

Broads Curriculum

Geography Key Stage 2

Threats to Broads rivers

Table of Contents

Introduction	2
Threats to the Broads rivers.....	2
Pollution	2
Activities.....	3

Introduction

The rivers are the Bure, Ant, Thurne, Yare, Chet, Waveney and Wensum. These and the 63 broads are part of the third largest inland waterway in the UK.

Water is a precious resource used for drinking, food production and many industries, and it supports rare wetland habitats and species. The Broads is a haven for 25% of the UK's rarest species including birds like the crane, the fen raft spider and plants such as milk parsley and fennel-leaved pondweed.

The Broads Authority manages conservation, navigation, recreation and development on land and water in the Broads for the benefit of people and wildlife. Although we work to keep the Broads rivers and other waterways safe and clean, there are some major challenges. The Broads Authority works towards controlling these through giving advice and having rules called byelaws. We work with other organisations to find solutions to the challenges as they arise.

Threats to the Broads rivers

Pollution

- Agriculture – fertilisers, insecticides and herbicides used in some farming methods can cause pollution of the rivers, killing or damaging plants, animals and wildlife habitat, and polluting the water. Eutrophication – the enrichment of the waterbody with excess nutrients, can take place. This accelerates plant growth and causes algal blooms that block out light from the water, creating a lack of oxygen, harming the plants and animals that need it.
- Homes (household chemicals) – strong detergents used for washing up or washing clothes can end up in our rivers.
- Septic tanks and water treatment works – these are where the waste water and the contents of our toilets go to be treated and made safe for putting back into the rivers and sea. The waste contains phosphates – nutrients that can sometimes enter the rivers killing plants and animals.
- Transport – diesel from boat engines and the use of toxic paints on boat hulls can cause pollution of the rivers.
- Industry – factories can produce pollutants that are harmful to people and the environment. Many use water to carry away waste products into the rivers.
- Erosion of the navigation channels caused by damage to banks from bow wave swells (boat wash). This is from the size and number of boats and the way they are driven.

- Salt water entering rivers can lead to contamination of the water, kill the plants and animals, and change the habitat. This is caused by high tides and by percolation through the ground. It is an increasing problem as sea levels are rising.
- Flooding of the rivers is a threat because it can put people's lives at risk, damage buildings, farmland and the freshwater wildlife habitats of the surrounding land. Flood banks can help prevent this from happening.
- Invasive species – plants such as Japanese knotweed and Himalayan balsam, and animals like the mink can replace or damage native species such as milk parsley, swallowtail butterflies and water voles.

Activities

- Watch these Broads Authority videos:

'Water for life' <https://www.youtube.com/watch?v=JaxvFKsVyXg>

'Journey through the Broads National Park' <http://www.broads-authority.gov.uk/about-the-broads/journey>

- Put the threats on cards and have a debate about pros and cons (NB tourism is a high priority for the Broads Authority – will restrictions, such as byelaws, stop people coming to the Broads?).
- Find out about the Broads Authority byelaws in small groups and discuss them.
- Discover a polluted river in Norfolk or Suffolk and why it happened. How could it be prevented in future?
- Put in order the most dangerous threats.
- Can students think of any other threats?
- Design posters or make a friendly video about threats and what people can do to help.
- Investigate your local river and test for pollution with a nitrate test to determine levels, and compare with a different waterway. Sample the invertebrate species in the river through dipping with nets, and catching and identifying the species. Please make sure a risk assessment is done to include adequate supervision, and how to use the equipment correctly and limit numbers of children near the water at one time. For help or a led session please contact the Broads Authority Education Officer.
- Observe the use of the surrounding land to determine whether there is a source of pollution. Contact the Freshwater Habitats Trust for information on simple testing kits.
- Make a snakes and ladders-type game with threats and positives about the Broads.

- Incorporate pollution threats into your created water cycle, and discuss what can happen and ways to prevent pollution or raise awareness about the issues.
- Research the history of your local river to find out about the changes and improvements to its water quality. Do the recent laws on nitrogen fertilisers in Nitrate Vulnerable Zones or rules on sewage treatment in the UK affect your river? Are there any Broads Authority byelaws that have improved the river?