Galway Bay North Catchment Assessment 2010-2015 (HA 31)

Catchment Science & Management Unit

Environmental Protection Agency

December 2018

Version no. 3

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Preface

This document provides a summary of the characterisation outcomes for the water resources of the Galway Bay North 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/

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1 Introduction

This catchment includes the area drained by all streams entering tidal water between Nimmo's Pier and Slyne Head, Co. Galway, draining a total area of 936km². The largest urban centre in the catchment is the western part of Galway City. The other main urban centres in this catchment are Bearna and Spiddle. The total population of the catchment is approximately 47,288 with a population density of 51 people per km².

This catchment includes most of the Connemara region from the hills to the west of Lough Corrib to the western flanks of the Maunturk Mountains and the wild, lake covered bogland and complex coastline of West Galway.

The tip of the catchment west of Ballyconneely is drained by the Keerhaun South River, while the area west of Roundstone is drained by the Callow River.

The Recess River is the largest river system in the catchment, rising southern end of the Maumturk Mountains and flowing west where it enters Glendollagh Lough. Just before Recess, the Owentooey River joins from the north. The Recess River then flows west into Derryclare Lough.

The Tooreenacoona River flows south through Letterbrechbaun and into the northern end of Inagh Lough. At the southern end of Inagh Lough the river outflows into the northern end of Derryclare Lough. Derryclare Lough in turn outflows from its western end, after which the Glencoaghan River enters from the north.

The Recess River then flows into the eastern end of Ballynahinch Lake. The Recess River, at this point known locally as the Owenmore River leaves the southwestern end of Ballynahinch Lake and flows south into Blackhaven Bay and then out to sea via Bertraghboy Bay.

The area south of Recess is drained by the Owengowla and Invermore Rivers. The Screeb River flows into Shindilla Lough, then Nahashleam Lough before flowing into the head of Camus Bay. The area to the southeast is drained by the Furnace River, which flows into Camus Bay to the east of the Screeb.

The Cashla River rises near Lackadunna Hill and makes its way south, through numerous small lakes and into Costelloe Bay near Rossaveel. The eastern extent of the catchment from Inveran to Bearna is drained by a series of southerly flowing rivers that drain into the northern side of Galway Bay. The largest of these rivers is the Owenboliska which flows from the hills south of Oughterard, south and into the sea at Spiddle. Other rivers in the area include the Crumlin, Owenriff and Knock Rivers.

The Galway Bay North catchment comprises of nine subcatchments (Table 1, Figure 1) with 43 river water bodies, 146 lakes, 27 transitional and eight coastal water bodies, and five groundwater bodies. There are no heavily modified or artificial water bodies in the Galway Bay North catchment.

Table 1. List of subcatchments in the Galway Bay North catchment

Subcatchment ID	Subcatchment Name
31_1	DÚLEITIR_THIAR_SC_010
31_2	Recess_SC_010
31_3	Furnace_SC_010
31_4	Recess_SC_020
31_5	Owenriff[SouthGalway]_SC_010
31_6	Owenboliska_SC_010
31_7	Knock[Furbo]_SC_010
31_8	Cashla_SC_010
31_9	AranIslands_SC_010

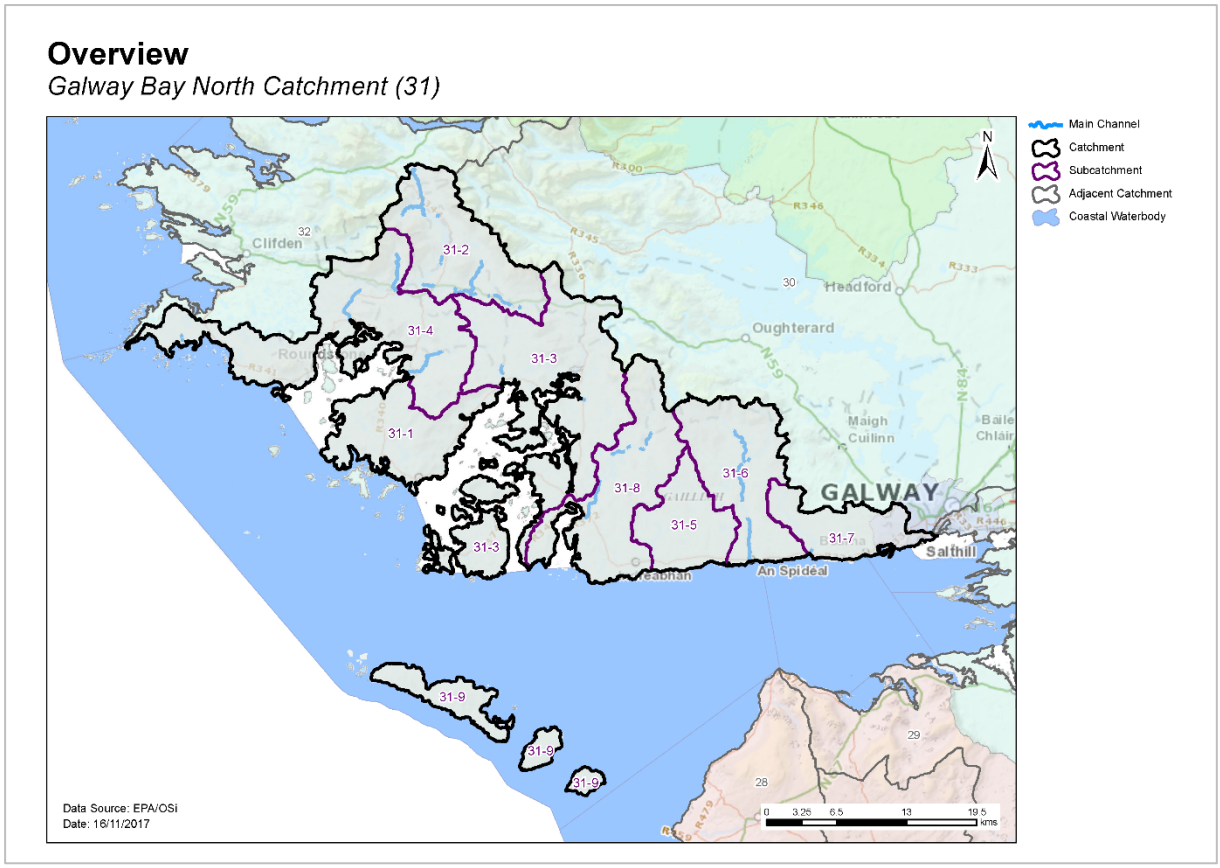


Figure 1. Subcatchments in the Galway Bay North catchment

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 22 (12%) river and lake water bodies at Good or High status, and six (3%) at less than Good status in 2015 (Table 2, Figure 2). 161 (85%) river and lakes water bodies are unassigned.
- Three river water bodies and sites and five lakes have a high ecological status objective. In 2015, seven of these water bodies were at High status, and one was at Good (Figure 3, Appendix 1).
- The numbers of water bodies at each status class in 2007-09 and 2010-15 are shown in Figure 4 (rivers) and Figure 5 (lakes).
- Four water bodies have improved and four water bodies have deteriorated since 2007-09 WFD monitoring cycle (Figure 7).
- The variation in nutrient concentrations and loads in the River Recess and River Screeb main channels are illustrated in Appendix 2.

2.1.2 Transitional and coastal (TraC)

- There were nine TraC water bodies at Good or High status in 2015, and the remaining 26 are unassigned (Table 2).
- There are six TraC water bodies with a High ecological status objective. In 2015, all these water bodies were at High status (Appendix 1, Figure 3).
- The numbers of TraC water bodies at each status class in 2007-09 and 2010-15 are shown in Figure 6.
- Note Aran Islands, Galway Bay, Connemara (HAs 29;31) and Western Atlantic Seaboard (HAs 32;33;34) coastal water bodies are shared with other catchments.

Table 2. Summary of surface water body status and risk categories

	Number of water bodies	2010-15						Risk Categories		
		High	Good	Mod	Poor	Bad	Unassigned	*Not at Risk*	*Review*	*At Risk*
Rivers	43	2	11	3	2	0	25	24	12	7
Lakes	146	5	4	1	0	0	136	105	40	1
TraC	35	6	3	0	0	0	26	26	9	0

