Environment & Ecology · GS - III

How can technological interventions such as satellite telemetry improve the effectiveness of species reintroduction programmes? Illustrate with reference to vulture conservation in India.

EXAM YEAR	PAPER	SUBJECT
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MARKS	WORD LIMIT
15	~250 words

Answer Hint

GPS-GSM telemetry, post-release monitoring, dispersal behaviour, habitat connectivity, captive breeding, ecological corridors, threat identification, adaptive conservation.

Model Answer

Introduction

Species reintroduction involves releasing captive-bred or translocated individuals into suitable natural habitats to restore threatened populations. The tracking of a captive-bred Indian vulture (*Gyps indicus*) from Pench Tiger Reserve across 10,767 km demonstrates the value of technology in monitoring wildlife movement.

Role of Technological Interventions

1. **Movement monitoring:** GPS-GSM transmitters reveal dispersal patterns and long-distance movements after release.
2. **Habitat identification:** Tracking helps identify feeding grounds, nesting habitats and ecological corridors.
3. **Survival assessment:** Monitoring provides information on mortality, adaptation and post-release behaviour.

4. **Threat detection:** Movement data can help identify exposure to unsafe habitats and potential poisoning risks.
5. **Conservation planning:** Scientific evidence supports habitat restoration and targeted protection measures.

Lessons for Vulture Conservation

- Captive breeding must be accompanied by systematic post-release monitoring.
- Veterinary screening and careful selection of release sites are essential.
- Food availability and protection from veterinary drugs such as diclofenac are critical.
- Collaboration among BNHS, WII, forest departments and local communities should be strengthened.

Conclusion

Technology cannot substitute for habitat protection and threat reduction, but it makes conservation interventions more evidence-based. Integrating telemetry with captive breeding and landscape-level conservation can improve the recovery prospects of threatened species.

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