

## Learning for Lakes Project

Economic Development in Lake Environments Case Study



**Title:** Tackling problems of Phosphate in Lake Windermere

**Location:** Lake Windermere, Cumbria, UK

**Period:** 2009 - present

**Organisations:** Environment Agency, Nurture Lakeland & Lake District National Park Authority

**Budget:** Unknown

### Location and Background

Windermere is England's largest and longest natural lake and an iconic part of the Lake District National Park. Both local residents and the millions of people who visit each year enjoy the recreational opportunities, spectacular scenery and culture that Windermere has to offer. With a public right of navigation on the lake, Windermere has a rich boating history, including a public highway crossing the lake by way of a ferry. The busiest of all the lakes in the National Park, the lake and its shoreline are popular for many recreational activities. The towns of Bowness, Windermere and Ambleside are the main settlements around the lake, attracting high numbers of visitors. Many accommodation providers, businesses, retail and food outlets rely on tourists visiting the area.

Tourism in the English Lake District dates back to 1698 when many visitors travelled to the Lake District for education and the pleasure of the journey. The area started to become very popular with travellers towards the end of the 18th century, and in 1778 Father Thomas West wrote 'A Guide to the Lakes', which signified the era of true tourism.

In the 1790s 'viewpoint stations' were set up so that tourists could enjoy the best views across the landscape. Buildings were erected at some of these stations to help tourists appreciate the formal qualities of the landscape. The remains of Claife Station on the edge of Windermere can still be seen today.



Photo Credit: Si Homfray

In 1810 William Wordsworth published his Guide to the Lakes, which was very influential in helping to popularise the region and boost tourism. By 1835 the book had reached its fifth edition and was renamed A Guide through the District of the Lakes in the North of England.

The Kendal and Windermere Railway was the first to be built in the Lake District,



reaching Kendal in 1846 and Windermere in 1847. The railway brought a huge increase in the number of tourists to the area and was one of the biggest contributing factors to the growth of the tourism industry within the Lake District. Steamer boats on the major lakes of Ullswater, Windermere, Coniston Water and Derwentwater supplemented the railway and helped increase tourism even further.

Today, approximately 17,500 people live in the Windermere catchment. The lake is a focal point for local communities and visitors, and the economic and social well-being of the area heavily depends on the quality of its unique natural and cultural environment. Tourism remains an important sector for the area and continues to be a major trade. Almost 16 million visitors come to the National Park each year spending over 23 million visitor days (STEAM, 2010).

It is estimated over fifty percent of all economic activity in the National Park is directly or indirectly linked to tourism. In the Windermere area this may well be greater. The lake and its landscape setting are major attractions for visitors, and it is essential that these natural assets are maintained and enhanced. (Cumbria Tourism)

### Problems/Issues and Causes of Issue

Although visitors to Lake Windermere are vital for the local economy, the sheer numbers and the difficulties with insufficient infrastructure bring many problems. Phosphate is a key one, resulting in dense blooms of microscopic algae. This prevents sunlight reaching down through the water and limits the growth of more favourable aquatic plants such as lilies. When the algae die off, the deeper water becomes deoxygenated, forcing the fish up from the deeper cooler water into the warmer surface waters.



Blooms of blue-green algae in particular are a specific hazard as they are potentially toxic. Phosphates can enter the water through a variety of sources, including sewage discharges, agriculture, soil erosion, and even from too many geese grazing on the lakeshore (WCRP 2008). The problem with overloading the sewerage system with phosphate due to increasing tourism pressures are addressed in the projects below.

Other environmental issues in the Lake Windermere catchment include; climate change, invasive non-native species, too much sediment, and insufficient infrastructure. More details about projects on these topics can be found on [www.windermere-lakes.co.uk](http://www.windermere-lakes.co.uk)

### Organisations Involved

The organisations directly involved in leading the projects as outlined below are; Nurture Lakeland, the Lake District National Park Authority, and the Environment Agency. However many other organisations are involved in addressing the issues through an extensive programme of improvements to the sewerage infrastructure and through other projects. These include; United Utilities, the National Trust, Natural England, the Forestry Commission and others.



## Actions Taken

The projects outlined below are to address the source of the issue rather than trying to resolve the infrastructure problems as this happens separately. The projects are focused on community engagement and include elements of education and awareness raising. There are a number of projects currently ongoing which are outlined below.

Love Your Lakes - The Love Your Lakes campaign is delivered by responsible tourism organisation Nurture Lakeland on behalf of the [Windermere Reflections](#) programme. The aim of the project is to reduce the amount of damaging phosphate entering Windermere from laundry and dish-washing detergents used by businesses, residents and visitors to the area. This innovative campaign uses positive and engaging messages to raise awareness of the issues, educating people about their impacts on the lake, and influencing a change in buying behaviors. The project also works with manufacturers and suppliers to source and make available supplies of phosphate-free detergents. Lots of information, useful downloads and video clips can be found by following the links below.