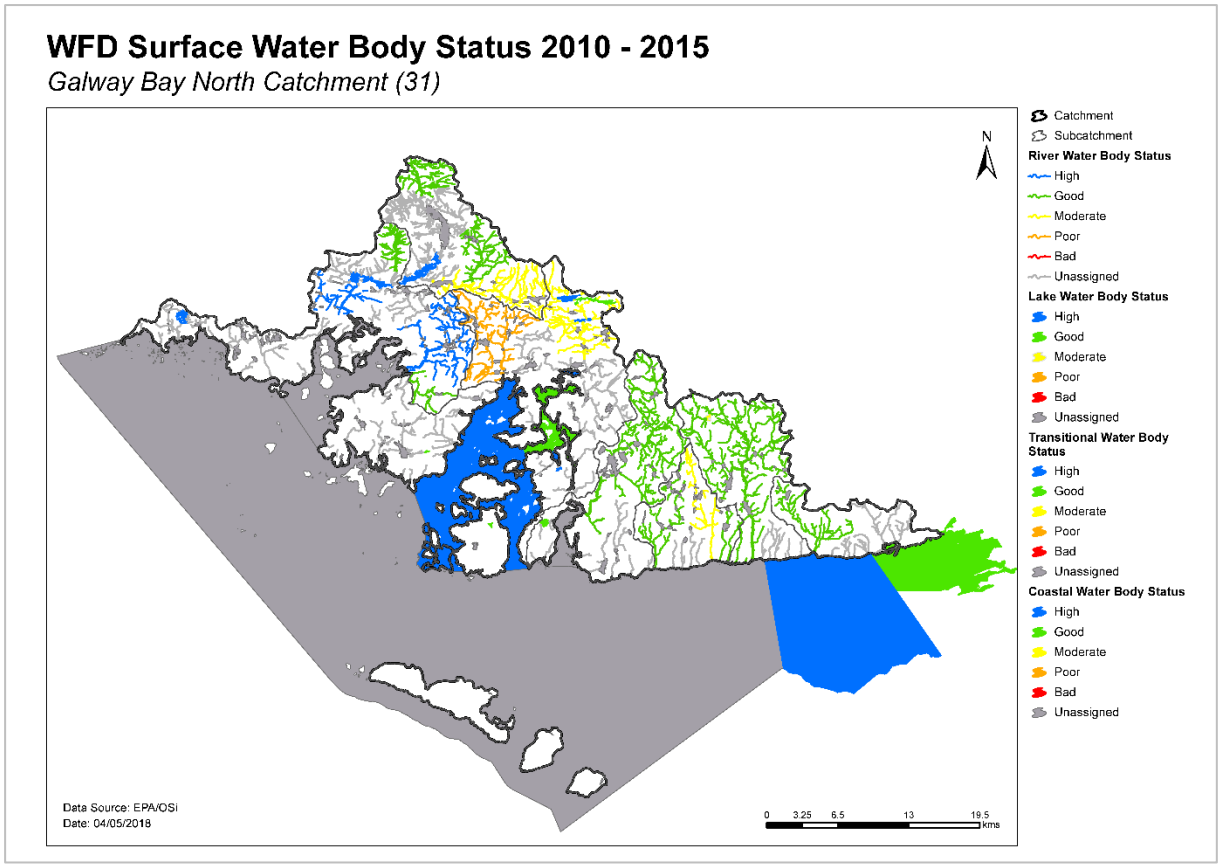


Figure 2. Surface water ecological status

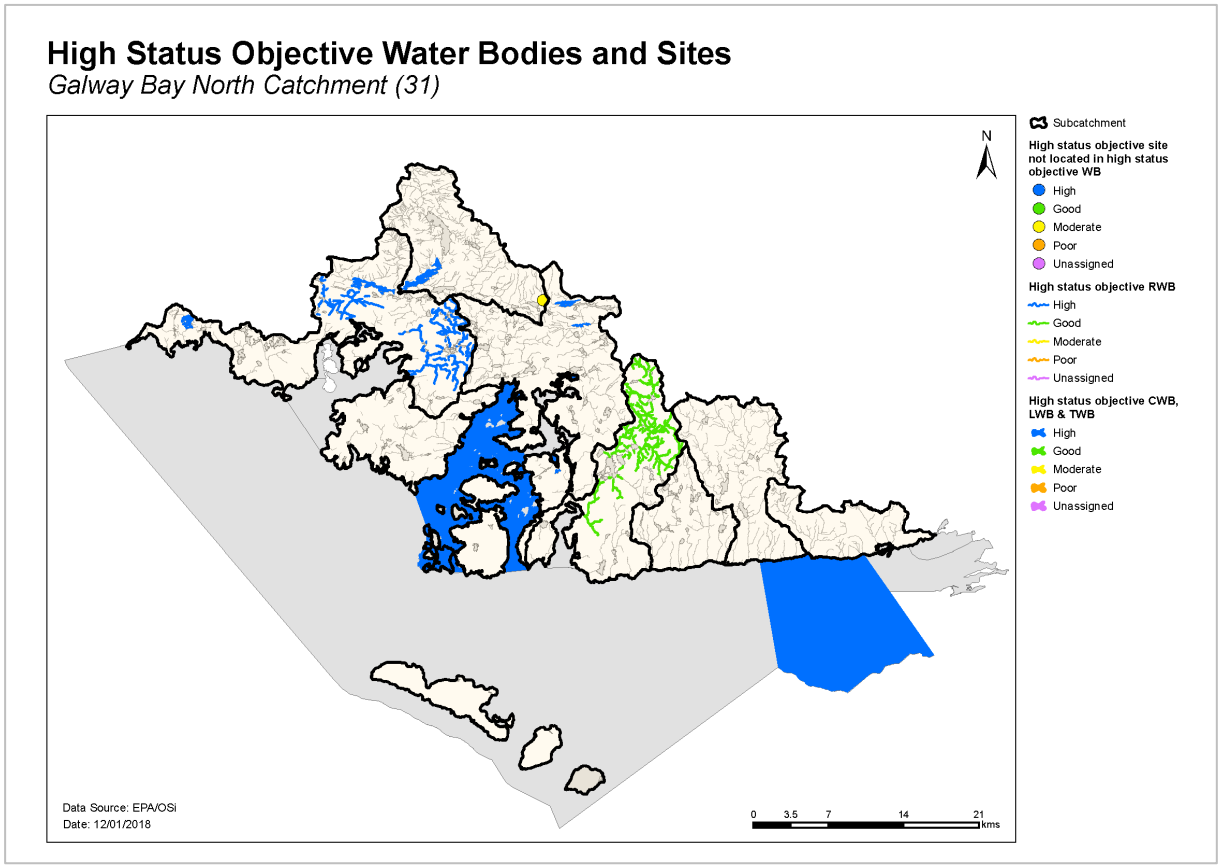


Figure 3. High ecological status objective water bodies and sites

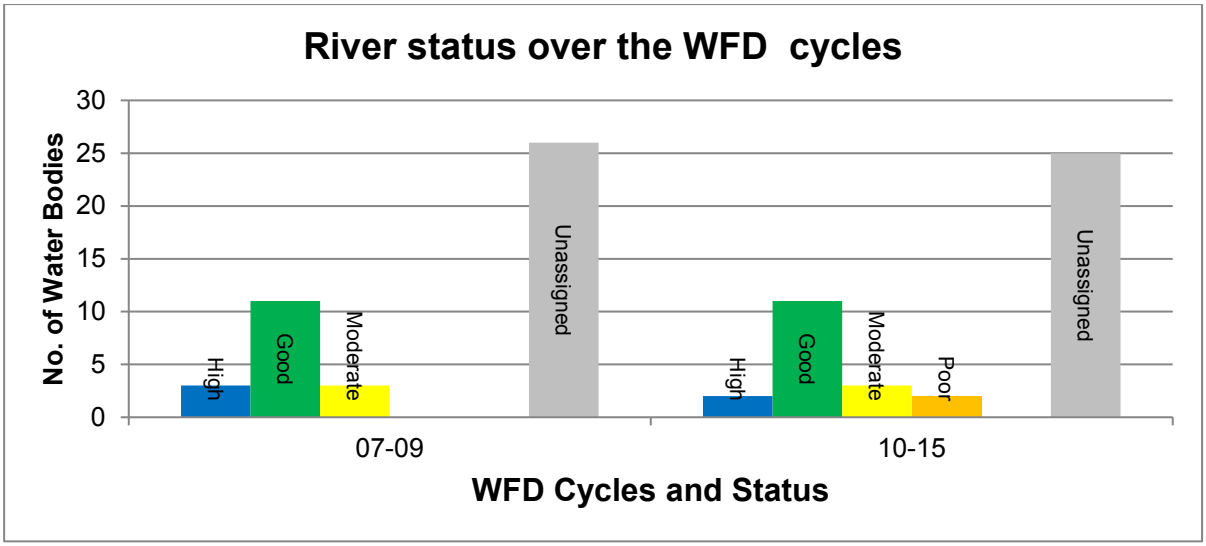


Figure 4. Number of rivers at each status class in 2007-09 and 2010-15

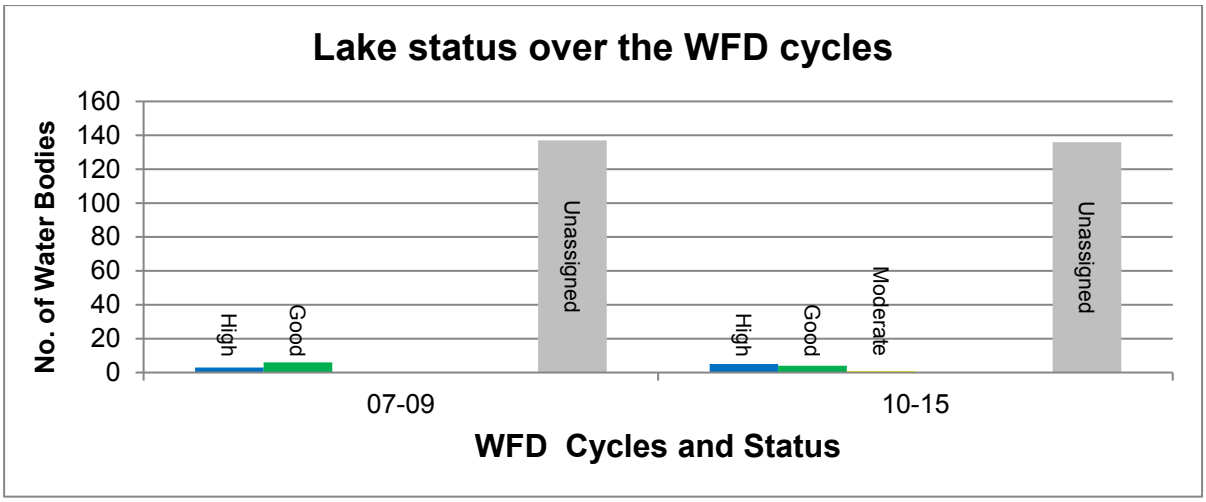


Figure 5. Number of lakes at each status class in 2007-09 and 2010-15

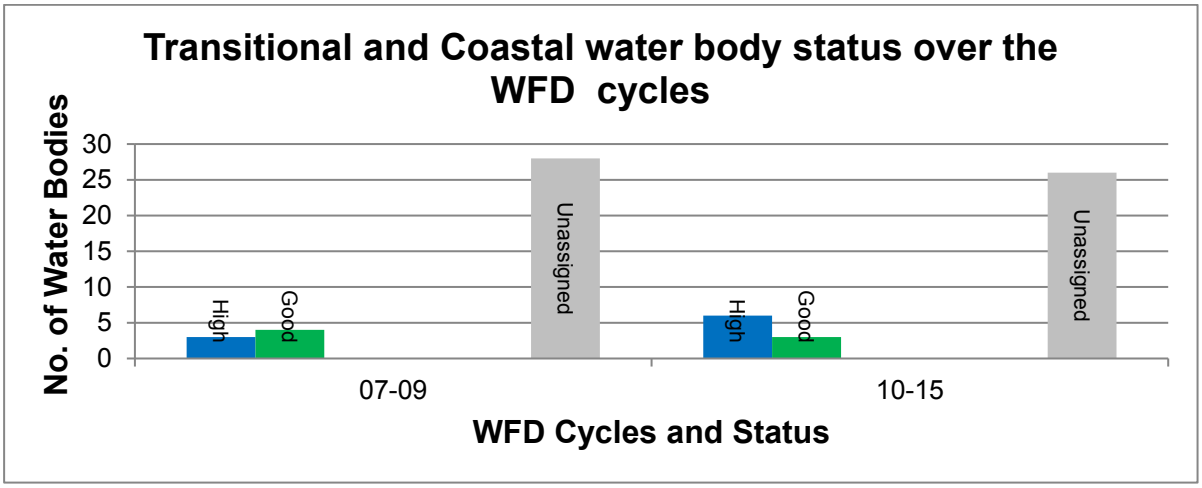


Figure 6. Number of transitional and coastal water bodies at each status class in 2007-09[1] and 2010-15

[1] 2007-09* and 2010-15.*Not all elements were included in this assessment so changes between periods may not reflect ecological change

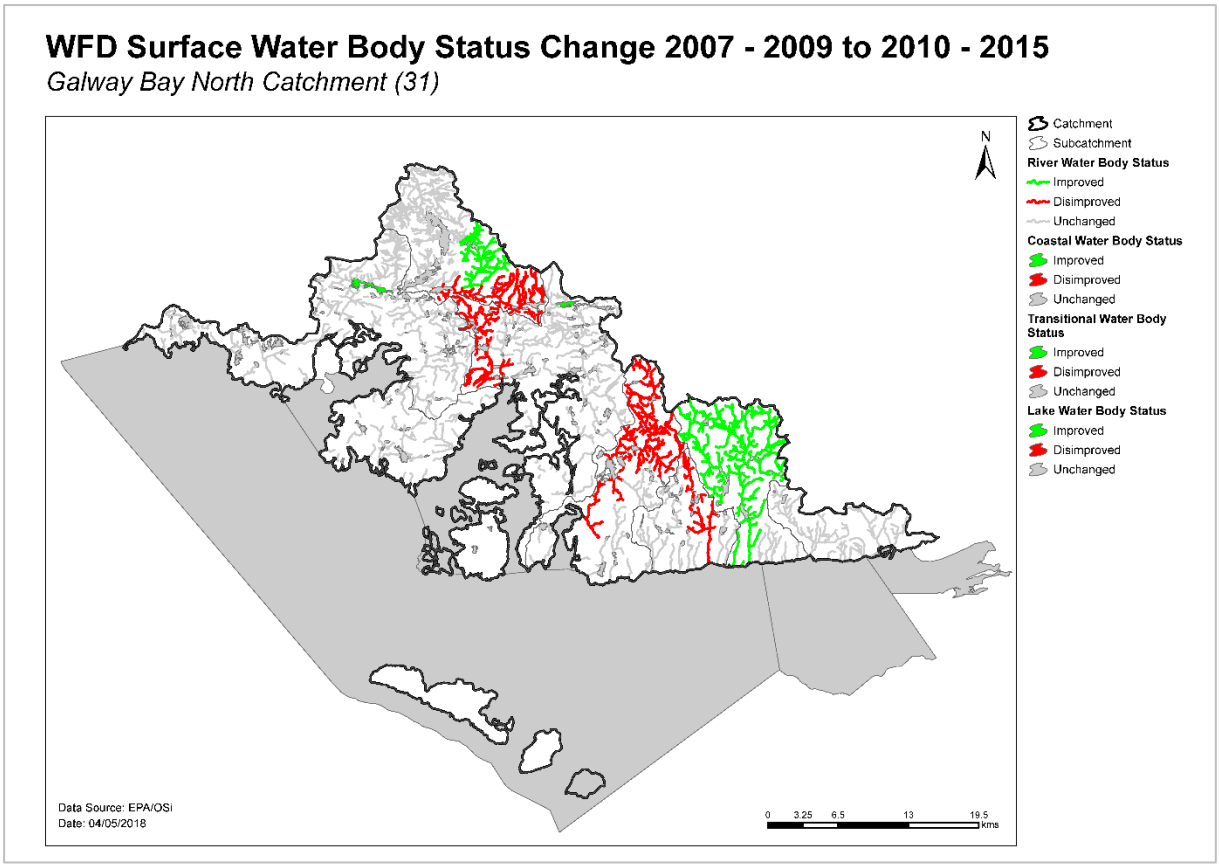


Figure 7. Surface water body status change from 2007-09 to 2010-15

2.2 Groundwater status

- All five groundwater bodies at Good status in 2015 (Table 3).

Table 3. Summary of groundwater body status and risk categories

	Number of water bodies	2010-15		Risk Categories		
		Good	Poor	*Not at Risk*	*Review*	*At Risk*
Groundwater	5	5	0	3	2	0

2.3 Risk of not meeting surface water environmental objectives

2.3.1 Rivers and lakes

- There are 24 river and 105 lake water bodies that are *Not at Risk* (Figure 8, Table 2) and that require no additional investigative assessment or measures to be applied, other than those measures that are already in place.
- There are 12 river and 40 lake water bodies in *Review*. This includes 33 water bodies where more information is required and 19 water bodies where measures have recently been implemented and improvements have not yet been realised.

- Seven river water bodies and one lake water body in the catchment are *At Risk* of not meeting their water quality objectives. Measures will be needed in these water bodies to improve the water quality outcomes.

2.3.2 Transitional and coastal (TraC)

- Eighteen transitional and eight coastal water bodies are *Not at Risk* (Figure 8, Table 2) and require no additional investigative assessment or measures to be applied, other than those measures that are already in place.
- Nine transitional water bodies are in *Review* where more information is required to assess if the water bodies are *At Risk.*

2.4 Risk of not meeting groundwater environmental objectives

- Three groundwater bodies are *Not at Risk* (Figure 9, Table 3) and require no additional investigative assessment or measures to be applied, other than those measures that are already in place.
- Two groundwater bodies are in *Review* (Figure 9). Spiddal and Clifden Castlebar are in *Review* as they are hydrologically linked to surface waters that are not meeting water quality objectives where it is considered likely that groundwater is a contributing source of phosphorus.

