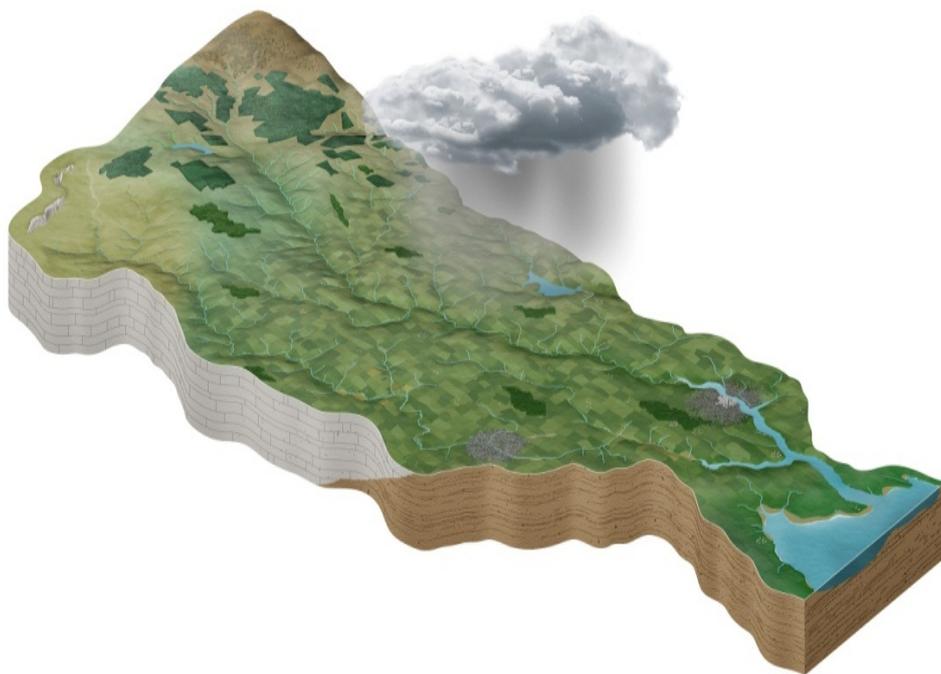


3rd Cycle Draft Owenavorrhagh Catchment Report (HA 11)



Catchment Science & Management Unit

Environmental Protection Agency

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Version no. 1

Preface

This document provides a summary of the water quality assessment outcomes for the Owenavorrhagh 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.
2 nd 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.
2 nd 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.
3 rd 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.
3 rd 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

1	Introduction.....	6
2	Waterbody Overview.....	7
2.1	Waterbody Status	7
2.2	Protected Areas	9
2.3	Heavily Modified Waterbodies.....	12
2.4	Artificial Waterbodies	12
3	Waterbody Risk	12
3.1	Overview of Risk	12
3.2	Surface Waters.....	12
3.3	Groundwater.....	15
3.4	Heavily Modified Waterbodies.....	16
3.5	Artificial Waterbodies	16
4	Significant Issues in <i>At Risk</i> Waterbodies	16
4.1	All Waterbodies	16
4.2	High Status Objective Waterbodies	17
5	Significant pressures in <i>At Risk</i> Waterbodies.....	17
5.1	All Waterbodies	17
5.2	High Status Objective Waterbodies	21
6	Source Load Apportionment Modelling (SLAM)	21
7	Load Reduction Assessment	21
7.1	Nitrogen Load Reduction	21
7.2	Phosphorus / Sediment Load Reduction	22
8	2 nd Cycle Areas for Action	22
8.1	Area for Action Overview	22
8.2	Status Change in 2 nd Cycle Areas for Action	24
8.3	Waterbody Risk in 2 nd Cycle Areas for Action	24
8.4	Significant Issues in 2 nd Cycle Areas for Action.....	25
8.5	Significant Pressure in 2 nd Cycle Areas for Action	26
9	3 rd Cycle Recommended Areas for Action	27
9.1	Recommended Areas for Action Overview	27
10	Catchment Summary	28

List of Figures

Figure 1: Overview of subcatchments in the Owenavorrhagh catchment	6
Figure 2: Waterbody types and numbers in the Owenavorrhagh Catchment.....	7
Figure 3: Waterbody Status Breakdown (All waterbodies).....	8
Figure 4: Status Class Changes between Cycle 2 and Cycle 3	9
Figure 5: Protected Areas – Public Health.....	10
Figure 6: Water Dependent SPAs / SACs.....	12
Figure 7: Number of waterbodies in each risk category	13
Figure 8: Surface Water Risk Cycle 3	14
Figure 9: Surface Water Risk Change between Cycle 2 and Cycle 3	14
Figure 10: Cycle 3 Groundwater Body Risk	15
Figure 11: Groundwater Body Risk Change between Cycle 2 & Cycle 3	16
Figure 12: Significant Issues across all <i>At Risk</i> WBs between Cycle 2 and Cycle 3.....	17
Figure 13: Significant Pressure (All <i>At Risk</i> Waterbodies)	18
Figure 14: Locations of Waterbodies where Agriculture is a Significant Pressure.....	20
Figure 15: Locations of Waterbodies where Domestic Waste Water is a Significant Pressure	20
Figure 16: Locations of Waterbodies where Urban Run-off is a Significant Pressure	20
Figure 17: Locations of Waterbodies where Urban Waste Water is a Significant Pressure	20
Figure 18: Estimated Proportions of N & P from Each Sector in the Owenavorrhagh Catchment	21
Figure 19: Waterbodies where Agricultural Measures should be Targeted	22
Figure 20: 2 nd Cycle Areas for Action Locations	23
Figure 21: 2 nd Cycle Area for Action Waterbody Status Class Changes between Cycle 2 and Cycle 3 .	24
Figure 22: Number of waterbodies in each risk category in 2 nd Cycle Areas for Action	25
Figure 23: Significant Issues across all 2 nd Cycle Areas for Action Waterbodies.....	26
Figure 24: Significant Pressures in 2 nd Cycle Area for Action Waterbodies	27
Figure 25: 3 rd Cycle Recommended Areas for Action Locations	28

List of Tables

Table 1: Waterbody Status Breakdown Table (All Waterbodies).....	8
Table 2: Natura 2000 Network Assessment Summary.....	11
Table 3: Urban Waste Water Treatment agglomerations identified as significant pressures in <i>At Risk</i> waterbodies in Cycle 3	19
Table 4: 2 nd Cycle Areas for Action	23
Table 5: 3 rd Cycle Recommended Areas for Action Breakdown.....	28

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 Owenavorrach 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 Owenavorrach catchment includes the area drained by the River Owenavorrach and by all streams entering tidal water between Kilmichael Point and Raven Point, Co. Wexford, draining a total area of 395km² (Figure 1). The largest urban centre in the catchment is Gorey. The other main urban centre in this catchment is Courtown. The total population of the catchment is approximately 27,319 with a population density of 69 people per km². The catchment is relatively hilly and is underlain by a mixture of metamorphic and volcanic rocks.

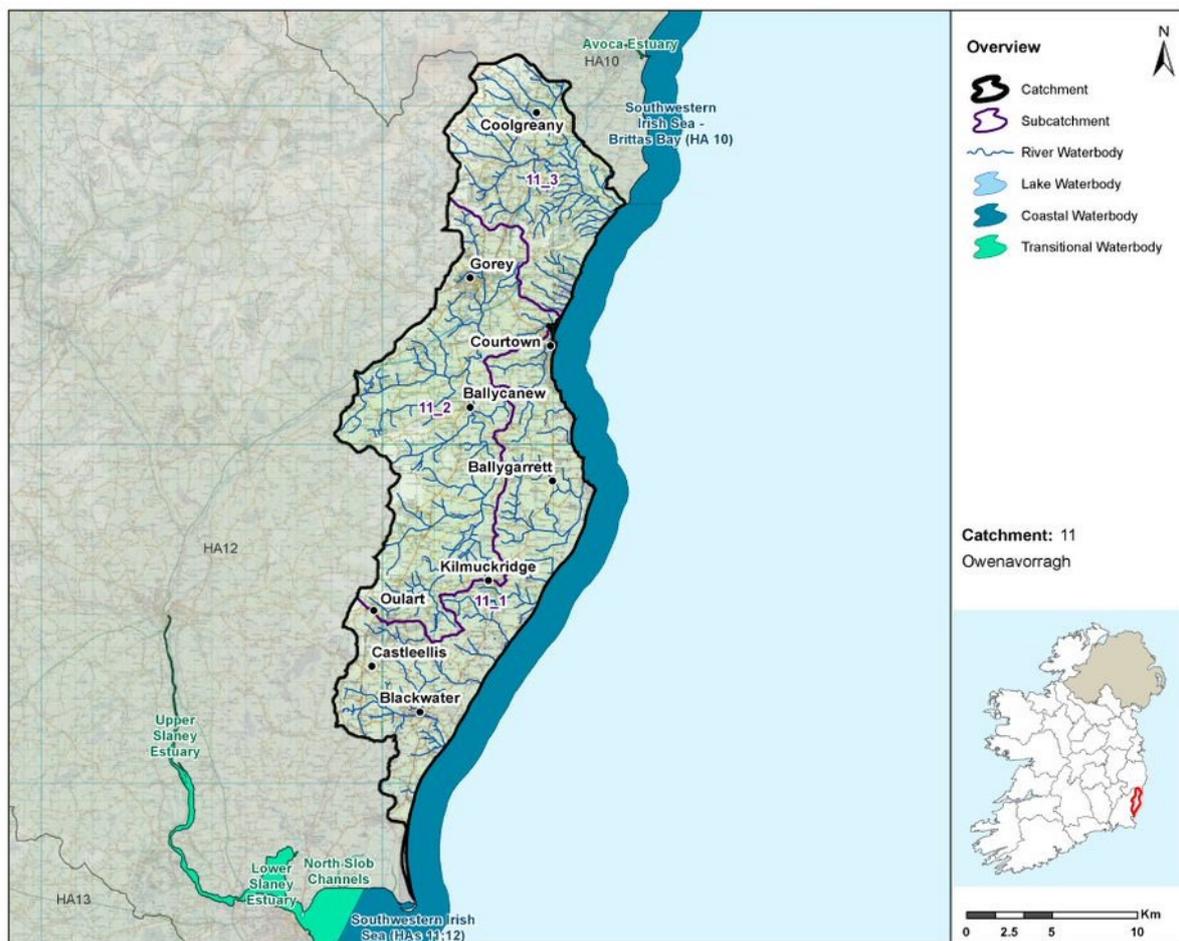


Figure 1: Overview of subcatchments in the Owenavorrach catchment

The Owenavorrach catchment is divided into three subcatchments (Figure 1) with 25 river waterbodies, one lakes waterbody, one transitional waterbody, three coastal waterbodies and 11 groundwater bodies (Figure 2).

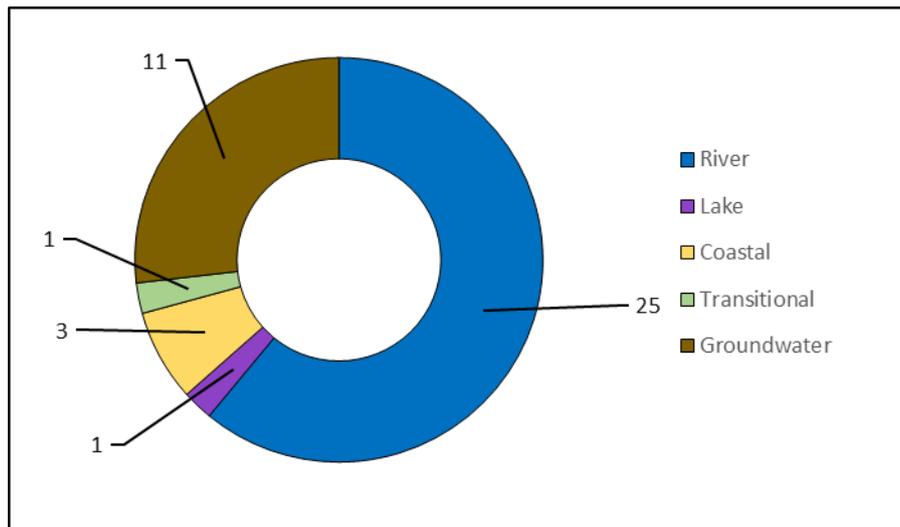


Figure 2: Waterbody types and numbers in the Owenavorrhagh Catchment.

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 13 achieving Good Status, 12 achieving Moderate Status, four achieving Poor Status and there is one Bad Status waterbody. All waterbodies must achieve at least Good Ecological Status.
- ◆ There are no waterbodies that must achieve High Ecological Status (HES) in this catchment.
- ◆ There has been a reduction of three waterbodies (all rivers waterbodies) achieving Poor Status between Cycle 2 and Cycle 3 and an increase in three waterbodies (all rivers waterbodies) achieving Moderate Status (Figure 3 & Table 1).

