

Contents

1	Role of Wildlife Protected Areas in India	1
1.1	Global Context of Biodiversity Loss	1
1.1.1	General Background and Literature Review.....	1
1.1.2	Challenges Posed by Human Impacts on Biodiversity in Asia	3
1.1.3	Specific Drivers of Biodiversity Loss	3
1.2	Biodiversity Conservation: Alternative Approaches	6
1.2.1	Global Scenario	6
1.2.2	The Conservation Scenario in India.....	6
1.2.3	Patterns of Ownership and Management of Protected Areas.....	9
1.2.4	Management of Protected Areas in the Indian Context.....	9
1.2.5	Integrating Surveys, Monitoring and Management Objectives.....	10
2	Study Species, Habitats and Hypotheses	13
2.1	Study Area	13
2.1.1	Geographic Location, Topography and Soils.....	13
2.1.2	Vegetation of the Study Area	15
2.1.3	Wildlife and Biodiversity in the Study Area.....	15
2.1.4	Human Impacts on Wildlife and Habitats.....	17
2.1.5	Forest Management History.....	18
2.1.6	Present Management.....	18
2.1.7	Delineation of Management Regimes.....	19
2.2	Research Hypotheses and Objectives	20
2.2.1	Objectives	20
2.2.2	Target Biodiversity Components	21
3	Survey Design, Field and Analytical Methods.....	23
3.1	The Overall Study Design.....	23
3.2	Assessment of the Habitat Similarity	26

3.3	Field Survey Methods.....	27
3.3.1	Overall Approach to Field Surveys.....	27
3.3.2	Plants.....	27
3.3.3	Bird Species and Guilds (Non-gallinaceous).....	29
3.3.4	Mammals and Gallinaceous Birds.....	31
3.3.5	Human Disturbances and Impacts	31
3.4	Analytical Methods.....	33
3.4.1	Assessing Species Richness.....	33
3.4.2	Assessing Species Abundance	36
3.4.3	Assessing Human Impacts and Disturbance.....	39
3.4.4	Comparisons of Attributes Across Management and Access Regimes.....	39
4	Results and Findings.....	43
4.1	Habitat Similarity.....	43
4.1.1	Assessments of Habitat Similarity.....	43
4.2	Assessments of Status of Biodiversity Components.....	45
4.2.1	Plant Species Richness	45
4.2.2	Bird Species Richness.....	45
4.2.3	Mammal Species Richness	45
4.2.4	Abundances of Plant Species.....	49
4.2.5	Abundances of Bird Species.....	52
4.2.6	Abundances of Mammalian Species.....	53
4.3	Human Disturbance Levels.....	55
4.4	Comparison of Status of Biodiversity Components Across Management Regimes	55
4.4.1	Plants.....	55
4.4.2	Birds.....	61
4.4.3	Mammals	64
4.4.4	Normalised Difference Vegetation Index.....	66
4.4.5	Human Disturbance Index	67
4.5	Impact of Habitat Variables and Human Disturbance Factors on the Status of Biodiversity Components.....	68
4.5.1	Plants.....	69
4.5.2	Birds.....	71
4.5.3	Mammals	72
4.5.4	Human Disturbance Impacts on Biodiversity After Controlling for Habitat	73
5	Synthesis, Discussion and Conclusions	85
5.1	General Patterns of Effect of Human Disturbances on Biodiversity.....	85
5.2	Cumulative Potential Future Impacts.....	87
5.3	Implications for Management of Forests and Wildlife	87
5.4	Monitoring Biodiversity Reliably	88
5.5	Civil Society Participation in Conservation Monitoring	89
5.6	Broader Policy Implications of the Study.....	90

Contents	xi
Appendices	93
Appendix I.....	93
Appendix II	99
Bibliography	103

Recovering Biodiversity in Indian Forests

Reddy, G.V.; Karanth, K.U.; Kumar, N.S.; Krishnaswamy, J.; Karanth, K.K.

2016, XI, 111 p. 37 illus., 9 illus. in color., Softcover

ISBN: 978-981-10-0909-9