

Northern Ireland
Environment Agency

SIX MILE WATER

Local Management Area Information Leaflet



Information Leaflet - Six Mile Water 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 Neagh Bann District. These LMA Plans will be implemented on a three-year rolling programme within the Neagh Bann District as set out below:

- Ballinderry and Lough Neagh in 2010;
- Blackwater, Lower Bann and Carlingford & Newry in 2011;
- Upper Bann, Moyola, Six Mile Water and Braid & Main in 2012.

Introduction

Six Mile Water LMA, part of the Neagh Bann River Basin District, drains into Lough Neagh at Antrim Boat Club just south of Shane's Castle.

The main river is the Six Mile Water whose upper reaches rise in the western part of the LMA near the Antrim Hills and Ballynure. The river flows westward towards Lough Neagh at Antrim, where it is joined by a number of significant tributaries such as Ballymartin Water, Clady Water, Doagh River and Rathmore Burn and supports a wide diversity of natural habitats, several of which are protected.

The main towns are Ballyclare and Antrim, but there are also several other significant towns throughout the area, such as Templepatrick, Ballynure, Parkgate, Mallusk and Doagh. The main land use is improved grassland with some forestry in the upper reaches, such as Ballyboley forest. A large industrial estate is present in the catchment at Mallusk. This is situated on the Ballymartin water which flows into the Six Mile Water.

The Antrim Hills in the north of the LMA are at the southern most tip of the Antrim Plateau and this region is designated as part of the Antrim Coast and Glens Area of Outstanding Natural Beauty. The Six Mile Water is an important salmon and trout angling river and also has native Dollaghan trout that are a feature of Lough Neagh. The area also supports a number of outdoor activities such as walking, boating and water sports.

Key Facts

LMA area: 397 km²

WFD water bodies:

12 river water bodies
1 groundwater body

Main land use:

Agriculture (improved grassland 50%, arable horticulture 10%)
Calcareous grass 8%

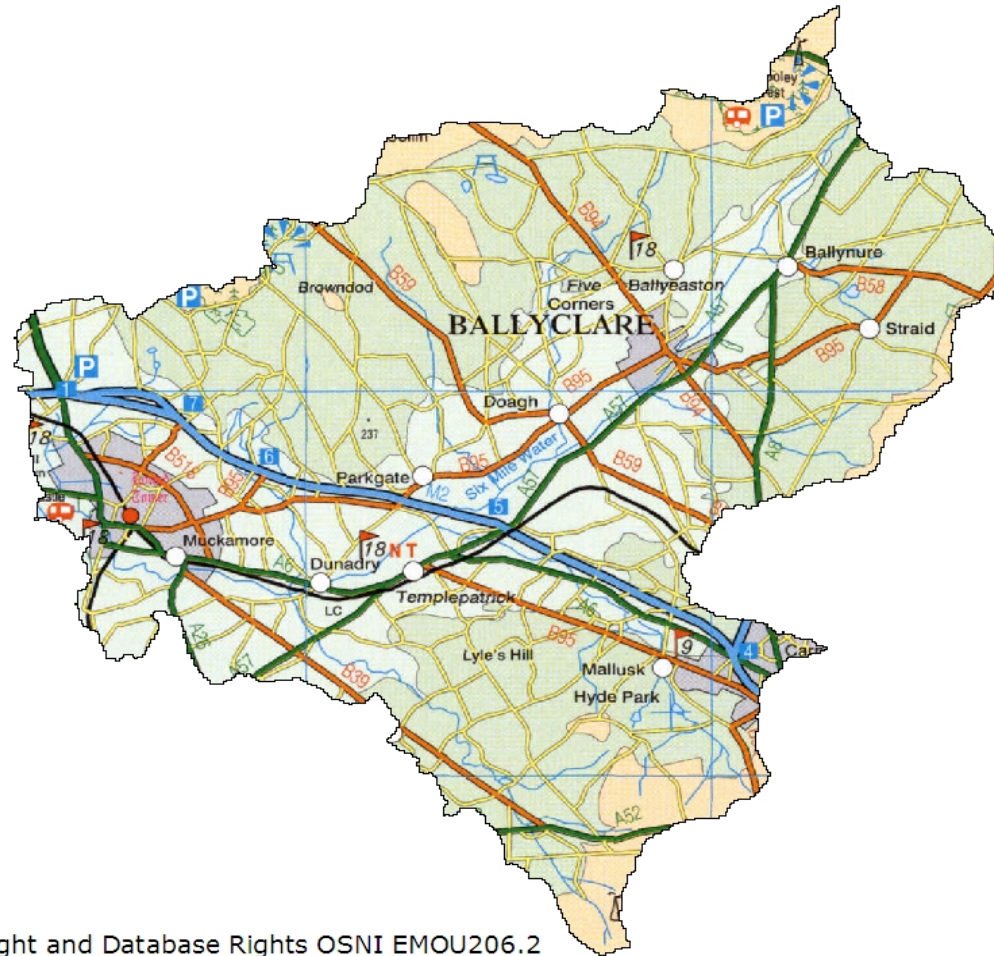
Key industries:

Agriculture
Tourism
Fishing

Main towns and populations:

Antrim (20001*)
Ballyclare (8770*)
Templepatrick (1556*)
Doagh (1130*)
Ballynure (677*)
Parkgate (646*)

*Figures based on 2001 census.



