Erne Catchment Assessment 2010-2015 (HA 36)

Catchment Science & Management Unit

Environmental Protection Agency

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epaCatchments
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Preface

This document provides a summary of the characterisation outcomes for the water resources of the Erne Catchment, which have been compiled and assessed by the EPA, with the assistance of local authorities and RPS consultants. The information presented includes status and risk categories of all water bodies, details on protected areas, significant issues, significant pressures, load reduction assessments, recommendations on future investigative assessments, areas for actions and environmental objectives. The characterisation assessments are based on information available to the end of 2015. Additional, more detailed characterisation information is available to public bodies on the EPA WFD Application via the EDEN portal, and more widely on the catchments.ie website. The purpose of this document is to provide an overview of the situation in the catchment and help inform further action and analysis of appropriate measures and management strategies.

This document is supported by, and can be read in conjunction with, a series of other documents which provide explanations of the elements it contains:

1. An explanatory document setting out the full characterisation process, including water body, subcatchment and catchment characterisation.
2. The Final River Basin Management Plan, which can be accessed on: www.catchments.ie.
3. A published paper on Source Load Apportionment Modelling, which can be accessed at: http://www.jstor.org/stable/10.3318/bioe.2016.22
4. A published paper on the role of pathways in transferring nutrients to streams and the relevance to water quality management strategies, which can be accessed at: http://www.jstor.org/stable/pdf/10.3318/bioe.2016.19.pdf
5. An article on Investigative Assessments which can be accessed at: https://www.catchments.ie/download/catchments-newsletter-sharing-science-stories-june-2016/

Table of contents

1 Introduction

This catchment includes the area drained by the River Erne and all streams entering tidal water between Aughrus Point and Kildoney Point, Co. Donegal. This is a cross border catchment with a surface area of 4,415 km², 2,512 km² of which is located within the Republic of Ireland (RoI). The largest urban centre is Cavan Town. The other main urban centres are Bundoran, Ballyshannon, Clones, Ballybay, Cootehill and Belturbet. The total population (in the RoI area) is approximately 86,000 km², with a population density of 34 people per km².

There are three isolated parts of the catchment located in the RoI, one around Ballyshannon, one near Blacklion, and the southern part occupying much of Counties Cavan and Monaghan.

The River Erne rises on the southern slopes of Dennmore Hill between Ballyjamesduff and Cavan Town flowing south west into Lough Gowna and Lough Oughter near Killashandra where it is joined by the Cullies River. The Erne then flows north-east where it meets the Annalee River to the west of Butlers Bridge.

The Annalee River drains the south-eastern part of the catchment, and is fed by the Bunnoe, Dromore, Knappagh, Madabawn, Laragh and Cavan Rivers. Past Ballyhaise, the Cavan River flows in from the south, having drained the area surrounding Cavan Town, before the Annalee flows into the River Erne.

The Erne flows north from here, past Belturbet and into Upper Lough Erne and County Fermanagh. At the border the Erne is joined by the Finn River from the east.

The Woodford River rises in the uplands to the east of Lough Allen as the Aghacashalun River and flows through Newtown Gore near which it is joined by the Blackwater before flowing along the border and into the southern tip of Upper Lough Erne. The Colebrook River flows into the lake from the north east and the Swanlibar River from the west. The Swanlibar River and its tributaries flow off the eastern flanks of Cuilcagh Mountain and turn north-east running through Swanlibar and across the border into Upper Lough Erne.

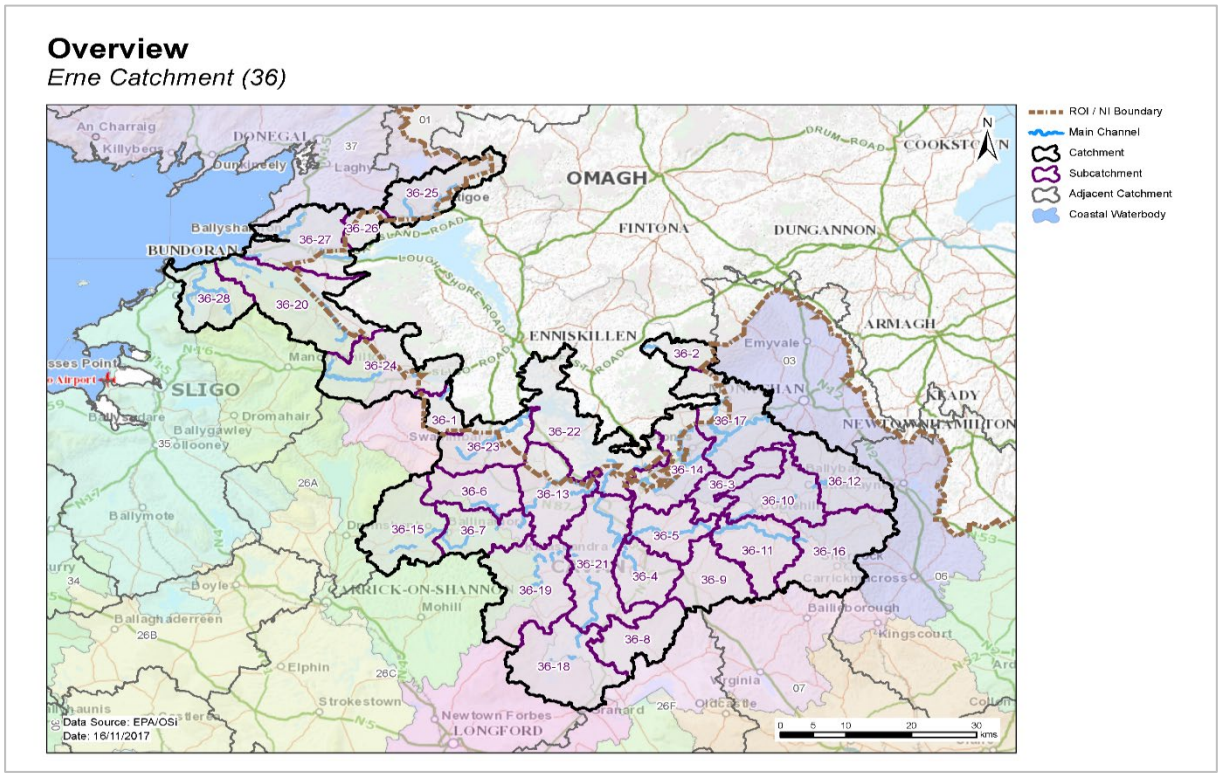


Figure 1. Subcatchments in the Erne catchment

The River Erne outflows from Lough Erne, is joined by the River Arney from the west, and then flows north through a series of meandering channels.

The Sillees River drains much of County Fermanagh between the western side of Lower Lough Erne, the Macnean Lakes and the Drowes River catchment. The Sillees River flows southeast, entering the Erne just upstream of Enniskillen. After the Erne flows through Enniskillen, it enters the southern end of Lower Lough Erne, the second largest lake in Northern Ireland. The area of the catchment to the east of the lake is drained by the Ballycassidy, Kesh and Brannagh Rivers. The area to the north of the lake is drained by the Termon or Billary River, and the Waterfoot River, and their tributaries, both of which run along the border for some of their length. The River Erne flows out of the north-western end of the lake and passes though the ESB Cliff generating station, and into Assaroe Lake before passing through a second ESB hydroelectric generating station at Cathleen's Falls in Ballyshannon, and out to sea in Donegal Bay at the northern end of Tullan Strand.

The Erne catchment comprises 28 sub-catchments (Table 1, Figure 1) with 129 river water bodies, 132 lakes, three transitional, two coastal water bodies, and 39 groundwater bodies. There are two heavily modified water bodies (HMWBs) and one artificial water body (AWB) in the catchment.

Table 1. List of subcatchments in the Erne catchment

Subcatchment ID	Subcatchment Name
36_1	MacneanTribCuilcaghMountains_SC_010
36_2	Colebrook River[Cooneen]_SC_010
36_3	Bunnoe_SC_010
36_4	Cavan_SC_010
36_5	Annalee_SC_030
36_6	Blackwater[Newtowngore]_SC_010
36_7	Blackwater[Newtowngore]_SC_020
36_8	Erne_SC_010
36_9	Laragh_SC_010
36_10	Dromore_SC_020
36_11	Annalee_SC_020
36_12	Dromore_SC_010
36_13	Woodford[Cavan]_SC_010
36_14	Finn[Monaghan]_SC_020
36_15	Yellow[Ballinamore]_SC_010
36_16	Annalee_SC_010
36_17	Finn[Monaghan]_SC_010
36_18	Erne_SC_020
36_19	Cullies_SC_010
36_20	Drowes_SC_010
36_21	Erne_SC_030
36_22	Erne_SC_040
36_23	Swanlinbar_SC_010
36_24	MacneanLoughsconnector_SC_010
36_25	BILLARY_SC_010
36_26	TullynasiddaghLoughStream_SC_010
36_27	Erne_SC_050
36_28	Duff_SC_010

2 Water body status and risk of not meeting environmental objectives

2.1 Surface water ecological status

2.1.1 Rivers and lakes

- There were 47 (18%) river and lake water bodies at Good or High status, and 85 (33%) at less than Good status in 2015 (Table 2). 39 (15%) river water bodies and 90 (34%) lake water bodies are unmonitored. The status of the surface water body for the period 2010-2015 is shown in Figure 2.
- Seven river water bodies have a high status objective. In 2015, five of these water bodies were at High status and two were at Good (Appendix 1, Figure 3).
- Since 2007-09. Twenty-three river water bodies and three lake water bodies have improved, and 15 river water bodies and 11 lake water bodies have deteriorated.
- The number of water bodies at each status class in 2007-09 and 2010-2015 are shown in Figure 4 (rivers), Figure 5 (lakes) with the catchment-wide changes illustrated in Figure 7.
- The variation in nutrient concentrations and loads in the Erne main channel is described and illustrated in Appendix 2.

2.1.2 Transitional and Coastal (TraC)

- Of the five TraC water bodies in the catchment, one is Moderate status and remaining four are not monitored and therefore have no status assigned to them (Table 2). One of the coastal water bodies in this catchment, Donegal Bay (Erne), is shared with two neighbouring catchments, HA 35 and 37.
- There are no TraC water bodies with a High Ecological Status objective.
- The number of TraC water bodies at each status class in 2007-09 and 2010-2015 are shown in and Figure 6.

Table 2. Summary of surface water body status and risk

	Number of water bodies	2010-2015 Status						Risk Categories		
		High	Good	Mod	Poor	Bad	Un-monitored	*Not at Risk*	*Review*	*At Risk*
Rivers	129	8	34	19	29	0	39	42	27	60
Lakes	132	0	5	18	10	9	90	8	85	39
TraCs	5	0	0	1	0	0	4	2	2	1

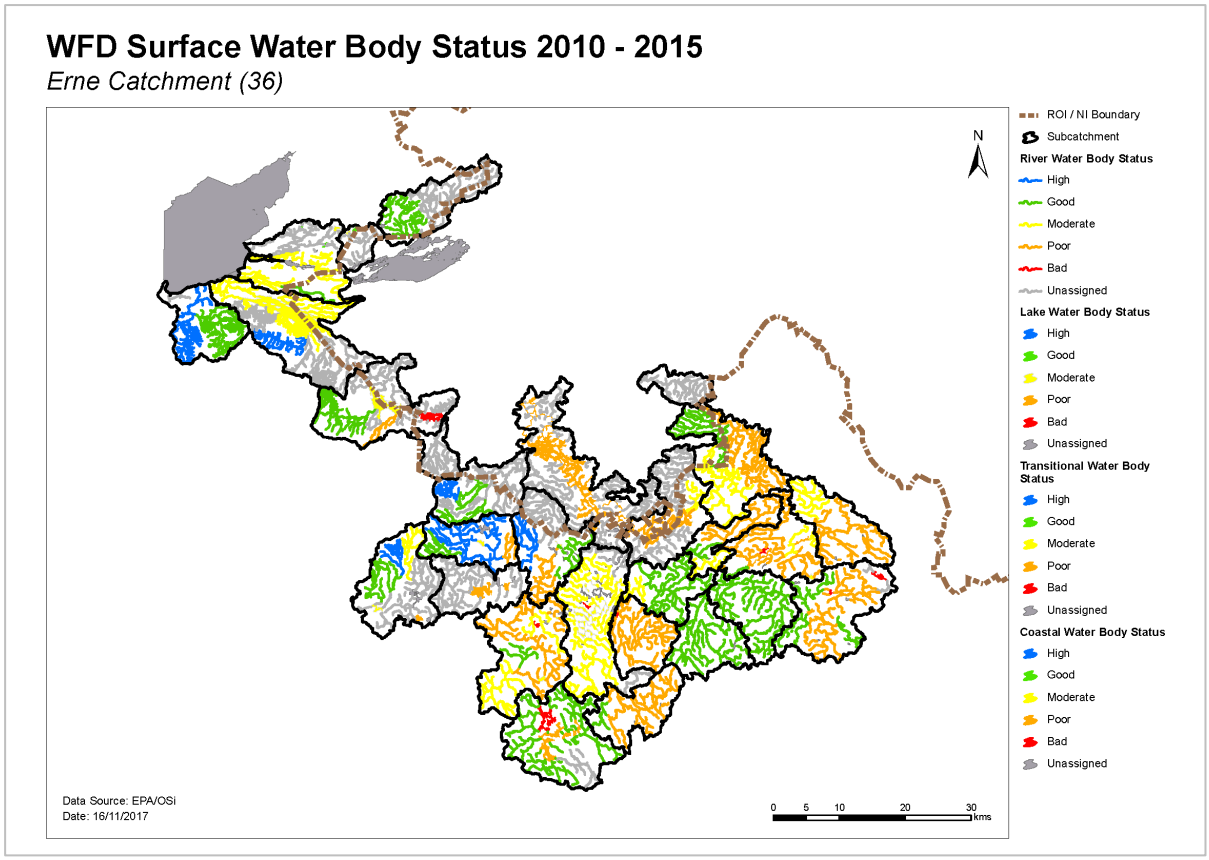


Figure 2. Surface water ecological status.

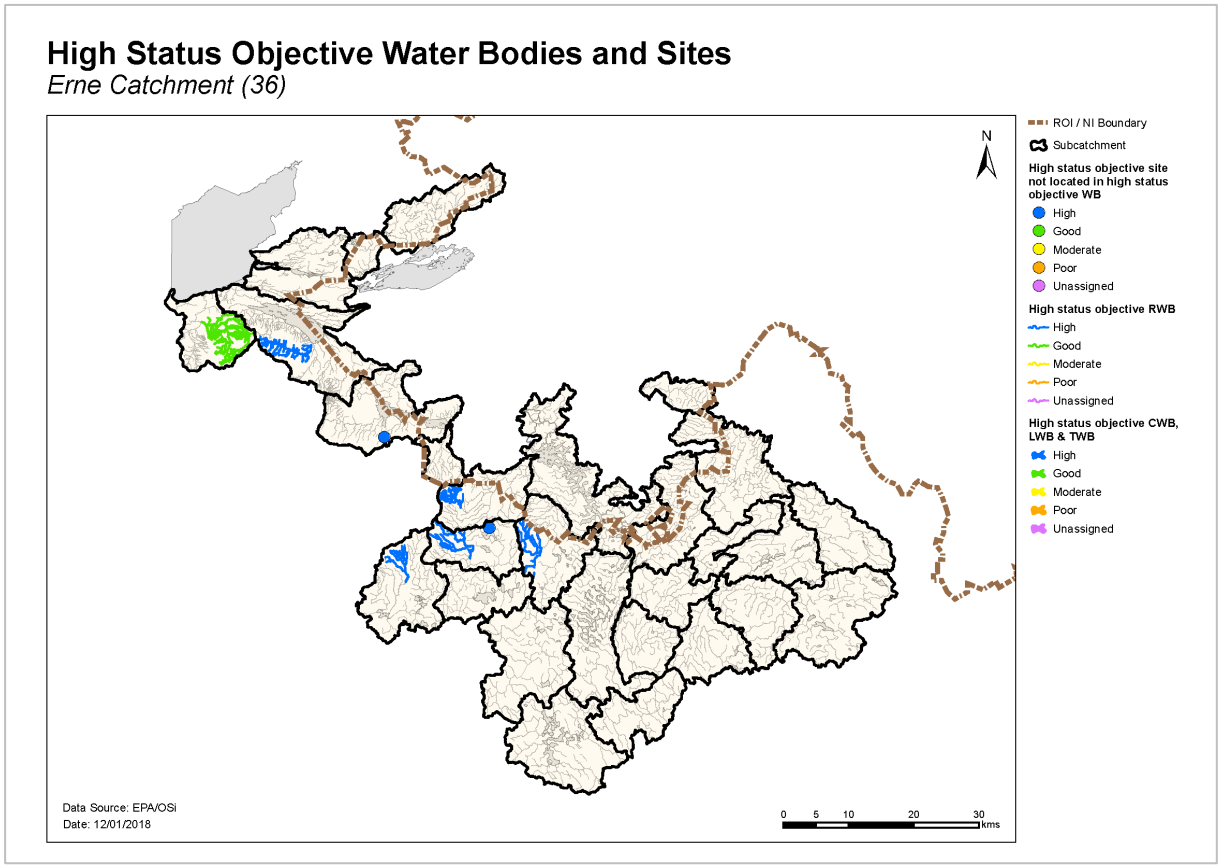


Figure 3. High ecological status objective water bodies and sites.

