

Northern Ireland  
Environment Agency

## **BUSH**

### Local Management Area Information Leaflet



## **Information Leaflet - Bush Local Management Area**

The River Basin Management Plans will be implemented through Local Management Areas (LMAs) during the 2010 to 2015 planning cycle. This information leaflet is one of a series, for each of the 26 LMAs, across the Neagh Bann, North Western and North Eastern Districts. The leaflet includes details of the characteristics and quality of the water environment within the area and specific local measures identified to improve the water environment.

The leaflet will inform work with stakeholders, through **Catchment Stakeholder Groups**, to develop focused implementation plans for each LMA in the North Eastern District. These LMA Plans will be implemented on a three-year rolling programme within the North Eastern District as set out below:

- South Down, Strangford, Lagan and Bush in 2010;
- Quoile, Belfast Lough and Glens & Rathlin in 2011;
- Larne Lough in 2012.

### **Introduction**

Bush LMA is in the North Eastern River Basin District and covers an area of approximately 490km<sup>2</sup>. The main river is the River Bush that rises within the Antrim Plateau about 500m above sea level. It is joined by smaller tributaries before continuing through Bushmills and draining into the Atlantic Ocean at Bushfoot Strand, Portballintrae. The river supports indigenous stocks of Atlantic Salmon and Brown Trout and also a salmon hatchery to maintain stocking levels.

The dominant land use is improved grassland, forestry and arable farming. The main towns include Bushmills, Portrush, Portstewart, Dervock, Stranocum and Armoy. There are also numerous smaller villages scattered throughout the area.

This area also takes in the Giant's Causeway which is Northern Ireland's only UNESCO World Heritage Site and a number of other tourist attractions, including the world's oldest whiskey licensed distillery at Bushmills.

**Key Facts**

**LMA area:** 490km<sup>2</sup>

**WFD water bodies:**

- 17 river water bodies
- 1 coastal water bodies
- 1 groundwater body

**Main land use:**

Agriculture (Improved grassland and arable 59%)

**Key industries:**

- Agriculture
- Tourism
- Fishing
- Fisheries
- Forestry

**Main towns and populations:**

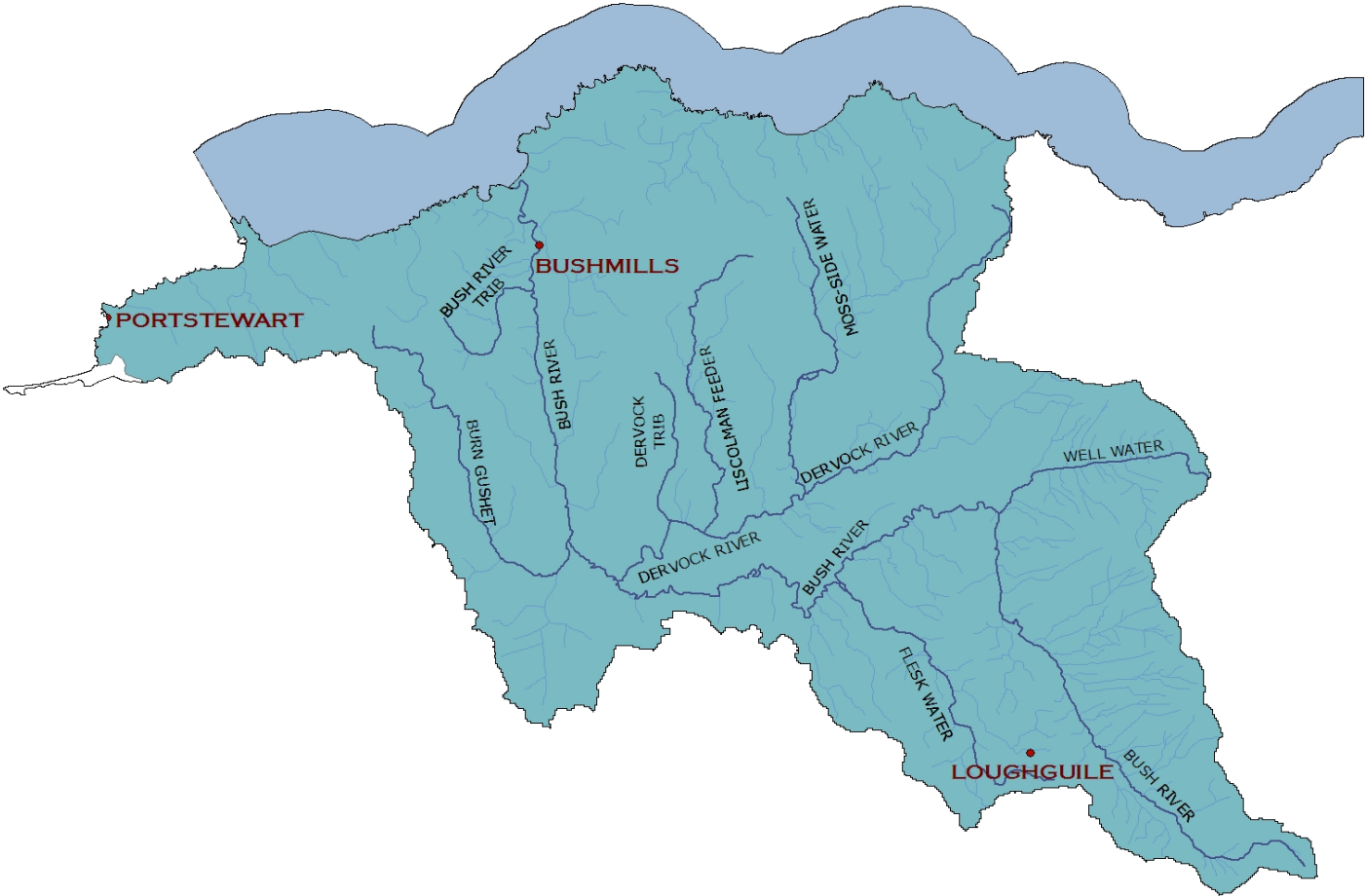
- Bushmills (1319\*)
- Portrush (6372\*)
- Portstewart (7803\*)
- Portballintrae (734\*)
- Dervock (601\*)

