

Habitats Directive

RIVER TWEED

What's happening?

Laws have been introduced under the Habitats Directive to safeguard Europe's most endangered plants, animals and habitats.

As part of this, the Environment Agency has to review all the existing consents that we regulate to ensure there are no adverse effects on the nature conservation interests of designated sites such as Special Areas of Conservation (SAC) and Special Protection Areas (SPA).

We used a staged approach to do this:

- Stages One and Two – listed all consents and looked at those with the potential to have a significant effect.
- Stage Three – looked in detail at whether they have an adverse effect on special sites.
- Stage Four - those consents with no adverse effect will stand, those that do have been examined further to see what can be done about it.

Location



About this site

The River Tweed is designated as a SAC for the following features:

- Atlantic salmon
- sea lamprey
- river lamprey
- brook lamprey
- otter
- watercourse with submerged or floating plants

The Tweed catchment drains through both Scotland and England. The Environment Agency's review of consents only covers issues within the English part of the catchment. Within England the site includes the lower River Tweed from Coldstream to the river mouth at Berwick-upon-Tweed, the Whiteadder from the Scottish Border to the Tweed and the River Till and its major tributaries (Rivers Glen, English Bowmont, College Burn, Wooler Water and Lilburn).

The English part of the SAC covers an area of over 570 hectares and its total length is nearly 170 kilometres.



Water quality

Discharges from waste water treatment works can lead to increased levels of nutrients in the water, particularly phosphorus. All the features of the SAC are potentially sensitive to nutrients in the water. There is a link between phosphorus and detrimental ecological change in rivers, for example, high levels of phosphorus can lead to increased growth of algae and other plants and may result in decline in the submerged and floating plants that are characteristic of the SAC.

The water quality in the River Tweed is generally excellent. We concluded that the feature most sensitive to impact from waste water discharges is the submerged and floating plants. This habitat type is characterised by water crowfoot species, this is an important habitat for invertebrates and fish.

Guideline standards for phosphorus

Guideline standards have been developed for the level of dissolved phosphorus that can occur in rivers. The standards are based on the geology of the catchment and the river size. The guideline standards allow a reasonable degree of phosphorus due to human activities while also allowing the SAC interest features to be in favourable condition. If the level of phosphorus in the river is above the guideline standard, the ecology of the river may be affected.

At Stage 3 we looked at the level of phosphorus in water samples taken from all the rivers in the English part of the SAC. We found that a short stretch of Wooler Water, just over one kilometre, did not meet the guideline standard. We modelled the impact of the one discharge that we thought contributed to this. The model suggested that the standard should be met so we investigated further. We looked for any other discharges that might account for the difference but found none. It was concluded that the water samples had been taken too close to the discharge and were not representative of the water quality in this stretch of the river. We collected water samples throughout 2007 from another point a little further downstream from the discharge and out of the water mixing zone. These showed lower phosphorus levels than our original sampling point and closer agreement with our model.

We carried out additional surveys to look at the plants and invertebrates that occur in this part of the site. Downstream of the discharge some of the plants and algae did show a response to the higher levels of nutrients, however there was no evidence that they were being adversely affected.

Other impacts

We estimated that 85 percent of the phosphorus in this stretch of the river was due to the consented discharge. We did not investigate other sources, but the catchment is largely rural so it is likely that diffuse pollution from agriculture makes a contribution to the level of phosphorus.

Final conclusions

Our decision at the end of the review was based on the data from the new water samples and the predictions from our computer model. The new information showed that the level of phosphorus in the water is lower than the current guideline standard. We concluded that no changes were needed to the consents that we regulate.

Further information can be found at:
www.environment-agency.gov.uk

Guidance can be requested from enquiries@environment-agency.gov.uk