# 3rd Cycle Draft Galway Bay South East Catchment Report (HA 29)

**Catchment Science & Management Unit**

**Environmental Protection Agency**

August 2021

Version no. 1

epaCatchments
Healthy • Resilient • Productive
Valued water resources supporting vibrant communities

# Preface

This document provides a summary of the water quality assessment outcomes for the Galway Bay South East Catchment, which have been compiled and assessed by the EPA, with the assistance of the Local Authority Waters Programme (LAWPRO), local authorities and RPS consultants to inform the draft 3rd Cycle River Basin Management Plan. The information presented includes status and risk categories of all waterbodies, details on protected areas, significant issues, significant pressures, source load apportionment modelling and load reduction assessments for nutrients where applicable, an overview of the 2nd Cycle Areas for Action and a list of proposed 3rd Cycle Areas for Action. These characterisation assessments are largely based on information available to the end of 2018, including the WFD Status Assessment for 2013-2018. Protected Area assessments are based on water quality information up to 2018 for Natura 2000 and Salmonid Waters; 2019 for Drinking Water; and 2020 for Nutrient Sensitive Areas and Bathing Waters.

The purpose of this draft report is to provide an overview of the situation in the catchment, draw comparison between Cycle 2 and Cycle 3, and help support the draft River Basin Management Plan 2022-2027 consultation process. Once the consultation process is completed the report will be finalised to reflect any changes and comments made as a result of the consultation process.

| Water Framework Directive – key dates and terminology | |
|---|---|
| Cycle 2 – EPA Characterisation and Assessment | Characterisation and assessment to inform the Cycle 2 RBMP was largely based on 2010-2015 WFD monitoring data. |
| Cycle 2 Catchment Assessments | Catchment Assessments based on the Cycle 2 characterisation and assessment were published in September 2018. |
| 2nd Cycle River Basin Management Plan (RBMP) 2018-2021 | This plan was for WFD Cycle 2 which runs from 2016-2021. This RBMP was published late, with this plan covering 2018-2021. |
| 2nd Cycle Areas for Action | These 189 Areas for Action were selected under the RBMP 2018-2021 |
| Cycle 3 -EPA Characterisation and Assessment | Cycle 3 runs from 2022-2027. Assessments to inform the Cycle 3 RBMP is largely based on 2013-2018 WFD monitoring data. This is the latest WFD monitoring assessment period for which all data are available. |
| Cycle 3 Catchment Assessments | Catchment Assessments based on the Cycle 3 characterisation and assessment were published in August 2021. |
| 3rd Cycle River Basin Management Plan 2022-2027 | This draft RBMP is for WFD Cycle 3 which runs from 2022-2027. Public consultation on this plan by the DHLGH and LAWPRO is taking place in late 2021 and early 2022. |
| 3rd Cycle Recommended Areas for Action – Protection/ Restoration/Projects | These recommended Areas for Action have been identified in the draft RBMP 2022-2027 and feedback can be given in the public consultation on this plan. They fall into 3 categories – Areas for Protection, Areas for Restoration and Catchment Projects. |

# Table of Contents

# List of Figures



# List of Tables

# 1 Introduction

This report aims to provide an overview of the water quality status, risk, key issues and significant pressures for all waterbodies in the catchment based on the Characterisation Assessment undertaken for the 3rd Cycle River Basin Management Plan. In addition, a comparative overview of the water quality in the Galway Bay South East catchment between Cycle 2 and Cycle 3 characterisation is provided along with a summary of the progress made in the 2nd Cycle Areas for Action. The recommended list for the 3rd Cycle Areas for Action is also provided.

To provide context, the Galway Bay South East catchment includes the area drained by all streams entering tidal water in Galway Bay between Black Head and Renmore Point, Galway, draining a total area of 1,270km². (Figure 1). The largest urban centre in the catchment is the eastern part of Galway City. The other main urban centres in this catchment are Athenry, Louyghrea, Gort, and Oranmore. The total population of the catchment is approximately 74,365 with a population density of 59 people per km². This catchment is predominantly underlain by karstified limestone, including the northern part of the Burren in County Clare, and the groundwater and surface water systems in the area are closely interlinked.

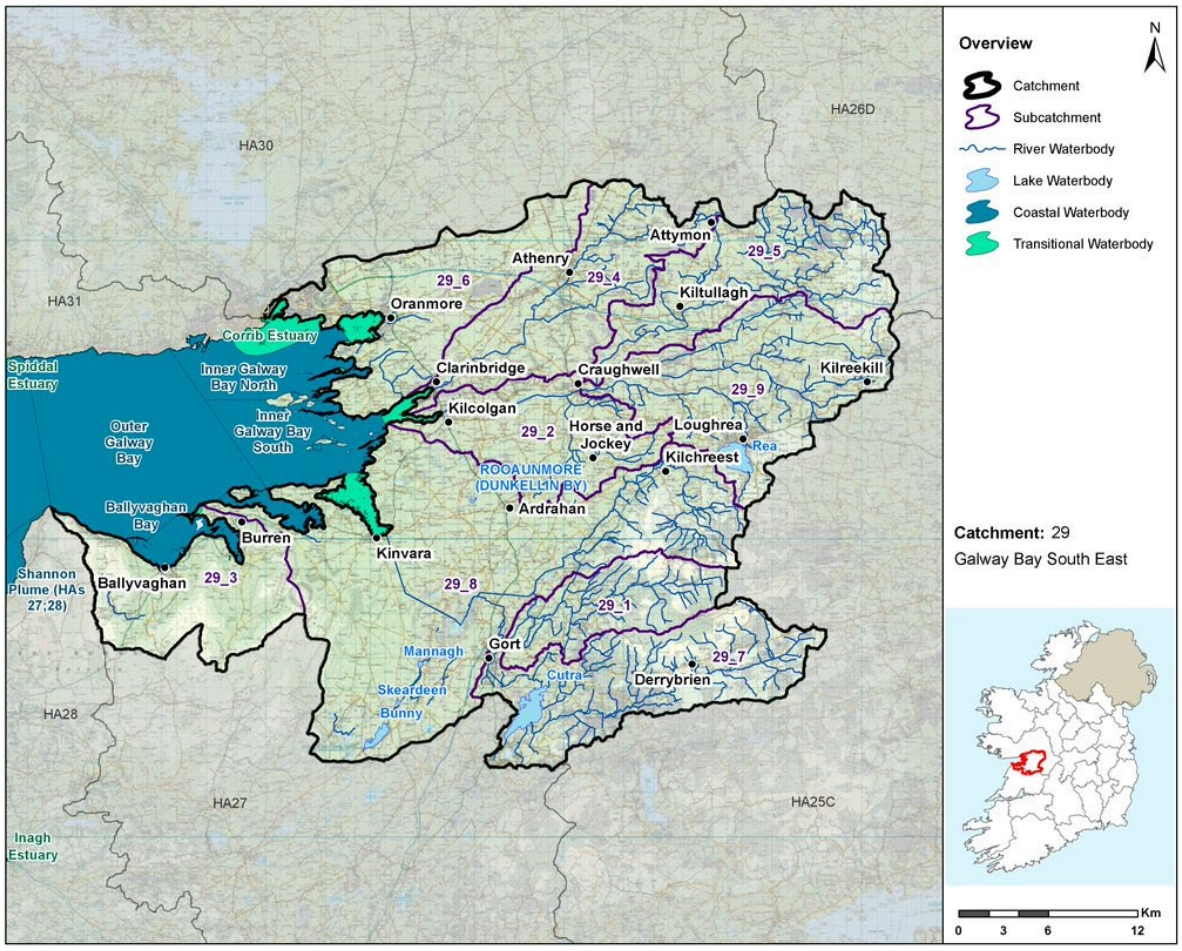



Figure 1: Overview of subcatchments in the Galway Bay South East catchment

The Galway Bay South East catchment is divided into nine subcatchments (Figure 1) with 33 river waterbodies, six lakes, 20 transitional, nine coastal waterbodies and 28 groundwater bodies (Figure 2).

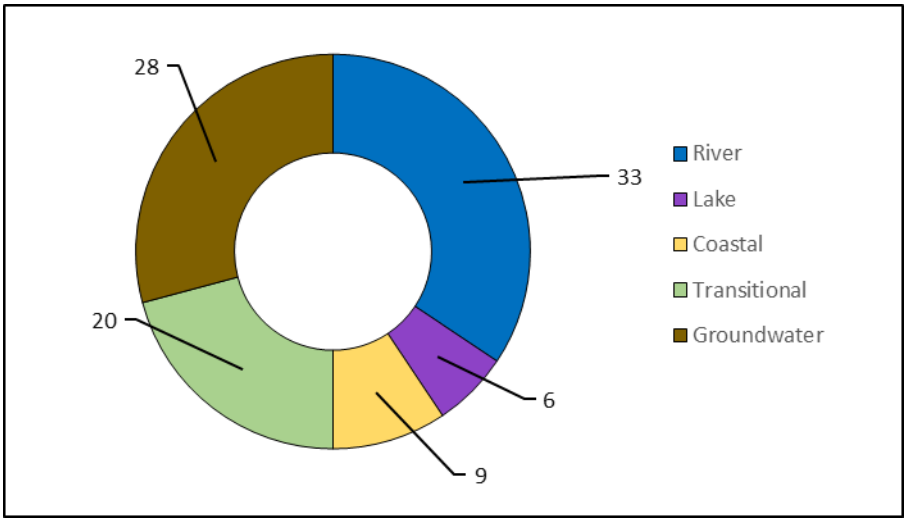



Figure 2: Waterbody types and numbers in the Galway Bay South East Catchment.

# 2 Waterbody Overview

## 2.1 Waterbody Status

- This assessment to inform the 3rd Cycle RBMP is largely based on WFD monitoring data for the period 2013-2018, which is the latest WFD monitoring assessment period for which all data are available.

- For this assessment to inform Cycle 3, there are six waterbodies achieving High Status, 38 achieving Good Status, six achieving Moderate Status, 11 at Poor Status and two at Bad Status (Kilcolgan_030 river waterbody & Rincarna Pools North coastal waterbody). There are 33 waterbodies that do not have Status assigned for Cycle 3. All waterbodies must achieve at least Good Ecological status.

- Six river waterbodies, one coastal waterbody and one lake waterbody that must achieve High Ecological Status (HES) in this catchment. These waterbodies are listed in Appendix 1. Of the eight HES Environmental Objective waterbodies, four river waterbodies (Boleyneendorrish_010, Boleyneendorrish_020, Owendalulleegh_020 & Owendalulleegh_040) and one coastal waterbody (Outer Galway Bay) are achieving High Status while two river waterbodies (Owendalulleegh_010 & Owendalulleegh_030) and one lake waterbody (Bunny) are at Good Status.

- The overall number of waterbodies achieving High Status has remained at six between Cycle 2 and Cycle 3 (Figure 3 & Table 1). There was a reduction in the number of Moderate Status waterbodies from 16 to six between Cycle 2 and Cycle 3. There were increases in Good Status waterbodies (from 32 to 38), Poor Status waterbodies (from nine to 11), Bad Status waterbodies (from one to two) and the number of unassigned waterbodies (from 32 to 33).

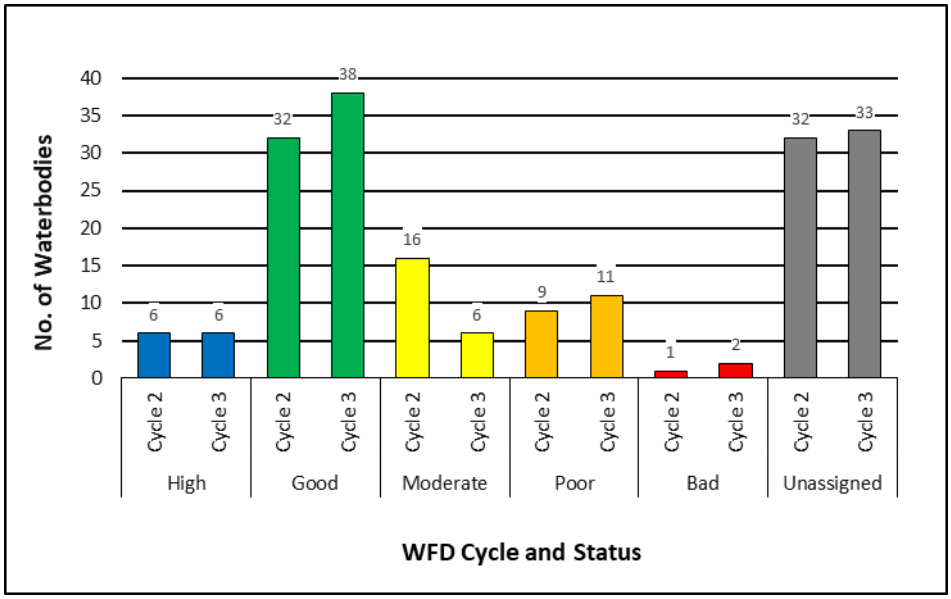



Figure 3: Waterbody Status Breakdown (All waterbodies)

Table 1: Waterbody Status Breakdown Table (All Waterbodies)

| 2013-2018 Status | River | | Lake | | Transitional | | Coastal | | Groundwater | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cycle 2 | Cycle 3 | Cycle 2 | Cycle 3 | Cycle 2 | Cycle 3 | Cycle 2 | Cycle 3 | Cycle 2 | Cycle 3 | **Cycle 2** | **Cycle 3** |
| High | 5 | 5 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | **6** | **6** |
| Good | 4 | 7 | 1 | 3 | 1 | 2 | 1 | 1 | 25 | 25 | **32** | **38** |
| Moderate | 12 | 5 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | **16** | **6** |
| Poor | 5 | 8 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 3 | **9** | **11** |
| Bad | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | **1** | **2** |
| Un-assigned | 7 | 7 | 3 | 3 | 16 | 17 | 6 | 6 | 0 | 0 | **32** | **33** |
| **Total** | 33 | 33 | 6 | 6 | 20 | 20 | 9 | 9 | 28 | 28 | **96** | **96** |

- Figure 4 illustrates the change in status between Cycle 2 (assessment based largely on 2010-2015 WFD Monitoring data) and Cycle 3 (assessment largely based on 2013-2018 WFD monitoring data.
- Over this period nine (14%) waterbodies have improved in status, 47 (75%) waterbodies have remained unchanged and seven (11%) waterbodies have declined in status.[1]
- There is an overall improvement in the status of two waterbodies across the catchment since the Cycle 2 assessment.

[1] Unassigned waterbodies have not been considered in this Status class change assessment and therefore are not represented in Figure 5. Percentage displayed in Figure 4 are in relation to the total number of waterbodies with status assigned in both cycles, as opposed to total number of all waterbodies.

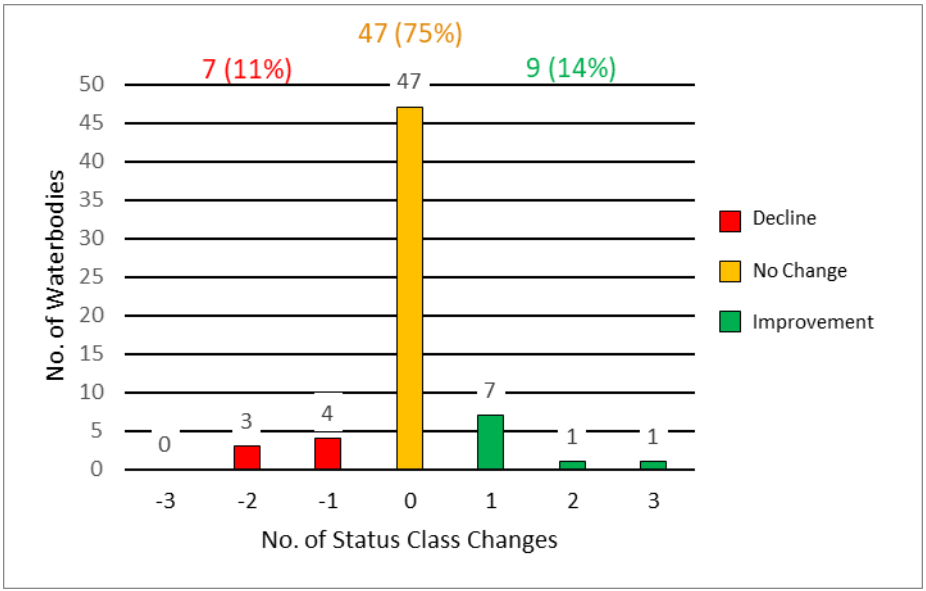



Figure 4: Status Class Changes between Cycle 2 and Cycle 3

## 2.2 Protected Areas

### 2.2.1 Drinking Water

- There are two surface waterbodies in the catchment identified as Drinking Water Protected Areas (DWPA) based on water abstraction data on the abstraction register and from other sources in 2018. All groundwater bodies nationally are identified as DWPA. DWPA layers can be viewed at https://gis.epa.ie/EPAMaps/Water - see *Protected Areas - Drinking Water*.

- Two groundwater bodies in the catchment did not meet the DWPA objective in 2019:
  - Ennis (IE_SH_G_080) groundwater body is the source for Ennis Public Water Supply which had MCPA pesticide exceedance;
  - GWDTE-Kiltiernan Turlough (SAC001285) (IE_WE_G_0096) groundwater body is the source for Kiltiernan GWS Co-Operative Society Ltd private water supply (1200PRI1056) which had nitrate exceedance.

- For more detailed information please see the EPA reports on drinking water quality in 2019 for Public Supplies[2] and Private Supplies[3].

### 2.2.2 Bathing Waters

- There are seven bathing waters in or directly adjacent to the catchment identified under the Bathing Water Regulations 2008.

- Five of the seven bathing waters had an Excellent classification in 2020, the remaining two (Grattan Road Beach & Ballyloughane Beach) had a sufficient classification.

[2] https://www.epa.ie/publications/compliance--enforcement/drinking-water/annual-drinking-water-reports/drinking-water-quality-in-public-supplies-2019.php

[3] https://www.epa.ie/publications/compliance--enforcement/drinking-water/annual-drinking-water-reports/focus-on-private-water-supplies-2019.php

- For more detailed information please see the EPA report on bathing water quality in 2020[4].

### 2.2.3 Shellfish Areas

- There are three designated shellfish area in the catchment across seven waterbodies. The shellfish area objectives are being met in two of the three shellfish areas.

- The Marine Institute assessed the average dissolved concentrations for metals in shellfish waters for the period 2016-2019 and the microbial quality in shellfish flesh for 2018. This assessment was used to determine if the WFD protected area objective for shellfish areas was met.

