Environment & Ecology · GS - III

Explain the importance of taxonomy and scientific nomenclature in documenting biodiversity. How can species discovery contribute to conservation and ecological research?

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 20/10/2026	GS - III	Environment & Ecology

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Taxonomy, binomial nomenclature, species identification, biodiversity assessment, ecosystem services, conservation planning, habitat loss, taxonomic research.

Model Answer

Introduction

Taxonomy is the scientific discipline concerned with identifying, naming and classifying organisms. Scientific nomenclature provides a standardised system for communicating information about Earth's biodiversity.

Importance of Taxonomy

- **Standardised identification:** Scientific names reduce confusion arising from different regional and common names.
- **Understanding evolution:** Classification helps researchers study relationships among organisms and their evolutionary histories.
- **Biodiversity documentation:** Identifying new species improves knowledge of ecosystem composition and species distribution.
- **Conservation planning:** Taxonomic information helps identify rare, endemic and threatened species and supports conservation priorities.

Role in Ecological Research

Discoveries of organisms, including parasitoid wasps, can improve understanding of food webs, host relationships and ecosystem functioning. Naming a species after a prominent individual can also attract public attention to biodiversity, although recognition alone does not establish its ecological importance.

Challenges and Way Forward

Habitat destruction, inadequate taxonomic expertise and limited research funding hinder species documentation. Strengthening taxonomic institutions, field surveys, DNA-based identification and open biodiversity databases can address these gaps.

Conclusion

Reliable taxonomy is essential for understanding, monitoring and conserving biodiversity, particularly amid accelerating environmental change.

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