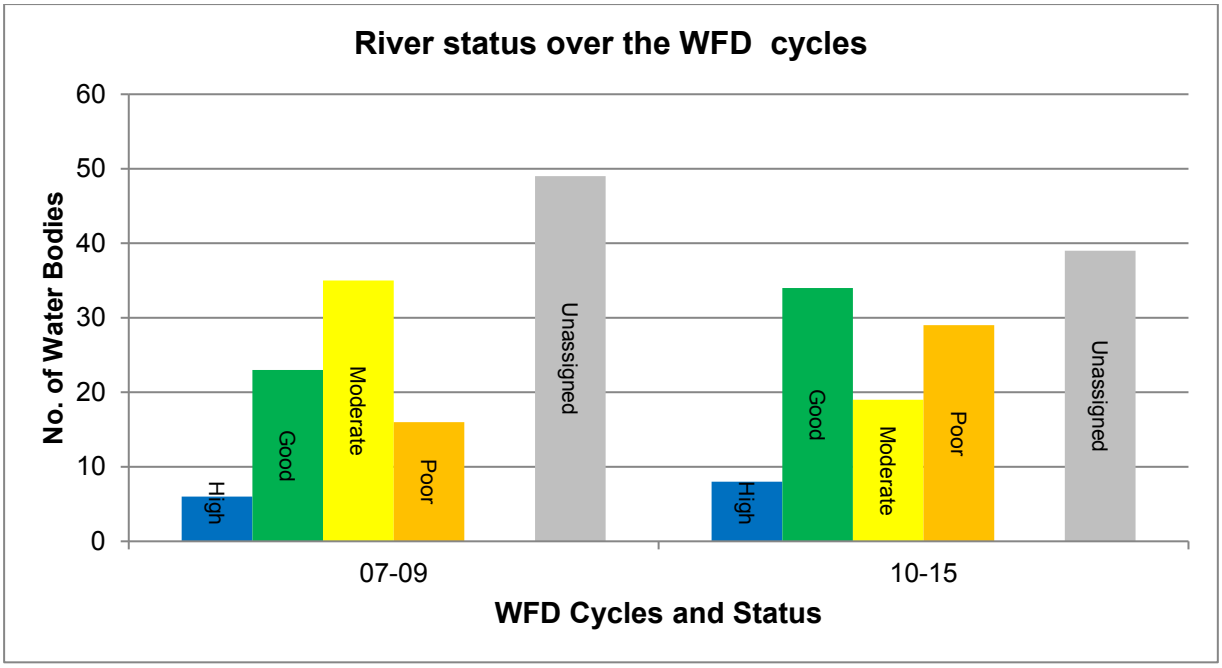


Figure 4. Number of rivers at each status class in 2007-09 and 2010-2015

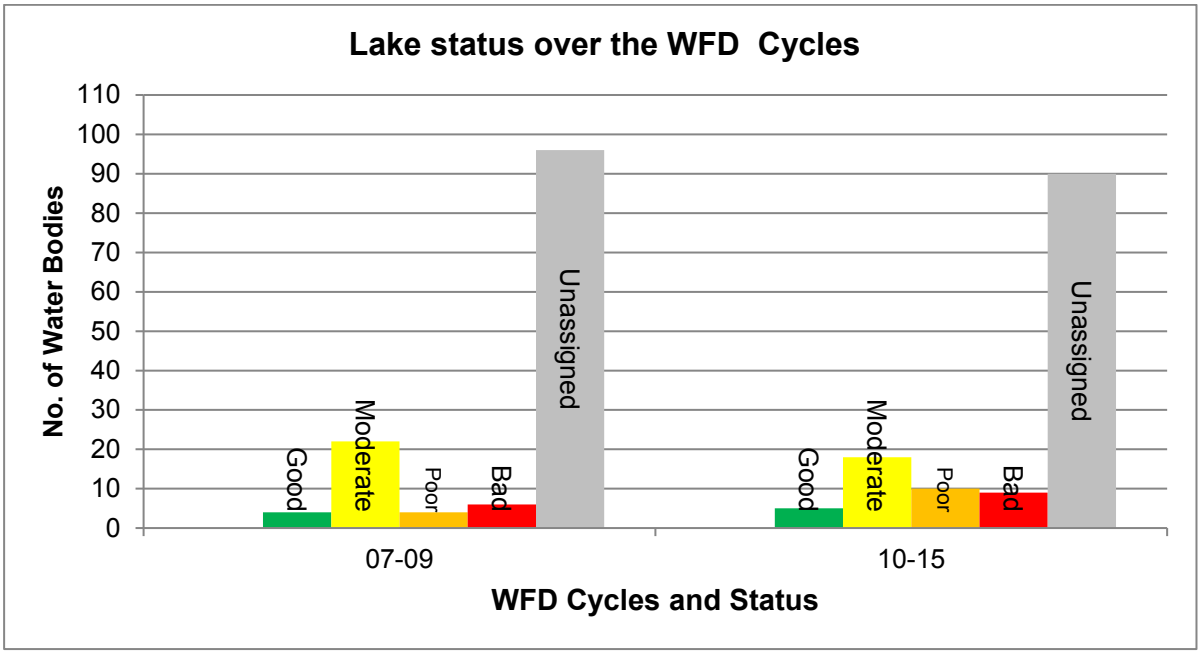


Figure 5. Number of lakes at each status class in 2007-09 and 2010-2015

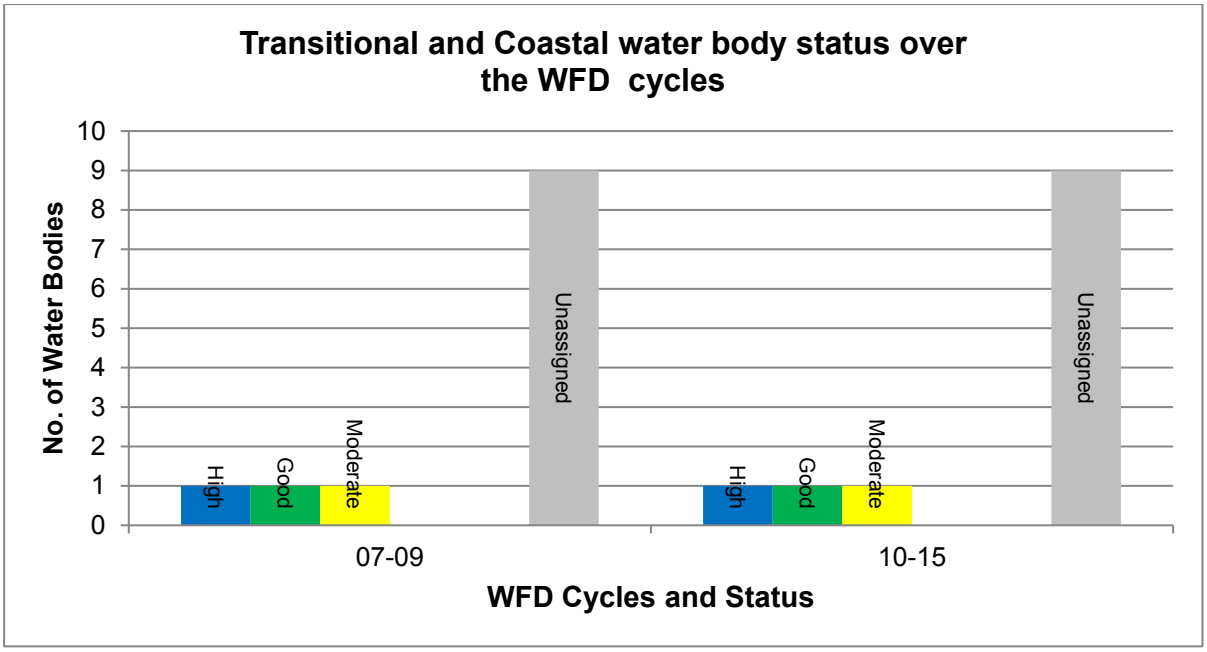


Figure 6. Number of transitional and coastal water bodies at each status class in 2007-09 and 2010-15

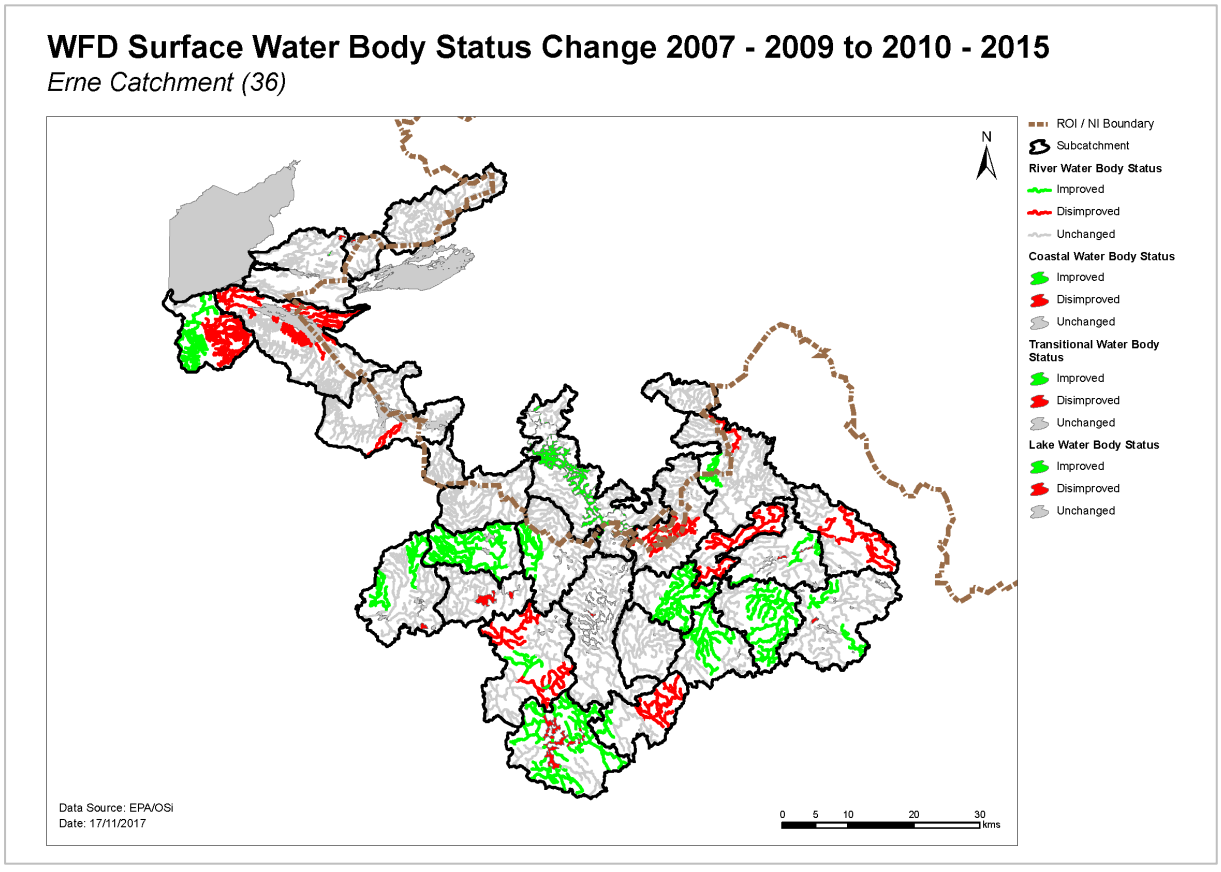


Figure 7. Surface water body status changes from 2007-09 to 2010-2015.

2.2 Groundwater Status

- All 39 (100%) groundwater bodies are at Good status, (Table 3, Figure 8).

Table 3. Summary of groundwater body status and risk

	Number of water bodies	2010-2015 status		Risk		
		Good	Poor	*Not at Risk*	*Review*	*At Risk*
Groundwater	39	39	0	30	9	0

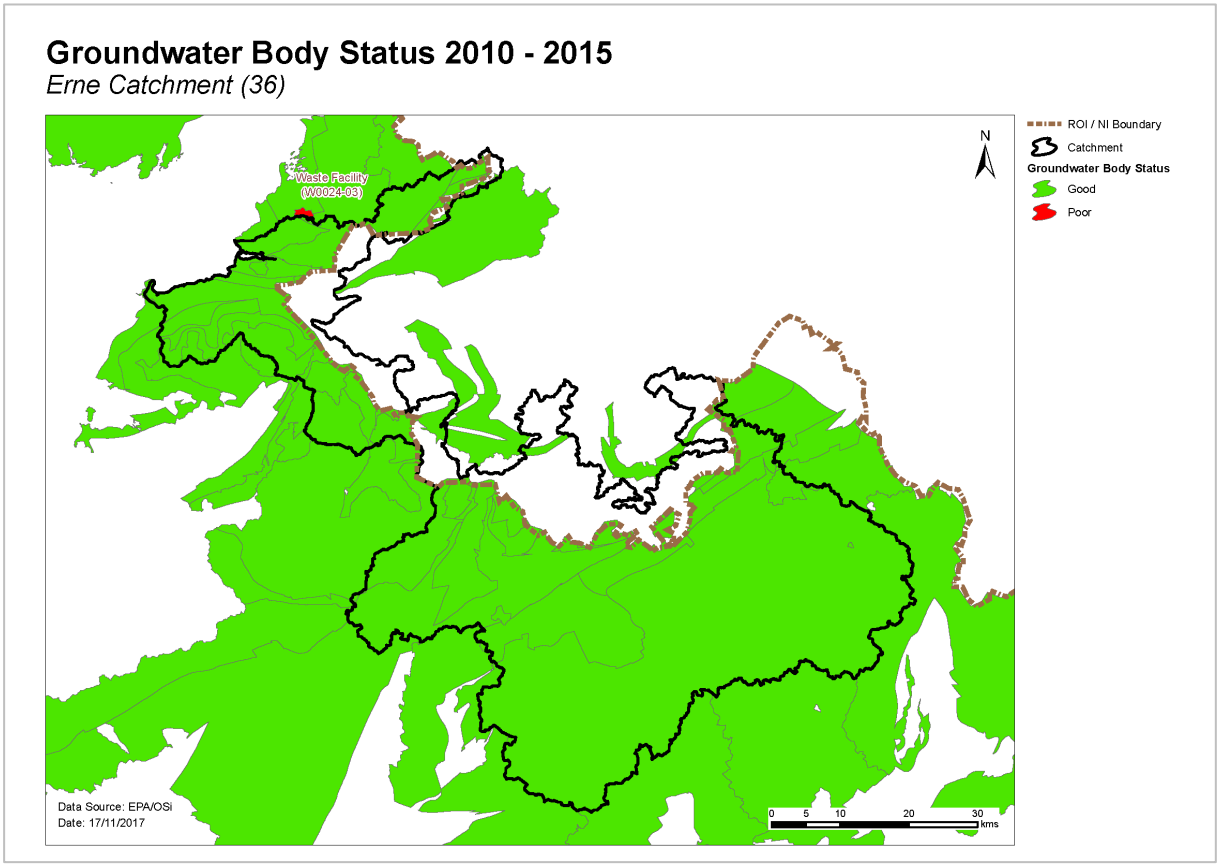


Figure 8 – Groundwater Body Status

2.3 Risk of not meeting surface water environmental objectives

2.3.1 Rivers and lakes

- Forty-two river water bodies and eight lake water bodies water are *Not at Risk* (Figure 9, Table 2) and require no additional investigative assessment or measures to be applied, other than those measures that are already in place.
- Twenty-seven river water bodies and 85 lake water bodies are in *Review*. This applies to 89 (23 river and 65 lake) water bodies where more information is required and 24 (4 river and 20 lake) water bodies where measures have recently been implemented and improvements have not yet been realised.

- Sixty river water bodies and 39 lake water bodies in the catchment are *At Risk* of not meeting their water quality objectives. Measures will be needed in the catchment areas water bodies to improve the water quality outcomes.
- Summary information for the *At Risk* water bodies is given in Appendix 3.

2.3.2 Transitional and Coastal (TraC)

- Two TraC water bodies are *Not at Risk* (Figure 9, Table 2) and require no additional investigative assessment or measures to be applied, other than those measures that are already in place.
- Two TraC water bodies are in *Review* where more data and information is required.
- One TraC water body IE_NW_030_0100 the Erne Estuary is *At Risk* of not meeting its water quality objectives. Measures will be needed in these water bodies to improve the water quality outcomes.

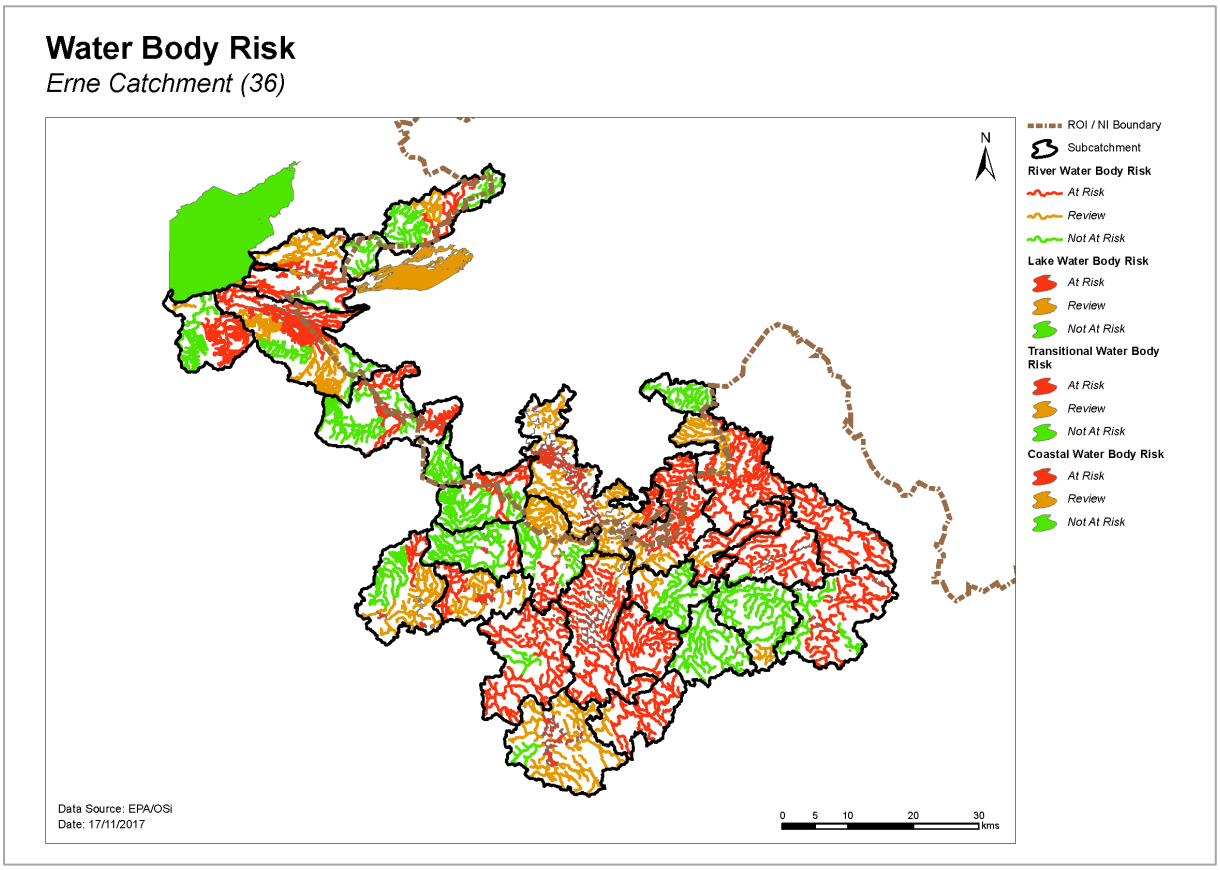


Figure 9. Surface water body risk.

2.4 Risk of not meeting groundwater body environmental objectives

- All 39 groundwater bodies are *Not at Risk* (Figure 10, Table 3) and require no additional investigative assessment or measures to be applied, other than those measures that are already in place.
- No groundwater bodies are *At Risk* of not meeting their water quality objectives.

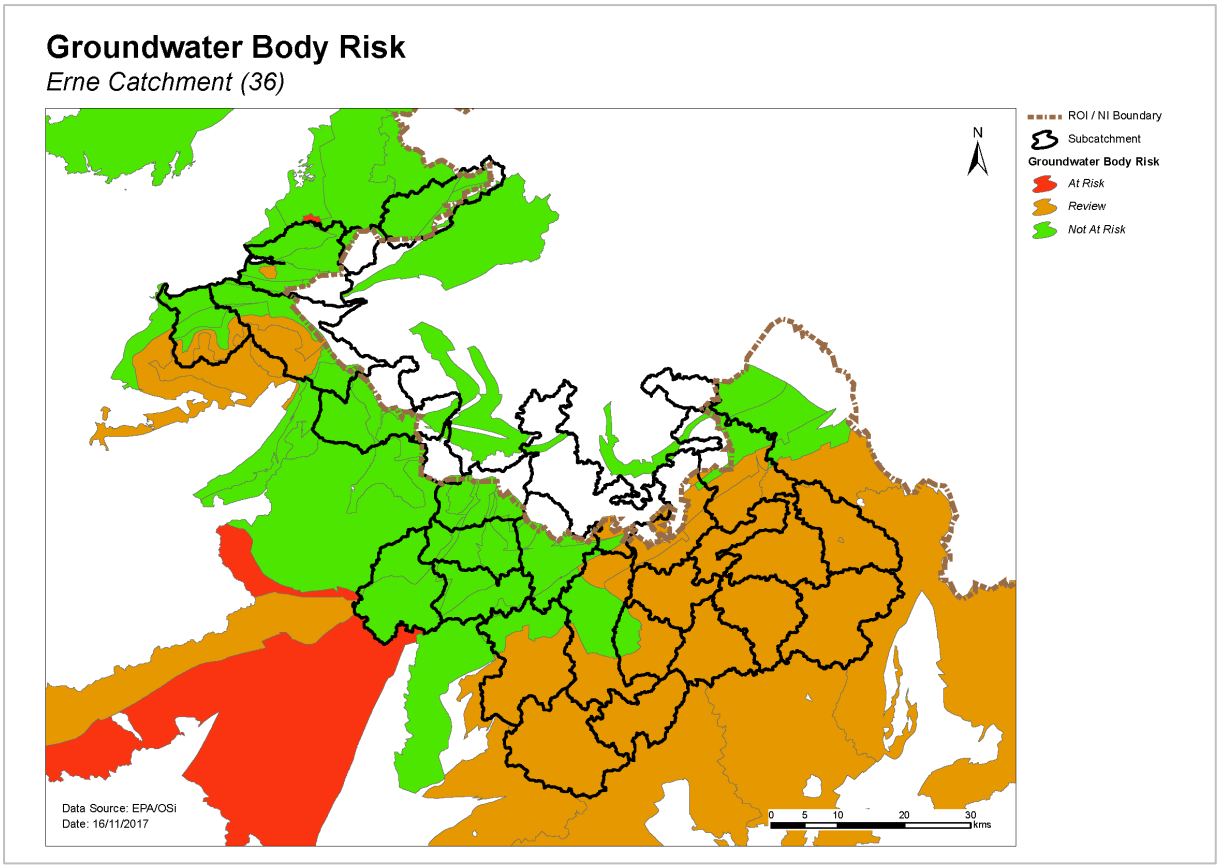


Figure 10. Groundwater body risk

2.5 Protected Areas

2.5.1 Drinking Water Protected Areas

- There are 59 abstractions in the Erne Catchment, comprising of 22 group water schemes (Corlough GWS, Milltown GWS, Templeport GWS, Kildallan GWS, Carrigallen GPR, Drumeela GPR, Ballintrillick GWS, Magheracloone GWSS, Annagh GWS, Bunnoe GWS, Crosserlough GWS, Erne Valley GWS, Kill GWS, Mountainlodge GWS, Corduff-Corracharra GWSS, Doohamlet GWSS, Drumgole GWSS, Stranoodan GWSS, Aughnashalvey GWSS, Barraghy GWS, Dernakesh GWS and Dhuish GWS) and 16 public supplies (Ballyconnell PWS, Bawnboy PWS, Mountain Spring, Smithboro, Pettigo WTP, Ballyshannon, Kiltyclogher, Clones, Bundoran Urban, Cavan PWS, Cootehill PWS, Gowna, LERWSS, Newbliss, Monaghan, and Belturbet PWS).
- Twenty eight of the abstractions are located in 10 groundwater bodies (Aninerin-Cuilcagh, Killashandra, Newtown-Ballyconnell, Cavan, Rossinver, Ballinamore-Swanlinbar, Ballyshannon East, Ballyshannon, Clones and Kiltyclogher), 27 abstractions are from 11lakes designated under WFD (Annagh Lough, Killynenagh Lough, Garty, Namachree, Killcoran, Melvin, Acanon and Corcaghan) and 9 lakes which are not designated under WFD; and 4 abstractions are from 8 rivers (Erne_090, Annalee_020 and Annalee_030). The list of the public supplies and the associated water bodies is provided in Appendix 4.
- All sources were compliant with the standards for nitrate in 2015.
- All sources, apart from Lough Bawn (2400PUB1001), were compliant with the standards for pesticides in 2015 and therefore met their WFD objectives.
- Lough Bawn has not met its drinking water protected area requirement due to the presence of MCPA.