\*Figures based on 2001 census.



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**Bush LMA with main rivers identified**



## The quality of water bodies in Bush LMA

Our understanding of the state of Northern Ireland's water environment and Bush LMA has developed as we have adapted to the requirements of the Water Framework Directive. Now, when assessing water quality, we consider both ecological and chemical quality, as well as the pressures that can affect them.

Some water bodies have been changed to such a degree that they can no longer be restored to their original condition without compromising their current use. For example, some have been deepened to allow for navigation, others have flood defences or have been dammed to provide a source of drinking water. These are called Heavily Modified or Artificial water bodies and are required to meet Good Ecological Potential (GEP) rather than good status.

In Bush LMA, River Bush Upper and two sections of Burn Gushet have been designated as heavily modified.

### What is the current status of surface waters in Bush LMA?

94% of surface water bodies in Bush LMA have been classified as less than good status and 16.7% of these were identified as heavily modified. Most rivers failed to achieve good status due to impacts on invertebrate communities. Bush LMA contains one coastal water body, the North Coast, which is currently achieving good status.

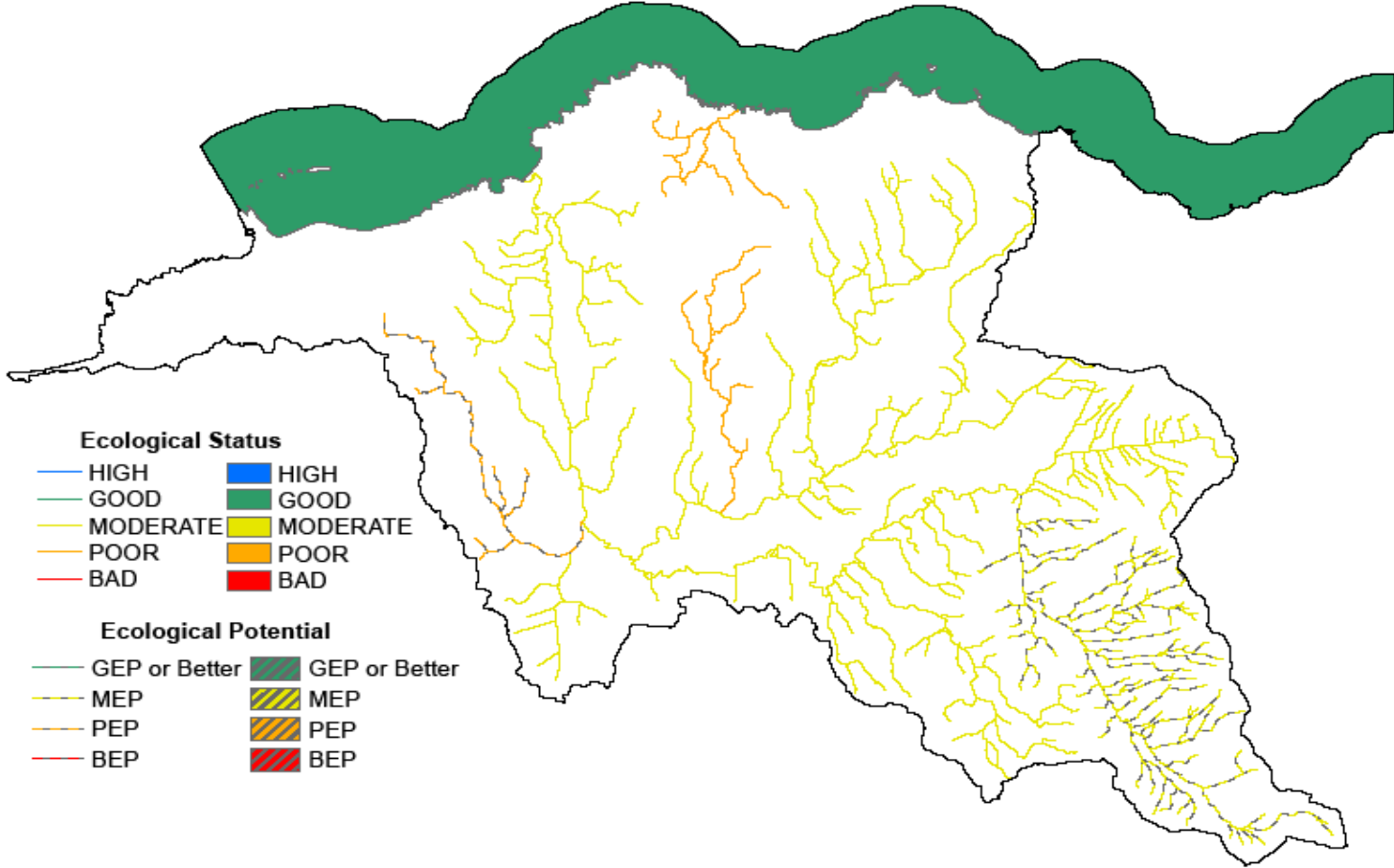
**Table 1: Status of surface waters in Bush LMA**

Water body type	High	Good	Moderate	Poor	Bad	GEP	MEP	PEP	BEP
River	0	0	12	2	0	0	1	2	0
%	0	0	70.6	11.8	0	0	5.9	11.8	0
Coastal	0	1	0	0	0	0	0	0	0
%	0	100	0	0	0	0	0	0	0
Total Surface Waters	0	1	12	2	0	0	1	2	0
%	0	5.6	66.7	11.1	0	0	5.6	11.1	0

**Groundwaters** (underground water) interact with the surface waters around them, thus the quality and quantity of an area's groundwater can affect the surface waters.

All **groundwater** bodies in Bush LMA are achieving good status.

