

3rd Cycle Draft

Lee, Cork Harbour and Youghal Bay

Catchment Report (HA 19)



Catchment Science & Management Unit

Environmental Protection Agency

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Preface

This document provides a summary of the water quality assessment outcomes for the Lee, Cork Harbour and Youghal Bay 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.

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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 Lee, Cork Harbour and Youghal Bay 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 Lee, Cork Harbour and Youghal Bay catchment includes the area drained by the River Lee and all streams entering tidal water in Cork Harbour and Youghal Bay and between Knockaverry and Templebreedy Battery, Co. Cork, draining a total area of 2,153km² (Figure 1). The largest urban centre in the catchment is Cork City. The other main urban centres in this catchment are Ballincollig, Macroom, Carrigaline, Crosshaven, Blarney, Glanmire, Midleton, Carrigtohill, Cobh, Passage West and Belvelly. The total population of the catchment is approximately 328,854 with a population density of 153 people per km².

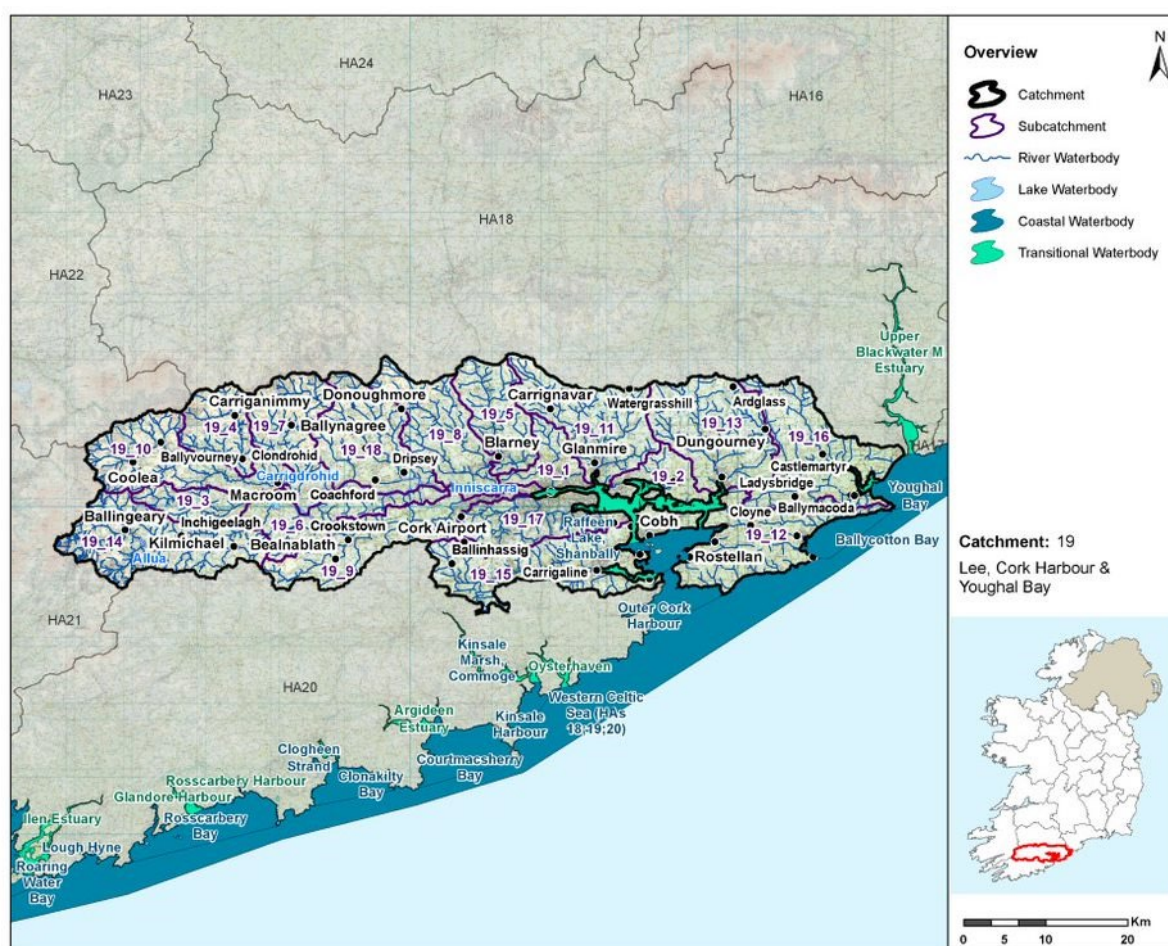


Figure 1: Overview of subcatchments in the Lee, Cork Harbour and Youghal Bay catchment

The Lee, Cork Harbour and Youghal Bay catchment is divided into 18 subcatchments (Figure 1) with 92 river waterbodies, three lakes (Inniscarra, Carrigdrohid, Allua) 13 transitional, six coastal and 22 groundwater bodies (Figure 2).

