

HUMAN-ANIMAL CONFLICT AND ITS EFFECT ON ANIMAL BEHAVIOUR

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Introduction

Human-animal conflict occurs when interactions between humans and wildlife result in negative impacts on one or both parties. Which results in adverse effects, such as injury, property damage, or loss of life on either side. These conflicts have been escalating due to habitat loss, climate change, urbanization, and the increasing overlap of human and wildlife territories. While such conflicts pose challenges for conservation and human well-being, they also drive significant behavioral changes in animals.

Causes of Human-Animal Conflict are

Habitat Destruction and Fragmentation:

Expansion of agricultural land, Deforestation and urbanization reduce natural habitats, forcing animals to venture into human settlements for food and shelter.

Competition for Resources: Wild animals often target crops, livestock, or food waste in human areas, leading to direct confrontations.

Climate Change: Altered ecosystems and food shortages push animals into human habitats, disrupting traditional wildlife behaviours.

Expansion of Infrastructure: Roads, railways, and settlements intersect wildlife corridors, increasing accidental encounters and stress on animal populations.

Effects of Human-Animal Conflict on Animal Behavior

Increased Aggression: Frequent encounters with humans can lead to heightened aggression in animals as a survival response. For instance, elephants in conflict-prone areas often display heightened defensive aggression due to past threats or attacks.

Temporal Shifts (Nocturnal Behaviour): Many animals adapt by becoming more

nocturnal to avoid daytime human activity and they will shift their activities at night time and they will become more active during night time

Habituation and Loss of Fear: Some species, particularly those exposed to regular human presence, may lose their natural fear of humans. In areas of frequent human interaction leading to bold or invasive behaviours. Urban primates and scavengers such as raccoons and foxes are known for this adaptation.

Altered Foraging Strategies: Animals adapt by altering their diets and foraging strategies to include human food sources. Stress from human encounters can disrupt social hierarchies and group dynamics in animals like elephants and wolves, leading to smaller, fragmented groups.

Migration and Range Shifts: Some animals abandon traditional habitats to escape human disturbances, leading to altered migration patterns and range shifts. Such movements can disrupt ecosystems and increase conflict in new areas

Physiological Stress: Continuous exposure to conflict situations can elevate stress hormones like cortisol in animals, negatively affecting reproduction, immunity, and overall health.

Group Dynamics and Social Structure: Human-induced stress can lead to changes in group behaviour, such as fragmentation or altered hierarchies. For example, elephant herds may split into smaller groups to reduce visibility.

Dietary Adaptations: Animals often modify their diets to include crops, garbage, or livestock. While this adaptation may temporarily sustain them, it can lead to malnutrition and dependency.

Changes in Movement Patterns: Many animals alter their migratory routes or shrink their ranges to avoid conflict zones, affecting their ecological roles and survival.

Modern Technologies in Conflict Mitigation

- GPS Tracking and Radio Collaring: Helps monitor animal movement.
- Drones and Thermal Imaging: Used for surveillance in forest fringes.
- AI-based Early Warning Systems: Alert communities about approaching wildlife.
- Electric Fencing and Bio-repellents: Non-lethal deterrents to protect crops.

Conservation and Management Strategies

Habitat Restoration: Reforestation and the establishment of wildlife corridors help reduce encounters between humans and animals.

Conflict Mitigation Tools: Early warning systems, fencing, and non-lethal deterrents can minimize direct encounters.

Community Engagement: Educating local communities about coexistence and offering compensation schemes for losses can reduce hostility toward wildlife.

Wildlife Monitoring and Research: Studying the behavioral adaptations of wildlife in conflict-prone areas provides insights for effective management.

Policy and Legislation: Strengthening legal frameworks to protect wildlife and regulate human activities in sensitive zones is critical for long-term conflict mitigation.

Case Studies of Human Animal Conflict in India

India is one of the most affected countries due to its rich biodiversity and dense human population.

Elephant-Human Conflict: In states like Odisha, Assam, and Karnataka, Asian Elephant frequently raid crops and enter villages. This leads to retaliatory killings and increased aggression in elephants.

Tiger-Human Conflict: In areas around Sundarbans, Bengal Tiger attacks on humans

are reported due to habitat degradation and prey scarcity.

Leopard Encounters in Urban Areas: Indian Leopard sightings in cities like Mumbai show high adaptability but also increased risk of conflict.

Future Perspectives

Landscape-Level Planning and Corridors: Ensuring connectivity between habitats will reduce forced animal movement into human areas.

One Health Approach: Integration of human, animal, and environmental health to control diseases like Nipah Virus Infection.

Climate-Adaptive Management: Using predictive models to anticipate wildlife movement under changing climates.

Community-Based Conservation: Empowering local communities with education, incentives, and compensation.

Behavioral Ecology Integration: Understanding animal learning patterns to predict and prevent conflict.

Advanced Non-Lethal Technologies: Smart deterrents and bio-repellents to reduce harmful interactions.

Policy and Global Collaboration: Aligning with frameworks from International Union for Conservation of Nature.

Education and Awareness: Promoting coexistence through grassroots awareness programs.

AI and Data Science Applications: Using big data to identify and manage conflict hotspots.

Sustainable Coexistence Models: Developing ethical frameworks for long-term human-wildlife harmony.

Conclusion

Human animal conflict is a complex and growing challenge that not only threatens biodiversity but also impacts human livelihoods. The behavioral adaptations observed in animals reflect both resilience and stress under anthropogenic pressures. Sustainable coexistence requires interdisciplinary approaches involving

ecology, veterinary science, policy-making, it is possible to reduce conflict and promote and community participation. By harmony between humans and wildlife. understanding and addressing the root causes,

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