
Preface

This book is a new volume of the "Environmental Science, Engineering and Technology" Series which is part of the Nova Science Publishers, Inc. publishing program. The preparation of this book came from Nadya Gotsiridze-Columbus invitation and her editorial team. The realization of this volume has been made possible thanks to the valuable contributions of the authors.

Phytoplankton plays a key role in aquatic ecosystems where it is the major biomass producer. Phytoplankton is characterized by a high time-space variability which is determined by abiotic and biotic factors. In this book, the role of abiotic factors (light, temperature, nutrients, wind, hydrodynamics, CO₂ and UV radiation) and biotic factors (bacteria, zooplankton, macrophytes and fish) is discussed. Anthropogenic pressure can alter those environmental factors causing undesired changes in the composition and biomass of phytoplankton. This book emphasizes effects on water quality, but bottom sediment is also analyzed. The effectiveness of the management measures to restore impacted ecosystems is reviewed and ecological modeling is used as a prediction tool. In this book, the authors describe case studies in different systems such as natural lakes, reservoirs, marine systems and aquatic microcosm systems; covering a wide range of geographic areas from African tropical lakes and Brazilian subtropical lakes to peri-alpine European lakes. The book also includes a chapter about the toxic effects of phytoplankton consumption on *Sarpa salpa*, a fish used for human consumption, and two chapters which study algae removal from the water supply network.

In summary, this book shows how the analysis of phytoplankton composition can serve as an excellent indicator of environmental changes; without forgetting the objective analysis of the results of the implementation of management measures. I hope you will find it truly interesting.

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