- Details on the shellfish area and its associated waterbody is summarised in Table 2.

Table 2: Designated shellfish areas in the catchment

| Shellfish Area | | Water Body Intersection | | Objective met? | | Comment |
|---|---|---|---|---|---|---|
| Name | Code | Name | Code | Yes | No | |
| Clarinbridge/ Kinvara Bay | IEPA2_0005 | Bridge Lough, Knockakilleen | IE_WE_160_0200 | | ✓ | The significant pressures are a combination of waste water treatment plants (Loughrea, Athenry and Kinvarra) and septic tank systems. |
| | | Kinvarra Bay | IE_WE_160_0100 | | | |
| | | Dunbulcaun Bay | IE_WE_160_0800 | | | |
| | | Lough Sallagh (Doorus Loughs) | IE_WE_160_0600 | | | |
| | | Inner Galway Bay South | IE_WE_160_0000 | | | |
| The Bay at Aughinish | IEPA2_0001 | Aughinish Bay | IE_WE_130_0000 | ✓ | | |
| Ballyvaughan/Poulnaclough Bay | IEPA2_0024 | Ballyvaghan Bay | IE_WE_110_0000 | ✓ | | |

The locations of Protected Areas associated with Public Health (Drinking Water, Bathing Water and Shellfish Areas, where applicable) are illustrated in Figure 5 below.

[4] https://www.epa.ie/publications/monitoring--assessment/freshwater--marine/bathing-water-quality-in-ireland-2020-.php

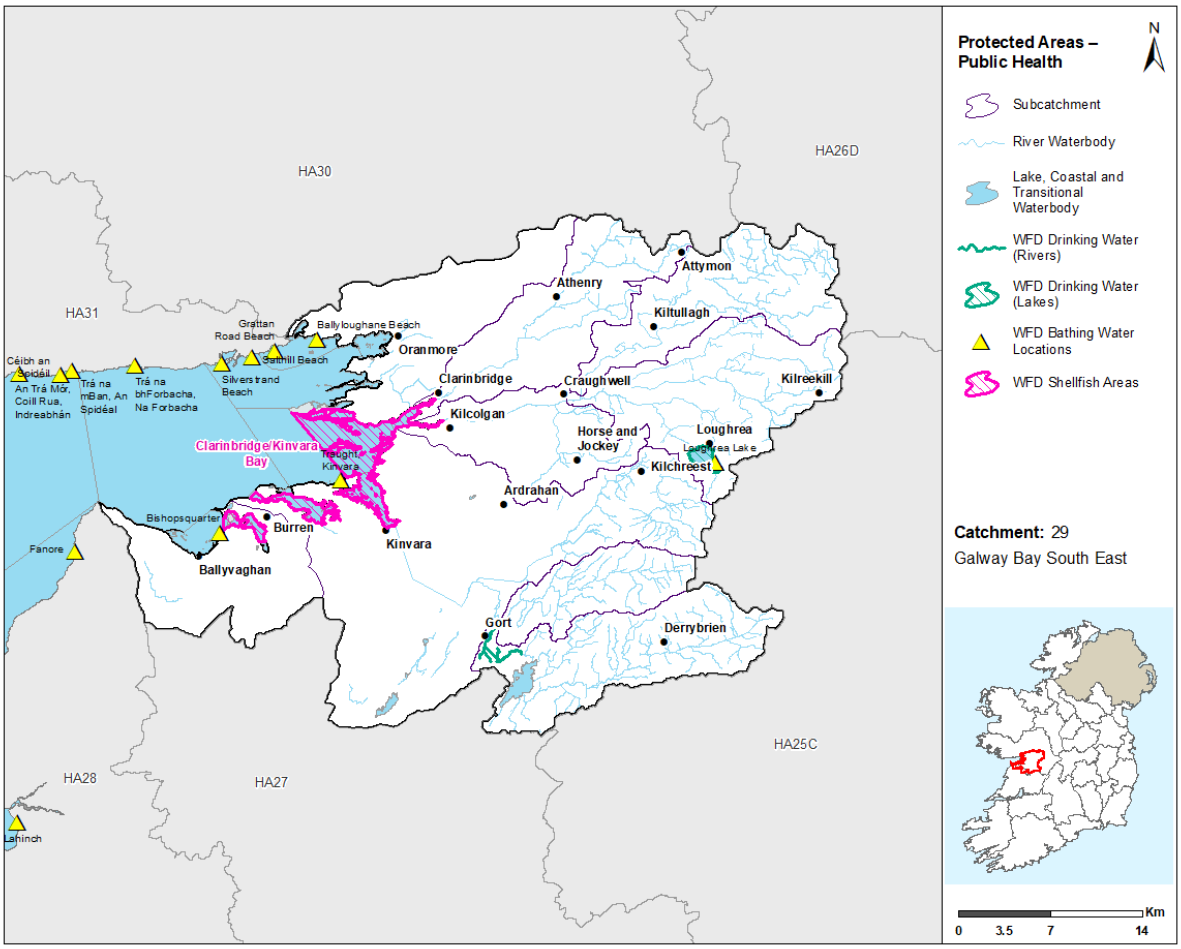



Figure 5: Protected Areas – Public Health

### 2.2.4 Natura 2000 Sites

- Many of the habitats and species listed for protection in the Birds and Habitats Directives are water dependent. The Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) with water dependent habitats or species in this catchment are presented in Figure 6, along with waterbodies designated as salmonid waters (S.I. No. 293 of 1988) and waterbodies with Fresh Water Pearl Mussel habitat, where identified.

- There are 25 SACs in this catchment, 21 of which have water dependent habitats or species. The waterbodies within these SACs were assessed for associated water dependent habitats and species and if they met the supporting requirements for habitats and species using their 2013-2018 WFD status. For the purposes of the assessment, it was assumed that Good ecological status is adequate to meet the supporting conditions of all habitats and species with the exception of the Freshwater Pearl Mussel, which has additional requirements for supporting conditions set out in the Freshwater Pearl Mussel Regulations (S.I. No 296 of 2009) for macroinvertebrates, filamentous algae, phytobenthos, macrophytes and siltation.

- Specific water supporting conditions have not been identified for the dependent bird species in the SPAs and so waterbodies associated with SPAs are not included in this assessment.

Results of the overall assessment for this catchment are outlined in

Table 3 below, information at a waterbody level can be viewed at Catchments.ie.[5]

Table 3: Natura 2000 Network Assessment Summary

| Water Body Type | Total No. | Meeting the Requirements | Did not meet the Requirements | Unknown* |
|---|---|---|---|---|
| Rivers | 5 | 0 | 0 | 5 |
| Lake | 1 | 1 | 0 | 0 |
| Transitional & Coastal | 26 | 9 | 16 | 1 |

**As the waterbody status was unassigned.*

- There are no river waterbodies with FWPM habitats in the catchment.
- There are 13 groundwater bodies delineated and assessed as Groundwater Dependent Terrestrial Ecosystems for this catchment. 11 associated groundwater bodies are at Good Status and two are at Poor Status (2013-2018).
- Water dependent SACs/ SPAs in the catchment are illustrated in Figure 6.

[5] https://www.catchments.ie/download/catchments-assessments-protected-areas-supporting-documents/

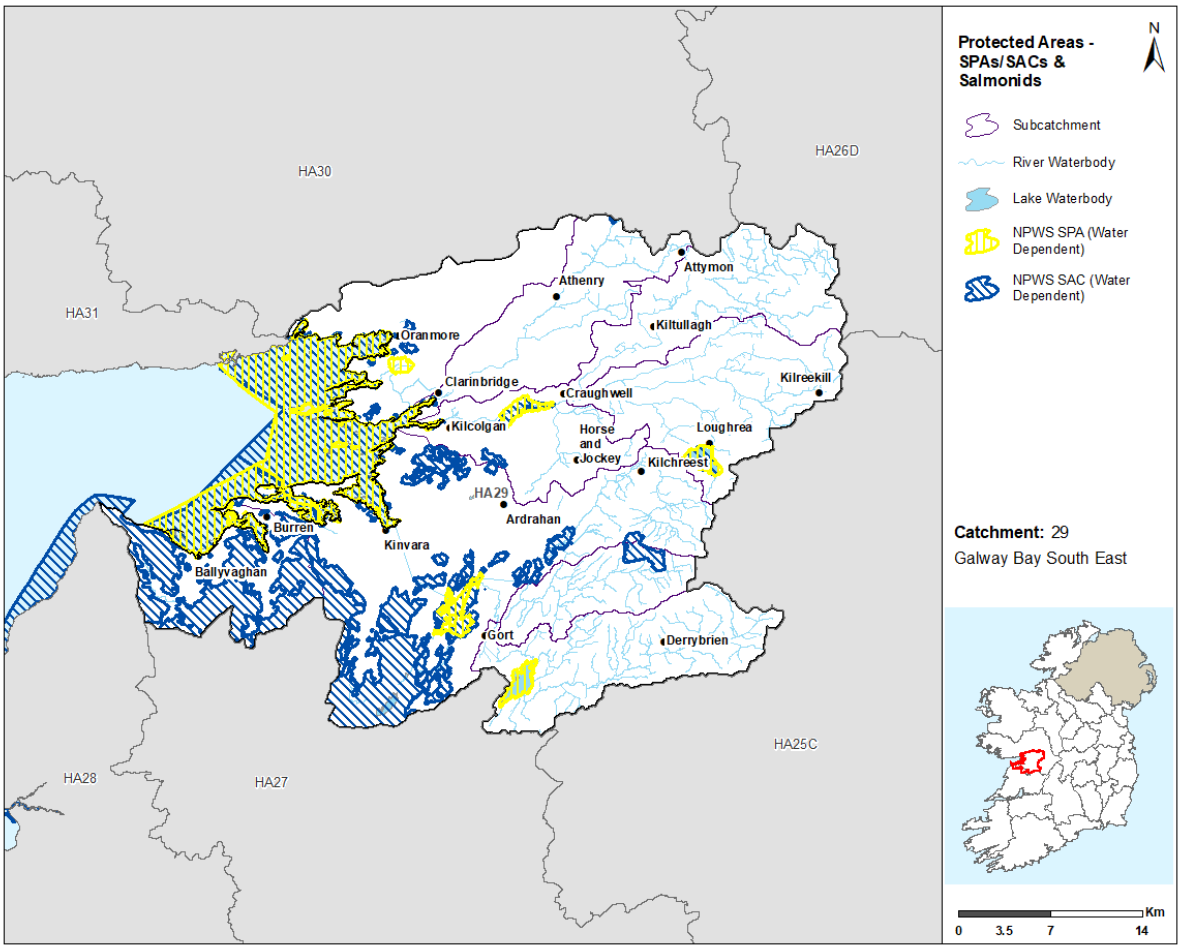



Figure 6: Water Dependent SPAs / SACs

### 2.2.5 Nutrient Sensitive Areas

- There are no Nutrient Sensitive Areas in the catchment.

## 2.3 Heavily Modified Waterbodies

- Based on the 1st and 2nd RBMPs there are currently no heavily modified water bodies (HMWB) in the Galway Bay South East catchment. There will be a consultation period on HMWBs for the 3rd Cycle RBMP and this will be completed for inclusion in the 3rd Cycle Final RBMP.

## 2.4 Artificial Waterbodies

- There are no Artificial Waterbodies (AWBs) present in the Galway Bay South East Catchment.

# 3 Waterbody Risk

## 3.1 Overview of Risk

- A waterbody that is *At Risk* means that either the waterbody is currently not achieving its Water Framework Directive (WFD) environmental objective of Good or High Ecological Status or that there is an upward trend in nutrients or ammonia and if this trend continues the waterbody Status will decline by the end of Cycle 3 and will fail to meet its environmental objective.

- A waterbody can be considered as *Review* for the following three reasons:
    - The waterbody does not have status assigned to it yet, it is referred to as an unassigned waterbody, and therefore there is not enough evidence to determine if it is *At Risk* or *Not At Risk*.
    - The waterbody has shown some slight evidence or improvement, but more evidence is needed before it can be considered as *Not At Risk.*
    - Measures are planned or have already been implemented for the waterbody and no further measures should be applied until there is enough time to assess if these measures are working.

- A waterbody is *Not At Risk* when it is achieving its environmental objective of either High or Good Status and that there is no evidence indicating that there is a trend towards status decline.

- In total there are 96 waterbodies in the Galway Bay South East Catchment and 27 (28%) of these are currently *At Risk*, 35 (36%) in *Review* and 34 (35%) are *Not At Risk*.

## 3.2 Surface Waters

- For the 33 river waterbodies, 16 (48%) are *At Risk*, six (18%) are in *Review* and 11 (33%) are *Not At Risk*.

- For the six lake waterbodies, one (17%) is *At Risk* and five (83%) are *Not At Risk.* Bunny is the lake waterbody *At Risk* in Cycle 3.

- For the 20 transitional waterbodies, three (15%) are *At Risk*, 14 (70%) are in *Review* and three (15%) are *Not At Risk.* Murree Lough, Kinvarra Bay & Bridge Lough, Knockakilleen are the transitional waterbodies *At Risk* in Cycle 3.

- For the seven coastal waterbodies, one (11%) is *At Risk,* five (56%) are in *Review* and three (33%) are *Not At Risk*. Rincarna Pools North is the coastal waterbody *At Risk* in Cycle 3.

- The largest proportion of *At Risk* waterbodies are found in rivers, accounting for 16 (59%) of 27 *At Risk* waterbodies. Figure 7 gives an overview of the breakdown of risk across waterbody types for both Cycle 2 and Cycle 3.

- Overall there is decrease in six *At Risk* waterbodies, reflected by increases of three *Review* waterbodies and four *Not At Risk* waterbodies between Cycle 2 and Cycle 3.

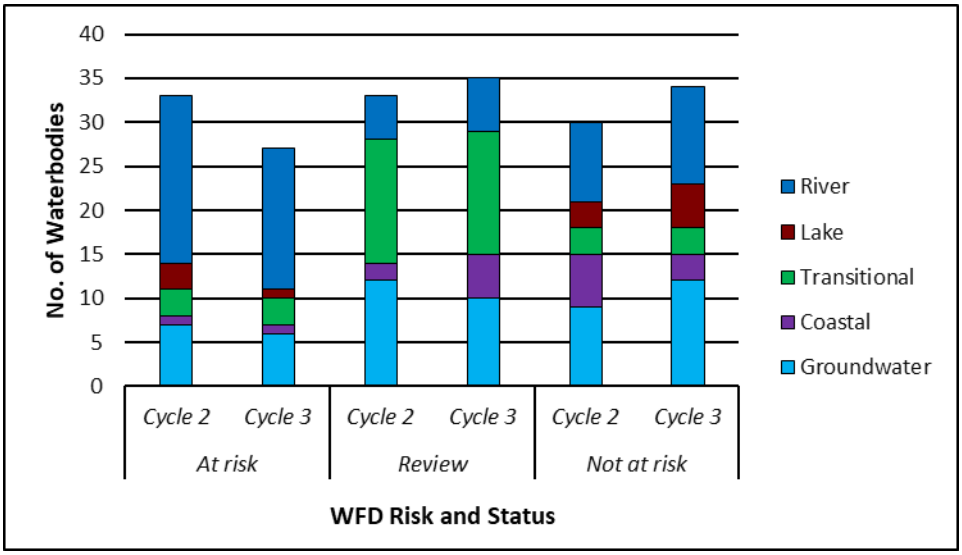



Figure 7: Number of waterbodies in each risk category

- The location of the *At Risk, Review and Not At Risk* surface waterbodies for Cycle 3 are shown in Figure 8 while the surface waterbodies that have experienced a change in risk between Cycle 2 and Cycle 3 are shown in Figure 9.

