Eye Water and Berwick coastal catchment profiles

These catchment profiles have been produced together because the Eye Water priority catchment work includes water bodies within both catchments, the land use is similar and they impact upon one groundwater body.

Introduction

From its source at Dod Hill, the Eye Water runs through predominantly agricultural land, reaching the coast at Eyemouth. It has a catchment area of 120 km^2.

The Berwick coastal catchment extends south from Reed Point to Lamberton Beach and includes the settlements of St Abbs, part of Eyemouth and Burnmouth. It has a catchment area of 94 km^2.

Land use within these catchments is predominantly agricultural, supporting a substantial arable and livestock farming industry.

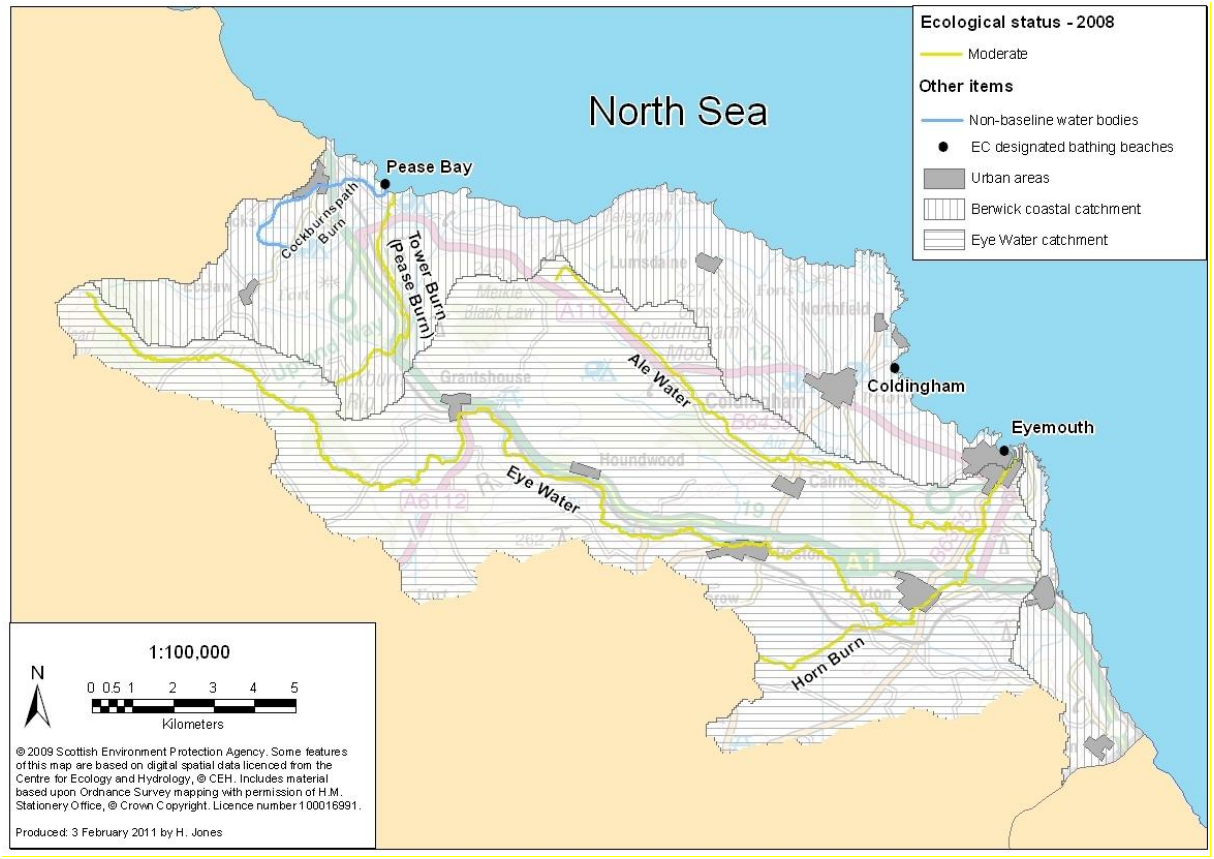

Figure 1: Eye Water catchment and Berwick coastal catchment

The Eye Water catchment contains four baseline[1] river water bodies and the Berwick coastal catchment contains one baseline river water body and two coastal water bodies. One groundwater body is associated with both catchments.

[1] A baseline water body is a river which drains a catchment greater than 10km^2, lochs bigger than 0.5km^2, all coastal waters out to three nautical miles, transitional waters such as estuaries and groundwaters. A non-baseline water body is a river or loch which falls below the size threshold.

Further information on the Eye Water and Berwick coastal catchments can be found on the RBMP interactive map.

The Forth Area Management Plan and other catchment profiles within the Forth sub-basin district can be found on SEPA's website.

