

Northern Ireland
Environment Agency

LOUGH MELVIN AND ARNEY

Local Management Area Information Leaflet



Information Leaflet - Lough Melvin and Arney 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 Western District. These LMA Plans will be implemented on a three-year rolling programme within the North Western District as set out below:

- Lower Lough Erne, Owenkillew and Burn Dennet & Foyle in 2010;
- Upper Lough Erne, Derg & Mourne and Roe in 2011;
- Lough Melvin and Arney, Strule and Faughan in 2012.

Introduction

Lough Melvin and Arney LMA is part of the North Western River Basin District and covers an area of approximately 499km². There are several distinct river systems in this LMA. These include Arney, Sillees, Lurgan, Glen and Roogagh. The area supports a wide range of natural habitats several of which are protected.

Lough Melvin is in the north west of the LMA and supports important native fish populations. It contains the only currently known population of Arctic Charr in Northern Ireland. The Lough also contains three genetically distinct populations of Brown Trout and is an important area for Atlantic Salmon. The area also supports a wide range of recreational activities including walking, caving and angling.

The main towns are Derrygonnelly, Garrison, Boho and Bellanaleck. There are also several smaller towns dispersed throughout the area. The south and west of this LMA is dominated by lake-land fringed with wetland habitats. The land area is largely given over to improved grassland in the south east, changing to acid grass and forested areas moving north west.

Cuilcagh Mountain in the south east is designated as a RAMSAR site and is the source of the Cladagh River which runs through the Marble Arch Caves.

Key Facts

LMA area: 499km²

WFD water bodies:

- 24 river water bodies
- 4 lake water bodies
- 17 groundwater bodies

Main land use:

- Agriculture (Improved grassland 27%)
- Acid grass 13%
- Calcareous grass 12%

Forestry (Coniferous woodland 11%)

Key industries:

- Agriculture
- Forestry
- Fishing
- Tourism

Main towns and populations:

Derrygonnelly (594*)

*Figures based on 2001 census.



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Lough Melvin and Arney LMA with main rivers identified



The quality of water bodies in Lough Melvin and Arney LMA

Our understanding of the state of Northern Ireland’s water environment and Lough Melvin and Arney LMA has developed as we have adapted to the requirements of the Water Framework Directive (WFD). Now, when assessing water quality, we consider both ecological and chemical quality, as well as the pressures that can affect these factors.

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.

No water bodies in the area have been identified as heavily modified.

What is the current status of surface waters in Lough Melvin and Arney LMA?

57.1% of surface water bodies in Lough Melvin and Arney LMA have been classified as less than good status. Many of the rivers failed to achieve good status due to low levels of dissolved oxygen and impacted invertebrate communities.

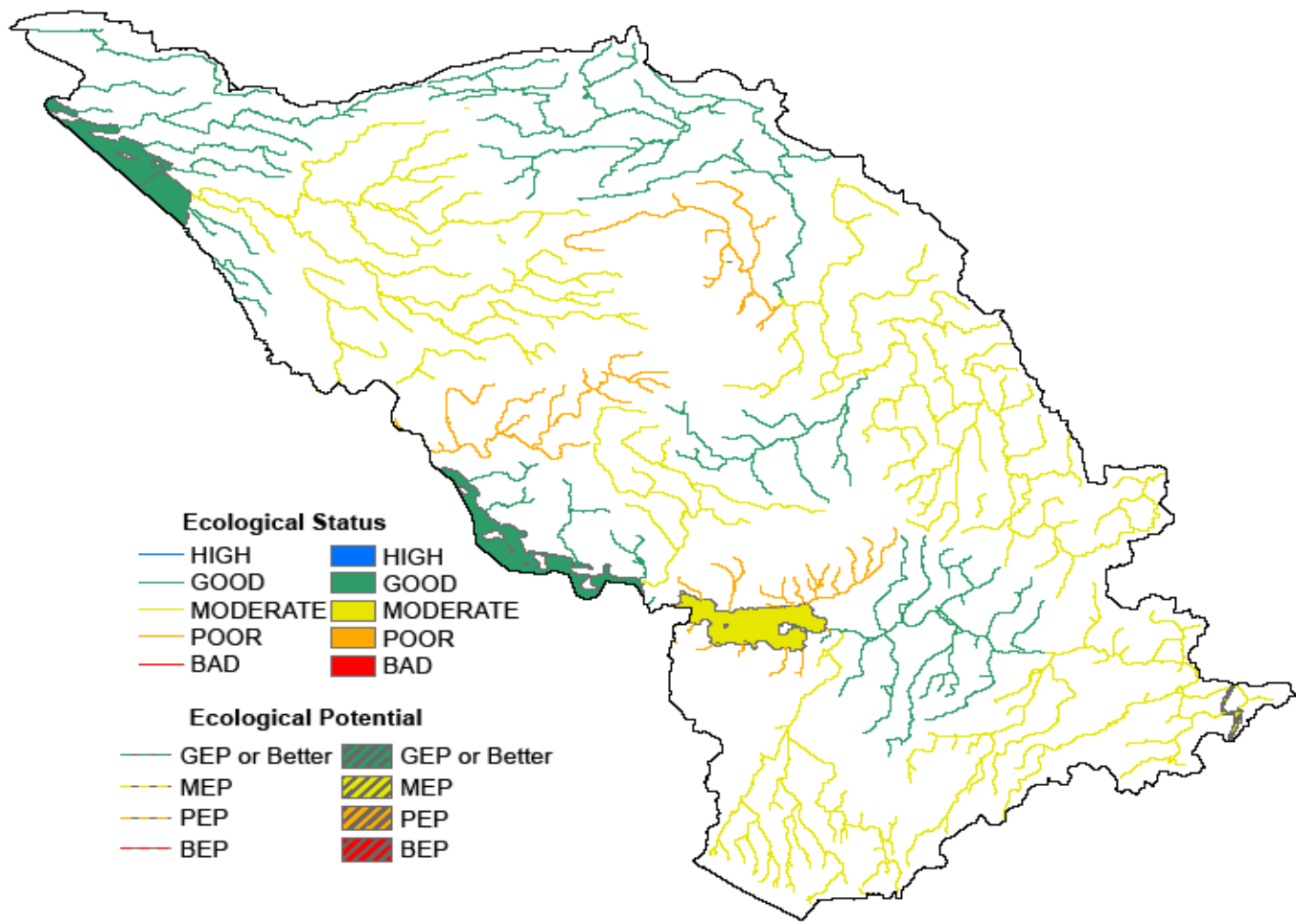
Table 1: Status of surface waters in the Lough Melvin and Arney LMA

