

Monitoring Plant and Animal Populations

C. Elzinga, D. Salzer, J. Willoughby and J. Gibbs, 2001.

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ELZINGA *et al.* have brought together a wealth of experience from their employment in private, governmental, educational and voluntary organizations to produce *Monitoring Plant and Animal Populations*. This knowledgeable book is intended to assist a range of audiences, from students to experienced wildlife biologists, encouraging them to produce high-quality population monitoring studies, with adaptations for community monitoring.

Following through from the development and planning of a project to statistical analysis and communication of results, the book is written in a language that is neither too complex nor simple. The book contains plenty of up-to-date American focused examples, in addition to a wealth of figures, tables and diagrams, all neatly laid-out. In addition, the book's appendices contain information for those readers that are interested in details, for example, statistical formulae.

The first two, rather short and unnecessary chapters of the book give an introduction to monitoring studies and an overview of the book. Once past this prolonged introduction, the book devotes itself to the importance of selecting priorities, for example, what to monitor, and at what scale and intensity. With priorities set, the book introduces the advantages and disadvantages of qualitative data collection techniques, a topic it revisits in a number of chapters. Field techniques are covered well, including comprehensive methods, equipment lists, useful tips, and foreseeable problems. Following this, data collection methods

and management are explained, including countless collection methods, from specimen samples to data recording in the field.

The rest of the book lends itself in a disjunct pattern to sample design, statistical procedures and monitoring techniques. Such a mix of topics makes a difficult and confusing read! This aside, sampling design for animal and vegetation monitoring studies are explained fully, with good depth and clarity. In all cases, detailed advantages and disadvantage of techniques are given along with instructions of methods, examples and useful template data sheets. The importance of random sampling is well underlined. Statistics covered include important factors such as error, minimum detectable change, and setting of probability values. Data analysis is covered, from standard deviation, graphical analysis, significance tests, trends analysis and setting of confidence intervals. Explanations and plentiful examples help explain complex statistics, with reference to selecting computer programmes and interpretation. The final two sections of the book go onto discuss, somewhat later than expected, the setting of objectives and the need to communicate findings, though details of writing up are minimal.

In summary, what *Monitoring Plant and Animal Populations* offers is a comprehensive explanation of how to succeed in monitoring studies; what it lacks is the conciseness and logical structure that I would find useful in a study aid. At times I felt overwhelmed by the explanations and many examples, and felt reluctant to trawl through vast paragraphs to understand simple concepts. Furthermore, there is little mention of literature reviews, time management and conceptual frameworks, all integral parts of monitoring studies. Despite this the completeness of the book makes it worth the \$140 price mark to those undertaking monitoring studies. As a student, I would find a copy in a local library and spend my limited budget on a more broad-spectrum research guide.

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