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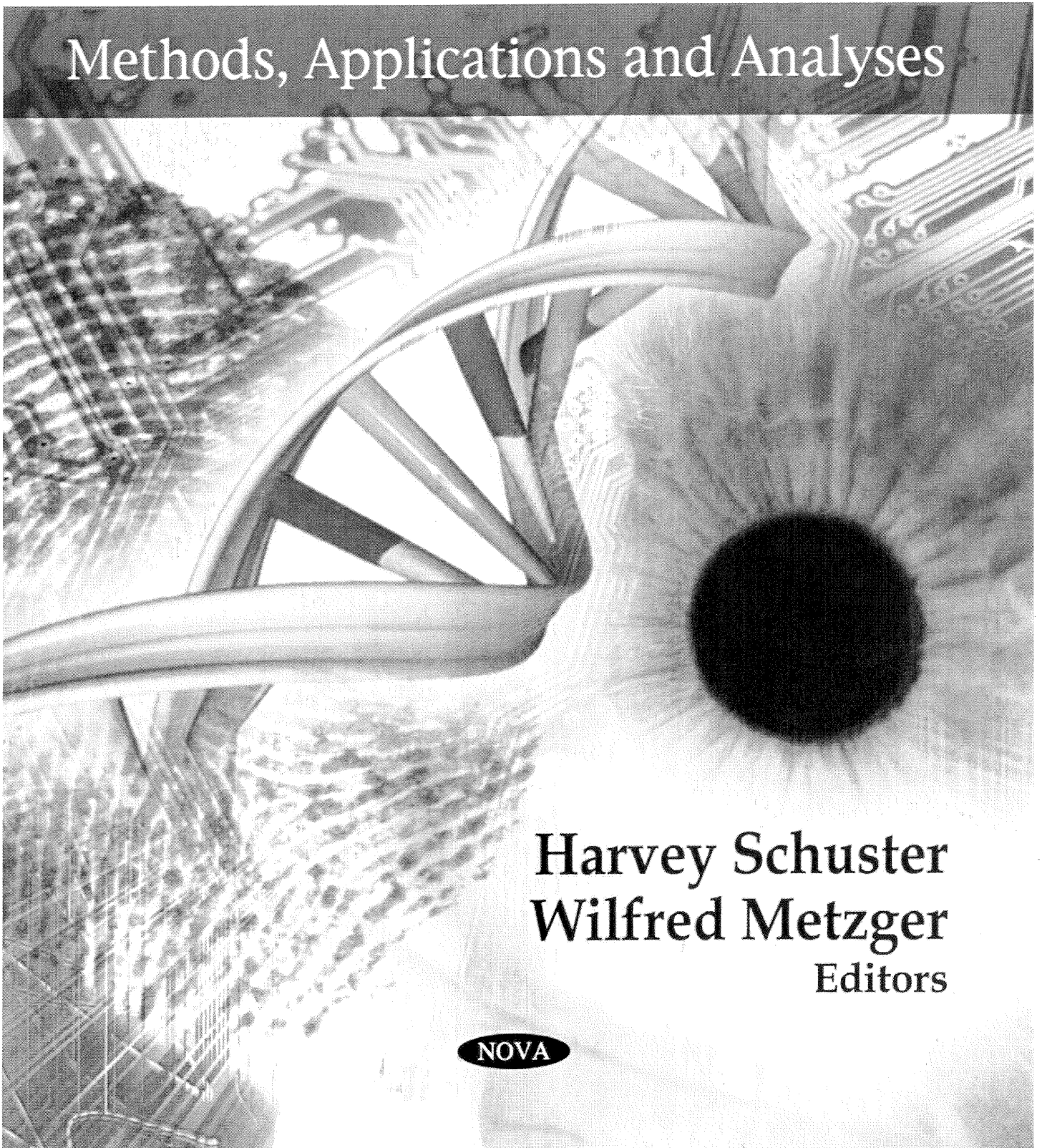
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# Biometrics

Methods, Applications and Analyses



**Harvey Schuster**  
**Wilfred Metzger**  
Editors

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*Chapter 3*

## BIOMETRICS IN MARINE BENTHIC ECOLOGY

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### Abstract

Biometric measurements are of fundamental importance in ecological studies. Organisms store, consume or produce organic matter and this organic content of populations has to be evaluated in investigations of community energetics and dynamics. In marine ecology, biometrical studies of benthic organisms are powerful and useful tools to understand the functioning of a coastal ecosystem. The aim is to relate a simple, rapid and non-destructive measurement of a morphological variable to another parameter, which is generally destructive and time-consuming and/or expensive to acquire, but fundamental to an appreciation of community processes. Highly significant and lasting relationships have been obtained from these kinds of measurement on dominant species of various coastal benthic communities. It is then possible to accurately assess the fresh weight, dry weight, ash-free dry weight or carbon and nitrogen contents without removing the individuals from their substrate, by measuring, for instance, the total length of a seaweed directly in the field. When properly established and applied, such relationships allow the evaluation of the population standing biomass in terms of carbon or nitrogen and the quantification and understanding of its role in carbon and nitrogen cycles. Normally used for solitary species, this approach has been shown to be relevant also for some colonial species. These relationships can also be useful in long term surveys. However, biological features of a species such as carbon or nitrogen content vary with season, developmental and reproductive stages, food and environmental conditions, which means that considerable preliminary work has to be performed before they can be used effectively.