

Purpose

The purpose of this report is to outline the general principles and assumptions that were applied in setting objectives for Ireland's surface waters and groundwaters. These proposed objectives are presented in the draft river basin management plans for each River Basin District which will be available for consultation between December 2008 and June 2009 with the final plan to be made by December 2009.

Background

The European Union Water Framework Directive was adopted in 2000. It requires governments to manage all of their waters: rivers, canals, lakes, reservoirs, groundwaters, protected areas (including wetlands and other water dependent ecosystems), estuaries and coastal waters. Member states must, in general, ensure that their waters achieve at least good status by 2015 and that their status doesn't deteriorate.

The Directive requires the preparation of a management plan for all waters in a River Basin District. This in turn requires a process of establishing the current status of waters; setting default objectives; examining measures and their effectiveness and then where necessary refining these objectives.

Objective setting has been carried out in accordance with the following:

- Directive 2000/60/EC Establishing a Framework for Community Action in the Field of Water Policy (known as the "Water Framework Directive"). Article 4 establishes the Directive's environmental objectives and also details the circumstances in which objectives can be altered to take account of heavily modified or artificial waters, extended deadlines, less stringent environmental objectives, temporary deteriorations and other non breach situations.
- River Basin Management Planning, A Practical Guide for Public Authorities (Department of the Environment, Heritage and Local Government 2008). The document provides guidance on the objectives and standards to be achieved by Irish groundwater and surface waters, the circumstances where alternative objectives apply and the reasons for extended deadlines or less stringent objectives in an Irish context.

Objectives must be set for every water body. The interim status of waters, assigned by the Environmental Protection Agency is the starting point for establishing objectives in the draft River Basin Management Plan.

Objectives will be set based on mandatory measures and selected supplementary measures identified by Ireland's Programmes of Measures and Standards Studies. In cases where "good status" will not be achieved by 2015 there must be good reasons for this. These reasons must be documented and made available as part of the draft and final River Basin Management Plans.

Extended deadline objectives in the draft River Basin Management Plan will be proposed for 2015, 2021 or 2027, based on basic judgements about cost-effective combinations of measures. These objectives will be reviewed during the finalization of the river basin plan and further revised during subsequent planning cycles. Disproportionate cost analysis will be undertaken during 2009 to support the plan finalization.

The objectives proposed for Ireland's cross border or "shared waters" have been developed in consultation with the Northern Ireland Environment Agency.

Default objectives

Achieve protected areas objectives

Some waters require greater protection (including drinking, bathing and shellfish waters, nutrient-sensitive areas, protected habitats and species). Protected areas must, by 2015, achieve standards relevant to their designation which may be stricter than good or high status. The primary core objective is therefore to ensure that the waters supporting protected areas are protected and where necessary improved. There are a series of targeted measures proposed in the draft plan aim to support protected areas in meeting their stricter standards by 2015. These protected areas, presented in Map 1, are quite extensive; consequently this dictates that many of our waters must, without exception, satisfy this objective by 2015.

Prevent deterioration

For surface waters, the core objective is to:

- prevent deterioration, and in particular maintain high or good status.

For groundwaters, the core objective is to:

- limit pollution inputs and prevent deterioration.

Surface waters and groundwaters already meeting good or better standards must continue to be managed to protect them from deterioration. The implementation of the suite of prior authorisation measures in the draft plan aims to prevent deterioration in these waters.

Restore good status

The core objective for surface waters is to:

- improve waters where necessary in order to achieve at least good status.

For groundwaters, the core objectives are to:

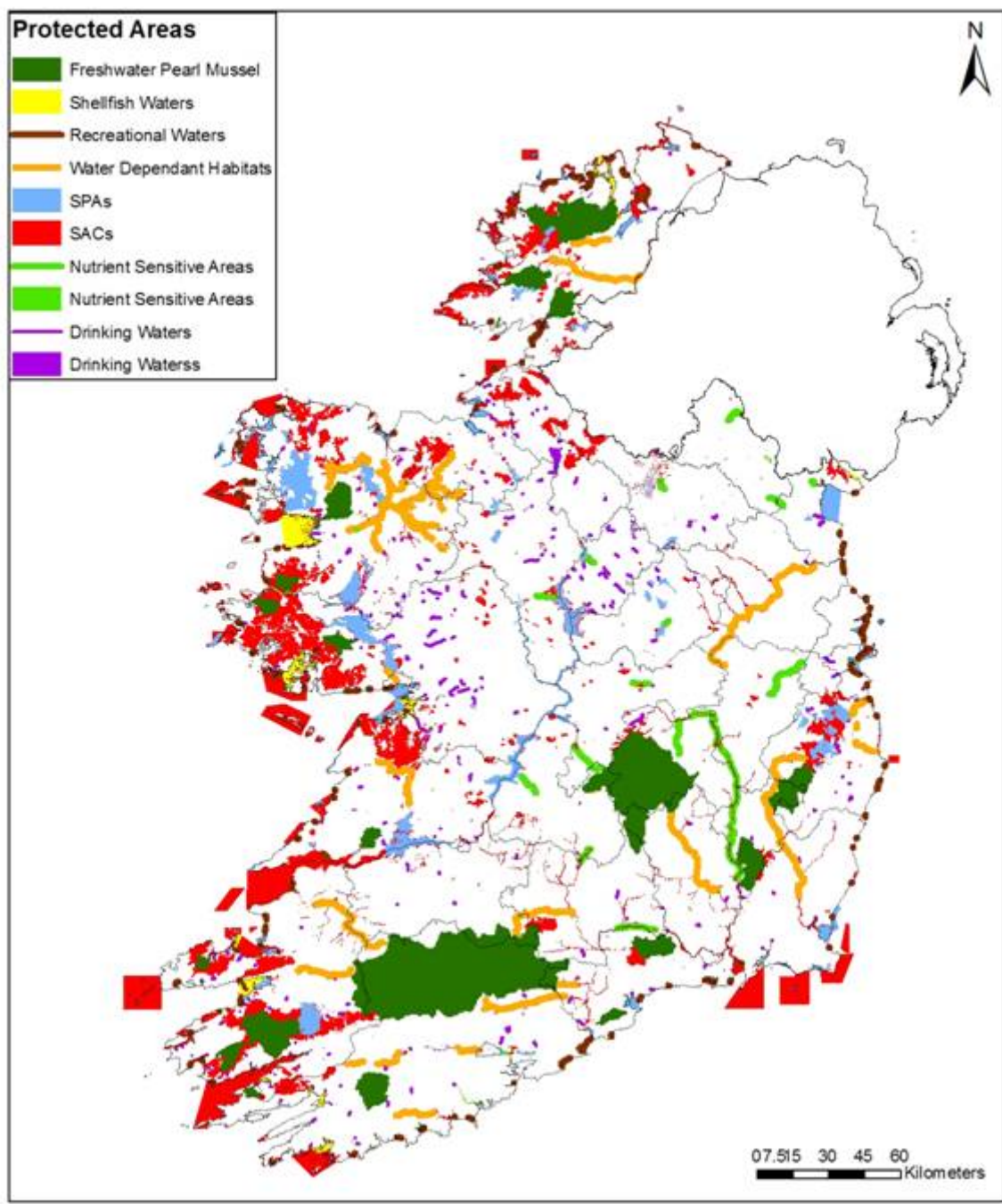
- improve quantity and chemical quality where necessary to achieve good status,
- reverse increasing pollution trends.