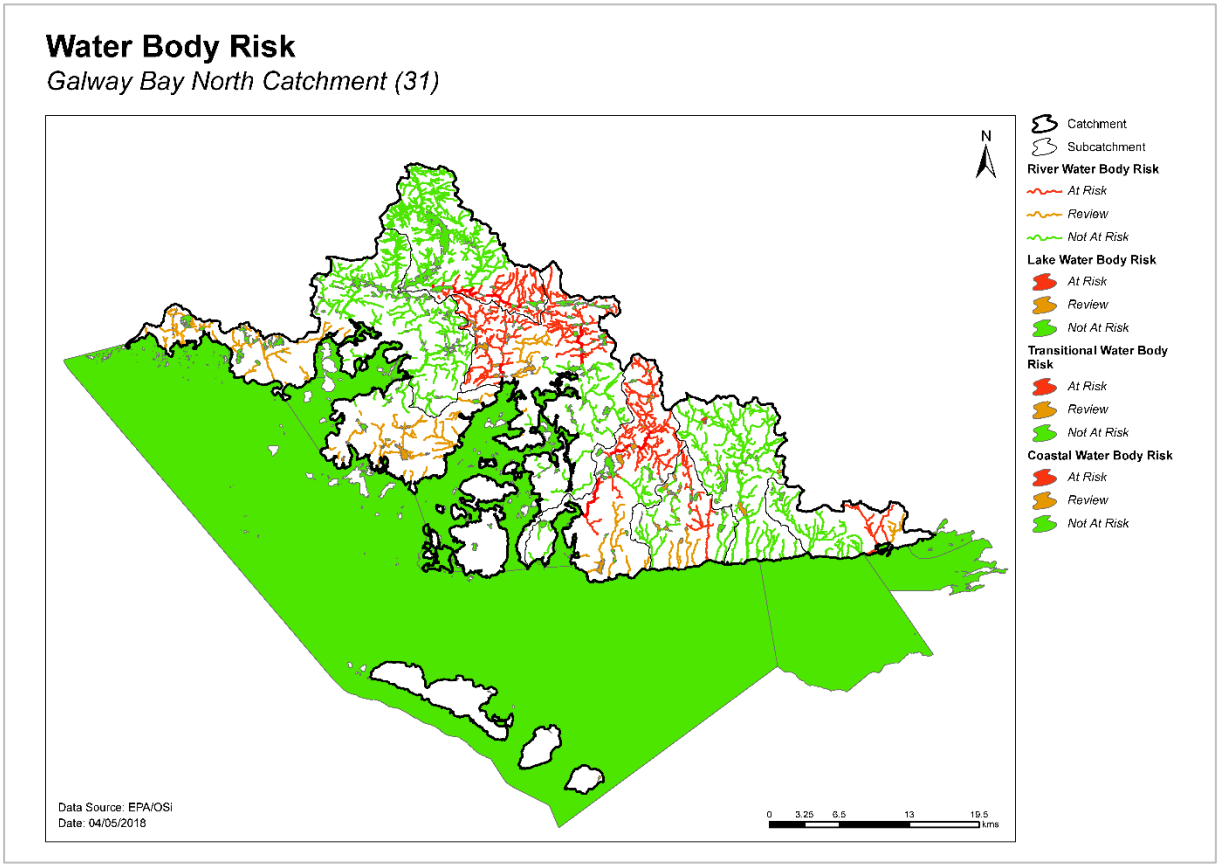


Figure 8. Surface water body risk

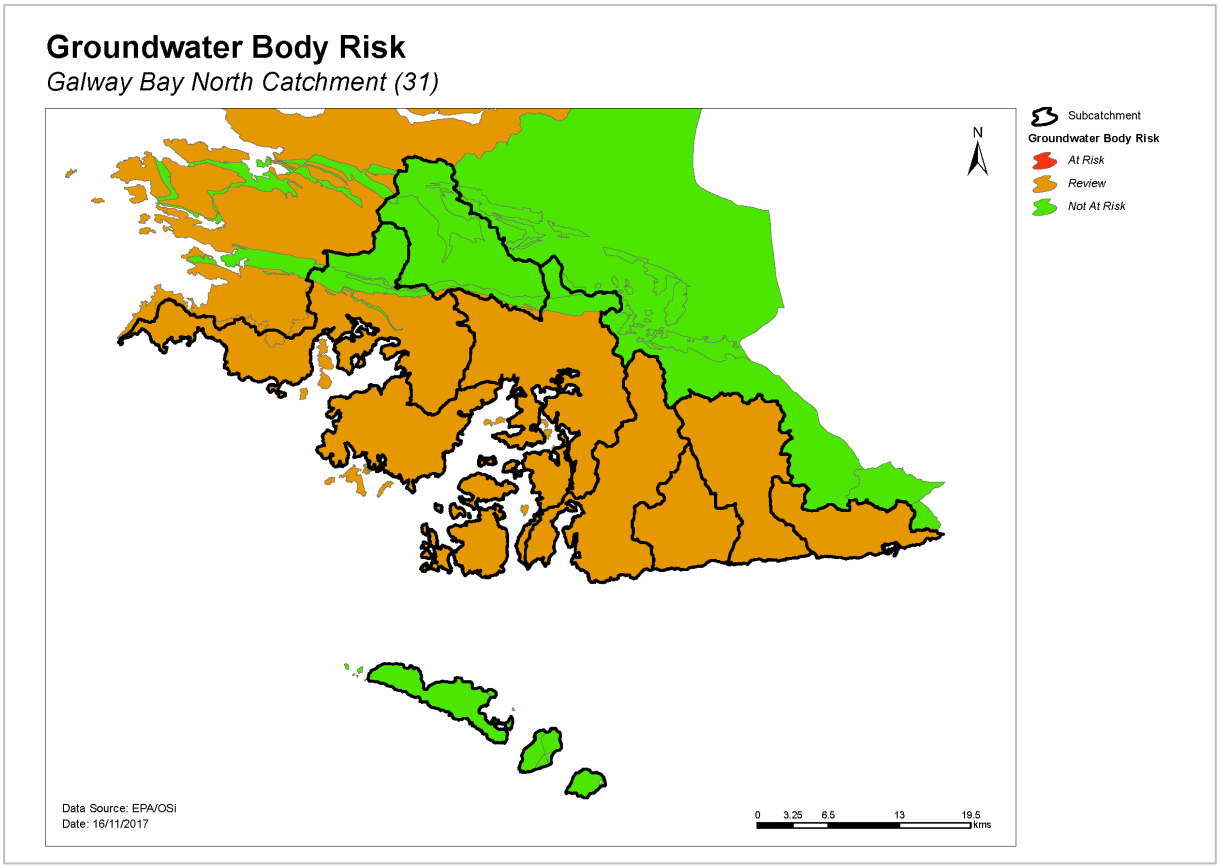


Figure 9. Groundwater body risk

2.5 Protected areas

2.5.1 Drinking water protected areas

- There are 16 abstractions in the Galway Bay North Catchment comprising one group water scheme (Scéim Uisce Loch Hirbirte & Leitir Mealláin) and nine public supply schemes (Appendix 4).
- Twelve of the abstractions are from two groundwater bodies (Spiddal and Inishmore), three are from lakes (Illauntrasna, Anaserd and Loughaunwillan), and one is from a very small lake (Lough Lerin) at the headwaters of the Dooletter East_010 river water body. The list of the public supplies and the associated water bodies is provided in Appendix 4.
- All sources were compliant with the standard for nitrate in 2015.
- All sources were compliant with the standard for pesticides in 2015.

2.5.2 Bathing waters

- There are 12 designated marine bathing waters in the catchment.
- Nine of the 12 were in satisfactory condition.
- The remaining three – Trá na mBan, An Spidéal; Trá na bhForbacha, Na Forbacha; and Grattan Road Beach – failed to meet their environmental objectives due to bacteriological water quality.
- The list of the bathing waters and the associated water bodies are provided in Table 4.

Table 4. Bathing waters in the catchment

Bathing Water	Water Body Intersection	Objective met?	Comment	Objective met?		Comment
Name	Code	Name	Code	Yes	No	
Trá na mBan, An Spidéal	IEWEBWC010_0000_0400	Aran Islands, Galway Bay, Connemara (HAs 29;31)	IE_WE_010_0000		✓	Principal pressure at An Spidéal is believed to be septic tank drainage and sewage discharges
Trá na bhForbacha, Na Forbacha	IEWEBWC100_0000_0100	Outer Galway Bay	IE_WE_100_0000		✓	Principal pollution pressure is the Forbacha River which drains onto the beach. Septic tank systems are the significant pressure on this river.
Grattan Road Beach	IEWEBWT170_0700_0100	Corrib Estuary	IE_WE_170_0700		✓	Grattan Road is subject to urban pressures from sewer overflows in Galway city.
Salthill Beach	IEWEBWC170_0000_0200	Inner Galway Bay North	IE_WE_170_0000	✓		
Silverstrand Beach	IEWEBWC170_0000_0100	Inner Galway Bay North	IE_WE_170_0000	✓		
Céibh an Spidéil	IEWEBWT180_0100_0100	Spiddal Estuary	IE_WE_180_0100	✓		
An Trá Mór, Coill Rua, Indreabhán	IEWEBWC010_0000_0300	Aran Islands, Galway Bay, Connemara (HAs 29;31)	IE_WE_010_0000	✓		
Trá an Dóilín, An Ceathrú Rua	IEWEBWC200_0000_0100	Kilkieran Bay	IE_WE_200_0000	✓		
Trá Chaladh Fínis, Carna	IEWEBWC010_0000_0100	Aran Islands, Galway Bay, Connemara (HAs 29;31)	IE_WE_010_0000	✓		
Goirtín, Cloch na Rón	IEWEBWC230_0000_0100	Bertraghboy Bay	IE_WE_230_0000	✓		
Cill Mhuirbhigh, Inis Mór	IEWEBWC010_0000_0200	Aran Islands, Galway Bay, Connemara (HAs 29;31)	IE_WE_010_0000	✓		
Trá Inis Oirr (Main Beach)	IEWEBWC010_0000_0250	Aran Islands, Galway Bay, Connemara (HAs 29;31)	IE_WE_010_0000	✓		

2.5.3 Shellfish areas

- There is one designated shellfish area in the catchment (Table 6).
- The shellfish area is compliant with the relevant standards and there are no water quality issues of concern.

Table 5. Designated shellfish waters in the catchment

Shellfish Area		Water Body Intersection		Objective met?	
Name	Code	Name	Code	Yes	No
Kilkieran Bay	IEPA2_0010	Loch an Aibhinn, Camus Bay	IE_WE_200_0700	✓	
		Camus Bay	IE_WE_200_0200		
		Kilkieran Bay	IE_WE_200_0000		

2.5.4 Nutrient sensitive areas

- There are no nutrient sensitive areas in the Galway Bay North catchment.

2.5.5 Natura 2000 sites

- There are 12 Special Areas of Conservation (SACs) in the catchment (Appendix 5), not all of which have water quality and/or quantity conservation objectives for their qualifying interests.
- Thirty-nine water bodies (37 lakes and two TraC 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 two Special Protected Areas (SPAs) in the catchment:
    - Connemara Bog Complex SPA
    - Inner Galway Bay 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 no heavily modified water bodies (HMWB) in the catchment.
- There are no artificially modified water bodies (AWB) in the catchment.

3 Significant issues in *At Risk* water bodies

- Excess phosphates leading to eutrophication is the dominant issue in the rivers and lakes.
- Alteration of hydromorphological (or physical) conditions is one of the most significant issues in rivers in the North Galway Bay Catchment. This includes inputs of excess fine sediment and alteration of the morphology of the river channel, which in turn alter habitat conditions. This can occur because of, for example, implementing river and field drainage schemes, forestry activities, animal access, and discharge from quarries.

4 Significant pressures

4.1 Water bodies

- Where water bodies have been classed as *At Risk*, by water quality or survey data, significant pressures have been identified.
- Figure 10 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 through the initial characterisation process in nine water bodies, four of which have multiple pressures. These significant pressures will be refined as further characterisation is carried out.
- The significant pressure affecting the greatest number of water bodies is forestry, followed by domestic waste water, industry, other, peat, urban run-off and hydromorphological pressures (Figure 10).
- There are no *At Risk* TraC water bodies in the catchment.

4.1.2 Groundwater

There are no significant pressures affecting the groundwater bodies.

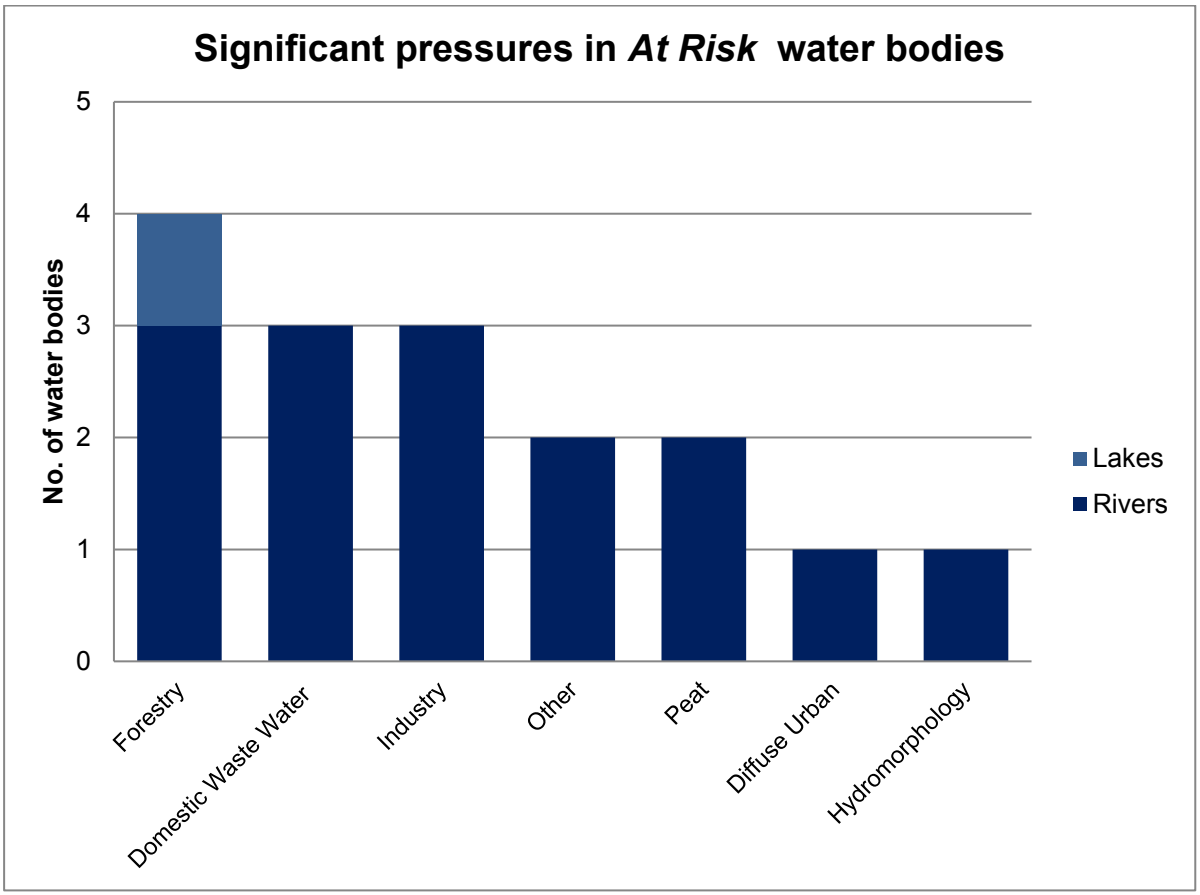


Figure 10. Significant pressures impacting on *At Risk* water bodies

4.2 Pressure type

4.2.1 Forestry

- Forestry has been identified as a significant pressure in a lake (Seecon) and three river water bodies (Figure 11). Forested areas planted on peat soils and forestry activities, such as clearfelling and replanting, have contributed to significant impacts of siltation and excess nutrients in surface water bodies resulting in algal growth.

