



Graeme S. Cumming

Spatial Resilience in Social-Ecological Systems

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The cover photograph shows a view from Strandfontein wastewater treatment works (near Muizenberg, on the edge of False Bay), looking towards Table Mountain. The idyllic appearance of this wetland disguises the high human use of this system and the ecological costs of the interaction: high *Escherichia coli* levels in the water in the settling ponds, invasive *Typha* reedbeds on the pond's edge, a landfill site just out of view to the left of the picture, and globally endangered lowland fynbos vegetation on the ridge behind the pond. Despite these problems, Strandfontein remains a nationally important site for waterbirds. Photograph by Graeme S. Cumming, 2008.

ISBN 978-94-007-0306-3

e-ISBN 978-94-007-0307-0

DOI 10.1007/978-94-007-0307-0

Springer Dordrecht Heidelberg London New York

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Printed on acid-free paper

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*To Nils and Clara, my delightful
inspirations –*

*May you find as much pleasure as I have in
exploring this green world!*

Preface

This book represents a personal landmark along a path that I have been following for close to 15 years. Along the way I have spent considerable amounts of time debating and pondering with friends and colleagues over the relevance of space, and spatial variation, for the intricate workings of complex systems. These interactions have greatly enriched the journey, and I remain deeply grateful for them.

Thanks are due to many people. Although I can not list all of you here, I would particularly like to acknowledge the influence of three groups. The first consists of members of the Resilience Alliance, which has provided a wonderful arena for free thought and passionate debate. The Resilience Alliance has been the creation of many people who can not all be listed here, but my particular thanks go to Buzz Holling, Steve Carpenter, Carl Folke, Lance Gunderson, Phil Taylor, and Brian Walker for their role in consistently creating, redefining, and defending this small but highly influential think-space. Within the Resilience Alliance I am also deeply indebted to a group of younger scientists for crazy discussions and far-ranging debate: in this context, thanks are particularly due to Garry Peterson, Jon Norberg, Craig Allen, Marco Janssen, Marty Anderies, Örjan Bodin, Michael Schoon, and Henrik Ernstson.

The second important group of people is the roadies; an informal, interdisciplinary collection of academics and students at the University of Florida who met over the course of 4 years (and beyond) to discuss social-ecological resilience in the context of understanding the impacts of the transAmazon highway. From this group I would particularly like to thank Jane Southworth, Steve Perz, Grenville Barnes, Marianne Schmink, Mike Binford, Katie Sieving, and Bob Holt.

The third group consists of the many graduate students, now spread across different continents in various professional roles, who through their ideas, questions and uncertainties about spatial analysis have helped to highlight problem areas and clarify my thinking. Special thanks in this group are due to Lin Cassidy, Matt Child, Amy Daniels, Amy Duchelle, Simon Dures, Ann George, Grant Joseph, Matt Marsik, Mduduzi Ndlovu, Heidi Richter, Brian Spiesman, and Claudia Stickler.

This book owes its existence in part to Margaret Deignan of Springer SBM, who suggested the project and has proved a willing and supportive editor. Individual chapters have been greatly improved by the contributions of colleagues who took

on reviews of one or more chapters. Insightful and constructively critical comment was provided by Örjan Bodin, Matt Child, David Cumming, Henrik Ernstson, Eric Lambin, Harini Nagendra, Jon Norberg, Magnus Nystrom, Xanic Rondon, Jane Southworth, and Cathy Wilkinson. David Cumming deserves special mention for providing detailed input on six of the eleven chapters as well as providing several photographs; and Harini Nagendra, for offering invaluable big-picture comments on the entire book. Joshua Lewis kindly took a photograph of a floatable house for me, and I am further indebted to Steve Carpenter, Carl Folke and Bob Holt for their cover endorsements.

Writing this book has been a sabbatical project, and I am grateful to the University of Cape Town and the Oppenheimer Foundation for their financial support during the writing period. Additional assistance was provided by the Stockholm Resilience Centre and the Department of Systems Ecology at the University of Stockholm, with particular thanks to Thomas Elmqvist and Carl Folke for making our stay in Stockholm possible. I am also grateful to my parents, David and Meg, and to my wife's parents, Rolf and Elizabeth, for hosting us for periods in Zimbabwe and Germany respectively.

Finally, no set of acknowledgements would be complete without mention of my immediate family, who have supported me wholeheartedly in completing this book: my wife, Katharina; and my children, Nils and Clara, to whom this book is dedicated.

Cape Town, South Africa

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