The waters currently below good status must be restored to at least good status where it is technically feasible and not disproportionately expensive to do so. The measures proposed in the draft plan aim to improve most of these waters by 2015, but some waters will take longer to reach their target.

Reduce chemical pollution

The core objective is to progressively reduce chemical pollution of surface waters. A new monitoring programme for chemical substances in surface waters is currently being carried out across the country but is incomplete. Based on the information available to date, there are three rivers failing chemical status. The source of this pollution will have to be investigated to determine what can be done to restore the chemical status of these waters.

Map 1 Protected Areas



Measures

There are two types of measures:

- basic measures are required by law and apply to all waters.
- supplementary measures can be considered in waters if basic measures won't achieve the objectives.

The basic measures themselves fall into two categories:

- the implementation of eleven key EU Directives on water protection
- the implementation of other stipulated measures.

The 11 key EU Directives	Other stipulated measures
Bathing waters	Cost recovery for water use
Birds	Promotion of efficient and sustainable water use
Habitats	Protection of drinking water sources
Drinking waters	Control of abstraction and impoundment
Major accidents	Control of point source discharges
Environmental impact assessment	Control of diffuse source discharges
Sewage sludge	Authorisation of discharges to groundwaters
Urban wastewater treatment	Control of priority substances
Plant protection products	Controls on physical modifications to surface waters
Nitrates	Controls on other activities impacting on water status
Integrated pollution prevention control	Prevention or reduction of the impact of accidental pollution incidents

Technical studies have established that supplementary measures are needed to address the following pressures:

Point and diffuse sources of pollution Wastewater and industrial discharges Landfills, quarries, mines and contaminated lands Agriculture Wastewater from unsewered properties Forestry Dangerous substances & chemical pollution	Physical modifications
	Abstractions
	Locally focussed and future issues
	Research and education

Redefined Objectives

Review of what the basic measures and the supplementary measures together will achieve, identifies the total progress expected by 2015. However, objectives must allow for the nature or uses of certain artificial or heavily modified waters and take account of new physical modifications or sustainable developments. Furthermore, in some impacted surface waters or groundwaters it will take several years before objectives are achieved.

When there are such technical, economic, environmental or recovery constraints, default objectives are redefined by setting alternative objectives for the waters in question. Improvements may be phased over further river basin planning cycles if these constraints mean objectives cannot be met within the first river basin planning cycle.

Note that in all cases where alternative objectives apply, all actions that are technically feasible and not disproportionately expensive should still be taken to reach the best

status possible. And alternative objectives cannot be set for protected areas, all of which must, by 2015, achieve the core objectives and the more stringent standards that support protected areas.

Alternative objectives – heavily modified waters and artificial waters

Some surface waters have been substantially changed in character to allow uses such as navigation, water storage, public supply, flood defence and land drainage. To recognise that the benefits from such modifications need to be retained, these waters are designated as heavily modified. The same reasoning applies to artificial waters (for example canals) created for human activities.

Heavily modified and artificial waters are expected to achieve good ecological potential, which recognises their important uses while making sure that ecology is protected or improved as far as possible. The designation of, and standards for, artificial and heavily modified waters were established using a detailed screening process. Further information is available in our artificial and heavily modified background document (www.wfdireland.ie).