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Six Mile Water LMA with main rivers identified



The quality of water bodies in Six Mile Water LMA

Our understanding of the state of Northern Ireland's water environment and Six Mile Water 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.

Two sections of the Six Mile Water and the Plaskets Burn have been classified as heavily modified.

What is the current status of surface waters in Six Mile Water LMA?

83% of surface water bodies in Six Mile Water LMA have been classified as less than good status. Many of the rivers failed to achieve good status due to suppressed invertebrate populations and diatoms as well as changes to morphology.

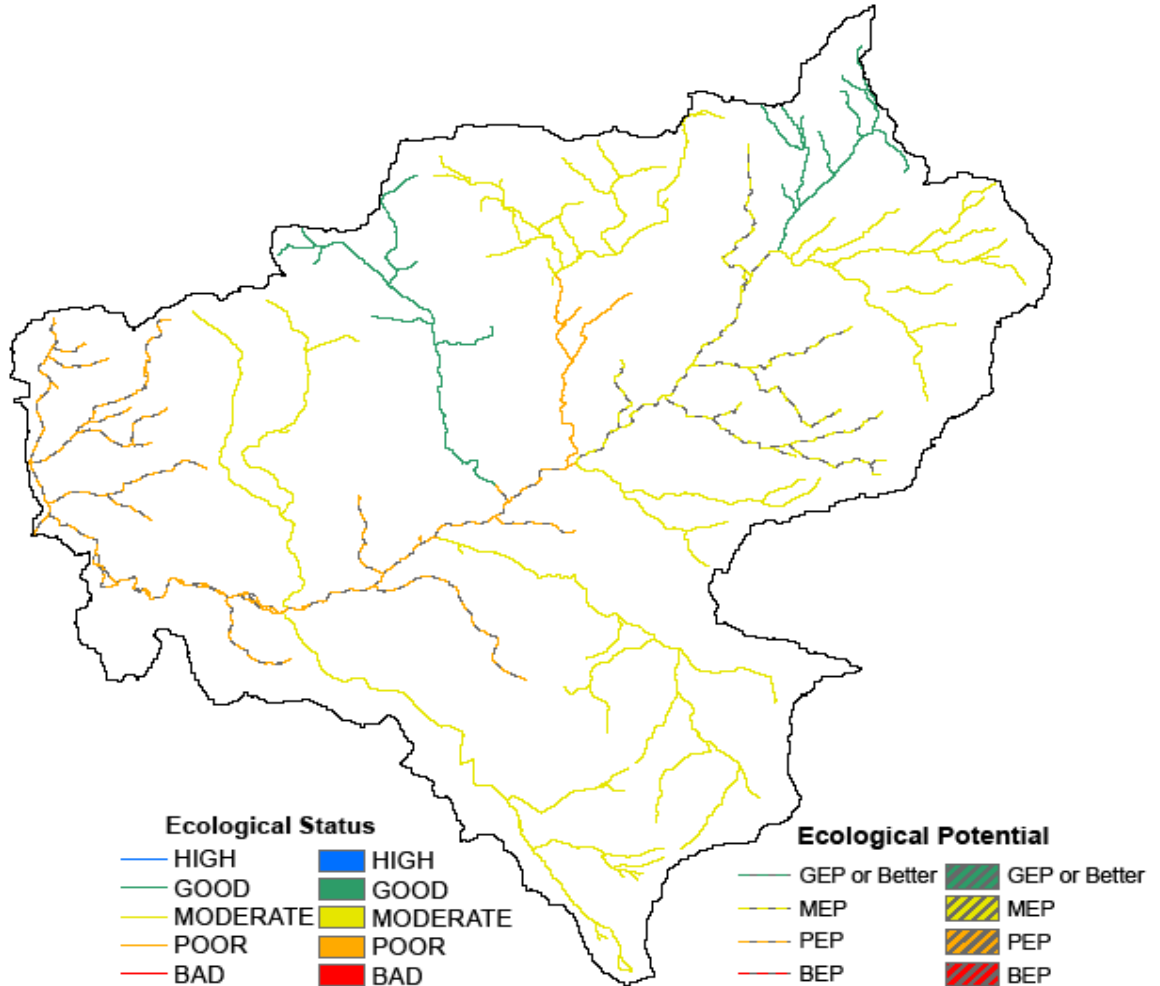
Table 1: Status of surface waters in Six Mile Water LMA

Water body type	High	Good	Moderate	Poor	Bad	GEP	MEP	PEP	BEP
River	0	2	6	1	0	0	1	2	0
%	0	17	50	8	0	0	8	17	0
Lake	0	0	0	0	0	0	0	0	0
%	0	0	0	0	0	0	0	0	0
Transitional & Coastal	0	0	0	0	0	0	0	0	0
%	0	0	0	0	0	0	0	0	0
Total Surface Waters	0	2	6	1	0	0	1	2	0
%	0	17	50	8	0	0	8	17	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.

