CATCHMENT MANAGEMENT PLAN

REVISED JULY 2018
Contents

1.0 Introduction to the Yorkshire Derwent ................................................................. 3
2.0 The Catchment Based Approach.............................................................................. 5
3.0 The Partnership’s Vision for the Yorkshire Derwent ............................................. 6
4.0 Data & Evidence ....................................................................................................... 8
   4.1 National evidence .............................................................................................. 8
   4.2 Local Evidence ................................................................................................. 8
   4.3 What the evidence tells us ............................................................................... 10
5.0 Delivery Plan ......................................................................................................... 12
   5.1 Catchment-scale Initiatives .............................................................................. 12
   5.2 What are we currently doing in the catchment? ................................................ 13
6.0 Monitoring and Reporting ...................................................................................... 15
Yorkshire Derwent Catchment Partnership

Catchment Management Plan

“Habitats are connected, people are connected, activities are connected.”

1.0 Introduction to the Yorkshire Derwent

The River Derwent, its tributaries and wetlands are highly valued for their landscape and nature conservation. This largely rural catchment extends from the North York Moors through to a more undulating landscape, then flat, low-lying land near the confluence of the River Derwent and tidal River Ouse. The seaside resort of Scarborough is the largest urban area, while inland there are dispersed market towns and villages, including Stamford Bridge, Malton, Norton, Helmsley, Pickering and Pocklington.

The River Derwent and its landscape has been dominated and changed by people for centuries. In the 12th Century the monasteries began draining large areas of land for arable and pasture, a process which has been continued over following centuries. In particular, the Mustingham and Yedingham Drainage Act of 1800 enabled the straightening and realigning of large lengths of the Upper Derwent and River Hertford in the north and east of the catchment. During and after the Second World War increased food production resulted in further drainage and more land coming into productive use increasing pressure on wetland wildlife habitats and floodplains.

The main river, its tributaries and adjacent wetlands are very significant for nature conservation, ecology and landscape. The area contains a wide diversity of habitats and a number of designated sites. The River Derwent is a Site of Special Scientific Interest (SSSI) downstream of the confluence with the River Rye and is designated a Special Area of Conservation (SAC) for the river habitat and rare species such as river and sea lamprey. The wetlands of the Lower Derwent Valley form one of the most important examples of agriculturally unimproved, species-rich alluvial flood meadow habitat remaining in the UK and are an SAC for the rare hay-meadow plant community, a Special Protection Area (SPA), for the breeding and wintering bird communities and designated a Wetland of International Importance under the Ramsar Convention.
The River Derwent catchment is a major source of drinking water for the people of Yorkshire, particularly in Leeds, Hull, Scarborough, Sheffield, York and Wakefield making it of strategic importance in the Yorkshire region. In addition, there are several groundwater bodies that overlap with the Derwent catchment but the Corallian Limestone and Sherwood sandstone are the two principal aquifers in the area and support both public water supply and other large abstractions. Barmby Barrage is located at the confluence with the River Ouse to prevent tidal waters entering the lower River Derwent, maintain water quality for drinking water abstraction and retain levels for navigation, which is currently possible between Barmby Barrage and Sutton Lock, Sutton on Derwent.

Near the top of the catchment, the ‘Sea Cut’ helps to reduce the risk of fluvial flooding in Scarborough by providing an overflow channel from the upper Derwent into the North Sea at times of peak rainfall. The catchment is otherwise an area of market towns, villages and hamlets, many of which have suffered historic flooding. Larger settlements such as Malton and Stamford Bridge have benefited from engineered flood defence schemes within the last two decades but recent weather events have tested these to the limit and further measures to reduce flood risk are needed. Groundwater flooding remains a major issue in Malton. Many smaller towns and villages are at risk from surface water flooding, but may not be eligible for hard engineered or high cost flood protection schemes. The exceptions are Pickering and Sinnington, where the well-known Slowing the Flow project has significantly mitigated risk – although even here, Pickering still has a 4% chance of flooding in any one year, and surface water issues remain to be tackled in the village of Sinnington.

