

River Basin Management Plans

Programme of measures

Key Sectors — Industry and Other Business

Pressure Type — Diffuse and Point Source Pollution

Introduction

Northern Ireland has traditionally had an industrial economy, most notably in shipbuilding and textiles. The food and drink sector is now Northern Ireland's largest manufacturing industry. The sector employs over 18,000 people with over 330 processing companies. Other large sectors in Northern Ireland include the electrical and electronics sector and the transport equipment sector. The aquaculture industry in Northern Ireland has grown to be an increasingly successful economic sector. At present there are over 100 licensed aquaculture sites.

The majority of industry is concentrated in industrial estates on the outskirts of Belfast and Londonderry/Derry and other large towns within Northern Ireland. However there are areas of the province where industry is located in more isolated areas. Major industrial estates contain a wide range of businesses from food processors, chemical manufacturers and fuel depots to car washes. Several small streams may flow through these sites and drain into a river, which can be continually affected by various types of pollution from the industrial estate. Within industrial estates drainage networks can often be complex and in many cases small streams are culverted. As new sites are developed and premises change ownership, it is increasingly difficult to locate storm systems, foul sewers, and streams. Companies may not be aware that their drainage is causing pollution, therefore tracing the source and cleaning up becomes difficult when an incident occurs. Industrial sites may also be located in areas where groundwater is vulnerable to inputs of pollutants from spills, leaks or inappropriate disposal.

Industries which discharge directly to waterways are controlled by the Northern Ireland Environment Agency (NIEA) either through Water Order consent or through a Pollution Prevention and Control (PPC) Permit. Other industries discharge effluent to the public sewer and come under the control of Northern Ireland Water. Where a quantity of water is being discharged into a waterway consent is also required under the Drainage (NI) Order 1973 from Rivers Agency.

What causes the environmental impact?

In 2006, industry accounted for 23.2% of substantiated water related pollution incidents. Water pollution associated with industrial premises arises from inadequately treated effluents which can contain:

- Organic matter and ammonia;
- Nutrients;
- Toxic dissolved metals;
- Suspended solids; and
- Hazardous organic chemicals.

The main water pollution types associated with industrial premises include oil, sewage, chemicals and fine sediments. In addition certain types of effluent may cause an increase in the temperature in the receiving water.



Ballylumford Power Station

What action are we already taking?

Key legislation

The Water (Northern Ireland) Order 1999

Under the Water (Northern Ireland) Order 1999 (the Water Order) it is an offence to discharge trade or sewage effluent to waterways or water in underground strata without the consent of the Department of the Environment. NIEA administers a system of discharge consents which lay down conditions relating to the quality and quantity of effluent that may be discharged. Numerical limits may be placed on a variety of parameters such as Biochemical Oxygen Demand, Dissolved Oxygen, trace metals, temperature, suspended solids, pH, and visible oil and grease.

Failure to comply with the conditions of a discharge consent is an offence under the Water Order, and, if a discharge is non-compliant, appropriate action is taken by NIEA, depending on compliance history and/or the severity of the breach of consent and its effect on the environment.

Once a discharge consent has been issued, compliance assessment monitoring is normally carried out where the consent permits a maximum daily discharge of 5 cubic metres or more, or where the consent relates to significant site drainage discharges, such as those for quarries.

Pollution Prevention and Control Regulations (Northern Ireland) 2003

The PPC Regulations control the operation of any installations or mobile plant carrying out activities listed in Schedule 1 of the Regulations. Industries that require regulation under the PPC Regulations include food processing industries, chemical manufacturers, power plants and intensive agricultural operations. NIEA regulate both part A and B processes, a Part A permit covers releases to all media, but Part B Permits cover releases to air only.