Water-dependent protected areas

The Eye Water catchment contains the following water-dependent protected areas which are all currently achieving their protected area objectives:

- One drinking water protected area – St Abbs bedrock and localised sand and gravel aquifers
- One freshwater fish designation – River Eye
- One urban waste water treatment directive sensitive area – Eye Water

The Berwick coastal catchment contains the following water-dependent protected areas which are all currently achieving their protected area objectives:

- Two Special Areas of Conservation – Berwickshire and North Northumberland Coast and St Abb's Head to Fast Castle.
- One Special Protection Area – Berwickshire and North Northumberland Coast and St Abb's Head to Fast Castle.
- Three EC designated bathing waters – Eyemouth, Pease Bay and Coldingham Bay

Classification and pressures summary

The 2009 classification status, pressures and objectives for the Eye Water and Berwick coastal catchments and associated groundwater is shown in Tables 1-3 below.

Table 1: Classification status, pressures and objectives for baseline water bodies within the Eye Water catchment in 2009; water bodies are ordered from the upstream extent of the catchment to the downstream extent.

Surface water body	Water body ID	2009 classification	Pressures	Good by
Eye Water (Source to Ale Water confluence)	5011	Poor ecological status	Diffuse source pollution – mixed farming	2015
Horn Burn	5013	Moderate ecological status	Diffuse source pollution – livestock farming Morphology – livestock farming	2015
Ale Water	5012	Moderate ecological status	Diffuse source pollution – livestock farming	2015
Eye Water (Ale Water confluence to Eyemouth)	5010	Moderate ecological status	Diffuse source pollution – livestock farming	2015

Table 2: Classification status, pressures and objectives for baseline water bodies within the Berwick coastal catchment in 2008; water bodies are ordered from the upstream extent of the catchment to the downstream extent.

Surface water body	Water body ID	2008 classification	Pressures	Good by
Tower Burn (Pease Burn)	5001	Moderate ecological status	Diffuse source pollution – livestock farming	2015
Barns Ness to Wheat Stack	200038	Good ecological status	-	-
Wheat Stack to Berwick-upon-Tweed	200031	Good ecological status	-	-

Table 3: Classification status, pressures and objectives for the groundwater body associated with the Eye Water and Berwick coastal catchments in 2008.

Groundwater	Water body ID	2008 classification	Pressures	Good by
St Abbs bedrock and localised sand and gravel aquifers	150124	Poor status	Diffuse source pollution – mixed farming	2015

Small water bodies

The Cockburnspath Burn is a small (non-baseline[2]) water body within the Berwick coastal catchment. It is under pressure from diffuse source pollution associated with mixed farming and is placing the downstream bathing water – Pease Bay – at risk of failing to meet its objectives. It is therefore discussed within this catchment profile.

Pressures, measures and objectives summary

No deterioration objectives

No pressures exist on the Barns Ness to Wheat Stack and Wheat Stack to Berwick-upon-Tweed coastal water bodies, which are both at good ecological status, or on the protected areas listed above which are meeting their objectives. Under the Water Framework Directive we have a requirement to ensure that there is no deterioration in status.

For those water bodies currently at less than good ecological status and those protected areas failing to meet their objectives, the objective is to ensure that no further deterioration occurs, in addition to any improvement objectives.

Diffuse source pollution

Rural diffuse pollution is a key issue within the Eye Water catchment, with all four surface water bodies and the associated groundwater body impacted by diffuse pollution from farming activities. Within the Berwick coastal catchment, the Tower Burn (Pease Burn) and the Cockburnspath Burn, a non-baseline water body, are also affected by diffuse pollution associated with farming.

[2] Under the Water Framework Directive we are only required to formally identify pressures, determine the classification status, develop and implement measures and report progress to the European Commission for baseline water bodies. However, the Water Framework Directive applies to the whole water environment and if any pressures exist on non-baseline water bodies we would seek to address these through river basin planning; especially, for example, where an activity on a non-baseline water body causes, or has the potential to cause, a downgrade in status to a downstream baseline water body or protected area.

This rural diffuse pollution is also impacting the Eyemouth bathing water and has the potential to impact on designated bathing waters at Pease Bay and Coldingham Bay. The Eyemouth bathing water failed to meet mandatory standards in 2005 and 2007. Diffuse pollution associated with arable and livestock farming in the Eye Water catchment contributed to this failure alongside local sewage disposal. Whilst the Pease Bay and Coldingham Bay bathing waters are currently passing mandatory and guideline standards, upstream rural diffuse pollution inputs place these bathing waters at risk of deterioration. In the case of Coldingham Bay, local sewage inputs are also contributory factor.

Eye Water diffuse pollution priority catchment initiative

Since 2005, the Eye Water has been the subject of a SEPA-led environmental improvement action plan initiative to identify potential sources of faecal indicator organisms/bacteria which could be contributory factors to elevated faecal indicator organism levels at Eyemouth bathing water. These studies have shown that livestock having unhindered access to watercourses in the Eye Water catchment has a significant impact on bathing water quality on the coast.

To tackle this issue in a holistic manner, the water bodies flowing into the Eyemouth and Pease Bay bathing waters have been grouped together to form the Eye Water priority catchment. These water bodies are being targeted in the first river basin planning cycle through the rural diffuse pollution priority catchment initiative co-ordinated by SEPA and the Tweed Forum's Collaborative Action Co-ordinator.