Together, the range of habitats, designated sites and its strategic importance as a source of water, all contribute to the unique character of the Derwent catchment.
2.0 The Catchment Based Approach

The Catchment Based Approach (CaBA) is a Partnership-led approach that engages people and groups from across society to help improve our precious water environment. The Yorkshire Derwent Catchment Partnership was established to drive cost-effective practical delivery on the ground that results in improvements to water quality, biodiversity, water level management, (including promotion of natural flood management techniques), resilience to climate change and greater community engagement with the local water environment. Addressing and delivering Water Framework Directive improvements is at the heart of the CaBA approach and this is reflected in the fact that CaBA embeds collaborative working at river catchment scale.

Since its inception with an Interim Steering Group in 2012 the Partnership is now fully established. In 2016 a senior, strategic Board was established made up of director level representatives from 15 key partners. This has set out a set of agreed objectives and has raised some £120,000 from local partners to cover core running costs up to April 2019. It meets quarterly to review progress against the objectives and to discuss initiatives on this special river. It supports a Delivery Group, also made up of operational officers from a wide range of partners. The Partnership is an unincorporated association and partners have agreed Terms of Reference which set out the governance arrangements for the Partnership; https://www.catchmentbasedapproach.org/index.php?option=com_k2&view=item&layout=item&id=24&Itemid=239, The Yorkshire Derwent Catchment Partnership has helped to facilitate funding for projects and is enabling a more co-ordinated approach to delivery on the ground.
3.0 The Partnership’s Vision for the Yorkshire Derwent

The Partnership has developed the following vision for the Yorkshire Derwent, which we plan to deliver through five key aims. The aims are broken down into several objectives under which the Partnership’s project work will fall.

Vision

*The Yorkshire Derwent will be a thriving river within a catchment abundant in wildlife, providing a better quality environment for people to visit, live and work in.*

Aims and Objectives

1. **Ensure a resilient catchment through community engagement and promoting integrated, sustainable land management which benefits the rural economy**

   1.1. Develop business opportunities from sustainable land-based products.

   1.2. Encourage volunteering opportunities for local people to improve health and well-being and benefit the natural environment.

   1.3. Improve public access, understanding and sense of connection to the river and surrounding areas for enjoyment and well-being, working in harmony with wildlife.

   1.4. Work with local communities and land managers to develop tourism in the catchment.

   1.5. Promote awareness of the risks posed by invasive species and importance of following best practice.

2. **Improve water level management, reducing flood risk and preserving water resources**

   2.1. Demonstrate and implement natural flood management approaches which complement traditional flood management practices by working with local communities and land managers.

   2.2. Guard against drought risks by promoting sustainable use of the Derwent’s precious water resources.

   2.3. Integrate biodiversity enhancement into water management systems where practicable and affordable opportunities can be found.
3. Secure better soil conservation and water quality

3.1. Improve water quality in the catchment by reducing inputs of pollutants.

3.2. Improve soil conservation by working with land managers to promote and develop best practice approaches for sustainable land management.

3.3. Reduce pesticides and nutrients entering watercourses by working with land managers.

4. Create extensive habitat connectivity and species resilience

4.1. Restore and create river habitats that allow native aquatic and wetland species movement; upstream, downstream and into the floodplain.

4.2. Restore and create floodplain habitats such as wet grassland, fen and wet woodland, allowing additional space for water, reducing flood risk and providing greater connectivity between these priority habitats.

4.3. Control invasive non-native species (INNS) by co-ordinating the implementation of a control and eradication strategy.

5. Ensure good partnership governance and develop a robust evidence base

5.1. Encourage a culture of co-operation following clear partnership and governance protocols and proactive partner engagement.

5.2. Ensure the partnership is adequately funded and resourced with people with the right skills and knowledge.

5.3. Communicate the work of the partnership.

5.4. Develop a monitoring programme to build an effective baseline that will identify areas for improvements and to measure success.

5.5. Ensure all water management is based on evidence of the hydrology and hydraulics of the River Derwent catchment.

5.6. Commission research to assist decision-making and forward planning of work in the catchment.
4.0 Data & Evidence

In order to develop ideas for projects and prioritise limited resources, it is important to examine a range of different sources of data and evidence. This helps to identify places where we can maximise opportunities for delivering the Partnership’s objectives. The key sources of evidence which we have used to identify where we will work and what we will do are outlined below and include a combination of national data that is available as well as more local evidence and/or local strategies and plans that relate to the Yorkshire Derwent.