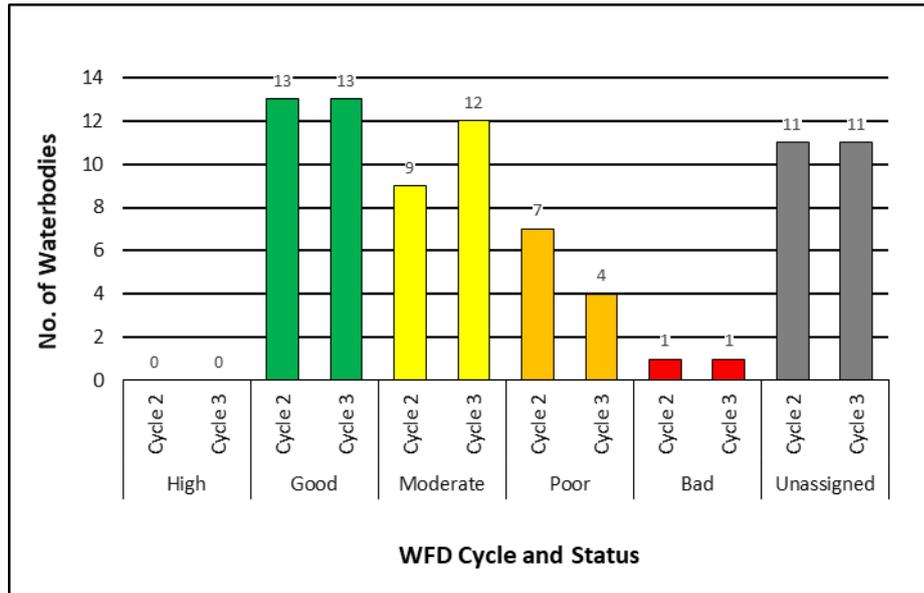


Figure 3: Waterbody Status Breakdown (All waterbodies)

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	0	0	0	0	0	0	0	0	0	0	0	0
Good	1	1	0	0	0	0	1	1	11	11	13	13
Moderate	8	11	0	0	0	0	1	1	0	0	9	12
Poor	7	4	0	0	0	0	0	0	0	0	7	4
Bad	1	1	0	0	0	0	0	0	0	0	1	1
Un-assigned	8	8	1	1	1	1	1	1	0	0	11	11
Total	25	25	1	1	1	1	3	3	11	11	41	41

- ◆ 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 five (11%) waterbodies have improved in status, 23 (77%) waterbodies have remained unchanged and two (7%) waterbodies have declined in status.¹
- ◆ There is an overall improvement in the status of three 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 4. Percentage displayed in the 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.

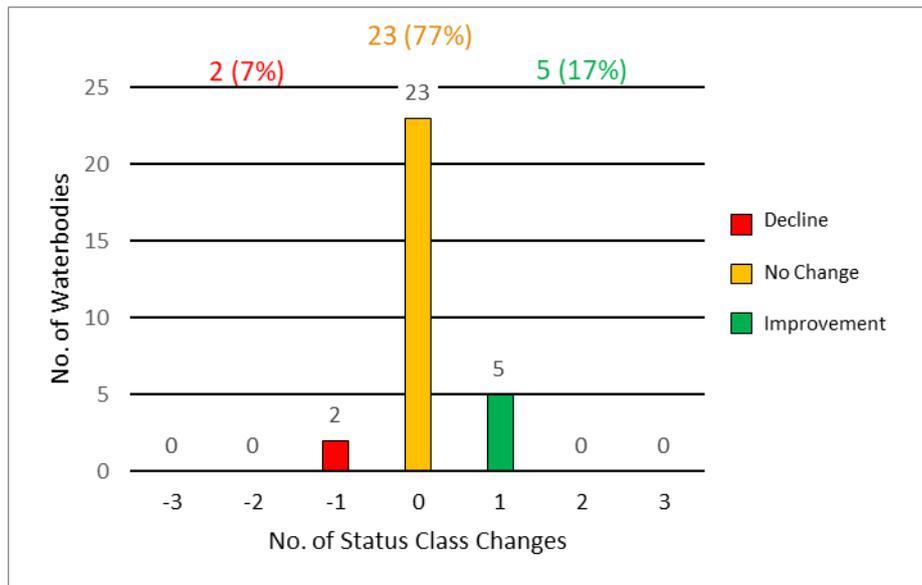


Figure 4: Status Class Changes between Cycle 2 and Cycle 3

2.2 Protected Areas

2.2.1 Drinking Water

- ◆ There are no 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*..
- ◆ 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 six bathing waters in or directly adjacent to the catchment identified under the Bathing Water Regulations 2008.
- ◆ Five of the six designated bathing waters had an Excellent classification for 2020 and the remaining bathing water (Ballymoney, North Beach) had a Good classification.
- ◆ For more detailed information please see the EPA report on [bathing water quality in 2020](#)⁴.

2.2.3 Shellfish Areas

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

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>

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

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

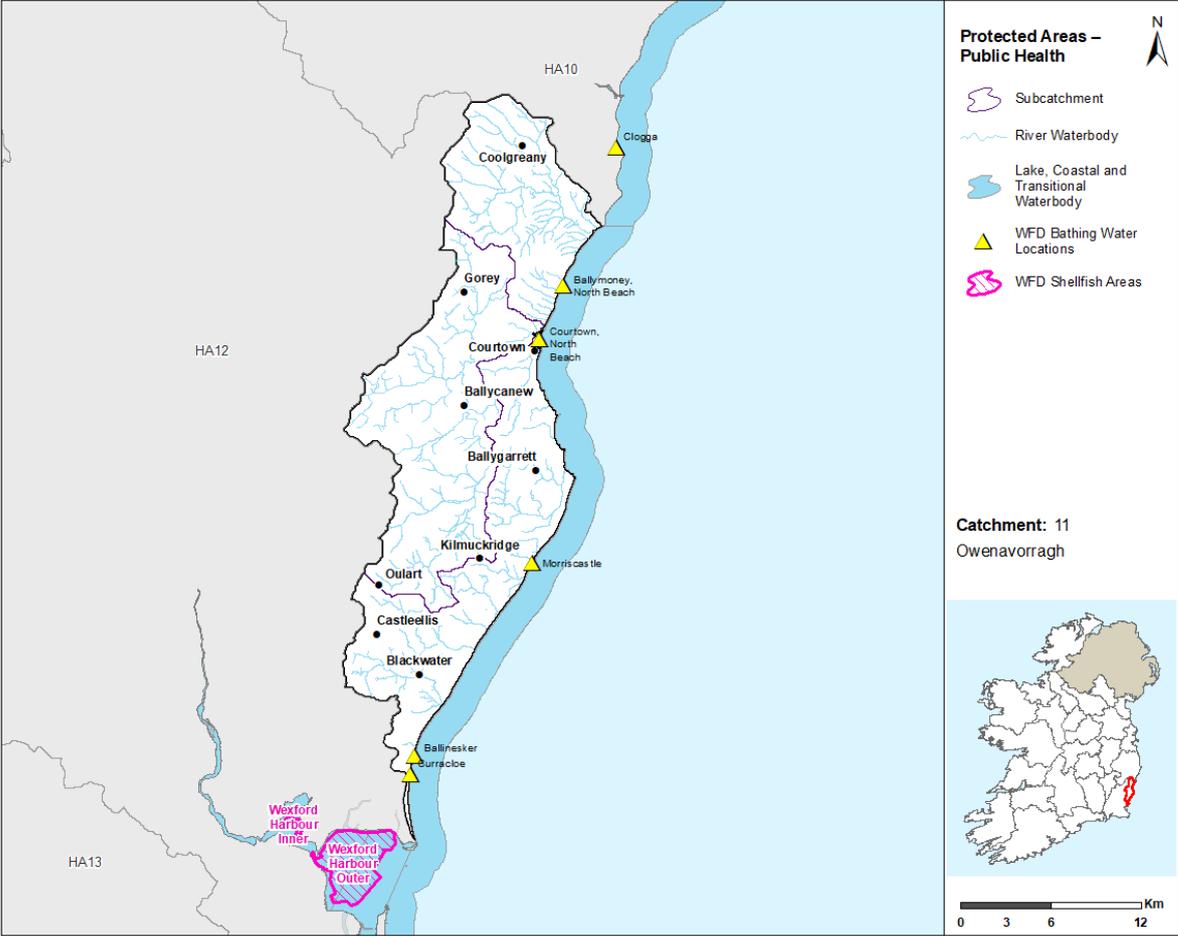


Figure 5: Protected Areas – Public Health

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 four SACs in this catchment, all 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.

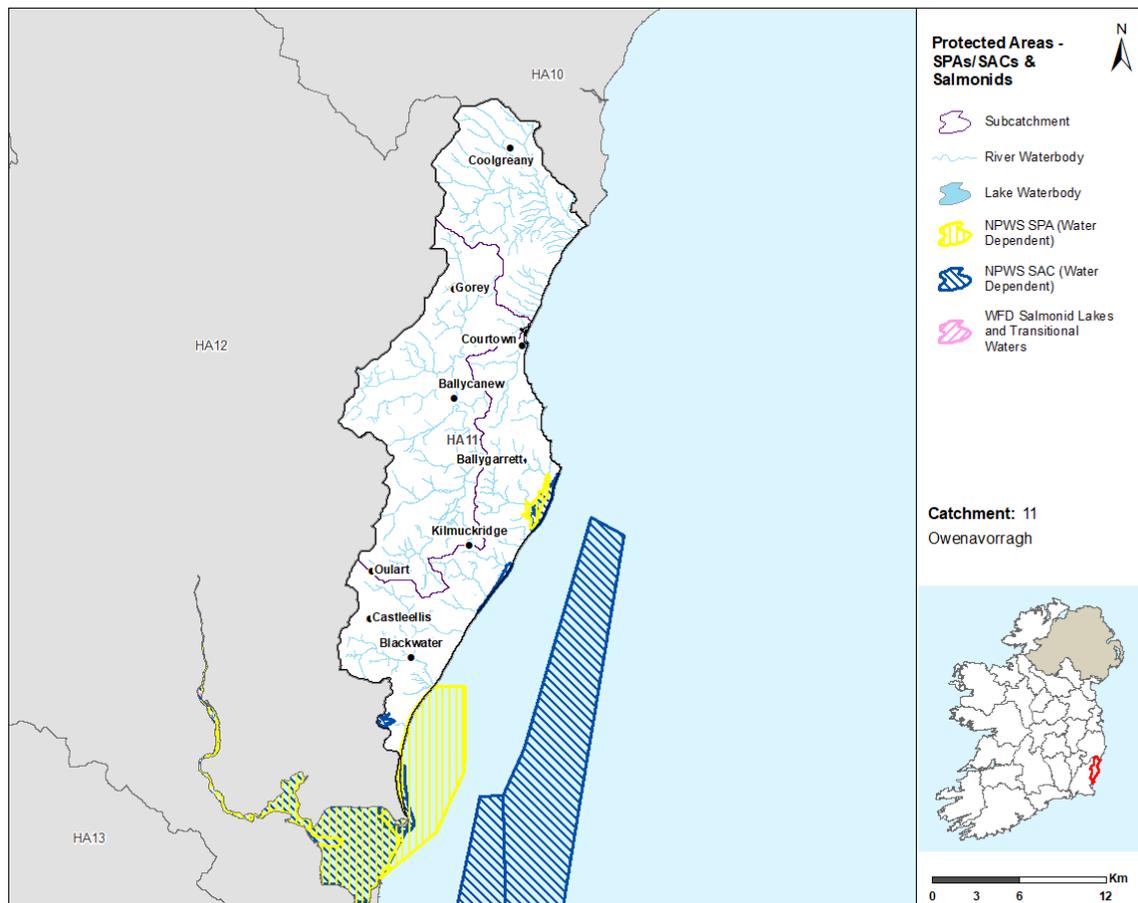
Results of the overall assessment for this catchment are outlined in Table 2 below, information at a waterbody level can be viewed at [Catchments.ie](https://www.catchments.ie).⁵

Table 2: Natura 2000 Network Assessment Summary

Water Body Type	Total No.	Meeting the Requirements	Did not meet the Requirements	Unknown*
Transitional & Coastal	2	1	1	0

*As the waterbody status was unassigned.

- ◆ There are no river waterbodies with FWPM habitats, none of which had achieved the required macroinvertebrate standard as set out in the FWPM Regulations.
- ◆ There are no groundwater bodies delineated and assessed as Groundwater Dependent Terrestrial Ecosystems for this catchment.
- ◆ 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 designated heavily modified water bodies (HMWB) in the Owenavorrhagh 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 Owenavorrhagh 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 41 waterbodies in the Owenavorrhagh Catchment and 23 (56%) of these are currently *At Risk*, 10 (24%) in *Review* and eight (20%) are *Not At Risk*.