**Overall status of water bodies in Bush LMA**



## Protected areas in Bush LMA

The LMA supports important habitats and wildlife. These areas have been designated under European Directives and require special protection. The protected areas are summarised in the following table.

**Table 2: Protected areas in Bush LMA**

Protected Area Type	Location
<p><a href="#">Waters used for the abstraction of drinking water (drinking water protected areas)</a></p>	<p>There is 1 drinking water protected river.</p> <p>There is 1 drinking water protected groundwater.</p>
<p><a href="#">Areas designed to protect economically significant aquatic species</a></p> <p>Freshwater Fish Directive (78/659/EEC)</p> <p>Shellfish Waters Directive (79/923/EC)</p>	<p>There are 131 km of rivers identified under the Freshwater Fish Directive, all designated Salmonid.</p> <p>There are no designated shellfish waters.</p>
<p><a href="#">Bathing Waters</a></p> <p>These are bathing waters identified under the Bathing Waters Directives (76/160/EEC)</p>	<p>There are 5 identified bathing waters; Portrush (Mill) West, Portrush (Curran) East, Portrush (Whiterocks), Portstewart and Portballintrae Salmon Rock.</p>
<p><a href="#">Nutrient Sensitive Areas</a></p> <p>Areas designated as sensitive under the Urban Waste Water Treatment Directive (91/271/EEC) and the Nitrates Directive (91/676/EEC)</p>	<p>There is 1 Urban Waste Water Treatment Directive sensitive area; River Bush.</p> <p>A total territory approach has been adopted in Northern Ireland for the Nitrates Directive.</p>
<p><a href="#">Areas designated for the protection of habitats or species (Natura 2000 sites)</a></p> <p>These are areas designated for the protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection.</p> <p>Habitats Directive (92/43/EEC)</p> <p>Birds Directive (79/409/EEC)</p>	<p>There are 3 water dependent Special Areas of Conservation; Garry Bog, Breen Wood and North Antrim Coast.</p> <p>There are 2 water dependent Special Protection Areas; Sheep Island and Antrim Hills.</p>