4.1 National evidence

National CaBA website: http://www.catchmentbasedapproach.org/

The CaBA websites includes access to a wide range of Geographical Information Systems (GIS) data and layers that can be used to help map out where specific issues are located within the catchment.

Catchment Data Explorer: http://environment.data.gov.uk/catchment-planning/RiverBasinDistrict/4

Delivering Water Framework Directive (WFD) improvements is at the heart of the CaBA approach and WFD data and evidence underpins much of the work of the Partnership. This data source uses WFD / RBMP data to help identify where the issues are and the likely causes. A summary of the status of individual water bodies is in Annex 1.

Countryside Stewardship: Statements of Priorities

These statements identify the priority features and issues being targeted in the Derwent catchment, particularly in relation to water quality and flooding, and are used to determine the allocation of countryside stewardship grants.

4.2 Local Evidence

In addition to national sources of data, local data and evidence (including modelling) is important for helping to identify issues, solutions and actions as well as helping to monitor outcomes in the catchment. Many partner organisations need to prioritise where they spend money and undertake actions to provide the best outcome for their particular objectives and have commissioned separate studies to help prioritise action. This section highlights some of the main prioritisation tools and plans the Partnership will refer to when planning and coordinating activities within the Derwent Catchment (see also Annex 2). This evidence helps to develop the best project proposals for delivery multiple benefits in the catchment and will help develop robust business cases for future funding bids.
**Humber River Basin Management Plan:** This plan, developed by the Environment Agency, and updated in 2015, identifies the local issues and priorities for the Derwent Catchment, particularly in relation to meeting the requirements of the Water Framework Directive.

**York, North Yorkshire and East Riding Spatial Plan, 2015:** We have used this plan to identify where green infrastructure measures could be targeted, and funded from infrastructure levy, to provide flood risk, water quality, biodiversity and recreational benefits.

**Water company asset management plan:** We have used this to understand where the priorities are for the water company and identify opportunities for partnership working.

**AONB Management Plan 2014 - 2019:** This plan for the Howardian Hills Area of Outstanding Natural Beauty (AONB) covers the topical issues affecting the AONB. It sets out recommendations and makes a number of proposals for action, as well as identifying priority sites where actions are needed.

**Flood Risk Management Plans (FRMPs):** These plans were published in 2016 to explain the risk of flooding from rivers, the sea, surface water, groundwater and reservoirs. The Humber river basin district FRMP [https://www.gov.uk/government/publications/humber-river-basin-district-flood-risk-management-plan](https://www.gov.uk/government/publications/humber-river-basin-district-flood-risk-management-plan) sets out how risk management authorities\(^1\) will work with communities to manage flood and coastal risk over the period 2015-2021. Part C of the plan also sets out the specific planned actions for the Derwent catchment which, subject to funding, have been agreed as necessary to help manage flood risk. These actions are linked to the earlier [Derwent Catchment Flood Management Plan](https://www.gov.uk/government/publications/humber-river-basin-district-flood-risk-management-plan), published in 2010 which sets policies for managing flood risk within the catchment. It was produced by the Environment Agency working with others including Planning and Local Authorities, Yorkshire Water and Natural England – see Annex 3.

**Yorkshire and Humberside Living Landscapes:** this plan includes an Ecological Network Map highlighting areas in which wildlife-friendly management of built or farmed land around and within the network will improve the ecological network’s effectiveness.

**North York Moors National Park Management Plan:** The vast majority of the upper catchment of both the Derwent and its main tributary, the Rye, lies within the National Park. The Management Plan’s main focus is on conservation much of which is linked to land use and its impact on landscape including the water environment and biodiversity.

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1 Risk management authorities include the Environment Agency, local councils, internal drainage boards, Highways England and lead local flood authorities (LLFAs).
Natural England Pollution Risk Assessment of the River Derwent, 2015: This report provides an analysis of pollution sources within the Derwent catchment, and identification of a targeted intervention strategy for improving water quality in the catchment. We will use it to prioritise actions within the catchment.

Site Improvement Plan, River Derwent: This plan provides a high-level overview of the issues (both current and predicted) affecting the condition of the Natura 2000 features on the stretch of the River Derwent designates as a Special Area of Conservation (SAC) and outlines the priority measures required to improve the condition of the features.