2.5.2 Bathing Waters

- There are no freshwater bathing waters in the Erne catchment. There are two marine bathing waters and both are in satisfactory condition. The list of the bathing waters and the associated water bodies is provided in Table 4.

Table 4. Bathing Waters in the catchment

Bathing Water		Water Body Intersection		Objective met?	
Name	Code	Name	Code	Yes	No
Bundoran	IENWBWC020_0000_0100	Bundoran Bay	IE_NW_020_0000	✓	
Mullaghmore	IENWBWC010_0000_0300	Donegal Bay (Erne)	IE_NW_010_0000	✓	

2.5.3 Shellfish Areas

- There are no designated shellfish areas in the Erne catchment.

2.5.4 Nutrient Sensitive Areas

- There are two designated Nutrient Sensitive Areas (NSAs) in the Erne catchment. The NSAs are associated with Cavan waste water treatment and both are compliant with their environmental objectives. The list of NSAs and the associated water bodies are provided in Table 5.

Table 5. Nutrient Sensitive Areas in the catchment

Nutrient Sensitive Area		Agglomeration		Objective met?		Comment
Name	Code	Name	Code	Yes	No	
Lough Oughter, County Cavan	IEGBNILK_NW_1994_0010	Cavan	D0020	✓		Tertiary treatment is in place.
Cavan (River)	IEGBNIRI_NW_2001_0013					

2.5.5 Natura 2000 Sites

- There are 13 Special Areas of Conservation (SACs) in the catchment, not all of which have water quality and/or quantity conservation objectives for their qualifying interests.
- Seven lake water bodies have been prioritised for action as the water conservation objectives for their habitats and/or species are not being supported by ecological status (Appendix 5).
- There are four Special Protected Areas (SPAs) in the catchment:
    - Donegal Bay SPA
    - Lough Oughter SPA
    - Slieve Beagh SPA
    - Sligo/Leitrim Uplands SPA

As there are no specific water quality and quantity supporting conditions identified in the site-specific conservation objectives for these SPAs, the intersecting water bodies are not assigned priority action for WFD protected area purposes in the second cycle.

2.6 Heavily modified water bodies

- There are three heavily modified water bodies (HMWBs) in the catchment due to power generation – Assaroe Lake, Erne_120 and Erne Estuary (the latter two were made up of two HMWBs in WFD Cycle 1- River Erne (Belleek to the dam) and Erne (downstream of Cathleen's Fall), respectively). Ecological potential was classified as unassigned for Assaroe Lake and Moderate for Erne_120 and Erne Estuary in 2010-2015.

- There is one artificial water body in the catchment – the Shannon-Erne Waterway.

3 Significant issues in *At Risk* water bodies

- Excess phosphorus is the dominant issue in rivers and lakes in the Erne Catchment. Excess ammonium is also a concern in a limited number of water bodies. Hydromorphological issues are noted for several rivers and lakes. The impact is poor habitat quality due to high levels of fine sediment and in-stream obstructions.
- Other significant issues which are of concern but for a limited number of water bodies include: invasive species (Zebra mussels) in several lakes and MCPA in one river water body.
- Fish Status and impairments to migration is the dominant issue in terms of TraC water bodies in this catchment.

4 Significant pressures

4.1 Water bodies

- Where water bodies have been classed as *At Risk*, due to water quality or survey data, significant pressures have been identified.
- Figure 11 shows a breakdown of the number of *At Risk* water bodies in each significant pressure category.

4.1.1 Rivers, lakes, transitional and coastal (TraC)

- Significant pressures have been identified by the initial characterisation process in 100 water bodies (60 rivers, 39 lakes and one transitional), 42 of which (31 rivers and 11 lakes) have multiple pressures. The significant pressures will be refined as further characterisation is carried out.
- Hydromorphology is the significant pressure in the single *At Risk* TraC water body in the catchment with a dam believed to be impairing the fish potential or Status in the Erne Estuary.
- The significant pressure affecting the greatest number of water bodies is agriculture, followed by urban waste water, other, diffuse urban, domestic waste water, hydromorphological pressures, forestry, industry, and peat drainage and extraction (Figure 11).

4.1.2 Groundwater

There are no groundwater bodies *At Risk.*

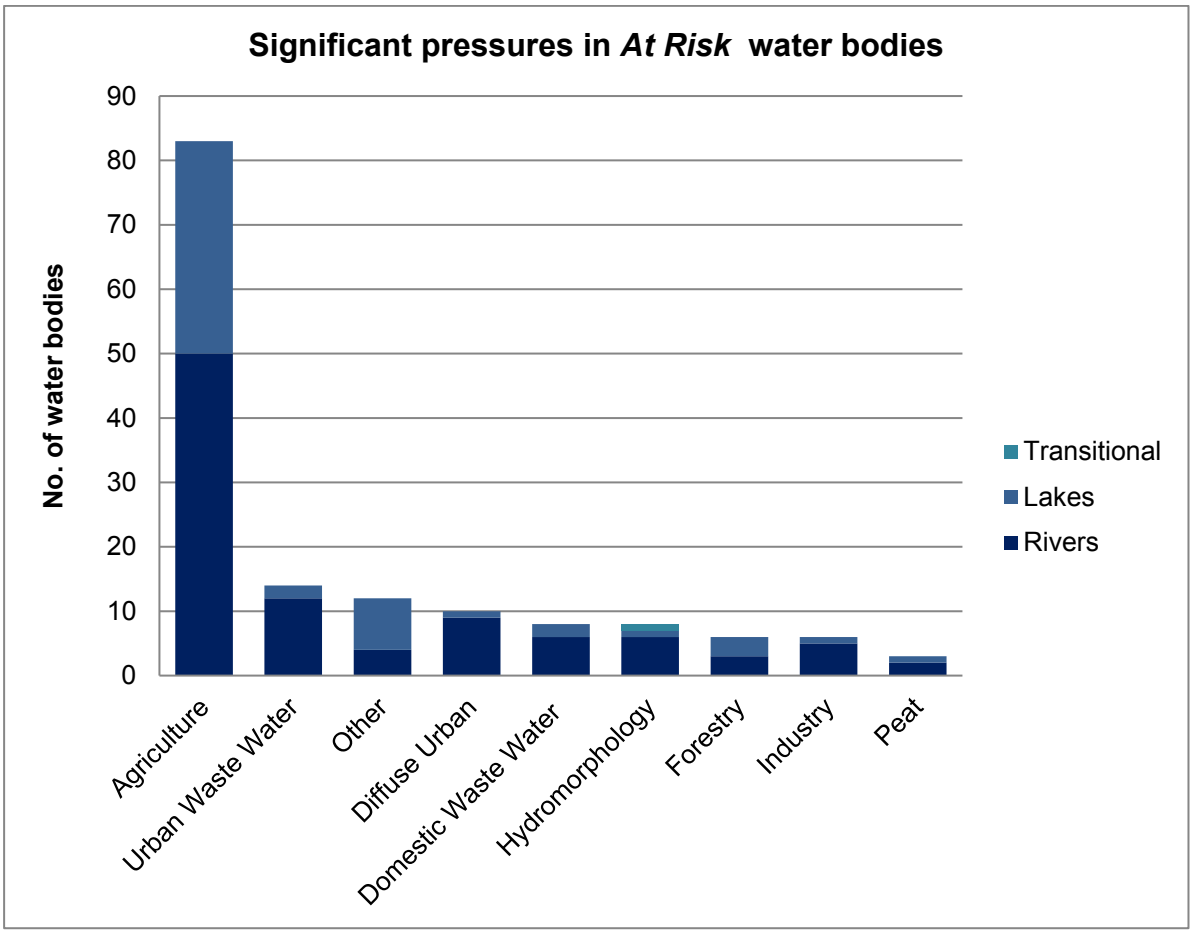


Figure 11. Significant pressures impacting on *At Risk* water bodies

4.2 Pressure types

4.2.1 Agriculture

- Agriculture is a significant pressure in 50 river and 33 lake water bodies; the affected water bodies are shown in Figure 12. The main impacts from agriculture include phosphorus loss to surface waters from, for example, direct discharges; or runoff from yards, roadways or other compacted surfaces, or runoff from poorly draining soils. Sediment can also be a problem from land drainage works, bank erosion from animal access or stream crossings. The pollution impact potential map showing areas of relative risk for phosphorus loss from agriculture to surface water is given in Appendix 6.

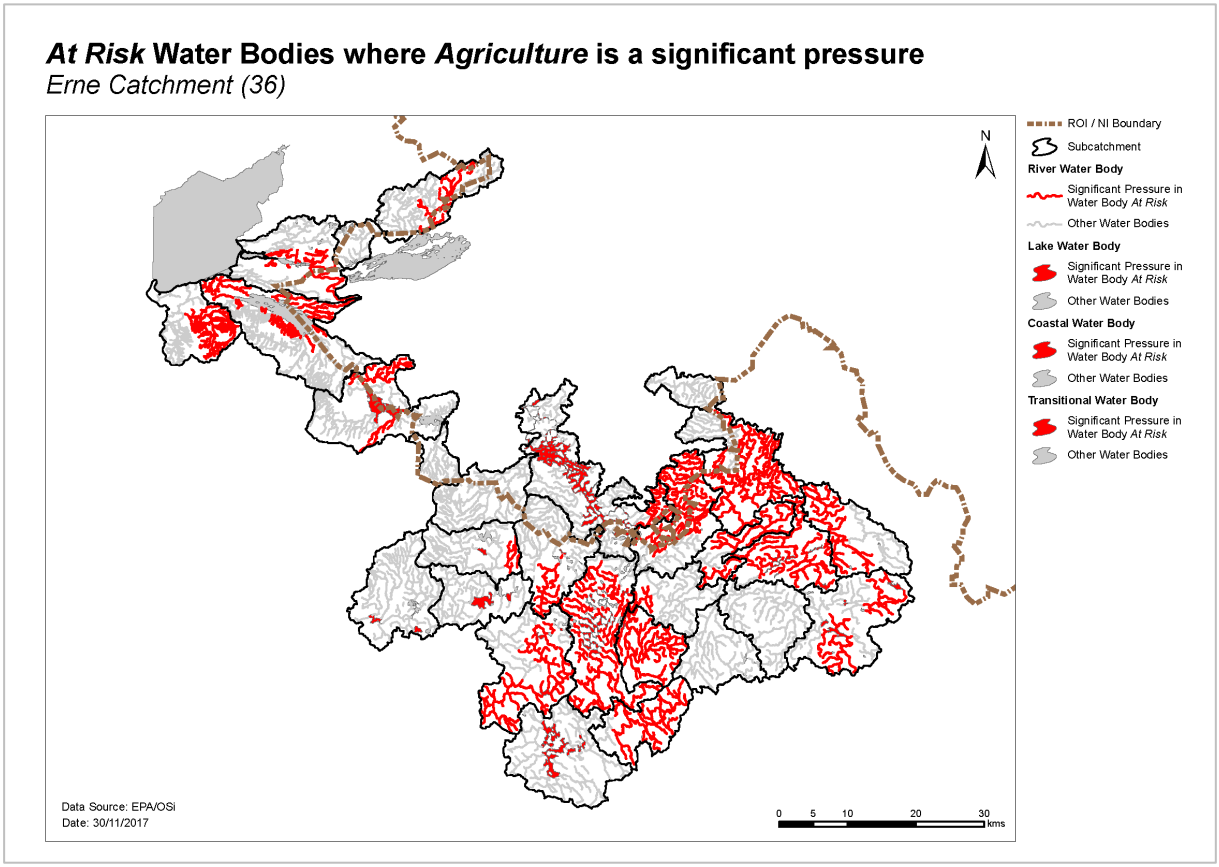


Figure 12. Water bodies that are *At Risk* and are impacted by agricultural activities

4.2.2 Urban waste water treatment plants

- Urban Waste Water Treatment Plants (WWTPs) and agglomeration networks have been identified as a significant pressure in 14 *At Risk* water bodies; details are given in Table 6 and Figure 13. Upgrade works at Cootehill WWTP, which impacts Dromore_070, are scheduled to be completed by 2024, while works on the Bundoran agglomeration network, which impacts Bradoge_020, and Ballinagh WWTP, which impacts Erne_070, are scheduled to be completed in 2018.

Table 6. Waste Water Treatment Plants and agglomerations identified as Significant Pressures in *At Risk* water bodies and expected completion dates for associated upgrade works, where applicable.

Facility name	Facility Type	Water Body	10-15 Ecological Status	Expected Completion Date
Ballybay D0207	2,001 to 10,000 p.e.	Dromore_040	Poor	*NA* [1]
Cootehill D0082	2,001 to 10,000 p.e.	Dromore_070	Poor	2024
Clones D0206	2,001 to 10,000 p.e.	Finn (Monaghan)_040	Moderate	*NA*[1]
Clones D0206	2,001 to 10,000 p.e.	Finn (Monaghan)_050	Poor	*NA*[1]
Shercock D0495	500 to 1,000 p.e.	Sillan	Poor	*NA*[1]
Shercock D0495	500 to 1,000 p.e.	Annalee_020	Poor	*NA*[1]
Smithborough D0464	500 to 1,000 p.e.	Finn (Monaghan)_020	Moderate	*NA*[1]
Newbliss D0458	500 to 1,000 p.e.	Finn (Monaghan)_030	Moderate	*NA*[1]
Threemilehouse A0020	< 500 p.e.	Magherarney_010	Poor	*NA*[1]
Killeshandra D0499	500 to 1,000 p.e.	Cullies_050	Poor	*NA*[1]
Ballinagh D0501	1,001 to 2,000 p.e.	Erne_070	Moderate	2018
Blacklion D0498	500 to 1,000p.e.	Lower Lough Macnean	Bad	*NA*[1]
Pettigo A0461	< 500 p.e.	Termon River (Pettigoe)	*Unassigned* [2]	*NA*[1]
Bundoran D0130	2,001 to 10,000 p.e.	*Bradoge_020* [3]	Moderate	2018

4.2.3 Other significant pressures

Unknown Anthropogenic

- Three *At Risk* river water bodies and two lake water bodies have unknown pressures. These are Cross border water bodies with no readily identifiable, significant pressure Figure 14.

Invasive Species

- There are six *At Risk* surface water bodies impacted by Zebra mussels by Figure 15.

Abstraction

- One *At Risk* lake water body Corconnelly, being impacted by an abstraction, for a public drinking water supply.

[1] *Currently not specified in improvement plans.*

[2] *Ecological Status is not available for Termon River (Pettigoe), however, following discussions with Donegal County Council, this water body was deemed to be At Risk of not meeting its environmental objectives.*

[3] *The agglomeration network, rather than the WWTP, has been identified as a significant pressure impacting Bradoge_020.*

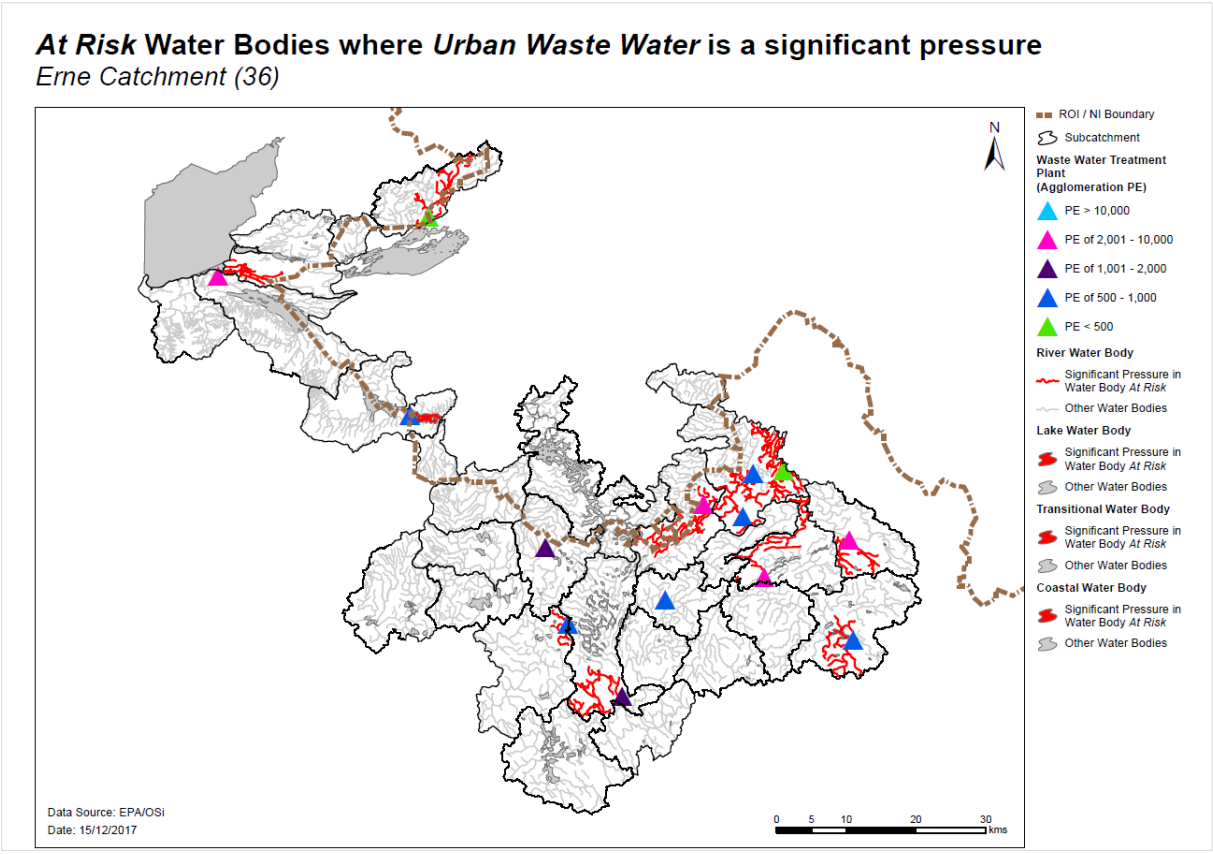


Figure 13. Water bodies that are *At Risk* and are impacted by Urban waste water

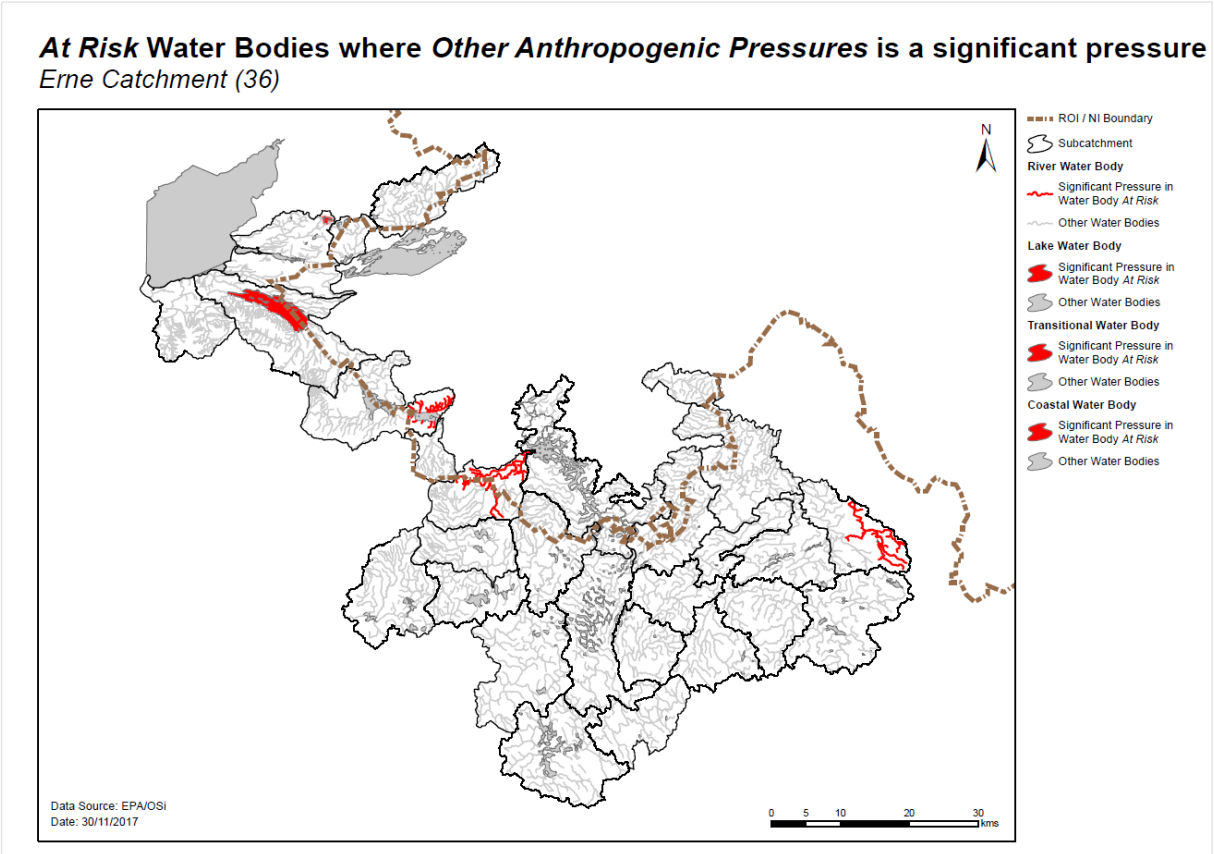


Figure 14. Water bodies that are *At Risk* and are impacted by other *Unknown Anthropogenic impacts*