## Why are some waters not reaching good status?

There are a number of pressures that may prevent some waters reaching good quality. The main ones are considered to be:

- **Abstraction and flow regulation**
- **Diffuse and point source pollution**
- **Changes to morphology (physical habitat)**
- **Invasive alien species**

Seven river water bodies were identified as being impacted by **abstraction and flow regulation**.

Three of these have been classified as heavily modified. Reasons for this classification include flood risk management. The rivers affected are: River Bush Upper and two sections of Burn Gushet River.

Although the other four river water bodies were not classified as heavily modified, they did show impacts from abstraction and flow regulation. Reasons for this classification include the presence of hydropower schemes. The rivers affected were: Well Water, River Bush, River Bush Lower and River Bush Stranocum.

A number of biological and chemical elements can be affected by both **diffuse and point source pollution**.

**Table 3: Water bodies not reaching good status due to diffuse and point source pollution**

Classification element affected*	Number of water bodies showing impacts	
	River	Coastal
Macrophytes	0	N/A
Diatoms	5	N/A
Phytoplankton	N/A	0
Macroalgae	N/A	0
Angiosperms	N/A	0
Invertebrates	15	0
Fish	0	N/A
DIN	N/A	0
Phosphorous	2	N/A
Dissolved Oxygen	5	0
Specific Pollutants/Priority Substances	0	0

\*More than one element may be affected in each individual water body.

In Bush LMA the main impact was observed in invertebrate communities and dissolved oxygen levels. These elements are associated with organic enrichment and the rivers affected were: Dunseverick River, River Bush, Black Water, Doughery Water, Dervock River, Moss-side Water, Stracam

River, Well Water, Inver Burn, River Bush Lower, Flesk Water, River Bush Stranocum and Burn Gushet River.

There was also evidence of nutrient enrichment within the catchment. The main impacts were observed in diatom communities and phosphorous levels. The rivers affected were: Black Water, Dervock River, Moss-side Water, Stracam River, Well Water and Burn Gushet River.

Five river water bodies were identified as affected by **changes to morphology (physical habitat)**. The rivers affected were: Burn Gushet River, Black Water, Doughery Water, Well Water and River Bush Lower.

These changes include historical engineering, resectioning, sluices and weirs.

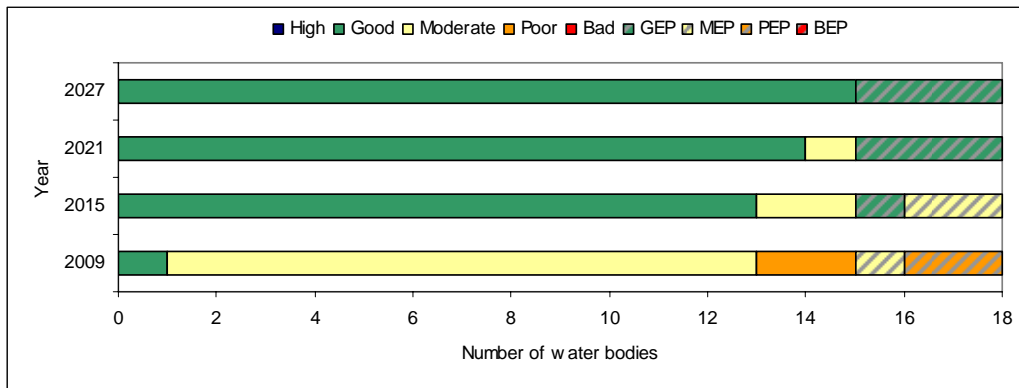
The water environment in Northern Ireland has been impacted by the introduction of **invasive alien species**. Species which have already become established in this area include:

- Japanese Knotweed (*Fallopia japonica*)
- Himalayan Balsam (*Impatiens glandulifera*)

### What improvements do we plan to achieve?

We have set environmental objectives to deliver improvements as shown below. We aim to achieve good status or better in 72% and GEP (for Heavily Modified Water Bodies) in 5.6% of our surface waters by 2015. We aim to maintain good status in 100% of our groundwaters.