4.3 What the evidence tells us

Based on our work so far, there are a number of key issues in the Yorkshire Derwent that we plan to address. Many of these issues are closely linked. This makes it even more important to develop projects that deliver multiple benefits, wherever possible. We will continuously review and update our understanding of the issues in the catchment as new evidence becomes available, but at present the main issues include:

i) Water quality – diffuse pollution from agriculture and ‘point source’ pollution from wastewater discharges and septic tanks both affect water quality and account for 22% and 16% respectively for the reasons for failure of individual waterbodies. Phosphate and ammonia affect the levels of oxygen in the water and its ability to support healthy fish and invertebrate populations. There is also a particular issue with Metaldehyde, a chemical used in slug pellets, which is very difficult to remove from water and affects the quality of groundwater and surface water used for drinking water supplies. High levels of nitrate from agriculture and sewage treatment also locally affect the groundwater quality in the Corallian Limestone, one of the major groundwater sources of drinking water in the catchment.

ii) Barriers to fish migration and modifications to river channel – there are multiple in-river structures which prevent the movement of migratory fish and other wildlife up and down the rivers, together with stretches of river channel that have been changed, accounting for 40% of the reasons why individual water bodies are failing to achieve good status. Engineering of the channel and the creation of artificial structures has also contributed to problems with flow dynamics and, in some places, resulted in silt problems, such as in the Lower Derwent.
iii) **Habitat Restoration** – although there are many designated sites in the catchment and other important habitats, we know that many of these need to be improved and new habitats created to protect vulnerable species and better connect these sites.

iv) **Flood Risk and Flood Risk Management** – like the majority of catchments in England, managing flood risk is an important issue in the Derwent catchment. All risk management authorities are directly represented on the Partnership. Whilst the Partnership does not take a lead role in delivering major, hard engineered schemes, the evidence that we have can be used to highlight areas for delivering natural flood measures. A key area of work is to help to reduce flood peaks for communities immediately downstream whilst delivering benefits for water quality and ecology. The Derwent Catchment is also a significantly engineered catchment which does have an impact on water quality, ecology and geomorphology of the river and its catchment. We know that in some locations we need to mitigate against historical changes and ensure that land drainage and ongoing maintenance activities are undertaken in a way that is sympathetic or beneficial to wildlife.

v) **Land management** – many land management practices contribute to diffuse pollution, but also increase the amount of sediment that naturally enters the river and moves downstream. The sediment smothers gravel beds which are home to river invertebrates and are used by fish for spawning, reduces the amount of light that enters the watercourse and is also costly to remove from water abstracted for drinking water. Working with landowners and land managers to improve soil management would also benefit farm productivity and the rural economy.
5.0  Delivery Plan

Based on the evidence and discussions with partners and other stakeholders during the Partnership’s development phase in 2015/2016, we have identified a wide range of potential projects for partners to collaborate on in addition to many of the existing or planned projects that individual partners may deliver in the Derwent. A full list of Partnership projects (proposed, in progress or complete) is included in the Project Delivery Plan.

5.1  Catchment-scale Initiatives

As a Partnership, the Yorkshire Derwent Catchment Partnership is extremely ambitious. A key element of what we want to achieve is to take an integrated, whole catchment approach to resolving the environmental issues on the River Derwent and, where possible, scale up local initiatives to apply to the whole catchment. We are currently working on the development of several flagship catchment scale projects:

**Reducing flood risk:** building on the success of the Slowing the Flow Project, which sought to reduce flood risk in Pickering and Sinnington, we will explore the potential to scale up natural flood measures to deliver at a larger sub-catchment and whole catchment scale. We will use some funding received in 2016 to help develop the evidence base for this and progress a demonstration project, but ultimately we want to deliver best practice in natural flood management right across the catchment not just in a few individual locations.

**Invasive Non-Native Species (INNS):** we plan to establish a catchment-wide strategy for managing INNS, with an initial focus on Giant Hogweed and Himalayan Balsam. An initial stage of this work, completed by Yorkshire Wildlife Trust in spring 2017, was to collate information from partners and other sources to create a map of the locations on INNS and any treatment actions already in place, within the catchment.