Links: [www.nurturelakeland.org](http://www.nurturelakeland.org) and [www.nurturelakeland.org/love-your-lakes](http://www.nurturelakeland.org/love-your-lakes)

Visitor Giving - Visitor Giving is a simple way of inviting voluntary donations from visitors to a destination who feel inspired to put something back into looking after the places they love. By asking visitors to donate a small amount of money, often as little as £1, the scheme raises much needed funds for local conservation projects and helps everyone involved to better understand their impact on the environment. Responsible tourism organisation Nurture Lakeland has been delivering Visitor Giving in Cumbria for 18 years and has raised over £2.2 million pounds to support hundreds of conservation projects protecting landscape, wildlife, heritage and culture.

In the Windermere catchment, some of Nurture Lakeland's many business members raise money through their guests and customers to support the Love Your Lakes project to improve water quality along with the 'Fix the Fells' project which prevents sedimentation in the lake by repairing and maintaining upland paths. In 2012/2013 local businesses raised £6,000 and £66,000 for these projects respectively. The success of Visitor Giving demonstrates that very small donations can add up to make a significant difference, while raising awareness and educating visitors of the impacts of tourism on the lake and its surroundings. Lots of information, useful downloads and video clips can be found by following the links below:

Links: [www.nurturelakeland.org/nl-visit-give-protect](http://www.nurturelakeland.org/nl-visit-give-protect) and [www.nurturelakeland.org/video-gallery](http://www.nurturelakeland.org/video-gallery)

## Maintenance and Monitoring

Monitoring of lake Windermere is co-ordinated by the Environment Agency. Their monitoring obligations arise from UK or European legislation or from existing national and international commitments. Monitoring of Windermere, along with most current lake monitoring programmes, is driven by the requirements of the [Water Framework Directive](#), and the data collected is used to report on a variety of other directives.

The Environment Agency in the North West also supports and helps to fund a project called "The Lakes Tour" which is a long-term survey of the water quality and ecology of the 20 major lakes in the English Lake District. The report on the latest survey, was carried out and reported in 2010 and includes an analysis of changes in the lakes over the last three decades. The Tour was first carried out in 1984, and has been repeated in 1991, 1995, 2000, 2005 and 2010. The work is carried out by scientists from the Centre for Ecology & Hydrology, supported by staff from the Environment Agency, with funding from the Environment Agency and the Lake District National Park Authority.



The Lakes Tour is a valuable way of increasing our understanding of how lakes respond to environmental change in general, as well as providing information on long-term changes at specific lakes. The results help us assess where there are positive responses from current lakes management projects and highlight those lakes where there is concern that water quality is failing the EU Framework Directive Good Ecological Status standard.

Specific monitoring of the Love your Lakes project happens quarterly and is part of the funding requirement, however an important strategy that monitors how effectively we are managing Windermere is the Windermere Management Strategy. This Strategy sets out how the Lake District National Park and South Lakeland District Council alongside other partners and agencies are addressing challenges, and opportunities to protect and enhance Windermere for future generations.

### Results and Benefits

The projects in Windermere catchment have yet to be evaluated, however similar projects have been delivered in other catchments in the Lake District. In 2009 a Love your Lakes campaign was run in the Bassenthwaite catchment. Full results from this evaluation can be found here; <http://www.nurturelakeland.org/love-your-lakes/latestnewsandevents.html>

### Lessons Learnt

Whilst there are clearly many successful and creative projects being delivered to tackle the issues relating to the impacts that have arisen from economic development around the lake, dependent particularly on tourism, one of the major challenges faced by the stakeholder organisations involved in managing the lake and surrounding landscape is that of funding.

The nature of funding for many of these projects is that it is often short-term and linked to a fixed time limit for delivery of the project, whilst the issues themselves are often long-term and without a 'quick fix' solution. The challenge therefore is not only to try and secure funding for the continuation of the work but, where this is not possible, to find a way of building a legacy into the project model to ensure the positive outcomes are not lost or indeed reversed.

The best way to achieve what is best for the national park, including Windermere, is for all the organisations to work together. There are a number of partnerships working to improve the lake and its catchment including, the Windermere Catchment Restoration Programme, The Lake District Still Waters Partnership and Windermere Reflections. Each partnership has specific objectives and are part of a wider partnership called The Lake District Partnership.

### References:

Cumbria Tourism *STEAM 2010* [www.cumbriatourism.org](http://www.cumbriatourism.org)

WCRP (2009) [www.windermere-lakes.co.uk](http://www.windermere-lakes.co.uk)

Lakes Tour (2010) [http://www.ceh.ac.uk/sci\\_programmes/water/lakestour2010.html](http://www.ceh.ac.uk/sci_programmes/water/lakestour2010.html)

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