Water body type	High	Good	Moderate	Poor	Bad	GEP	MEP	PEP	BEP
River	0	9	12	3	0	0	0	0	0
%	0	37.5	50	12.5	0	0	0	0	0
Lake	0	3	1	0	0	0	0	0	0
%	0	75	25	0	0	0	0	0	0
Total Surface Waters	0	12	13	3	0	0	0	0	0
%	0	42.9	46.4	10.7	0	0	0	0	0

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

All of the groundwater water bodies in Lough Melvin and Arney LMA are achieving good status.

Overall status of water bodies in Lough Melvin and Arney LMA



Protected areas in Lough Melvin and Arney 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 Lough Melvin and Arney LMA

Protected Area Type	Location
Waters used for the abstraction of drinking water (drinking water protected areas)	There are groundwater drinking water protected areas.
Areas designed to protect economically significant aquatic species Freshwater Fish Directive (78/659/EEC) Shellfish Waters Directive (79/923/EC)	There are 198 km of rivers and 12.9 km ² of lakes identified under the Freshwater Fish Directive, all designated Salmonid. There are no designated shellfish waters.
Bathing Waters These are bathing waters identified under the Bathing Waters Directives (76/160/EEC)	There are no identified bathing waters.
Nutrient Sensitive Areas Areas designated as sensitive under the Urban Waste Water Treatment Directive (91/271/EEC) and the Nitrates Directive (91/676/EEC)	There is 1 Urban Waste Water Treatment Directive sensitive area; Lough Erne. A total territory approach has been adopted in Northern Ireland for the Nitrates Directive.
Areas designated for the protection of habitats or species (Natura 2000 sites) 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. Habitats Directive (92/43/EEC) Birds Directive (79/409/EEC)	There are 4 water dependent Special Areas of Conservation; Lough Melvin, West Fermanagh Scarplands, Upper Lough Erne and Cuilcagh Mountain. There is 1 water dependent Special Protection Areas; Upper Lough Erne.

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**

No water bodies in the area were identified as being impacted by **abstraction and flow regulation**.

A number of 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	Lake
Macrophytes	3	0
Diatoms	3	1
Phytoplankton	N/A	0
Macroalgae	N/A	N/A
Angiosperms	N/A	N/A
Invertebrates	4	N/A
Fish	3	0
DIN	N/A	N/A
Phosphorous	0	0
Dissolved Oxygen	4	0
Specific Pollutants/Priority Substances	1	0

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

In this LMA the main impact in rivers was observed in invertebrate communities and dissolved oxygen levels. These elements are associated with organic enrichment and the rivers affected were: Drunharriff Burn, Lurgan, Sillees, Arney river tributary, Sillees River Ross Lough and Arney.

There was also evidence of nutrient enrichment in this LMA. The impacts were seen in macrophyte and diatom communities. The water bodies affected were: Drunharriff burn, Sillees, Screenagh, Roogagh and Glen Rivers and Lower Lough Macnean.

Seven water bodies were identified as being impacted by **changes to morphology (physical habitat)**. The main rivers affected were: Glen, Arney, Lurgan, Boho, Sillees and Cladagh. However, the changes to these rivers did not downgrade the overall status and we will continue to monitor these rivers for any further changes.

