



Conservation of lakes in England

English Nature is the Government agency that champions the conservation of wildlife and geology throughout England.

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Conservation of lakes in England

This leaflet launches English Nature's Lakes Flagship Project for 2002-2004 and explains what needs to be done to help protect the biodiversity of lakes in England.

There are approximately 6,000 lakes in England over one hectare in size. Of these, about 400 are designated as Sites of Special Scientific Interest (SSSIs). Numerically, the most important areas for lakes in England are the Lake District in Cumbria, the Norfolk Broads and the West Midland Meres & Mosses. However, most counties in England have at least one or two lake SSSIs in addition to others of county or local interest.

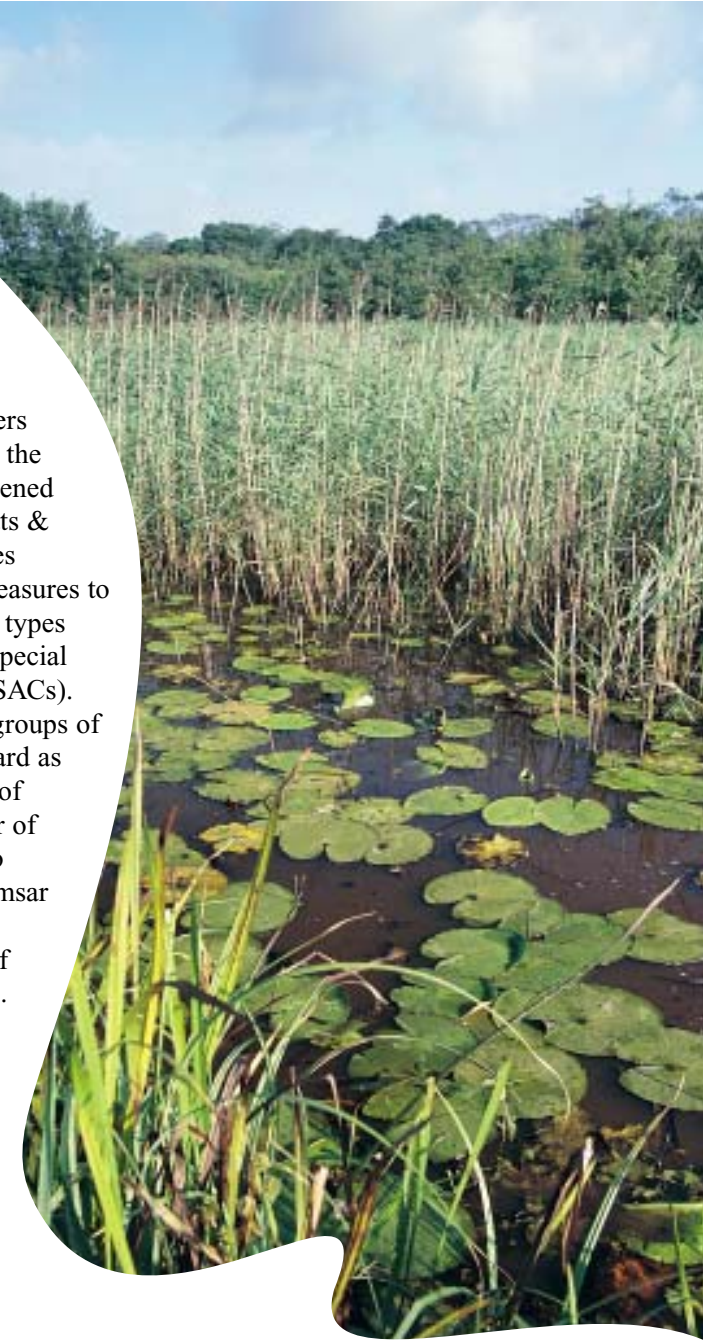


Distribution of lake SSSIs in England

Internationally, freshwaters are recognised as among the most sensitive and threatened habitats. The EU Habitats & Species Directive requires member states to take measures to protect a number of lake types through designation of Special Areas of Conservation (SACs). In England, 33 lakes or groups of lakes are being put forward as candidate Special Areas of Conservation. A number of lakes in England are also designated under the Ramsar Convention for the Protection of Wetlands of International Importance.

Calthorpe Broad, Norfolk – a nutrient-rich lowland lake

Paul Glendell/English Nature 24,801





Wastwater, a deep, nutrient-poor lake in the Lake District, Cumbria

Paul Glendell/English Nature 22,000

Lakes as sensitive ecosystems

Lakes and their wildlife are intimately linked to their surrounding catchments. Each lake differs in the plants and animals it supports depending on the nutrients and sediments entering from the catchment, the physical conditions within the lake and its geographical setting. For example, the large, deep lakes of the Lake District support a very different fauna and flora from the shallow lakes of the Norfolk Broads. As the front cover photograph illustrates, a lake rich in wildlife usually has clear water, supports a range of aquatic plants and is surrounded by wetland habitats.