4.2.2 Domestic waste water

- Domestic waste water has been identified as a significant pressure in three river water bodies (Invermore_020, Owenriff (South Galway) _010 and Barna (Stream)_010). This is due to concentrations of domestic waste water systems in areas of high susceptibility to phosphate transport via near surface pathways, leading to elevated nutrients (Figure 12).

4.2.3 Industry

- Industry has been identified as a significant pressure in three river water bodies Screeb_010, Owenriff (South Galway) _010, and Barna (Stream)_010. These are point source discharges arising from industrial facilities. Nutrient, organic and sediment impacts are the main impacts from these discharges. (Figure 13).

4.2.4 Other significant pressures

- *Anthropogenic unknown*
  Recess_010 has deteriorated in status from Good to Moderate while Cashla-010 has deteriorated from High to Good (Figure 14). The specific pressure that has driven the biology status requires further investigation. CASHLA_010 has deteriorated due to unknown impacts and has a HES objective.

4.2.5 Extractive industry

- *Peat*
  Peat extraction and drainage has been identified as a significant pressure in the Invermore_020 and Cashla_010 river water bodies. Elevated nutrient concentrations and changes to habitat morphology because of siltation are the significant issues (Figure 15).

4.2.6 Diffuse urban

- Diffuse urban pressures, caused by misconnections, leaking sewers and runoff from paved and unpaved areas, have been identified as a significant pressure in the Barna (Stream)_010 river water body (Figure 16). A specific issue is associated with from towns within Knock (Furbo)_010 subcatchment. It contributes to elevated concentrations of phosphates and ammonia in these catchments.

4.2.7 Hydromorphology

- A river water body within the Owenriff (South Galway) (SC31_5) subcatchment has experienced accelerated bank erosion following recent flooding. Further assessment will need to be carried out to identify the contributing factors to these issues. See Figure 17 and Appendix 3 for information on this water body.

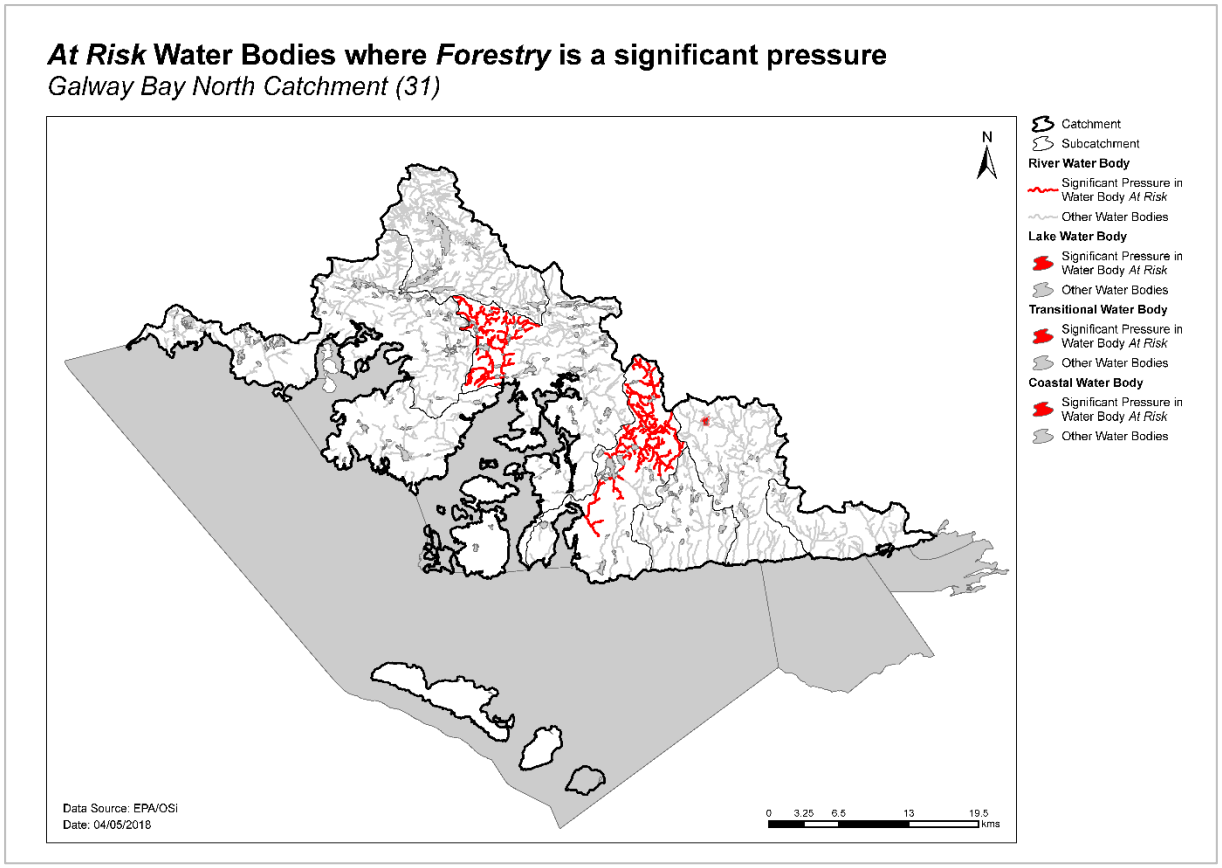


Figure 11. Water bodies that are *At Risk* and are impacted by forestry

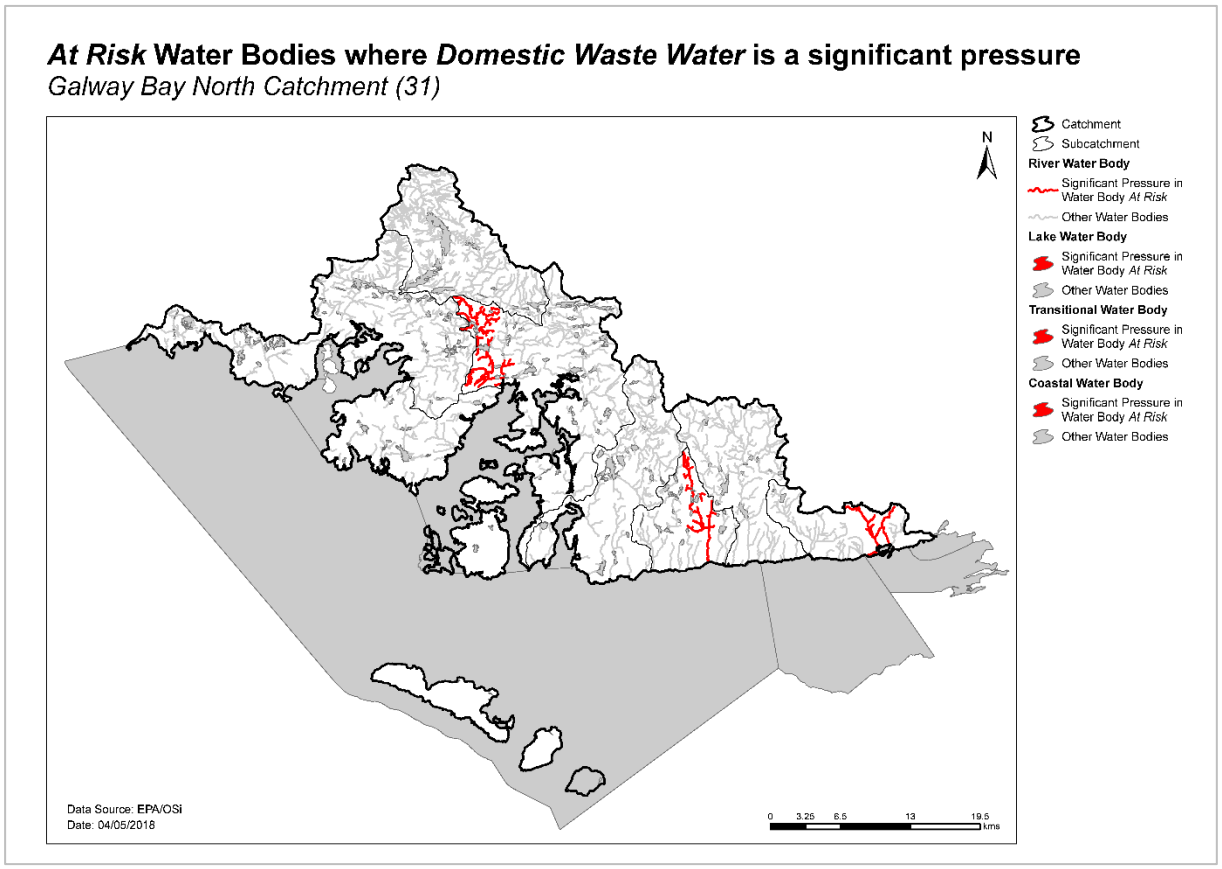


Figure 12. Water bodies that are *At Risk* and are impacted by domestic waste water

