

This accessible book provides practical advice to students and researchers in plant population ecology on how to establish research programs and achieve effective experimental design, both in the field and lab. Individual chapters cover different facets of experimental design and the philosophy behind it, including experimental variables and treatments, measurement of plants and the environment, statistics including basic parametric approaches, spatial pattern analysis, life table analysis, and modelling. Use of the R program for statistical analysis is emphasised and an appendix provides a listing of appropriate R packages. Numerous citations to the current research literature are provided, and four case studies are referred to throughout the book to illustrate the use of methodology.

Thoroughly updated since the first edition, the book now includes new topics including generalized linear mixed models, life table response experiments, population viability analysis, and integral projection models. The molecular methods section has been brought up to date with the inclusion of descriptions and the relevance to plant population ecology of the newest approaches including SNPS, Gene expression profiling, epigenetics, and functional metagenomics. Fully illustrated, including colour plates, and with follow up exercises at the end of each chapter, this book is a valuable resource for all plant ecologists, particularly students and teachers who are developing field and laboratory modules in population ecology.

Cover image: Flowering *Sorghastrum nutans* [L.]
Nash Indiangrass growing in a tallgrass prairie restoration,
Crab Orchard National Wildlife Refuge, Illinois, USA (photo David Gibson).

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