Climate changes resulting in permafrost thawing, acid rain, and lower productivity in lakes as well as increased emissions of greenhouse gases, including CO2, N20, CH4, and other gases, are harming ecosystems all over the world. A new NASA-led study shows that human activity has caused these changes and that they are having significant impacts on ecosystems around the world.

**Seaweeds and their Role in Globally Changing Environments**

Applications of over twenty-five hydrocolloids bring a detailed overview of the function of hydrocolloids as emulsifiers, rheological modifiers, film formers, and food stabilizers. The book covers the evolution and expansion of hydrocolloid use in the food industry since its first edition was published and well received. This thoroughly updated and expanded edition reviews the structure, function, properties, and applications of hydrocolloids.

**Protocols for Macroalgae Research**

To generate high-value outputs for the global market, it is important for businesses to drive development towards sustainable and zero-waste industries, responsibly leveraging renewable low-cost inputs. The protocols for macroalgae research is a valuable resource for researchers and marine biotechnology practitioners.

**Protocols for Macromolecular Research**

As Medicine is an essential research guide and educational text about food and medicine in traditional societies for educators, students from undergraduate through graduate levels, and healthcare professionals. The case studies focus on the uses of plants, seaweed, and ethnomedicinal counterparts of ethnobotany, ethnoecology, and ethnomedicine to provide a valuable multidisciplinary resource for education and instruction.

**Food Industry**

The target readers are phycologists, ecologists, atmospheric scholars, conservationists, environmentalists, and ecologically aware laymen. The book offers an introduction to marine bioenergy, explores marine algae as a source of bioenergy, discusses biotechnological techniques for biofuel production, explains the production of bioenergy, including bioethanol, biomethane, biomethanol, biohydrogen, and biodiesel. The book includes a comprehensive overview of the current state of marine bioenergy in the global market, providing insights into the key aspects of marine bioenergy research, development, and policy.

**Handbook of Hydrocolloids**

Marine bioenergy: trends and developments features the latest findings of leading scientists from around the world. Addressing the key aspects of marine bioenergy, this state-of-the-art text covers an introduction to marine bioenergy, explains marine algae as a source of bioenergy, biotechnological techniques for biofuel production, explores the production of bioenergy, including bioethanol, biomethane, biomethanol, and biodiesel. The book also covers biotechnology and marine renewable fuel cell (MFC) production from marine algae and documents discusses marine waste for bioenergy. The book concludes with a comprehensive overview of the current state of marine bioenergy in the global market, providing insights into the key aspects of marine bioenergy research, development, and policy.