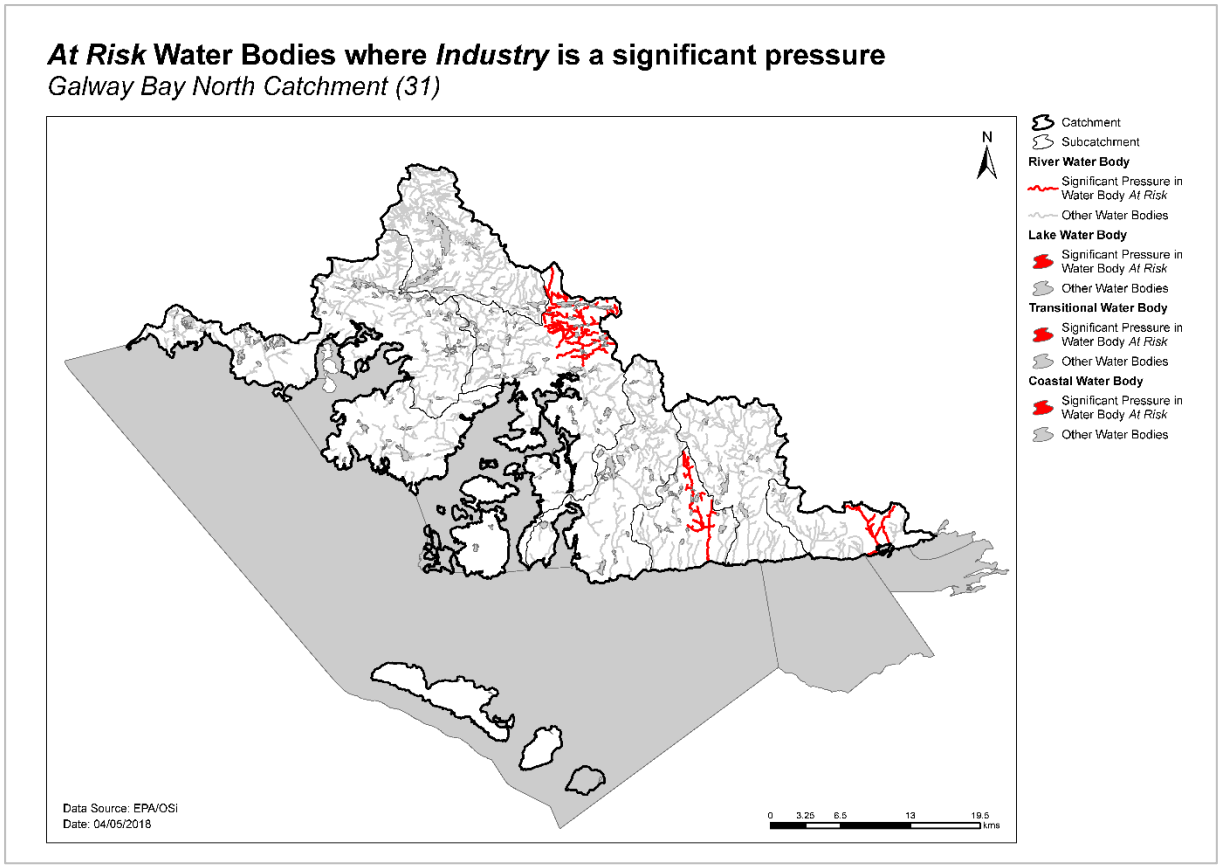


Figure 13. Water bodies that are *At Risk* and are impacted by industry

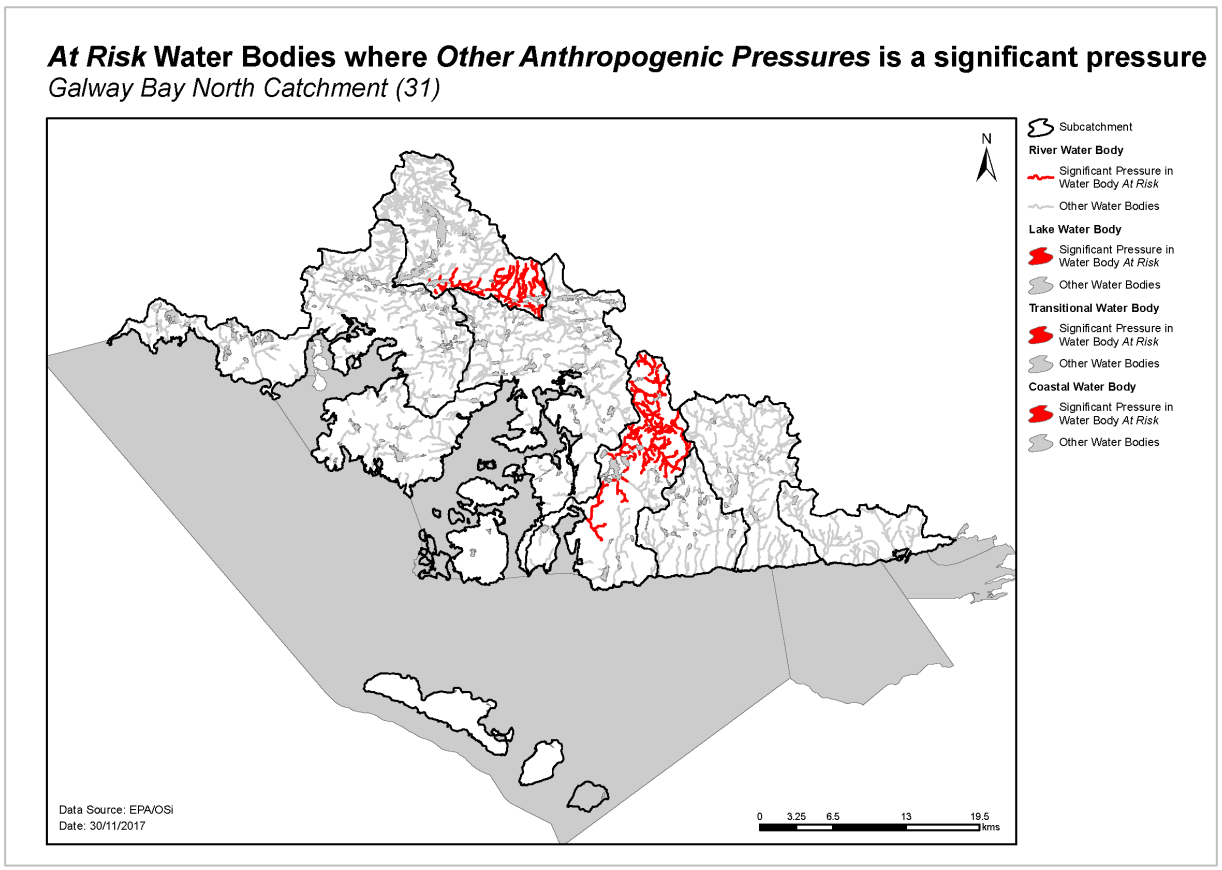


Figure 14. Water bodies that are *At Risk* and are impacted by anthropogenic pressures

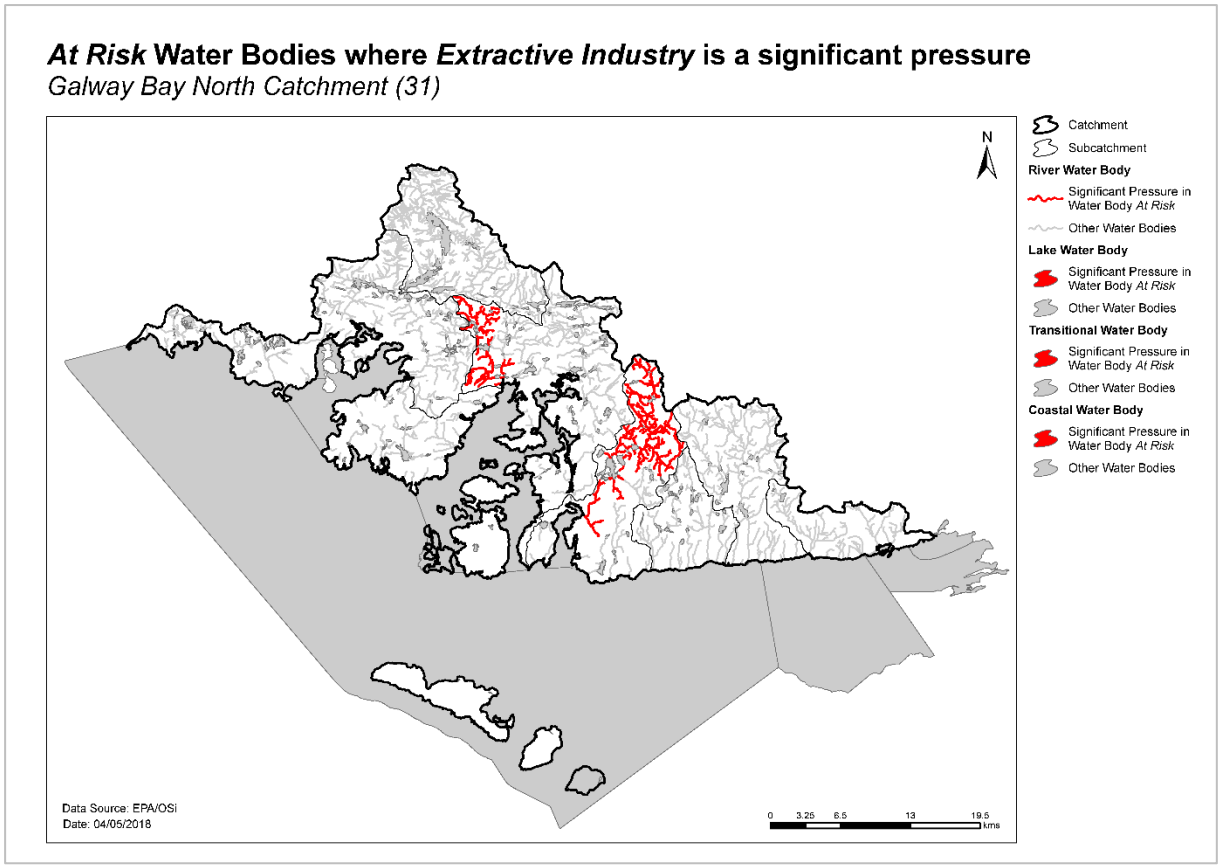


Figure 15. Water bodies that are *At Risk* and are impacted by peat

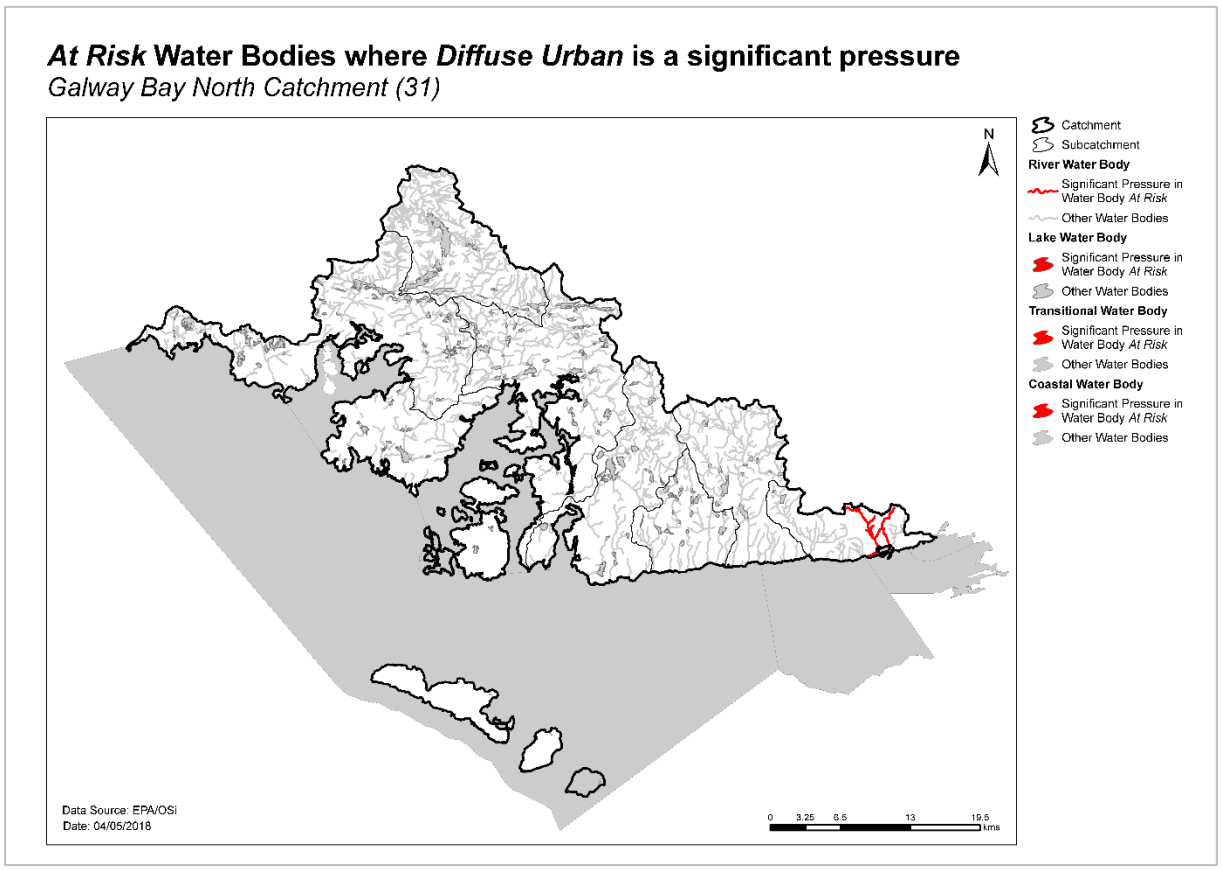


Figure 16. Water bodies that are *At Risk* and are impacted by diffuse urban

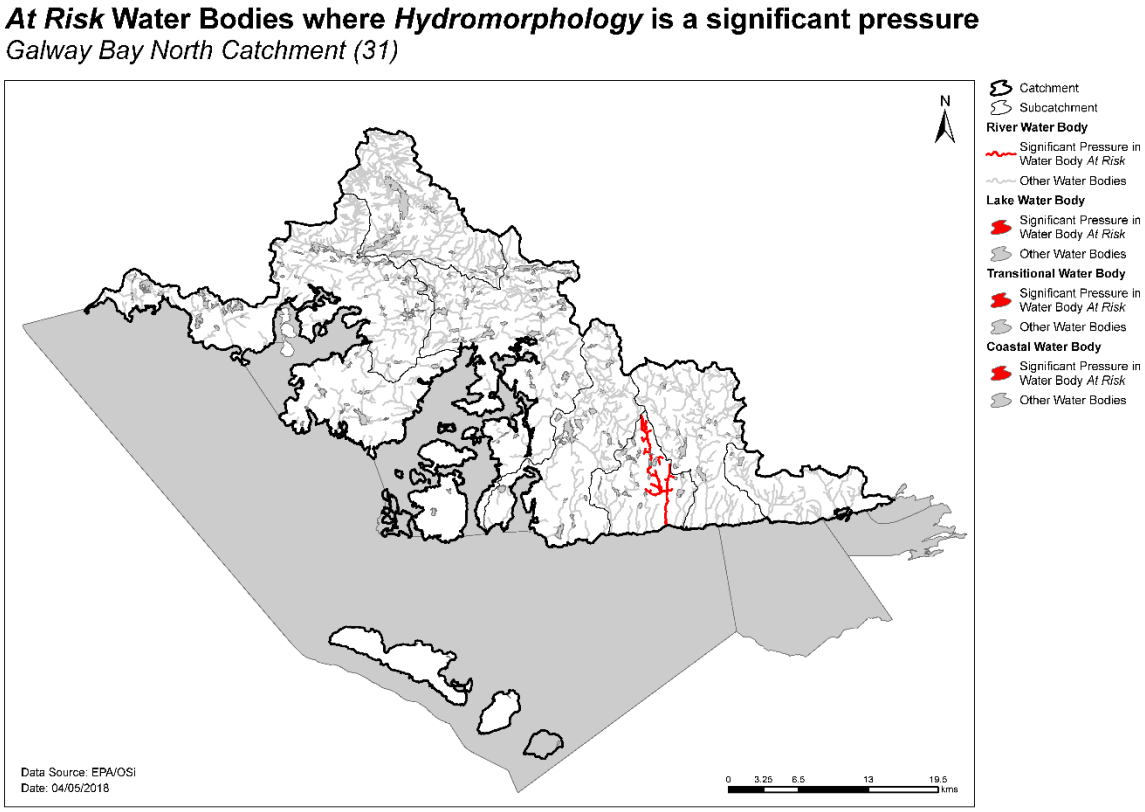


Figure 17. Water bodies that are *At Risk* and are impacted by hydromorphological pressures

5 Load reduction assessment

5.1 River water body load reductions

- Based on the assessment, it indicated there are no load reductions required in the Galway Bay North catchment. Concentrations of orthophosphate, ammonia and total oxidised nitrogen are very low. At all monitoring points, rivers where water chemistry data is available which is limited, nutrient concentrations remain well below environmental quality standards (Appendix 2).

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.

- Based on the available data, there are no load reductions required for TraC water bodies or for the rivers discharging into the TraC. It should be noted 26 of the 35 TraC water bodies have an Unassigned status.

6 Further characterisation and local catchment assessments

- Further characterisation through local catchment assessments is needed in eight of the *At Risk* water bodies (Table 6) to refine the understanding of the significant pressures at the site/field scale so that specific and targeted measures can be identified.
- Further characterisation through local catchment assessments is needed in 52 *Review* water bodies at to refine the understanding of the significant pressures at the site/field scale so that specific and targeted measures can be identified.
- Brief definitions on the 10 IA assessment scenarios are given in Appendix 7.

Table 6. Local Catchment Assessment Allocation for *At Risk* and *Review* River and Lake Water Bodies in the Catchment

Risk	IA 1	IA2	IA 3	IA4	IA 5	IA6	IA 7	IA 8	IA 9	IA10	Total
At Risk	2	0	0	0	2	1	3	2	1	0	**11**
Review	20	0	33	0	0	1	0	0	0	0	**54**
Note water bodies may have multiple categories of Local Catchment Assessments											

7 Catchment summary

- Of the 43 river water bodies, seven are *At Risk* of not meeting their WFD objectives.
- One of 146 lake water bodies is *At Risk* of not meeting its WFD objectives.
- Excess nutrient loss, mainly phosphorus, leading to eutrophication is the dominant issue in the rivers and lakes in the catchment. The significant pressures relating to excess nutrients are primarily forestry, as well as domestic waste water and industry. Poor habitat quality from high levels of fine sediment is also a concern for several water bodies.
- There are no *At Risk* TraC water bodies in the catchment.
- There are no *At Risk* groundwater bodies in the catchment.