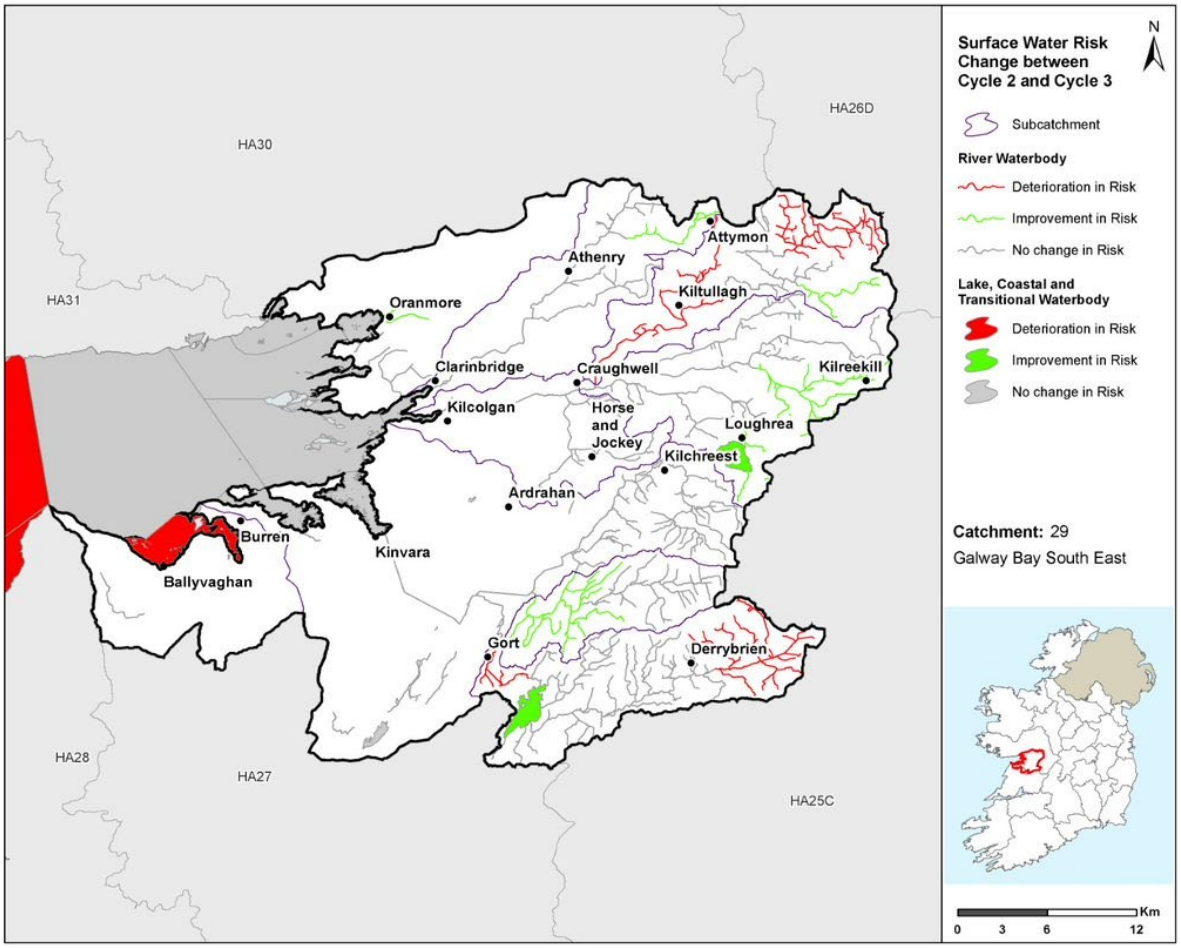



Figure 8: Surface Water Risk Cycle 3

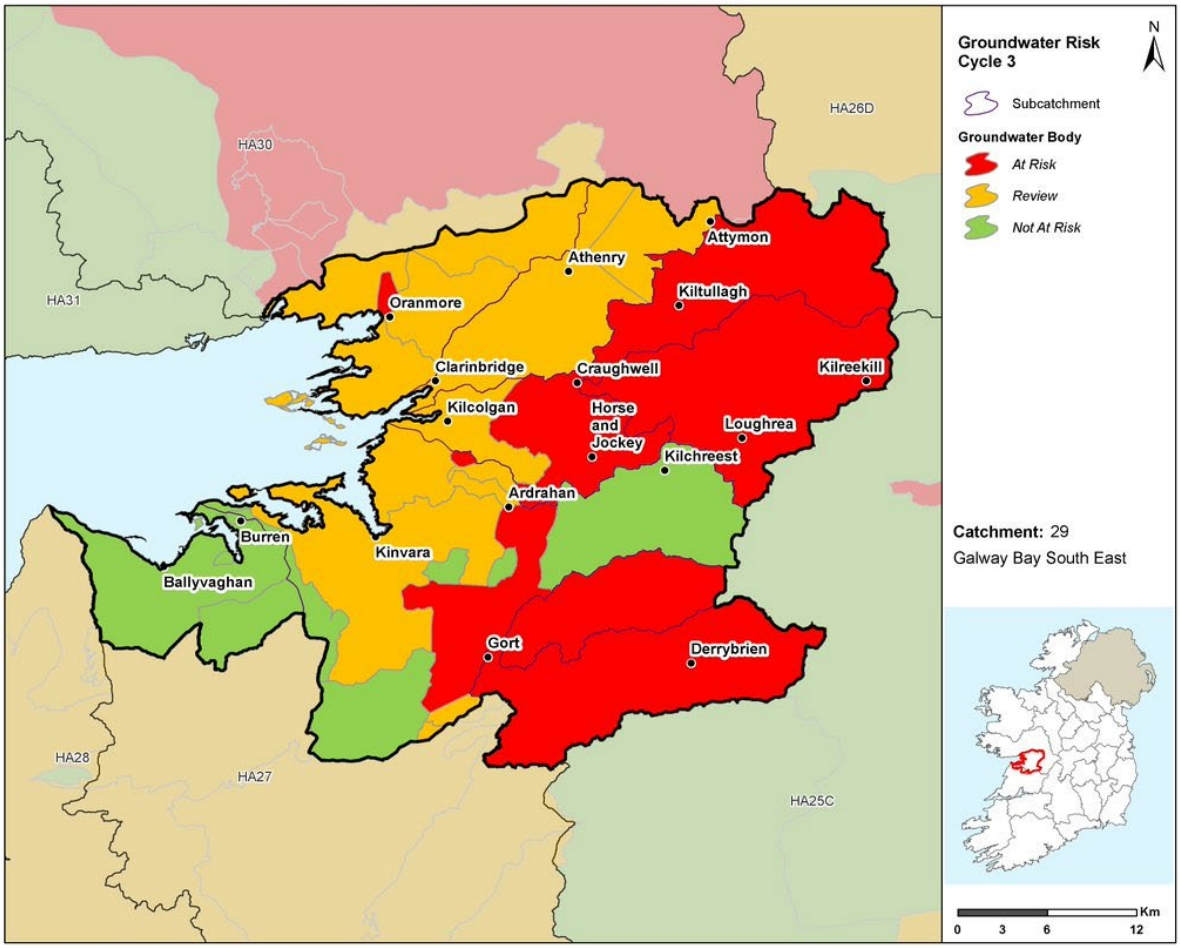



Figure 9: Surface Water Risk Change between Cycle 2 and Cycle 3

## 3.3 Groundwater

- For the 28 groundwater bodies, six (21%) are *At Risk*, 10 (36%) are in *Review* and 12 (43%) are *Not At Risk*.

- In Cycle 2, there were seven groundwater bodies *At Risk* in this catchment, 12 in *Review* and nine *Not At Risk*.

- The location of the *At Risk, Review and Not At Risk* groundwater bodies for Cycle 3 are shown in Figure 10 while the groundwater bodies that have experienced a change in risk between Cycle 2 and 3 are shown in Figure 11.

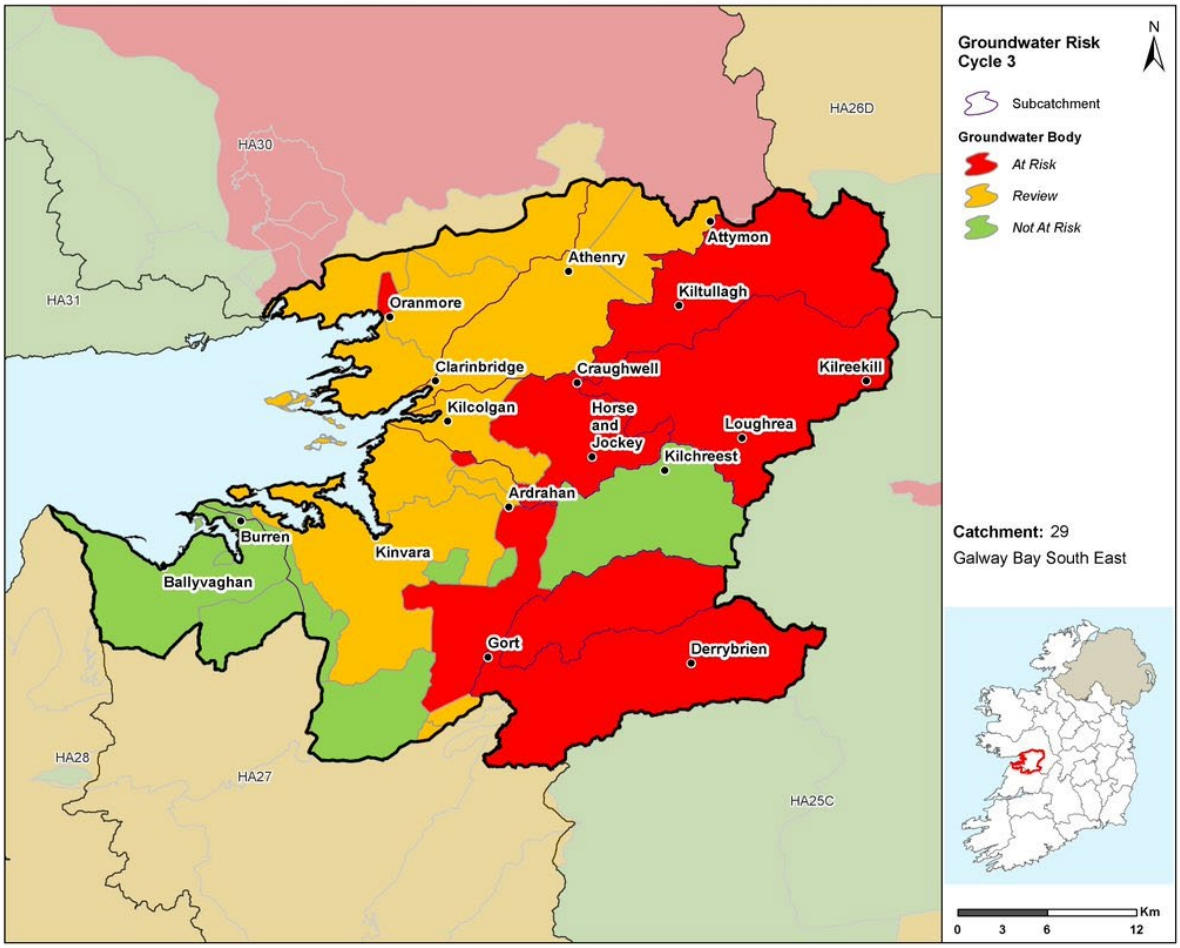



Figure 10: Cycle 3 Groundwater Body Risk

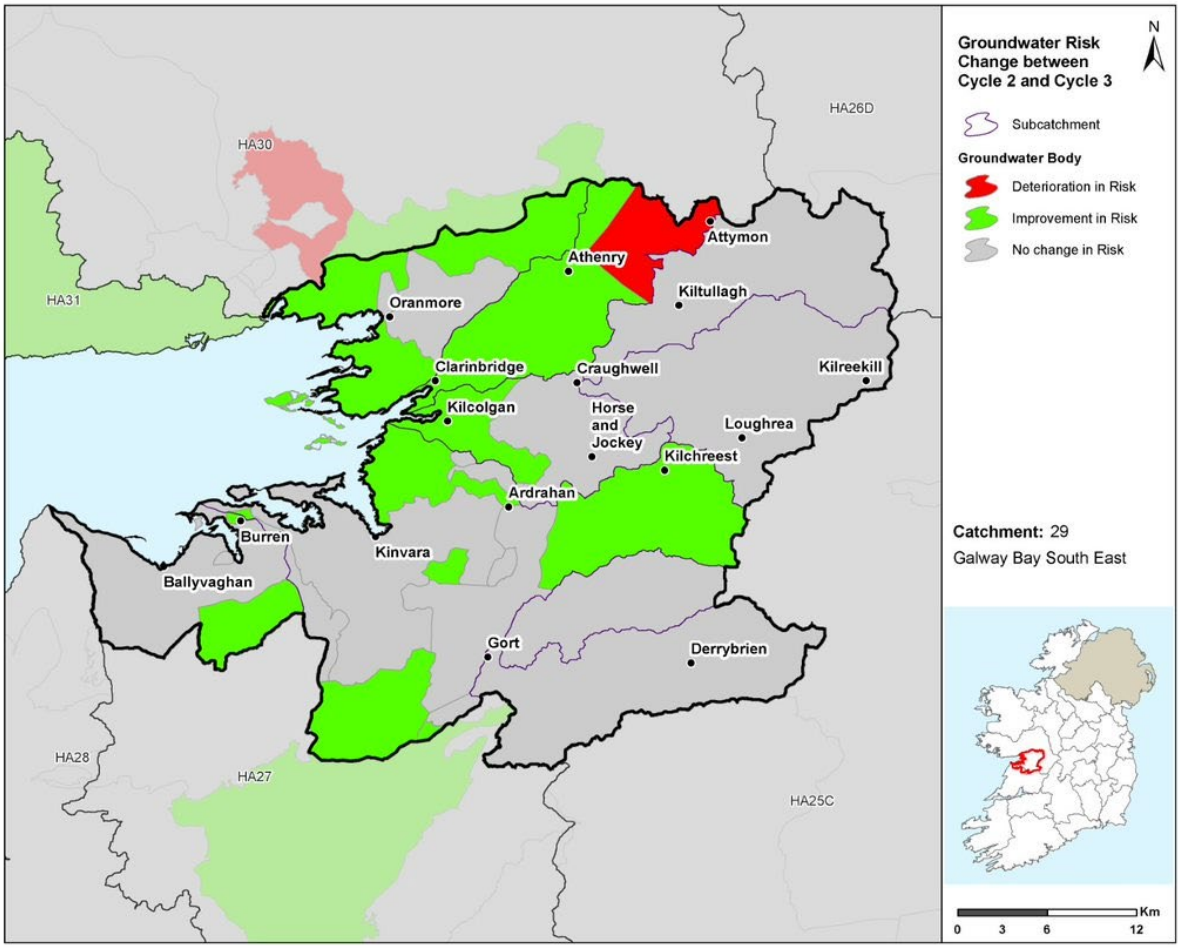



Figure 11: Groundwater Body Risk Change between Cycle 2 & Cycle 3

## 3.4 Heavily Modified Waterbodies

- There are no heavily modified water bodies (HMWB) in the Galway Bay South East catchment. There may be changes to HMWB designation once the Cycle 3 HMWB assessment has been completed and consulted on for the 3rd Cycle Final RBMP.

## 3.5 Artificial Waterbodies

- There are no artificial waterbodies (AWBs) present in the Galway Bay South East Catchment.

# 4 Significant Issues in *At Risk* Waterbodies

## 4.1 All Waterbodies

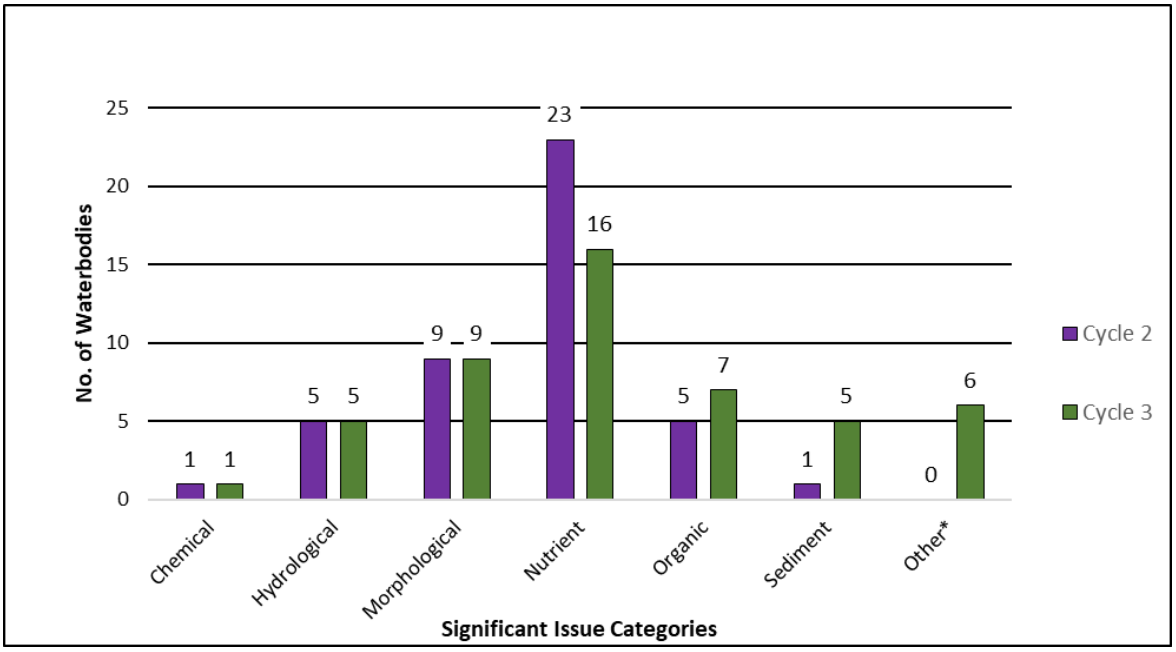
- Excess nutrients remain the most prevalent issue in the Galway Bay South East Catchment (Figure 12) impacting 16 waterbodies in Cycle 3. Morphological issues are impacting nine waterbodies, organic pollution is impacting seven waterbodies, hydrological issues are impacting five waterbodies, sediment is impacting five and chemical pollution is impacting one waterbody. There are also three waterbodies with unknown impact types and three groundwater bodies where

diminution of quality of associated surface waters for chemical reasons, which are represented by the other category in Figure 12.

- For rivers, the main significant issues are nutrient pollution (14), morphological impacts (8), organic pollution (7), sediment (4) and hydrological impacts (4).
- Hydrological and morphological issues are both impacting the only *At Risk* lake waterbody (Bunny) in the catchment.
- For transitional waterbodies the significant issues are unknown impacts (2) and nutrient pollution (1).
- Unknown issues are impacting the only *At Risk* coastal waterbody (Rincarna Pools North) in the catchment.
- For groundwater bodies the main significant issues are nutrient pollution (5), Diminution of quality of associated surface waters for chemical reasons (3) and chemical pollution (1).

- Between Cycle 2 and Cycle 3 the number of waterbodies with nutrients issues have decreased by six from 23 to 16. The number of waterbodies impacted by organic pollution has increased by two from five to seven. The number of waterbodies impacted by sediment has increased by four from one to five.

- The numbers of waterbodies with chemical, hydrological and morphological issues have remained at one, five and nine respectively between Cycle 2 and Cycle 3.



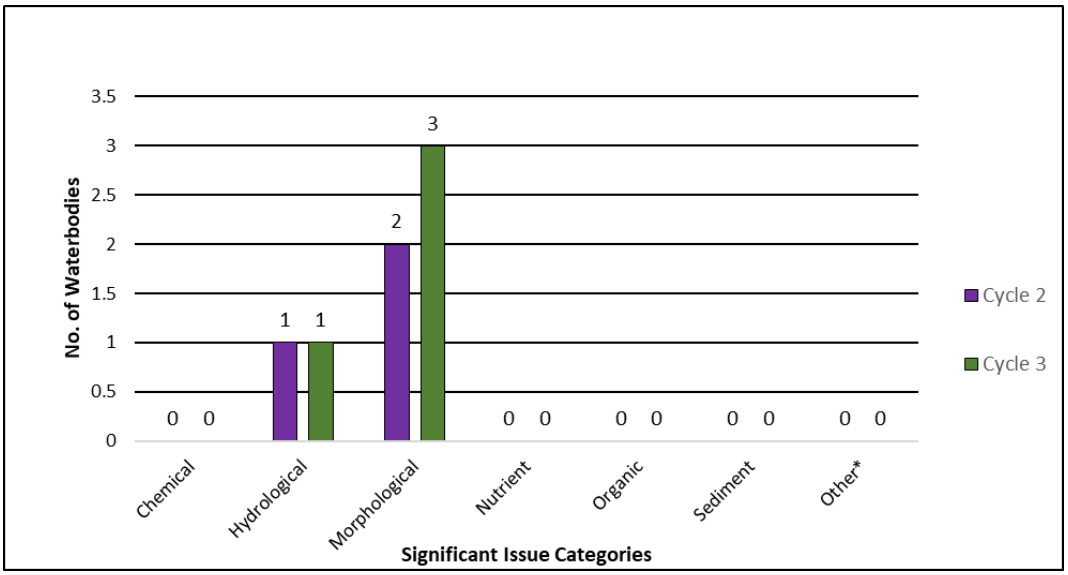

*Other - Acidification, saline intrusion, elevated temperature, litter, microbiological pollution and unknown impacts have all been grouped into the "Other" issues category for the purpose of this report

Figure 12: Significant Issues across all *At Risk* WBs between Cycle 2 and Cycle 3

## 4.2 High Status Objective Waterbodies

- In Cycle 3 nutrient issues are impacting all three of the High Status Objective waterbodies currently *At Risk* (Figure 13). In additional to nutrient issues Bunny lake is also impacted by hydrological issues.