Table 1 Heavily Modified Waterbodies

	RBD	Category	Water body name	Name of associated modification
Impoundments				
(HEP = hydro electric power)				
1	EA	Lake	Pollaphuca Reservoir	Pollaphuca dam HEP station
2	EA	Lake	Golden Falls	Golden Falls dam – HEP station
3	EA	Lake	Leixlip	Leixlip dam – HEP station
4	EA	Lake	Lough Nahanagan	Turlough Hill Pumped Storage HEP
5	NW	Lake	Assaroe Lake	Cathleen’s Fall dam - HEP station
6	NW	River	Erne d/s of Cathleen's Fall	Cathleen’s Fall dam - HEP station
7	NW	River	River Erne from Belleek to the dam	Cliff dam – HEP station
8	NW	Lake	Lough Nacung (Upper)	Gweedore Dam/Weir for Clady HEP
9	NW	Lake	Lough Dunlewy	Weir / dam for Clady HEP Station
10	SW	Lake	Carrigdrohid Reservoir	Carrigdrohid Dam – HEP station
11	SW	Lake	Inniscarra Reservoir	Inniscarra Dam
12	SH	Lake	Lough Derg (Lower)	Parteen weir/dam for Ardnacrusha HEP
13	EA	Lake	Vartry Reservoir lwr	Vartry Reservoir Lwr
14	EA	Lake	Vartry Reservoir upr	Vartry Reservoir Upr
15	EA	River	EA_Vartry170_Vartry3	Vartry Reservoir
16	EA	Lake	Glenasmole Reservoir lwr	Dam for Glenasmole Reservoir Lwr (Dodder)
17	EA	Lake	Glenasmole Reservoirs upr	Glenasmole Reservoir Upr (Dodder)
18	SH	Lake	Doo Lough	West Clare water supply
19	NW	Lake	Lough Salt	Letterkenny
Flood protection				
20	SH	River	SH_Fergus_FergusMAIN_1Lower	Fergus Tidal Barrage
21	SH	River	SH_Fergus_Spancelhill_1	Fergus Tidal Barrage
22	EA	River	EA_Santry166_Santry1	Santry river channel modification

Ports				
23	EA	Transitional	Liffey Estuary Lower	Dublin Port
24	SE	Coastal	Rosslare Harbour	Rosslare Harbour
25	NW	Coastal	North Western Atlantic Ocean	Killybegs Port
26	SE	Transitional	Lower Suir Estuary (Little Island -	Port of Waterford
27	SE	Transitional	New Ross Port	New Ross Port
28	SW	Transitional	Lee (Cork) Estuary Lower	Port of Cork
29	SW	Transitional	Lough Mahon	Port of Cork
30	SW	Coastal	Cork Harbour	Port of Cork / Ringaskiddy
31	SH	Transitional	Limerick Dock	Limerick Port
32	SH	Transitional	Foynes Harbour	Foynes Port
Other				
33	SE	River	SE_NoreMain_Breaghagh_Lower	Modified bed following contamination by spill
34	EA	Transitional	Broadmeadow Water	Dublin-Belfast railway line

Table 2 Artificial Waterbodies

No	RBD	Name
1	SH	Tralee Ship Canal
2	SH	Shannon Navigation
3	SH	Ardnacrusha_Tailrace
4	SH	Errina - Plassey Canal
5	SH	Ardnacrusha_Headrace
6	SH	Boyle Canal
7	SH	Shannon Erne Waterway (ShRBD)
8	SH	Grand Canal Main Line (ShRBD)
9	SH	Ballinasloe Canal
10	SH	Allen Canal
11	SH	Royal Canal Longford Branch
12	SH	Cloondara Canal
13	SH	Royal Canal Main Line (ShRBD) E of Lough Owel
14	SE	Grand Canal Main Line (SERBD) E of Lowtown
15	SE	Grand Canal Milltown Feeder & Old Barrow Line
16	SE	Grand Canal Barrow Line
17	SE	Cahore Canal
18	EA	Grand Canal Edenderry Branch
19	EA	Royal Canal Main Line (EaRBD)
20	EA	Grand Canal Main Line (EaRBD) W of Lowtown
21	EA	Grand Canal Main Line (EaRBD) E of Lowtown
22	EA	Grand Canal Naas & Corbally Branch
23	EA	Boyne Navigation
24	WE	Cong Canal
25	SE	Castlebridge Canal
26	SW	Lismore Canal
27	NB	Ulster Canal
28	WE	Eglinton Canal
29	NW	Clady Headrace
30	NW	Shannon - Erne Waterway (NWRBD)
31	SE	Barrow Navigation

32	SE	Grand Canal Main Line (SERBD) W of Lowtown
33	SH	Royal Canal Lough Owel Feeder
34	SH	Royal Canal Main Line (ShRBD) W of Lough Owel
35	SE	Ballynafagh Reservoir
36	EA	Turlough Hill Reservoir
37	SH	Athlone Canal

The objective that all of these waters will meet good ecological potential standards by 2015 has been set; with the investigations and mitigation measures needed to achieve that included in the draft River Basin Management Plan.

Northern Ireland Environment Agency have also identified a further two heavily modified water bodies in the shared waters. Assessment of over 100 further candidate waters for designation will be undertaken before the plan is finalised or during the first planning cycle.

Alternative objectives – new modifications or development

Alternative objectives can also be set for waters where it is known that a new modification or development, requiring tailored objectives, will take place during the plan. Such development proposals must have over-riding social and economic benefits and new developments must still allow waters to achieve good status. Proposals have to be assessed on a case by case basis and have to satisfy a series of tests of sustainability. Options have to be examined, such as alternative locations and different scales or designs, to ensure that all practicable steps are taken to mitigate adverse impacts. However, no such physical modifications or sustainable developments have been proposed in Ireland's draft River Basin Management Plans.