3.2 Surface Waters

- ◆ For the 25 rivers waterbodies, 17 (68%) are *At Risk*, seven (28%) are in *Review* and one (4%) is *Not At Risk*.
- ◆ The one lake waterbody (Kilmaceo) is *Not At Risk*.
- ◆ The one transitional waterbody (Owenavorrhagh Estuary) is in *Review*.

- ◆ For the three coastal waterbodies, two (66%) are *At Risk* and one (33%) is *Not At Risk*. The coastal waterbodies *At Risk* are Wexford Harbour and Southwestern Irish Sea (HAs 11;12).
- ◆ The largest proportion of *At Risk* waterbodies are found in river waterbodies, accounting for 17 (77%) of 22 *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 an increase in two *At Risk* waterbodies and one *Not At Risk* waterbody, while there is a reduction of three *Review* waterbodies between Cycle 2 and Cycle 3.

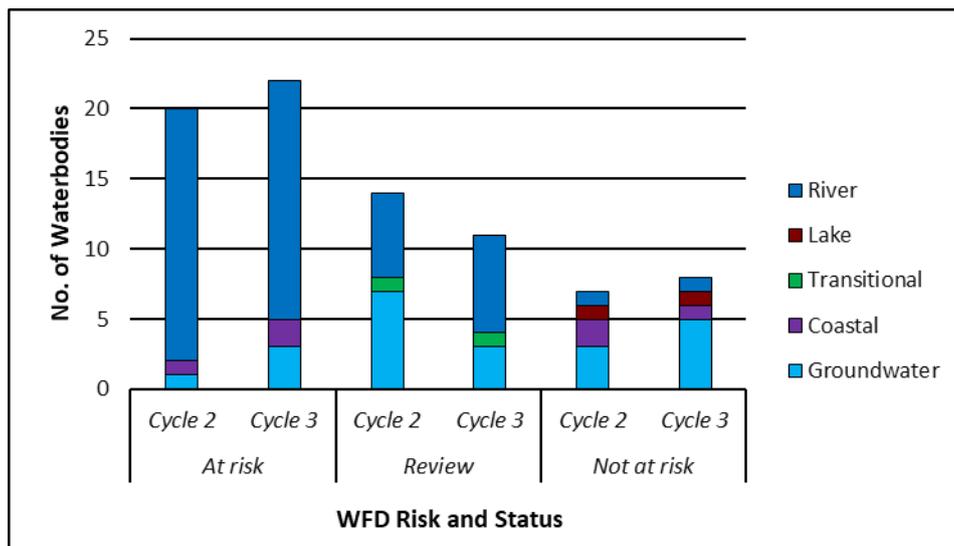


Figure 7: Number of waterbodies in each risk category

- ◆ 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.

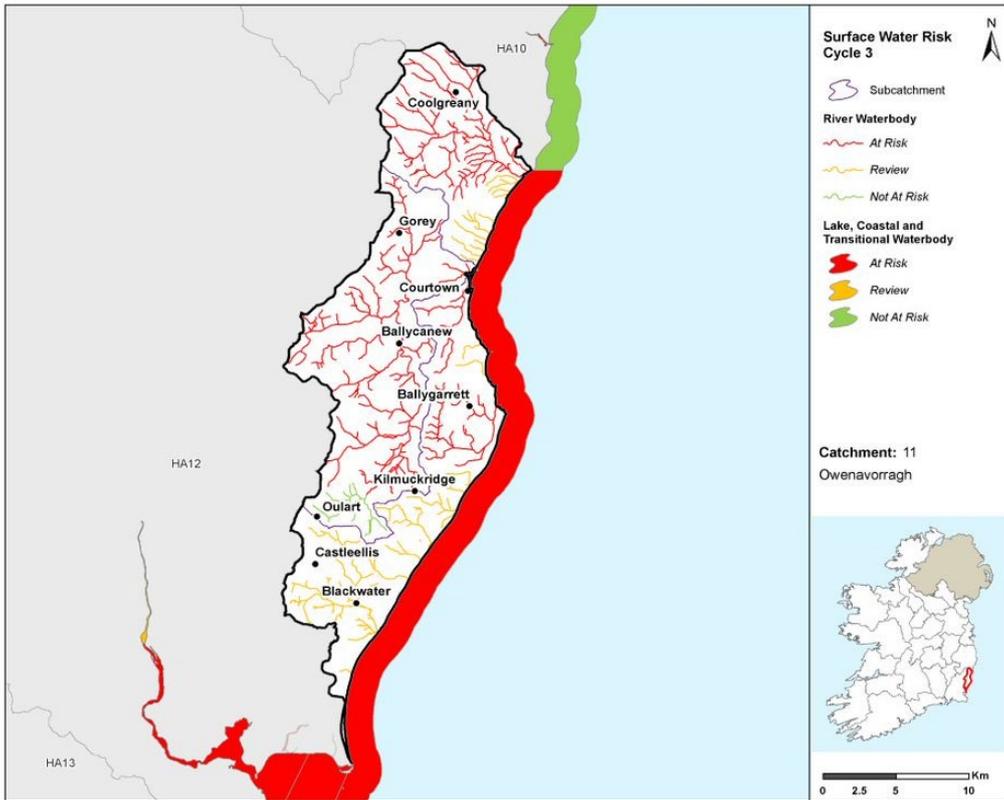


Figure 8: Surface Water Risk Cycle 3



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

3.3 Groundwater

- ◆ For the 11 groundwater bodies, 4 (36%) are *At Risk* (Ballyglass, Cahore Point, Inch and Enniscorthy), 2 (18%) are in *Review* and 5 (45%) are *Not At Risk*.
- ◆ In Cycle 2 there was one groundwater body (Enniscorthy) *At Risk* in this catchment, 7 in *Review* and 3 *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 Cycle 3 are shown in Figure 11.

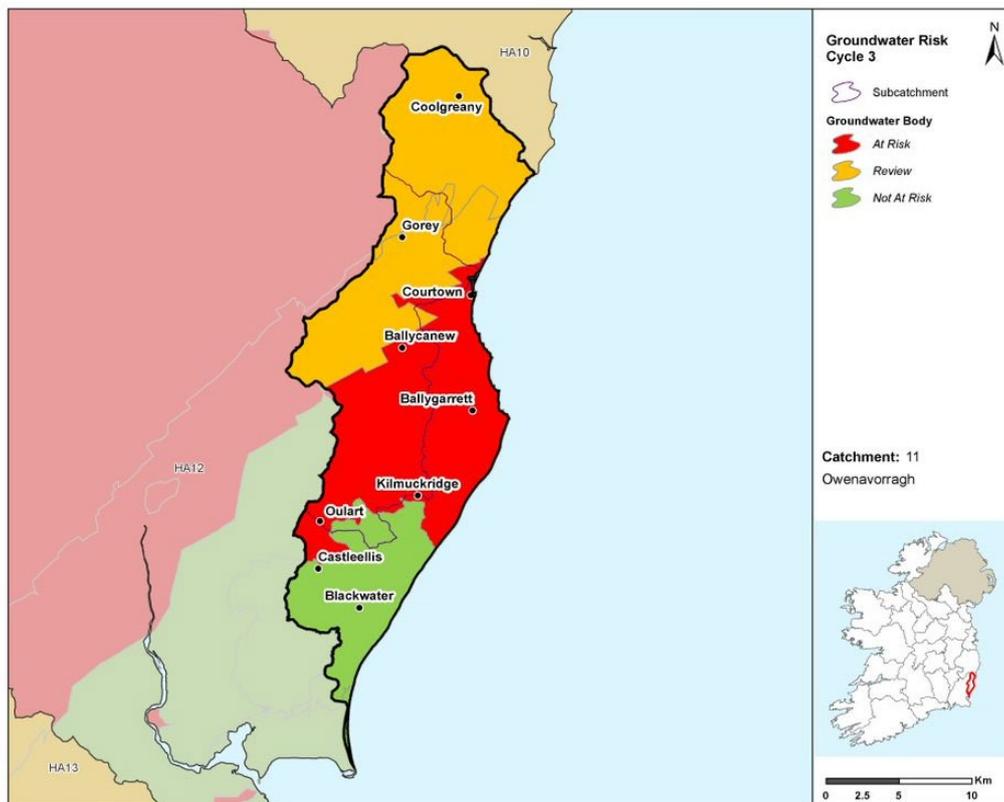


Figure 10: Cycle 3 Groundwater Body Risk

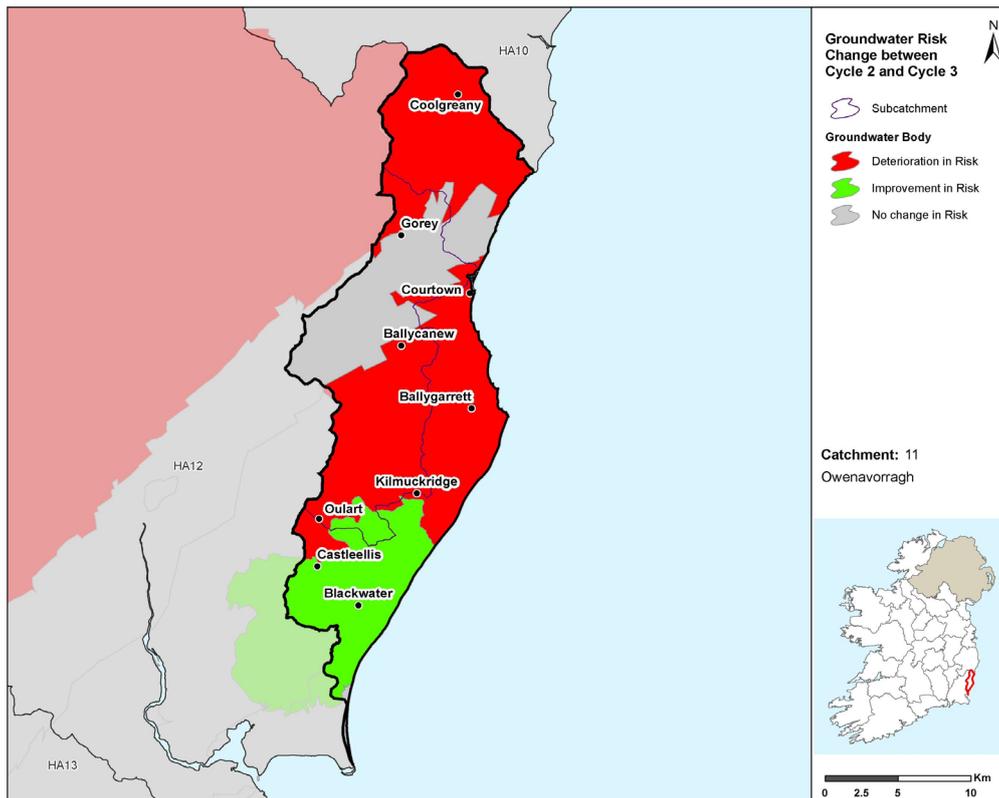


Figure 11: Groundwater Body Risk Change between Cycle 2 & Cycle 3

3.4 Heavily Modified Waterbodies

- ◆ Based on the 1st and 2nd RBMPs there are currently no designated heavily modified water bodies (HMWB) in the Owenavorrhagh 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.

3.5 Artificial Waterbodies

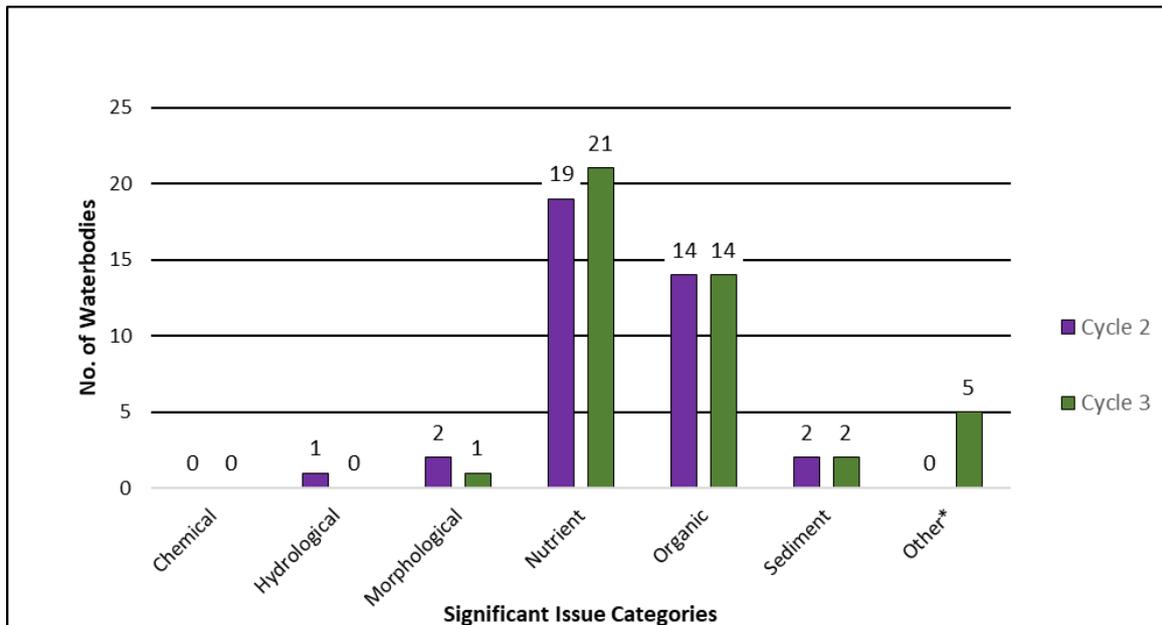
- ◆ There are no Artificial Waterbodies (AWBs) present in the Owenavorrhagh Catchment.

