Table of contents

Introduction 1

Section I: Monitoring program development in six easy steps 5
Chapter 1 Step 1: Define management and monitoring objectives 9
Chapter 2 Step 2: Stratify land into monitoring units 13
Chapter 3 Step 3: Assess current status 18
Chapter 4 Step 4: Select indicators and number of measurements 21
Chapter 5 Step 5: Select monitoring plot locations 27
Chapter 6 Step 6: Establish monitoring plots 30

Section II: Supplementary methods 37
Chapter 7 Compaction test 38
Chapter 8 Single-ring infiltrometer 44
Chapter 9 Plant production 51
Chapter 10 Plant species richness 57
Chapter 11 Vegetation structure 61
Chapter 12 Tree density 65
Chapter 13 Riparian channel vegetation survey 69
Chapter 14 Riparian channel and gully profile 74
Chapter 15 Density, frequency and Line-point intercept alternative methods 79

Section III: Indicator calculation and interpretation 83
Chapter 16 Calculate indicators 84
Chapter 17 Interpret results 86

Section IV: Special Topics 107
Chapter 18 Riparian 109
Chapter 19 Livestock production 111
Chapter 20 Wildlife habitat 113
Chapter 21 Off-road vehicle use and other recreational land uses 115
Chapter 22 Fire 117
Chapter 23 Invasive species 120
Chapter 24 State and transition models: an introduction 122
Chapter 25 Remote sensing 125
Chapter 26 Soil carbon 128

Appendices
Appendix A Monitoring tools 131
Appendix B Conversion factors 141
Appendix C How many measurements? 142
Appendix D Soil Quality Information Sheets 172
Appendix E Soil texture chart 173

Glossary 174
References and Additional Resources 189
Authors and Contributors 200

Data forms

Monitoring Program Design Checklist 8
Monitoring Program Design Form I 12
Monitoring Program Design Form II 26
Monitoring Plot Description Form 35-36
Soil Compaction – Impact Penetrometer Data Form 43
Infiltration Data Form 50
Plant Production Data Form 56
Plant Species Richness Data Form 60
Vegetation Structure Data Form 64
Tree Density and Size Data Form 68
Riparian Channel Vegetation Survey Data Form 73
Riparian Channel Profile Data Form 78
Line-point Intercept with Height Data Form 82