Permit conditions for each installation are set in a similar fashion to Water Order Discharge Consents so as to achieve a high level of protection for the aquatic environment. These conditions relate to the quality and quantity of effluent that may be discharged and require the installation to use 'Best Available Techniques' to achieve compliance. Installations are inspected regularly and monitoring requirements are specified in permits which include use of appropriate standards for sampling and analysis. Compliance

monitoring is supplemented by independent check monitoring carried out by NIEA. NIEA currently regulates some 230 Part A installations under the Regulations, of these only 16 installations have a direct process discharge to a water course.

Any Part A permitted sites which have discharges to a watercourse have discharge conditions contained within the permit to reduce the pollution potential of the discharge e.g. from roof and yard run off. Failure to comply with a permit discharge condition is an offence under the Regulations, and, if a discharge is non-compliant, appropriate action is taken by NIEA, depending on compliance history and/or the severity of the breach of condition and its effect on the watercourse.

The Water and Sewerage Services (Northern Ireland) Order 2006

Industries that discharge trade effluent to sewer are regulated by Northern Ireland Water under the Water and Sewerage Services Order. Northern Ireland Water administers the system of trade effluent discharge consents and applies standards or restrictions to the composition, strength and flow and of consented discharges. Ultimately discharge of treated water from wastewater treatment works is controlled by Water Order consents (please refer to the Programme of Measures key sector on the 'Collection and treatment of sewage' for more detail)

Groundwater Regulations (Northern Ireland) 1998

The Groundwater Regulations (NI) 1998 implement the Groundwater Directive (80/68/EEC) which seeks to protect groundwater by preventing the direct discharge of certain hazardous substances and subjecting the discharge of other substances to an authorisation procedure.

A consultation exercise setting out proposals to transpose the new Groundwater Daughter Directive (GWDD) (2006/118/EC) is ongoing. Following the consultation exercise new transposing Regulations incorporating the existing Groundwater Regulations and the relevant requirements of the WFD and the GWDD will be introduced in 2009. More information on this can be found in the 'What further actions can we take to deliver environmental improvements?' section below.

European Community Regulation on Registration, Evaluation and Authorisation of Chemicals (REACH) (EC 1907/2006)

REACH is a new Regulation on chemicals and their safe use. REACH aims to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. It will make those who place chemicals on the market responsible for understanding and managing the risks associated with their use. The REACH Regulation will be implemented progressively over a number of years on a prioritised basis and where necessary controls will be put in place to ensure a high level of protection. Risks to the environment and human health will be identified and, where necessary, controls will be put in place to ensure a high level of protection. This will result in a reduction in the environmental burden of hazardous chemicals and will make a significant contribution to the delivery of good chemical status under the Water Framework Directive (WFD).

Oil Storage Regulations

The DOE is currently progressing the development of Oil Storage Regulations for Northern Ireland. These regulations are proposed to meet the requirements of the Dangerous Substances and Groundwater Directive to act to prevent pollution of the water environment by toxic substances. They will set minimum design standards for new and existing above ground oil storage facilities, codifying existing good practice to ensure that oil storage facilities are adequately constructed. The Regulations will cover industrial, commercial and institutional sectors and will also extend to companies who refine or distribute oil. This will provide a legal framework to ensure construction standards are met to minimise the risk of pollution to our waterways. A draft consultation paper and Regulations are due by March 2010 with a view to introducing Regulations by September 2010.

Planning Policy Statement on Planning and Minerals

The Planning Policy Statement (PPS) on Planning and Minerals (PPS 19) is currently being prepared within the context of Shaping Our Future – The Regional Development Strategy for Northern Ireland 2025. This policy will ensure the development and management of sites under best practice guidance and its development is ongoing.

Key legislation related to aquaculture activities (including shellfish and finfish farming)

The Surface Waters (Shellfish) (Classification) Regulations (Northern Ireland) 1997

These regulations apply for classifying waters which are coastal or brackish waters which need protection or improvement in order to support shellfish (bivalve and gastropod molluscs) life and growth and thus contribute to the high quality of shellfish products.