Alternative objectives – timescales

The first two default objectives (achieve environmental conditions suitable to support protected areas and prevent deterioration) are expected to be achieved in full by 2015. Alternative objective timescales are considered only for non protected waters where the combination of basic and supplementary measures will not fully achieve the other two objectives: restoring good status and reducing chemical pollution.

In most cases, the alternative objective is an extension of the timescale for achieving the core objectives. The extension is usually of one planning cycle (that is six years, to 2021) but may be of two cycles (to 2027). If the objective cannot be met by then, a less stringent objective is set which means that the waters are not expected to achieve good status before 2027.

Technical, economic, environmental or recovery constraints that may mean an extended timescale is required: The time to reach good status may also have to be extended where we need longer to investigate problems to gain a better understanding of how to tackle them.

The overall timescale for waters to achieve good status will be dictated by the slowest response to basic and supplementary measures. For example, even if a treatment plant is installed in the first plan cycle, it may take a further cycle for the waters to show improvement in gley soil areas with high soil nutrient levels that are also impacted by agricultural activities.

The reasons for which the timescales for achieving objectives in some waters will have to be extended are set out below.

Point and diffuse sources: wastewater and industrial discharges

There are rivers, transitional and coastal waters where further investigation is needed to provide scientific evidence concerning the impact of point source discharges and to identify the most appropriate measure. The circumstances which require further research include:

- where there is insufficient data on plant discharges, for example no flow measurement or insufficient sampling,
- where the downstream water quality is less than good status and where the wastewater treatment plant has sufficient capacity and there appears to be sufficient assimilative capacity in the receiving waters,
- where the assimilative capacity in the receiving waters is based on estimated values.

In the case of rivers (not containing protected areas) deadlines will be extended by one cycle. The deadlines for transitional and coastal waters will not be extended even though investigations are required as these contain protected areas.

Further actions will be identified for industries following license review which will be completed by 2012. Objectives should be revised during the first planning cycle once solutions are established.

Table 3 Wastewater and Industrial Extensions

RBD	Wastewater Discharges Extension 2021	Industrial Discharges Extension 2021
North Western District	1	7
Neagh Bann District	3	3
South Eastern District	14	6
Shannon District	16	13
South Western District	2	1
Eastern District	8	15
Western District	2	7
Total	46	52

Point and diffuse sources: landfills, quarries, mines & contaminated lands

Where substantial impact has taken place (for example groundwaters below urban areas or polluted by historical contaminated lands or mining activities), recovery can take many years and the objectives may need to be either extended by one or more cycles or a less stringent objective set.

Detailed site specific risk and impact analysis was undertaken of mines and industrial/urban impacts. Extensions have not been proposed in the draft River Basin Management Plan for urban or contaminated lands impacting poor status groundwaters. However a small number of less stringent objectives for poor status mine sites are likely given that the timescales and costs of restoring these groundwaters will probably extend beyond 2027. More detailed economic tests need to be applied to confirm these likely less stringent objectives during 2009, consequently the objective for good status has been reviewed in the final plan.

Table 4 Other Point Sources Extensions

RBD	Mines Likely Less Stringent Objectives	Urban/contaminated Likely Less Stringent Objectives
North Western District	0	0
Neagh Bann District	0	0
South Eastern District	2	0
Shannon District	2	0
South Western District	0	0
Eastern District	1	0
Western District	0	0
Total	5	0

Point and diffuse sources: agriculture

In some areas it is expected that it will take time for soil nutrient levels to reduce after changing agricultural practices (for example lowering stock levels or fertilizer application rates) and therefore nutrient losses to waters may persist. These areas were identified by examining areas of wet soils (typically gleys) together with one or more of intensive agriculture enterprises, greater than 2 livestock units per hectare, likely high soil phosphorus zone (based on research presented in *Daly et al 2002*). The timescale to achieve the objectives in these areas should be extended by one cycle.

Table 5 Agriculture Extensions

RBD	Agriculture Extension 2021
North Western District	12
Neagh Bann District	0
South Eastern District	0
Shannon District	7
South Western District	0
Eastern District	0
Western District	0
Total	19

Point and diffuse sources: wastewater from unsewered properties

The on-site system study identified several risk pathways. No extensions have been granted for nutrient related risks. However, where investigation of pathogen risks to surface waters from on-site system remediation works is required and where this will not impinge on drinking waters (which are part of the register of protected areas), objectives should be extended by one cycle.

Table 6 On-site Systems Extensions

RBD	On-site Wastewater Treatment Systems Extension 2021
North Western District	58
Neagh Bann District	8
South Eastern District	19
Shannon District	14
South Western District	13
Eastern District	19
Western District	42
Total	173

Point and diffuse sources: forestry

Investigation of the effectiveness of acidification status impacts and measures is required. Consequently the objective timescale is extended by two cycles in waters at risk from this impact to allow investigations to take place.

Table 7 Forestry Extensions

RBD	Forestry Extension 2027
North Western District	1
Neagh Bann District	0
South Eastern District	1
Shannon District	3
South Western District	15
Eastern District	2
Western District	3
Total	25

Point and diffuse sources: dangerous substances & chemical pollution

Pollution reduction programmes will be put in place by 2012 to help restore waters and reduce chemical pollution. However, where chemical pollution problems have been identified, resulting supplementary measures will take time to investigate and implement. This is because monitoring of some substances is limited as they are newly introduced to monitoring programmes for example polyaromatic hydrocarbons (PAH). Longer timescales are required where the causes of exceedences are unknown.

Investigative monitoring will be required to identify sources of pollutants of concern before improvements can be made. Where appropriate, objectives should be extended by one cycle. This extension has been limited to rivers failing chemical status, although limited chemical monitoring data in marine waters has indicated some non-compliance at Shellfish water sites the objectives for these transitional and coastal waters have not been extended as they are directly linked to the protected area designation of the sites.