4 Significant Issues in *At Risk* Waterbodies

4.1 All Waterbodies

- ◆ Excess nutrients and organic impacts remain the most prevalent issues in the Owenavorrhagh catchment (Figure 12) impacting 21 and 14 waterbodies in Cycle 3, respectively. Sediment and the 'other' category are impacting two and three waterbodies each, while morphological issues are impacting one waterbody.
 - For rivers waterbodies, the main significant issues are nutrient impacts (16), organic pollution (13), sediment (2) and morphological impacts (1).
 - For coastal waterbodies, the significant issue is nutrient, organic and other pollution, which are all impacting one waterbody each.
 - For groundwater bodies, the significant issues are nutrient pollution (4) and other issues (4).

- ◆ Between Cycle 2 and Cycle 3 the number of waterbodies with nutrient issues have increased from 19 to 21. The number of waterbodies impacted by organic and sediment issues remain unchanged since Cycle 2.
- ◆ The numbers of waterbodies with hydrological and morphological issues have both reduced by one each to 0 waterbodies and one respectively between Cycle 2 to 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

- ◆ The Owenavorrhagh Catchment has no High Status Objective waterbodies.

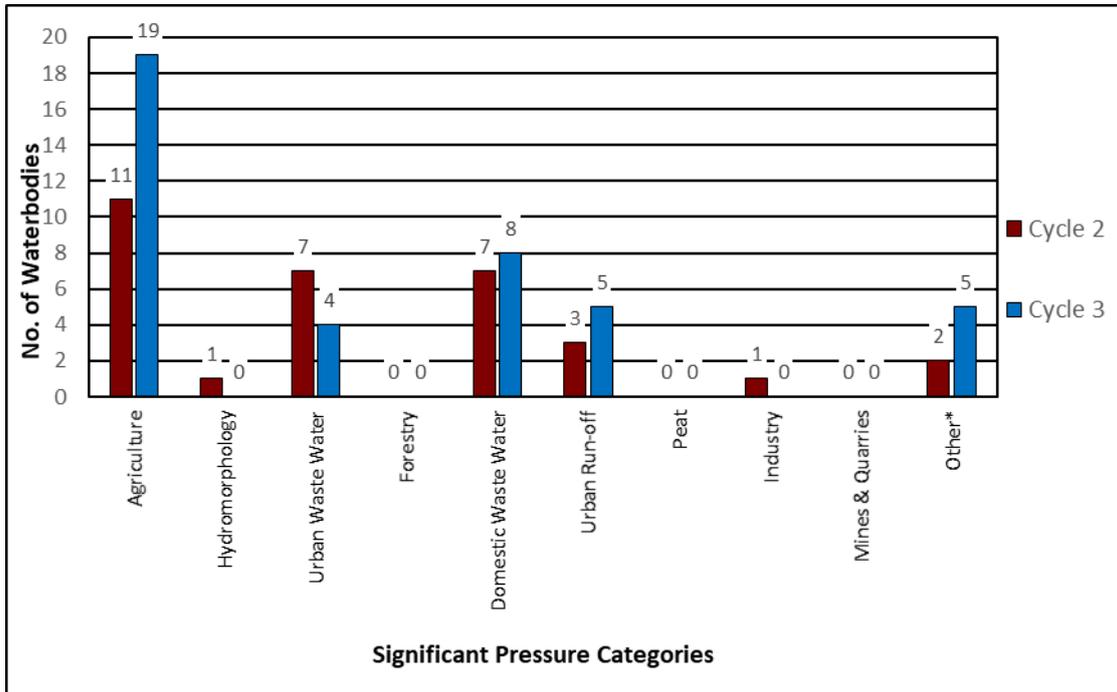
5 Significant pressures in *At Risk* Waterbodies

5.1 All Waterbodies

- ◆ Where waterbodies have been classed as *At Risk*, significant pressures have been identified.
- ◆ Figure 13 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, followed by domestic waste water, urban run-off, urban waste water and other⁶.

⁶ 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

- ◆ When comparing Cycle 2 and Cycle 3 the biggest change is an increase of eight waterbodies where agriculture is a significant pressure from 11 waterbodies in Cycle 2 to 19 waterbodies in Cycle 3.



*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 13: Significant Pressure (All At Risk Waterbodies)

5.1.1 Pressure Type

5.1.1.1 Agriculture

- ◆ Agriculture is a significant pressure in 19 waterbodies across the catchment. The waterbodies are comprised of 14 rivers waterbodies, one coastal waterbody and four groundwater bodies. The issues related to agriculture in this catchment are diffuse phosphorus and nitrate loss to surface waters from, for example, direct discharges; or runoff from yards, roadways or other compacted surfaces, or runoff from poorly draining soils. Sediment is also be a problem from land drainage works, bank erosion from animal access or stream crossings. Furthermore, issues with high nitrate in groundwaters are prevalent in the east of the sub-basin.

5.1.1.2 Domestic waste water

- ◆ Domestic waste water has been identified as a significant pressure in eight waterbodies. This is due to inadequate or poorly located domestic waste water treatment systems. The significant issue is excess nutrients entering surface waters. Furthermore, several septic tank systems are mapped on areas of high susceptibility to phosphate transport via near surface pathways.

5.1.1.3 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 five river waterbodies. Banoge_020 and Banoge_030 are impacted by pressures in Gorey town, Clonough_010 by Coolgreany town and Aughboy (Wexford)_010 and Banoge_010 flow through several unfinished housing estates. Elevated concentrations of phosphates and ammonia are the significant issues.

5.1.1.4 Urban Waste Water

- ◆ Urban Waste Water Treatment Plants (WWTPs) have been identified as a significant pressure in four *At Risk* waterbodies (3 river waterbodies and Wexford Harbour coastal waterbody), details are given in Table 3.
- ◆ Two *At Risk* waterbodies (Banoge_020 and Banoge_030) are impacted by the Courtown-Gorey agglomeration, which was upgraded in 2016 and the primary discharge now goes to the Irish Sea, however, the agglomeration network has been identified as causing an impact in Cycle 3. None of the *At Risk* waterbodies are impacted by agglomerations that are included on Irish Water’s Capital Investment Programme (2020-2024).

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

Facility name	Facility Type	Waterbody	2013-18 Ecological Status	Irish Water’s Expected CIP Completion Date ⁷
Ballycanew D0402	Agglomeration PE 500 to 1,000	Owenvorragh_050	Moderate	N/A
Courtown-Gorey D0046	Combined Sewer Overflows	Banoge_020	Poor	N/A
Courtown-Gorey D0046	Combined Sewer Overflows	Banoge_030	Poor	N/A
Wexford Town D0030	Agglomeration PE > 10,000	Wexford Harbour	Moderate	N/A <small>Error! Bookmark not defined.</small>

- ◆ Urban waste water significant pressures impacted three less waterbodies than in Cycle 2 (a reduction from seven to four waterbodies impacted). The following agglomerations were listed as pressures in Cycle 2 but have been removed from the list of significant pressures in Cycle 3.
 - Blackwater (D0143)
 - Coolgreany (D0174)

5.1.1.5 Other

Unknown Anthropogenic

- ◆ Five *At Risk* waterbodies have unknown anthropogenic pressures. One river waterbody (Askinch Upper Stream_010), one coastal waterbody (Southwestern Irish Sea (HAS 11;12)) and three groundwater bodies (Ballyglass, Enniscorthy and Inch).

Figure 14 - Figure 17 illustrates the locations of waterbodies for the four most common pressures in order of prevalence (agriculture, domestic waste water, urban run-off and urban waste water) within the catchment in Cycle 3.

⁷ Based on Irish Water’s Capital Investment Programme (2020-2024) as of February 2021 and may be subject to change.

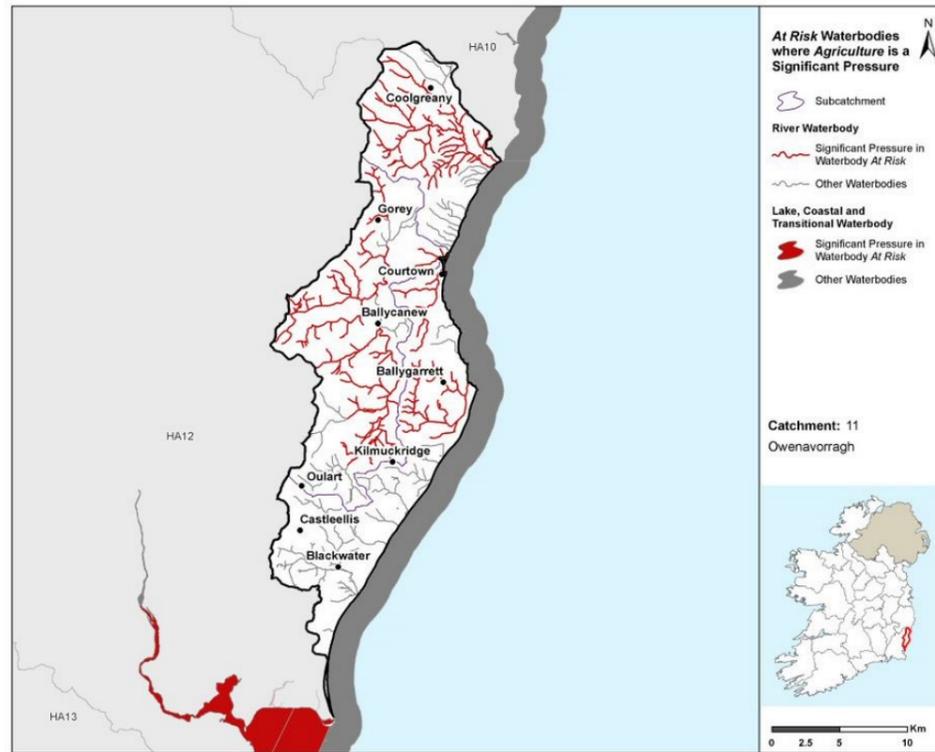


Figure 14: Locations of Waterbodies where Agriculture is a Significant Pressure

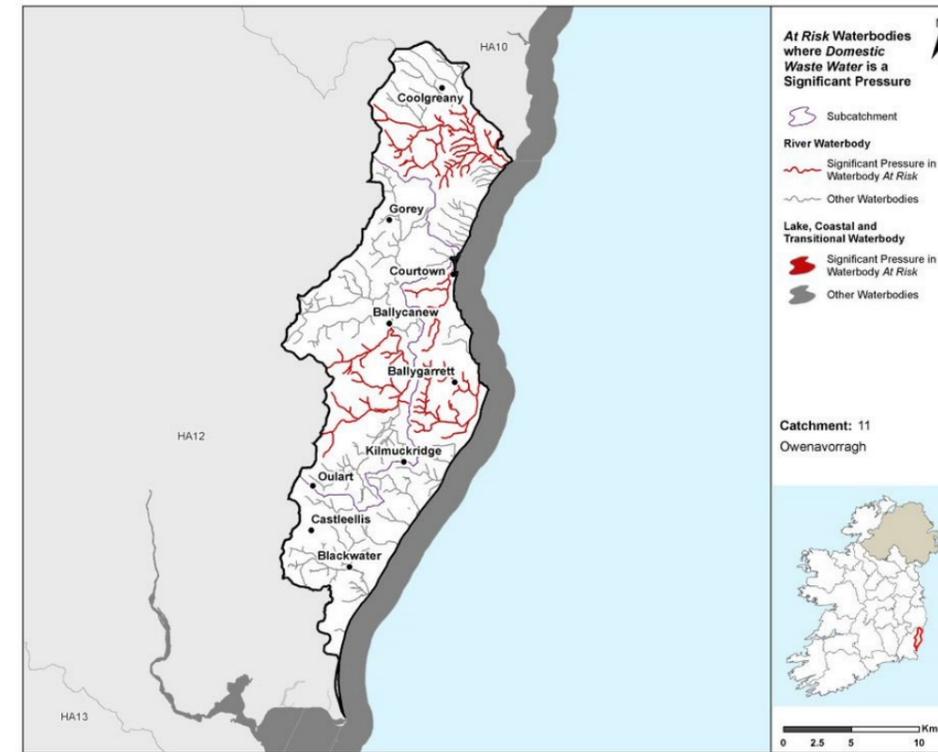


Figure 15: Locations of Waterbodies where Domestic Waste Water is a Significant Pressure