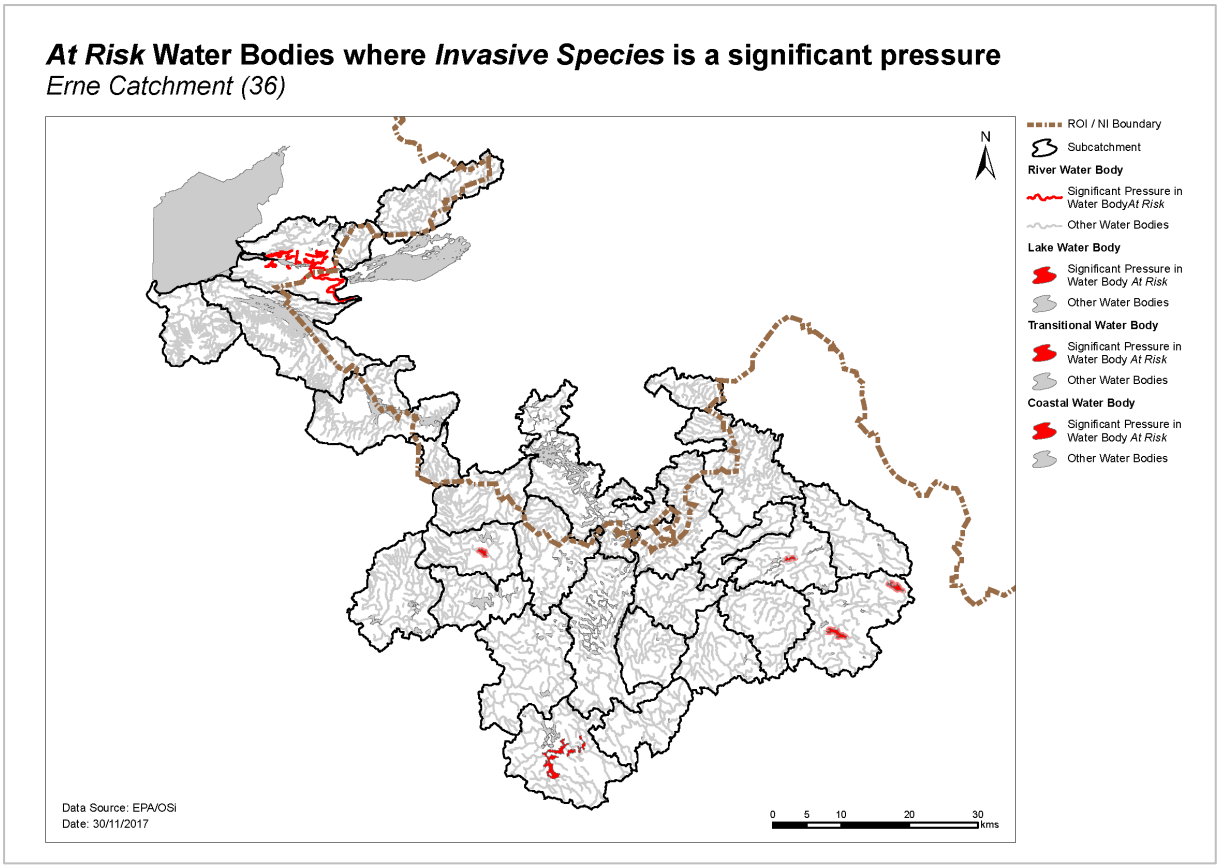


Figure 15. Water bodies that are *At Risk* and are impacted by Invasive Species

4.2.4 Diffuse urban

- Diffuse urban pressures, caused by misconnections, leaking sewers and runoff from paved and unpaved areas has been identified as a significant pressure in one lake and nine river water bodies in the Erne catchment. This pressure exists downstream of towns including Clones, Cavan and Ballybay. Elevated concentrations of phosphate and ammonia are the significant issues. The map showing water bodies which are *At Risk* where diffuse urban is a significant pressure is given Figure 16.

4.2.5 Domestic Waste water

- Domestic waste water has been identified as a significant pressure contributing nutrients in two lake and six river water bodies. Figure 17 shows water bodies *At Risk* from domestic waste water.

4.2.6 Hydromorphology

- River water bodies (6) within the Erne, Woodford [Cavan] and Cullies subcatchments, and a lake water body within the Blackwater [Newtowngore] subcatchment are subject to extensive modification. Drainage schemes are present which have led to altered flow and high levels of fine sediment. A weir is located at the outlet of Lough Bawn, which may be impacting on hydrological conditions within the downstream river water body of the Annalee subcatchment. The hydromorphological impacts in the Erne are also believed to be impacting on the fish status or potential in the Erne Estuary see Figure 18.

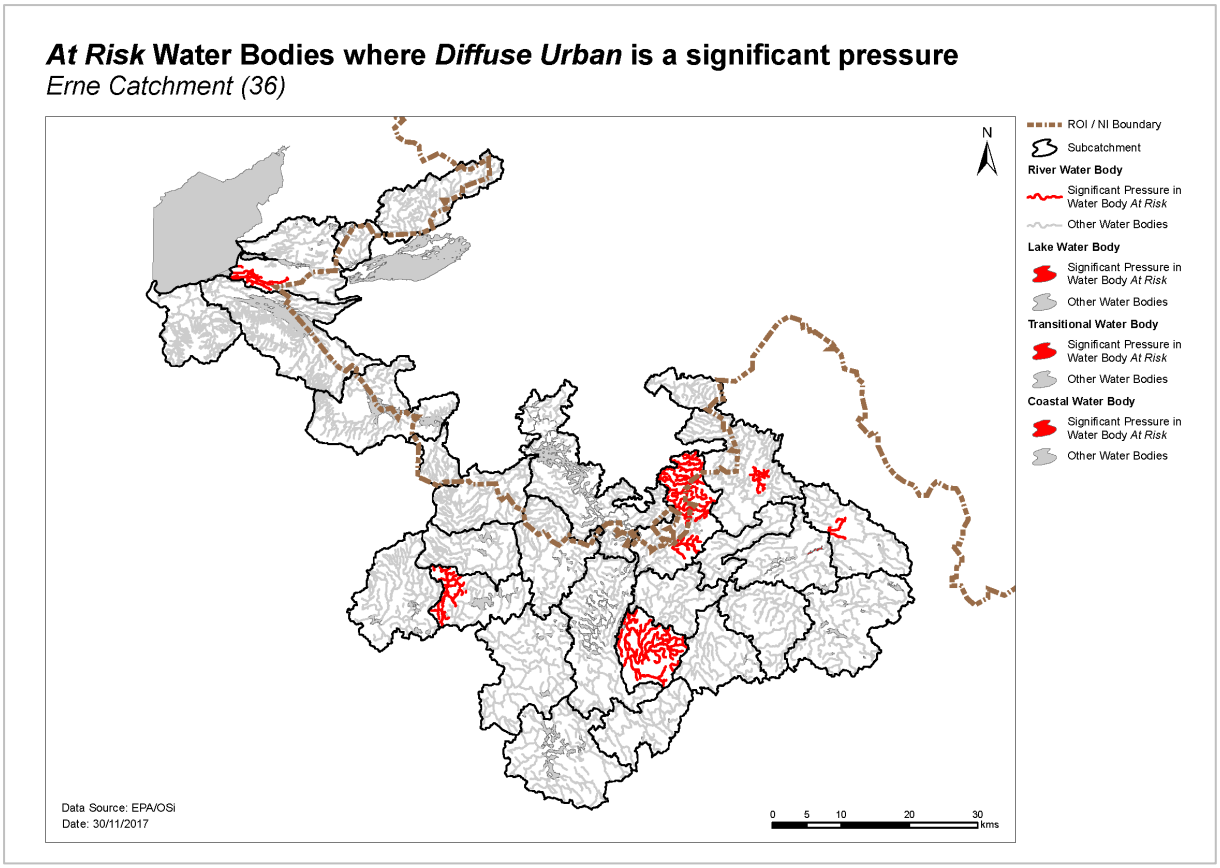


Figure 16. Water bodies that are *At Risk* and are impacted by Diffuse Urban

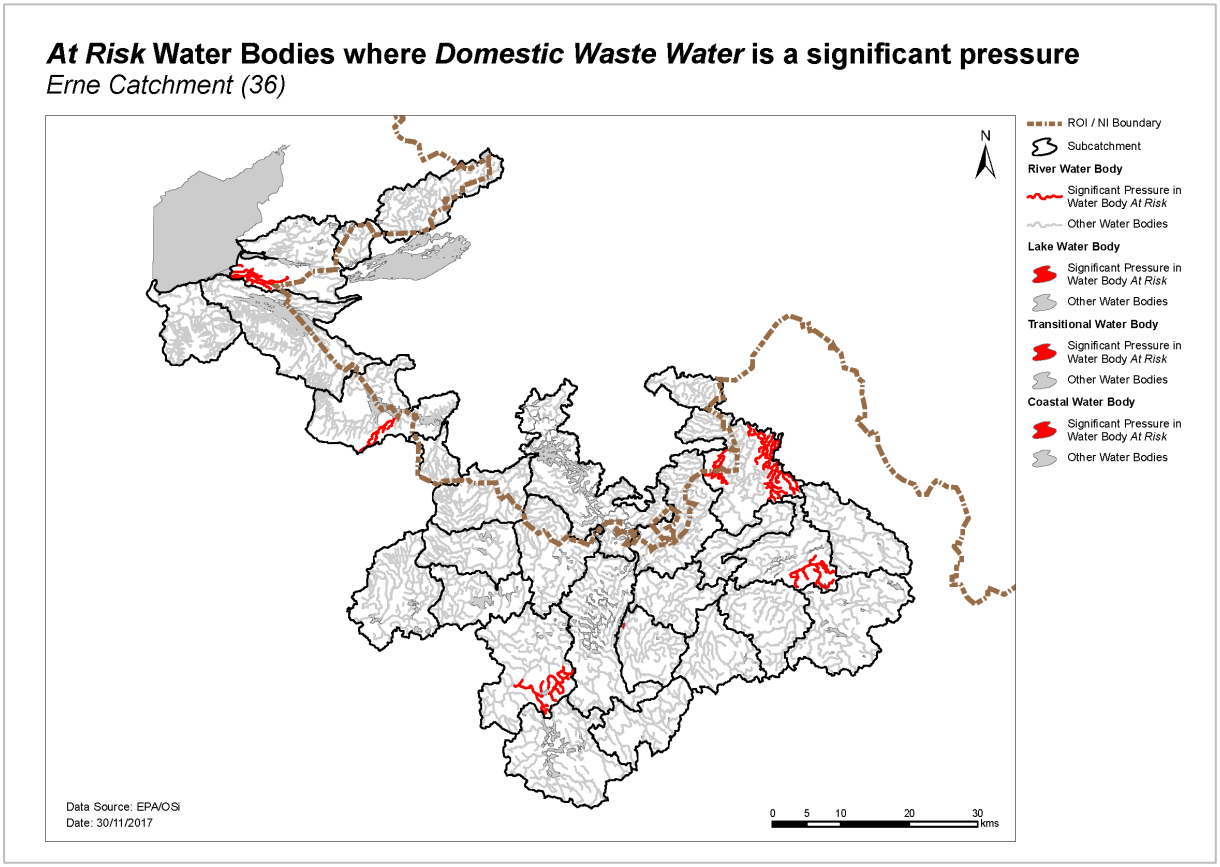


Figure 17. Water bodies that are *At Risk* and are impacted by Domestic Waste water

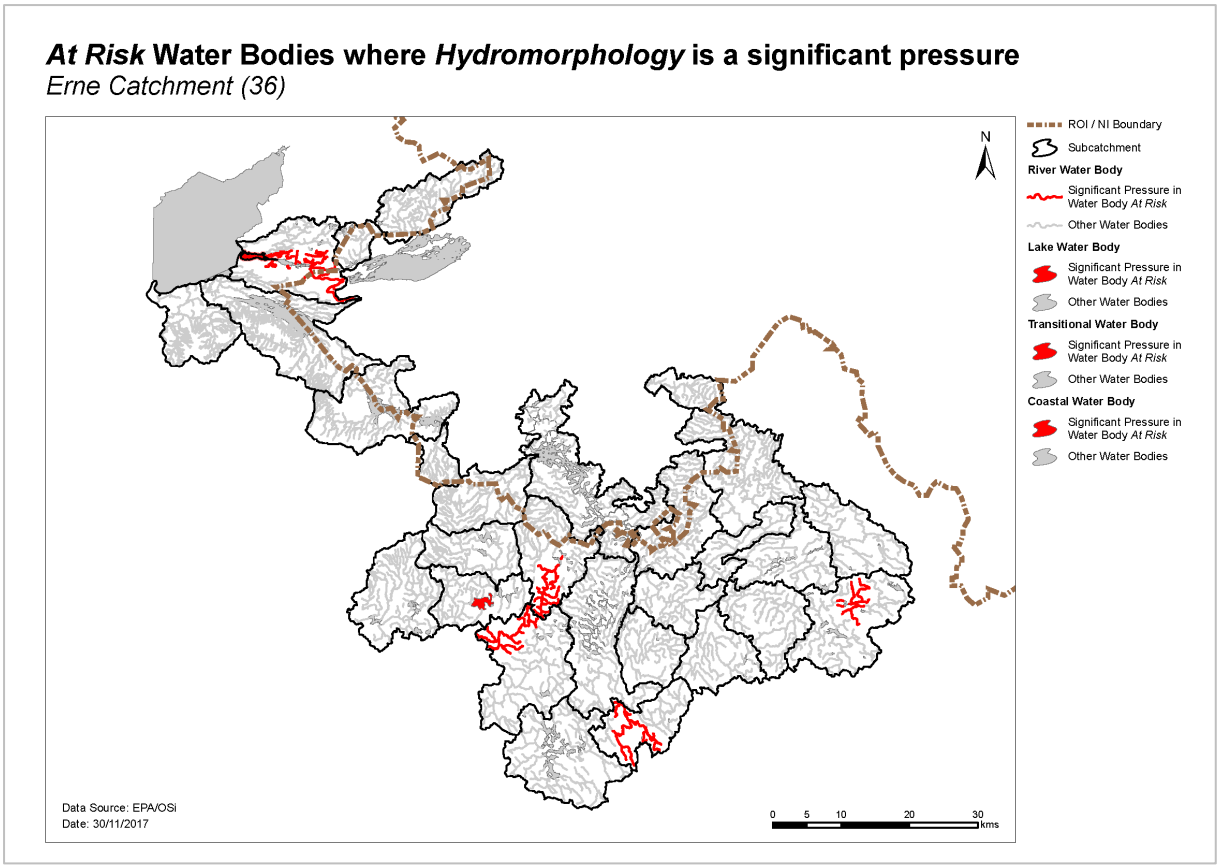


Figure 18. Water bodies that are *At Risk* and are impacted by Hydromorphology

4.2.7 Forestry

- Forestry has been identified as a significant pressure in three river and three lake water bodies, with nutrients and sediment identified as the associated significant issue. Subcatchments Cullies_SC_010 and Drowes_SC_010 have a large proportion of forestry, and are noted to have relatively intensive activities taking place, such as clearfelling. Figure 19 shows water bodies that are *At Risk* from forestry.

4.2.8 Industry

- Industry has been identified as a significant pressure in one lake and five river water bodies. Nutrient and organic impacts from industrial facilities, are the main issues of concern. Figure 20 shows water bodies *At Risk* from Industry.

4.2.9 Extractive Industry

Peat

- Peat workings incorporating drainage and extraction have been identified as a significant pressure in one lake and two river water bodies, with nutrients and sediment identified as the significant issue. Peat cutting as well as large areas of peat is driving these issues. Figure 21 shows water bodies that are *At Risk* from Peat.

