In coastal seas, from the tropics to the poles, seaweeds supply the energy required to support diverse coastal marine life and provide habitat for invertebrates and fish. Retaining the highly successful approach and structure of the first edition, this is a synthesis of the role of seaweeds in underpinning the functioning of coastal ecosystems worldwide. It has been fully updated to cover the major developments of the past 20 years, including current research on the endosymbiotic origin of algae, molecular biology including "omics", chemical ecology, invasive seaweeds, photobiology, and stress physiology.

In addition to exploring the processes by which seaweeds, as individuals and communities, interact with their biotic and abiotic environment, the book presents exciting new research on how seaweeds respond to local and global environmental change. It remains an invaluable resource for students and provides an entry into the scientific literature on a wide range of topics.

"The first edition has always been my desk-side reading for my courses and a reference book for my undergraduate and graduate students. With the incorporation of the latest knowledge on seaweeds and the functioning of coastal ecosystems, and reference to the latest key papers, this significantly augmented second edition adds new content on topical subjects..."

Thierry Chopin, University of New Brunswick, Saint John, Canada

"If there were a list of must-read books for student and researcher, then this book makes the list for seaweed ecology and physiology... [It] manages to do a superb job of bringing a comprehensive set of ideas and approaches, concerns and opportunity within easier reach of our imagination."

Sean D. Connell, University of Adelaide, Australia

"An excellent and highly needed update of the first edition! ... It is well suited for senior undergraduates and an excellent source for PhD students, lecturers and even senior scientists."

Christian Wiencke, Alfred Wegener Institute, Bermerhaven, Germany

Cover illustration (front): wave-exposed rocky intertidal site in Pacific Grove, California, USA, showing a female *Mazzaella flaccida* (Rhodophyta) in the foreground and several kelps and pink coralline algae in the background; (back): rich diversity of macroalgae and invertebrates in a low tidepool near Kyuquot, British Columbia, Canada. © Patrick T.

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