There is one groundwater body in Six Mile Water LMA which is currently achieving good status.

Overall status of water bodies in Six Mile Water LMA



Protected areas in Six Mile Water 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 Six Mile Water LMA

Protected Area Type	Location
Waters used for the abstraction of drinking water (drinking water protected areas)	There are no drinking water protected areas.
<p>Areas designed to protect economically significant aquatic species</p> <p>Freshwater Fish Directive (78/659/EEC)</p> <p>Shellfish Waters Directive (79/923/EC)</p>	<p>There are 95 km of rivers identified under the Freshwater Fish Directive, all designated Salmonid</p> <p>There are no designated shellfish waters.</p>
<p>Bathing Waters</p> <p>These are bathing waters identified under the Bathing Waters Directives (76/160/EEC)</p>	There are no identified bathing waters.
<p>Nutrient Sensitive Areas</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; Lough Neagh.</p> <p>A total territory approach has been adopted in Northern Ireland for the Nitrates Directive.</p>
<p>Areas designated for the protection of habitats or species (Natura 2000 sites)</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 no water dependent Special Areas of Conservation.</p> <p>There are 2 Special Protection Areas; Lough Neagh & Lough Beg 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**

3 water bodies in the area were identified as being impacted by **abstraction and flow regulation**. Six Mile Water (Antrim) has bed and bank reinforcement and straightening. Six Mile Water (Ballyclare) has bank reinforcement and culverts. Plaskets Burn has been extensively straightened with weirs and culverts present.

A number of the biological and chemical water quality elements used in classification 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
Macrophytes	1
Diatoms	7
Phytoplankton	N/A
Macroalgae	N/A
Angiosperms	N/A
Invertebrates	7
Fish	1
DIN	N/A
Phosphorous	1
Dissolved Oxygen	0
Specific Pollutants / Priority Substances	0

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

In this LMA the main impact was seen in invertebrate and diatom suppression. The rivers affected were: Doagh, Ilsekelly, Six Mile, Rathmore, Plaskets, Ballynure, Lisnalinchey, Ballymartin and Clady Water.

6 water bodies were identified as being affected by **changes to morphology (physical habitat)**. The main rivers affected were: Doagh, Rathmore, Ballynure, Lisnalinchey, Ballymartin and Clady Water.

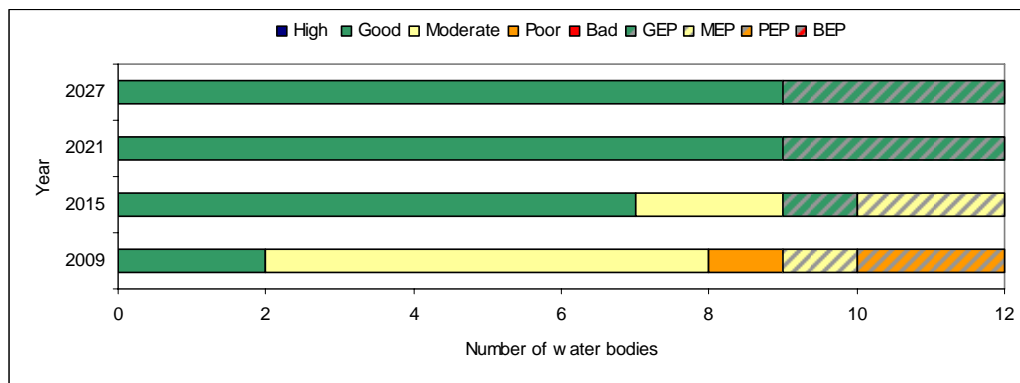
The water environment in Northern Ireland has been impacted by the introduction of **invasive alien species**. Species which have already become established in this area include:

- Himalayan Balsam (*Impatiens glandulifera*)
- Giant Hogweed (*Heracleum mantegazzianum*)
- Japanese Knotweed (*Fallopia japonica*)

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 67% of our surface waters and maintain good status in 100% of our groundwaters.

Current status and proposed objectives for surface waters in Six Mile Water LMA



How are we going to maintain and improve the water environment in Six Mile Water LMA?

