

Ecosystem Functioning

In the face of decreasing biodiversity and ongoing global changes, maintaining ecosystem functioning is seen both as a means to preserve biological diversity and for safeguarding human well-being by securing the services ecosystems provide. The concept today is prominent in many fields of ecology and conservation biology, such as biodiversity research, ecosystem management or restoration ecology. Although the idea of ecosystem functioning is important, the concept itself remains rather vague and elusive. This book provides a novel analysis and integrated synthesis of different approaches to conceptualising and assessing ecosystem functioning. It links the natural sciences with methodologies from philosophy and the social sciences, and introduces a new methodology for a clearer and more efficient application of ecosystem functioning concepts in practice. Special emphasis is laid on the social dimensions of the concept and on the ways in which these influence research practice. Several case studies relate theoretical analyses to practical application.

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The world's biological diversity faces unprecedented threats. The urgent challenge facing the concerned biologist is to understand ecological processes well enough to maintain their functioning in the face of the pressures resulting from human population growth. Those concerned with the conservation of biodiversity and with restoration also need to be acquainted with the political, social, historical, economic, and legal frameworks within which ecological and conservation practice must be developed. The new *Ecology, Biodiversity and Conservation* series will present balanced, comprehensive, up-to-date, and critical reviews of selected topics within the sciences of ecology and conservation biology, both botanical and zoological, and both 'pure' and 'applied'. It is aimed at advanced final-year undergraduates, graduate students, researchers, and university teachers, as well as ecologists and conservationists in industry, government, and the voluntary sectors. The series encompasses a wide range of approaches and scales (spatial, temporal, and taxonomic), including quantitative, theoretical, population, community, ecosystem, landscape, historical, experimental, behavioural, and evolutionary studies. The emphasis is on science related to the real world of plants and animals rather than on purely theoretical abstractions and mathematical models. Books in this series will, wherever possible, consider issues from a broad perspective. Some books will challenge existing paradigms and present new ecological concepts, empirical or theoretical models, and testable hypotheses. Other books will explore new approaches and present syntheses on topics of ecological importance.

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“Solche Missgriffe, setzte er abbrechend hinzu, sind unvermeidlich, seitdem wir von dem Baum der Erkenntnis gegessen haben. Doch das Paradies ist verriegelt und der Cherub hinter uns; wir müssen die Reise um die Welt machen, und sehen, ob es vielleicht von hinten irgendwo wieder offen ist.”

[. . .]

“Mithin, sagte ich ein wenig zerstreut, müssten wir wieder von dem Baum der Erkenntnis essen, um in den stand der Unschuld zurückzufallen? Allerdings, antwortete er, das ist das letzte Kapitel von der Geschichte der Welt.”

Heinrich von Kleist: *Über das Marionettentheater* (1810)

“Such blunders,” he added, interrupting himself, “are unavoidable, since we have eaten of the tree of knowledge. But Paradise is locked and bolted and the Cherub is behind us. We must journey around the world, to see if a back door has perhaps been left open.”

[. . .]

“Would that mean,” I said somewhat absentminded, “that we would have to eat of the tree of knowledge once more to fall back into the state of innocence?”

“Indeed” he answered, “and that is the final chapter in the history of the world.”

Heinrich von Kleist: *On the Marionette Theater* (1810)

Contents

<i>Acknowledgements</i>	xiii
1 Introduction	1
2 Setting the scene: the context of investigating ecosystem functioning	9
2.1 Case study: exotic species and ecosystem functioning on Navarino Island	9
2.2 The fields of application for ‘ecosystem functioning’	22
2.3 Conclusions from this chapter	27
3 What do we need for a functioning ecosystem? The debate on biodiversity and ecosystem functioning	29
3.1 A brief look at the history of the biodiversity–ecosystem functioning debate	31
3.1.1 Two diversity debates in ecology	32
3.1.2 Biodiversity and ecosystem functioning research: some general trends	37
3.2 Biodiversity and ecosystem functioning: what do we measure?	39
3.2.1 Biodiversity and ecosystem processes	39
3.2.2 From ecosystem processes to overall ecosystem functioning	50
3.2.3 Excursus: ecosystem functioning, functional groups, and functional diversity	53
3.2.4 Biodiversity and ecosystem functioning: some consensus and many open questions	55
3.3 Conclusions from this chapter	57