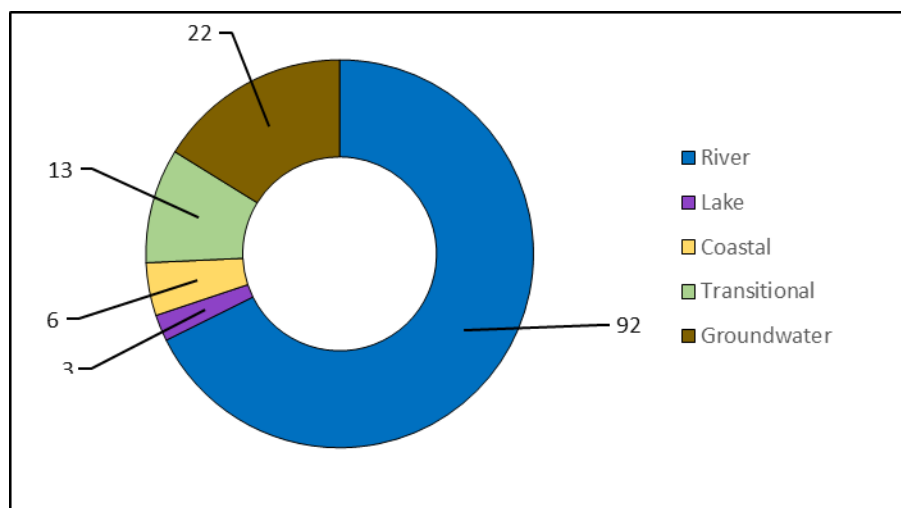


Figure 2: Waterbody types and numbers in the Lee, Cork Harbour and Youghal Bay Catchment.

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 15 waterbodies achieving High Status, 59 achieving Good Status, 23 achieving Moderate Status, five at Poor Status and one Bad Status waterbody. There are 33 waterbodies that do not have status assigned for Cycle 3. All waterbodies must achieve at least Good Ecological status.
- ◆ There are 22 river waterbodies that must achieve High Ecological Status (HES) in this catchment. These waterbodies are listed in Appendix 1. Of the 22 HES Environmental Objective waterbodies, nine waterbodies are achieving High Status while 11 waterbodies are at Good Status and two waterbodies are at Moderate Status.
- ◆ The overall number of waterbodies achieving High Status has reduced from 26 to 15 between Cycle 2 and Cycle 3 (Figure 3 & Table 1). The number of waterbodies at Poor Status also reduced from seven to three between Cycle 2 and Cycle 3. There has been increases in the number of waterbodies at Moderate Status and Good Status, from nine and 25 respectively in Cycle 2 to 13 and 36 in Cycle 3.

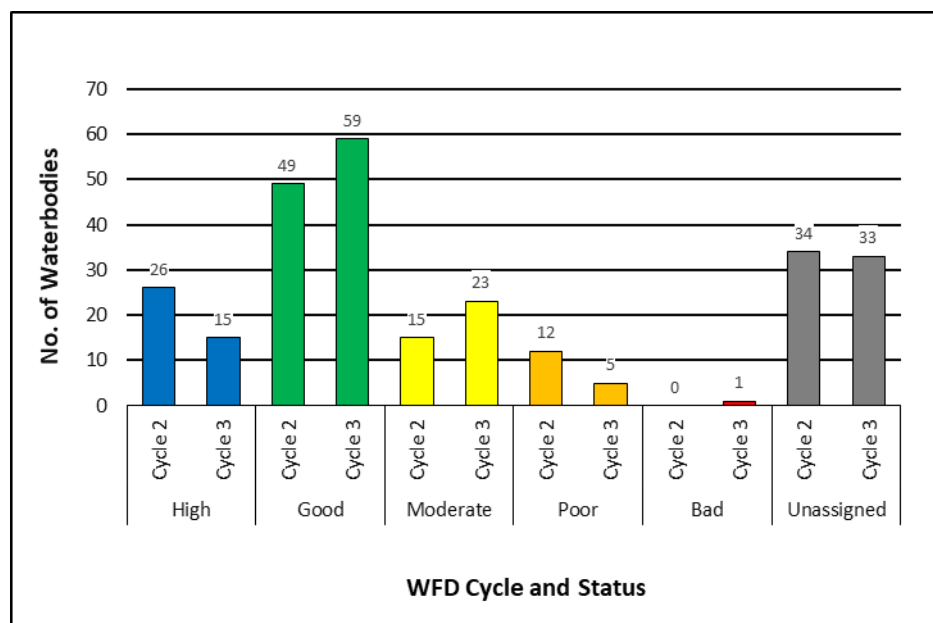


Figure 3: Waterbody Status Breakdown (All waterbodies)

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	26	15	0	0	0	0	0	0	0	0	26	15
Good	25	36	0	0	1	1	3	1	20	21	49	59
Moderate	9	13	1	2	5	6	0	2	0	0	15	23
Poor	7	3	2	1	1	0	0	0	2	1	12	5
Bad	0	0	0	0	0	1	0	0	0	0	0	1
Un-assigned	25	25	0	0	6	5	3	3	0	0	34	33
Total	92	92	3	3	13	13	6	6	22	22	136	136

- ◆ 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 12 (12%) waterbodies have improved in status, 71 (70%) waterbodies have remained unchanged and 19 (19%) waterbodies have declined in status.¹
- ◆ There is an overall decline in the status of seven 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.

