

Contents

PART I. INTRODUCTION	1
1 Recreation Use and Resource Impacts	3
What Is Wildland Recreation? What Is Recreation Resource Impact? Recent Trends in Wildland Recreation Use. Ecological Impacts of Wildland Recreation. The Importance of Ecological Impacts. The Manager's Role. Recreational Carrying Capacity. Themes of this Book. References.	
PART II. IMPACTS TO RESOURCE COMPONENTS	27
2 Soil	29
Basic Soil Ecology. <i>What Is Soil? Soil Texture and Structure. Pore Space. Bulk Density. The Soil Profile. Impacts on Soils. Organic Matter. Profile Truncation. Soil Compaction. Macroporosity and Infiltration Rate. Soil Moisture. Soil Erosion. Other Soil Impacts. Impacts Associated with Campfires.</i> Summary. References.	
3 Vegetation	57
Vegetation Impact Parameters. <i>Amount of Vegetation. Vegetation Composition. Tree Condition. Impacts on Vegetation. Ground Cover. Shrubs and Saplings. Mature Trees.</i> Summary. References.	

4	Wildlife	77
	Human-Wildlife Interactions. Recreation-Wildlife Impacts. <i>Animal Disturbance and Harassment. Harvest. Habitat Modification. Alteration of Behavior. Species Displacement and Reproduction Level. Species Composition and Structure.</i> Impacts on Wildlife Species. <i>Large Mammals. Medium-Sized Animals. Small Animals. Fish.</i> Summary. References.	
5	Water	103
	Basic Water Ecology. <i>Water Temperature and Flow. Nutrients. Dissolved Oxygen. Pathogens and Other Pollutants.</i> Impacts on Water Quality. <i>Nutrient Influx. Coliform Bacteria. Backcountry Camping and Drinking Sources. Solid Waste and Foreign Materials. Suspended Matter and Turbidity.</i> Summary. References.	
6	Impact Patterns	127
	Spatial Patterns of Impact. <i>Impact Zone. Intersite Zone. Buffer Zone.</i> Temporal Patterns of Impact. Recovery Rates of Impacts. Summary. References.	
PART III. FACTORS AFFECTING IMPACTS		141
7	Environmental Durability	143
	Vegetational Resistance. Soil Characteristics. Topographic Characteristics. Ecosystem Characteristics. Wildlife Impacts. Water Impacts. Season of Use. Summary. References.	
8	Visitor Use	165
	Amount of Use. Use Distribution. Type of User Group. Party Size. User Behavior. <i>Minimum Impact Knowledge. Experience Level. User Motivation. Social Group and Structure. Mode of Travel. Snowmobiles/Skis. Motor Boats/Nonmotorized Boats. Off-Road Vehicles/Stock/Foot Travel.</i> Summary. References.	
PART IV. MANAGEMENT ALTERNATIVES		193
9	Strategies and Concepts of Management	195
	General Principles. Planning for Management. <i>Recreation Opportunity Spectrum. A Planning Framework.</i> Management	

of Problems. *Strategic Purpose. Types of Undesirable Visitor Actions. Direct vs. Indirect Approaches. References.*

10 Monitoring Recreational Impacts 213

Campsites. Measurements. Rapid Estimates of Condition. Photographs. Trails. Replicable Measurements. Rapid Survey Samples. Census Techniques. Water Bodies. Aerial Photography. References.

11 Visitor Management 243

Visitor Management Techniques. Limitations on Amount of Use. Dispersal of Use. Concentration of Use. Limitations on Length of Stay. Seasonal Limitations on Use. Zoning. Party Size Limits. Low Impact Education. Campfire Management Alternatives. Information Programs. Alternative Fuels. Elevational Zoning. Forest Type and Site Zoning. Temporal Zoning. Seasonal Zoning. Communal Fires. Rationing. Total Ban. Visitor Information Needed to Manage Recreation Impacts. References.*

12 Site Management 285

Locating Use on Resistant Sites. Influencing Visitor Use. Site Hardening and Shielding. Temporary Site Closures. Rehabilitation of Closed Sites. References.

PART V. CONCLUSION 325

13 A Lasting Impact 327

Wildland Recreation and Resource Impacts: Necessities. Understanding the Resource. Environment and Visitor Influences. Some Management Tools. Lasting into the Future.