#### Current status and proposed objectives for surface water bodies in Bush LMA



## How are we going to maintain and improve the water environment in Bush LMA?

There are a number of measures which will be implemented in Bush LMA in order to maintain and improve the water environment.

The programme of measures described in the North Eastern River Basin Management Plan has been categorised into two types of measures: **existing and planned** and **supplementary**. Existing and planned measures aim to ensure that existing water uses are appropriately managed and that the water environment remains at good status.

**Existing and planned measures** include those which have been put in place to meet legal requirements. Those which apply in this LMA include:

- The current Bathing Water Directive (76/106/EEC) and revised Bathing Water Directive (2006/7/EEC);
- The Birds Directive (79/409/EEC);
- The Drinking Water Directive (80/778/EEC) as amended by Directive (98/83/EC);
- The Major Accidents Directive (96/82/EC);
- The Environmental Impact Assessment Directive (85/337/EEC);
- The Urban Waste Water Treatment Directive (91/271/EEC);
- The Plant Protection Products Directive (91/414/EEC);
- The Nitrates Directive (91/676/EEC);
- The Habitats Directive (92/43/EEC); and
- The Integrated Pollution Prevention Control Directive (96/61/EC).

A number of **other existing and planned measures** apply in this LMA:

- Cost recovery for water use and promotion of efficient and sustainable water use;
- Protection of drinking water sources;
- Abstraction and impoundment control;
- Point source and diffuse source discharge control;
- Controls on physical modifications to surface waters;
- Prevention or reduction of the impact of accidental pollution incidents;
- Authorisation of discharges to groundwater;
- Priority substances control and
- Controls on other activities impacting on water status.

Further information on existing and planned measures for each sector is available on the **programme of measures** section of the website.

The following measures are in place to manage the problems with alien species:

- Rivers Agency Management protocols (Himalayan Balsam and Japanese Knotweed)
- NIEA/National Parks and Wildlife Service best practice management guidance for Japanese Knotweed and Himalayan Balsam.

[www.ni-environment.gov.uk/wfd](http://www.ni-environment.gov.uk/wfd)

- A number of codes of practice, educational and awareness leaflets have been prepared and are available to download from [www.invasivespeciesireland.com](http://www.invasivespeciesireland.com)

## What measures are agreed for water dependent Natura 2000 sites in unfavourable condition?

**Special Areas of Conservation** (Habitats Directive) and **Special Protection Areas** (Birds Directive) are assessed as being in favourable or unfavourable condition. These areas have been examined to determine if **water dependent features** are present.

There are no specific measures for the North Antrim Coast or Breen Wood Special Area of Conservation as there are no water related adverse activities causing the unfavourable condition assessment of water dependent features. Garry Bog Special Area of Conservation has water dependent features which are in unfavourable condition.

**Table 4: Measures for water dependent features of Garry Bog Special Areas of Conservation**

Name	Current condition assessment of water dependent features	Measures in place
Garry Bog	Active raised bogs unfavourable due to water management (including drainage, dredging or alterations to the water table. Could be too much water or too little)	Investigation ongoing

The condition of Antrim Hills Special Protection Area has not yet been assessed. The condition of Sheep Island Special Protection Area has been assessed as unfavourable.

Unfavourable Special Protection Areas require investigation to identify external and internal factors. The issues affecting this LMA are currently unclear. The unfavourable condition may be caused by changes in migratory patterns, disturbance to high tide roost sites, water quality and/or ecological factors. Further details on Special Areas of Conservation and Special Protection Areas in the Bush LMA are available in the **protected areas** section of the website.

**Supplementary measures** required to achieve environmental objectives for rivers, lakes, transitional and coastal water bodies have been identified for a number of sectors and pressures in this LMA. Supplementary measures will be applied during the implementation phase of the River Basin Management Plans subject to necessary funding and tests to justify technical feasibility and cost effectiveness.