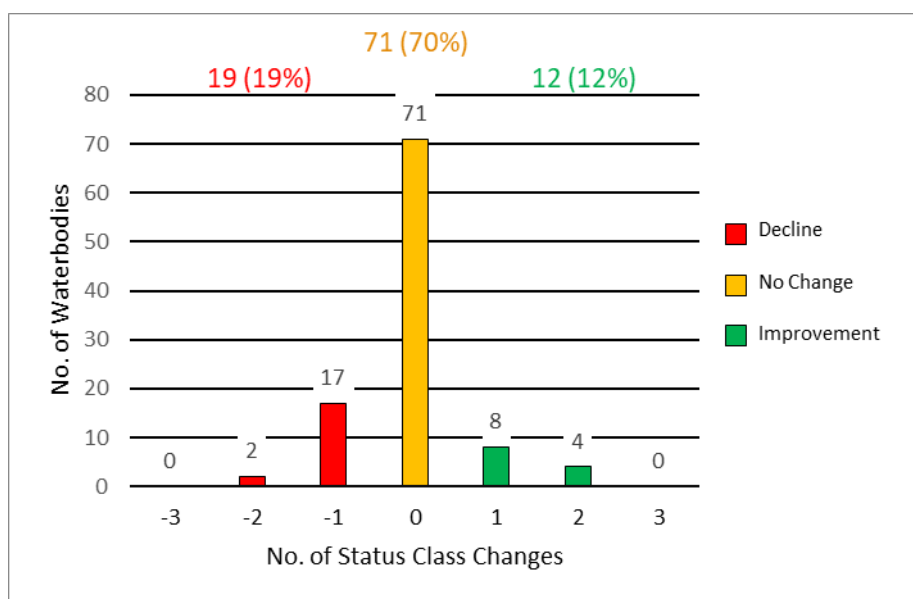


Figure 4: Status Class Changes between Cycle 2 and Cycle 3

2.2 Protected Areas

2.2.1 Drinking Water

- ◆ There are nine 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*.
- ◆ Three river waterbodies in the catchment did not meet the DWPA objective in 2019:
 - Butlerstown_020 (IE_SW_19B060500) river waterbody is the source for the Glanmire (0500PUB2107) public supply which had Fluroxypr, MCPA and 2,4-D pesticide exceedances;
 - Glashaboy (Lough Mahon)_030 (IE_SW_19G010600) river waterbody is the source for the Glashaboy (0500PUB3303) public supply which had MCPA, Mecoprop and Triclopyr pesticide exceedances and
 - Sullan_060 (IE_SW_19S020480) river waterbody is the source for the Macroom (0500PUB2307) public supply which had MCPA and Glyphosate pesticide exceedances.
- ◆ 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 two bathing waters in or directly adjacent to the catchment identified under the Bathing Water Regulations 2008.
- ◆ Fountainstown bathing water had an excellent classification for 2020, while Garryvoe 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 2020⁴](#).

2.2.3 Shellfish Areas

- ◆ There are four designated shellfish areas in the catchment.
- ◆ 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?	
Name	Code	Name	Code	Yes	No
Ballymacoda Bay	IEPA2_0046	Youghal Bay	IE_SW_020_0000	✓	
Rostellan South	IEPA2_0047	Cork Harbour	IE_SW_060_0000	✓	
Rostellan North	IEPA2_0048	Cork Harbour	IE_SW_060_0000	✓	
Cork Great Island North Channel	IEPA2_0049	North Channel Great Island	IE_SW_060_0300		✓