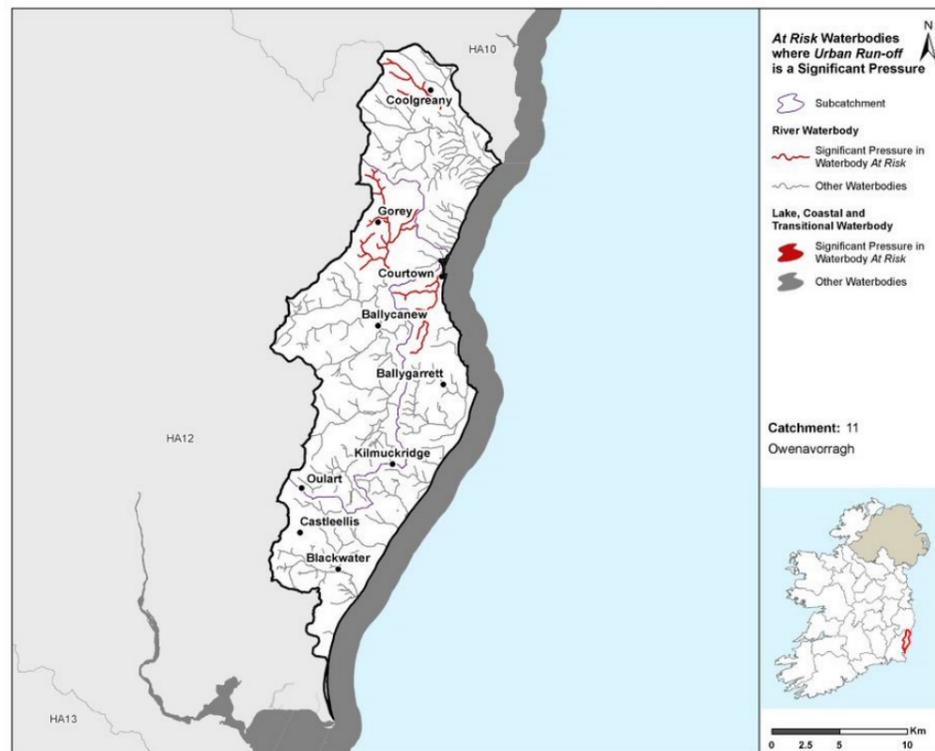


Figure 16: Locations of Waterbodies where Urban Run-off is a Significant Pressure

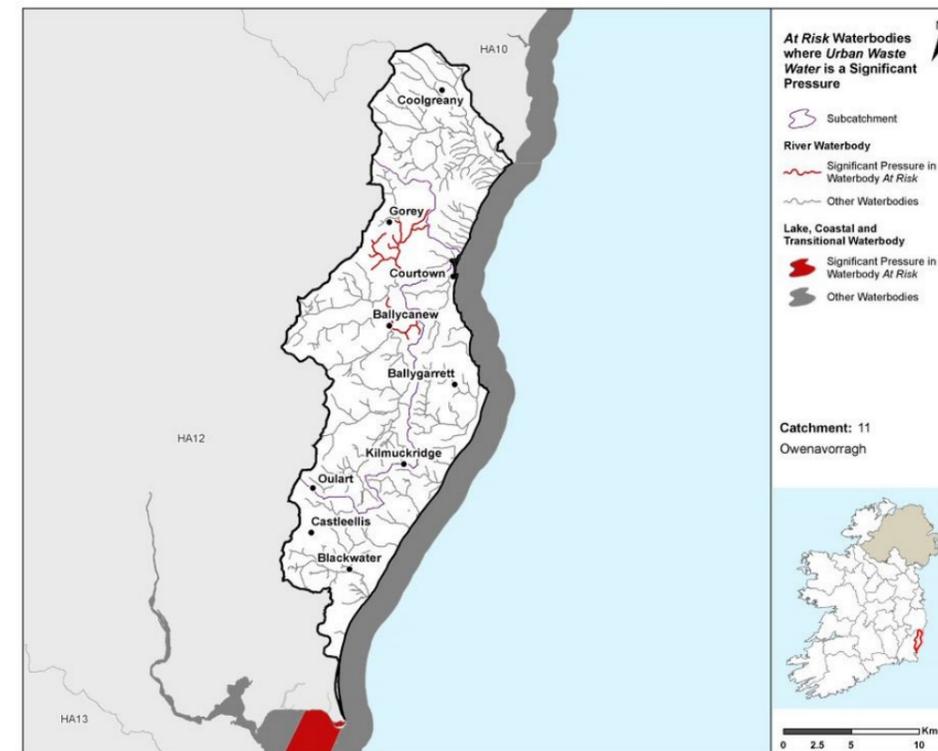


Figure 17: Locations of Waterbodies where Urban Waste Water is a Significant Pressure

5.2 High Status Objective Waterbodies

- ◆ As stated in 4.2, there are no High Status Objective waterbodies with the Owenavorrhagh catchment assigned.

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 and arable land is responsible for 75% and 17% of the nitrogen load respectively while discharges from urban waste water and land in pasture contribute 44%, and 32% of the phosphorus loadings for the catchment respectively (Figure 17).

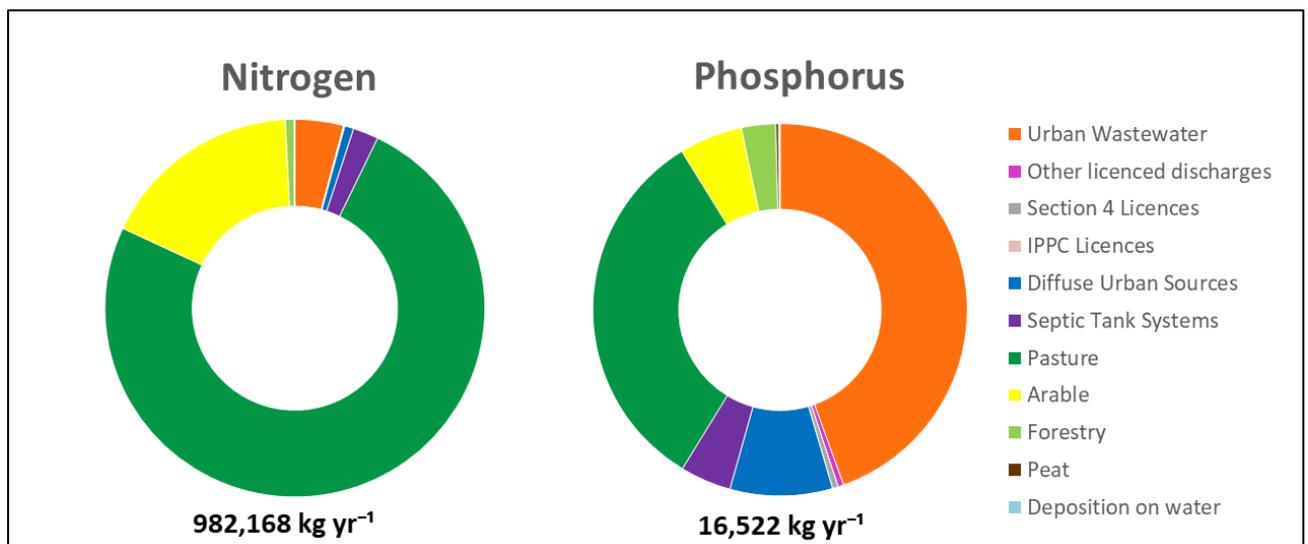


Figure 18: Estimated Proportions of N & P from Each Sector in the Owenavorrhagh Catchment

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 Transitional and Coastal (TRACs) waterbodies to achieve their WFD 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 to meet TRAC WFD objectives are not required in the Owenavorrhagh Catchment.

7.2 Phosphorus / Sediment Load Reduction

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

Figure 19 highlights areas where agricultural measures for nitrogen, sediment and phosphorus should be targeted. Waterbodies with orange fill are areas where nitrogen measures should be targeted, waterbodies with blue fill are areas where sediment or phosphorus should be targeted and waterbodies with orange and blue hatching highlight areas where multiple measures (phosphorus /sediment and nitrogen) are required. Pollution Impact Potential mapping for both phosphorus and nitrogen in the catchment are provided in Appendix 1.

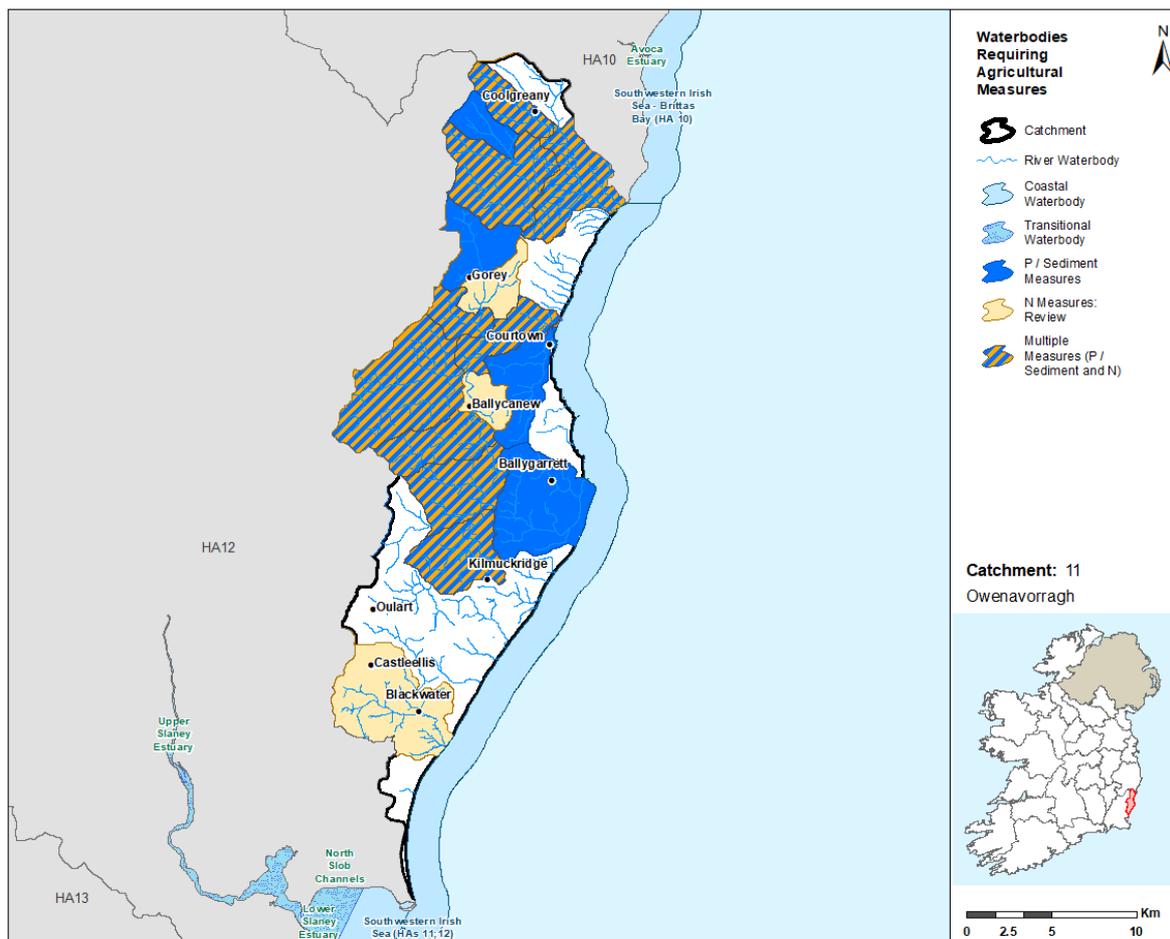


Figure 19: Waterbodies where Agricultural Measures should be Targeted

8 2nd Cycle Areas for Action

8.1 Area for Action Overview

- ◆ There were two Areas for Action, comprising of 13 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 4 and shown in Figure 20. LAWPRO, in conjunction with local authorities and stakeholders from the Western Regional Operational Committee, have been working in these areas since 2018.