Table 8 Dangerous Substances Extensions

RBD	Dangerous Substances Extension 2021
North Western District	1
Neagh Bann District	0
South Eastern District	0
Shannon District	1
South Western District	0
Eastern District	0
Western District	1
Total	3

Physical modifications

Assessment of recovery of Irish waters following river enhancement schemes has identified that it will take at least one cycle for status to recover after rehabilitation works, so deadlines should be extended by one cycle in these waters.

There are knowledge gaps in the status of certain waters experiencing morphological pressures, and of the fish that are key indicators of morphological status. investigations

of the natural condition of these waters and of the technical feasibility of measures have been recommended before overall status, objectives and measures are decided. If these waters are impacted by morphological pressures but there are no technically feasible measures, alternative objectives may have to be considered.

Table 9 Physical Modifications Extensions

RBD	Physical Modifications Extension 2021
North Western District	0
Neagh Bann District	0
South Eastern District	0
Shannon District	1
South Western District	0
Eastern District	0
Western District	22
Total	23

Abstractions

There are also knowledge gaps in the status of certain waters experiencing abstraction pressures. Further studies and investigations have been recommended in waters at risk from these pressures. The rate of recovery in lake and river systems varies depending on the previous effects and measure implemented. It may take at least one cycle for status to recover after remediation works. The requirements for extended deadlines should be re-examined following the investigations of flow requirements. No extensions are proposed in the draft River Basin Management Plans.

Overview of alternative timescales

For some waters, it is not possible to restore good status fully by 2015. In most of those cases, extended deadlines are proposed, but in a few cases likely less stringent objectives are proposed where it is probable that application of disproportionate costs tests early in 2009 will confirm this assessment.

These extensions are generally applied in waters that do not support protected areas and that are currently at less than good status. In one case only, time extensions have been permitted for investigations in protected areas. This relates to potential localised on-site system pathogen impacts in protected waters only where the protected area will not be impaired (that is the extension excludes protected drinking waters).

Large transitional and coastal waters can contain small protected areas. In some cases the discharges to these waters will not impact on their protected areas because of the remoteness of the discharge from protected areas and the large dilutions available. Therefore, the impact of these discharges will be investigated to determine the appropriate levels treatment. This will not impact on the objective of achieving protected area objectives and no time extension has been set.

The extended deadlines relate mainly to waters where further investigations are required for impacts from on-site systems, wastewater and industrial discharges; afforestation acidification measures and chemical status failures. Similarly extensions have been proposed for some waters where recovery from agricultural nutrient losses or morphology enhancement will take several years. A small number of likely less stringent objectives have been proposed in some waters impacted by mine discharges.

Table 10 Overview of alternative timescales

Key Issue	2015	2021	2027 or likely LSO cases
Wastewater	Majority of waters	Nationally 46 rivers where investigations are in place by 2015	
Industrial discharges	Majority of waters	Nationally 52 rivers where investigations are in place by 2015	
Landfills, quarries, mines and contaminated lands	Majority of waters	Majority of waters	Nationally 5 groundwaters at risk from mine impacts (these will be tested during 2009 as likely less stringent objectives)
Agriculture	Majority of waters	Nationally 19 rivers where recovery timescales are longer (gley soils with agricultural pressures and elevated soil nutrients)	
Wastewater from unsewered properties	Majority of waters	Nationally 173 rivers where investigations of pathogen losses to surface waters are in place by 2015	
Forestry	Majority of waters	Majority of waters	Nationally 25 rivers where investigation of acidification measures is required
Dangerous substances & chemical pollution	Majority of waters	Nationally 3 rivers where investigations are in place by 2015	
Physical modifications	Majority of waters	Nationally 23 rivers where remediation schemes are in place by 2015	
Abstractions	Majority of waters		

Some waters may have more than one extension case associated with them so the total number of time extension is not merely the sum of the above cases. When the overlaps between extensions are analysed the following summarises the number of time extensions per River basin District set in Ireland's draft River Basin Management Plans. These extensions relate to river and groundwaters. Northern Ireland Environment Agency has proposed a small number of extensions in shared rivers, lakes or marine waters.

Table 11 River Basin District Summary of Extensions

RBD	Total number of Rivers with Extended Deadlines	Total number of Groundwater Likely Less Stringent Objectives
North Western District	88	0
Neagh Bann District	19	0
South Eastern District	41	2
Shannon District	44	2
South Western District	30	0
Eastern District	38	1
Western District	75	0
Total	335	5

Core objectives: full achievement

Local authorities are responsible for proposing the objectives in the draft river basin management plan. This section highlights the waters where alternative objectives are proposed and also summarises the overall environmental objectives. The objectives have been coordinated with the Northern Ireland Environment Agency, which is responsible for setting objectives in Northern Ireland.

Table 12 Alternative objectives - Heavily modified waters and artificial waters

	Rivers and Canals Length (%)	Lakes and Reservoirs Area (%)	Estuaries Area (%)	Coastal Area (%)
Artificial Waters	4.8 (1.0%)	0 (0%)	0 (0%)	0 (0%)
Heavily Modified Waters	2.8 (10.0%)	6.0 (13.0%)	0 (0%)	2.8 (9.1%)
Total as % of All Waters	7.6 (11.0%)	6.0 (13.0%)	0 (0%)	2.8 (9.1%)

Table 13 Alternative objectives – timescales

	Rivers and Canals Number (%)	Lakes and Reservoirs Number (%) Area km² (%)	Estuaries Number (%) Area km² (%)	Coastal Number (%) Area km² (%)	Groundwaters Number (%) Area km² (%)
Extended Deadline to 2021	310 (6.8%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)
Extended Deadline to 2027	25 (0.6%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)
Likely Less Stringent Objective	0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	5 (0.7%) 456.0 (0.7%)
Total as % of All Waters	335 (7.4%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	5 (0.7%) 456.0 (0.7%)

The overall picture

Ireland's draft River Basin Management plans propose alternative objectives for well under 10% of waters and only in justified cases where protected area uses will not be impaired.