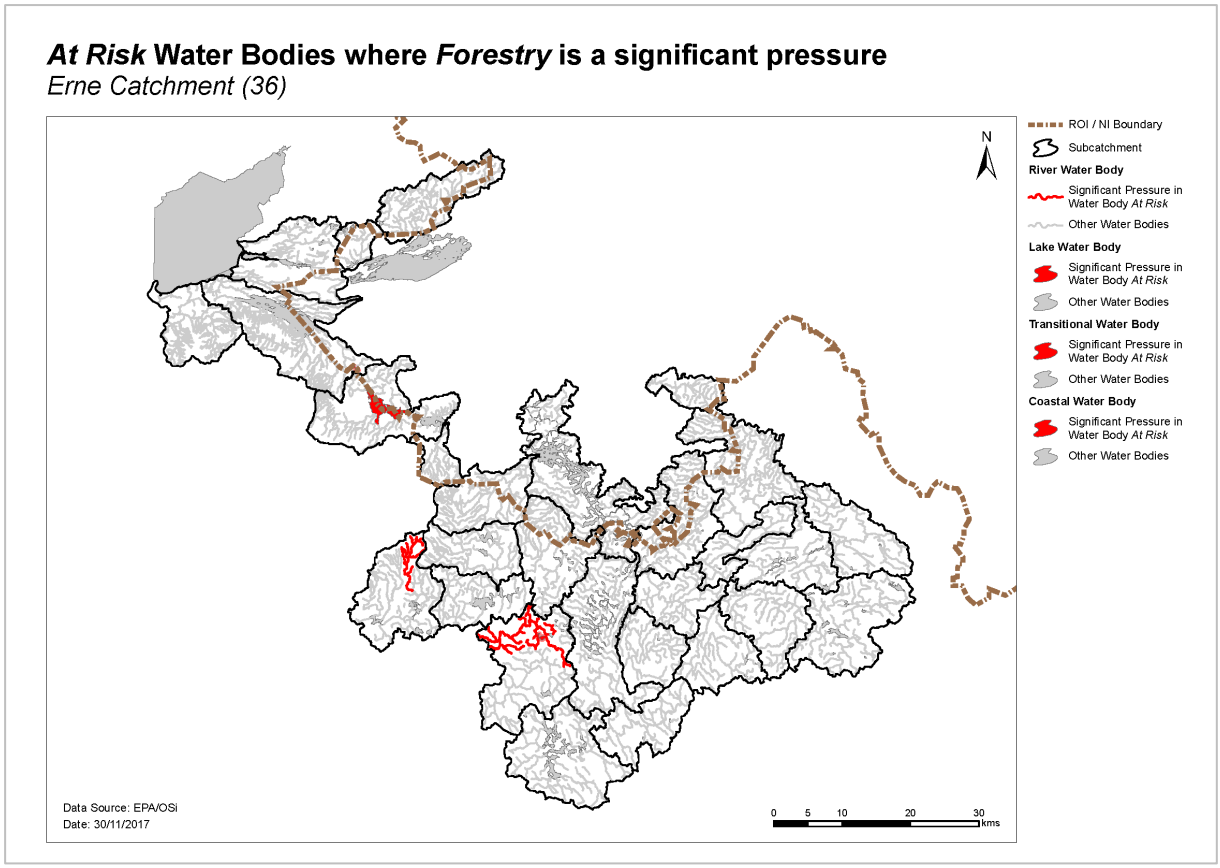


Figure 19. Water bodies that are *At Risk* and are impacted by Forestry

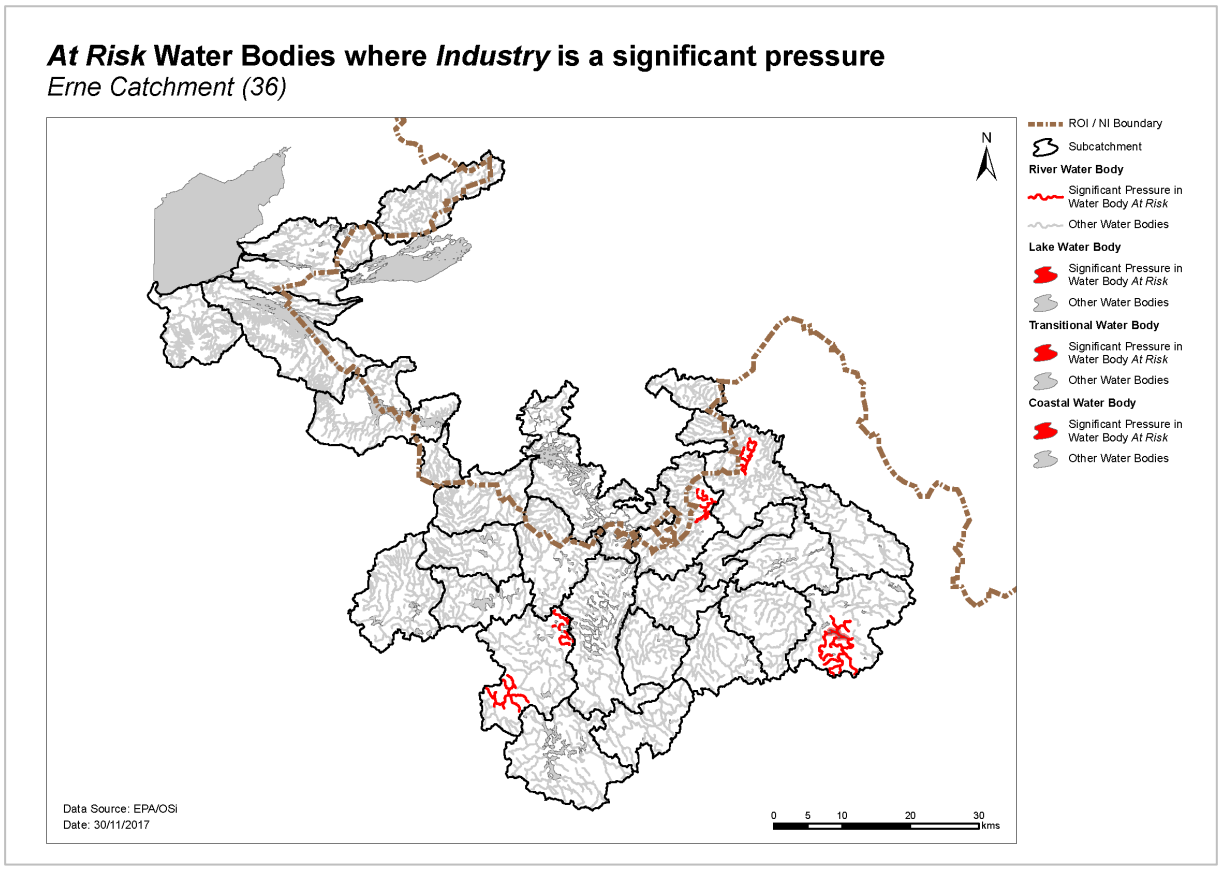


Figure 20. Water bodies that are *At Risk* and are impacted by Industry

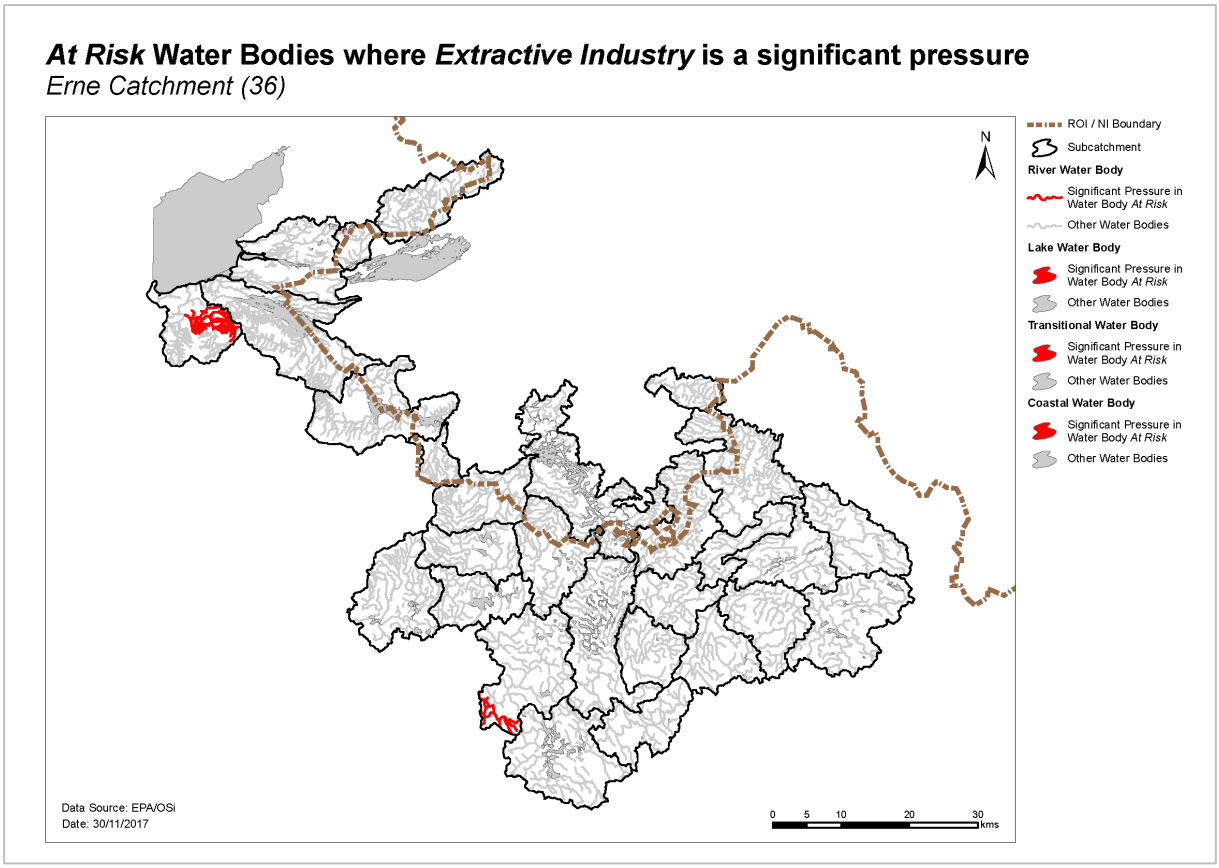


Figure 21. Water bodies that are *At Risk* and are impacted by peat drainage and extraction

5 Load reduction assessment

5.1 River water body load reductions

- Phosphorus is the main parameter influencing water quality in rivers in the catchment.
- For water bodies where phosphorus monitoring data are available, the reduction in P load that would be required to bring the mean concentration back to the EQS of 0.035 mg/l as P, can be estimated using a simple method based on the average 2013 to 2015 concentration and the average flow, or the estimated 30th percentile flow (Q30) where flow data are not available. The relative load reductions are ranked on a national scale from Very High (>1 kg/Ha/y), to High (0.5-1 kg/Ha/y), to Medium (0.25-0.5 kg/Ha/y) to Low (<0.25 kg/Ha/y). Note that P load reductions may also be required in other water bodies, but without chemistry monitoring data a quantitative estimate cannot be calculated.
- Of the water bodies in the Erne catchment with chemistry monitoring data, 17 had excessive P concentrations and required a load reduction (Table 9). The largest reductions will be needed in the Cavan_010 and Finn (Monaghan)_040 water bodies, followed by Erne_070, Cullies_050, Ballinagh_010 and Dromore_030. The load reductions needed elsewhere is typically low.

Table 7. Relative load reductions required in monitored water bodies that are *At Risk*.

WATER BODY	P Load Reduction Required
CAVAN_010	V. High
FINN (MONAGHAN)_040	V. High
ERNE_070	High
CULLIES_050	High
BALLINAGH_010	High
DROMORE_030	High
FINN (MONAGHAN)_020	Med
CULLIES_040	Med
ERNE_040	Med
KNAPPAGH_010	Med
ERNE_080	Low
BUNNOE_010	Low
ERNE_020	Low
DROMORE_040	Low
ERNE_010	Low
MAGHERY_010	Low
MAGHERY_020	Low

5.2 TraC load reductions

Some 18 estuaries in Ireland have been monitored on a continual basis since 1990 as part of Ireland's commitment under the Convention for the Protection of the Marine Environment of the North-East Atlantic (the Ospar Convention). This has shown that generally over the long term, nutrients have decreased but further reduction will be required in many cases to support Good Ecological Status. However, many estuaries have not been monitored to the same degree, and where monitoring data in insufficient, an ongoing programme of modelling has been undertaken to estimate potential nutrient load removal from contributing sub-catchments.

Different estuaries may require reductions in different nutrients. Further modelling work is required to determine precisely what load reductions are required, but in the interim, further monitoring will be carried out to assess the improvements resulting from various planned measures, and to confirm the nature of the issues. Estuaries within the catchment are not nutrient limited and therefore do not require load reductions.

As part of the Irelands commitment to the Ospar Convention, nutrient flux or load monitoring has been carried out on the Erne Estuary since 1990 (Figure 21a and 21b). Further analysis of these nutrient load trends is available at http://dx.doi.org/10.3318/BIOE.2016.23.

Figure 21a – Total Nitrogen Load (Tonnes/year) 1990-2015

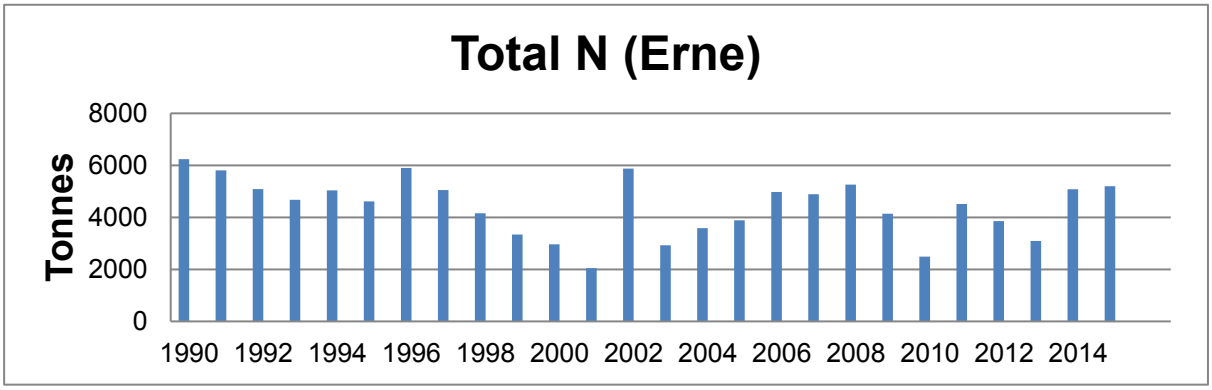
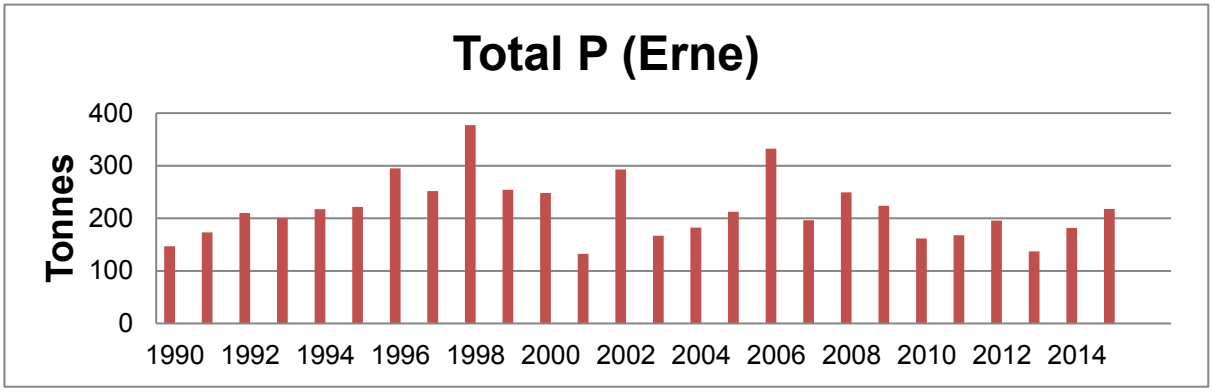


Figure 21b – Total Phosphorus Load (Tonnes/year) 1990-2015



6 Further characterisation and local catchment assessments

- Further characterisation through local catchment assessments is needed in 100 of the water bodies *At Risk* to refine the understanding of the significant pressures at the site/field scale so that specific and targeted measures can be identified (Table 8).
- In addition, further characterisation through local catchment assessments is needed in 114 of the water bodies in *Review* to refine the understanding of the significant pressures at the site/field scale so that, if necessary, specific and targeted measures can be identified (Table 8).

Table 8. Local Catchment Assessment Allocation for *At Risk* and *Review* River and Lake water bodies in the Catchment.

Risk	IA 1	IA 2	IA 3	IA 4	IA 5	IA 6	IA 7	IA 8	IA 9	Total
At Risk	60	4	3	2	4	10	34	2	25	144
Review	48	9	57		3		3		16	135
Note water bodies may have multiple categories of Local Catchment Assessments										

7 Catchment summary

- Of the 129 river water bodies in this catchment, 60 are *At Risk* of not meeting their WFD objective.

- There are 39 of the 132 lake water bodies in this catchment *At Risk* of not meeting their WFD objective.
- Two of the *At Risk* water bodies are High Ecological Status objective water bodies that are not meeting their objectives.
- One of the five transitional and coastal water bodies, Erne Estuary, is *At Risk* due to Moderate ecological status. The metric driving Moderate ecological status is fish status. Therefore, excess nutrients in the river and lake water bodies are not impacting water quality in the Erne Estuary.
- The significant issue in the river and lake water bodies is nutrients and the significant pressure is predominantly diffuse agriculture, followed by urban waste water treatment plants and agglomerations.

8 Areas for Action

The characterisation outcomes described above have highlighted that there is significant work to do in the catchment to protect and restore water quality, and meet the objectives of the WFD. During the development of the draft river basin management plan it became apparent that there would be a need to prioritise areas for collective action so that the best return on investment could be achieved. 190 Areas for action have been selected nationally in a process as described below. There are 11 areas for action in the Erne catchment.

8.1 Process of Selection

Following the publication of the draft river basin management plan in early 2017, the EPA and the Local Authority Waters and Communities Office (LAWCO) jointly led a collaborative regional workshop process to determine where, from a technical and scientific perspective, actions should be prioritised in the second cycle. The prioritisation process was based on the priorities in the draft river basin management plan, the evidence from the characterisation process, and the expertise, data and knowledge of public body staff with responsibilities for water and the different pressure types. The recommended areas for action selected during the workshops were then agreed by the Water and Environmental Regional Committees.

The recommended areas for action are an initial list of areas where action will be carried out in the second cycle. All water bodies that are *At Risk* still however, need to be addressed. As issues are resolved, areas for action will be removed from the list and new areas will be added. If additional monitoring shows that new issues have arisen, new areas may become a priority and may need to be added to the work programme.

The initial list of areas for action is not therefore considered as a closed or finite list; it simply represents the initial areas where work will be carried out during the second WFD planning cycle.

8.2 Outcomes of process

The outcomes for the Erne catchment are summarised below.

- Eleven recommended areas for actions (Table 9, Figure 22) were selected.
- These are the Maghery, Duff, Erne, Avaghlon, Cullies, Summerhill Kilroosky, Lough Melvin and Drowse, Templeport, Roo, Yellow (Ballinamore) and Annalee.
- These include 21 *At Risk* and 12 *Review* river and lake water bodies.

- Six groundwater bodies, that are *At Risk* or *Review* due to groundwater contribution of nutrients to surface water bodies, intersect with eight of the recommended areas for action, see Table 10. Actions taken to improve surface water will need to take account of the groundwater contribution to surface water.

A remaining one hundred and eighty-one (181) *At Risk* and *Review* surface water bodies were not included in the recommended areas for action for the second cycle. The distribution of these is presented in Figure 23. These include:

- sixty-four river water bodies, 44 *At Risk* and 20 *Review,*
- one hundred and fourteen lake water bodies, 34 *At Risk* and 80 *Review,* and
- two transitional water bodies and one coastal water body, one *At Risk* and two *Review.*

Table 9. Recommended Areas for Action in the Erne Catchment

Recommended area for action	Number of water bodies	SCs	Local authority	Reason for Selection
Maghery	2	36_17	Monaghan	• One deteriorated river water body. • Starting in the headwaters. • Multiple pressures which can be investigated at the same time. • A mixture of possible quick win and longer term challenge.
Duff	2	36_28	Leitrim Sligo	• Two deteriorated High Ecological Status objective water bodies that deteriorated recently to Good in the 2013-2015 monitoring cycle. • Starting in the headwaters. • Multiple pressures which can be investigated at the same time. • Possibility of a quick win.
Erne	7	36_8 36_21	Cavan	• Two deteriorated water bodies both of which have recently dropped in status to Poor in the 2013-2015 monitoring cycle. • Work planned by Cavan Co. Co. and potential to build on findings. • Starting in the headwaters. • Multiple pressures which can be investigated at the same time. • Two unassigned lake water bodies in the upper Erne system to be included to determine water quality.
Avaghlon	2	36_10	Monaghan	• Build on existing work by County Council who have a good understanding of the significant pressures.
Cullies	2	36_19	Cavan	• One deteriorated water body which recently dropped in status to Poor in the 2013-2015 monitoring cycle. • Starting at the headwaters. • Multiple pressures which can be investigated at the same time.

				• Build on work undertaken by County Council including Septic tank awareness programme. • May link to Source protection study with raw water monitoring on going.

Table 9 cont'd. Recommended Areas for Action in the Erne Catchment

Recommended area for action	Number of water bodies	SCs	Local authority	Reason for Selection
Summerhill Kilroosky	4	36_14	Monaghan NIEA	• One deteriorated lake water body. • Three unassigned lake water bodies in the Kilroosky Special Area of Conservation. • Monaghan Co. Co. Heritage officer working to source funds to look at water pollution in this cluster of lakes. • NIEA undertaking work on northern side of border, Cross Border Partnership on-going.
Lough Melvin and Drowse	9	36_20	Leitrim NIEA	• One Deteriorated water body, Drowse_010, with a Protected Area objective that is not being met. This water body recently dropped in status to Moderate in the 2013-2015 monitoring cycle. • Lough Melvin is also not meeting its Protected Area objective. • Previous catchment management plan in this area which can be built on and may inform and focus investigation. • Six unassigned river water bodies that flow into Lough Melvin are included to determine the respective water quality which may be impacting on the lake. • Community engagement possibilities in the area. • Long term challenge requiring cross agency approach. • Cross Border Partnership required.
Templeport	2	36_6	Cavan	• Build on recent action by Cavan Co. Co. relating to a direct discharge to Templeport Lake Stream. • Bunerky Lake included as it has similar pressures to the river water body. • The two water bodies included in the recommended action area are the only water bodies that are less than Good in this subcatchment. • Improvements in these water bodies may protect the current High status in the Blackwater(Newtowngor)_020 river water body.
Roo	1	36_24	Cavan	• One Deteriorated water body which was previously at High status. • County council familiar with pressures in the area. • Little activity and significant pressure point could be easy to identify. • Possibility of Quick win
Yellow (Ballinamore)	1	36_15	Leitrim	• Water body was at Good status in the 10-12 monitoring cycle. • Single significant pressure identified. • Possibility of Quick win
Annalee	1	36_5	Cavan	• Single significant pressure identified in this water body. • This is the only water body in this subcatchment that is at less than Good status. • Fish status driving ecological status with all other determinands at Good.

Table 10. Groundwater bodies intersecting with surface water bodies in recommended areas for action

Groundwater bodies			Intersecting surface water bodies		Recommended Area for Action
Code	Name	Risk	Code	Name	
		Review	IE_NW_36A021400	Annalee_100	Annalee
		Review	IE_NW_36A070600	Avaghon Lake Stream_010	Avaghlon
		Review	IE_NW_36_638	Avaghon	
		Review	IE_NW_36C030300	Cullies_010	Cullies
IE_NW_G_061	Cavan	Review	IE_NW_36C030600	Cullies_030	
IE_NW_G_043	Glenaniff	Review	IE_NW_35D050250	Duff_020	Duff
IE_NW_G_073	Tievebaun	Review	IE_NW_35D050100	Duff_010	
IEGBNI_NW_G_044	Rossinver	Review	IE_NW_35D050250	Duff_020	
		Review	IE_NW_36E010100	Erne_010	Erne
		Review	IE_NW_36E010200	Erne_020	
		Review	IE_NW_36E010400	Erne_030	
		Review	IE_NW_36E010500	Erne_040	
		Review	IE_NW_36E010700	Erne_050	
		Review	IE_NW_36_316	Graddum	
IE_NW_G_061	Cavan	Review	IE_NW_36_448	Kill	
		Review	IE_NW_35B010400	Ballagh_010	Lough Melvin and Drowse
IE_NW_G_043	Glenaniff	Review	IE_NW_35S070870	Sragarve_010	
		Review	IE_NW_35B010400	Ballagh_010	
		Review	IE_NW_35K380940	Kinlough 35_010	
		Review	IE_NW_35S070870	Sragarve_010	
		Review	UKGBNI1NW353504075	County River (Carran West)	
		Review	UKGBNI1NW353504082	Drowes_010	
IEGBNI_NW_G_044	Rossinver	Review	IE_NW_35_160	Melvin	
IEGBNI_NW_G_063	Clones	Review	IE_NW_36M031200	Maghery_020	Maghery
IEGBNI_NW_G_030	Crom Castle	Review	IE_NW_36_301	Burdautiers	Summerhill Kilroosky
IEGBNI_NW_G_063	Clones	Review	IE_NW_36_669	Killrosky	

9 Environmental Objectives

The environmental objectives are the target status for each *At Risk* or *Review* water body and the date by which that status is expected to be achieved (Appendix 3). Where a water body is *Not at Risk* and is already at its target status, the environmental objective is deemed to have been met.

9.1 Surface Water

- Assuming resources are available and actions are taken in the recommended areas for action, of the 21 *At Risk* surface water bodies, it is predicted that 10 (48%) will improve by 2021 and eleven (52%) will achieve their objective by 2027.

- For the 12 *At Review* surface water bodies, the absence of information on these water bodies means that there is no scientific basis to quantify environmental objective dates, and therefore a 2027 date is set for these water bodies, see Table 11.