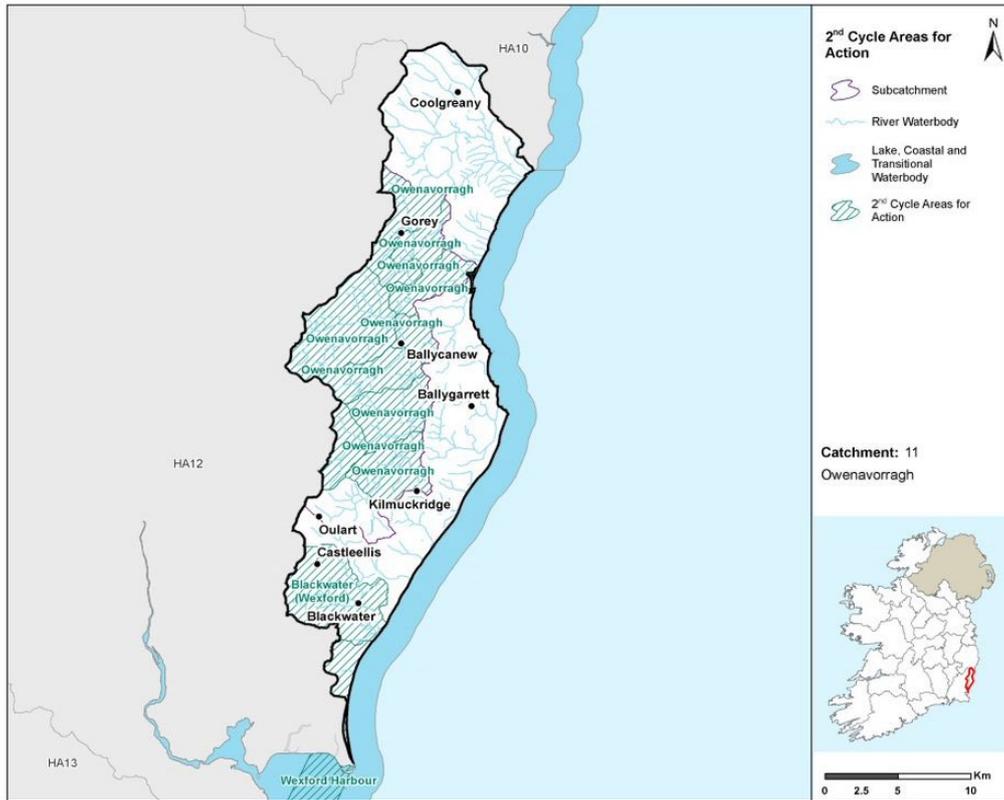


Figure 20: 2nd Cycle Areas for Action Locations

Table 4: 2nd Cycle Areas for Action

2 nd Cycle Area for Action	Number of waterbodies	Sub-catchment	Local Authority	Reason for Selection
OWENAVORRAGH	10	11_2	Wexford	<ul style="list-style-type: none"> • Longer term challenge. Ten waterbodies, 4 of which are consistently Poor Status. • Discharging into bathing water amenity (Courtown). • Teagasc Agriculture Catchments Programme catchment (Bracken_010) • Building on improvements completed in Gorey WWTP. • NHA in Gorey. • Very active community group in Ballycanew. • 2 deteriorated waterbodies. • 3 potential 'quick wins'.
Blackwater (Wexford)	2	11_1	Wexford	<ul style="list-style-type: none"> • Building on work completed by Wexford County Council. • 1 deteriorated waterbody. • Discharging into bathing waters (Ballinesker and Curracloe).

8.2 Status Change in 2nd Cycle Areas for Action

- ◆ For Cycle 3, of the 13 waterbodies in the 2nd Cycle Areas for Action, there is one waterbody at Good Status, seven waterbodies at Moderate Status, three waterbodies at Poor Status and two waterbodies where status has not been assigned.
- ◆ There is an overall improvement in the status of three of the 2nd cycle Areas for Action waterbodies across the catchment.⁸
- ◆ Of the 11 waterbodies within the 2nd Cycle Areas for Action which had status assigned, six experienced no change in status between Cycle 2 and Cycle 3, four waterbodies experienced an improvement and one was subject to deterioration in status (Figure 21). Of the four waterbody improvements two were across Owenavorrhagh Area for Action, one in Blackwater (Wexford) Area for Action and one in Wexford Harbour Area for Action. The one waterbody which experienced a decline was in the Owenavorrhagh Area for Action.

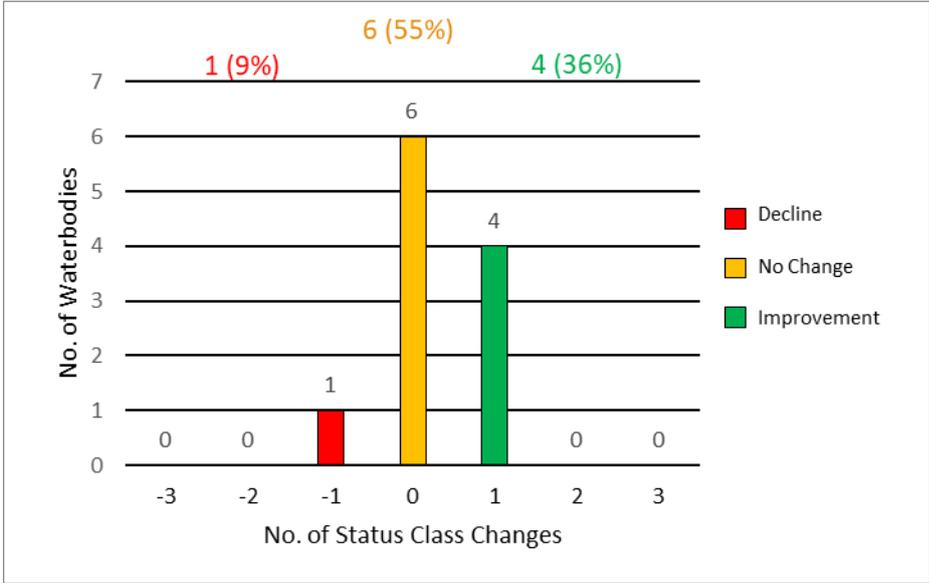


Figure 21: 2nd Cycle Area for Action Waterbody Status Class Changes between Cycle 2 and Cycle 3

8.3 Waterbody Risk in 2nd Cycle Areas for Action

- ◆ For the 13 waterbodies in the 2nd Cycle Areas for Action, 11 (85%) of these are currently *At Risk* and two (15%) in *Review*.
- ◆ For the 12 river waterbodies, 10 (83%) are *At Risk* and two (17%) are in *Review*.

⁸ 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.

- ◆ The only coastal waterbody (Wexford Harbour) in the catchment is *At Risk*.
- ◆ The largest proportion of *At Risk* waterbodies are river waterbodies, accounting for 10 (91%) of the 11 *At Risk* waterbodies. Figure 7 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 12 to 11 *At Risk* waterbodies in 2nd Cycle Areas for Action between Cycle 2 and Cycle 3.

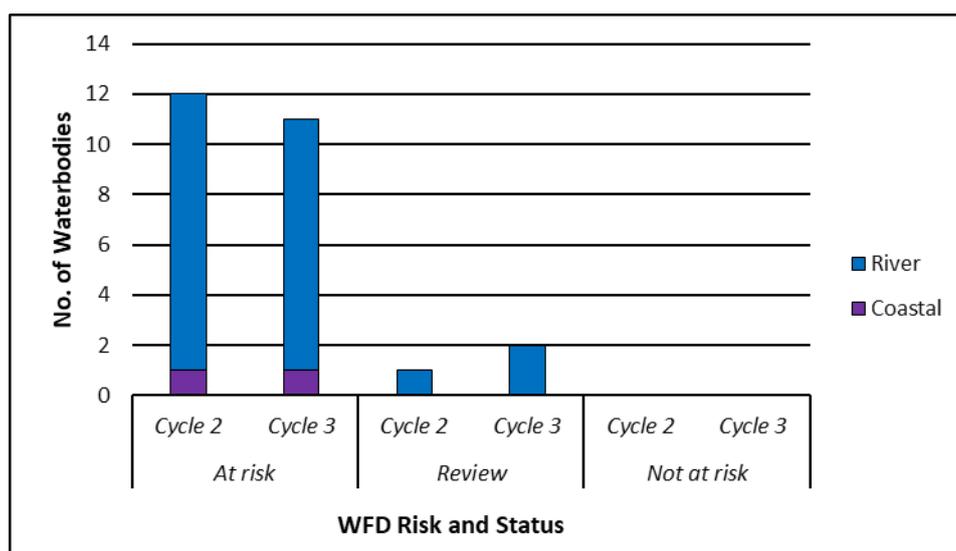
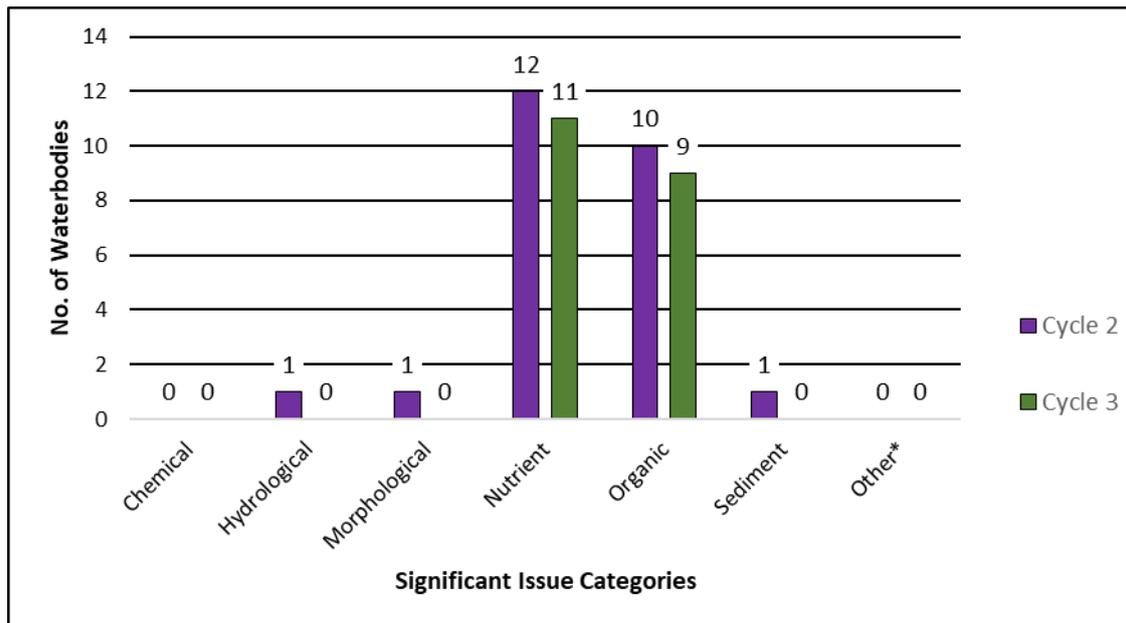


Figure 22: Number of waterbodies in each risk category in 2nd Cycle Areas for Action

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 are nutrient impacts and organic pollution, each impacting 11 and nine waterbodies, respectively (Figure 23). These are the only significant issues impacting the 2nd Cycle Areas for Action waterbodies in Cycle 3.
- ◆ The number of 2nd Cycle Areas for Action waterbodies associated with each of the significant issues categories has reduced between Cycle 2 and Cycle 3.