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>

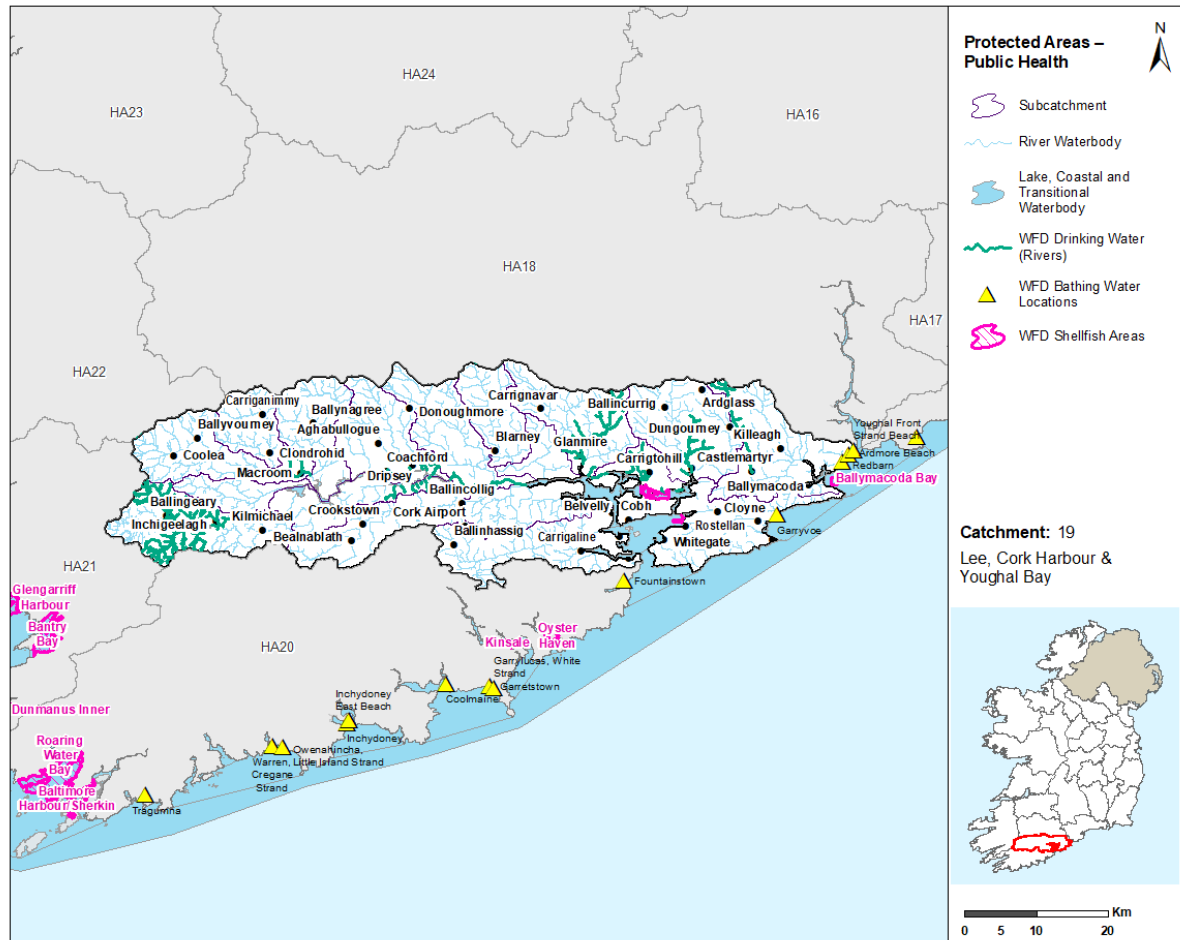


Figure 5: Protected Areas – Public Health

2.2.4 Natura 2000 Sites and Salmonid Waters

- ◆ 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 five SACs in this catchment, four 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.

Table 3 below, information at a waterbody level can be viewed at [Catchments.ie](https://catchments.ie).⁵

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

- ◆ There are no river waterbodies with FWPM habitats in the catchment.
- ◆ There are no groundwater bodies delineated and assessed as Groundwater Dependent Terrestrial Ecosystems for this catchment.
- ◆ Water dependent SACs/ SPAs and salmonid waters in the catchment are illustrated in Figure 6.

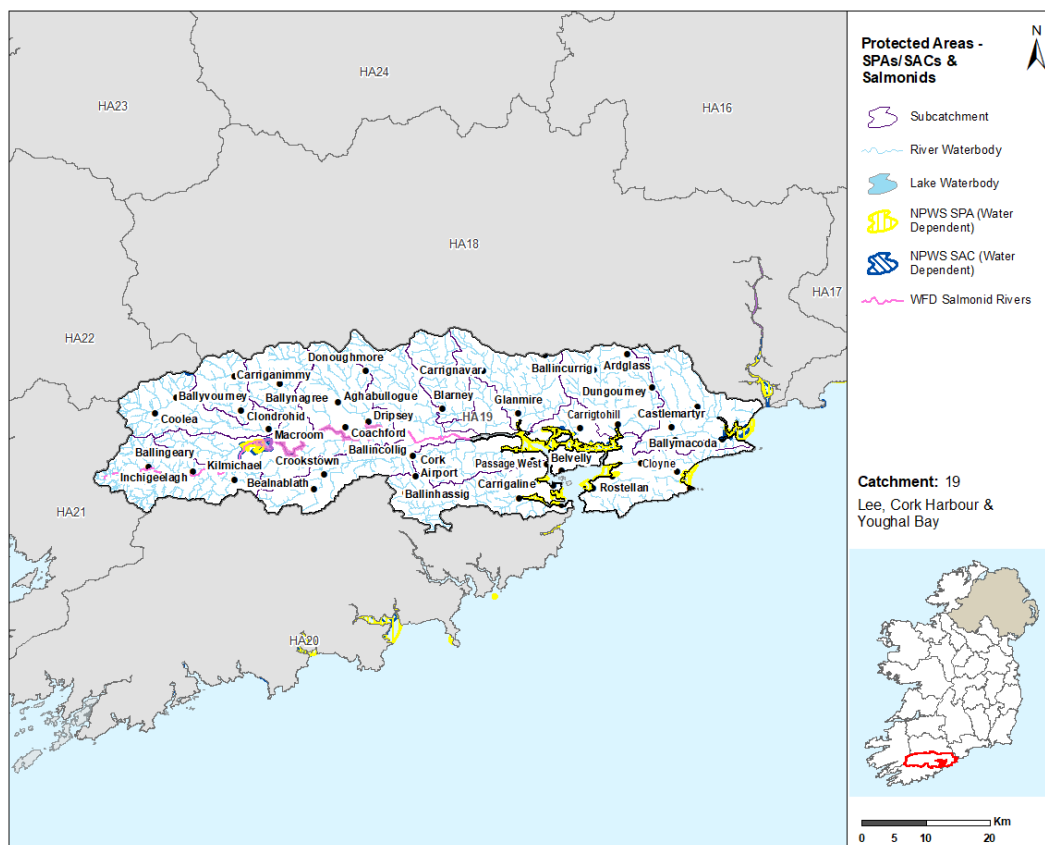


Figure 6: Water Dependent SPAs / SACs and Salmonid Waters

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2.2.5 Nutrient Sensitive Areas

