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Sommario/riassunto	There is a broad consensus in considering that the loss of biodiversity is accelerating which is due, for example, to the destruction of habitats, overexploitation of wild species and climate change. Many countries have pledged at various international conferences to take swift measures to halt this loss of biodiversity. Among these measures, the creation of protected areas - which also contribute to food and water security, the fight against climate change and people' health and well-being - plays a decisive role, although it is not sufficient on its own. In this book, we review classic and original problems associated with the optimal design of a network of protected areas, focusing on the modelling and practical solution of these problems. We show how to approach these optimisation problems within a unified framework, that of mathematical programming, a branch of mathematics that focuses on finding good solutions to a problem from a huge number of possible solutions. We describe efficient and often innovative

modellings of these problems. Several strategies are also proposed to take into account the inevitable uncertainty concerning the ecological benefits that can be expected from protected areas. These strategies are based on the classical notions of probability and robustness. This book aims to help all those, from students to decision-makers, who are confronted with the establishment of a network of protected areas to identify the most effective solutions, taking into account ecological objectives, various constraints and limited resources. In order to facilitate the reading of this book, most of the problems addressed and the approaches proposed to solve them are illustrated by fully processed examples, and an appendix presents in some detail the basic mathematical concepts related to its content.