Table 11. Environmental objective dates for water bodies in the Areas for Action

Risk Category	No. of Water Bodies	No. of WBs for 2021 Improvement	No. of WBs for 2027 Status Improvement
Rivers			
At Risk	16	9	7
Review	7	0	7
Lakes			
At Risk	5	1	4
Review	5	0	5
Total	33	10	23

- Fifty-two surface water bodies have met their 2015 environmental objective. One of the 52 water bodies met their environmental objective for ecological status but failed to meet its protected area objectives.
- As action is not yet planned to be taken in the remaining 79 *At Risk* surface water bodies, a 2027 date is applied.
- For the 102 *At Review* surface water bodies, the absence of information on these water bodies means that there is no scientific basis to quantify an environmental objective date and therefore a 2027 date is applied, see Table 12.

Table 12. Environmental objectives dates in the *At Risk* and *Review* surface water bodies not included in Areas for Action

Risk Category	No. of Water Bodies	No. of WBs for 2021 Improvement	No. of WBs for 2027 Status Improvement
Rivers			
At Risk	44	0	44
Review	20	0	20
Lakes			
At Risk	34	0	34
Review	80	0	80
TraCs			
At Risk	1	0	1
Review	2	0	2
Total	181	0	181

9.2 Groundwater

- All 39 groundwater bodies in the catchment are Good status and, therefore, have met their environmental objectives

10 Acknowledgements

This Erne Catchment Assessment (Version 3) has been produced by the Catchment Science & Management Unit, EPA, with the assistance of the following:

- Cavan County Council
- Monaghan County Council.
- Leitrim County Council.
- Donegal County Council.
- Sligo County Council.
- Inland Fisheries Ireland.
- Local Authorities Waters & Communities Office.
- Irish Water.
- Northern Ireland Environment Agency.
- RPS Group.
- Ecological Monitoring & Assessment Unit, EPA.
- Hydrometric & Groundwater Section, EPA.
- Informatics Section, EPA.
- Laboratories, EPA.
- Office of Environmental Enforcement, EPA.
- DAFM Agriculture.
- DAFM Forest Service.
- Coillte.
- Teagasc.
- Health Service Executive.
- National Parks and Wildlife Service.
- Loughs Agency.
- National Federation of Group Water Schemes.
- Office of Public Works.

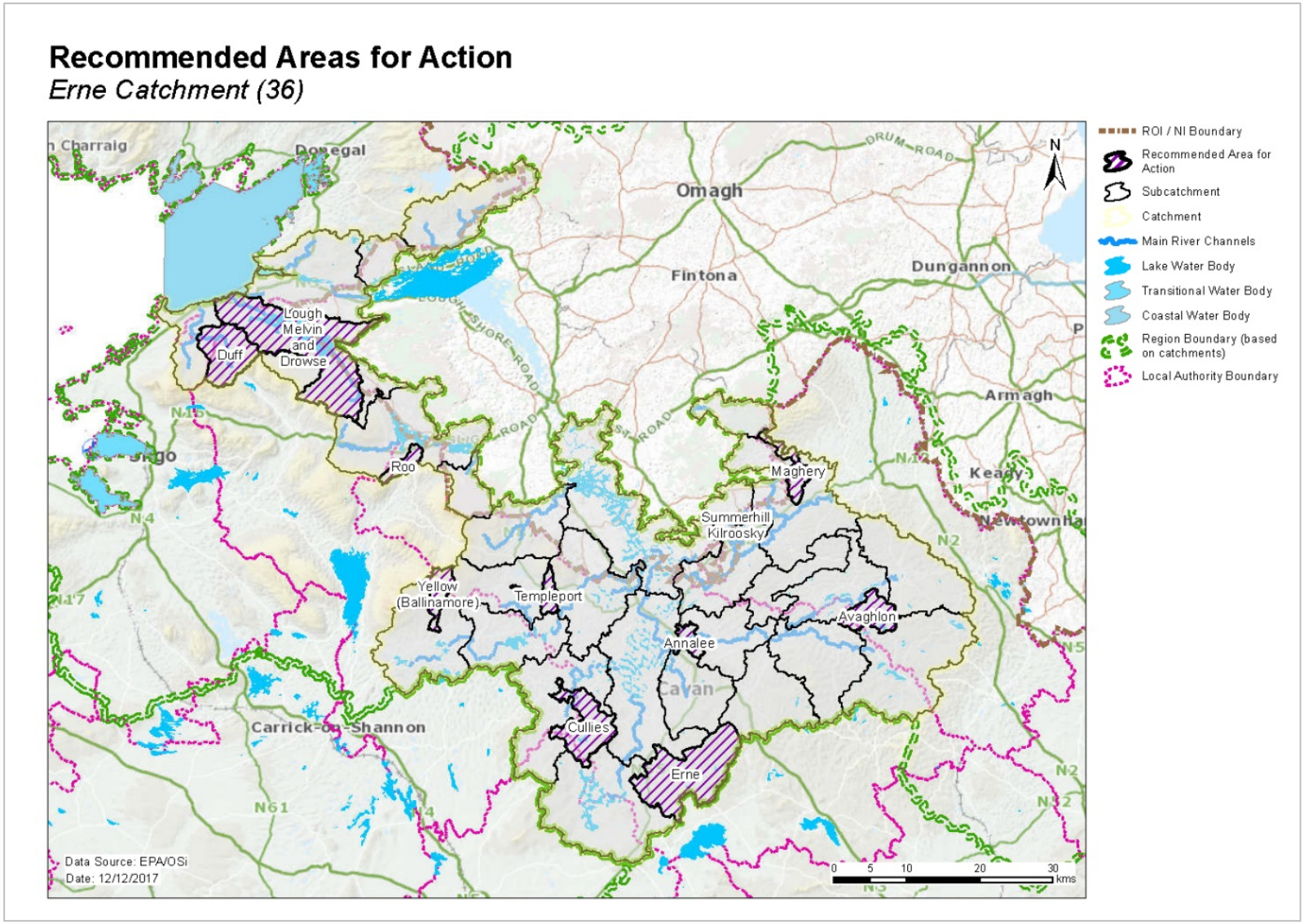


Figure 22. Location of Recommended Areas for Action in the Erne Catchment

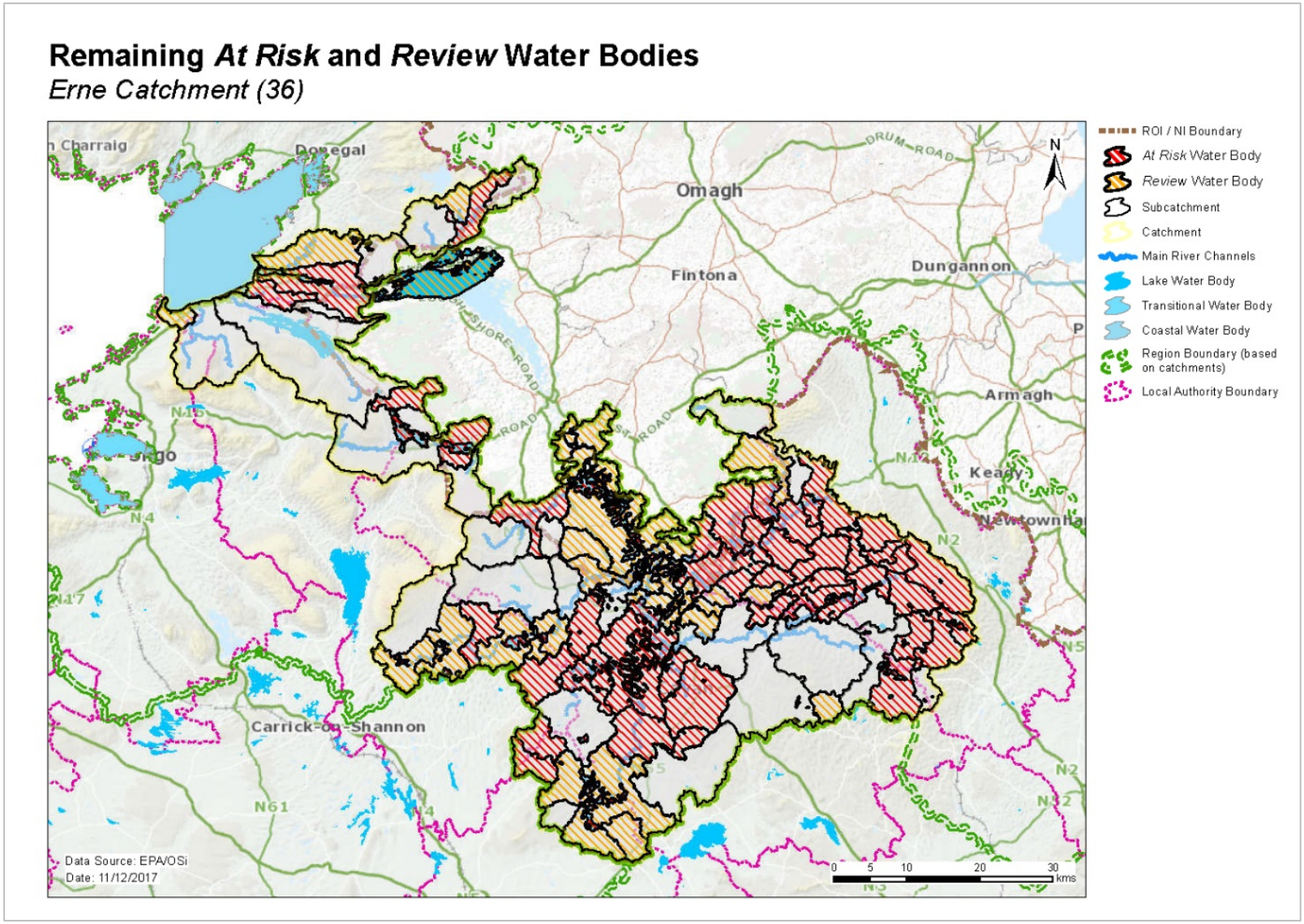


Figure 23. Location of *At Risk* and *Review* water bodies located outside Recommended Areas for Action in the Erne Catchment

Appendix 1 High ecological status objective water bodies

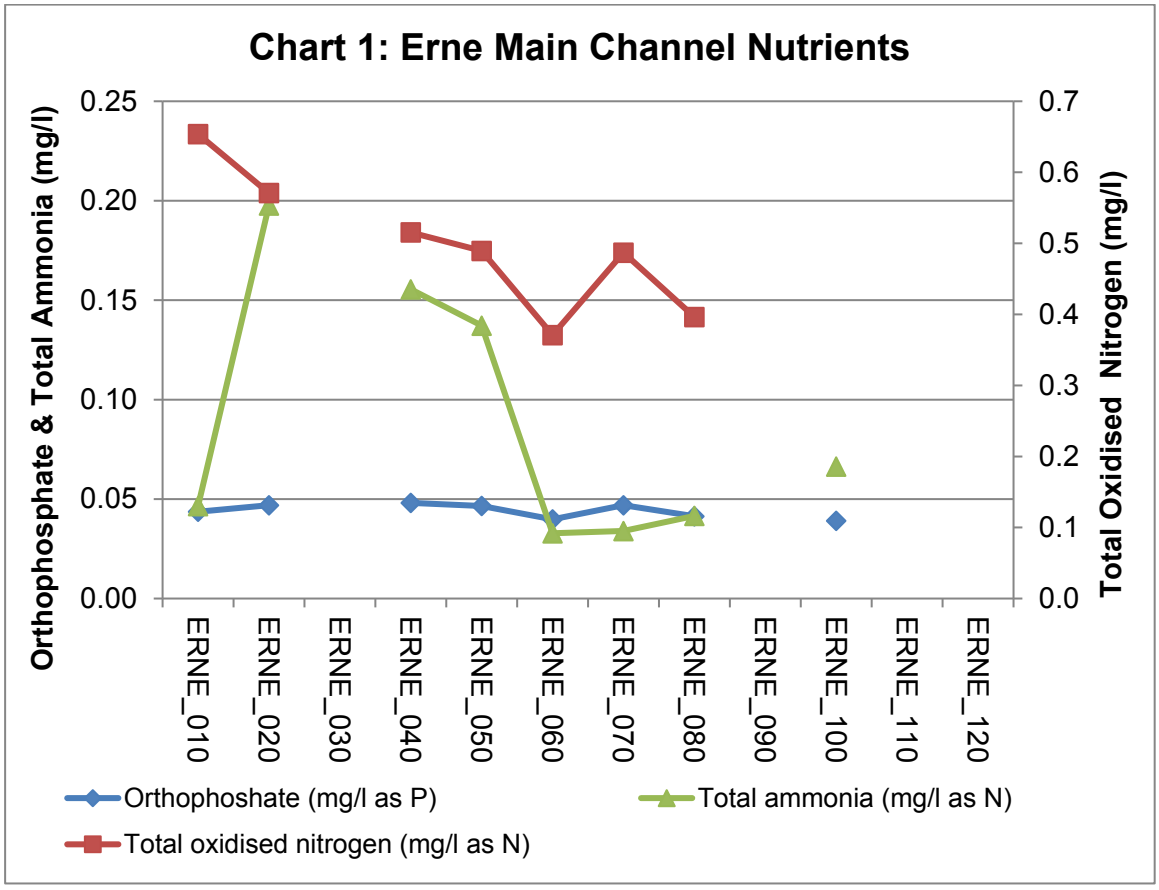
Water body/ Site	Type	Codes	2015 Status
WOODFORD (CAVAN)_020	River	IE_NW_36W010400	High
AGHACASHLAUN_010	River	IE_NW_36A030300	High
GLENANIFF_010	River	IE_NW_35G020200	High
SWANLINBAR_010	River	IE_NW_36S010100	High
DUFF_010	River	IE_NW_35D050100	Good
DUFF_020	River	IE_NW_35D050250	Good
BLACKWATER (NEWTOWNGORE)_010	River	IE_NW_36B040200	High

Appendix 2 Catchment Scale Nutrient concentrations and in-stream loads

The results of the in-stream water quality assessment for the Erne catchment are illustrated in Chart 1. Average orthophosphate concentrations along the main channel are high ranging from 0.039 to 0.048mg/l. The EQS (0.035mg/l) is exceeded at all monitoring points where data are available.

A large spike in average ammonia concentration (0.198mg/l) occurs at ERNE_020, downstream of which concentrations decrease, but remain above the EQS (0.065mg/l) as far as ERNE_050. Downstream of ERNE_050, ammonia is typically below the EQS. The mean concentration spike at ERNE_020 was heavily influenced by a comparative outlier in the dataset; a concentration of 1.96mg/l recorded in February 2014.

Total oxidised nitrogen (TON) concentrations are low (range: 0.37-0.65mg/l) along the main channel and decrease downstream of the headwaters.



The results of the nutrient loading trend assessment for the Erne channel are presented in Chart 3. Stream flow ranges from 0.4 to 35.6m^3/s from ERNE_010 to ERNE_120. Between ERNE_010 and ERNE_070, nutrient loads generally increase with increasing stream flow. A substantial increase in flow between ERNE_070 and ERNE_080 results in a large increase orthophosphate, TON and ammonia loads. The loading trends for ammonia in the headwater water bodies shows that the higher concentrations correspond to water bodies with lower flows.

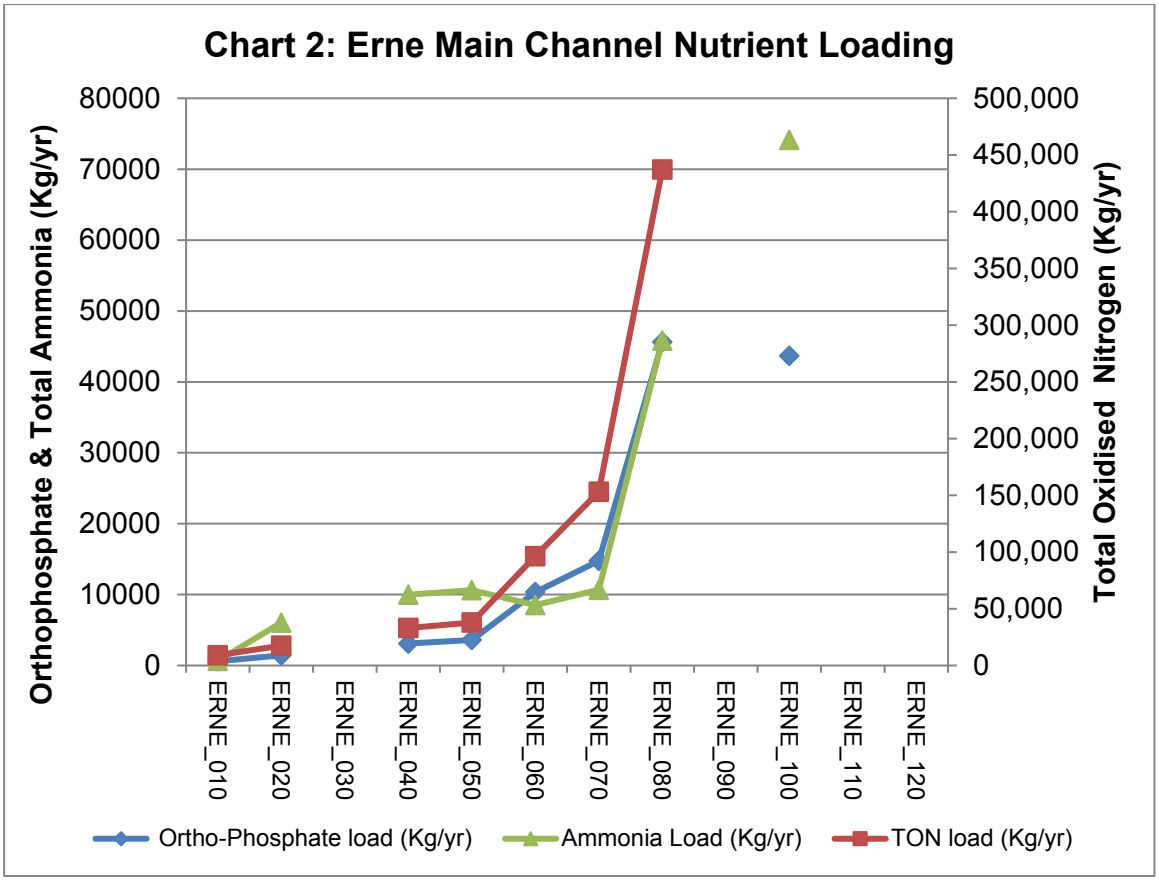


Chart 2: Erne Main Channel Nutrient Loading
Orthophosphate & Total Ammonia (Kg/yr)
Total Oxidised Nitrogen (Kg/yr)
80000
70000
60000
50000
40000
30000
20000
10000
0
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
ERNE_010
ERNE_020
ERNE_030
ERNE_040
ERNE_050
ERNE_060
ERNE_070
ERNE_080
ERNE_090
ERNE_100
ERNE_110
ERNE_120
Ortho-Phosphate load (Kg/yr)
Ammonia Load (Kg/yr)
TON load (Kg/yr)

Appendix 3 Summary information on *At Risk* and *Review* surface water bodies

Subcatchment code	Water body code	Water body name	Water body type	Risk	Ecological Status 07-09	Ecological Status 10-15	High Ecological Status Objective Water Body Y/N	Significant Pressures	Date to Meet Environmental Objective	Recommended Area for Action Name
36_3	IE_NW_36_409	Killynenagh	Lake	Review	Unassigned	Unassigned	N		2027	
36_3	IE_NW_36B050300	Bunnoe_010	River	At Risk	Good	Poor	N	Ag	2027	
36_3	IE_NW_36B050400	Bunnoe_020	River	At Risk	Moderate	Poor	N	Ag	2027	
36_3	IE_NW_36B050500	Bunnoe_030	River	Review	Unassigned	Good	N		2027	
36_3	IE_NW_36B050700	Bunnoe_040	River	At Risk	Good	Moderate	N	Ag	2027	
36_4	IE_NW_36_554	Beaghy	Lake	Review	Unassigned	Unassigned	N		2027	
36_4	IE_NW_36_580	Derrygid	Lake	At Risk	Unassigned	Unassigned	N	Ag	2027	
36_4	IE_NW_36_633	Coalpit	Lake	At Risk	Unassigned	Unassigned	N	Ag	2027	
36_4	IE_NW_36_564	Farnharn	Lake	At Risk	Unassigned	Bad	N	Ag,DWW	2027	
36_4	IE_NW_36C020300	Cavan_010	River	At Risk	Poor	Poor	N	Ag,DU	2027	
36_4	IE_NW_36C020400	Cavan_020	River	At Risk	Poor	Poor	N	Ag,DU	2027	
36_5	IE_NW_36A021150	Annalee_090	River	Review	Unassigned	Good	N		2027	
36_5	IE_NW_36A021400	Annalee_100	River	At Risk	Moderate	Moderate	N	Ag	2021	Annalee
36_6	IE_NW_36_624	Bunerky	Lake	At Risk	Moderate	Moderate	N	Ag,Other	2027	Templeport
36_6	IE_NW_36T010600	Templeport Lake Stream_010	River	At Risk	Unassigned	Poor	N	Ag	2027	Templeport
36_7	IE_NW_36_725	Derrycassan West	Lake	Review	Unassigned	Unassigned	N		2027	
36_7	IE_NW_36_727	Derrycassan East	Lake	Review	Unassigned	Unassigned	N		2027	
36_7	IE_NW_36_648	Garadice	Lake	At Risk	Moderate	Poor	N	Ag,Hymo	2027	
36_7	IE_NW_36N010500	Newtowngore Stream_010	River	Review	Unassigned	Unassigned	N		2027	
36_7	IE_NW_36_726	Derrycassan Mid	Lake	At Risk	Moderate	Poor	N	Ag	2027	
36_7	IE_NW_36W010180	Woodford (Cavan)_010	River	Review	Unassigned	Unassigned	N		2027	
36_7	IE_NW_36Y010620	Yellow (Ballinamore)_030	River	At Risk	Unassigned	Unassigned	N	DU	2027	
36_8	IE_NW_36_316	Graddum	Lake	Review	Unassigned	Unassigned	N		2027	Erne
36_8	IE_NW_36_448	Kill	Lake	Review	Unassigned	Unassigned	N		2027	Erne
36_8	IE_NW_36E010100	Erne_010	River	At Risk	Moderate	Poor	N	Ag	2021	Erne
36_8	IE_NW_36E010200	Erne_020	River	At Risk	Moderate	Poor	N	Ag	2021	Erne
36_8	IE_NW_36E010400	Erne_030	River	At Risk	Unassigned	Poor	N	Ag,Hymo	2027	Erne
36_8	IE_NW_36E010500	Erne_040	River	At Risk	Poor	Poor	N	Ag,Hymo	2027	Erne
36_8	IE_NW_36E010700	Erne_050	River	Review	Moderate	Good	N		2027	Erne
36_9	IE_NW_36_378	Asturral	Lake	Review	Unassigned	Unassigned	N		2027	