- Between Cycle 2 and Cycle 3 the number of waterbodies with nutrients issues have increased by one from two to 3. The number of waterbodies impacted by hydrological issues have remained at one.



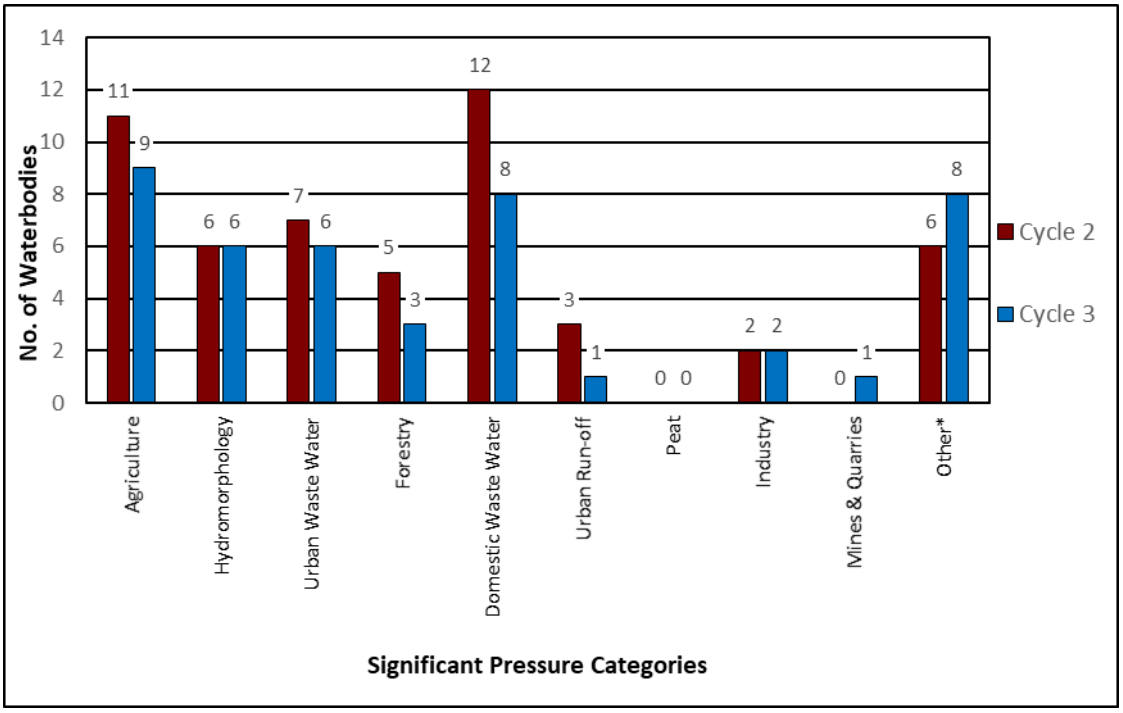

*Other - Acidification, saline intrusion, elevated temperature, litter, microbiological pollution and unknown impacts have all been grouped into the "Other" issues category for the purpose of this report

Figure 13: Significant Issues in *At Risk* High Status Objective Waterbodies

# 5 Significant pressures in *At Risk* Waterbodies

## 5.1 All Waterbodies

- Where waterbodies have been classed as *At Risk*, significant pressures have been identified.
- Figure 14 shows a breakdown of the number of *At Risk* waterbodies in each significant pressure category.
- The significant pressure affecting the greatest number of waterbodies is agriculture and domestic waste water followed by hydromorphology, urban waste water, forestry, industry and urban run-off.
- There are also eight waterbodies impacted by pressures that fall under the 'other' category in Figure 14. Six waterbodies are impacted by unknown pressures, one transitional waterbody (Kinvarra Bay) is impacted by aquaculture and one groundwater body (GWDTE-Lough Corrib Fens 3 & 4 (SAC000297) is impacted by abstraction pressures.
- When comparing Cycle 2 and Cycle 3 the biggest change is that there have been decreases in the number of waterbodies impacted by agriculture, urban waste water, forestry, domestic waste water and urban run-off since Cycle 2.




*Other – abstractions, aquaculture, atmospheric, anthropogenic pressures, historically polluted sites, waste, water treatment and invasive species have all been grouped into the "Other" pressure category for the purpose of this report

Figure 14: Significant Pressure (All *At Risk* Waterbodies)

### 5.1.1 Pressure Type

#### *5.1.1.1 Agriculture*

- Agriculture is a significant pressure in seven river waterbodies and two groundwater bodies (Clare-Corrib & GWDTE-Rahasane Turlough (SAC000322)). The issues related to farming in this catchment are diffuse phosphorus loss to surface waters due to poorly draining soils and extreme vulnerability in karstic areas; resulting in excess nutrients causing signs of enrichment. Sediment can also be a problem from land drainage works, bank erosion from animal access or stream crossings. In addition to nutrients impacts on groundwater agriculture is also leading to diminution of quality of associated surface waters for chemical reasons

#### *5.1.1.2 Domestic waste water*

- Domestic waste water has been identified as a significant pressure in four river waterbodies (Clarinbridge_050, Kilcolgan_030, Kilcolgan_040 & Toberdowney_020) and one groundwater body (GWDTE-Rahasane Turlough (SAC000322). This is due to high concentration of domestic waste water systems in areas of extreme vulnerability where karstified limestone outcrops are exposed. The Local Authority reported that several septic tank systems failed inspections due to unsuitable soil percolation conditions.

#### *5.1.1.3 Other significant pressures*

- *Aquaculture*
  The Kinvarra Bay transitional waterbody remains impacted by aquaculture as identified in Cycle 2.

- *Unknown anthropogenic*
  The significant pressures impacting one river waterbody (Cannahowna_010), one lake waterbody (Bunny), two transitional waterbodies (Murree Lough & Bridge Lough, knockakillenn) one coastal waterbody (Rincarna Pools North) and two groundwater bodies (Clare-Corrib & GWDTE-Caherglassaun Turlough (SAC000238)) are unknown.

#### 5.1.1.4 Hydromorphology

- Hydromorphology is a significant pressure in six river waterbodies (Beagh_010, Carra Stream_010, Kilcolgan_030, Kilcolgan_040, Owendalulleegh_050 & Raford_010). Channelisation is the dominant hydromorphology subcategory in the catchment with four river waterbodies within the catchment subject to extensive modification mainly due to drainage schemes. Land drainage was identified as an impact on two river waterbodies (Beagh_010 & Owendalulleegh_050). Dams, barriers, lock and weirs were identified as the pressure subcategory in two river waterbodies (Carra Stream_010 & Kilcolgan_030). Kilcolgan_030 is impounded and very seriously impacted by flood engineering works.

#### 5.1.1.5 Urban waste water

- Urban waste water agglomerations have been identified as a significant pressure in six *At Risk* river waterbodies (Table 4). None of the agglomerations identified as significant pressures are scheduled to be upgraded under Irish Water's Capital Investment Programme (2020-2024). The Kinvara and Athenry agglomerations were upgraded in 2017 and 2019 respectively, however, further assessment is required to quantify improvements in water quality following these upgrades.

Table 4: Waste Water Treatment Agglomerations identified as significant pressures in *At Risk* waterbodies in Cycle 3

| Facility name | Facility Type | Waterbody | 2013-18 Ecological Status | Expected Completion Date[6] |
|---|---|---|---|---|
| Kinvara D0276 | Agglomeration PE of 1,001 to 2,000 | Kinvarra Bay | Moderate | N/A |
| Gort D0195 | Agglomeration PE of 2,001 to 10,000 | CANNAHOWNA_010 | Poor | N/A |
| Athenry D0193 | Agglomeration PE of 2,001 to 10,000 | CLARINBRIDGE_030 | Poor | N/A |
| Athenry D0193 | Agglomeration PE of 2,001 to 10,000 | CLARINBRIDGE_040 | Poor | N/A |
| Loughrea D0194 | Agglomeration PE of 2,001 to 10,000 | KILCOLGAN_020 | Poor | N/A |
| Loughrea D0194 | Agglomeration PE of 2,001 to 10,000 | KILCOLGAN_030 | Bad | N/A |

- Urban waste water significant pressures impacted one less waterbody than in Cycle 2 (a decrease from seven to six waterbodies impacted). The following agglomeration was listed as a pressure in Cycle 3 but not in Cycle 2.
    - Gort (D0195)
    - Galway (D0050) was listed as a pressure in Cycle 2 but is not deemed to be impacting in Cycle 3.

#### 5.1.1.6 Forestry

- Forestry is a significant pressure in three river waterbodies (Owendalulleegh_010, Owendalulleegh_030 & Owendalulleegh_050) in Cycle 3. The issues are a range of forestry activities taking place that include clearfelling and drainage, which have resulted in heavy siltation and excess nutrients in surface water bodies.

[6] Based on Irish Water's Capital Investment Programme (2020-2024) as of February 2021 and may be subject to change.

#### *5.1.1.7 Industry*

- Industry has been identified as a significant pressure in one river waterbody (Kilcolgan_040) and one groundwater body (Industrial Facility (P0056-01). The point source discharge in Kilcolgan_040 is causing organic issues and the ground arise from industrial discharges (Table 5).

Table 5: Breakdown of Cycle 3 Industry Significant Pressures in the Galway Bay South East Catchment

| Waterbody Code | Waterbody Name | Waterbody Type | Emission Type | Name | Impact |
|---|---|---|---|---|---|
| IE_WE_29K010600 | KILCOLGAN_040 | River | Section 4 | N/A | Organic |
| IE_WE_G_0117 | Industrial Facility (P0056-01) | Groundwater | IPC | Colas Bitumen Emulsions (West) Limited | Nutrient, organic & Diminution of quality of associated surface waters for chemical reasons |

*Name of facility not provided during characterisation

#### *5.1.1.8 Urban run-off*

- Diffuse urban pressures, caused by misconnections, leaking sewers and runoff from paved and unpaved areas, have been identified as a significant pressure in Clarinbridge_050 river waterbody impacted by Clarinbridge urban areas. There is no is currently no treatment in place in the town. Nutrient and organic pollution are the significant issues.

#### 5.1.1.9 Mines & Quarries

- An abstraction for a quarry was identified as a significant pressure in GWDTE-Lough Corrib Fens 3 & 4 (SAC000297) groundwater body with Damage to groundwater-dependent terrestrial ecosystems for quantitative reasons identified as the associated issues. The name of the quarry was not identified during characterisation.

Figure 15 – Figure 18 illustrates the locations of waterbodies for the four most common pressures in order of prevalence (agriculture, domestic waste water and hydromorphology) within the catchment in Cycle 3.

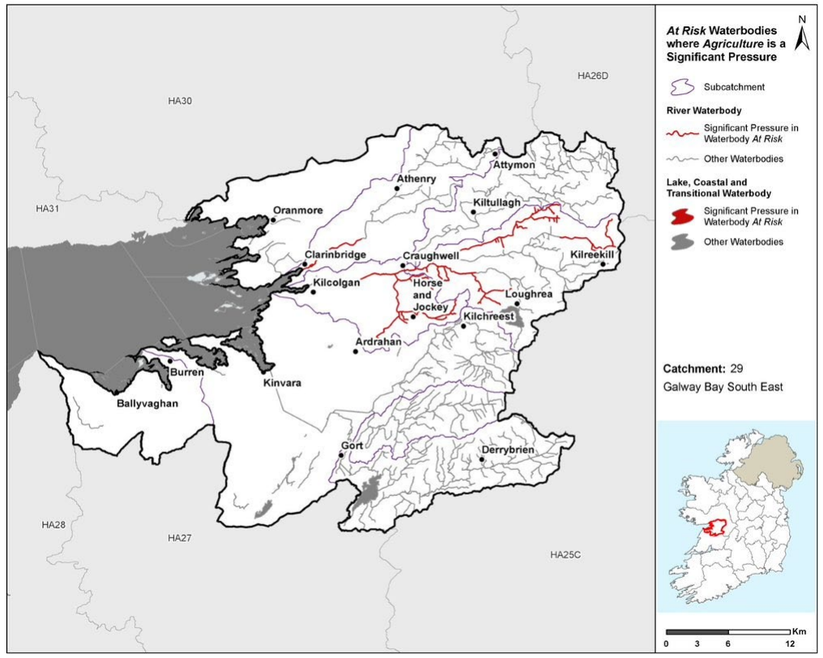



Figure 15: Locations of Waterbodies where Agriculture is a Significant Pressure

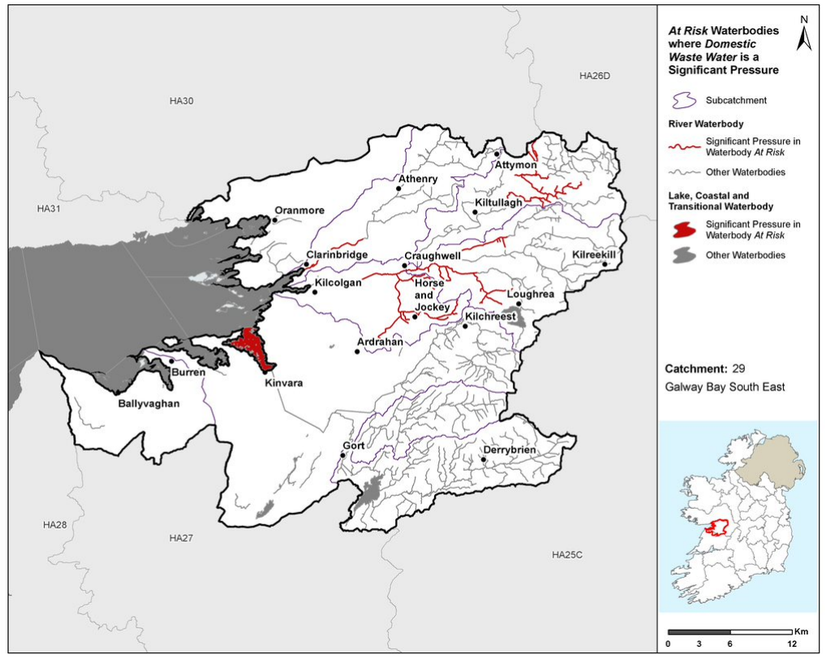



Figure 16: Locations of Waterbodies where Domestic Waste Water is a Significant Pressure

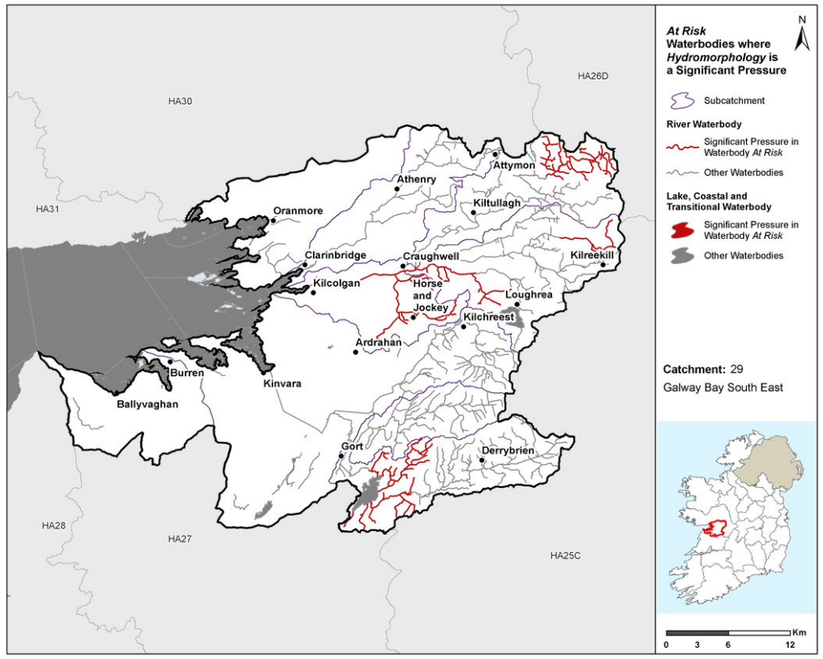



Figure 17: Locations of Waterbodies where Hydromorphology is a Significant Pressure