- ◆ The EPA carried out a review of Nutrient Sensitive Areas (NSAs) downstream of large urban waste water discharges in 2020. Once the regulations are in place, and nutrient sensitive areas have been identified, additional nutrient removal must be applied (if not already applied) to waste water treatment plants discharging to the sensitive area. If this treatment was in place the objective was deemed to have been met.
- ◆ There are four NSAs in the catchment and these are downstream of three urban wastewater agglomerations. The list of NSAs, associated agglomerations and intersecting water bodies are provided in Table 4.
- ◆ NSA objectives are being met in two of the four NSAs in the catchment.

Table 4: Nutrient sensitive areas in the catchment

Nutrient Sensitive Area	Agglomeration		Water body		Objective met?		Comment
	Name	Code	Name	Code	Yes	No	
Owenacurra Estuary & North Channel	Midleton	D0056-01	Owenacurra Estuary	IE_SW_060_0400	✓		Tertiary Treatment in place
			North Channel Great Island	IE_SW_060_0300			
Lee Estuary (Upper and Lower)	Cork City	D0033-01	Lee (Cork) Estuary Upper	IE_SW_060_0950		✓	Secondary Treatment in Place
			Lee (Cork) Estuary Lower	IE_SW_060_0900			
Lough Mahon	Cork City	D0033-01	Lough Mahon	IE_SW_060_0750		✓	Secondary Treatment in Place
Lough Mahon (Harpers Island)	Carrigtwohill	D0044-01	Lough Mahon (Harper's Island)	IE_SW_060_0700	✓		Tertiary Treatment in place

2.3 Heavily Modified Waterbodies

- ◆ Based on the 1st and 2nd RBMPs there are currently five designated heavily modified water bodies (HMWB) in the catchment: Inniscarra due to power generation and abstraction for drinking water; Carrigdrohid due to power generation; and Lee (Cork) Estuary Lower, Lough Mahon and Cork Harbour due to port facilities. Cork Harbour was classified as having Good Ecological Potential in 2013-15 but has declined to Moderate in the 2016-2018 period; Carrigdrohid was classified as having Poor Ecological Potential in 2013-2015 but has improved to Moderate in the 2016-2018 period; and the remaining three remain at Moderate. 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 Lee 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 136 waterbodies in the Lee, Cork Harbour and Youghal Bay Catchment and 49(36%) are *At Risk*, 34 (25%) in *Review* and 53 (39%) are *Not At Risk*.

3.2 Surface Waters

- ◆ For the 92 river waterbodies, 32 (35%) are *At Risk*, 22 (24%) are in *Review* and 38 (41%) are *Not At Risk*.
- ◆ All three (100%) lake waterbodies in the catchment are *At Risk*.
- ◆ For the 13 transitional waterbodies, eight (62%) are *At Risk* and five (38%) are in *Review*.
- ◆ For the six coastal waterbodies in the catchment, two (33%) are *At Risk*, one (17%) is in *Review* and three (50%) are *Not At Risk*. Cork Harbour and Youghal Bay are the coastal waterbodies *At Risk*.
- ◆ The largest proportion of *At Risk* waterbodies are found in rivers, accounting for 32 (65%) of 49 *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 13 *At Risk* waterbodies reflected by reductions of nine *Review* and four *Not At Risk* waterbodies between Cycle 2 and Cycle 3.

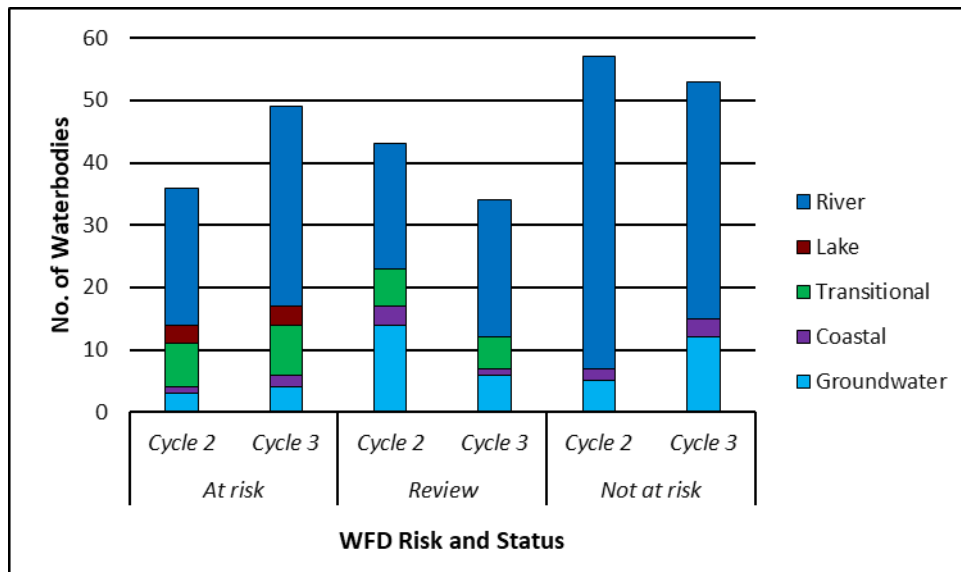


Figure 7: Number of waterbodies in each risk category

- ◆ 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.