Subcatchment code	Water body code	Water body name	Water body type	Risk	Ecological Status 07-09	Ecological Status 10-15	High Ecological Status Objective Water Body Y/N	Significant Pressures	Date to Meet Environmental Objective	Recommended Area for Action Name
36_9	IE_NW_36_420	Naglare	Lake	Review	Unassigned	Unassigned	N		2027	
36_9	IE_NW_36_515	Acanon	Lake	Review	Unassigned	Unassigned	N		2027	
36_10	IE_NW_36_349	Drumsaul	Lake	Review	Unassigned	Unassigned	N		2027	
36_10	IE_NW_36_402	Drum	Lake	Review	Unassigned	Unassigned	N		2027	
36_10	IE_NW_36_415	Drumgole	Lake	Review	Unassigned	Unassigned	N		2027	
36_10	IE_NW_36_460	Coragh	Lake	Review	Unassigned	Unassigned	N		2027	
36_10	IE_NW_36_525a	Drumore	Lake	At Risk	Poor	Poor	N	Ag	2027	
36_10	IE_NW_36_525b	Drumlona	Lake	At Risk	Moderate	Poor	N	Ag,Other	2027	
36_10	IE_NW_36_526	Inner	Lake	At Risk	Bad	Bad	N	Ag	2027	
36_10	IE_NW_36_638	Avaghon	Lake	At Risk	Moderate	Moderate	N	Ag,DWW	2021	Avaghlon
36_10	IE_NW_36_647	White Rockcorry	Lake	At Risk	Moderate	Poor	N	Ag,DU	2027	
36_10	IE_NW_36A070600	Avaghon Lake Stream_010	River	At Risk	Poor	Poor	N	Ag,DWW	2027	Avaghlon
36_10	IE_NW_36D020500	Dromore_050	River	At Risk	Poor	Moderate	N	Ag	2027	
36_10	IE_NW_36D020600	Dromore_060	River	At Risk	Unassigned	Poor	N	Ag	2027	
36_10	IE_NW_36D020700	Dromore_070	River	At Risk	Poor	Poor	N	Ag,UWW	2027	
36_11	IE_NW_36M020070	Madabawn Stream_010	River	Review	Moderate	Good	N		2027	
36_12	IE_NW_36_382	Toome Crinkill	Lake	Review	Unassigned	Unassigned	N		2027	
36_12	IE_NW_36_641	Creeve	Lake	Review	Unassigned	Unassigned	N		2027	
36_12	IE_NW_36D020075	Dromore_010	River	At Risk	Moderate	Moderate	N	Ag	2027	
36_12	IE_NW_36D020090	Dromore_020	River	At Risk	Unassigned	Moderate	N	Ag	2027	
36_12	IE_NW_36D020150	Dromore_030	River	At Risk	Moderate	Poor	N	Ag,DU	2027	
36_12	IE_NW_36D020300	Dromore_040	River	At Risk	Poor	Poor	N	Ag,UWW	2027	
36_12	IE_NW_36M080200	Major Lough Stream_010	River	At Risk	Good	Poor	N	Other	2027	
36_13	IE_NW_36_207	Holy	Lake	Review	Unassigned	Unassigned	N		2027	
36_13	IE_NW_36_247	Clonmullig	Lake	Review	Unassigned	Unassigned	N		2027	
36_13	IE_NW_36_391	Anoneen	Lake	Review	Unassigned	Unassigned	N		2027	
36_13	IE_NW_36_410	Tomkinroad	Lake	Review	Unassigned	Unassigned	N		2027	
36_13	IE_NW_36_385	Cullinaghan	Lake	At Risk	Moderate	Moderate	N	Ag	2027	
36_13	IE_NW_36_468	Clonty	Lake	Review	Unassigned	Unassigned	N		2027	
36_13	IE_NW_36_470	Corraback	Lake	Review	Unassigned	Unassigned	N		2027	
36_13	IE_NW_36_486	Killynaher	Lake	Review	Unassigned	Unassigned	N		2027	
36_13	IE_NW_36_500	Long	Lake	Review	Unassigned	Unassigned	N		2027	

Subcatchment code	Water body code	Water body name	Water body type	Risk	Ecological Status 07-09	Ecological Status 10-15	High Ecological Status Objective Water Body Y/N	Significant Pressures	Date to Meet Environmental Objective	Recommended Area for Action Name
36_13	IE_NW_36_513	Kilywilly	Lake	Review	Unassigned	Unassigned	N		2027	
36_13	UKGBNI1NW363602029	Derryhooley Tributary	River	Review	Unassigned	Unassigned	N		2027	
36_13	UKGBNI1NW363604083	Woodford River	River	Review	Unassigned	Unassigned	N		2027	
36_13	IE_NW_36R010600	Rag (Cavan)_010	River	At Risk	Unassigned	Poor	N	Ag,Hymo	2027	
36_14	IE_NW_36_301	Burdautiers	Lake	Review	Unassigned	Unassigned	N		2027	Summerhill Kilroosky
36_14	IE_NW_36_339	Ramages	Lake	Review	Unassigned	Unassigned	N		2027	
36_14	IE_NW_36_192	Corconnelly	Lake	At Risk	Unassigned	Moderate	N	Other	2027	
36_14	IE_NW_36_343	Drumgorry	Lake	Review	Unassigned	Unassigned	N		2027	
36_14	IE_NW_36_368	Dummys	Lake	Review	Unassigned	Unassigned	N		2027	Summerhill Kilroosky
36_14	IE_NW_36_394	Drumlaney	Lake	Review	Unassigned	Unassigned	N		2027	
36_14	IE_NW_36_489	Killybandrick	Lake	Review	Unassigned	Unassigned	N		2027	
36_14	IE_NW_36_669	Killrosky	Lake	Review	Unassigned	Unassigned	N		2027	Summerhill Kilroosky
36_14	IE_NW_36_677	Castle CN	Lake	Review	Unassigned	Unassigned	N		2027	
36_14	IE_NW_36F170840	Fastry_010	River	Review	Unassigned	Unassigned	N		2027	
36_14	IE_NW_36_672	Erne Upper	Lake	At Risk	Bad	Poor	N	Ag	2027	
36_14	IE_NW_36G750800	Gortnana 36_010	River	At Risk	Unassigned	Unassigned	N	DU	2027	
36_14	IE_NW_36_721	Summerhill	Lake	At Risk	Moderate	Moderate	N	Ag	2027	Summerhill Kilroosky
36_14	IE_NW_36F010500	Finn (Monaghan)_040	River	At Risk	Moderate	Moderate	N	Ag,DU,Ind, UWW	2027	
36_14	IE_NW_36M620820	May_Hill_010	River	Review	Unassigned	Unassigned	N		2027	
36_14	UKGBNI1NW363604066	Lackey River_010	River	At Risk	Unassigned	Unassigned	N	Ag,DU	2027	
36_14	UKGBNI1NW363604080	Finn (Monaghan)_050	River	At Risk	Moderate	Poor	N	Ag,UWW	2027	
36_15	IE_NW_26_736	Fenagh	Lake	Review	Unassigned	Unassigned	N		2027	
36_15	IE_NW_36_642	St Johns	Lake	Review	Unassigned	Unassigned	N		2027	
36_15	IE_NW_36A030900	Adhacashlaun_030	River	Review	Unassigned	Unassigned	N		2027	
36_15	IE_NW_36_614	Drumlaheen	Lake	At Risk	Good	Poor	N	Ag	2027	
36_15	IE_NW_36Y010400	Yellow (Ballinamore)_020	River	Review	Unassigned	Unassigned	N		2027	
36_15	IE_NW_36_665	Scur	Lake	At Risk	Moderate	Moderate	N	Ag	2027	
36_15	IE_NW_36Y010200	Yellow (Ballinamore)_010	River	At Risk	Poor	Moderate	N	For	2021	Yellow (Ballinamore)
36_16	IE_NW_36_331	Cornalara	Lake	Review	Unassigned	Unassigned	N		2027	
36_16	IE_NW_36_336	Mill MN	Lake	Review	Unassigned	Unassigned	N		2027	
36_16	IE_NW_36_421	Annaghierin	Lake	Review	Unassigned	Unassigned	N		2027	

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36_16	IE_NW_36_635	Baraghy	Lake	Review	Unassigned	Unassigned	N		2027	
36_16	IE_NW_36_363	Tacker	Lake	At Risk	Moderate	Poor	N	Ag	2027	
36_16	IE_NW_36_684	Namachree	Lake	Review	Unassigned	Unassigned	N		2027	
36_16	IE_NW_36_528	Sillan	Lake	At Risk	Poor	Poor	N	Ag,Ind,Other,UWW	2027	
36_16	IE_NW_36_623	Bawn MN	Lake	At Risk	Unassigned	Bad	N	Ag	2027	
36_16	IE_NW_36K010100	Knappagh_010	River	At Risk	Unassigned	Unassigned	N	Ag	2027	
36_16	IE_NW_36_671	Egish	Lake	At Risk	Bad	Bad	N	Ag,Other	2027	
36_16	IE_NW_36A020150	Annalee_020	River	At Risk	Poor	Poor	N	Ag,Ind,UWW	2027	
36_16	IE_NW_36K010200	Knappagh_020	River	At Risk	Poor	Poor	N	Ag	2027	
36_16	IE_NW_36K010400	Knappagh_030	River	At Risk	Unassigned	Poor	N	Hymo	2027	
36_17	IE_NB_03_51	Greagh	Lake	Review	Unassigned	Unassigned	N		2027	
36_17	IE_NB_03_71	Corcaghan	Lake	Review	Poor	Unassigned	N		2027	
36_17	IE_NB_03_97	Ballagh	Lake	Review	Unassigned	Unassigned	N		2027	
36_17	IE_NW_36_267	Hollywood	Lake	Review	Unassigned	Unassigned	N		2027	
36_17	IE_NW_36_278	Black Fermanagh	Lake	Review	Unassigned	Unassigned	N		2027	
36_17	IE_NW_36F010200	Finn (Monaghan)_020	River	At Risk	Moderate	Moderate	N	Ag,UWW	2027	
36_17	IE_NW_36F010400	Finn (Monaghan)_030	River	At Risk	Unassigned	Moderate	N	Ag,UWW	2027	
36_17	IE_NW_36M010150	Magherarney_010	River	At Risk	Unassigned	Poor	N	Ag,DWW,UWW	2027	
36_17	IE_NW_36M010200	Magherarney_020	River	At Risk	Poor	Poor	N	Ag,DU	2027	
36_17	IE_NW_36M030900	Maghery_010	River	At Risk	Moderate	Poor	N	Ag	2021	Maghery
36_17	IE_NW_36M031200	Maghery_020	River	At Risk	Poor	Poor	N	Ag,Ind	2027	Maghery
36_17	UKGBNI1NW363604079	Finn River (Tattymore)	River	Review	Good	Good	N		2027	
36_17	UKGBNI1NW363604084	Finn (Monaghan)_010	River	At Risk	Poor	Moderate	N	Ag,DWW	2027	
36_18	IE_NW_36_346	Naback	Lake	Review	Unassigned	Unassigned	N		2027	
36_18	IE_NW_36M170890	Mulrick_010	River	Review	Unassigned	Unassigned	N		2027	
36_18	IE_NW_36_723	Gowna North	Lake	At Risk	Moderate	Bad	N	Ag	2027	
36_18	IE_NW_36_724	Gowna South	Lake	At Risk	Moderate	Poor	N	Ag,Other	2027	
36_18	IE_NW_36E010900	Erne_060	River	Review	Moderate	Good	N		2027	
36_19	IE_NW_36_559	Aghabane	Lake	Review	Unassigned	Unassigned	N		2027	
36_19	IE_NW_36_574	Town	Lake	Review	Unassigned	Unassigned	N		2027	

Subcatchment code	Water body code	Water body name	Water body type	Risk	Ecological Status 07-09	Ecological Status 10-15	High Ecological Status Objective Water Body Y/N	Significant Pressures	Date to Meet Environmental Objective	Recommended Area for Action Name
36_19	IE_NW_36_430	Garty	Lake	At Risk	Poor	Moderate	N	Ag	2027	
36_19	IE_NW_36_575	Derry	Lake	Review	Unassigned	Unassigned	N		2027	
36_19	IE_NW_36_573	Bawn CN	Lake	At Risk	Moderate	Moderate	N	Ag	2027	
36_19	IE_NW_36_599	Derreskit	Lake	Review	Unassigned	Unassigned	N		2027	
36_19	IE_NW_36_632	Disert	Lake	Review	Unassigned	Unassigned	N		2027	
36_19	IE_NW_36_597	Mill CN	Lake	At Risk	Moderate	Moderate	N	Ag	2027	
36_19	IE_NW_36_615	Glasshouse	Lake	At Risk	Bad	Bad	N	Ag,For	2027	
36_19	IE_NW_36C030300	Cullies_010	River	At Risk	Moderate	Poor	N	Ag,DWW	2021	Cullies
36_19	IE_NW_36C030600	Cullies_030	River	At Risk	Poor	Poor	N	Ag	2027	Cullies
36_19	IE_NW_36C030700	Cullies_040	River	At Risk	Moderate	Moderate	N	Ag,For	2027	
36_19	IE_NW_36C030900	Cullies_050	River	At Risk	Poor	Poor	N	Ind,UWW	2027	
36_19	IE_NW_36L020800	Laheen Stream_010	River	At Risk	Moderate	Poor	N	For,Hymo	2027	
36_19	IE_NW_36L030300	Legga Stream_010	River	At Risk	Moderate	Moderate	N	Ag,Peat	2027	
36_19	IE_NW_36L030700	Legga Stream_020	River	At Risk	Moderate	Moderate	N	Ag,Ind	2027	
36_20	IE_NW_35B010400	Ballagh_010	River	Review	Unassigned	Unassigned	N		2027	Lough Melvin and Drowse
36_20	IE_NW_35K380940	Kinlough 35_010	River	Review	Unassigned	Unassigned	N		2027	Lough Melvin and Drowse
36_20	IE_NW_35_143	Lattone	Lake	At Risk	Bad	Bad	N	For	2027	Lough Melvin and Drowse
36_20	IE_NW_35_160	Melvin	Lake	At Risk	Moderate	Moderate	N	Other	2027	Lough Melvin and Drowse
36_20	IE_NW_35L660960	Lattone 35_010	River	Review	Unassigned	Unassigned	N		2027	Lough Melvin and Drowse
36_20	IE_NW_35R320460	Rosfriar_010	River	Review	Unassigned	Unassigned	N		2027	Lough Melvin and Drowse
36_20	IE_NW_35S070870	Sragarve_010	River	Review	Unassigned	Unassigned	N		2027	Lough Melvin and Drowse
36_20	UKGBNI1NW353504075	County River (Carran West)	River	Review	Unassigned	Unassigned	N		2027	Lough Melvin and Drowse
36_20	UKGBNI1NW353504082	Drowes_010	River	At Risk	Good	Moderate	N	Ag	2027	Lough Melvin and Drowse
36_20	IE_NW_020_0000	Bundoran Bay	Coastal	Review	Unassigned	Unassigned	N		2027	
36_20	IE_NW_020_0100	Drowes Estuary	Transitional	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_261	Bun	Lake	Review	Unassigned	Unassigned	N		2027	

Subcatchment code	Water body code	Water body name	Water body type	Risk	Ecological Status 07-09	Ecological Status 10-15	High Ecological Status Objective Water Body Y/N	Significant Pressures	Date to Meet Environmental Objective	Recommended Area for Action Name
36_21	IE_NW_36_277	Round	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_318	Corrarod	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_324	Cornaseer	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_367	Commons	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_386	Derrygeeraghan	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_458	Tonawolly	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_465	Parisee	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_400	Derrybrick	Lake	At Risk	Moderate	Moderate	N	Ag	2027	
36_21	IE_NW_36_432	Ardan	Lake	At Risk	Moderate	Moderate	N	Ag	2027	
36_21	IE_NW_36_476	Tullyroan	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_477	Black CN	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_490	Drumellis	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_504	Drumlane Or Garfinny	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_505	Putigan	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_521	Drummany	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_561	Tully CN	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_517	Annagh	Lake	At Risk	Moderate	Moderate	N	Ag	2027	
36_21	IE_NW_36_565	Pleasure	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_581	Broompark	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_603	Deraik	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_628	Carrs	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_640	Tullyguide	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_618	Atrain	Lake	At Risk	Unassigned	Moderate	N	Ag	2027	
36_21	IE_NW_36_652	Inchin	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36_661	Oughter North	Lake	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36B010100	Ballinagh_010	River	At Risk	Unassigned	Unassigned	N	Ag	2027	
36_21	IE_NW_36_655	Corglass	Lake	At Risk	Moderate	Bad	N	Ag	2027	
36_21	IE_NW_36_657	Oughter South	Lake	At Risk	Moderate	Moderate	N	Ag	2027	
36_21	IE_NW_36E011440	Erne_100	River	Review	Unassigned	Unassigned	N		2027	
36_21	IE_NW_36E011100	Erne_070	River	At Risk	Moderate	Moderate	N	Ag,UWW	2027	
36_21	IE_NW_36E011300	Erne_080	River	At Risk	Moderate	Moderate	N	Ag	2027	
36_21	IE_NW_36E011410	Erne_090	River	At Risk	Moderate	Moderate	N	Ag	2027	

Subcatchment code	Water body code	Water body name	Water body type	Risk	Ecological Status 07-09	Ecological Status 10-15	High Ecological Status Objective Water Body Y/N	Significant Pressures	Date to Meet Environmental Objective	Recommended Area for Action Name
36_22	IE_NW_36_369	Derryhoo	Lake	Review	Unassigned	Unassigned	N		2027	
36_22	IE_NW_36_441	Grilly	Lake	Review	Unassigned	Unassigned	N		2027	
36_22	IE_NW_36_444	Edenterriff	Lake	Review	Unassigned	Unassigned	N		2027	
36_22	IE_NW_36_472	Faharlagh	Lake	Review	Unassigned	Unassigned	N		2027	
36_22	IE_NW_36_718	Kilylea	Lake	Review	Unassigned	Unassigned	N		2027	
36_22	IE_NW_36_719	Quivvy	Lake	Review	Unassigned	Unassigned	N		2027	
36_22	IE_NW_36_720	Derrykerrib	Lake	Review	Unassigned	Unassigned	N		2027	
36_22	UKGBNI1NW363602063	Upper Lough Erne	River	Review	Unassigned	Unassigned	N		2027	
36_22	UKGBNI1NW363604067	Starraghen Tributary	River	At Risk	Unassigned	Unassigned	N	Ag	2027	
36_22	UKGBNI1NW363604081	Erne_110	River	Review	Unassigned	Unassigned	N		2027	
36_23	UKGBNI1NW363604054	Swanlinbar River	River	At Risk	Unassigned	Unassigned	N	Other	2027	
36_24	UKGBNI1NW363601036	Black River	River	At Risk	Unassigned	Unassigned	N	Ag	2027	
36_24	IE_NW_36_445	Macnean	Lake	At Risk	Bad	Bad	N	UWW	2027	
36_24	IE_NW_36_673	Macnean Upper	Lake	At Risk	Moderate	Moderate	N	Ag,For	2027	
36_24	IE_NW_36R020200	Roo_010	River	At Risk	High	Poor	N	Ag,DWW	2021	Roo
36_24	UKGBNI1NW363602093	Drumharriff Burn	River	At Risk	Unassigned	Unassigned	N	Other	2027	
36_25	IE_NW_36_142	Aghalough	Lake	Review	Unassigned	Unassigned	N		2027	
36_25	IE_NW_36S530890	Sessiaghkeelta 36_010	River	Review	Unassigned	Unassigned	N		2027	
36_25	UKGBNI1NW363604064	Termon River (Pettigoe)	River	At Risk	Unassigned	Unassigned	N	Ag,UWW	2027	
36_25	UKGBNI3NW0006	Erne Lower Kesh	Lake	Review	Unassigned	Unassigned	N		2027	
36_26	UKGBNI3NW0022	Scolban	Lake	Review	Unassigned	Unassigned	N		2027	
36_26	IE_NW_36_651	Tullynassidagh	Lake	At Risk	Good	Moderate	N	Peat	2027	
36_27	IE_NW_36_710	Columbkille	Lake	Review	Unassigned	Unassigned	N		2027	
36_27	IE_NW_36_717	Assaroe	Lake	Review	Unassigned	Unassigned	N		2027	
36_27	IE_NW_35B070200	Bradoge_020	River	At Risk	Moderate	Moderate	N	DU,DWW,UWW	2027	
36_27	IE_NW_36A010300	Abbey_010	River	Review	Unassigned	Unassigned	N		2027	
36_27	IE_NW_36_715	Golagh	Lake	At Risk	Good	Moderate	N	Other	2027	
36_27	UKGBNI3NW0029	Keenaghan	Lake	Review	Unassigned	Unassigned	N		2027	
36_27	UKGBNI1NW363604085	Erne_120	River	At Risk	Moderate	Moderate	N	Ag,Hymo,Other	2027	
36_27	IE_NW_030_0100	Erne Estuary	Transitional	At Risk	Good	Moderate	N	Hymo	2027	

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36_28	IE_WE_35M540870	Mullaghmore 35_010	River	Review	Unassigned	Unassigned	N		2027	
36_28	IE_NW_35D050100	Duff_010	River	At Risk	High	Good	Y	Ag	2021	Duff
36_28	IE_NW_35D050250	Duff_020	River	At Risk	High	Good	Y	Ag,Peat	2021	Duff

Ag: Agriculture

DWW: Domestic Waste Water

For: Forestry

Hymo: Hydromorphology

Ind: Industry

M+Q: Mines and Quarries

Peat: Peat Drainage and Extraction

DU: Diffuse Urban

UWW: Urban Waste Water

Note: Significant Pressures for Review water bodies have not been included as they will need to be confirmed as part of an Investigative Assessment.