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 2 areas for action in the North Galway Bay 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 from 2018 to 2021.

8.2 Outcomes of process

The outcomes for the Galway Bay North catchment are summarised below.

- Two recommended areas for actions (Table 7, Figure 18) were selected.
- These are the Recess and Cashla.
- These include two *At Risk* and eight *Review* river water bodies.
- One groundwater body, which is in *Review* due to groundwater contribution of nutrients to surface water bodies, intersects with two of the recommended areas for action, see Table 8. Actions taken to improve surface water will need to take account of the groundwater contribution to surface water.

A remaining fifty-nine *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 19. These include:

- fifty river and lake water bodies – 44 *At Risk* and six *Review*, and
- nine transitional water bodies – nine in *Review.*

Table 7. Recommended Areas for Action in the Galway Bay North Catchment

Recommended area for action	Number of water bodies	SCs	Local authority	Reason for Selection
Recess	1	31_2	Galway	• Possible quick win - limited extent of pressures. • One deteriorated water body. • Headwaters.
Cashla	9	31_8	Galway	• Test case for consideration of possible windfarm development impact. • One deteriorated High Ecological Status objective river water body. • Headwaters to Casla Bay.

Table 8. Groundwater bodies intersecting with surface water bodies in recommended areas for action

Groundwater body			Intersecting surface water body		Recommended Area for Action
Code	Name	Risk	Code	Name	
IE_WE_G_0004	Spiddal	Review	IE_WE_31R010400	RECESS_010	Recess
			IE_WE_31C010100	CASHLA_010	Cashla
			IE_WE_31K080800	KEERAUNNAGARK_NORTH_010	
			IE_WE_31_1092	Cloonadoon	
			IE_WE_31_129	Fiddaunnavreaghlee	
			IE_WE_31_136	Aclogher Cloghermore	
			IE_WE_31_141	Formoyle	
			IE_WE_31_212	na Creibhinne	
			IE_WE_31_53	Charraig Choill an Bhalla	
			IE_WE_31_7	Roisin	

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 two *At Risk* river water bodies, it is predicted both water bodies will improve by 2021. For the eight *Review* river water bodies, the absence of information means that there is no scientific basis to quantify an environmental objective date, and therefore a 2027 date is set for these water bodies, see Table 9.

Table 9. 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
At Risk	2	2	0
Review	8	0	8
Not at Risk	0	0	0
Total	10	2	8

- One hundred and fifty-five water bodies have met their 2015 environmental objective but five water bodies have failed to meet the protected area objective for bathing waters (3), shellfish areas (1) and Natura 2000 Sites (1).
- As action is not yet planned to be taken in five of the remaining six *At Risk* surface water bodies, a 2027 date is applied to all five water bodies. One water body has a single point discharge as the single significant pressure and, as a result, a 2021 objective is set.
- For the 53 *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 10.

Table 10. 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	5	1	4
Review	11	0	11
Lakes			
At Risk	1	0	1
Review	33	0	33
TraC's			
At Risk	0	0	0
Review	9	0	9
Total	59	1	58

9.2 Groundwater

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

10 Acknowledgements

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

- Galway County Council
- Galway City Council.
- Inland Fisheries Ireland.
- Local Authorities Waters & Communities Office.
- Irish Water.
- 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.
- Geological Survey Ireland.
- National Parks and Wildlife Service.
- Marine Institute.

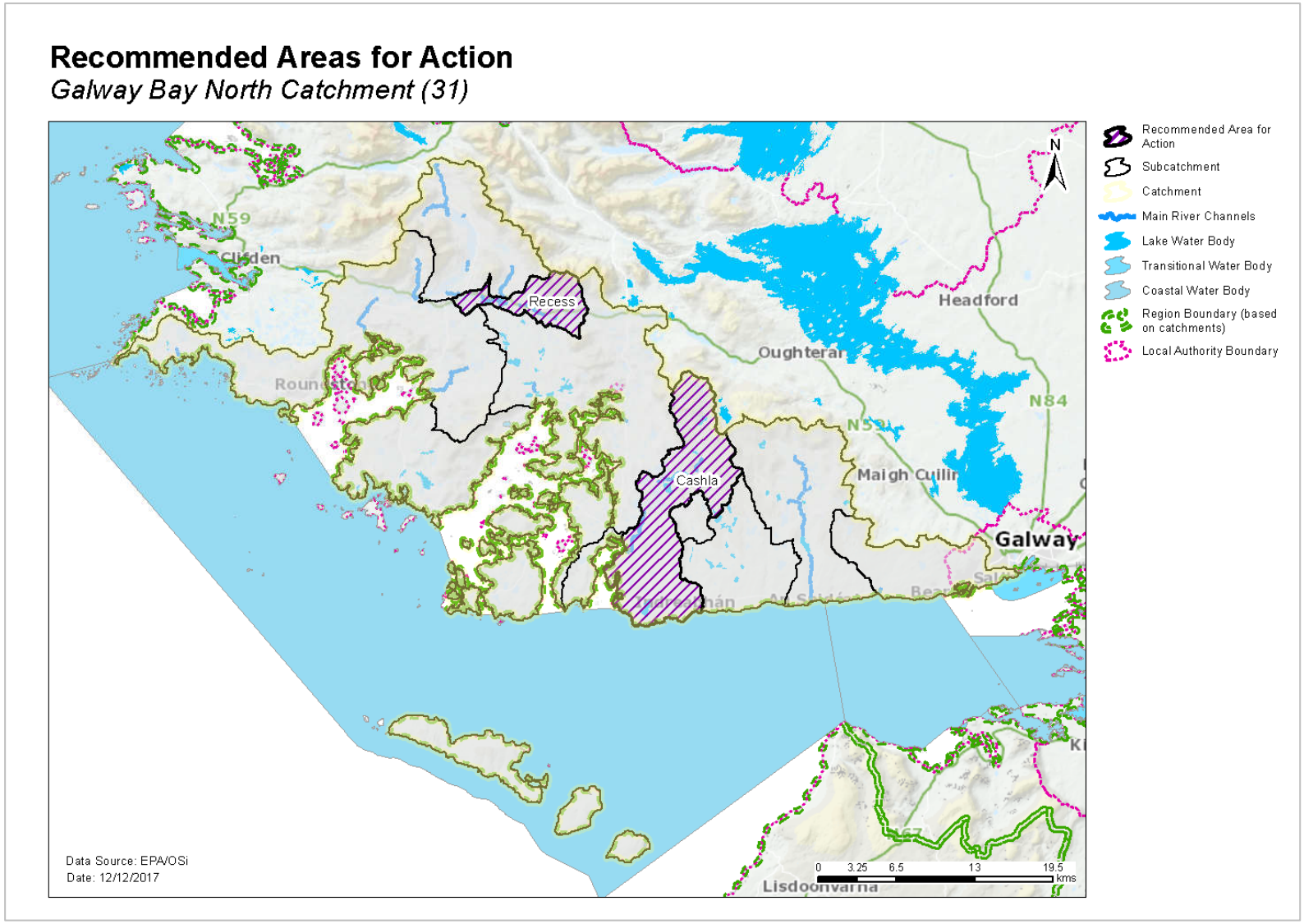


Figure 18. Location of Recommended Areas for Action in the Galway Bay North Catchment

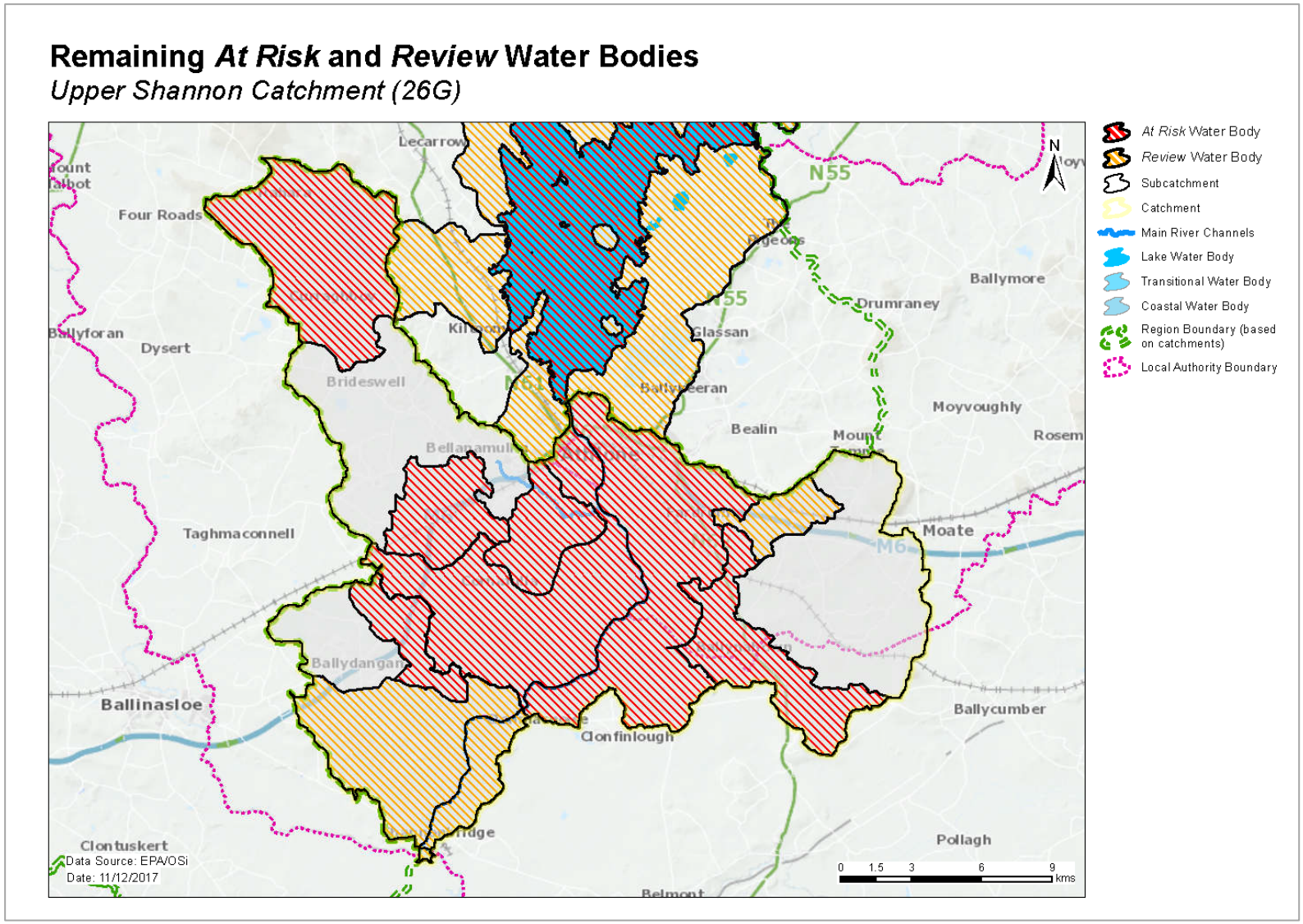


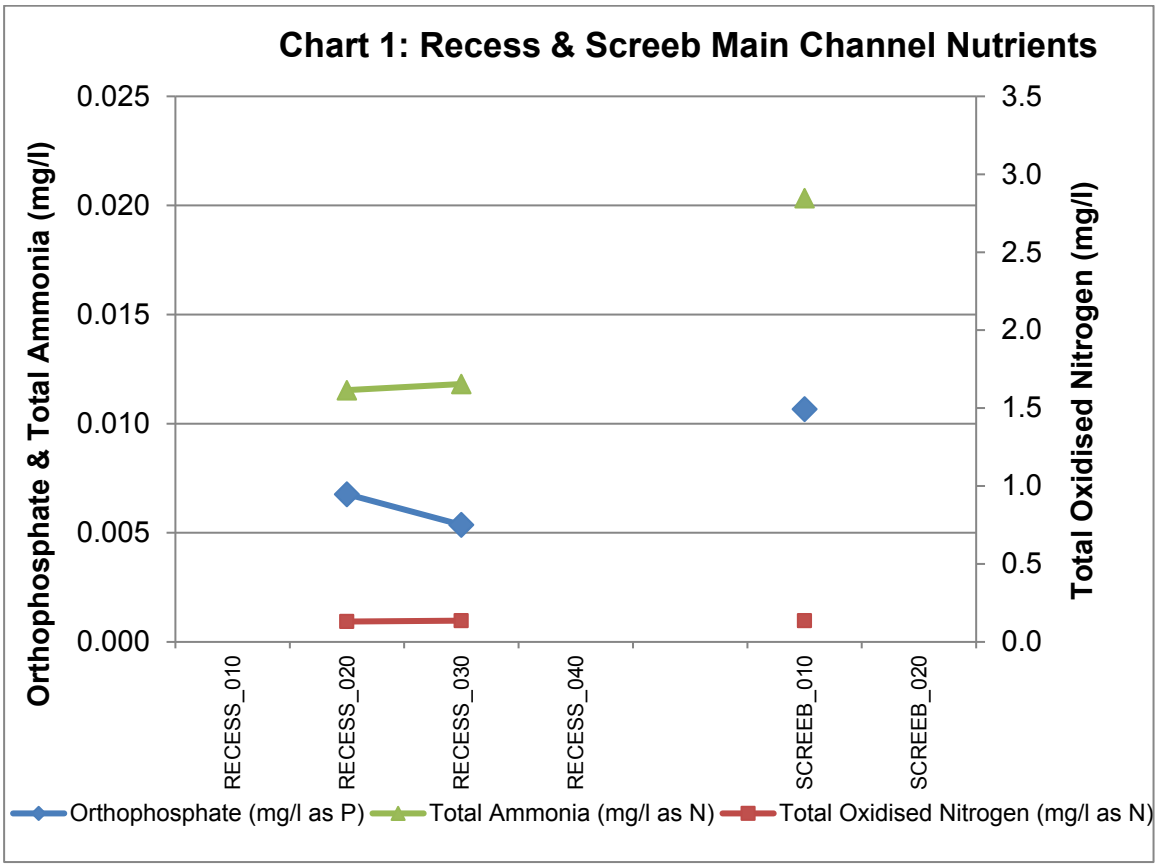
Figure 19. Location of *At Risk* and *Review* water bodies located outside Recommended Areas for Action in the Galway Bay North Catchment