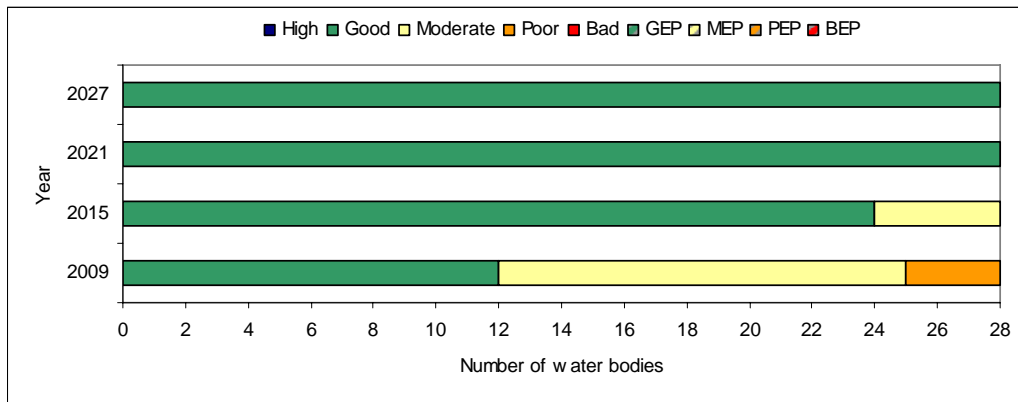
The water environment in Northern Ireland has been impacted by the introduction of **invasive alien species**. Species which have already become established in this area include:

- Japanese Knotweed (*Fallopia japonica*)

What improvements do we plan to achieve?

We have set environmental objectives to deliver improvements as shown below. For our surface waters we aim to achieve good status or better in 85.7% and maintain good status in 100% of our groundwaters.

Current status and proposed objectives for surface waters in Lough Melvin and Arney LMA



How are we going to maintain and improve the water environment in Lough Melvin and Arney LMA?

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

The programme of measures described in the North Western 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 Drinking Water Directive (80/778/EEC) as amended by Directive (98/83/EC);
- The Birds Directive (79/409/EEC);
- 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); and
- The Habitats Directive (92/43/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;
- 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 and
- Controls to avoid increase in pollution of marine waters.

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 for Japanese Knotweed
- NIEA/National Parks and Wildlife Service best practice management guidance for Japanese Knotweed
- 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 specific measures for West Fermanagh Scarplands, Cuilcagh Mountain and Upper Lough Erne Special Areas of Conservation as there are no water related adverse activities causing the unfavourable condition assessments. Lough Melvin Special Area of Conservation has water dependent features which are in unfavourable condition.

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

Name	Current condition assessment of water dependent features	Measures in place
Lough Melvin	Mesotrophic lough unfavourable due to Water quality (including silt, water pollution (direct or diffuse), run-off, nutrient enrichment, eutrophication etc).	Supplementary measures agreed in plan
	<i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) Unfavourable due to Invasive species (including bracken or scrub)	No water related adverse activity identified

The Upper Lough Erne water dependent Special Protection Area in Lough Melvin and Arney LMA is in favourable condition. Further details on Special Areas of Conservation and Special Protection Areas in the Lough Melvin and Arney 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: ¹Supplementary measures in Lough Melvin and Arney LMA

Key sectors	Supplementary measures	Additional Information
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 under the Rural Wastewater Investment Programme	² Derryaghna, Florence Court, Monea and Scribbagh to be completed by 2010
Industry and other business	Improve compliance with discharge consents	There are 3 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
Specific & priority substances	Develop and implement Pollution Reduction Programmes	See Table 3 for number of water bodies impacted by specific pollutants/priority substances.
Abstraction & flow regulation Morphology	Develop mitigation measures identified for hydromorphology pressures	There are 0 HMWBs at <GEP and 7 water bodies are affected by changes to morphology.
Pressure Unknown	Carry out further investigation	There are 2 water bodies where cause of pressure cannot be identified There is 1 water body where there is a metal failure - zinc There are 6 water bodies where confidence in class is low

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.

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

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;
- 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 these measures are already being carried out in Lough Melvin and Arney 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 Lough Melvin and Arney LMA are shown below.

Lough Melvin Catchment Management Plan

The Lough Melvin Nutrient Reduction Programme was funded by the EU Interreg IIIA Programme for Republic of Ireland / Northern Ireland and the Project Partners (Northern Regional Fisheries Board, Agri-Food and Biosciences Institute NI, Queen's University Belfast and Teagasc). The aim of the programme was to develop a Catchment Management Plan for the lake that would promote good ecological status and address the primary catchment threats of which nutrient enrichment is the most critical. The Catchment Management Plan was published in June 2008.

National Trust Site Projects

Florence Court

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.

Ongoing advice to farm tenants on resource management, waste control and environmental performance. Encouraging tenants to adhere to best practice for pollution control. Water pressures are diffuse and point source pollution, and Morphology.

Greening National Trust buildings to reduce run off and improve water efficiency. All renovation and building projects to apply sustainability criteria. Main pressure is abstraction and flow regulation. Ongoing project.

Natural Source Projection Pilot Project

The project is based at Churchill & Oram, funded by the Department of the Environment, Heritage and Local Government and the Federation of group Water Scheme. The project is designed to:

- Plan and develop a strategy for monitoring group water schemes and their catchments;
- Implement workable and sustainable solutions for preventing source contamination; and
- Guide and inform policy for the implementation of practical source protection measures on group scheme nationally.

NIEA support the project via membership of its steering group.

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.