Protected Area: If a water body is one or more of the following: Drinking Water Protected Area; Bathing Water; Shellfish Area; Nutrient Sensitive Area or; a Natura 2000 site with a water dependent qualifying interest with a water quality and/or quantity conservation objective, then it has been highlighted as a protected area in this table.

Appendix 4 Drinking water supplies in the catchment

Scheme Code	Scheme Name	Water Body	Water Body Code
0200PRI2009	Corlough GWS Spring 1	Anierin-Cuilcagh East GWB	IEGBNI_NW_G_035
	Corlough GWS Spring 2	Anierin-Cuilcagh East GWB	IEGBNI_NW_G_035
	Corlough GWS Spring 3	Anierin-Cuilcagh East GWB	IEGBNI_NW_G_035
	Corlough GWS Spring 4	Anierin-Cuilcagh East GWB	IEGBNI_NW_G_035
0200PRI2023	Milltown GWS	Killashandra GWB	IE_NW_G_062
0200PRI2003	Templeport GWS Borehole 1	Newtown-Ballyconnell GWB	IEGBNI_NW_G_031
	Templeport GWS Borehole 2	Newtown-Ballyconnell GWB	IEGBNI_NW_G_031
0200PRI2020	Kildallan GWS Borehole 1	Newtown-Ballyconnell GWB	IEGBNI_NW_G_031
	Kildallan GWS Borehole 2	Newtown-Ballyconnell GWB	IEGBNI_NW_G_031
1700PRI1002100	Carrigallen Gpr Well 1	Cavan GWB	IE_NW_G_061
	Carrigallen Gpr Well 2	Cavan GWB	IE_NW_G_061
	Carrigallen Gpr Well 3	Cavan GWB	IE_NW_G_061
1700PRI1111	Drumeela Gpr	Killashandra GWB	IE_NW_G_062
2700PRI1019	Ballintrillick GWS	Rossinver GWB	IEGBNI_NW_G_044
2400PRI2019	Magheracloone GWSS	Comertagh Lough LWB *(not designated, therefore RWB referenced)*	IE_NW_36A020080
	Magheracloone GWSS	Graghlone Or Beagh Lough LWB *(not designated, therefore RWB referenced)*	IE_NW_36A020080
0200PRI2001	Annagh GWS	Annagh Lough LWB	IE_NW_36_517
0200PRI2007	Bunnoe GWS	Killynenagh LWB	IE_NW_36_409
0200PRI2011	Crossdoney GWS	Lough Attrain LWB	IE_NW_36_618
0200PRI2012	Crosserlough GWS	Graddum LWB	IE_NW_36_316
0200PRI2017	Erne Valley GWS	Garty LWB	IE_NW_36_430
0200PRI2021	Kill GWS	Black Lough LWB *(not designated, therefore RWB referenced)*	IE_NW_36A020600
0200PRI2023	Milltown GWS	Derrybrick Lough LWB	IE_NW_36_400
0200PRI2024	Mountainlodge GWS	Lough Asturral LWB	IE_NW_36_378
2400PRI2012	Corduff-Corracharra GWSS	Namachree LWB	IE_NW_36_684
2400PRI2015	Doohamlet GWSS	Toome Crinkill Lough LWB	IE_NW_36_382
2400PRI2016	Drumgole GWSS	Annaghmakerrig Lough LWB *(not designated, therefore RWB referenced)*	IE_NW_36B050300

Scheme Code	Scheme Name	Water Body	Water Body Code
2400PRI2021	Stranoodan GWSS	White Rockcorry LWB	IE_NW_36_647
2400PRI2011	Aughnashalvey GWSS	Killcoran LWB	IE_NW_36_329
0200PRI2004	Barraghy GWS	ANNALEE_030 RWB	IE_NW_36A020350
0200PRI2013	Dernakesh GWS	ANNALEE_030 RWB	IE_NW_36A020350
0200PRI2014	Dhuish GWS	ANNALEE_020 RWB	IE_NW_36A020150
0200PUB1004	Ballyconnell PWS Borehole 1	Newtown-Ballyconnell GWB	IEGBNI_NW_G_031
	Ballyconnell PWS Borehole 2	Newtown-Ballyconnell GWB	IEGBNI_NW_G_031
0200PUB1007	Bawnboy PWS Borehole 1	Newtown-Ballyconnell GWB	IEGBNI_NW_G_031
	Bawnboy PWS Borehole 2	Newtown-Ballyconnell GWB	IEGBNI_NW_G_031
0200PUB1017	Mountain Spring	Ballinamore-Swanlinbar GWB	IEGBNI_NW_G_034
2400PUB1010	Smithboro Templetate Borehole 1	Clones GWB	IEGBNI_NW_G_063
	Smithboro Templetate Borehole 2	Clones GWB	IEGBNI_NW_G_063
0600PUB1104	Pettigo WTP	Ballyshannon East GWB	IEGBNI_NW_G_011
0600PUB1105	Ballyshannon	Ballyshannon GWB	IE_NW_G_072
	Ballyshannon	Ballyshannon GWB	IE_NW_G_072
	Ballyshannon	Ballyshannon GWB	IE_NW_G_072
	Ballyshannon	Lough Unshin LWB	IE_NW_36_712
1700PUB4500	Kiltyclogher	Kiltyclogher GWB	IE_NW_G_074
2400PUB1002	Clones	Clones GWB	IEGBNI_NW_G_063
	Clones	Clones GWB	IEGBNI_NW_G_063
	Clones	Carnroe Lake LWB *(not designated, therefore RWB referenced)*	IE_NW_36G750800
	Clones	Skerrick Lake LWB *(not designated, therefore RWB referenced)*	IE_NW_36G750800
	Clones	Corconnelly Lough LWB	IE_NW_36_192
0600PUB1108	Bundoran Urban	Melvin LWB	IE_NW_35_160
0200PUB1011	Cavan PWS	Acanon LWB	IE_NW_36_515
0200PUB1011	Cootehill PWS	Lough Coragh LWB	IE_NW_36_460
2000PUB1011	Gowna	Lough Gowna North LWB	IE_NW_36_723
2400PUB1001	LERWSS	Lough Bawn MN LWB	IE_NW_36_623
2400PUB1003	Newbliss	Feagh Lough LWB *(not designated, therefore RWB referenced)*	IE_NW_36F010400
2400PUB1024	Monaghan	Corcaghan LWB	IE_NB_03_71
	Monaghan	Blackraw & Greagh Lough LWB	IE_NB_03_51
0200PUB1008	Belturbet PWS	Erne_090 RWB	IE_NW_36E011410

Appendix 5 Prioritisation of water bodies with Natura 2000 site qualifying interests

Note that additional water dependent species have been added that are not qualifying interests within the SACs (i.e. Arctic char (Salvelinus alpinus) has been added to Lough Melvin SAC).

SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Boleybrack Mountain SAC 002032	none							
Cuilcagh – Anierin Uplands SACs 000584	Potential 3110/3160	At least Good	Lake	Nabellbeg	Unassigned (NAR)	No	IE_NW_36_201	Yes
Arroo Mountain SAC 001403	7220	Good GW level	Groundwater	Glenaniff	Good (R)	No	IE_NW_G_043	Yes
			Groundwater	Rossinver	Good (R)	No	IE_NW_G_044	Yes
Lough Oughter and Associated Loughs SAC 000007	3150	Good	Lake	Derrygid	Unassigned (AR)	Yes	IE_NW_36_580	No
			Lake	Coalpit	Unassigned (AR)	Yes	IE_NW_36_633	No
			Lake	Erne Upper	Poor (AT RISK)	Yes	IE_NW_36_672	No
			Lake	Corglass	Bad (AT RISK)	Yes	IE_NW_36_655	No
			Lake	Farnharn	Bad (AT RISK)	Yes	IE_NW_36_564	No
			Lake	Ardan	Moderate (AT RISK)	No	IE_NW_36_432	No
			Lake	Derrybrick	Moderate (AT RISK)	No	IE_NW_36_400	No
			Lake	Oughter South	Moderate (AT RISK)	No	IE_NW_36_657	No
			Lake	Atrain	Moderate (AT RISK)	No	IE_NW_36_618	No
			Lake	Annagh	Moderate (AT RISK)	No	IE_NW_36_517	No
			Lake	Mill CN	Moderate (AT RISK)	No	IE_NW_36_597	No
			Lake	Cullinaghan	Moderate (AT RISK)	No	IE_NW_36_385	No
			Lake	Bawn CN	Moderate (AT RISK)	No	IE_NW_36_573	No

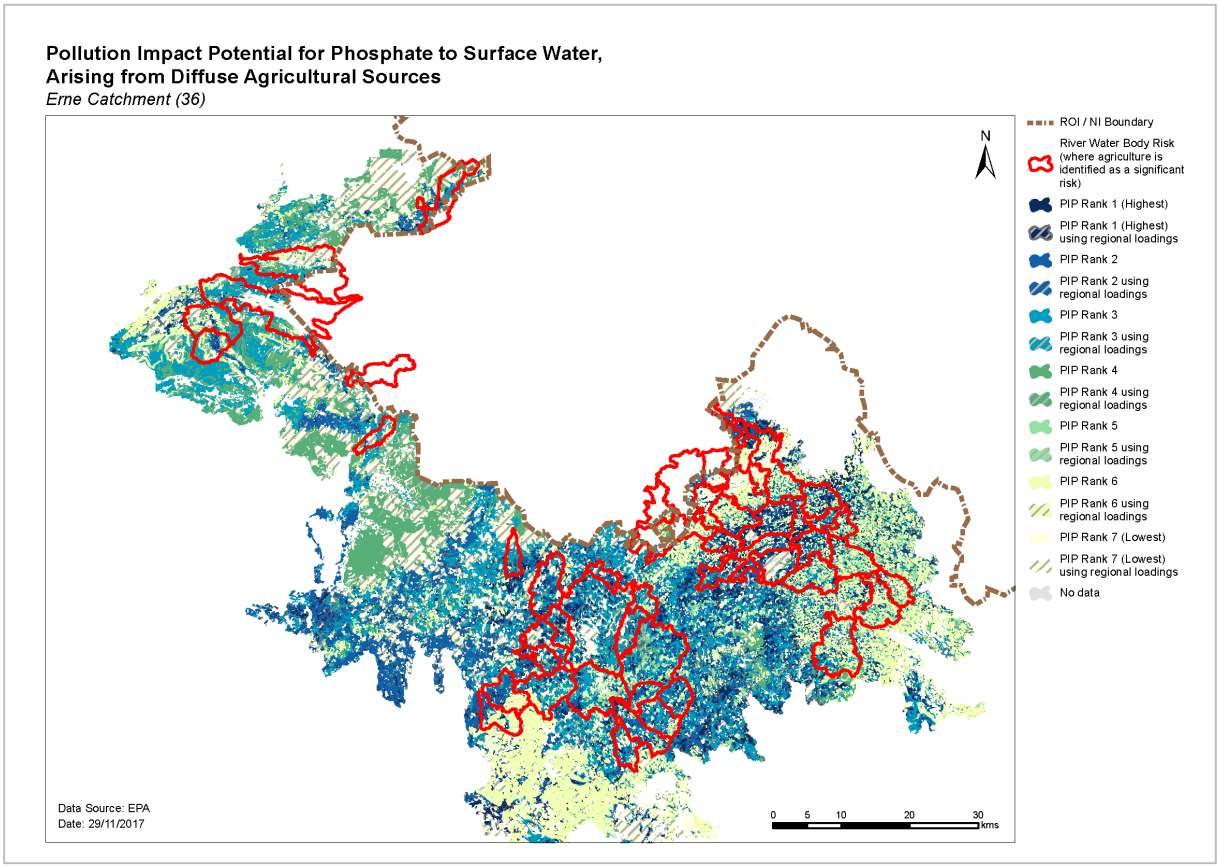
SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Lough Oughter and Associated Loughs SAC 000007	3150	Good	Lake	Anoneen	Unassigned (R)	No	IE_NW_36_391	No
			Lake	Quivvy	Unassigned (R)	No	IE_NW_36_719	No
			Lake	Derrykerrib	Unassigned (R)	No	IE_NW_36_720	No
			Lake	Kilylea	Unassigned (R)	No	IE_NW_36_718	No
			Lake	Edenterriff	Unassigned (R)	No	IE_NW_36_444	No
			Lake	Faharlagh	Unassigned (R)	No	IE_NW_36_472	No
			Lake	Castle CN	Unassigned (R)	No	IE_NW_36_677	No
			Lake	Grilly	Unassigned (R)	No	IE_NW_36_441	No
			Lake	Corraback	Unassigned (R)	No	IE_NW_36_470	No
			Lake	Kilywilly	Unassigned (R)	No	IE_NW_36_513	No
			Lake	Tomkinroad	Unassigned (R)	No	IE_NW_36_410	No
			Lake	Holy	Unassigned (R)	No	IE_NW_36_207	No
			Lake	Clonmullig	Unassigned (R)	No	IE_NW_36_247	No
			Lake	Long	Unassigned (R)	No	IE_NW_36_500	No
			Lake	Killynaher	Unassigned (R)	No	IE_NW_36_486	No
			Lake	Drumlaney	Unassigned (R)	No	IE_NW_36_394	No
			Lake	Derryhoo	Unassigned (R)	No	IE_NW_36_369	No
			Lake	Killybandrick	Unassigned (R)	No	IE_NW_36_489	No
			Lake	Drumgorry	Unassigned (R)	No	IE_NW_36_343	No
			Lake	Parisee	Unassigned (R)	No	IE_NW_36_465	No
			Lake	Corrarod	Unassigned (R)	No	IE_NW_36_318	No
			Lake	Drumellis	Unassigned (R)	No	IE_NW_36_490	No
			Lake	Commons	Unassigned (R)	No	IE_NW_36_367	No
			Lake	Round	Unassigned (R)	No	IE_NW_36_277	No
			Lake	Putigan	Unassigned (R)	No	IE_NW_36_505	No
			Lake	Bun	Unassigned (R)	No	IE_NW_36_261	No
			Lake	Tonawolly	Unassigned (R)	No	IE_NW_36_458	No
			Lake	Tulyroan	Unassigned (R)	No	IE_NW-36_476	No
			Lake	Bun	Unassigned (R)	No	IE_NW_36_261	No
			Lake	Derrygeeraghan	Unassigned (R)	No	IE_NW_36_386	No
			Lake	Black CN	Unassigned (R)	No	IE_NW_36_477	No
			Lake	Drummany	Unassigned (R)	No	IE_NW_36_521	No
			Lake	Oughter North	Unassigned (R)	No	IE_NW_36_661	No

SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Lough Oughter and Associated Loughs SAC 000007	3150	Good	Lake	Drumlane or Garfinny	Unassigned (R)	No	IE_NW_36_504	No
			Lake	Inchin	Unassigned (R)	No	IE_NW_36_652	No
			Lake	Tully CN	Unassigned (R)	No	IE_NW_36_561	No
			Lake	Deraik	Unassigned (R)	No	IE_NW_36_603	No
			Lake	Carrs	Unassigned (R)	No	IE_NW_36_628	No
			Lake	Tullguide	Unassigned (R)	No	IE_NW_36_640	No
			Lake	Broompark	Unassigned (R)	No	IE_NW_36_581	No
			Lake	Pleasure	Unassigned (R)	No	IE_NW_36_565	No
			Lake	Town	Unassigned (R)	No	IE_NW_36_574	No
			Lake	Derry	Unassigned (R)	No	IE_NW_36_575	No
			Lake	Aghabane	Unassigned (R)	No	IE_NW_36_559	No
			Lake	Disert	Unassigned (R)	No	IE_NW_36_632	No
			Lake	Derreskit	Unassigned (R)	No	IE_NW_36_599	No
Kilroosky Lough Cluster SAC 001786	3140	At least Good	Lake	Summerhill	Moderate (AT RISK)	Yes	IE_NW_36_721	No
			Lake	Dummys	Unassigned (R)	No	IE_NW_36_368	No
			Lake	Killrosky	Unassigned (R)	No	IE_NW_36_669	No
			Lake	Burdautiers	Unassigned (R)	No	IE_NW_36_301	No
	1092	At least Moderate	Lake	Killrosky	Unassigned (R)	No	IE_NW_36_669	No
	7230	Good GW level	Groundwater	Clones	Good (R)	No	IE_NW_G_063	No
Lough Melvin SAC 000428	3130	At least Good	Lake	Melvin	Moderate (AT RISK)	Yes	IE_NW_35_160	No
	1106	Good	Lake	Melvin	Moderate (AT RISK)	Yes	IE_NW_35_160	No
	Artic char (not listed)	Good	Lake	Melvin	Moderate (AT RISK)	Yes	IE_NW_35_160	No
Lough Golagh and Breesy Hill SAC 002164	none							
Tamur Bog SAC 001992	none							
Lough Nageage SAC 002135	none							

SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Dunmuckrum Turloughs SAC 002303	3180	At least Good	Groundwater	GWDTE-Dunmuckrum Turlough (SAC002303)	Good (R)	No	IE_NW_G_095	No
Bunduff Lough And Machair/Trawalua/Mullaghmore SAC 000625	21A0	Good GW level	Groundwater	Tullaghan-Lough Melvin	Good (NAR)	No	IE_NW_G_014	Yes
			Groundwater	Grange East GWB	Good (NAR)	No	IE_WE_G_0062	Yes
	7230	Good GW level	Groundwater	Tullaghan-Lough Melvin	Good (NAR)	No	IE_NW_G_014	Yes
			Groundwater	Grange East GWB	Good (NAR)	No	IE_WE_G_0062	Yes
Ben Bulben, Gleniff And Glenade Complex SAC 000623	7220	Good GW level	Groundwater	Largydonnell	Good (NAR)	No	IE_NW_G_045	No
			Groundwater	Tievebaun	Good (R)	No	IE_NW_G_073	No
			Groundwater	Rossinver	Good (R)	No	IE_NW_G_044	No
	7230	Good GW level	Groundwater	Largydonnell	Good (NAR)	No	IE_NW_G_045	No
			Groundwater	Tievebaun	Good (R)	No	IE_NW_G_073	No
			Groundwater	Rossinver	Good (R)	No	IE_NW_G_044	No
Corratirrim SAC 000979	None							

Appendix 6 Pollution Impact Potential (PIP) Map for Phosphorus

For areas where agriculture is deemed as the significant pressure, areas of high risk to surface water can be targeted. The map below shows relative risk of loss of phosphorus to surface water. The risk of phosphorus losses is strongly correlated on whether the land is poorly draining or free draining and the loadings applied i.e. significant loadings applied on poorly draining areas result in a high potential risk to surface water. However, this figure does not imply that actual losses from these areas are occurring but is a useful tool for informing where resources should be focused (i.e. by allowing high risk areas to be identified and prioritised for further investigation). PIP maps are available online at a scale of 1:20,000 and can be accessed by public bodies via the EDEN process.



Appendix 7 Local Catchment Assessment Categories

Category	Assessment & Measures Evaluation Details
IA1	Further information provision (e.g. from IFI, LAs, EPA)
IA2	Point source desk-based assessment
IA3	Assessment of unassigned status water bodies, requiring field visit(s)
IA4	Regulated point sources, requiring field visit/s
IA5	Stream (catchment) walk to evaluate multiple sources in a defined (1 km) river stretch (used as the basis for estimating resource requirements)
IA6	Stream (catchment) walk in urban areas
IA7	Stream (catchment) walk along >1 km river stretches
IA8	Stream (catchment) walk along high ecological status (HES) objective rivers
IA9	Lakes assessment, requiring field visits
IA10	Groundwater assessments, requiring field visits