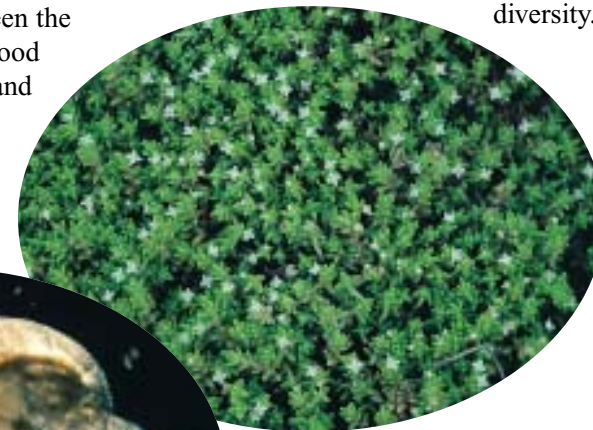
Lakes are sensitive to a variety of human activities that have increased in intensity over the last century. In the lowlands particularly, greater quantities of nutrients and silt are entering lakes from run-off on agricultural land or direct discharges of sewage effluent. The effect of this can be to reduce water clarity and to increase algal blooms, both of which lead to declines in aquatic plants. In turn, the invertebrates, fish and birds that depend on these plants for food or refuge also suffer. Many lakes have lost their natural shoreline habitats through changes in land use.

In some sites, the introduction of bottom-feeding coarse fish, such as carp and bream, is also contributing to the deterioration of lakes. These fish tend to disturb the bottom sediments and increase turbidity. This reduces the light entering the lake that is essential for aquatic plant growth. Excessive fish stocking may also reduce the numbers of zooplankton. These tiny creatures are important in grazing the populations of algae.

In summary, lakes in good condition have a delicate balance between the different components of the food chain – plants, invertebrates and predators such as fish. Adverse impacts can upset this balance and lead to loss of biodiversity.

The alien plant problem

The wildlife of many lakes in England is suffering due to the spread of introduced, non-native aquatic plants such as New Zealand pygmyweed. Although introduced to this country as garden pond plants, some of these species can easily colonise other freshwater habitats. New Zealand pygmyweed can rapidly spread across water bodies, eliminating the native plants and reducing habitat diversity.



New Zealand pygmyweed – an introduced species spreading rapidly into freshwater habitats

Paul Sterry/Nature Photographers Ltd



Daphnia – a vital component of the lake zooplankton, grazing on algae.

Owen Newman/Nature Photographers Ltd



Interpreting the value of lakes and their wildlife will be an important part of the project

Broads Authority

Action to restore lakes & the Lakes Flagship Project

Healthy lakes not only provide for good wildlife, enriching our quality of life, but also support wider human needs such as recreation. The importance of maintaining or restoring the biodiversity of lakes is now recognised and throughout the country efforts are being taken to address some of the adverse impacts.



Brown Moss, Shropshire – a lake under threat from New Zealand pygmyweed

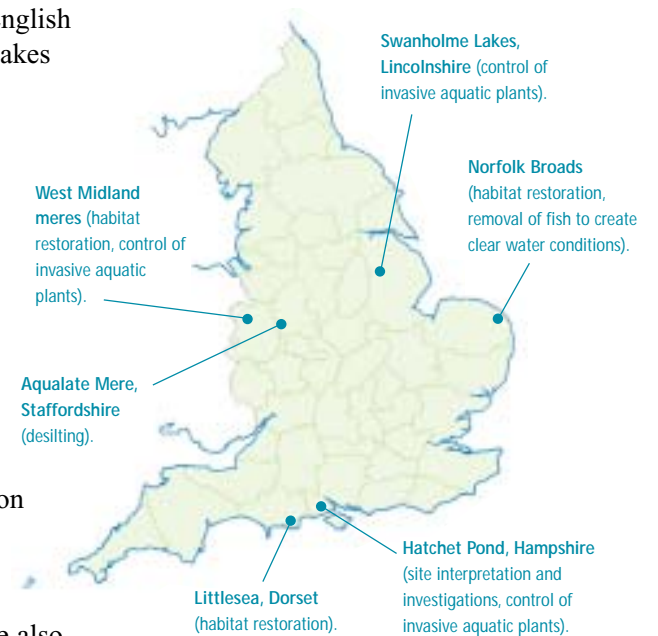
Peter Wakely/English Nature 17,788

Water companies are installing treatment processes to reduce the amount of nutrients discharging into watercourses from sewage effluent. The Broads Authority and others have, for many years, carried out works to help restore the Norfolk Broads to clear water, plant-rich ecosystems. English Nature, the Environment Agency and other partner organisations are actively involved in lake projects across the country.

However, there remains a great deal to do if we are to protect lake SSSIs for future generations. In recent years, Government has set stringent targets for improving the condition of wildlife on our SSSIs.

The need for action is also recognised in the UK Biodiversity Action Plan that identifies several lake types as priority habitats.

Rising to this challenge, English Nature has launched the Lakes Flagship Project. For 2002-2004, English Nature is investing £1.3 million in a series of projects to implement works to help restore the wildlife interest on lake SSSIs. This includes £1 million from a new Government-provided fund for nature conservation works – ‘Nature for People’. The Environment Agency and other public bodies are also contributing towards projects.



The projects will address adverse impacts on selected lake SSSIs. In addition, there will be a move to improve our public interpretation boards and to demonstrate the value of restoration techniques.

The map above shows the location of projects with a summary of the impacts being addressed.

Investigations are being funded on other lake SSSIs in order to establish the actions necessary to achieve favourable condition. Further restoration projects may be included during the life of the project.

This is an exciting and challenging project involving not just English Nature but many other partner organisations. If you would like further information on the project, please contact:

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