**Table 5: <sup>1</sup>Supplementary measures in Bush LMA**

<b>Key sectors</b>	<b>Supplementary measures</b>	<b>Additional Information</b>
Agriculture	Target education, advice and regulatory action	See Table 3 for number of water bodies where invertebrates are less than good
Collection & treatment of sewage	Assess significance of septic tanks and take action accordingly	See Table 3 for number of water bodies where invertebrates are less than good
	Upgrade WWTWs with a population equivalent greater than 250PE	<sup>2</sup> Bushmills WWTW upgrade under PC10
Industry & other business	Improve compliance with discharge consents	There is 1 non-compliant discharge, based on 2008 compliance data
Agriculture, Collection & treatment of sewage Industry & other business	Assess point source phosphorus loads	See Table 3 for number of water bodies where SRP, diatoms or macrophytes are less than good
	Target further phosphorus controls from point sources	
	Assess diffuse nutrient loads using mathematical modelling	
	Target further phosphorus controls from diffuse sources	
<b>Pressures</b>	<b>Supplementary measures</b>	<b>Additional Information</b>
Abstraction & flow regulation Morphology	Develop mitigation measures identified for hydromorphology pressures	There are 3 HMWBs at <GEP and 5 water bodies are affected by changes to morphology
Pressure unknown	Carry out further Investigation	There are 10 water bodies where confidence in class is low

Responses from the draft River Basin Plan consultation were used to identify the measures below:

<sup>1</sup> Strategic Environmental Assessment has considered the impacts associated with the suite of supplementary measures proposed. Where impacts were identified, mitigation measures were proposed and are detailed in the SEA Mitigation Measures document which is available on the website.

<sup>2</sup> The dates/works upgrades may be subject to change. PC10 upgrades cover the period April 2010 – March 2013

- promote efficient use of water;
- introduce seasonal discharge consents, where possible, to promote installation of reed beds and constructed wetlands for sewage treatment;
- improve septic tank maintenance, installation and design;
- review and investigate the effectiveness of wetlands in the reduction of nutrient loadings;
- facilitate River Trusts across Northern Ireland.

The improvements in water quality proposed above will be delivered through a programme of measures coordinated by the Department of the Environment. Some of these measures are already being carried out in Bush LMA.

**Local measures** are also being applied in this LMA. There are a number of projects and initiatives run, for example, by local communities, angling groups and voluntary environmental organisations that will contribute to achieving the objectives we have set for our waters. Some of those happening in Bush LMA are shown below.

The **River Bush Targeted Catchment Action Plan** is a local project that NIEA have been working on with the North Antrim Anglers Association to identify problem stretches of the River Bush and its tributaries. Catchment investigations into water pollution problems are being carried out by NIEA staff. A number of pressures have been identified and NIEA are working to resolve these with other government departments and agencies.

NIEA are working in partnership with DCAL, Rivers Agency and the North Antrim Anglers Association on a small scale trial on a stretch of the River Bush. The trial is aimed at managing the river's aquatic environment to improve salmonid fisheries habitats.

### **National Trust**

- Actions/plans to bring Natura 2000 sites and Areas of Special Scientific Interest towards favourable condition by 2015 for sites in National Trust ownership. The actions are ongoing at Aird and Innisfree Farm and White Park Bay.
- Environmental Compliance Audit of all National Trust owned sites. Water Pressure is diffuse and Point source pollution. Emergency remedial action has been completed. Action on the remaining assets presenting a risk to water quality completed or in progress. Issue a code of practice to septic tank users. Sites at Larrybane, Giants Causeway and White Park Bay.
- Ongoing advice to farm tenants on resource management, waste control and environmental performance. Encouraging tenants to adhere to best practice for pollution control in Carrick-a-rede, Dunseverick, Fair Head, Greenhill and Innisfree areas.

- Coastal Risk Assessment to identify habitats at risk of coastal erosion and flooding. Based on the results, work to identify opportunities for managed realignment and habitat creation on National Trust land. Assessment complete and follow-up action ongoing at Dunseverick, Carrick-a-rede and Larrybane, Rathlin Island, White Park Bay and Giants Causeway.
- Promoting the importance of water and its efficient use to our supporters through information, campaigns and events. Planned to include Giants Causeway.
- Greening National Trust buildings to reduce run off and improve water efficiency. All renovation and building projects to apply sustainability criteria. Ongoing project for Carrick-a-rede, plus all future projects, including the Giants Causeway (by 2012)
- Control of invasive species on National Trust Land. Participation in invasive species control forums and provide advice on good practice in invasive species control. Ongoing for Fairhead, White Park Bay and Giants Causeway.
- Audit of water use at all National Trust sites to establish a baseline then set targets for reduction and introduce water efficiency measures. Ongoing for Larrybane, Fairhead, Giants Causeway and White Park Bay.

If you are running a project or carrying out work that will assist in protecting the water environment or water dependant features, or restoring natural waters then we would encourage you to let us know.

Contact details for your **Catchment Stakeholder Group** are available on the **public participation** section of the website.

Our aim is to protect, conserve and promote the natural environment and built heritage for the benefit of present and future generations.

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