally paler. The tail is short and rounded.
- **Sexual Dimorphism:** Males are larger and more colourful than females, with more prominent black markings on the breast and white patches on the wings.

Geographic Range & Habitat: It historically inhabited vast expanses of the Indian subcontinent and parts of Pakistan.

However, its range has significantly contracted due to habitat loss and hunting. It is primarily found in isolated pockets

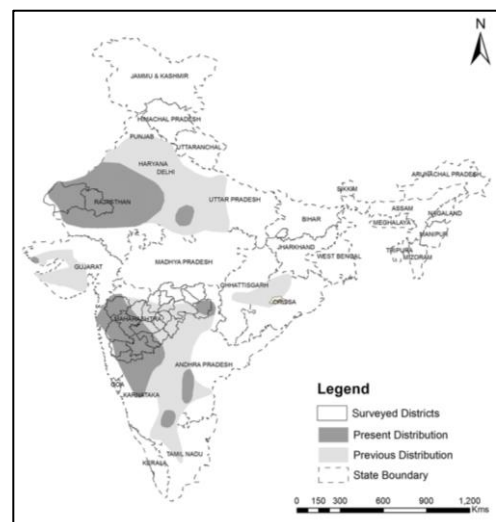


Figure4: Range map of GIB

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within India, predominantly in the states of Rajasthan, Gujarat, and Maharashtra. These areas encompass semi-arid and grassland habitats, crucial for the bird's survival. Occasional sightings have also been reported in other regions of India, but the population remains fragmented (Khan *et al.*, 2019).

Major threats to GIB: The Great Indian Bustard face many threats, many of which are anthropogenic. Here

are some of the major ones:

1. **Habitat Loss and Fragmentation:** Transformation of grasslands for the agriculture, urbanization, industrialization, and infrastructure development leads to fragmentation and destruction of the bird's habitat, limiting its range and breeding grounds (Varghese *et al.*, 2016).
2. **Poaching and Hunting:** Despite legal protection, it is still targeted for its meat, feathers, and other body parts, often driven by traditional beliefs or for commercial purposes.
3. **Collision with Infrastructure:** Power lines, wind turbines, and other infrastructure in or near the bustard's habitat pose a significant threat through collision mortality. Bustards are large, heavy birds with poor manoeuvrability in flight, making them vulnerable to colliding with power lines.
4. **Human Disturbance:** Human activities such as grazing, recreational activities, and tourism disturb nesting sites and foraging areas of GIB, leading to stress abandonment of nests.
5. **Predation:** Increased predation pressure from domestic and feral animals, such as dogs and cats, and natural predators impacts populations, particularly on eggs and chicks.
6. **Climate Change:** Climate change alters the bustard's habitat and may lead to shifts in distribution and availability of food resources. Extreme weather events like droughts and heat waves can further exacerbate habitat degradation and reduce food availability.



Figure5: GIB electrocuted to death due to high tension power lines. Source: <https://ruralindiaonline.org/>

Conservation Measures: Efforts to save the Great Indian Bustard (GIB) from extinction have been multi-faceted, involving various stakeholders and strategies. Here are some of the critical efforts:



1. **Research and Monitoring:** Research efforts focused on understanding the ecology, behavior, and threats to the GIB have been crucial for informing conservation actions. Monitoring programs track population trends, reproductive success, and movement patterns to assess the effectiveness of conservation measures.
2. **Captive Breeding and Reintroduction:** Captive breeding programs have been established to breed Great Indian Bustards in captivity to reintroduce individuals into the wild to bolster wild populations (Dutta *et al.*, 2011).
3. **Community Engagement:** Long-term success of GIB conservation can be achieved by engaging local communities.
4. **Mitigation of Threats:** Various measures have been implemented to mitigate threats to the GIB, including marking power lines to reduce collisions and enforcing laws against poaching and habitat destruction.
5. **Habitat Restoration:** Initiatives to restore degraded habitats and create corridors between fragmented habitats have been undertaken to provide suitable environments for the GIB.



Figure6: GIB Breeding Centre at Pokhran, Rajasthan.

Source: www.thehindu.com

Conclusion: The conservation of the GIB represents a critical endeavour requiring concerted efforts from multiple stakeholders. Moreover, collaborative efforts at national and international levels are essential to tackle the complex conservation challenges and ensure the long-term survival of the GIB. Ultimately, the conservation of the GIB is about protecting a single species and preserving the integrity of entire ecosystems and the rich biodiversity they support. By investing in conservation today, we not only secure the future of this magnificent bird but also contribute to the broader goal of safeguarding India's natural heritage for generations to come.

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