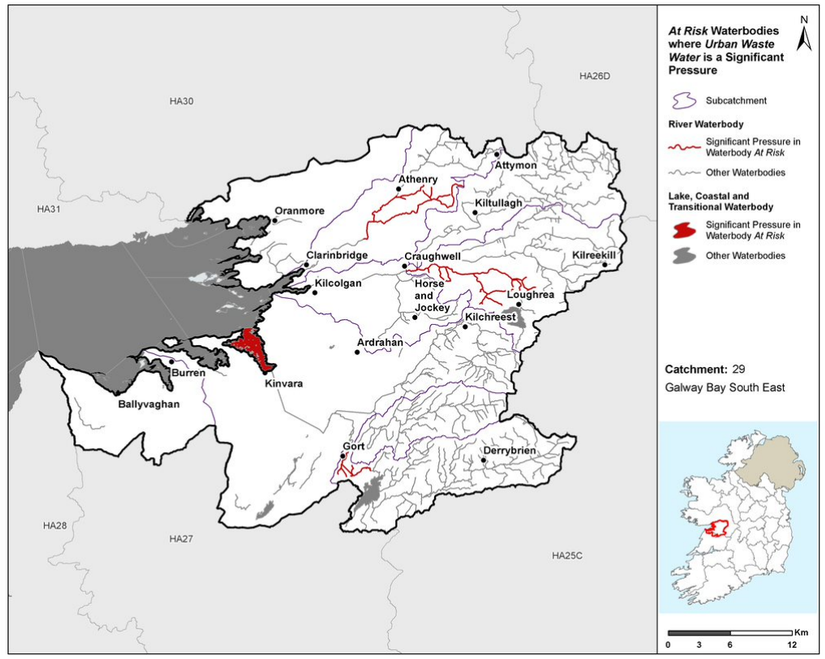
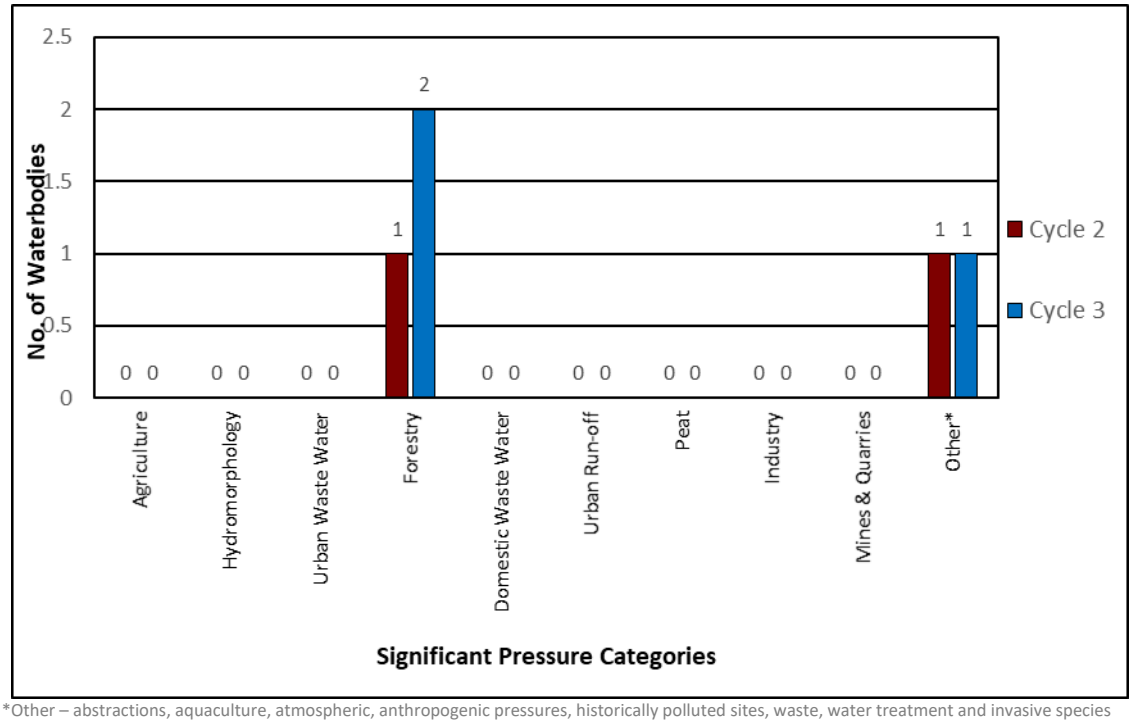



Figure 18: Locations of Waterbodies where Urban Waste Water is a Significant Pressure

## 5.2 High Status Objective Waterbodies

- Forestry is the dominant significant pressure in High Status Objective waterbodies with two out of the three HES waterbodies impacted by forestry pressures (OWENDALULLEEGH_010 & OWENDALULLEEGH_030), the significant pressure in the remaining HES waterbody (Bunny) is unknown.




*Other – abstractions, aquaculture, atmospheric, anthropogenic pressures, historically polluted sites, waste, water treatment and invasive species have all been grouped into the "Other" pressure category for the purpose of this report

Figure 19: Significant Pressure in *At Risk* High Status Objective Waterbodies

# 6 Source Load Apportionment Modelling (SLAM)

- The EPA has developed Source Load Apportionment Models (SLAM) for both P and N which estimate the proportion of the phosphorus and nitrogen inputs, respectively, to waters in each catchment that comes from each sector.

- The main data inputs for the model for agriculture are the 2018 land parcel (LPIS) and animal (AIMs) data from the Department of Agriculture Food and the Marine. The Urban Waste Water (UWW) data comes from Irish Water's discharge monitoring data. The model also calculates the inputs from a range of other sectors, including for example, forestry, septic tanks, peat, urban runoff and atmospheric deposition.

- In the catchment pasture is responsible for 89% of the nitrogen load while land in pasture, discharges from urban waste water and forestry contribute 30%, 28% and 23% of the phosphorus loadings for the catchment respectively (Figure 17).

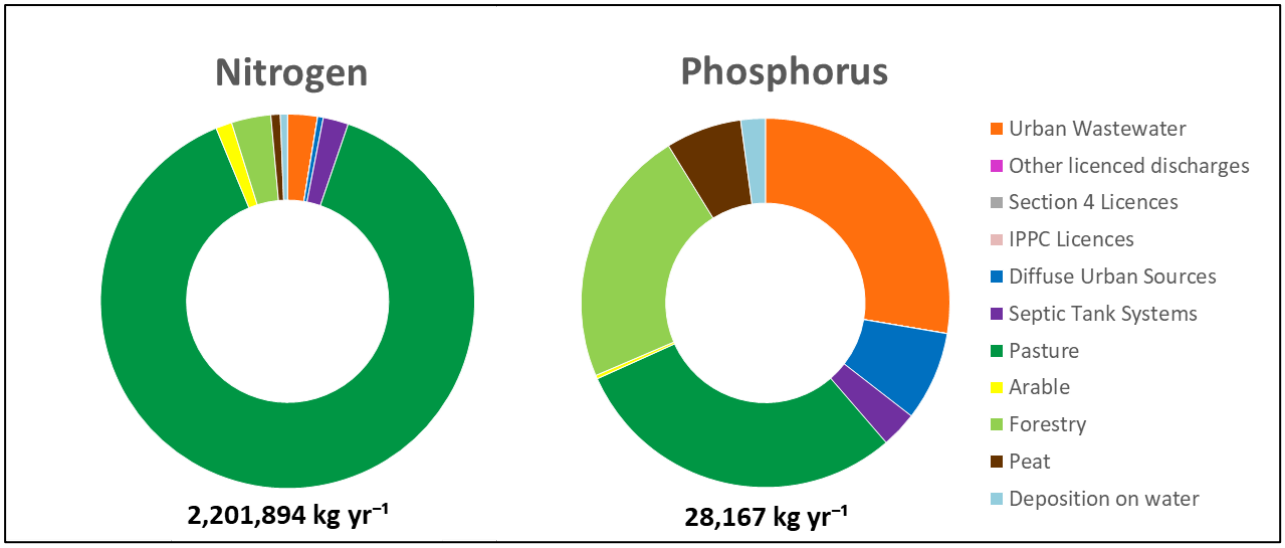



Figure 20: Estimated Proportions of N & P from Each Sector in the Galway Bay South East Catchment

# 7 Load Reduction Assessment

## 7.1 Nitrogen Load Reduction

- An assessment was undertaken to determine if nitrogen reductions in rivers, streams and lakes are required for TRACs waterbodies to achieve their environmental objective. The outcome of the assessment indicated that 10 of the 46 catchments require N reductions in our inland waters to restore some TRAC waterbodies. Nitrogen load reduction is not required in the Galway Bay South East Catchment.

## 7.2 Phosphorous / Sediment Load Reduction

- Further modelling work is required to determine if and what P load reductions are required.

Figure 21 highlights areas where agricultural measures for sediment and phosphorus should be targeted. Waterbodies with blue fill are areas where sediment or phosphorus should be targeted. Pollution Impact Potential mapping for both phosphorus and nitrogen in the catchment are provided in Appendix 2.

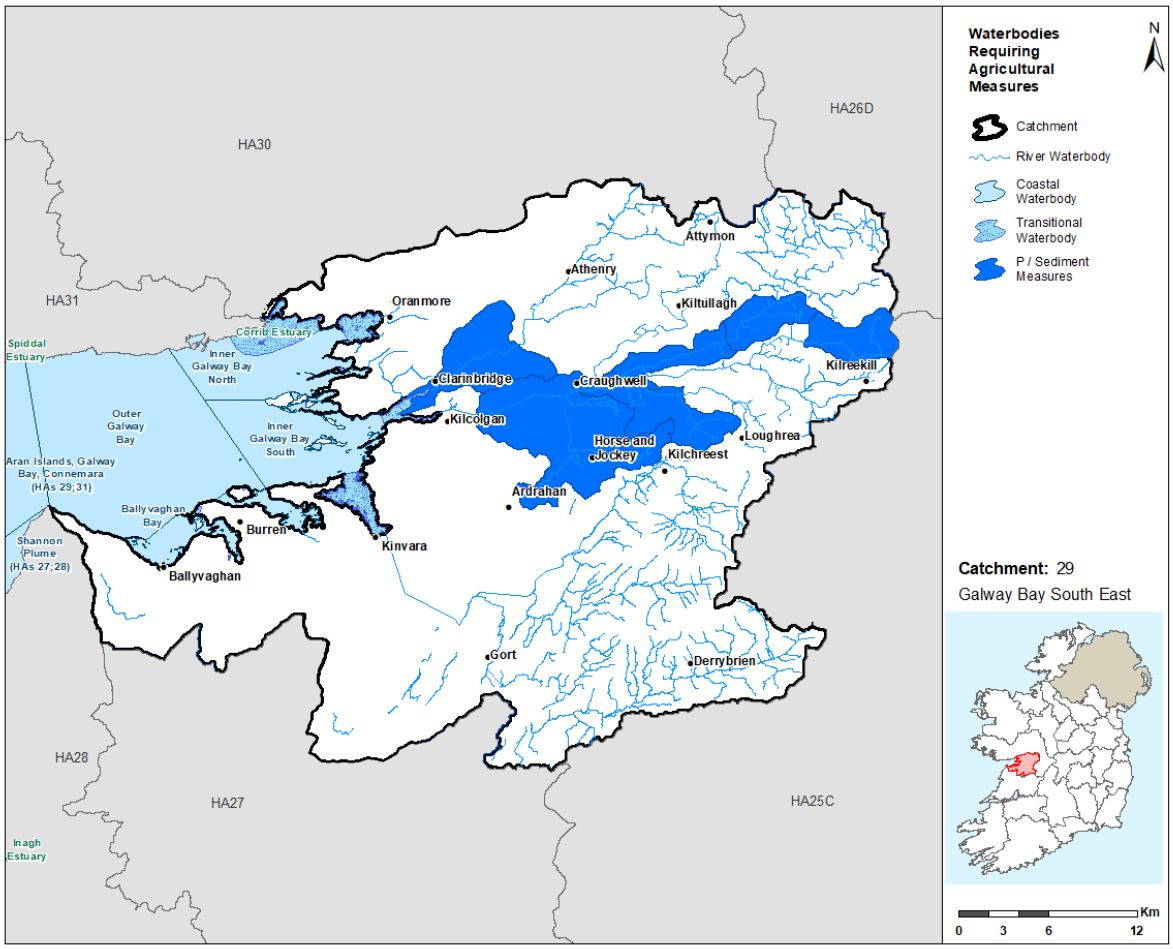



Figure 21: Waterbodies where Agricultural Measures should be Targeted

# 8 2nd Cycle Areas for Action

## 8.1 Area for Action Overview

- There were two Areas for Action, comprising of 11 waterbodies, selected for further characterisation and action in the catchment for the 2nd Cycle River Basin Management Plan. The Areas for Action in the catchment are listed in Table 6 and shown in Figure 22. LAWPRO, in conjunction with local authorities and stakeholders from the Western Regional Operational Committee, have been working in these areas since 2018.

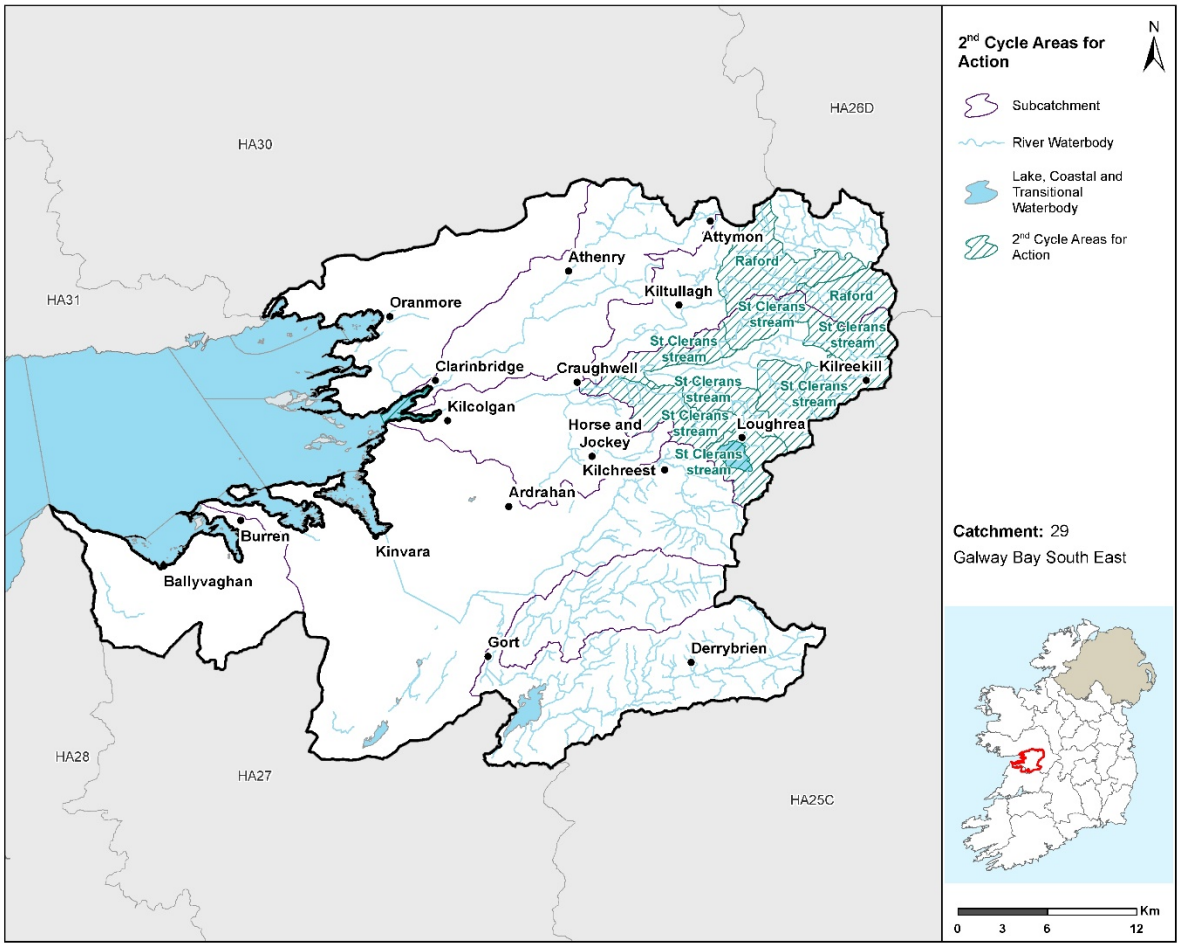



Figure 22: 2nd Cycle Areas for Action Locations

Table 6: 2nd Cycle Areas for Action

| 2nd Cycle Area for Action | Number of Waterbodies | Sub-catchment | Local Authority | Reason for Selection |
|---|---|---|---|---|
| **St Clerans Stream** | 9 | 29_9 | Galway | • Kilcolgan river ultimately enters Clarinbridge/Kinvarra shellfish area which failed to meet its protected area objectives.<br>• Active community groups<br>• Four deteriorated water bodies in the headwaters to the shellfish area.<br>Linked with 29_5. |
| **Radford** | 2 | 29_5 | Galway | • Kilcolgan river ultimately flows into the Clarinbridge/Kinvarra shellfish area which failed to meet its protected area objectives.<br>• Active community groups<br>• Two deteriorated water bodies in the headwaters to the shellfish area.<br>• Linked with 29_9. |

## 8.2 Status Change in 2nd Cycle Areas for Action

- For Cycle 3, of the 11 waterbodies in the 2nd Cycle Areas for Action, there are three waterbodies at Good Status (Ballymabilla_010, Lecarrow Stream_010 and Rea Lake), three waterbodies at Moderate Status (Raford_020, Toberdoney_010 & Toberdoney_020), two waterbodies at Poor Status (Carra Stream_010 & Kilcolgan_020), one Bad Status waterbody (Kilcolgan_030) and two waterbodies (Kilcolgan_010 & Dunbulcan Bay) where status has not been assigned.

- There is an overall improvement in the status of two 2nd cycle Areas for Action waterbodies across the catchment.[7]

- Of the nine waterbodies within the 2nd Cycle Areas for Action which had status assigned, three (Kilcolgan_020, Raford_020 & Toberdoney_010) experienced no change in status between Cycle 2 and Cycle 3, four waterbodies (Ballymabilla_010, Lecarrow Stream_010, Toberdoney_020 & Rea lake) experienced an improvement and two waterbodies (Carra Stream_010 & Kilcolgan_030) were subject to deterioration in status (Figure 23). The four waterbody improvements were across Raford and St Clerans Stream Area for Action. The waterbodies that experienced decline were in St Cleans Stream Area for Action.

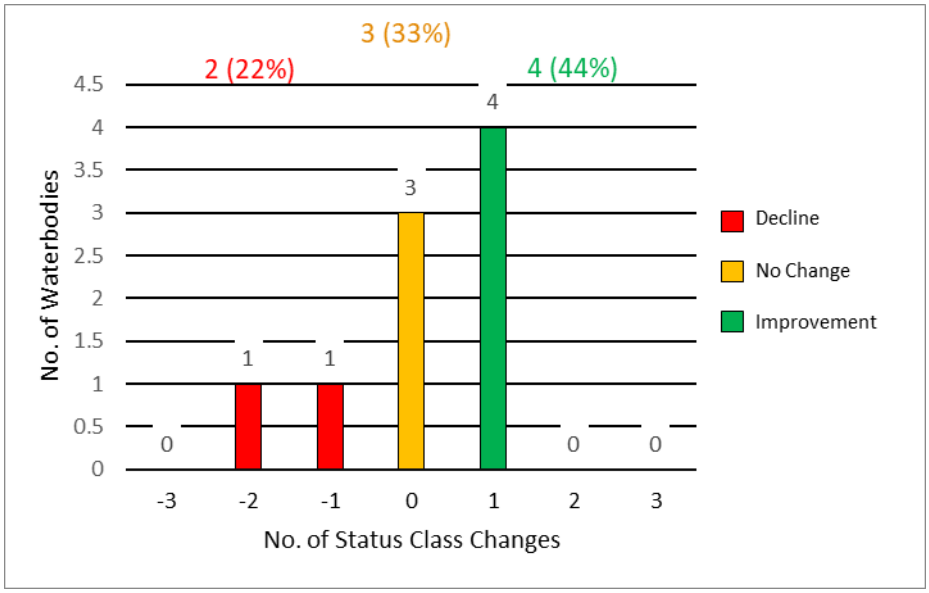



Figure 23: 2nd Cycle Area for Action Waterbody Status Class Changes between Cycle 2 and Cycle 3

## 8.3 Waterbody Risk in 2nd Cycle Areas for Action

- For the 11 waterbodies in the 2nd Cycle Areas for Action, six (55%) of these are currently *At Risk* and five (45%) are *Not At Risk*.

