Preface

Global warming/climate change is the major environmental issues of our time. Reducing anthropogenic greenhouse gases, especially carbon dioxide, is our pressing problem. Increased concentration of CO₂ in the atmosphere will not only cause global warming but also raise partial pressure of CO₂ and lower pH in the ocean. Even if the global temperature rise anticipated is at the low end of predictions, a significant decrease in oceanic pH appears to be all but assured.

As one of the options to prevent the rapid increase in atmospheric CO₂ concentration, storage of CO₂ in the deep ocean has been proposed, and examined so far only in small scale laboratory, field, and theoretical studies. Before its implementation, environmental effects and consequences must be revealed, and detailed understanding of the biological impacts is the key. This has highlighted the urgent need of further studies concerning the responses of organisms and community to high-CO₂/low-pH sea-water.

This special section not only brings together what we know of the CO₂ effects on marine organisms, but attempts to move forward the biological impacts assessment of the CO₂ ocean sequestration for considering feasibility of this mitigation option. We hope that this section will also convey how seriously we should tackle climate change, and stimulate others to enter the field.

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