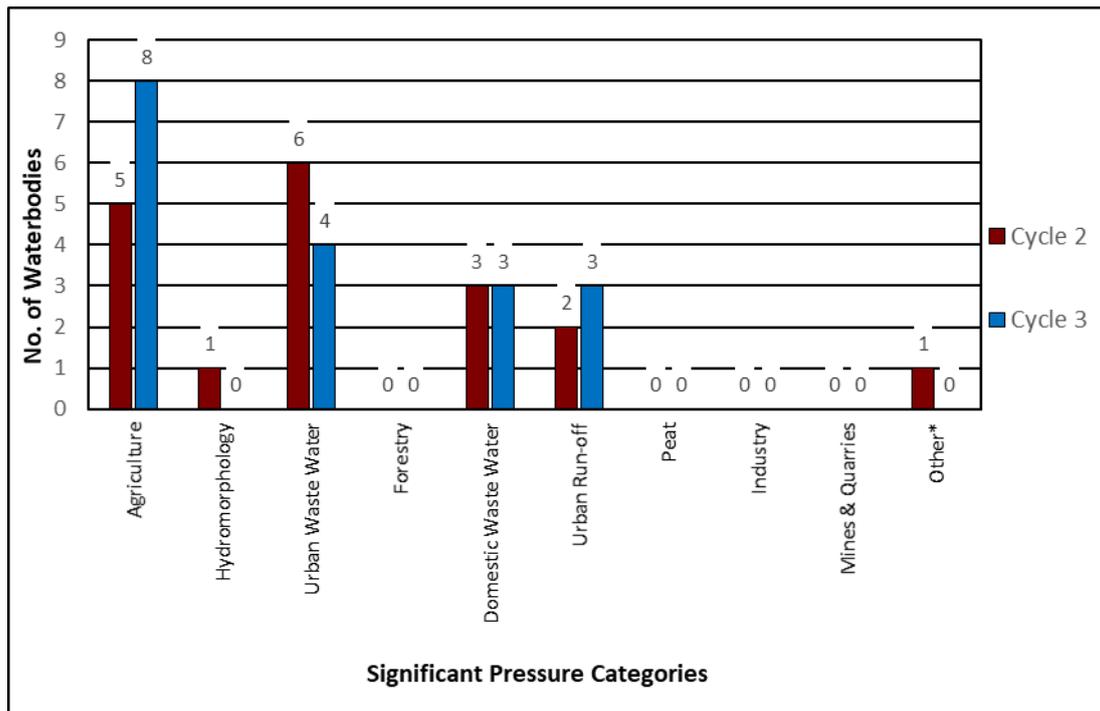


*Other - Acidification, saline intrusion, elevated temperature, litter, microbiological pollution and unknown impacts have all been grouped into the "Other" issues category for the purpose of this report

Figure 23: 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 - eight waterbodies are impacted compared to five impacted in Cycle 2.
 - Urban waste water – there are two less waterbodies in Cycle 3 than in Cycle 2 (a reduction of six to four waterbodies impacted). The Blackwater (D0143) agglomeration was listed as pressures in Cycle 2 but have been removed from the list of significant pressures in Cycle 3.
 - Domestic waste water – remained unchanged in Cycle 3 when compare to the number of waterbodies impacted in Cycle 2.
 - Urban run-off – three waterbodies are impacted compared to two waterbodies impacted in Cycle 2.
- ◆ When comparing the significant pressures in the 2nd Cycle Areas for Action between Cycle 2 and Cycle 3 there has been a decrease in all significant pressure categories in the catchment with the exception of agriculture and urban run-off which increased by three and one respectively.



*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 24: 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.
- ◆ There are six Areas for Action, comprising of 22 waterbodies, recommended for further characterisation and action in the catchment for the 3rd Cycle River Basin Management Plan. 18 of the 22 waterbodies in the 3rd Cycle Recommended Areas for Action are *At Risk*, three are in *Review* and one is *Not At Risk*. The six Recommended Areas for Action consist of five Areas for Restoration and one Area for Catchment Projects. LAWPRO are the proposed lead organisation in five Recommended Areas for Action and GSI, NFGWS and TCD are the proposed lead on the remaining Recommended Area for Action. The Recommended Areas for Action in the catchment are listed in Table 5 and shown in Figure 25. The reason for selecting each waterbody in a Recommended Area for Action is provided in Appendix 2.

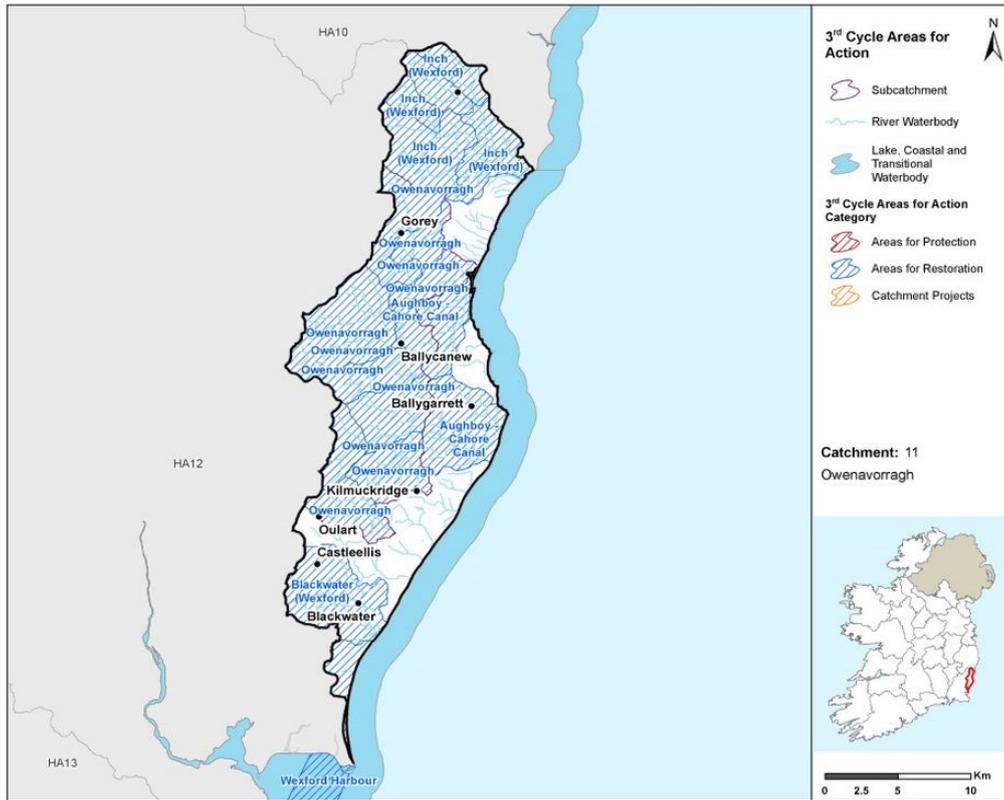


Figure 25: 3rd Cycle Recommended Areas for Action Locations

Table 5: 3rd Cycle Recommended Areas for Action Breakdown

3 rd Cycle Recommended Areas for Action	Number of Waterbodies	Recommended Areas for Action Category	Recommended Areas for Action Sub-category	Lead Organisation
Aughboy - Cahore Canal	2	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Inch (Wexford)	5	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Owenavorragh	11	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Blackwater (Wexford)	2	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Wexford Harbour	1	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Inch - Groundwater	1	Catchment Projects	Public Body Research	GSI and NFGWS and TCD

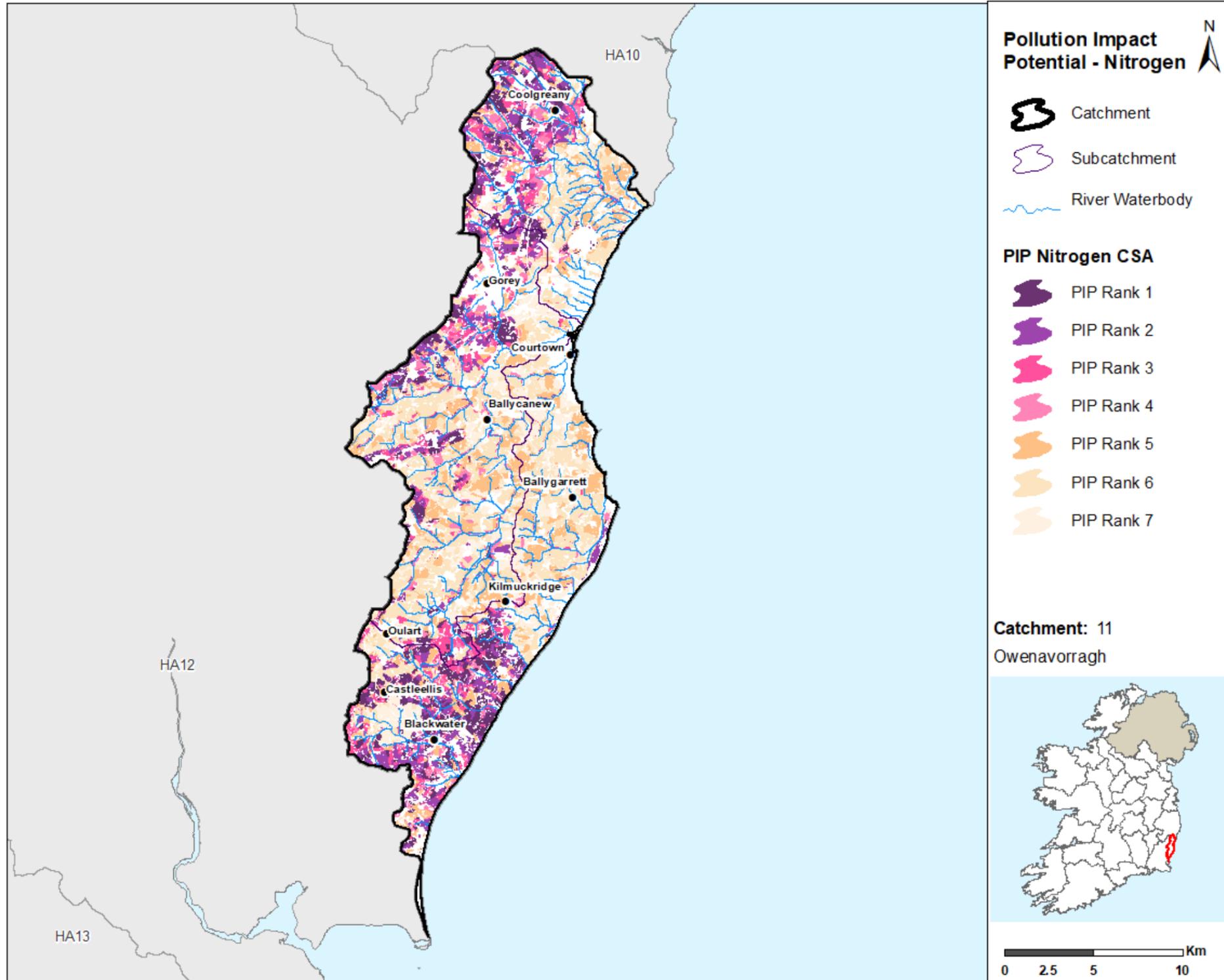
10 Catchment Summary

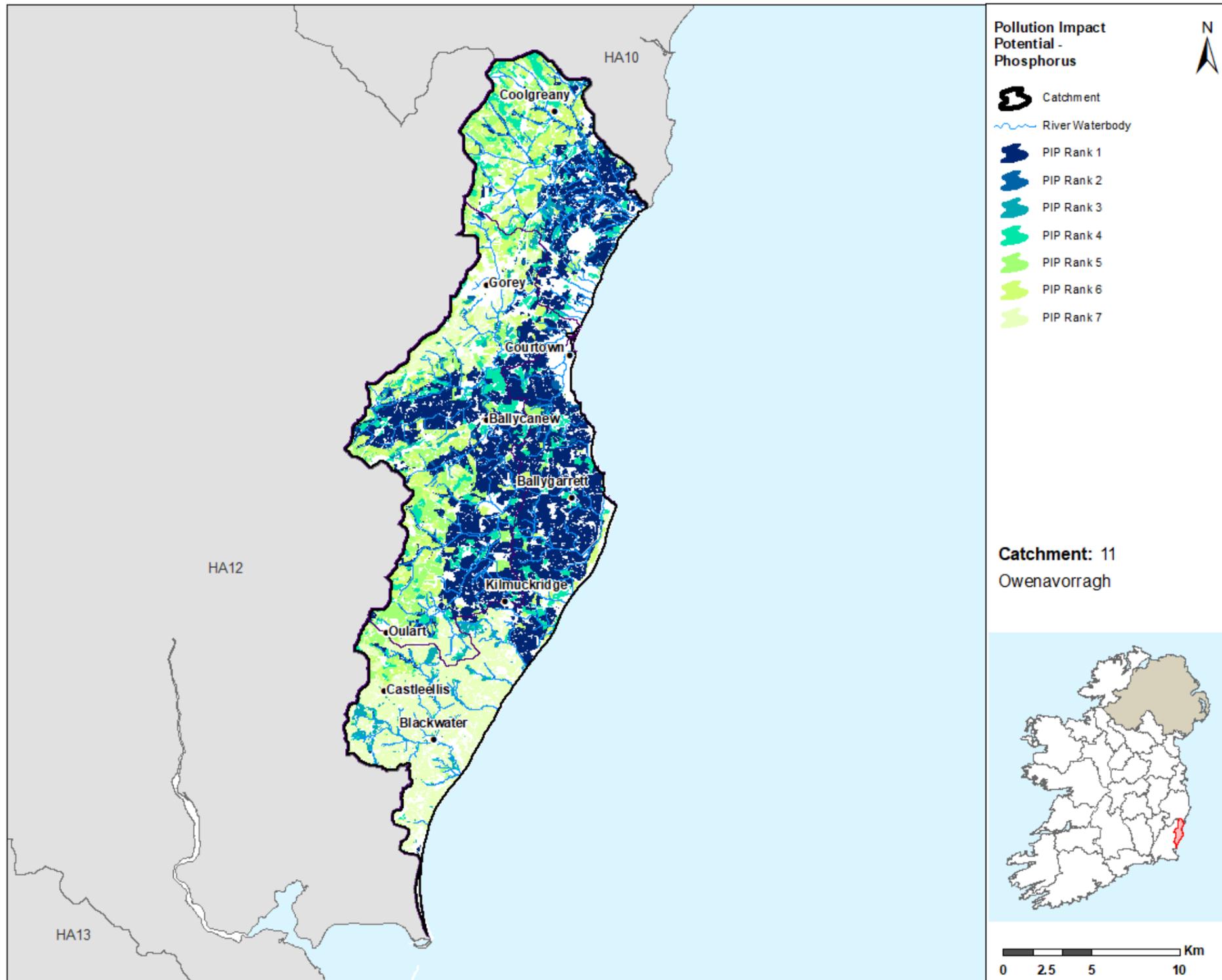
- Of the 25 river waterbodies, 17 are *At Risk* of not meeting their WFD objectives.
- The single lake (Kilmacoe) and transitional (Owenavorragh Estuary) waterbodies are *Not At Risk* of not meeting their WFD objectives.
- Of the three coastal waterbodies, two (Southwestern Irish Sea (HAs 11;12) and Wexford Harbour) are *At Risk* of not meeting their WFD objectives.