[7] Status class change cannot be calculated for waterbodies where status has not been assigned in either cycle 2 or 3 and therefore these waterbodies are not represented in Figure 18. Percentage displayed in the chart below are in relation to the total number of waterbodies with status assigned in both cycles, as opposed to total number of all waterbodies.

- For the nine river waterbodies, three (33%) are *Not At Risk* and six (67%) are *At Risk.* Carra Stream_010, Kilcolgan_020, Kilcolgan_030, Raford_020, Toberdoney_010 & Toberdoney_020 are the river waterbodies that are *At Risk*.

- The only lake waterbody (Rea) in a 2nd Cycle Areas for Action is *Not At Risk*.

- The only transitional waterbody (Dunbulcaun Bay) in a 2nd Cycle Areas for Action is *Not At Risk*.

- All six *At Risk* waterbodies are river waterbodies. Figure 24 gives an overview of the breakdown of risk across waterbody types for both Cycle 2 and Cycle 3 in 2nd Cycle Areas for Action.

- Overall there is a decrease from 11 to six *At Risk* waterbodies in 2nd Cycle Areas for Action between Cycle 2 and Cycle 3. Aherlow_040 river waterbody and Ballyscanlan lake waterbody both improved to *Not At Risk*.

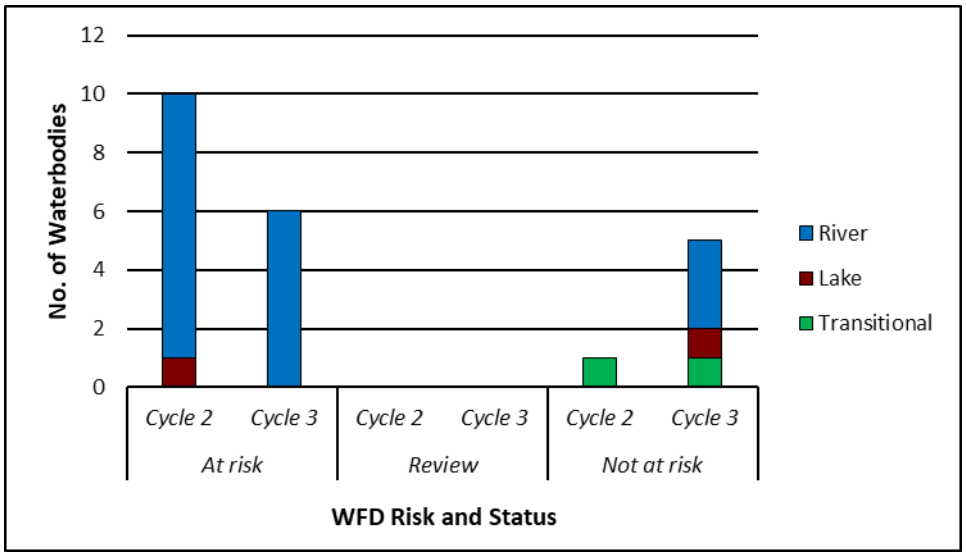
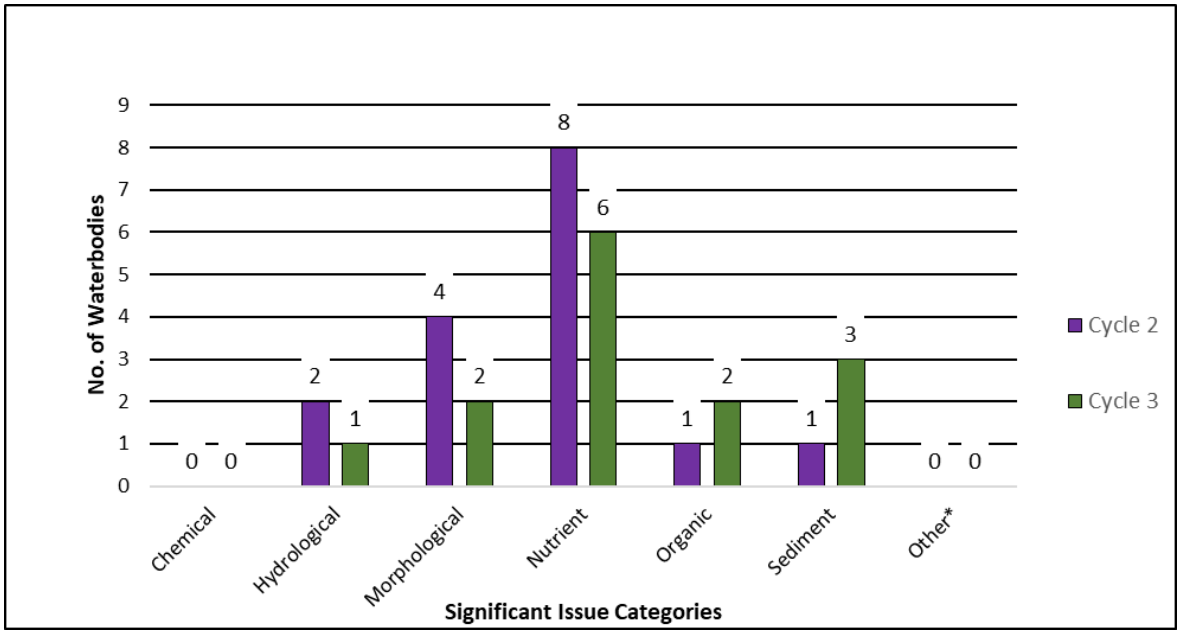



Figure 24: Number of waterbodies in each risk category in 2nd Cycle Areas for Action

## 8.4 Significant Issues in 2nd Cycle Areas for Action

- Based on the EPA assessment for Cycle 3, the significant issue in the 2nd Cycle Areas for Action is nutrient pollution impacting six waterbodies (Figure 25). This is followed by sediment impacting three waterbodies, organic pollution and morphological issues each impacting two waterbodies and hydrological issues impacting one waterbody.

- The number of 2nd Cycle Areas for Action waterbodies associated with nutrient, morphological and hydrological issues have reduced between Cycle 2 and Cycle 3, whereas organic pollution and sediment increased.



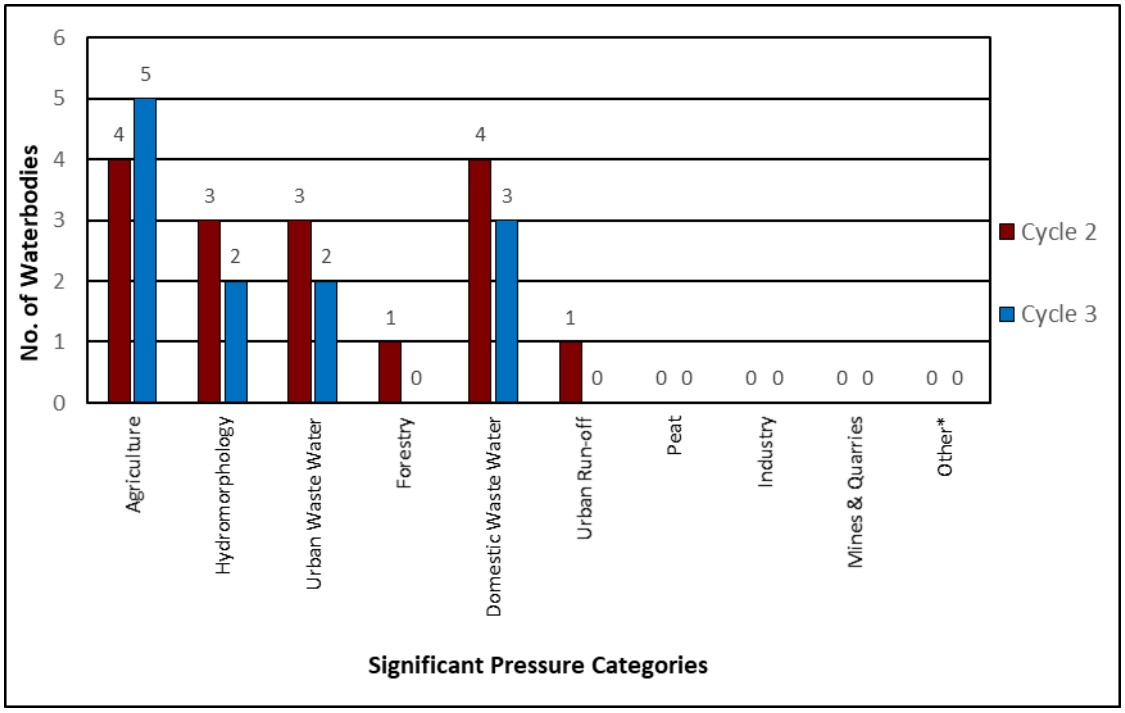

*Other - Acidification, saline intrusion, elevated temperature, litter, microbiological pollution and unknown impacts have all been grouped into the "Other" issues category for the purpose of this report

Figure 25: Significant Issues across all 2nd Cycle Areas for Action Waterbodies

## 8.5 Significant Pressure in 2nd Cycle Areas for Action

- For Cycle 3, in 2nd Cycle Areas for Action waterbodies in the catchment the dominant significant pressures are:
  - Agriculture - five waterbodies impacted in Cycle 3, an increase by one since Cycle 2.
  - Domestic Waste Water - three waterbodies (Kilcolgan_030, Radford_020 & Toberdoney_020) impacted in Cycle 3, a reduction by one since Cycle 2.
  - Urban Waste Water - two waterbodies (Kilcolgan_020 & Kilcolgan_030) impacted in Cycle 3, a reduction by one since Cycle 2.
  - Hydromorphology – two waterbodies (Carra Stream_010, Kilcolgan_030) impacted in Cycle 3, a reduction by one since Cycle 2.

- When comparing the significant pressures in the 2nd Cycle Areas for Action between Cycle 2 and 3 there has been there has been no change in the number of waterbodies affected by agricultural pressures, however the number of waterbodies impacted by each of the remaining significant pressure category have decreased by one waterbody.




*Other – abstractions, aquaculture, atmospheric, anthropogenic pressures, historically polluted sites, waste, water treatment and invasive species have all been grouped into the "Other" pressure category for the purpose of this report

Figure 26: Significant Pressures in 2nd Cycle Area for Action Waterbodies

# 9 3rd Cycle Recommended Areas for Action

## 9.1 Recommended Areas for Action Overview

- For the 3rd Cycle Draft River Basin Management Plan Areas for Action have been extended out to not only include Prioritised Areas for Action undertaken by LAWPRO which focussed on restoring waterbodies, but to also include restoration work undertaken by all agencies under Areas for Restoration. In addition, protection work is included under Areas for Protection and research, pilot schemes and community initiatives are included under Catchment Projects. The aim of the 3rd Cycle Plan is to capture all activity that is working to restore, improve and/or protect waterbodies.

- The Recommended 3rd Cycle Areas for Action list will be included in the Draft River Basin Management Plan and will be finalised after the consultation period.

- There are 12 Areas for Action, comprising of 39 waterbodies, recommended for further characterisation and action in the catchment for the 3rd Cycle River Basin Management Plan. 19 of the 39 waterbodies in the 3rd Cycle Recommended Areas for Action are *At Risk*, seven are in *Review* and 13 are *Not At Risk.* The 12 Recommended Areas for Action consist of two Areas for Protection, eight Areas for Restoration and two Catchment Projects. LAWPRO are the proposed lead organisation in seven Recommended Areas for Action, GIS are the proposed lead in two Recommended Areas for Action. NFGWS, Clare County Council and Galway City Council are the proposed leads for one Recommended Area for Action each. The Recommended Areas for Action in the catchment are listed in Table 7 and shown in Figure 27.

The reason for selecting each waterbody in a Recommended Areas for Action is provided in Appendix 3.

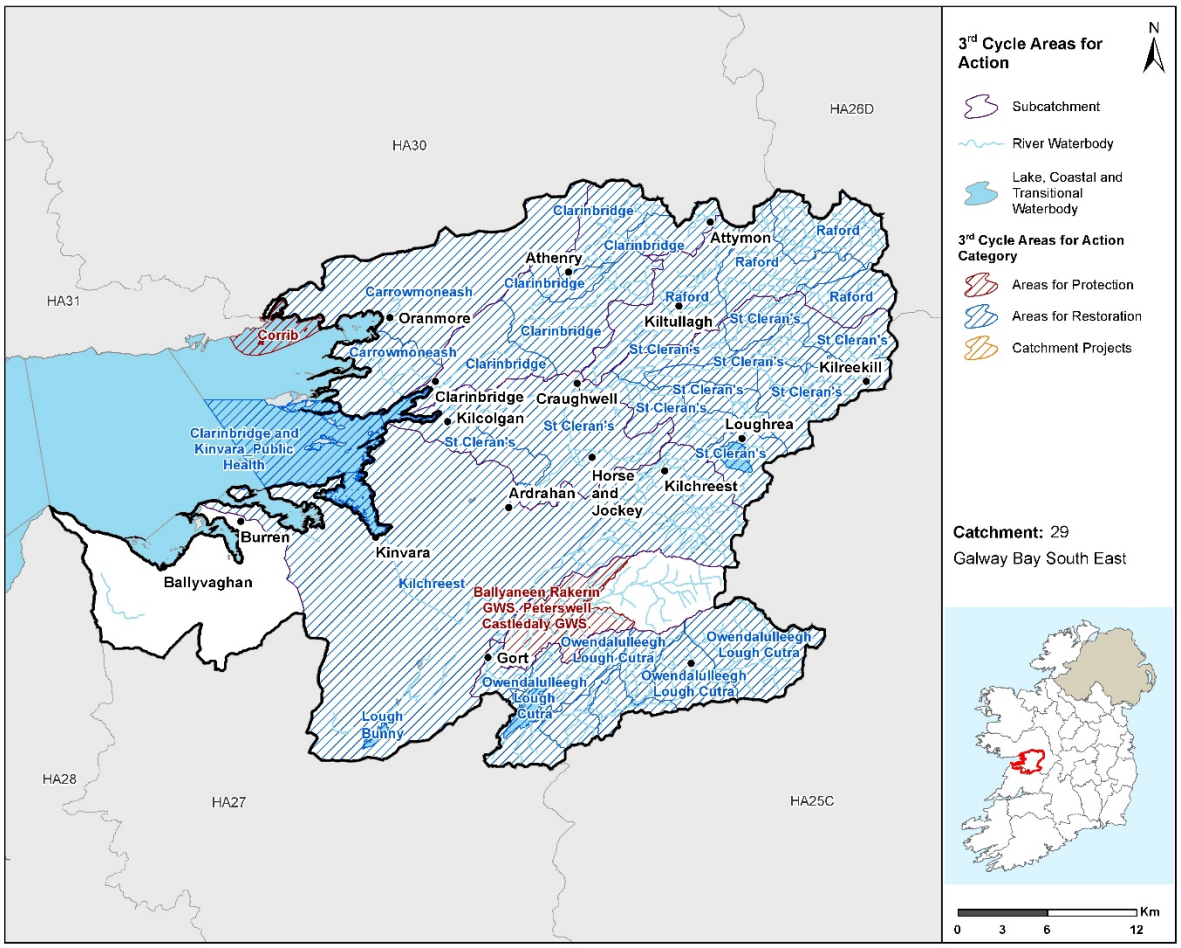



Figure 27: 3rd Cycle Recommended Areas for Action Locations

Table 7: 3rd Cycle Recommended Areas for Action Breakdown

| 3rd Cycle Recommended Areas for Action | Number of Waterbodies | Recommended Areas for Action Category | Recommended Areas for Action Sub-category | Lead Organisation |
|---|---|---|---|---|
| Owendalulleegh Lough Cutra | 8 | Restoration | Prioritised Areas for Action LAWPRO | LAWPRO |
| Raford | 4 | Restoration | Prioritised Areas for Action LAWPRO | LAWPRO |
| Ballyaneen Rakerin GWS. Peterswell Castledaly GWS. | 1 | Protection | Public Health Areas for Protection NFGWS, IW, HSE, LAs, SFPA | NFGWS |
| Clarinbridge | 5 | Restoration | Prioritised Areas for Action LAWPRO | LAWPRO |
| St Cleran's | 11 | Restoration | Prioritised Areas for Action LAWPRO | LAWPRO |
| Carrowmoneash | 2 | Restoration | Prioritised Areas for Action LAWPRO | LAWPRO |
| Kilchreest | 1 | Restoration | Prioritised Areas for Action LAWPRO | LAWPRO |

| 3rd Cycle Recommended Areas for Action | Number of Waterbodies | Recommended Areas for Action Category | Recommended Areas for Action Sub-category | Lead Organisation |
|---|---|---|---|---|
| Lough Bunny | 1 | Restoration | Blue Dot Areas for Action LAWPRO and Others | Clare County Council |
| Clarinbridge and Kinvara_Public Health | 3 | Restoration | Prioritised Areas for Action LAWPRO | LAWPRO |
| Corrib | 1 | Protection | LA Areas for Protection Local Authorities | Galway City Council |
| Suck South GWB | 1 | Catchment Projects | Public Body Research | GSI |
| GWDTE-Caherglassaun Turlough | 1 | Catchment Projects | Public Body Research | GSI |