x · Contents

4	Becoming general: what is ecosystem functioning?	59
4.1	At the heart of the problem: the meanings of ‘functioning’	60
4.1.1	From function to functioning	61
4.1.2	Excursus: ecosystem services	66
4.2	Function and functioning: teleology looming	72
4.2.1	Two different views on wholes and parts	72
4.2.2	Ecosystem functioning and teleology	74
4.2.3	Functions in organisms, societies, and ecosystems	76
4.3	The meanings of ‘ecosystem’	83
4.3.1	Case study: destroying or maintaining a functioning ecosystem? Wildlife management in Yellowstone National Park	84
4.3.2	A tool for clarifying and visualising different ecosystem definitions: the SIC scheme	101
4.4	Conclusions from this chapter	110
4.4.1	General conclusions	110
4.4.2	Ecosystem functioning as a conceptual cluster: related terms and concepts	112
5	Ecosystem functioning: science meets society	113
5.1	Between constructivism and scientific realism: determining the limits of ecosystem functioning	113
5.1.1	Are ecosystems mere constructs?	113
5.1.2	Implications for ecosystems and their functioning	118
5.1.3	Does the variety of ecosystem concepts promote environmental relativism?	123
5.1.4	Case study: alternative stable states as distinct modes of ecosystem functioning	126
5.2	Values, norms, and ecosystem functioning: a necessary and difficult unity	134
5.3	Case study: societal choices and ecosystem management: the Ecosystem Approach of the Convention on Biodiversity	138
5.3.1	The development of ecosystem management approaches	138

5.3.2	The Ecosystem Approach of the Convention on Biodiversity	139
5.3.3	‘Ecosystem functioning’ in the Convention on Biodiversity Ecosystem Approach	142
5.4	Conclusions: the roles of science and society in assessing ecosystem functioning	145
5.4.1	General conclusions	145
5.4.2	A network of hybrid concepts	147
6	Assessing ecosystem functioning: some existing approaches	150
6.1	Ecosystem functioning: the baseline	150
6.2	Existing approaches for assessing ecosystem functioning: ecosystem integrity, ecosystem health, ecosystem stability, and ecosystem resilience	153
6.2.1	Ecosystem integrity and health	153
6.2.2	Case study: assessing ‘good ecological status’ in the European Water Framework Directive	161
6.2.3	Ecosystem stability and resilience	168
6.2.4	Other approaches	177
6.3	Conclusions from this chapter	179
7	Putting ecosystem functioning concepts into practice: a classification and some guidelines	182
7.1	Ecosystem functioning concepts in practice: a classification	182
7.1.1	Ecosystem functioning and the generic-type ecosystem	185
7.1.2	Ecosystem functioning and the process-focused-type ecosystem	187
7.1.3	Ecosystem functioning and the physiognomic-type ecosystem	191
7.1.4	Ecosystem functioning and the species-specific-type ecosystem	195
7.1.5	What is the use in describing different ecosystem functioning types?	196
7.2	Some guidelines for conceptualising and assessing ecosystem functioning	197
7.2.1	Choices	198
7.2.2	Procedures	205

xii · Contents

7.3 Case study: ecological restoration and ecosystem functioning	207
7.3.1 Restoration of post-mining sites in Lower Lusatia	211
7.3.2 Beyond Lusatia: ecological restoration and ecosystem functioning	223
7.4 Conclusions and outlook	226
7.4.1 Ecosystem functioning as a research programme?	227
7.4.2 Is ecosystem functioning good?	229
7.4.3 The role(s) of scientists in ecosystem functioning research (and beyond)	231
7.4.4 How useful is the ecosystem functioning concept?	233
<i>References</i>	236
<i>Index</i>	269

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xiv · **Acknowledgements**

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