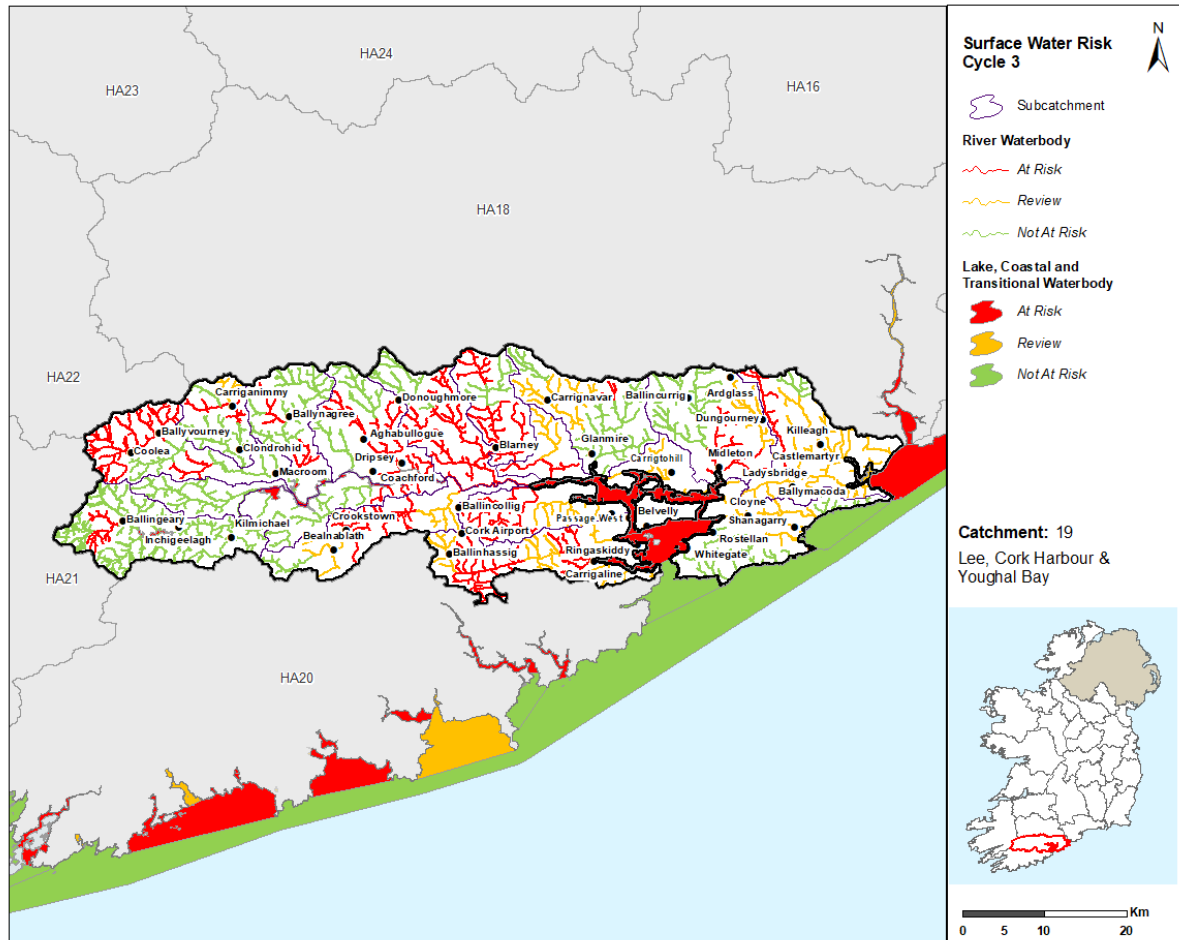


Figure 8: Surface Water Risk Cycle 3

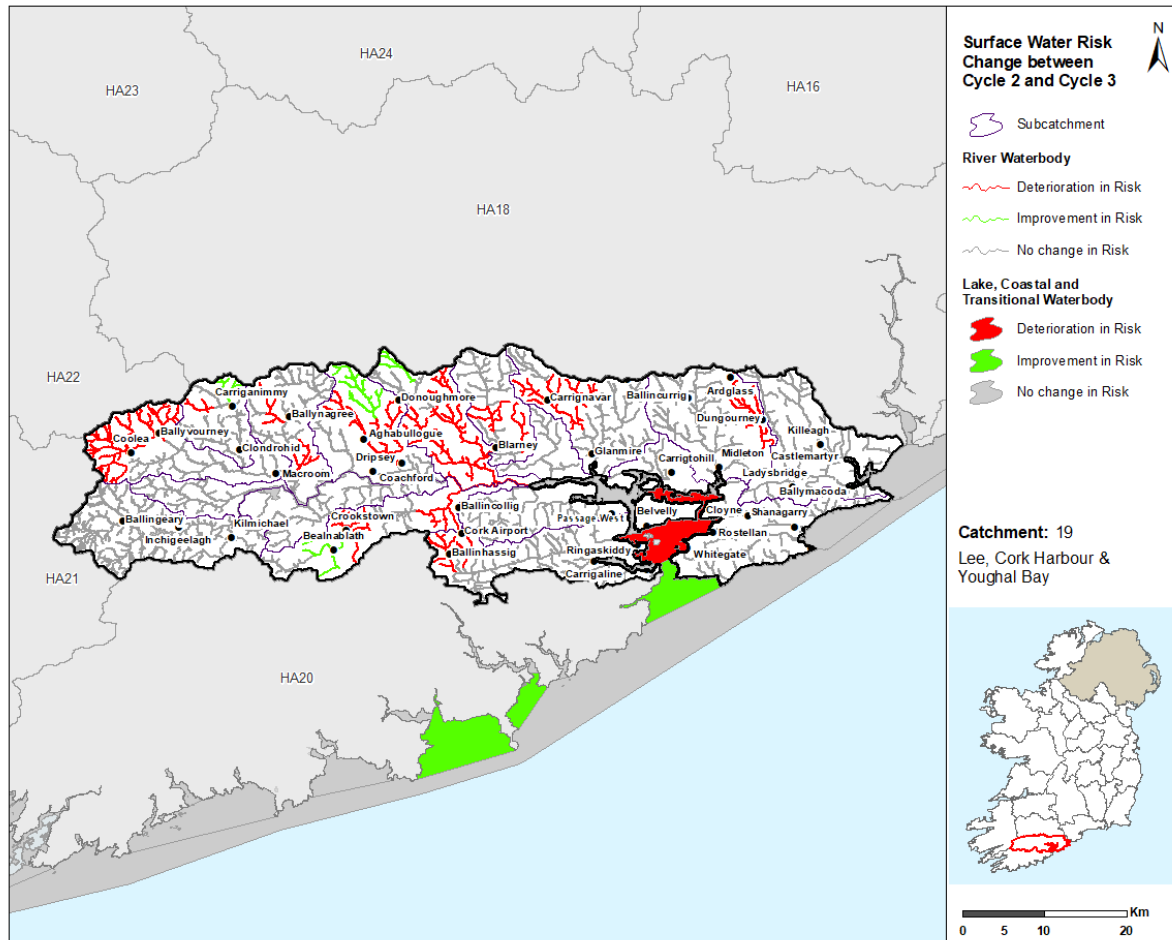


Figure 9: Surface Water Risk Change between Cycle 2 and Cycle 3

3.3 Groundwater

- ◆ For the 22 ground waterbodies in the catchment, four (18%) are *At Risk*, six (27%) are in *Review* and 12 (55%) are *Not At Risk*. Ballinhassig East, Glenville, Waste Facility (W0012-03) & Lee Valley Gravels are the groundwater bodies *At Risk*.
- ◆ In Cycle 2 there were three groundwater bodies, (Waste Facility (W0012-03), Industrial Facility (P0028-01) & Lee Valley Gravels) *At Risk* in this catchment, 16 in *Review* and 13 *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.

