

News Release

New Research Shows Rapid Improvement in Water Quality as a result of the Great Irish Famine

Dublin, September 2nd, 2010 – New research led by Dr Ian Donohue of the School of Natural Sciences in Trinity College Dublin, together with other researchers from TCD, University College Dublin, Spain and the United States, has revealed that water quality improved rapidly and dramatically as a direct consequence of the Great Famine in Ireland. The research found that, because of reduced human disturbance of the landscape and a consequent reduction in nutrient loads, water quality improved significantly during and immediately after the famine. The research, published recently in the journal *Ecological Applications*, involved the examination of sediment cores taken from Lough Carra in the west of Ireland together with the analysis of detailed historical census data.

The population of Ireland in the early 1840s was in excess of eight million people. By the end of the Great Famine of 1845-1850, one million of those people had died and two million had emigrated. The famine was one of the most significant human disasters of the nineteenth century which altered permanently the demographic, political and cultural landscape not only of Ireland, but had global ramifications, particularly in the USA and Great Britain.

“With human pressure on the environment increasing globally, the large scale reduction in populations over such a brief period during the famine provides a unique opportunity to study how ecosystems recover from human disturbance at landscape scales. This is something we actually know remarkably little about,” says Dr Ian Donohue. “This research gives us an important insight into the rates and nature of recovery processes at these large scales and will help us to make better management decisions.”

The research also found that water quality in Lough Carra took between only two and ten years to improve after the famine, which is far quicker than thought possible for this type of pollution. Such diffuse nutrient pollution is also by far the most important form of water pollution in Ireland and across

the globe. However, levels of pollution in Lough Carra were much lower before the famine than they are now. “As a result of more intensive land-use these days, recovery from present day human pollution would likely take considerably longer than it took after the famine,” explains Dr Donohue. “However, these results suggest that we can control this problem, provided there is proper management and investment.”

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Reference for the journal article:

Donohue, I., Leira, M., Hobbs, W., León-Vintró, L., O’Reilly, J. & Irvine, K. (2010) Rapid ecosystem recovery from diffuse pollution after the Great Irish Famine. *Ecological Applications* 20: 1733-1743.

You can download the article from either of the above websites.