Fisheries Act (Northern Ireland) 1966

Under this legislation the Department of Agriculture and Rural Development are responsible for the licensing of fish and shellfish farms in Northern Ireland. Licences provide a demonstrably open, participative and effective system of control within the aquaculture sector and guarantee good standards of practice in relation to environmental impact.

The Environmental Impact Assessment (Fish Farming in Marine Waters) Regulations (NI) 2007

Any application for a fish culture licence in respect of a marine fish farm (excluding shellfish) will be subject to the provisions of the Environmental Impact Assessment (Fish Farming in Marine Waters) Regulations (Northern Ireland) 1999 where any part of the proposed development:

- is in a sensitive area
- is designed to hold in biomass of 100 tonnes or greater
- will extend to 0.1 hectare or more of the surface area

The Foyle and Carlingford Fisheries (Northern Ireland) Order 2007

This Order amends the Foyle Fisheries Act (Northern Ireland) 1952 and confers powers on the Foyle, Carlingford and Irish Lights Commission to develop and licence aquaculture and to develop inland fisheries.

Key legislation related to mining and quarrying activities

In Northern Ireland the Department for Enterprise Trade and Investment (DETI) grant prospecting and mining licences for exploration and development of minerals. Planning permission for mineral development is also required under the planning system. Applications for all new mines and quarries above a size threshold require an Environmental Impact Assessment under the Environmental Impact Assessment Regulations (Northern Ireland) 2007. Under these regulations an Environmental Statement must accompany a planning application which assesses the environmental, social, cultural etc. impacts of the proposed extraction.

In Northern Ireland a Review of Old Mineral Permission (ROMP) for quarries and mines under the Planning Reform (Northern Ireland) Order 2006 is providing better information about these sites and their environmental impact. Provisions have been included in the Planning Reform Order that require owners and operators currently holding planning permissions for quarries in Northern Ireland to submit updated versions of the planning conditions attached to those permissions to Planning Service. The Department of the Environment (DOE) have powers to review mineral permissions which may result in the setting of new environmental standards as conditions of existing planning permissions. ROMP can also require an Environmental Impact Assessment to be carried out on mineral sites under the Environmental Impact Assessment Regulations.

European Union 'Mining Waste Directive'

The EU Directive on the Management of Waste from the Extractive Industries was adopted in 2006. Its aims are to prevent or reduce, as far as possible, any adverse effects on the environment, and any resultant risks to human health. The Department of the Environment are in the process of introducing legislation to give legal effect to this Directive. DOE aim to introduce legislation by the end of 2009 subject to the processes of the NI Assembly.

Codes of practice and guidelines

Pollution Prevention Guidelines

There are a range of Pollution Prevention Guidelines (PPG) that have been produced jointly by agencies across the UK that relate to the control of pollution from industry, they include:

- PPG 6 - to assist those in the construction and demolition industry with responsibility for managing the environmental impact of their activities.
- PPG 7 - to assist all who are involved in the planning, management and maintenance of fuelling facilities such as retail filling stations and company bulk fuel installations, including those where only diesel is handled;
- PPG 13 - to assist those using high pressure water and steam cleaners;
- PPG 17 - to assist all who design and operate dairies and other milk and milk product handling operations in the avoidance of water pollution and the minimisation of waste;
- PPG 19 - to assist those involved in the management and maintenance of garages and similar vehicle servicing operations;
- PPG 24 - to assist those involved in the management and operation of stables, kennels and catteries;
- PPG 25 - to assist all those involved in the management and maintenance of hospitals and health care establishments.



Waterfront, Belfast

Contingency Planning

Guidance notes have been drawn up to assist in the development of site specific pollution incident response plans to prevent and mitigate damage to the water environment caused by accidents such as spillages and fires i.e. Pollution incident response planning PPG21. The Control of Major Accident Hazards Regulations (NI) 2000 also requires certain sites to prepare more detailed pollution incident response plans.