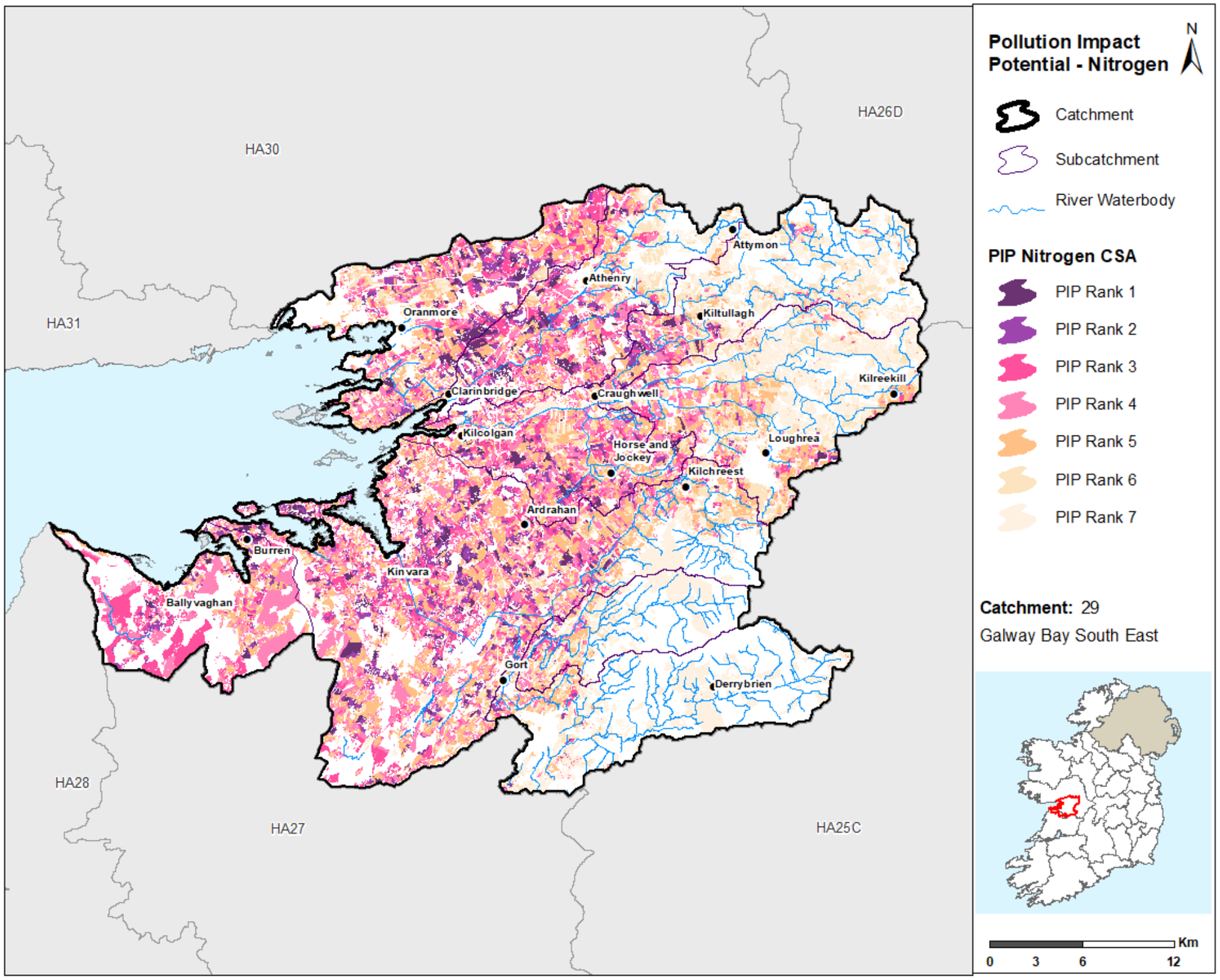
## 10 Catchment Summary

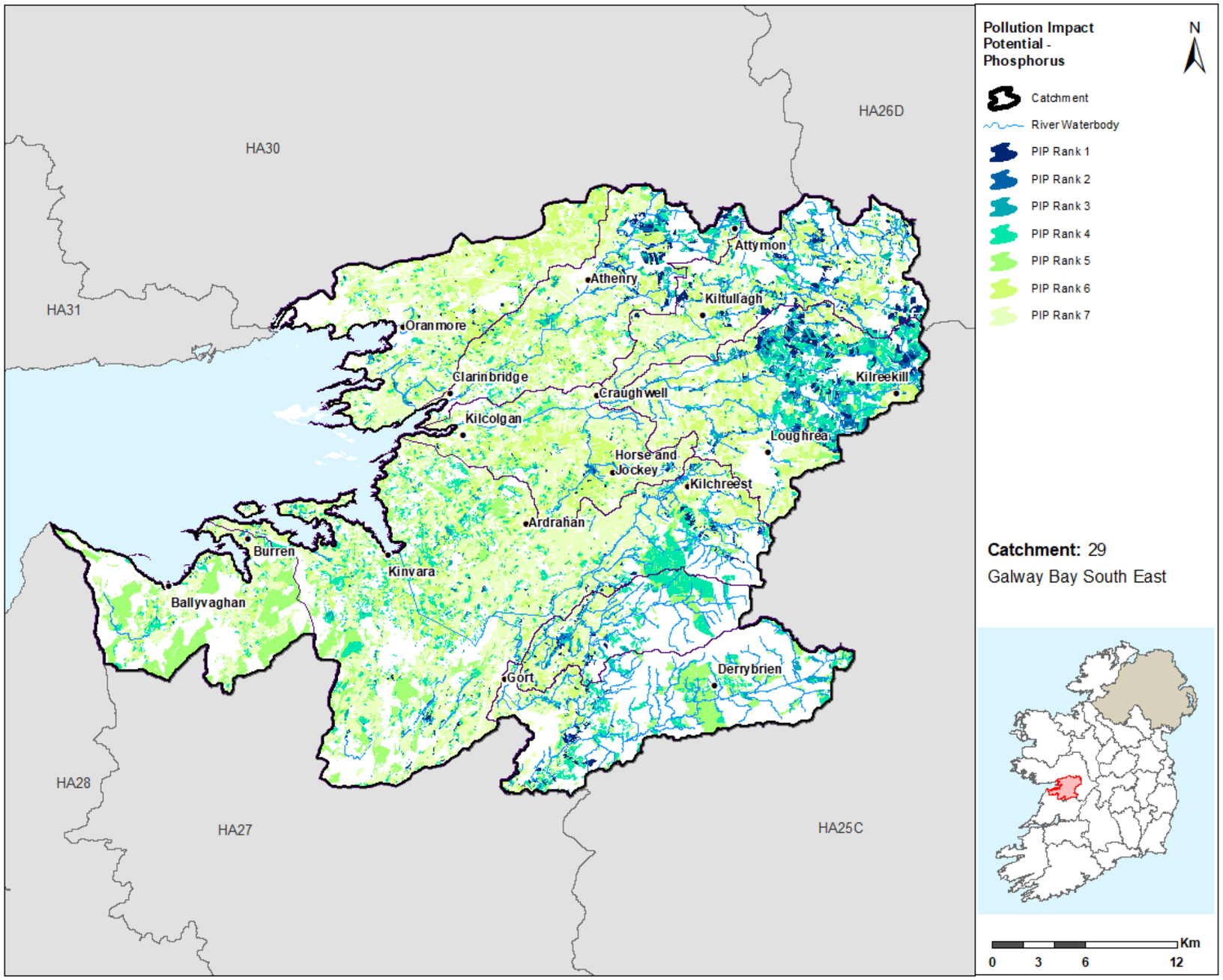
- Of the 33 river waterbodies, 16 are *At Risk* of not meeting their WFD objectives.
- One out of six lake waterbodies are *At Risk* of not meeting their WFD objectives.
- Three out of 20 transitional waterbodies in the catchment are *At Risk* of not meeting their WFD objectives.
- Six out of 28 groundwater bodies are *At Risk.* .
- There has been an overall improvement across the catchment with 27 waterbodies *At Risk* in Cycle 3 compared to 33 waterbodies *At Risk* in Cycle 2.
- The main significant issues are impacts from nutrient pollution, followed by morphological issues, organic pollution, hydrological issues, sediment and chemical pollution. There are also three waterbodies with unknown impact types.
- The main significant pressures are agricultural pressures followed by domestic waste water, hydromorphological pressures and urban waste water.
- The reduction in the number of waterbodies impacted by nutrients from urban waste water and agricultural pressures appear to be driving the improvements between Cycle 2 and Cycle 3.
- In the 2nd Cycle Areas for Action, 10 waterbodies were *At Risk* in Cycle 2 and six waterbodies are *At Risk* in Cycle 3.
- There are 12 3rd Cycle Recommended Areas for Action for Cycle 3. They comprise of 39 waterbodies with 19 waterbodies *At Risk*, seven in *Review* and 13 *Not At Risk*.

# Appendix 1
# High ecological status objective waterbodies

| Waterbody Name | Waterbody Type | Waterbody Code | Status 2013-2018 |
|---|---|---|---|
| BOLEYNEENDORRISH_010 | River | IE_WE_29B040100 | High |
| BOLEYNEENDORRISH_020 | River | IE_WE_29B040300 | High |
| Bunny | Lake | IE_WE_27_114 | Good |
| Outer Galway Bay | Coastal | IE_WE_100_0000 | High |
| OWENDALULLEEGH_010 | River | IE_WE_29O010500 | Good |
| OWENDALULLEEGH_020 | River | IE_WE_29O010700 | High |
| OWENDALULLEEGH_030 | River | IE_WE_29O010800 | Good |
| OWENDALULLEEGH_040 | River | IE_WE_29O010900 | High |

## Appendix 2
## Pollution Impact Potential Mapping






**Pollution Impact Potential - Phosphorus**

N

- Catchment
- River Waterbody
- PIP Rank 1
- PIP Rank 2
- PIP Rank 3
- PIP Rank 4
- PIP Rank 5
- PIP Rank 6
- PIP Rank 7

**Catchment:** 29
Galway Bay South East



Km
0 3 6 12

# Appendix 3
# Summary information on all waterbodies in the Galway Bay South East Catchment

| Subcatchment Code | Waterbody Code | Waterbody Name | Waterbody Type | Risk 10-15 | Risk 13-18 | Status 10-15 | Status 13-18 | High Ecological Status Objective Waterbody | Significant Pressures | Recommended Areas for Action Name | Recommended Areas for Action (reasons for selection) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 29_7 | IE_WE_29B020100 | BEAGH_010 | River | *At Risk* | *At Risk* | Moderate | Moderate | No | Hymo | Owendalulleegh Lough Cutra | |
| 29_5 | IE_WE_29B030300 | BALLYMABILLA_010 | River | *At Risk* | *Not At Risk* | Moderate | Good | No | | Raford | Existing PAA WB. Keep to ensure full contributing catchment to Clarinbridge/Kinvara shellfish area is included. |
| 29_1 | IE_WE_29B040100 | BOLEYNEENDORRISH_010 | River | *Not At Risk* | *Not At Risk* | High | High | Yes | | | |
| 29_1 | IE_WE_29B040300 | BOLEYNEENDORRISH_020 | River | *Not At Risk* | *Not At Risk* | High | High | Yes | | | |
| 29_1 | IE_WE_29B040800 | BOLEYNEENDORRISH_030 | River | *At Risk* | *Not At Risk* | Moderate | High | No | | Ballyaneen Rakerin GWS. Peterswell Castledaly GWS. | Ballyaneen Rakerin GWS. Peterswell / Castledaly GWS. |
| 29_7 | IE_WE_29C010200 | CANNAHOWNA_010 | River | *Review* | *At Risk* | Good | Poor | No | Other, UWW | Owendalulleegh Lough Cutra | |
| 29_4 | IE_WE_29C020040 | CLARINBRIDGE_010 | River | *At Risk* | *Not At Risk* | Moderate | Good | No | | Clarinbridge | Include as SC contributes to Clarinbridge / Kinvara Shellfish Area. Priority for GCC and BIM to address shellfish issues. |
| 29_4 | IE_WE_29C020200 | CLARINBRIDGE_020 | River | *Review* | *Review* | Unassigned | Unassigned | No | | Clarinbridge | Include as SC contributes to Clarinbridge / Kinvara Shellfish Area. Priority for GCC and BIM to address shellfish issues. |
| 29_4 | IE_WE_29C020300 | CLARINBRIDGE_030 | River | *At Risk* | *At Risk* | Poor | Poor | No | UWW | Clarinbridge | Include as SC contributes to Clarinbridge / Kinvara Shellfish Area. Priority for GCC and BIM to address shellfish issues. |
| 29_4 | IE_WE_29C020400 | CLARINBRIDGE_040 | River | *At Risk* | *At Risk* | Poor | Poor | No | UWW | Clarinbridge | Include as SC contributes to Clarinbridge / Kinvara Shellfish Area. Priority for GCC and BIM to address shellfish issues. |
| 29_4 | IE_WE_29C020500 | CLARINBRIDGE_050 | River | *At Risk* | *At Risk* | Poor | Poor | No | Ag, DWW, UR | Clarinbridge | Include as SC contributes to Clarinbridge / Kinvara Shellfish Area. Priority for GCC and BIM |

| Subcatchment Code | Waterbody Code | Waterbody Name | Waterbody Type | Risk 10-15 | Risk 13-18 | Status 10-15 | Status 13-18 | High Ecological Status Objective Waterbody | Significant Pressures | Recommended Areas for Action Name | Recommended Areas for Action (reasons for selection) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | to address shellfish issues. Brockagh GWS. |
| 29_9 | IE_WE_29C031000 | CARRA STREAM_010 | River | *At Risk* | *At Risk* | Moderate | Poor | No | Ag, Hymo | St Cleran's | Existing *At Risk* PAA waterbody. UWW the focus of characterisation work. Loughrea WWTP. |
| 29_9 | IE_WE_29C032000 | CARRA STREAM_020 | River | *Not At Risk* | *Not At Risk* | Good | Good | No | | St Cleran's | Add waterbody to ensure full SC to Clarinbridge/Kinvara PAA is included for characterisation. |
| 29_6 | IE_WE_29C050400 | CARROWMONEASH (Oranmore)_010 | River | *At Risk* | *Review* | Unassigned | Unassigned | No | | Carrowmoneash | Proposed by GCC & NPWS. Feeds into Inner Galway Bay CWB which is adjacent to Clarinbridge / Kinvara shellfish Area. This is a 2 RWB SC. |
| 29_3 | IE_WE_29G220860 | GLENINAGH_SOUTH_010 | River | *Not At Risk* | *Not At Risk* | Unassigned | Unassigned | No | | | |
| 29_9 | IE_WE_29K010100 | KILCOLGAN_010 | River | *At Risk* | *Not At Risk* | Unassigned | Unassigned | No | | St Cleran's | LAWPRO have confirmed this waterbody was impacted from urban waste water. Issue has been fixed and requires follow up checks. Other pressures have yet to be confirmed now the waste water pressure is fixed. Keep for 3rd cycle. |
| 29_9 | IE_WE_29K010200 | KILCOLGAN_020 | River | *At Risk* | *At Risk* | Poor | Poor | No | UWW | St Cleran's | Existing *At Risk* PAA waterbody. UWW the focus of characterisation work. Loughrea WWTP. |
| 29_9 | IE_WE_29K010400 | KILCOLGAN_030 | River | *At Risk* | *At Risk* | Moderate | Bad | No | Ag, DWW, Hymo, UWW | St Cleran's | Existing *At Risk* PAA waterbody |
| 29_2 | IE_WE_29K010600 | KILCOLGAN_040 | River | *At Risk* | *At Risk* | Moderate | Poor | No | Ag, DWW, Hymo, Ind | St Cleran's | In a subcatchment contributing to Clarinbridge/Kinvara shellfish area. Potentially also influenced by impacts from Loughrea WWTP - but to be further investigated. Ballyglass / Fiddane GWS. Ballymanagh GWS |

| Subcatchment Code | Waterbody Code | Waterbody Name | Waterbody Type | Risk 10-15 | Risk 13-18 | Status 10-15 | Status 13-18 | High Ecological Status Objective Waterbody | Significant Pressures | Recommended Areas for Action Name | Recommended Areas for Action (reasons for selection) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 29_2 | IE_WE_29K010700 | KILCOLGAN_050 | River | *Review* | *Review* | Unassigned | Unassigned | No | | St Cleran's | In a subcatchment contributing to Clarinbridge/Kinvara shellfish area. |
| 29_8 | IE_WE_29K022100 | KILCHREEST_010 | River | *Review* | *Review* | Unassigned | Unassigned | No | | Kilchreest | Contributes to Clarinbridge / Kinvara Shellfish Area. GWSs: Kilchreest GWS. Ardrahan GWS. Tierneevin GWS. Roo GWS. Lydacan GWS. Kiltieran GWS. Coole GWS. Seehan Gort GWS. |
| 29_9 | IE_WE_29L010600 | LECARROW STREAM_010 | River | *At Risk* | *Not At Risk* | Moderate | Good | No | | St Cleran's | Existing PAA WB. Keep to ensure full SC to Clarinbridge/Kinvarra Shellfish areas is included. |
| 29_7 | IE_WE_29O010500 | OWENDALULLEEGH_010 | River | *Not At Risk* | *At Risk* | High | Good | Yes | For | Owendalulleegh Lough Cutra | |
| 29_7 | IE_WE_29O010700 | OWENDALULLEEGH_020 | River | *Not At Risk* | *Not At Risk* | High | High | Yes | | Owendalulleegh Lough Cutra | |
| 29_7 | IE_WE_29O010800 | OWENDALULLEEGH_030 | River | *At Risk* | *At Risk* | Moderate | Good | Yes | For | Owendalulleegh Lough Cutra | |
| 29_7 | IE_WE_29O010900 | OWENDALULLEEGH_040 | River | *Not At Risk* | *Not At Risk* | High | High | Yes | | Owendalulleegh Lough Cutra | |
| 29_7 | IE_WE_29O011000 | OWENDALULLEEGH_050 | River | *At Risk* | *At Risk* | Moderate | Moderate | No | For, Hymo | Owendalulleegh Lough Cutra | |
| 29_5 | IE_WE_29R010100 | RAFORD_010 | River | *Not At Risk* | *At Risk* | Good | Poor | No | Hymo | Raford | Existing PAA WB. Keep to ensure full contributing catchment to Clarinbridge/Kinvara shellfish area is included. Significant decline at MP due to drainage. Upstream pressures to be investigated also. |
| 29_5 | IE_WE_29R010200 | RAFORD_020 | River | *At Risk* | *At Risk* | Moderate | Moderate | No | DWW | Raford | Existing PAA WB. Keep to ensure full contributing catchment to Clarinbridge/Kinvara shellfish area is included. Characterisation ongoing and requires time to develop action plan. |
| 29_5 | IE_WE_29R010500 | RAFORD_030 | River | *Not At Risk* | *Review* | Good | Good | No | | Raford | Existing PAA WB. Keep to ensure full contributing catchment to |