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

The programme of measures described in the Neagh Bann 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 Birds Directive (79/409/EEC);
- The Drinking Water Directive (80/778/EEC) as amended by Directive (98/83/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 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;
- Abstraction and Impoundment Control
- Protection of drinking water sources
- 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;
- 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 invasive alien species:

- Rivers Agency Management protocols (Giant Hogweed, Himalayan Balsam and Japanese Knotweed)
- NIEA/National Parks and Wildlife Service best practice management guidance for Japanese Knotweed, Giant Hogweed and the Himalayan Balsam.
- A number of codes of practice, educational and awareness leaflets have been prepared and are available to download from 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 water dependent Special Areas of Conservation in Six Mile Water LMA. Lough Neagh and Lough Beg Special Protection Area in this LMA is in unfavourable condition. Special Protection Areas in unfavourable condition require investigation to identify external and internal factors. The issues are unclear; may be changes in migratory patterns, disturbance to high tide roost sites, water quality and/or ecological factors. The condition of the Antrim Hills Special Protection Area has not yet been assessed. Further details on Special Areas of Conservation and Special Protection Areas in the Six Mile Water 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 4: ¹Sectors which have been identified this LMA as requiring supplementary measures in order to achieve the objectives.

Key sectors	Supplementary measures	Additional information
Agriculture	Targeted 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.
Industry & other business	Improve compliance with discharge consents	There are 11 non compliant discharges 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	
Pressures	Supplementary measures	Additional information
Abstraction & flow regulation Morphology	Develop mitigation measures identified for hydromorphology pressures.	There are 3 HMWBs at < GEP and 6 water bodies are affected by changes to morphology.
Pressure unknown	Carry out further investigation	There is 1 water body where confidence in class is low.

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

- promote efficient use of water;
- introduce seasonal discharge consents, where possible, to promote installation of reed beds and constructed wetlands for sewage treatment;

¹ 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.

- improve septic tank maintenance, installation and design;
- review and investigate the effectiveness of wetlands in the reduction of nutrient loadings; and
- 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 which are already being carried out in Six Mile Water 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 Six Mile Water LMA are shown below.

This has involved significant catchment investigation by NIEA Regional Operations into approximately 100 reported point and diffuse pollution sources highlighted by the Ulster Angling Federation and a local water bailiff. Actions resulting from the investigations have in some cases lead directly to prosecutions, agricultural breaches penalties, and cessation of direct discharges.

National Trust Projects

- The National Trust has local measures against point and diffuse pollution through their Environmental Compliance Audit of all National Trust owned sites. Emergency remedial action has been or is being completed on possible diffuse and point pollution sources. A code of practice has also been issued for sites with septic tanks. This specifically relates to a property at Pattersons Spade Mill.
- There are projects to audit of water use at all National Trust sites to establish a baseline then set targets for reduction and introduce water efficiency measures. This project is ongoing at Pattersons Spade Mill.
- Site specific projects to improve fish habitats and access for salmonids, main pressure is fishing. Ongoing project for Pattersons Spade Mill.

Six Mile Water Issue Log

Work has focused on the Mallusk industrial estate. Primarily as a result of two fish kills this year on the Six Mile Water River, which was traced back to an unknown source in Mallusk industrial estate, work involving the pollution risk assessment of 300 businesses was intensified by NIEA staff. Twenty sites were found to pose a high risk of pollution. NIEA staff issued four Enforcement Notices to companies, sixteen Pre-Notices and took four sets of statutory samples with a view to prosecution. This work is being used as a case study for NIEA to determine the most effective approach to be adopted in the future to target other industrial estates that may be linked to pollution incidents or thought to be causing a downgrading in water quality.

Catchment investigation by NIEA Regional Operations into reported point and diffuse pollution sources highlighted by Antrim and District Angling Association and the Ulster Angling Federation. A number of point source pollution problems have been identified which has led to action being taken to remedy the situation and cease the discharge. This work has led to a number of successful prosecutions and a number are still pending. A number of additional issues have been highlighted by Ballynure Angling Club and are currently being addressed by NIEA Regional Operations.

Six Mile Water Trust

NIEA are providing support to the development of River Trust in NI in partnership with the Association of River Trusts. The Six Mile Water Trust has been established to protect, enhance and restore the river catchment and its wildlife. The Trust consists of local volunteers with angling, community and environmental interests who work with a range of agencies to:

- promote the river and its use to the local community, schools, anglers, boat owners etc;
- improve access to the river;
- reduce pollution;
- increase biodiversity.

Six Mile Water Guardians

This project aims to conserve the corridor of the Six Mile Water managed by Antrim Borough Council from Antrim Town to Muckamore. Up to 40 project volunteers are actively involved in a regular programme of training and outdoor activities to improve the river corridor. The project has been awarded two prestigious Biodiversity Awards.

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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