Environmental Code of Practice for Aquaculture Companies and Traders (ECOPACT)

The ECOPACT Initiative was launched in Northern Ireland in November 2004 and was developed to bring about the widespread adoption of Environmental Management Systems into the aquaculture industry to provide a strong basis for fish farmers and associated businesses which impact positively on their communities and the environment.

Proactive pollution prevention

NIEA regularly carry out pollution prevention work and inspection and enforcement work targeted at industries that are non-compliant. Numerous targeted surveys have been carried out in order to investigate potential pollution pathways, provide advice on pollution prevention and instigate legal proceedings where pollution incidents are discovered and traced. Surveys can cover a very significant and expanding area. Liaison, follow up work and further site visits are required to ensure that companies take appropriate action to minimise long term pollution risks.



Voluntary schemes and guidance

A UK-wide Levy was introduced on the commercial exploitation of aggregates in recognition of the environmental damage caused by their extraction. In Northern Ireland a voluntary Aggregates Levy Credit Scheme (ALCS) was created whereby aggregate operators can avail of an 80% reduction in the Levy. On joining the ALCS Operators sign a legal agreement to comply with all regulatory requirements and to carry out environmental improvements identified by the DOE, following periodic review. On joining the Scheme operators receive a Code of Practice and Audit Protocol which identifies the type of environmental requirements needed to remain within the Scheme. In 2003 NIEA in liaison with the Quarry Products Association established a working group. Through this group significant progress has been made to improve the compliance of this sector particularly in relation to the Aggregates Levy Scheme. In order to avail of the Scheme, a quarry operator must have in place and comply with all relevant environmental consents/licenses. Regular audits are carried out by Planning and Environmental Policy Group of DOE to assess compliance with the scheme.

More recently Guidance for the Wise use of Water in the Aggregates and Quarry Products Industry has been jointly produced by NIEA and the Quarry Products Association of Northern Ireland.

Education and awareness

NIEA has established a number of industrial sector working groups aimed at improving compliance with Water Order discharge consents. These groups include quarry operators, sand and gravel extractors, fish farm and hatchery owners and peat bog extractors. NIEA also works in partnership with Invest NI to raise awareness of consent compliance and wider environmental protection issues through workshops, seminars and publications.

What improvements will current measures achieve?

In 2008 there were 2921 active discharge that were consented under the Water Order or The Pollution Prevention and Control Regulations (NI) 2003. Of these 835 sites were in the NIEA monitoring programme. Table 1 shows compliance for some of the key sectors monitored.

Table 1. Number of monitored discharges and compliance for key industry sectors

Industry sector	2000		2008	
	Number of monitored discharges	% Compliance (based on 95%ile)	Number of monitored discharges	% Compliance (based on 95 %ile)
Aggregates & concrete	133	48	169	45
Private Sewage	93	47	117	64
Fuel depots	37	46	31	68
Site drainage	25	52	169	66
Fish farms	17	88	10	90
Food processing	26	23	8	38

What further actions will deliver environmental improvements?

The following tables summarise the existing/ planned measures and supplementary measures for Industry & Other Businesses.

Key Sectors: Industry and other business**Pressure Type:** Diffuse and point source pollution**Summary of existing and planned measures**