**Sediment Reduction:** we will use evidence to identify the key pathways of sediment into the river system of the River Derwent and through a series of smaller projects, reduce the amount of sediment, and associated pollutants, entering the river, which in turn will reduce the amount of sediment removed by Yorkshire Water at its Elvington and Loftsome Bridge Water Treatment Works.
**Engagement and Connection:** our aspiration is to re-establish a real sense of connection between people and the River Derwent. A significant number of people already volunteer their time to improve their local environment, often via the well-established volunteering programmes that many of our partners already have in place, such as the Yorkshire Wildlife Trust, Forestry Commission, Howardian Hills AONB, North York Moors National Park Authority and North Yorkshire County Council. However, there are opportunities to strengthen this activity and the impacts volunteer action can have on the catchment as a whole, whether through river fly monitoring, litter picking, balsam bashing, walk over surveys or helping deliver individual projects. We will map out what is already happening and seek to develop a really strong volunteer base working on Yorkshire Derwent Catchment Partnership activities.

**5.2 What are we currently doing in the catchment?**

In addition to developing the flagship projects outlined above, there are a number of local projects currently being delivered. Some of these are being delivered by partners, outside the direct responsibility of the Partnership, but are included here for completeness, as they link directly with the overall objectives for the Yorkshire Derwent Catchment Partnership:

**Partnership Development:** As a result of financial contributions from partnership organisations, we have recruited a full-time Partnership Officer. A key role of the Project Officer will be to develop this plan in more detail and help ensure that we deliver the agreed actions. They will also have a key role in developing project ideas linked to our Partnership objective on “enjoyment and engagement”.

**River Derwent SSSI Restoration:** Natural England and the Environment Agency are working with East Yorkshire Rivers Trust and Yorkshire Wildlife Trust to deliver a range of actions, seeking to improve the condition of the River Derwent SSSI. The measures were identified in the River Derwent SSSI Restoration Plan and include actions to reduce sediment inputs to the river, tackle over or under shading of river banks and tackling INNS.

**Doing More for the Derwent:** The Restoration Plan also identified issues arising from the presence and operation of five structures, owned by the Environment Agency on the River Derwent. These structures at Barmby, Elvington, Buttercrambe, Kirkham and Howsham are being considered as part of a separate project, Doing More for the Derwent. The project is ongoing and is looking at each structure to identify potential future options for addressing the issues created by these in-structures. The work is being led by the Environment Agency.
**Slowing the Flow:** This pioneering natural flood management scheme is working in two sub-catchments, the River Seven and Pickering Beck. Forest Research are continuing to monitor upstream flows which is providing valuable data although further funding will be needed after 2019. The Forestry Commission have identified flood risk reduction as a key objective in their long-term management plans for Cropton and Dalby Forests. Both the Commission and the National Park will build further NFM measures in these sub-catchments as opportunities arise.

**Derwent Villages:** In July 2017, YDCP secured £50k of funding from the Environment Agency to deliver a multi-objective Natural Flood Management project aimed at reducing the risk of flooding in Hovingham, Gilling East, Sinnington and Thornton le Dale. The project will explore and deliver a range of natural flood risk management techniques such as leaky debris dams, willow spilling and best practice soil management that will deliver important benefits for water quality and delivering against Water Framework Directive Objectives.

**Norton Ings:** Funding was secured from Yorkshire Water to improve wet fenland habitat at a local site adjacent to the River Derwent and Transpennine Express railway in Norton, Malton. The project will commence in summer 2017 and support the re-introduction of Greater Water Parsnip.

**Ryevitalise:** The North York Moors National Park Authority secured funding from the Heritage Lottery Fund (HLF) in 2016 for a two-year development phase for a major programme of environmental projects in part of the Rye sub-catchment. The work involves many of our partner organisations and work is now underway to plan in detail more than 20 individual projects, the majority of which directly link to the objectives of the Yorkshire Derwent Catchment Partnership. The development stage will lead to the submission of a Stage 2 application in late 2018 to secure funding for a four-year delivery stage.

In addition to the projects outlined above, it is also important to note that many other organisations and local community groups are actively developing and delivering environmental improvements within the Derwent Catchment. For example, the Canal and Rivers Trust recently secured £496,600 from HLF funding to improve conditions for a variety of important species, restore two historic bridges and deliver a programme of events and activities aimed at encouraging people to get involved, learn new skills and explore the Pocklington Canal.
6.0 Monitoring and Reporting

A key part of any Action Plan is to monitor and evaluate the success of both the Partnership and project interventions. We have made good progress against CaBA and the Partnership’s objectives, as shown below and will develop a set of simple high-level measures to incorporate into a monitoring plan for the Yorkshire Derwent Catchment Partnership. Once our monitoring plan is in place, we will use this to report on the progress of the Partnership as part of an annual review cycle.