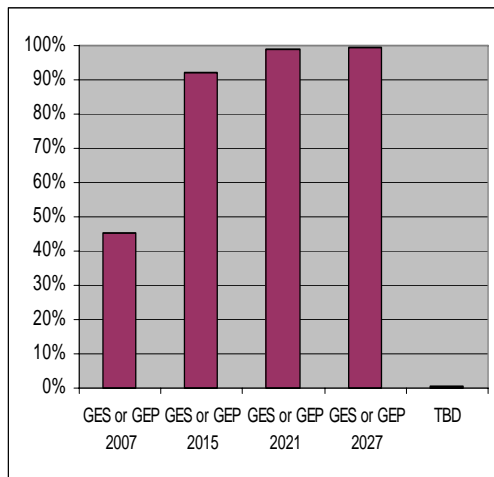
Table 14 summarises the target timescales established for Ireland's surface waters and groundwaters. By implementing the measures proposed in this draft plan, it is proposed to achieve the objectives in 4213 rivers, 805 lakes, 175 estuaries and 752 of our groundwaters by 2015 and further improvements may be achieved during the second and third river basin plans.

Table 14 Timescale for Achieving Surface Water and Groundwater Objectives

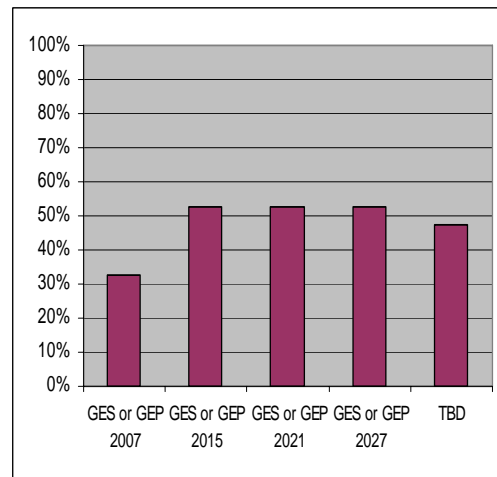
	Rivers and Canals Number (%)	Lakes and Reservoirs Number (%) Area km² (%)	Estuaries Number (%) Area km² (%)	Coastal Number (%) Area km² (%)	Groundwaters Number (%) Area km² (%)
Objective Achieved 2007	2061 (45.2%)	538 (66.4%) 285.7 (25.3%)	35 (15.2%) 268.3 31.97%	42 (32.6%) 2028.1 (14.2%)	669 (88.4%) 59328.1 (86.0%)
Objective Achieved 2015	4213 (92.4%)	805 (99.4%) 1111.1 (98.3%)	175 76.09% 832.21 99.17%	68 (52.7%) 2513.7 (17.7%)	752 (99.3%) 68558.2 (99.3%)
Objective Achieved 2021	4523 (99.2%)	805 (99.4%) 1111.1 (98.3%)	175 76.09% 832.21 99.17%	68 (52.7%) 2513.7 (17.7%)	752 (99.3%) 68558.2 (99.3%)
Objective Achieved 2027	4548 (99.7%)	805 (99.4%) 1111.1 (98.3%)	175 76.09% 832.21 99.17%	68 (52.7%) 2513.7 (17.7%)	752 (99.3%) 68558.2 (99.3%)
To be determined	14 0.31%	5 (0.6%) 19.7 (1.7%)	55 (23.9%) 7.0 (0.8%)	61 (47.3%) 11730.1 (82.4%)	0 (0%) 0 (0%)
Likely Less Stringent Objective	0 0%	0 (0%) 0 (0%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)	5 (0.7%) 456.0 (0.7%)

Graphs 1 – 5 illustrate the expected trends in status to improve for rivers and canals, lakes and reservoirs, marine waters and groundwaters over the Water Framework Directive management cycles. A summary of the proposed environmental objectives for the surface waters and groundwaters is provided in Maps 2 and 3.

