

A Future Strategy For Water Protection And Restoration

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Abstract

The eutrophication of many lakes and reservoirs is the result of urbanisation, climate change, and the intensification of agriculture. Consequently, numerous methods of lake and reservoir restoration have been developed and implemented. These include methods that remove nutrients from the aquatic ecosystem (e.g., hypolimnetic withdrawal, sediment removal, flushing, weed harvesting) and that increase circulation or otherwise reduce nutrients introduced from the bottom sediments (e.g., artificial aeration with/without destratification, sediment capping, phosphorus inactivation, biomanipulation). Unfortunately, lake and reservoir restoration is technically challenging and expensive, and the results obtained are not always as expected. The nutrient loads entering water bodies are often insufficiently reduced to sustain restoration goals. A new approach to lake and reservoir protection should therefore involve reducing pollution sources, as well as the simultaneous treatment of water using abiotic and biotic environmental processes, engineering, biotechnology and ecohydrology tools. Improving environmental quality enhances health and well-being and creates opportunities for personal and social development. Future water protection requires a holistic approach that encourages all sections of society to actively participate in water monitoring and restoration programmes.