<table>
<thead>
<tr>
<th>Component of CaBA Plan</th>
<th>Development Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Not Started, In Development, Ongoing or Completed)</td>
</tr>
<tr>
<td>Vision, Objectives and Terms of Reference</td>
<td>Completed 2016</td>
</tr>
<tr>
<td>Partnership Board and Delivery Group in place</td>
<td>Completed 2016</td>
</tr>
<tr>
<td>Data and Evidence</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Project Plan</td>
<td>Ongoing – last review, July 2017</td>
</tr>
<tr>
<td>Monitoring Plan</td>
<td>In development</td>
</tr>
<tr>
<td>Self-sustaining / Finance</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

We hope that this document has explained our aspirations and plans for improving the Yorkshire Derwent. We are always looking for new partners, so if you think you would like to get involved in helping to fund and/or deliver some of our project ideas, please get in touch with our Partnership Officer. Together, we will create an environment in the Yorkshire Derwent where “Habitats are connected, people are connected, activities are connected” - a place where we are proud to live, work and enjoy.
Annex 1 – Current status of Waterbodies in the Derwent Catchment

One of the foundation blocks for identifying issues are the water body classifications, which are based on Environment Agency investigations under the Water Framework Directive. There are over 70 river water bodies within the Derwent Catchment, along with five groundwater waterbodies, one lake (Wykeham Lake), one canal (Pocklington Canal) and a section of one coastal water body, where the coast fronts on to the area of the Derwent catchment). The overall status of these water bodies is shown below, along with a table outlining the reasons by sector, for not achieving good status by number of measured failing elements. These include invertebrates, macrophytes, phytobenthos, fish and certain chemicals.

**Ecological and chemical classification for surface waters | 2015 Cycle 2**

<table>
<thead>
<tr>
<th>Number of surface water bodies</th>
<th>Ecological status or potential</th>
<th>Chemical status</th>
</tr>
</thead>
<tbody>
<tr>
<td>72</td>
<td>Bad: 2, Poor: 11, Moderate: 48, Good: 11, High: 0, Fail: 0, Good: 71</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sector</th>
<th>Reasons for Not Achieving Good</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and rural land management</td>
<td>117</td>
</tr>
<tr>
<td>Domestic General Public</td>
<td>5</td>
</tr>
<tr>
<td>Industry</td>
<td>9</td>
</tr>
<tr>
<td>Local and Central Government</td>
<td>24</td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>2</td>
</tr>
<tr>
<td>Navigation</td>
<td>0</td>
</tr>
<tr>
<td>No sector responsible</td>
<td>37</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
</tr>
<tr>
<td>Recreation</td>
<td>2</td>
</tr>
<tr>
<td>Sector under investigation</td>
<td>12</td>
</tr>
<tr>
<td>Urban and transport</td>
<td>16</td>
</tr>
<tr>
<td>Waste treatment and disposal</td>
<td>0</td>
</tr>
<tr>
<td>Water Industry</td>
<td>51</td>
</tr>
<tr>
<td>Grand Total</td>
<td>279</td>
</tr>
</tbody>
</table>
Annex 2 – Priority Places

Each partner involved in the Yorkshire Derwent Catchment Partnership has its own set of objectives for different actions that are needed within the catchment. However, some partners have also identified specific areas within the catchment where they would like to see specific actions taken – these are referred to as Priority Places and are identified below. The entire Derwent Management Catchment is a priority for both Natural England and the Environment Agency, and together with the Forestry Commission, these three partners (referred to as the Defra family) have produced an Area Integrated Plan (AIP). This is currently being refreshed for Yorkshire.

**Environment Agency**

EA priority objectives within the Yorkshire Derwent include delivering the objectives of the River Basin Management Plan and Flood Risk Management Plan. This includes delivering the Humber RBMP objectives outlined below but most notably for the Derwent preventing deterioration of water bodies and protected areas.