Improvement Required	Actions	Delivery mechanism	Lead Department / Agency	Support Provider	Deadline for delivery of mechanism (year end)
Reduction in pollution	Trade effluent inspections, Water Order consent and PPC permit reviews	The Water (Northern Ireland) Order 1999	DOE		In place
		The Pollution Prevention and Control Regulations (Northern Ireland) 2003	DOE		In place
	Ensure good standards of practice in relation to environmental impact from fish farming and aquaculture	The Water and Sewerage Services (Northern Ireland) Order 2006	NIW		In place
		Groundwater Regulations (Northern Ireland) 2009	DOE		In place
		European Community Regulation on Registration, Evaluation and Authorisation of Chemicals (REACH); The REACH Enforcement Regulations 2008	HSE	NIEA	In place
		Fisheries Act (Northern Ireland) 1966	DARD		In place
		The Foyle and Carlingford Fisheries (Northern Ireland) Order 2007	Loughs Agency		In place
		Environmental Impact Assessment Regulations (Northern Ireland) 2007	NIEA		In place
		Pollution Prevention Guidelines	NIEA		In place
		Pollution incident response plans	NIEA		In place
		Environmental Code of Practice for Aquaculture Companies and Traders (ECOPACT)	DARD		In place
		Education and awareness raising	NIEA		In place
	Assess environmental impacts of proposed extraction	Environmental Impact Assessment Regulations (Northern Ireland) 2007	DOE		In place
Reduce pollution from the aggregates sector	Voluntary Aggregates Levy Credit Scheme	DOE		In place	
Comply with existing water directives	Water Order consent reviews IPC permit reviews Trade effluent inspections	NIEA		In place	

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Improvement Required	Actions	Delivery mechanism	Lead Department / Agency	Support Provider	Deadline for delivery of mechanism (year end)
Reduction in pollution	Reduce nutrient and dangerous substances loadings from industrial discharges	Water Order consent reviews IPC permit reviews Trade effluent inspections	NIEA		In place
		REACH	HSE		In place
	Prevent pollution of the water environment by toxic substances Set minimum design standards for new and existing above ground oil storage facilities, codifying existing good practice to ensure that oil storage facilities are adequately constructed	Pending Oil Storage Regulations	DOE		2010
	Reduce impact from fish farming in marine waters	Environmental Impact Assessment (Fish Farming in Marine Waters) Regulations	DARD		In place
Reduction in nutrients and dangerous substances	Review minerals planning permissions	Review of Old Mineral Permission (ROMP) under Planning Reform Order 2006	DOE		Ongoing –possible 2011
	Ensure the development and management of sites under best practice guidance	Planning Policy Statement on Planning and Minerals (PPS 19)	DOE		2012 - Subject to drafting and Ministerial approval

Key Sector: Industry and other business**Pressure Type:** Diffuse and point pollution**Summary of supplementary measures**

Improvement Required	Actions	Delivery mechanism	Lead Department / Agency	Support Provider	Deadline for delivery of action (yearend)
Protection of groundwater & Control of diffuse and point sources of pollution	Review diffuse pollution sources and options for control	The Groundwater Regulations (NI) 2009 Groundwater Daughter Directive (GWDD) Article 6	NIEA	DOE	2012
Improved Point Discharge Controls	Review Water Order consents, Groundwater authorisations and PPC permits (to ensure that adequate controls and emission limits are set to achieve new water quality standards in receiving waters) Develop mathematical models for all of Northern Ireland to look at cumulative impacts of discharge consents at a catchment scale	Review of consents/ authorisations/permits: PPC permit reviews Trade effluent inspections Research and Development REACH	NIEA, NIW HSENI, NIEA		2012
Control of diffuse and point sources of pollution	Collate further evidence on the nature and extent of the impacts of: <ul style="list-style-type: none">washing activities andconstruction sites with a view to identifying the need, if any, for additional controls	Water Order discharge consents Pollution Prevention and Control (PPC) permits Pollution Prevention Guidelines (5,6,13, 23)	NIEA		2010
	Review diffuse loads and prioritise of new actions Apply screening tool to take a wider look at the potential diffuse source contributions from other sectors (e.g. amenity, recreation and transport sectors) Review diffuse pollution sources and options for control to establish a baseline from the evidence collated by NIEA in looking at certain activities and modelling loads Consider effectiveness of a range of control options from advice/guidance, to general binding rules through to consenting /authorisation	The Groundwater Regulations (NI) 2009 NI Better Regulation Strategy	NIEA DETI	PEPG All NI Government Departments	2012