| Subcatchment Code | Waterbody Code | Waterbody Name | Waterbody Type | Risk 10-15 | Risk 13-18 | Status 10-15 | Status 13-18 | High Ecological Status Objective Waterbody | Significant Pressures | Recommended Areas for Action Name | Recommended Areas for Action (reasons for selection) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Clarinbridge/Kinvara shellfish area is included. |
| 29_6 | IE_WE_29R090950 | ROCKHILL (Galway)_010 | River | *Review* | *Review* | Unassigned | Unassigned | No | | Carrowmoneash | Proposed by GCC & NPWS. Feeds into Inner Galway Bay CWB which is adjacent to Clarinbridge / Kinvara shellfish Area. This is a 2 RWB SC. |
| 29_9 | IE_WE_29T010300 | TOBERDONEY_010 | River | *At Risk* | *At Risk* | Moderate | Moderate | No | Ag | St Cleran's | Existing *At Risk* PAA WB. Agriculture confirmed as significant pressure. Trailing Diffuse Tools outputs to refine breakthrough points to inform ASSAP referrals. |
| 29_9 | IE_WE_29T010700 | TOBERDONEY_020 | River | *At Risk* | *At Risk* | Poor | Moderate | No | Ag, DWW | St Cleran's | Existing *At Risk* PAA WB. Agriculture confirmed as significant pressure. Trailing Diffuse Tools outputs to refine breakthrough points to inform ASSAP referrals. |
| 29_8 | IE_WE_27_114 | Bunny | Lake | *At Risk* | *At Risk* | Good | Good | Yes | Other | Lough Bunny | HES objective waterbody not meeting its objective<br>NPWS priority habitat/species<br>Potential reference lake, contribution from groundwater |
| 29_8 | IE_WE_29_107 | ROOAUNMORE (DUNKELLIN BY) | Lake | *Not At Risk* | *Not At Risk* | Unassigned | Unassigned | No | | | |
| 29_8 | IE_WE_29_168 | Mannagh | Lake | *Not At Risk* | *Not At Risk* | Unassigned | Unassigned | No | | | |
| 29_8 | IE_WE_29_181 | Skeardeen | Lake | *Not At Risk* | *Not At Risk* | Unassigned | Unassigned | No | | | |
| 29_9 | IE_WE_29_194 | Rea | Lake | *At Risk* | *Not At Risk* | Moderate | Good | No | | St Cleran's | Existing PAA. Fish have recovered but lake is restocked regularly. Keep to ensure SC for Claringbridge/Kinvarra Shellfish Area is fully considered. |
| 29_7 | IE_WE_29_37 | Cutra | Lake | *At Risk* | *Not At Risk* | Moderate | Good | No | | Owendalulleegh Lough Cutra | |
| 27_8, 28_2, 28_3, 28_4, 28_5, 28_6, 28_7, 29_3 | IE_SH_070_0000 | Shannon Plume (HAs 27;28) | Coastal | *Not At Risk* | *Review* | Unassigned | Unassigned | No | | | |

| Subcatchment Code | Waterbody Code | Waterbody Name | Waterbody Type | Risk 10-15 | Risk 13-18 | Status 10-15 | Status 13-18 | High Ecological Status Objective Waterbody | Significant Pressures | Recommended Areas for Action Name | Recommended Areas for Action (reasons for selection) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 28_2, 29_3, 31_1, 31_3, 31_4, 31_5, 31_6, 31_8, 31_9, 32_12 | IE_WE_010_0000 | Aran Islands, Galway Bay, Connemara (HAs 29;31) | Coastal | *Not At Risk* | *Review* | Unassigned | Unassigned | No | | | |
| 29_3, 29_8, 31_6, 31_7 | IE_WE_100_0000 | Outer Galway Bay | Coastal | *Not At Risk* | *Not At Risk* | High | High | Yes | | | |
| 29_3 | IE_WE_110_0000 | Ballyvaghan Bay | Coastal | *Not At Risk* | *Review* | Unassigned | Unassigned | No | | | |
| 29_8 | IE_WE_130_0000 | Aughinish Bay | Coastal | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_6, 29_8 | IE_WE_160_0000 | Inner Galway Bay South | Coastal | *Not At Risk* | *Not At Risk* | Unassigned | Unassigned | No | | Clarinbridge and Kinvara_Public Health | |
| 29_8 | IE_WE_160_0700 | Rincarna Pools South | Coastal | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_8 | IE_WE_160_0710 | Rincarna Pools North | Coastal | *At Risk* | *At Risk* | Poor | Bad | No | Other | | |
| 29_6, 31_7 | IE_WE_170_0000 | Inner Galway Bay North | Coastal | *Not At Risk* | *Not At Risk* | Good | Good | No | | | |
| 29_3 | IE_WE_110_0100 | Muckinish Lough | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_3, 29_8 | IE_WE_120_0100 | Murree Lough | Transitional | *At Risk* | *At Risk* | Moderate | Unassigned | No | Other | | |
| 29_8 | IE_WE_140_0100 | Aughinish Lagoon | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_8 | IE_WE_140_0200 | Carrownahallia Lagoon, Aughinish | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_8 | IE_WE_150_0100 | Rossalia Lagoon | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |

| Subcatchment Code | Waterbody Code | Waterbody Name | Waterbody Type | Risk 10-15 | Risk 13-18 | Status 10-15 | Status 13-18 | High Ecological Status Objective Waterbody | Significant Pressures | Recommended Areas for Action Name | Recommended Areas for Action (reasons for selection) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 29_8 | IE_WE_160_0100 | Kinvarra Bay | Transitional | *At Risk* | *At Risk* | Moderate | Moderate | No | DWW, Other, UWW | Clarinbridge and Kinvara_Public Health | BIM: I would like the Designated shellfish area of Clarinbridge and Kinvara to be considered as areas where attention might be focussed. These areas are under pressure from development, and poor quality freshwater inputs, and a drainage scheme for south galway is being planned, with a possible exit point in Kinvara Bay. My fear is that the salinity will be so compromised as to wipe out the shellfish growing industry in the bay, as has already happened to the pacific oyster industry at Cave, near clarinbridge across the bay. At present efforts are underway on a Marine Institute led project trying to re-establish native oyster populations in kinvara bay, and any decrease in salinity or increase in suspended solids entering the bay could have serious impacts on the designated area and the protected species. |
| 29_8 | IE_WE_160_0200 | Bridge Lough, Knockakilleen | Transitional | *At Risk* | *At Risk* | Bad | Good | No | Other | | |
| 29_8 | IE_WE_160_0300 | Loughaungreena (Doorus Loughs) | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_8 | IE_WE_160_0400 | Lough Fadda (Doorus Loughs) | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_8 | IE_WE_160_0500 | Lough Namona (Doorus Loughs) | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_8 | IE_WE_160_0600 | Lough Sallagh (Doorus Loughs) | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |

| Subcatchment Code | Waterbody Code | Waterbody Name | Waterbody Type | Risk 10-15 | Risk 13-18 | Status 10-15 | Status 13-18 | High Ecological Status Objective Waterbody | Significant Pressures | Recommended Areas for Action Name | Recommended Areas for Action (reasons for selection) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 29_2, 29_4, 29_6, 29_8 | IE_WE_160_0800 | Dunbulcaun Bay | Transitional | *Not At Risk* | *Not At Risk* | Unassigned | Unassigned | No | | Clarinbridge and Kinvara_Public Health | This area is a priority for GCC because of Clarinbridge/Kinvara shellfish area. LAWPRO propose to fully characterise the inputting catchment but we do not have the LCA tools to assess transitional or coastal water bodies. BIM comments: I would like the Designated shellfish area of Clarinbridge and Kinvara to be considered as areas where attention might be focussed. These areas are under pressure from development, and poor quality freshwater inputs, and a drainage scheme for south galway is being planned, with a possible exit point in Kinvara Bay. My fear is that the salinity will be so compromised as to wipe out the shellfish growing industry in the bay, as has already happened to the pacific oyster industry at Cave, near clarinbridge across the bay. At present efforts are underway on a Marine Institute led project trying to re-establish native oyster populations in kinvara bay, and any decrease in salinity or increase in suspended solids entering the bay could have serious impacts on the designated area and the protected species. |
| 29_6 | IE_WE_170_0100 | Mweeloon Pool South | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_6 | IE_WE_170_0150 | Mweeloon Pool North | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_6 | IE_WE_170_0200 | Loughaunascalia, Ardfry Point | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_6 | IE_WE_170_0300 | Ardfry Oyster Pool | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_6 | IE_WE_170_0400 | Turreen Lough (Rinville West) | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_6 | IE_WE_170_0500 | Oranmore Bay | Transitional | *Not At Risk* | *Not At Risk* | Unassigned | Unassigned | No | | | |

| Subcatchment Code | Waterbody Code | Waterbody Name | Waterbody Type | Risk 10-15 | Risk 13-18 | Status 10-15 | Status 13-18 | High Ecological Status Objective Waterbody | Significant Pressures | Recommended Areas for Action Name | Recommended Areas for Action (reasons for selection) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 29_6 | IE_WE_170_0600 | Renmore Lough, Galway City | Transitional | *Review* | *Review* | Unassigned | Unassigned | No | | | |
| 29_6, 30_18, 31_7 | IE_WE_170_0700 | Corrib Estuary | Transitional | *Not At Risk* | *Not At Risk* | Good | Good | No | | Corrib | Proposed by LA. Develop Protection Plan. Work ongoing in the catchment to protect the Corrib River & Corrib Estuary including IW Drainage Plan. Plan will include consideration of canal system in Galway City. |
| 25B_4, 25C_12, 26D_2, 26D_3, 26D_5, 26G_1, 26G_3, 29_5, 29_9 | IE_SH_G_019 | Aughrim | Groundwater | *Not At Risk* | *Not At Risk* | Good | Good | No | | | |
| 27_7, 28_2, 28_6, 29_3, 29_8 | IE_SH_G_047 | Burren | Groundwater | *Review* | *Review* | Good | Good | No | | | |
| 25C_8, 27_1, 27_14, 27_6, 27_7, 29_7 | IE_SH_G_071 | Crusheen | Groundwater | *Review* | *Review* | Good | Good | No | | | |
| 27_1, 27_10, 27_14, 27_3, 27_6, 27_7, 27_9, 29_7, 29_8 | IE_SH_G_080 | Ennis | Groundwater | *At Risk* | *Review* | Good | Good | No | | | |
| 25C_10, 25C_3, 25C_6, 25C_7, 25C_8, 25D_3, 25D_6, 27_12, 27_13, 27_14, 27_6, 29_7 | IE_SH_G_157 | Lough Graney | Groundwater | *Not At Risk* | *Not At Risk* | Good | Good | No | | | |
| 27_7, 28_2, 29_3 | IE_SH_G_212 | Slieve Elva | Groundwater | *Review* | *Review* | Good | Good | No | | | |

| Subcatchment Code | Waterbody Code | Waterbody Name | Waterbody Type | Risk 10-15 | Risk 13-18 | Status 10-15 | Status 13-18 | High Ecological Status Objective Waterbody | Significant Pressures | Recommended Areas for Action Name | Recommended Areas for Action (reasons for selection) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 26B_1, 26C_12, 26D_1, 26D_10, 26D_11, 26D_2, 26D_3, 26D_4, 26D_5, 26D_6, 26D_7, 26D_8, 26D_9, 26E_2, 26E_3, 26E_5, 26G_1, 26G_2, 29_5, 30_10, 30_12, 30_19, 30_8 | IE_SH_G_225 | Suck South | Groundwater | *Review* | *Review* | Good | Good | No | | Suck South GWB | This GWB is in *Review* as it is 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. So this type of deterioration may be observed in the future.<br><br>Also there are numerous groundwater fed drinking water sources with water quality issues in the area.<br><br>GSI are involved in karst mapping and flood monitoring within this GWB. A PAA status would allow this already existing work to be highlighted via the WFD process.<br><br>Risk of GWB deteriorating; Public health areas for restoration.<br>Build on existing programmes and community group initiatives. |
| 25B_1, 25B_2, 25B_4, 25B_5, 25C_10, 25C_12, 25C_3, 25C_6, 25C_7, 25C_8, 26D_3, 26G_1, 26G_3, 29_1, 29_7, 29_8, 29_9 | IE_SH_G_236 | Tynagh | Groundwater | *Not At Risk* | *Not At Risk* | Good | Good | No | | | |
| 27_7, 28_2, 29_3, 29_8 | IE_WE_G_0001 | Ballyvaughan Uplands | Groundwater | *Not At Risk* | *Not At Risk* | Good | Good | No | | | |
| 27_7, 29_7, 29_8 | IE_WE_G_0002 | Kinvara-Gort | Groundwater | *Review* | *Review* | Good | Good | No | | | |
| 29_6, 30_14, 30_15, 30_16, 30_17, 30_18, 30_7, 31_2, 31_3, 31_6, 31_7, 31_8, 32_10, 32_11 | IE_WE_G_0006 | Maam-Clonbur | Groundwater | *Not At Risk* | *Not At Risk* | Good | Good | No | | | |

| Subcatchment Code | Waterbody Code | Waterbody Name | Waterbody Type | Risk 10-15 | Risk 13-18 | Status 10-15 | Status 13-18 | High Ecological Status Objective Waterbody | Significant Pressures | Recommended Areas for Action Name | Recommended Areas for Action (reasons for selection) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 29_4, 29_5, 30_12 | IE_WE_G_0007 | Loughrea | Groundwater | *Not At Risk* | *Review* | Good | Good | No | | | |
| 29_2, 29_4, 29_5, 29_6, 29_8, 30_12, 30_13, 30_18, 30_4 | IE_WE_G_0008 | Clarinbridge | Groundwater | *At Risk* | *Review* | Good | Good | No | | | |
| 26D_11, 26D_2, 26D_8, 26D_9, 29_4, 29_5, 29_6, 30_1, 30_10, 30_11, 30_12, 30_13, 30_18, 30_19, 30_2, 30_4, 30_5, 30_6, 30_8, 30_9, 34_15, 34_4 | IE_WE_G_0020 | Clare-Corrib | Groundwater | *At Risk* | *At Risk* | Good | Good | No | Ag | | |
| 29_4, 29_6 | IE_WE_G_0087 | GWDTE-Galway Bay Complex Fens (SAC000268) | Groundwater | *Review* | *Review* | Good | Good | No | | | |
| 29_8 | IE_WE_G_0088 | GWDTE-Ballinaduff Turlough (SAC002295) | Groundwater | *Not At Risk* | *Not At Risk* | Good | Good | No | | | |
| 29_3, 29_8 | IE_WE_G_0090 | GWDTE-Ballyvelaghan Turlough (SAC000268) | Groundwater | *Review* | *Not At Risk* | Good | Good | No | | | |
| 25C_6, 25C_8, 27_14, 27_7, 29_1, 29_2, 29_7, 29_8 | IE_WE_G_0091 | GWDTE-Caherglassaun Turlough (SAC000238) | Groundwater | *At Risk* | *At Risk* | Poor | Poor | No | Other | GWDTE-Caherglassaun Turlough | The GWB has deteriorated in status due to forestry pressures, and the local community blame forestry within for causing flooding within the GWB. The GWB is currently the subject of a flood relief scheme study which could permanently alter its hydrogeological behaviour .<br><br>GSI are involved in research (together with TCD and IT Carlow) into the flooding within this GWB A PAA status would allow this already existing work to be highlighted via the WFD process.<br><br>Deteriorated waterbody; GWB has deteriorated in status due to forestry pressures; Waterbody includes several SAC, SPA protected areas. Builds on existing |

| Subcatchment Code | Waterbody Code | Waterbody Name | Waterbody Type | Risk 10-15 | Risk 13-18 | Status 10-15 | Status 13-18 | High Ecological Status Objective Waterbody | Significant Pressures | Recommended Areas for Action Name | Recommended Areas for Action (reasons for selection) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | programmes and community group initiatives. |
| 29_8 | IE_WE_G_0092 | GWDTE-Cahermore Turlough (SAC002294) | Groundwater | *Review* | *Not At Risk* | Good | Good | No | | | |
| 25C_6, 29_1, 29_2, 29_8, 29_9 | IE_WE_G_0093 | GWDTE-Coy Turlough (SAC002117) | Groundwater | *Review* | *Not At Risk* | Good | Good | No | | | |
| 27_7, 29_3, 29_8 | IE_WE_G_0095 | GWDTE-Gortboyheen Turlough (SAC000054) | Groundwater | *Review* | *Not At Risk* | Good | Good | No | | | |
| 29_2, 29_8 | IE_WE_G_0096 | GWDTE-Kiltiernan Turlough (SAC001285) | Groundwater | *Review* | *Review* | Good | Good | No | | | |
| 27_7, 29_8 | IE_WE_G_0098 | GWDTE-Lough Mannagh Turlough (SAC001926) | Groundwater | *Review* | *Not At Risk* | Good | Good | No | | | |
| 29_3 | IE_WE_G_0099 | GWDTE-Muckinish Turlough (SAC000054) | Groundwater | *Not At Risk* | *Not At Risk* | Good | Good | No | | | |
| 25C_12, 25C_6, 26D_2, 26D_3, 29_2, 29_4, 29_5, 29_8, 29_9, 30_12 | IE_WE_G_0100 | GWDTE-Rahasane Turlough (SAC000322) | Groundwater | *At Risk* | *At Risk* | Good | Good | No | Ag, DWW | | |
| 29_2, 29_8 | IE_WE_G_0105 | GWDTE-Tullynafrankagh Turlough (SAC000606) | Groundwater | *At Risk* | *At Risk* | Poor | Poor | No | DWW | | |
| 29_6, 30_13, 30_18, 30_4 | IE_WE_G_0106 | GWDTE-Lough Corrib Fens 3 & 4 (SAC000297) | Groundwater | *Not At Risk* | *At Risk* | Good | Good | No | Other | | |

| Subcatchment Code | Waterbody Code | Waterbody Name | Waterbody Type | Risk 10-15 | Risk 13-18 | Status 10-15 | Status 13-18 | High Ecological Status Objective Waterbody | Significant Pressures | Recommended Areas for Action Name | Recommended Areas for Action (reasons for selection) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 29_6 | IE_WE_G_0117 | Industrial Facility (P0056-01) | Groundwater | *At Risk* | *At Risk* | Poor | Poor | No | Ind | | |

**Ag:** Agriculture

**DWW:** Domestic Waste Water

**For:** Forestry

**Hymo:** Hydromorphology

**Ind:** Industry

**M+Q:** Mines and Quarries

**Peat:** Peat Drainage and Extraction

**UR:** Urban Run-off

**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.