

Water quality problems in Japanese lakes: a brief overview

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Abstract Japan experienced serious environmental pollution during the period of high economic growth. As a result of targeted management and remediation strategies, the pollution problems have generally declined. However, eutrophication, invasive alien species and lake warming all continue to represent major issues for Japanese lakes. These pressures are disturbing indigenous lake ecosystems and affecting the physicochemical condition of the waterbodies. To help prevent eutrophication and its ecological impact, there is a need to reinforce control measures for diffuse pollution and small-scale wastewater treatment, and a concomitant need to develop an economical nitrogen-removal technology. Lake warming is projected to be more serious in the future, and this will alter vertical mass transport patterns, the redox state of sediments and ultimately lake ecosystems. However, we have little knowledge of the potential influence of lake warming at present. Therefore, further detailed limnological studies on lake warming and monitoring of lake environments should be encouraged.

Key words lake pollution; environmental administration; eutrophication; invasive alien species; lake warming; Japanese lakes; Lake Biwa