Appendix 1 High ecological status objective water bodies

Water body/ Site	Type	Codes	2015 Status
Derryclare	Lake	IE_WE_31_227	High
Shindilla	Lake	IE_WE_31_171	High
Nahasleam	Lake	IE_WE_31_208	High
Anaserd	Lake	IE_WE_31_211	High
Ballynahinch	Lake	IE_WE_31_228	High
OWENGOWLA_010	River	IE_WE_31O020300	High
RECESS_040	River	IE_WE_31R010700	High
CASHLA_010	River	IE_WE_31C010100	Good
Loch Tanai	Transitional	IE_WE_200_0600	High
Loch an Aibhinn, Camus Bay	Transitional	IE_WE_200_0700	High
Loch an tSaile, North of Camus Bay	Transitional	IE_WE_200_1100	High
Kilkieran Bay	Coastal	IE_WE_200_0000	High
Lettermullen Pool	Coastal	IE_WE_200_0100	High
Outer Galway Bay	Coastal	IE_WE_100_0000	High

Appendix 2 Catchment Scale Nutrient concentrations and in-stream loads

The results of the instream water quality assessment for the River Recess and River Screeb are illustrated in Chart 1. The assessment is based on the mean concentrations between 2013 and 2015 at each site where data was available, from the headwaters down to the estuary. Concentrations of orthophosphate, ammonia and total oxidised nitrogen (TON) in both rivers are very low. At all monitoring points along both rivers where water chemistry data is available, nutrient concentrations remain well below environmental quality standards.



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
31_1	IE_WE_31_142	Na Gcaor	Lake	Review	Unassigned	Unassigned	N		2027	
31_1	IE_WE_31_186	Keamnacally	Lake	Review	Unassigned	Unassigned	N		2027	
31_1	IE_WE_31_200	Skannive	Lake	Review	Unassigned	Unassigned	N		2027	
31_1	IE_WE_31_60	Glennaun	Lake	Review	Unassigned	Unassigned	N		2027	
31_1	IE_WE_31A030620	An_Aird_Mhór_010	River	Review	Unassigned	Unassigned	N		2027	
31_1	IE_WE_31C080760	Coill_Sáile_010	River	Review	Unassigned	Unassigned	N		2027	
31_1	IE_WE_31C400850	Cuilleen 31_010	River	Review	Unassigned	Unassigned	N		2027	
31_1	IE_WE_31D150920	Dooletter_East_010	River	Review	Unassigned	Unassigned	N		2027	
31_2	IE_WE_31R010400	Recess_010	River	At Risk	Good	Moderate	N	Other	2021	Recess
31_3	IE_WE_31_1000	Barrnahask	Lake	Review	Unassigned	Unassigned	N		2027	
31_3	IE_WE_31_166	Curreel	Lake	Review	Unassigned	Unassigned	N		2027	
31_3	IE_WE_31_179	Invermore	Lake	Review	Unassigned	Unassigned	N		2027	
31_3	IE_WE_31_188	Mongaun	Lake	Review	Unassigned	Unassigned	N		2027	
31_3	IE_WE_31_218	Cuskeamatinny	Lake	Review	Unassigned	Unassigned	N		2027	
31_3	IE_WE_31_222	Invernagleragh	Lake	Review	Unassigned	Unassigned	N		2027	
31_3	IE_WE_31_34	Avally	Lake	Review	Unassigned	Unassigned	N		2027	
31_3	IE_WE_31_40	Aliggan	Lake	Review	Unassigned	Unassigned	N		2027	
31_3	IE_WE_31_6	Nahavnygarriva	Lake	Review	Unassigned	Unassigned	N		2027	
31_3	IE_WE_31_61	Arusheen	Lake	Review	Unassigned	Unassigned	N		2027	
31_3	IE_WE_31_83	Inverbeg	Lake	Review	Unassigned	Unassigned	N		2027	
31_3	IE_WE_31_91	Bunnahask	Lake	Review	Unassigned	Unassigned	N		2027	
31_3	IE_WE_31I010080	Invermore_010	River	At Risk	Unassigned	Poor	N	For	2027	
31_3	IE_WE_31I010500	Invermore_020	River	At Risk	Good	Poor	N	DWW,For,Peat	2027	
31_3	IE_WE_31I060990	Inverbeg Lough Stream 31_010	River	Review	Unassigned	Unassigned	N		2027	
31_3	IE_WE_31S010570	Screeb_010	River	At Risk	Moderate	Moderate	N	Ind	2021	
31_3	IE_WE_200_1000	Loch Doire Bhanbh (Derravonniff)	Transitional	Review	Unassigned	Unassigned	N		2027	
31_4	IE_WE_31_63	Derreen	Lake	Review	Unassigned	Unassigned	N		2027	
31_4	IE_WE_31C250230	Callow_010	River	Review	Unassigned	Unassigned	N		2027	
31_4	IE_WE_31D030190	Dolan_010	River	Review	Unassigned	Unassigned	N		2027	
31_4	IE_WE_31K130730	Keerhaun_South_010	River	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
31_4	IE_WE_31L250940	Letterdife_010	River	Review	Unassigned	Unassigned	N		2027	
31_5	IE_WE_31_1053	Cloghernagun	Lake	Review	Unassigned	Unassigned	N		2027	
31_5	IE_WE_31_1119	Uggamore	Lake	Review	Unassigned	Unassigned	N		2027	
31_5	IE_WE_31_16	Nambrackmore Loughanbeg	Lake	Review	Unassigned	Unassigned	N		2027	
31_5	IE_WE_31_167	Fadda Inverin	Lake	Review	Unassigned	Unassigned	N		2027	
31_5	IE_WE_31_191	Loughaunbeg	Lake	Review	Unassigned	Unassigned	N		2027	
31_5	IE_WE_31_2	Tullaghalaher	Lake	Review	Unassigned	Unassigned	N		2027	
31_5	IE_WE_31_201	Canagun Or Ergoo	Lake	Review	Unassigned	Unassigned	N		2027	
31_5	IE_WE_31_230	Uggabeg	Lake	Review	Unassigned	Unassigned	N		2027	
31_5	IE_WE_31_52	Tullynasheay	Lake	Review	Unassigned	Unassigned	N		2027	
31_5	IE_WE_31_67	Tuyllynasheoy	Lake	Review	Unassigned	Unassigned	N		2027	
31_5	IE_WE_31_89	Crockaillenalee	Lake	Review	Unassigned	Unassigned	N		2027	
31_5	IE_WE_31A090790	Aille 31_010	River	Review	Unassigned	Unassigned	N		2027	
31_5	IE_WE_31O040300	Owenriff (South Galway)_010	River	At Risk	Good	Moderate	N	DWW,Hymo,Ind	2027	
31_6	IE_WE_31_1079	Loughaunayella	Lake	Review	Unassigned	Unassigned	N		2027	
31_6	IE_WE_31_168	Shliabh An Aonaigh	Lake	Review	Unassigned	Unassigned	N		2027	
31_6	IE_WE_31_229	Boliska	Lake	Review	Unassigned	Unassigned	N		2027	
31_6	IE_WE_31_27	Bealanambrack	Lake	Review	Unassigned	Unassigned	N		2027	
31_6	IE_WE_31_72	Nahalliagh	Lake	Review	Unassigned	Unassigned	N		2027	
31_6	IE_WE_31_98	Seecon	Lake	At Risk	Unassigned	Moderate	N	For	2027	
31_7	IE_WE_31B010200	Barna (Stream)_010	River	At Risk	Unassigned	Unassigned	N	DU,DWW,Ind	2027	
31_7	IE_WE_31K160960	Knocknacarragh_010	River	Review	Unassigned	Unassigned	N		2027	
31_8	IE_WE_31_1092	Cloonadoon	Lake	Review	Unassigned	Unassigned	N		2027	Cashla
31_8	IE_WE_31_129	Fiddaunnavreaghlee	Lake	Review	Unassigned	Unassigned	N		2027	Cashla
31_8	IE_WE_31_136	Aclogher Cloghermore	Lake	Review	Unassigned	Unassigned	N		2027	Cashla
31_8	IE_WE_31_141	Formoyle	Lake	Review	Unassigned	Unassigned	N		2027	Cashla
31_8	IE_WE_31_212	Na Creibhinne	Lake	Review	Unassigned	Unassigned	N		2027	Cashla
31_8	IE_WE_31_53	Charraig Choill An Bhalla	Lake	Review	Unassigned	Unassigned	N		2027	Cashla
31_8	IE_WE_31_7	Roisin	Lake	Review	Unassigned	Unassigned	N		2027	Cashla
31_8	IE_WE_31C010100	Cashla_010	River	At Risk	High	Good	Y	For,Other,Peat	2021	Cashla
31_8	IE_WE_31K080800	Keeraunnagark_North_010	River	Review	Unassigned	Unassigned	N		2027	Cashla
31_8	IE_WE_190_0200	Lough Faddacrussan	Transitional	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
31_9	IE_WE_020_0100	Loch Mor, Inis Oirr	Transitional	Review	Unassigned	Unassigned	N		2027	
31_9	IE_WE_030_0100	Port Na Cora Lochs, Inis Meain	Transitional	Review	Unassigned	Unassigned	N		2027	
31_9	IE_WE_040_0100	Loch Na Gcadhan, Inis Meain	Transitional	Review	Unassigned	Unassigned	N		2027	
31_9	IE_WE_055_0100	Baile An Duin Lagoon	Transitional	Review	Unassigned	Unassigned	N		2027	
31_9	IE_WE_060_0100	Loch An Chara, Arainn	Transitional	Review	Unassigned	Unassigned	N		2027	
31_9	IE_WE_070_0100	Loch Phort Chorruch, Arainn	Transitional	Review	Unassigned	Unassigned	N		2027	
31_9	IE_WE_090_0100	Loch Amurvy, Arainn	Transitional	Review	Unassigned	Unassigned	N		2027	

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	Objective met? Yes /No	Reason why not met
1200PRI0413	Scéim Uisce Loch Hirbirte & Leitir Mealláin	Spiddal	IE_WE_G_0004	Yes	N/A
1200PUB1043	Rosmuc	Spiddal	IE_WE_G_0004	Yes	N/A
1200PUB1045	Spiddal	Spiddal	IE_WE_G_0004	Yes	N/A
1200PUB1053	Inishmor - Cregacareen	Inishmore	IE_WE_G_0068	Yes	N/A
1200PUB1008	Carna Kilkieran Lough Aunore	Spiddal	IE_WE_G_0004	Yes	N/A
	Lough Lerin	Dooletter East_010 RWB	IE_WE_31D150920	Yes	N/A
1200PUB1025	Inisheer Borehole	Inishmore	IE_WE_G_0068	Yes	N/A
	Inisheer Borehole	Inishmore	IE_WE_G_0068	Yes	N/A
	Inisheer Borehole	Inishmore	IE_WE_G_0068	Yes	N/A
	Inisheer Borehole	Inishmore	IE_WE_G_0068	Yes	N/A
	Inisheer Borehole	Inishmore	IE_WE_G_0068	Yes	N/A
	Inisheer Borehole	Inishmore	IE_WE_G_0068	Yes	N/A
1200PUB1026	Inishmor Borehole at Kilcarna	Inishmore	IE_WE_G_0068	Yes	N/A
1200PUB1046	Lettermore	Illauntrasna	IE_WE_31_1126	Yes	N/A
1200PUB1005	Ballyconneely	Anaserd	IE_WE_31_211	Yes	N/A
1200PUB1009	Carraroe	Loughaunwillan	IE_WE_31_120	Yes	N/A

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 Connemara Bog Complex SAC, Maumturk Mountains SAC and The Twelve Bens/Garraun Complex SAC).

SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Cregduff Lough SAC 001251	none							
Connemara Bog Complex SAC 002034	1150	Good	Transitional	Loch Conaortha (L. Aconeera)	Unassigned (R)	Yes	IE_WE_200_1200	Yes
			Transitional	Loch an tSaile, North of Camus Bay	High (NAR)	No	IE_WE_200_1100	Yes
			Transitional	Loch Doire Bhanbh (Derravonniff)	Unassigned (R)	Yes	IE_WE_200_1000	Yes
	3110 (Potential 3130)	At least Good	Lake	Bollard	Unassigned (NAR)	No	IE_WE_31_216	Yes
			Lake	Anillaunlughy East	Unassigned (NAR)	No	IE_WE_31_169	Yes
			Lake	Ballynahinch	High (NAR-HES obj)	No	IE_WE_31_228	Yes
			Lake	Nabrucka	Unassigned (NAR)	No	IE_WE_31_43	Yes
			Lake	Ballinafad North	Unassigned (NAR)	No	IE_WE_31_1091	Yes
			Lake	Ballinafad South	Unassigned (NAR)	No	IE_WE_31_97	Yes
			Lake	Loughyvangan	Unassigned (NAR)	No	IE_WE_31_48	Yes
			Lake	Garroman or Glendollagh	Unassigned (NAR)	No	IE_WE_31_219	Yes
	3130	At least Good	Lake	Maumeen	Unassigned (NAR)	No	IE_WE_31_189	Yes
			Lake	Nalawney	Unassigned (NAR)	No	IE_WE_31_35	Yes
			Lake	na Cuige Rua West	Unassigned (NAR)	No	IE_WE_31_78	Yes
			Lake	na Cuige Rua East	Unassigned (NAR)	No	IE_WE_31_85	Yes
			Lake	Chluain Toipin	Unassigned (NAR)	No	IE_WE_31_47	Yes
	Potential 3110	At least Good	Lake	Cuskeamatinny	Unassigned (R)	Yes	IE_WE_31_218	Yes
			Lake	Curreel	Unassigned (R)	Yes	IE_WE_31_166	Yes
			Lake	Aliggan	Unassigned (R)	Yes	IE_WE_31_40	Yes
			Lake	Avally	Unassigned (R)	Yes	IE_WE_31_34	Yes
			Lake	Glennaun	Unassigned (R)	Yes	IE_WE_31_60	Yes
			Lake	Keamnacally	Unassigned (R)	Yes	IE_WE_31_186	Yes
			Lake	Invermore	Unassigned (R)	Yes	IE_WE_31_179	Yes

SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Connemara Bog Complex SAC 002034	Potential 3110	At least Good	Lake	Inverbeg	Unassigned (R)	Yes	IE_WE_31_83	Yes
			Lake	Invernagleragh	Unassigned (R)	Yes	IE_WE_31_222	Yes
			Lake	Bunnahask	Unassigned (R)	Yes	IE_WE_31_91	Yes
			Lake	Arusheen	Unassigned (R)	Yes	IE_WE_31_61	Yes
			Lake	Barrnahask	Unassigned (R)	Yes	IE_WE_31_1000	Yes
			Lake	Mongaun	Unassigned (R)	Yes	IE_WE_31_188	Yes
			Lake	Aclogher Cloghermore	Unassigned (R)	Yes	IE_WE_31_136	Yes
			Lake	Charraig Choill an Bhalla	Unassigned (R)	Yes	IE_WE_31_53	Yes
			Lake	Formoyle	Unassigned (R)	Yes	IE_WE_31_141	Yes
			Lake	Roisin	Unassigned (R)	Yes	IE_WE_31_7	Yes
			Lake	Cloonadoon	Unassigned (R)	Yes	IE_WE_31_1092	Yes
			Lake	Uggabeg	Unassigned (R)	Yes	IE_WE_31_230	Yes
			Lake	Fadda Inverin	Unassigned (R)	Yes	IE_WE_31_167	Yes
			Lake	Uggamore	Unassigned (R)	Yes	IE_WE_31_1119	Yes
			Lake	Nambrackmore Loughanbeg	Unassigned (R)	Yes	IE_WE_31_16	Yes
			Lake	Tullaghalaher	Unassigned (R)	Yes	IE_WE_31_2	Yes
			Lake	Loughaunbeg	Unassigned (R)	Yes	IE_WE_31_191	Yes
			Lake	Cloghernagun	Unassigned (R)	Yes	IE_WE_31_1053	Yes
			Lake	Fiddaunnavreaghlee	Unassigned (R)	Yes	IE_WE_31_129	Yes
			Lake	Crockaillenalee	Unassigned (R)	Yes	IE_WE_31_89	Yes
			Lake	Canagun or Ergoo	Unassigned (R)	Yes	IE_WE_31_201	Yes
			Lake	Tullynasheay	Unassigned (R)	Yes	IE_WE_31_52	Yes
			Lake	Tuyllynasheoy	Unassigned (R)	Yes	IE_WE_31_67	Yes
			Lake	Boliska	Unassigned (R)	Yes	IE_WE_31_229	Yes
			Lake	Nahalliagh	Unassigned (R)	Yes	IE_WE_31_72	Yes
			Lake	Shliabh an Aonaigh	Unassigned (R)	Yes	IE_WE_31_168	Yes
			Lake	Loughaunayella	Unassigned (R)	Yes	IE_WE_31_1079	Yes
			Lake	Bealanambrack	Unassigned (R)	Yes	IE_WE_31_27	Yes
			Lake	Numerous NOT AT RISK lakes	Good/High (NAR)	No		Yes

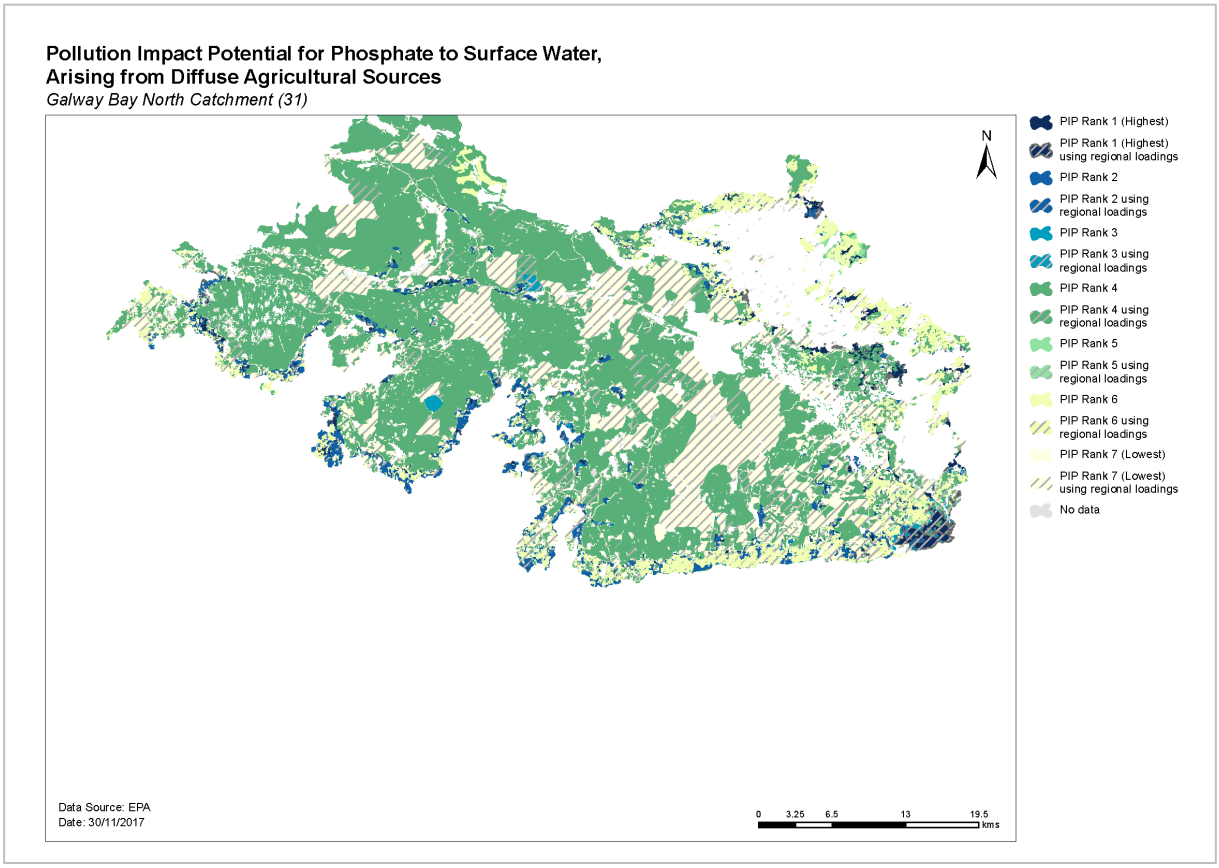
SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Connemara Bog Complex SAC 002034	Potential 3110/Potential 3130	At least Good	Lake	Rannaghaun	Unassigned (NAR)	No	IE_WE_31_153	Yes
			Lake	Athry	Unassigned (NAR)	No	IE_WE_31_126	Yes
			Lake	Tawnagh Park	Unassigned (NAR)	No	IE_WE_31_55	Yes
			Lake	South of Oorid	Unassigned (NAR)	No	IE_WE_31_95	Yes
			Lake	Oorid	Unassigned (NAR)	No	IE_WE_31_196	Yes
			Lake	Derroogh North	Unassigned (NAR)	No	IE_WE_31_41	Yes
	Potential 3110/potential 3160	At least Good	Lake	Numerous NOT AT RISK lakes	Good/High (NAR)	No		Yes
	7230	Good GW level	Groundwater	Spiddal GWB	Good (R)	No	IE_WE_G_0004	Yes
			Groundwater	Clifden Castlebar GWB	Good (R)	No	IE_WE_G_0017	No
			Groundwater	Recess Marbles GWB	Good (R)	No	IE_WE_G_0012	No
	1106	Good	Lake	Glenicmurrin	Unassigned (NAR)	No	IE_WE_31_226	No
			River	Cashla_010	Good (AT RISK-HES obj)	No	IE_WE_31C010100	No
			Lake	Ballynahinch	High (NAR-HES obj)	No	IE_WE_31_228	No
			Lake	Fadda Ballynahinch	Unassigned (NAR)	No	IE_WE_31_99	No
			River	Recess_030	Unassigned (NAR)	No	IE_WE_31R010600	No
	Artic char	Good	Lake	Ballynahinch	High (NAR-HES obj)	No	IE_WE_31_228	No
			Lake	Shindilla	High (NAR-HES obj)	No	IE_WE_31_171	No
			Lake	Glenicmurrin	Unassigned (NAR)	No	IE_WE_31_226	No
	Artic char (possibly extinct)	Good	Lake	Oorid	Unassigned (NAR)	No	IE_WE_31_196	No
			Lake	Garroman or Glendollagh	Unassigned (NAR)	No	IE_WE_31_219	No
	1833	At least Good	Lake	Maumeen	Unassigned (NAR)	No	IE_WE_31_189	Yes
			Lake	Anillaunlughy East	Unassigned (NAR)	No	IE_WE_31_169	Yes
			Lake	Chluain Toipin	Unassigned (NAR)	No	IE_WE_31_47	Yes
			Lake	Nalawney	Unassigned (NAR)	No	IE_WE_31_35	Yes
			Lake	na Cuige Rua West	Unassigned (NAR)	No	IE_WE_31_78	Yes
			Lake	na Cuige Rua East	Unassigned (NAR)	No	IE_WE_31_85	Yes
Dog's Bay SAC 001257	none							

SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Galway Bay Complex SAC 000268	none							
Kilkieran Bay And Islands SAC 002111	1150	Good	Transitional	Lough an Mhuilinn (Mill Lough)	Unassigned (NAR)	No	IE_WE_220_0100	Yes
			Transitional	Loch an Chaorain (L. Keeraun)	Unassigned (NAR)	No	IE_WE_210_0100	Yes
			Transitional	Loch an Aibhinn, Camus Bay	High (NAR)	No	IE_WE_200_0700	Yes
			Transitional	Loch Fhada	Unassigned (NAR)	No	IE_WE_200_0500	Yes
			Transitional	Loch Fhada Upper Pools	Unassigned (NAR)	No	IE_WE_200_0300	Yes
			Transitional	Loch Tanai	High (NAR-HES obj)	No	IE_WE_200_0600	Yes
			Transitional	Loch an Ghadai	Unassigned (NAR)	No	IE_WE_200_0400	Yes
			Transitional	Loch Cara Fionnla	Unassigned (NAR)	No	IE_WE_200_0800	Yes
			Transitional	Camus Bay	Good (NAR)	No	IE_WE_200_0200	Yes
	21AO	Good GW level	Groundwater	Spiddal GWB	Good (R)	No	IE_WE_G_0004	Yes
Lough Nageeron SAC 002119	3130	At least Good	Lake	na gCaor	Unassigned (R)	Yes	IE_WE_31_142	Yes
	1833	At least Good	Lake	na gCaor	Unassigned (R)	Yes	IE_WE_31_142	Yes
Maumturk Mountains SAC 002008	3110	At least Good	Lake	Shindilla	High (NAR-HES obj)	No	IE_WE_31_171	No
			Lake	Lehanagh	Unassigned (NAR)	No	IE_WE_31_152	No
	Artic char	Good	Lake	Shindilla	High (NAR-HES obj)	No	IE_WE_31_171	No
Murvey Machair SAC 002129	21AO	Good GW level	Groundwater	Spiddal GWB	Good (R)	No	IE_WE_G_0004	Yes
Rosroe Bog SAC 000324	none							
Slyne Head Islands SAC 000328	none							
Slyne Head Peninsula SAC 002074	1150	Good	Transitional	Ballyconneely Lough	Unassigned (NAR)	No	IE_WE_240_0100	Yes
	21AO	Good GW level	Groundwater	Spiddal GWB	Good (R)	No	IE_WE_G_0004	Yes
	1833	At least Good	Lake	Anaserd	High (NAR-HES obj)	No	IE_WE_31_211	Yes
	3130/Potential 3110	At least Good	Lake	Truska	Unassigned (NAR)	No	IE_WE_31_74	Yes

SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Slyne Head Peninsula SAC 002074	3130/Potential 3110	At least Good	Lake	Anaserd	High (NAR-HES obj)	No	IE_WE_31_211	Yes
	Potential 3140/Potential 3150	At least Good/Good	Lake	Derreen	Unassigned (R)	Yes	IE_WE_31_63	Yes
	7230	Good GW level	Groundwater	Spiddal GWB	Good (R)	No	IE_WE_G_0004	Yes
The Twelve Bens/Garraun Complex SAC 002031	3110	At least Good	Lake	Derryclare	High (NAR-HES obj)	No	IE_WE_31_227	No
			Lake	Inagh	Unassigned (NAR)	No	IE_WE_31_223	No
	3130	At least Good	Lake	Derryclare	High (NAR-HES obj)	No	IE_WE_31_227	No
			Lake	Inagh	Unassigned (NAR)	No	IE_WE_31_223	No
	1833	At least Good	Lake	Derryclare	High (NAR-HES obj)	No	IE_WE_31_227	No
			Lake	Inagh	Unassigned (NAR)	No	IE_WE_31_223	No
	Artic char	Good	Lake	Inagh	Unassigned (NAR)	No	IE_WE_31_223	No

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 are 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