- There are four *At Risk* groundwater bodies (Ballyglass, Cahore Point, Inch and Enniscorthy) out of 11 groundwater bodies.
- There has been an overall deterioration across the catchment with 23 waterbodies *At Risk* in Cycle 3 compared to 20 waterbodies *At Risk* in Cycle 2.
- The main significant issues are from nutrients pollution and organic pollution, followed by sediment, other pollution and morphological.
- The main significant pressures are agricultural pressures followed by domestic waste water, urban run-off and urban waste water.
- In the 2nd Cycle Areas for Action 12 waterbodies were *At Risk* in Cycle 2 and 11 waterbodies are *At Risk* in Cycle 3.
- There are six 3rd Cycle Recommended Areas for Action for Cycle 3. They comprise of 22 waterbodies with 18 waterbodies *At Risk*, three in *Review* and one *Not At Risk*.

Appendix 1

Pollution Impact Potential Mapping





Appendix 2

Summary information on all waterbodies in the Owenavorrhagh 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)
11_1	IE_SE_11A020200	AUGHBOY (WEXFORD)_010	River	At risk	At risk	Bad	Bad	No	Ag, DWW, UR	Aughboy - Cahore Canal	Wexford CC proposed as area for action for either LAWPRO or Wx depending on resources
11_3	IE_SE_11A030035	ASKINCH UPPER STREAM_010	River	At risk	At risk	Poor	Poor	No	Other	Inch (Wexford)	Wx: Proposed for LAWPRO
11_2	IE_SE_11B010300	BALLYEDMOND_010	River	At risk	At risk	Poor	Poor	No	DWW	Owenavorrhagh	LAWPRO: Existing PAA Wx: Proposed for LAWPRO
11_2	IE_SE_11B020100	BANOGE_010	River	At risk	At risk	Moderate	Poor	No	Ag, UR	Owenavorrhagh	LAWPRO: Existing PAA EPA: Headwater
11_2	IE_SE_11B020200	BANOGE_020	River	At risk	At risk	Poor	Poor	No	UR, UWW	Owenavorrhagh	LAWPRO: Existing PAA
11_2	IE_SE_11B020300	BANOGE_030	River	At risk	At risk	Poor	Moderate	No	Ag, UR, UWW	Owenavorrhagh	LAWPRO: Existing PAA EPA: Connects waterbodies that are identified for restoration
11_1	IE_SE_11B030300	BLACKWATER (WEXFORD)_010	River	At risk	Review	Poor	Moderate	No		Blackwater (Wexford)	Existing PAA
11_2	IE_SE_11B040200	BRACKAN_010	River	At risk	At risk	Moderate	Moderate	No	Ag	Owenavorrhagh	LAWPRO: Existing PAA
11_3	IE_SE_11B490430	BALLYMONEY_LOWER_010	River	Review	Review	Unassigned	Unassigned	No			
11_3	IE_SE_11C010100	CLONOUGH_010	River	At risk	At risk	Poor	Moderate	No	Ag, UR	Inch (Wexford)	Subcatchment of proposed waterbodies
11_1	IE_SE_11C020150	CAHORE CANAL_010	River	At risk	At risk	Unassigned	Unassigned	No	Ag, DWW	Aughboy - Cahore Canal	Wexford CC proposed as area for action for either LAWPRO or Wx depending on resources NPWS: Cahore Polders and Dunes SAC - Humid dume slacks
11_3	IE_SE_11G010040	GORTEEN UPPER STREAM_010	River	At risk	At risk	Moderate	Moderate	No	Ag	Inch (Wexford)	Subcatchment of proposed waterbodies
11_1	IE_SE_11G020720	GARRYMORE (Wexford)_010	River	Review	Review	Unassigned	Unassigned	No			
11_3	IE_SE_11I010130	INCH (WEXFORD)_010	River	At risk	At risk	Moderate	Moderate	No	Ag, DWW	Inch (Wexford)	Wexford CC proposed as area for action for either LAWPRO or Wx depending on resources NFGWS: GWS groundwater source
11_3	IE_SE_11I010200	INCH (WEXFORD)_020	River	At risk	At risk	Moderate	Moderate	No	Ag, DWW	Inch (Wexford)	Wexford CC proposed as area for action for either LAWPRO or Wx depending on resources EPA: Connects waterbodies identified for restoration/ protection LAWPRO: Active community group (Ahare River)
11_1	IE_SE_11K070580	KILLINCOOLY_BEG_010	River	Review	Review	Unassigned	Unassigned	No			

11_1	IE_SE_11K190350	KILMACOE_010	River	Review	Review	Unassigned	Unassigned	No		Blackwater (Wexford)	LAWPRO: Existing PAA NPWS: Raven Point Nature Reserve SAC - Humid dune slacks
11_1	IE_SE_11L010400	LITTER_MORE_010	River	Review	Review	Unassigned	Unassigned	No			
11_1	IE_SE_11M100800	MANGAN_LOWER_010	River	Review	Review	Unassigned	Unassigned	No			
11_2	IE_SE_11O010080	OWENAVORRAGH_010	River	Not at risk	Not at risk	Good	Good	No		Owenavorrigh	LAWPRO: Sub-catchment Existing PAA IFI: The Owenavorrigh River is a large and important salmon spawning system flowing to sea at Courtown. The Owenavorrigh is an OPW channel and the best salmon spawning/nursery habitat on this system is from Ballycanew downstream. Unfortunately Ballycanew WWTP is grossly overloaded and the effluent discharges from the plant are very poor, with a significant impact upon salmon recruitment downstream.
11_2	IE_SE_11O010200	OWENAVORRAGH_020	River	At risk	At risk	Unassigned	Unassigned	No	Ag	Owenavorrigh	LAWPRO: Existing PAA IFI: The Owenavorrigh River is a large and important salmon spawning system flowing to sea at Courtown. The Owenavorrigh is an OPW channel and the best salmon spawning/nursery habitat on this system is from Ballycanew downstream. Unfortunately Ballycanew WWTP is grossly overloaded and the effluent discharges from the plant are very poor, with a significant impact upon salmon recruitment downstream.
11_2	IE_SE_11O010300	OWENAVORRAGH_030	River	At risk	At risk	Poor	Moderate	No	Ag, DWW	Owenavorrigh	LAWPRO: Existing PAA IFI: The Owenavorrigh River is a large and important salmon spawning system flowing to sea at Courtown. The Owenavorrigh is an OPW channel and the best salmon spawning/nursery habitat on this system is from Ballycanew downstream. Unfortunately Ballycanew WWTP is grossly overloaded and the effluent discharges from the plant are very poor, with a significant impact upon salmon recruitment downstream.
11_2	IE_SE_11O010400	OWENAVORRAGH_040	River	At risk	At risk	Moderate	Moderate	No	Ag, DWW	Owenavorrigh	LAWPRO: Existing PAA IFI: The Owenavorrigh River is a large and important salmon spawning system flowing to sea at Courtown. The Owenavorrigh is an OPW channel and the best salmon spawning/nursery habitat on this system is from Ballycanew downstream. Unfortunately Ballycanew WWTP is grossly overloaded and the effluent discharges from the plant are very poor, with a

											significant impact upon salmon recruitment downstream.
11_2	IE_SE_11O010500	OWENAVORRAGH_050	River	At risk	At risk	Moderate	Moderate	No	Ag, UWW	Owenavorrigh	LAWPRO: Existing PAA IFI: The Owenavorrigh River is a large and important salmon spawning system flowing to sea at Courtown. The Owenavorrigh is an OPW channel and the best salmon spawning/nursery habitat on this system is from Ballycanew downstream. Unfortunately Ballycanew WWTP is grossly overloaded and the effluent discharges from the plant are very poor, with a significant impact upon salmon recruitment downstream.
11_2	IE_SE_11O010700	OWENAVORRAGH_060	River	At risk	At risk	Moderate	Moderate	No	Ag	Owenavorrigh	LAWPRO: Existing PAA IFI: The Owenavorrigh River is a large and important salmon spawning system flowing to sea at Courtown. The Owenavorrigh is an OPW channel and the best salmon spawning/nursery habitat on this system is from Ballycanew downstream. Unfortunately Ballycanew WWTP is grossly overloaded and the effluent discharges from the plant are very poor, with a significant impact upon salmon recruitment downstream.
11_1	IE_SE_11_26	Kilmacoe	Lake	Not at risk	Not at risk	Unassigned	Unassigned	No			
10_8, 10_9, 11_3	IE_EA_140_0000	Southwestern Irish Sea - Brittas Bay (HA 10)	Coastal	Not at risk	Not at risk	Unassigned	Unassigned	No			
10_9, 11_1, 11_2, 11_3, 12_15, 12_5, 13_4	IE_SE_010_0000	Southwestern Irish Sea (HAs 11;12)	Coastal	Not at risk	At risk	Good	Moderate	No	Other		
11_1, 12_15, 12_5	IE_SE_040_0000	Wexford Harbour	Coastal	At risk	At risk	Moderate	Good	No	Ag, UWW	Wexford Harbour	LAWPRO: Existing PAA TraC BIM: Shellfish PA. Microbial and nutrient concerns. Considered At risk NPWS: Raven Point Nature Reserve SAC - Humid dune slacks
11_1, 11_2, 11_3	IE_SE_020_0100	Owenavorrigh Estuary	Transitional	Review	Review	Unassigned	Unassigned	No			
09_13, 09_16, 09_8, 10_1, 10_10, 10_2, 10_3, 10_4, 10_5, 10_6, 10_7, 10_8, 10_9, 11_3, 12_11, 12_12, 12_13, 12_9	IE_EA_G_076	Wicklow	Groundwater	Review	Review	Good	Good	No			

09_11, 09_8, 10_10, 10_2, 10_3, 11_2, 11_3, 12_1, 12_10, 12_11, 12_12, 12_13, 12_14, 12_16, 12_3, 12_6, 12_7, 12_8, 12_9, 13_5, 14_10, 14_13, 14_19, 14_6, 14_9	IE_SE_G_011	Ballyglass	Groundwater	Review	At risk	Good	Good	No	Ag, Other	
11_1, 11_2, 11_3, 12_15, 12_4	IE_SE_G_025	Cahore Point	Groundwater	Review	At risk	Good	Good	No	Ag, DWW	
11_1, 11_2, 12_15, 12_2, 12_4, 12_5, 13_2, 13_5	IE_SE_G_031	Castlebridge North	Groundwater	Not at risk	Not at risk	Good	Good	No		
11_1, 12_15	IE_SE_G_033	Castlebridge South	Groundwater	Not at risk	Not at risk	Good	Good	No		
11_2, 12_1, 12_13, 12_14, 12_15, 12_2, 12_3, 12_4, 12_7, 13_5	IE_SE_G_061	Enniscorthy	Groundwater	At risk	At risk	Good	Good	No	Ag, Other	
11_1, 11_2, 11_3, 12_13, 12_4	IE_SE_G_071	Gorey	Groundwater	Review	Review	Good	Good	No		
10_3, 10_9, 11_2, 11_3, 12_13	IE_SE_G_075	Inch	Groundwater	Not at risk	At risk	Good	Good	No	Ag, Other	Inch - Groundwater GSI Drinking water abstraction points within this small GWB show elevated nitrate. At Killinerin, nitrate concentrations were excessive, necessitating the drilling of a new borehole. Whilst low initially, nitrate concentrations have risen steadily and are above the threshold. Nitrate concentrations in Coolgreany PWS have decreased over the same time period, but are still impacted at 25mg/l. Knockina GWS may also have elevated NO3. GSI have been involved in research (together with NFGWS and TCD) into the pressures in GWS in this gwb. A PAA status would allow this already existing work to be highlighted via the WFD process. This GWB - high to extreme vulnerability, poorly productive aquifer, Ordovician

