



- Data sets
- Questions for each chapter
- Links to software

# Experimental Design and Data Analysis for Biologists

An essential textbook for any student or researcher in biology needing to design experiments, sampling programs or analyze the resulting data.

Topics covered include:

- estimation and hypothesis testing methods, including an introduction to Bayesian philosophies
- analysis of linear and generalized linear models, including linear and logistic regression
- simple and complex ANOVA models, for factorial, nested, block, split-plot and repeated measures and covariance designs
- log-linear models
- multivariate techniques, including classification and ordination.

Special emphasis is placed on checking assumptions, exploratory data analysis and presentation of results. The main analyses are illustrated with many examples and there is an extensive reference list to both the statistical and biological literature.

Data sets, chapter questions and links to software are provided at <http://www.zoology.unimelb.edu.au/qkstats>

Gerry Quinn is in the School of Biological Sciences at Monash University, with research interests in marine and freshwater ecology, especially river floodplains and their associated wetlands.

Michael Keough is in the Department of Zoology at the University of Melbourne, with research interests in marine ecology, environmental science and conservation biology.

Both authors have extensive experience teaching experimental design and analysis courses and have provided advice on the design and analysis of sampling and experimental programs in ecology and environmental monitoring to a wide range of environmental consultants, university and government scientists.

Gerry Quinn and Michael Keough are co-authors of *Monitoring Ecological Impacts: Concepts and Practice in Flowing Waters*, Cambridge University Press, 2002.