Detailed walks of the priority catchment watercourses, in 2008 (as a part of the environmental improvement action plan work) and in the summer of 2010 (as part of the priority catchment work) have been undertaken to record where there are breaches of the Diffuse Pollution General Binding Rules (GBR) (part of The Water Environment (Controlled Activities) (Scotland) Regulations 2005).

In total, 268 GBR breaches have been recorded within these periods which equates to approximately two per km of watercourse walked. The vast majority of these breaches were GBR 19 breaches, i.e. significant poaching of land within 5 metres of a watercourse by livestock.

Work is ongoing to address these issues and in seven of the farms where problems were found in 2008, watercourses have now been fenced off, with farmers having obtained funding either through the Scottish Rural Development Programme or SEPA's Water Environment Restoration Fund. Therefore, the number of breaches will have reduced.

In 2011, work is planned to raise awareness of the findings of the catchment walks with land managers through evening meetings, on-farm workshops and 1:1 farm visits. It is expected that this will lead to land managers delivering improvements in land management practices with improvements to good ecological status expected by 2015.

The priority catchment work, together with Scottish Water improvement measures to address the point source sewage pressure on the Eyemouth bathing water, is expected to deliver the improvements required to ensure the bathing water consistently meets the Bathing Water Directive required standard of 'sufficient' by 2015. In the case of Pease Bay, the priority catchment work will help ensure this bathing water is protected from any deterioration in status. For Coldingham Bay, Scottish Water investment to improve sewage discharges by 2014 will help safeguard this bathing water from deterioration in status.

Further information on the priority catchment approach can be found on the priority catchment page on SEPA's website.

For the groundwater body, elevated levels of nitrates associated with mixed farming are causing the downgrade in status. It is expected that compliance with nitrate vulnerable zone action programme rules and increased adherence to the diffuse pollution general binding rules as a result of the priority catchment work will help reduce nutrient enrichment of the groundwater body. Natural groundwater recovery times are difficult to predict and whilst the current objective is for improvements to be delivered by 2015, it is likely that an extended deadline will be required in this instance.

Morphology

The physical changes observed on the Horn Burn are primarily associated with livestock poaching of the water body which has resulted in erosion of the banks. Engagement with land managers through the priority catchment initiative discussed above will assist with addressing these pressures by 2015, for example through projects to fence off water courses to prevent livestock obtaining direct access.

Invasive non-native species

No water bodies are currently downgraded to less than good on account of the presence of aquatic invasive non-native species. However, the presence of giant hogweed, Japanese knotweed and Himalayan balsam was noted during the priority catchment walks. Tweed Forum currently runs a Tweed-wide initiative to monitor and control riparian invasive species. This initiative includes the Eye Water catchment and a small part of the Berwick coastal catchment.

Riparian invasive non-native species such as Japanese knotweed, giant hogweed, Himalayan balsam and rhododendron are currently not incorporated into the morphology component of the Water Framework Directive classification scheme. However, this is expected to change before the end of the first river basin planning cycle. Efforts should be targeted to map the location of riparian invasive non-native species as this can be used by SEPA to inform future classification outputs. A recommended survey methodology has been developed to ensure consistency which can be provided on request. The Water Environment Restoration Fund can be used to fund eradication projects.

The Tweed Foundation and River Forth Fisheries Trust are preparing biosecurity plans which include the area covered by this catchment profile. Key objectives of the plan include preventing the introduction and spread of invasive non-native species, establishing a framework for detection and surveillance, and developing co-ordinated control and eradication programmes for invasive non-native species. This work will directly assist the achievement of RBMP objectives.

Areas for action

No.	Action	Suggested owner	Date
1	Continue to gather information on location of barriers to fish passage from appropriate stakeholders.	River Tweed Commission/Tweed Forum/SEPA	2011 - ongoing
2	Deliver Eye Water priority catchment initiative	SEPA/SEPA Priority Catchment Co-ordinator/Tweed Forum Collaborative Action Officer	Ongoing
3	Ensure Scottish Water measures are on track to deliver	SEPA quality and standards team	Ongoing - 2014
4	Check nitrate vulnerable zone action programme is on track and groundwater is improving	Scottish Government/SEPA	Ongoing to 2014
5	Raise awareness of diffuse pollution and Diffuse Pollution General Binding Rules to support priority catchment work.	SEPA Priority Catchment Co-ordinator/ Tweed Forum Collaborative Action Officer/Forth AAG	Ongoing
6	Continue to raise profile of RBMP and requirement to protect and improve the water environment.	SEPA/All AAG members	Ongoing
7	Link with Tweed Forum and River Tweed Commission to ensure co-ordinated action to tackle invasive non-native species to meet RBMP objectives.	Tweed Forum/River Tweed Commission/AAG	Ongoing
8	Ensure that Tweed Forum and River Tweed Commission are notified of locations of invasive non-native species recorded during priority catchment walks.	SEPA priority catchment co-ordinator	2011