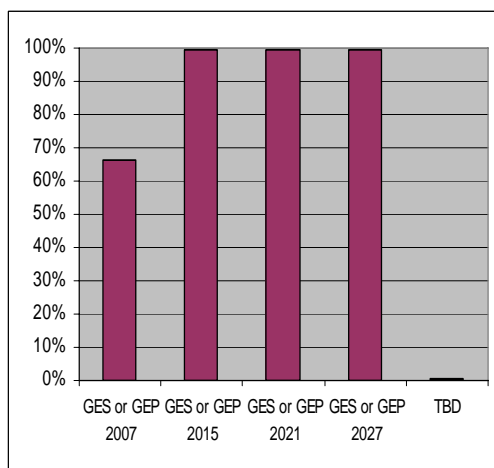
GRAPH 1 RIVERS & CANALS



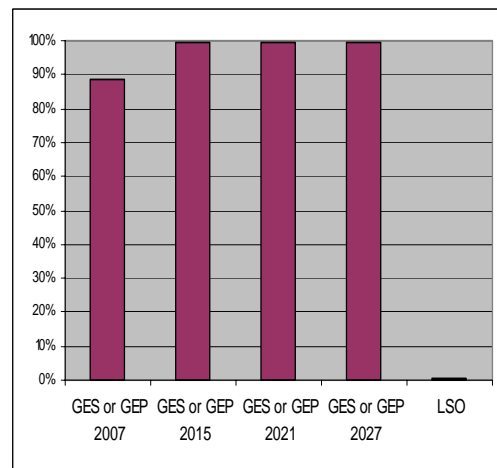
GRAPH 4 COASTAL



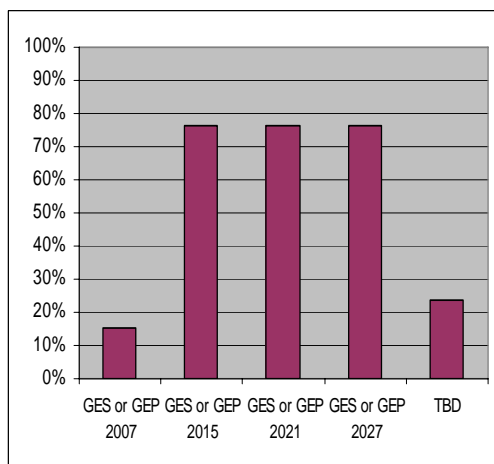
GRAPH 2 LAKES & RESERVOIRS



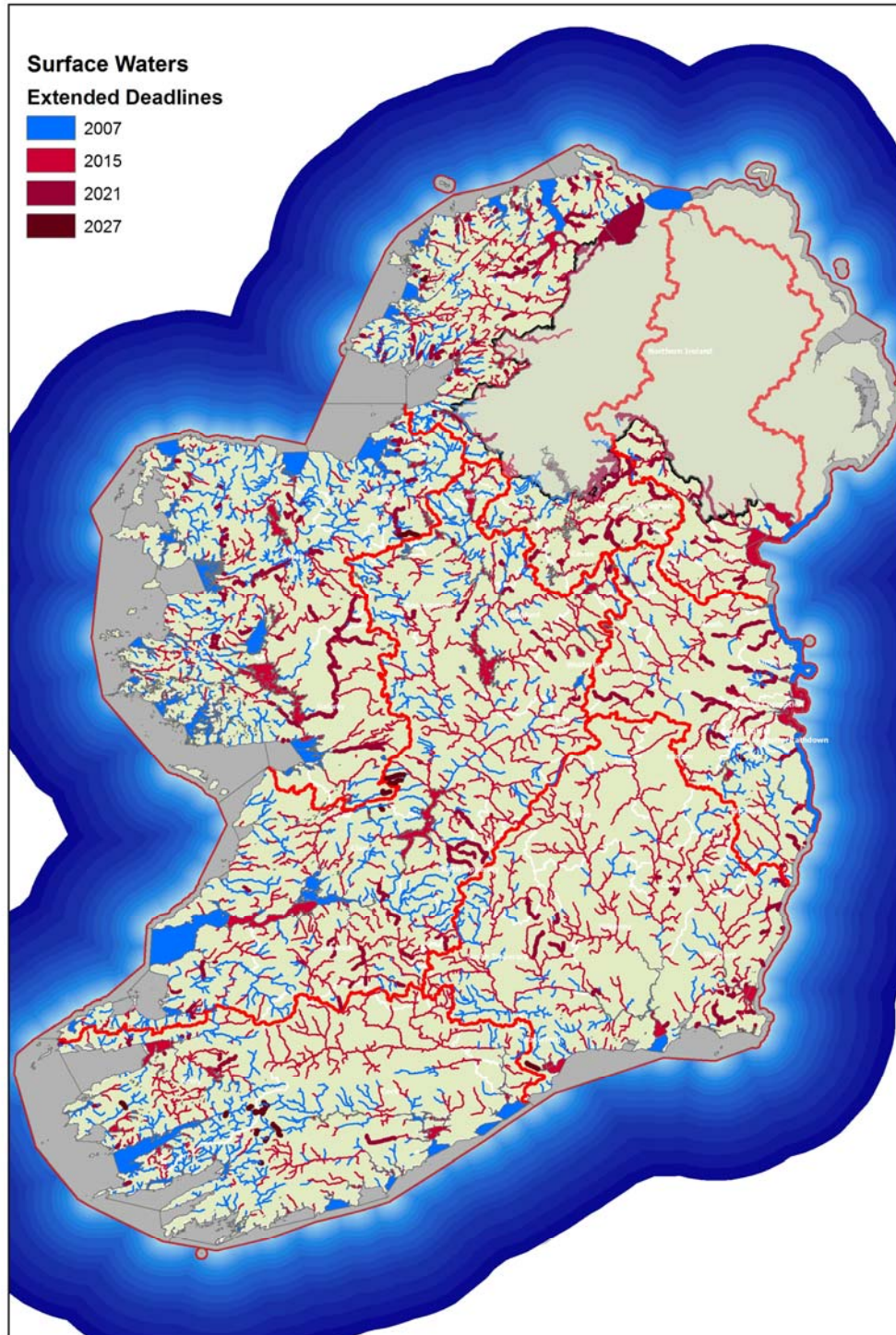
GRAPH 5 GROUNDWATERS



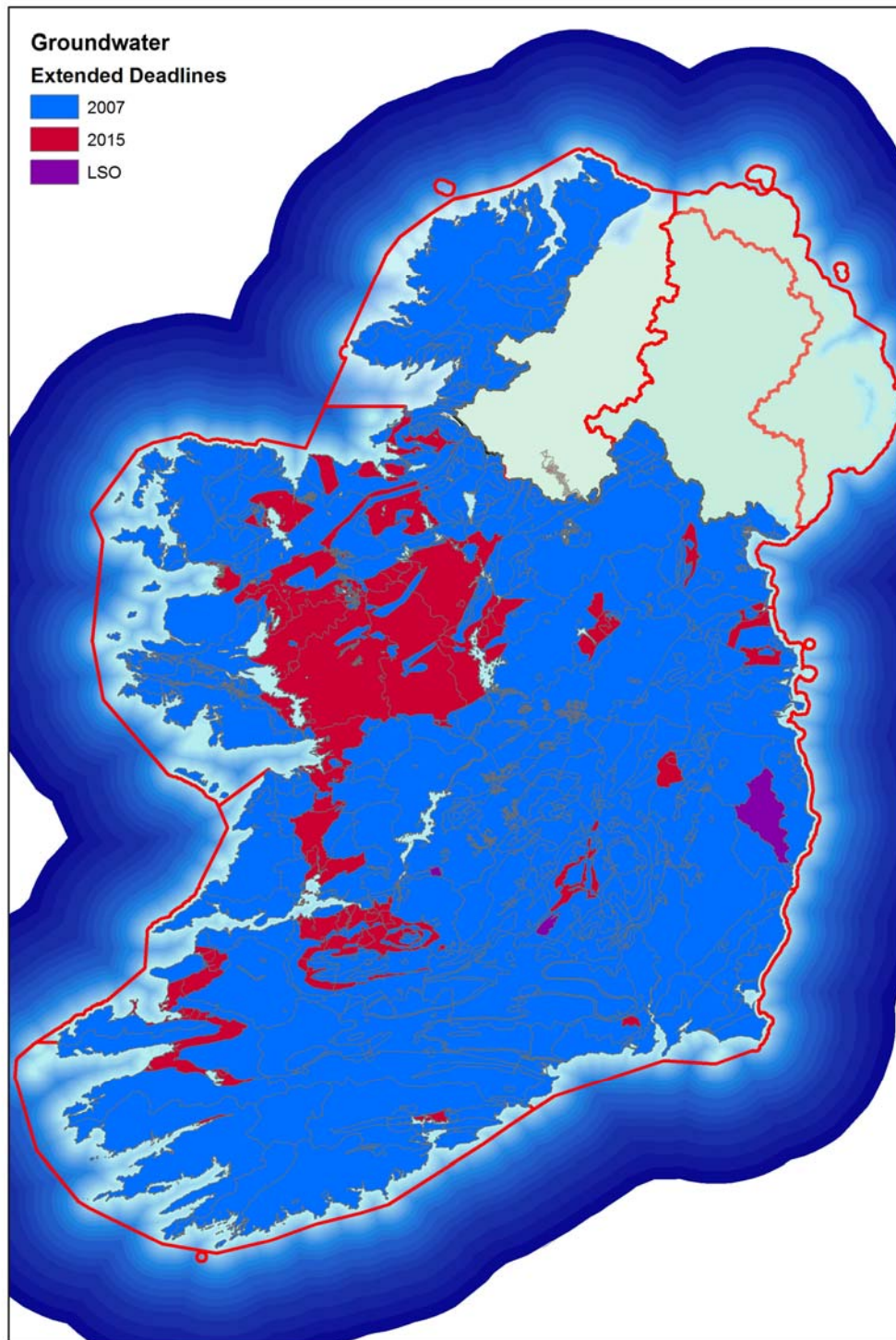
GRAPH 3 ESTUARIES



Map 2: Summary of the proposed environmental objectives for the surface waters



Map 3: Summary of the proposed environmental objectives for groundwaters



Conclusions

Achieve protected areas objectives

Our core objective is to ensure that the status of waters supporting our protected areas is protected and (where necessary) improved by 2015. These waters require greater protection because they contain rare and vulnerable habitats or wildlife or because of their beneficial uses or the need to protect human health. They include drinking water sources, shellfish growing areas, bathing areas, nutrient-sensitive areas and nature conservation sites. We have been taking measures to ensure we achieve the objectives for these protected areas for many years. The draft plan contains further actions considered necessary to strengthen the implementation of these measures.

Prevent deterioration

For surface waters, our core objective is to prevent deterioration, and in particular maintain high or good status; for groundwaters, the core objective is to limit pollution inputs and prevent deterioration. For our surface waters and for groundwaters that already meet good or better standards, we are confident that the strengthened basic measures in this plan will provide sufficient protection to enable these waters to maintain their satisfactory condition through 2015.

Restore good status

Our core objective for surface waters and groundwaters that are less than good status is to restore them to at least good status by 2015, where it is feasible and not disproportionately expensive to do so (some waters will take longer to reach their target). We have considered basic and supplementary measures to restore these waters to at least good status by 2015; most of them will be restored by 2015. However, alternative objectives (extended deadlines, likely less stringent objectives) have been applied in some limited circumstances.

Reduce chemical pollution

Our core objective for surface waters is to progressively reduce chemical pollution. For most waters, the objective is expected to be achieved by 2015, but in some waters we need to investigate the sources of dangerous substances and to develop appropriate measures accordingly. Measures taken against dangerous substances will also reduce chemical pollution.

We are seeking your views on these proposed objectives. What is your view about our proposals to:

- designate heavily modified and artificial waters?
- extend deadlines or set likely less stringent objectives for certain waters?

Are these proposals appropriate? Have we missed something important?