Under WFD, protected areas do not include SSSIs or local nature conservation designations but include the following:

<table>
<thead>
<tr>
<th>WFD Protected Areas in the Derwent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshwater Fish Waters</td>
</tr>
<tr>
<td>Bathing Water</td>
</tr>
<tr>
<td>Nitrate Vulnerable Zones</td>
</tr>
<tr>
<td>Water dependent Special Areas of Conservation</td>
</tr>
<tr>
<td>Water dependent Special Protection Areas</td>
</tr>
</tbody>
</table>
Forestry Commission

With funding from the Environment Agency, Forest Research have produced a report and supporting maps to show where there is greatest opportunity for woodland creation to mitigate downstream flood risk and/or reduce rural diffuse pollution and so address Water Framework Directive (WFD) objectives, in Yorkshire and the North East of England. This work builds on the evidence base summarised in Woodlands for Water (FC and EA, 2011 Flooding, woods and water bibliography (Forest Research)) and work from previous rounds of the Woods for Project schemes running from 2013, Woodland for Water: Woodland measures for meeting Water Framework Directive objectives.

The Forestry Commission is now delivering phase 3 of the project by continuing to encourage an increased rate and greater scale of woodland creation in the identified target areas through offering Woodland for Water Planning Grant to advisors to prepare CS Woodland Creation Grant (WCG) applications which lead to approved schemes.

Natural England

The Natural England priority objectives for the catchment are:

**To improve water quality for wildlife and drinking water.**

- To reduce sediment and metaldehyde in the river to improve the quality of the River Derwent as a major source of drinking water for public supply in Scarborough, Leeds, Wakefield, Sheffield, York and Hull (with abstraction points at Irton, Elvington and Loftsome Bridge).
- To reduce sediment in the river to benefit river wildlife which requires clean gravel river beds including sea and river lamprey, bullhead, otters, white clawed crayfish and water crowfoot.

**To restore a more naturally functioning River Derwent and provide opportunities for wildlife to spread out from the river corridor.**

- To reconnect the different stretches of the river and restore more natural river profiles and river flow patterns including the River Derwent itself (which is SSSI and SAC from Ryemouth to the confluence with the Ouse), the River Rye and tributaries of the Derwent and Rye.
- To enhance the wildlife of the floodplains of the Lower Derwent Valley (SSSIs at Derwent Ings, Melbourne and Thornton Ings, Newton Mask, Brighten Meadow and Lower Derwent Valley SPA/SAC/Ramsar/NNR) and the Vale of Pickering and provide opportunities for wildlife including wading birds, wildfowl and farmland birds to spill out into the surrounding countryside and link to other wildlife areas including the heathlands of Skipwith Common (SSSI/NNR/SAC) and Strensall Common (SSSI/SAC).
To reconnect more people to the wildlife and history of their local area.

- To develop links between volunteers in the focus area and support catchment partnerships to increase the number of local people who have the opportunity to experience and contribute to the enhancement of the natural environment.
- To explore opportunities to engage local farmers, and young people in the conservation of arable flora (particularly the Vale of Pickering and Wolds edges) and the enhancement of species rich grasslands and field margins for pollinators such as bees and butterflies.
- To work with Scampston Hall to provide opportunities for learning about the natural and cultural environment and to use opportunities to link the wildlife and cultural experience at other locations in the catchment including the Mesolithic Starr Carr site, Castle Howard, Wressle Castle and Skipwith Common.
Annex 3 – Properties at risk of flooding

The following table from the Derwent Catchment Flood Management Plan, 2010 identifies those locations with 100 or more properties at risk of fluvial flooding in a 1% probability if there were no flood defences in place and critical infrastructure that may be at risk.

<table>
<thead>
<tr>
<th>Number of properties at risk (Note considering defences)</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 to 1000</td>
<td>Malton/Norton</td>
</tr>
<tr>
<td>200 to 500</td>
<td>Helmsley, Pocklington, Pickering</td>
</tr>
<tr>
<td>100 to 200</td>
<td>Thornton-le-Dale, Kirkbymoorside, West Ayton, Wilberfoss</td>
</tr>
</tbody>
</table>

**Critical Infrastructure at Risk of Flooding**

- 15 gas and electricity assets
- 9 educational facilities
- 14 health facilities
- 7 waste water treatment works
- 1 emergency services building