



Coastal Lagoons: Ecology and Restoration (CLEAR)

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Identifying pressures

The CLEAR project addressed one of the most common problems impacting the quality of Ireland's aquatic environment which is the over-enrichment of surface waters with nutrients such as nitrogen and phosphorus. The focus of the CLEAR project was Lady's Island Lake located in the southeast of Ireland. Lady's Island Lake is a saline lagoon which is protected under the EU's Habitats Directive as a priority habitat. The ecology of this lagoon has been severely damaged by nutrient over-enrichment resulting in harmful algal blooms and fish kills. The purpose of the CLEAR project was to understand the extent to which Lady's Island Lake has been polluted by nutrients and the impact of this pollution on its ecology. This was achieved by comparing Lady's Island Lake to another saline lagoon known to be unimpacted by nutrient enrichment – Ballyteigue Channels. The shallow lake theory was used to compare the characteristics of both lagoons.

Informing policy

The continued decline of Lady's Island Lake and other saline lagoons in Ireland will result in the loss of many specialised species, the disappearance of feeding grounds for migratory birds and reduce the recreational and aesthetic value of these waters. The results of this research have shown that a 5 to 7-fold reduction in nitrogen and phosphorus inputs to Lady's Island Lake will be necessary to return the lagoon to its previous condition.

Developing solutions

The results of our research show that no improvement in the lake's ecology will be possible without a large reduction in nutrient run-off from land. Some amelioration may be possible by protecting the lake shoreline by tree planting, the use of artificial wetlands and the removal of nutrient rich sediments. Inevitably, society must address the conflict between the overuse of nutrients such as nitrogen and the impact this is having on our water resources.