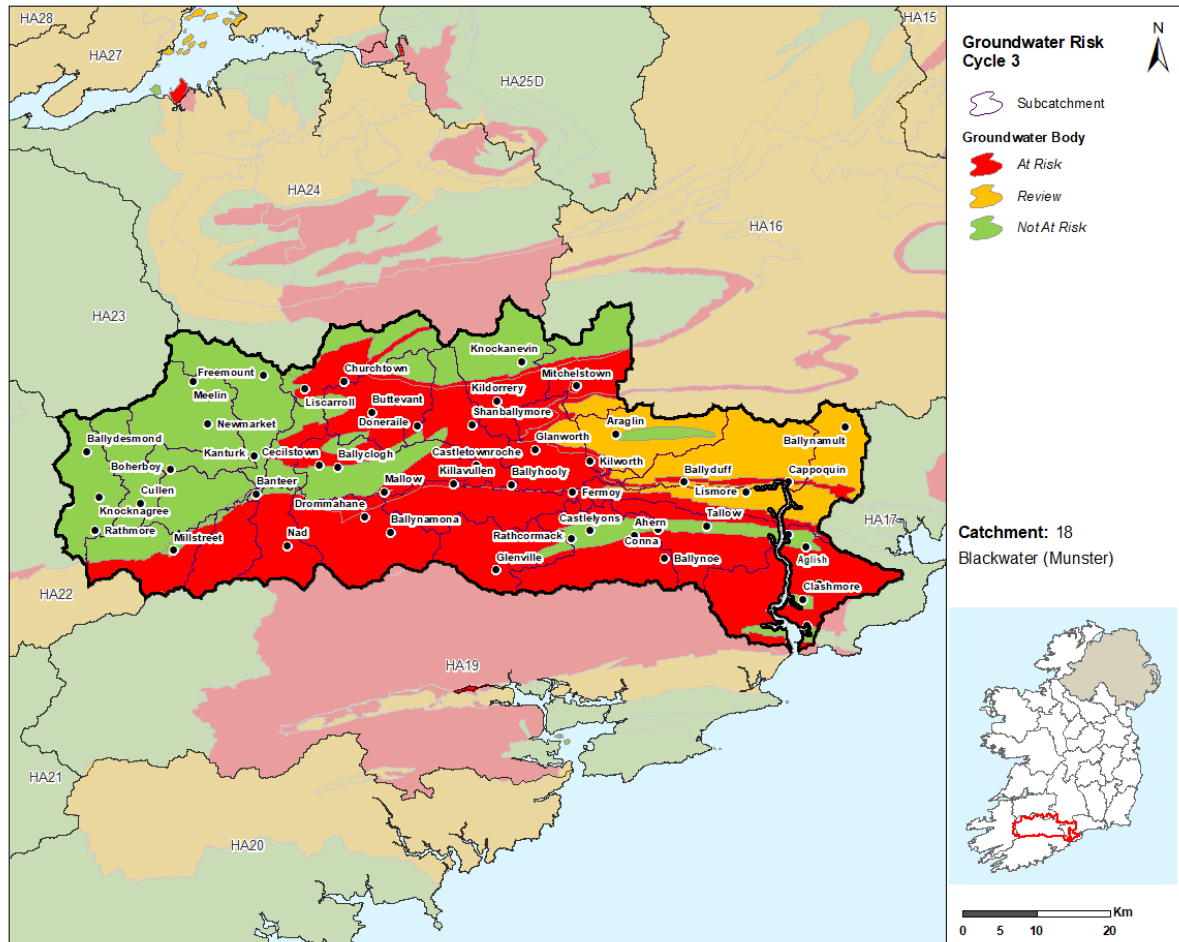


Figure 10: Cycle 3 Groundwater Body Risk

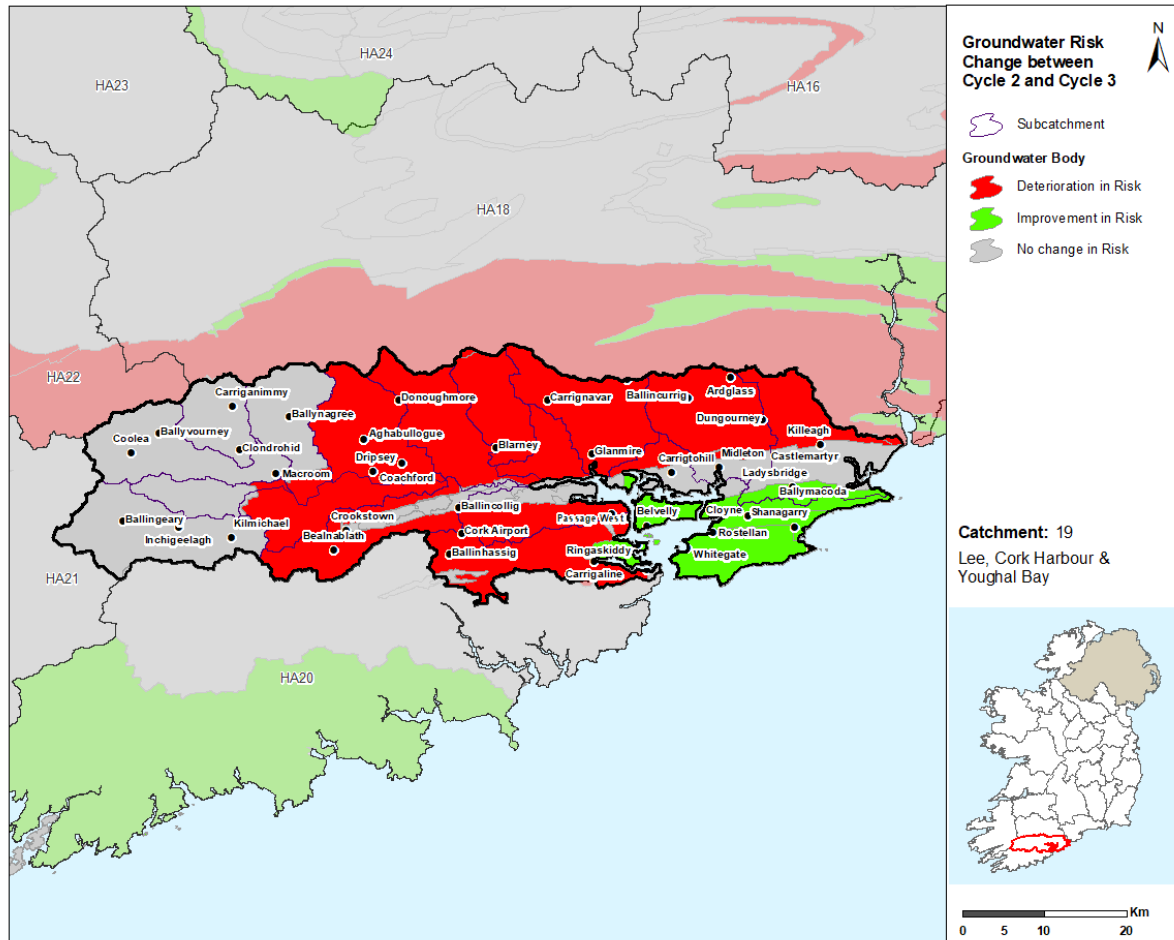


Figure 11: Groundwater Body Risk Change between Cycle 2 & Cycle 3

3.4 Heavily Modified Waterbodies

- ◆ All five designated heavily modified water bodies (HMWB) in the catchment are At Risk of not meeting their Environmental Objectives in Cycle 3. 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

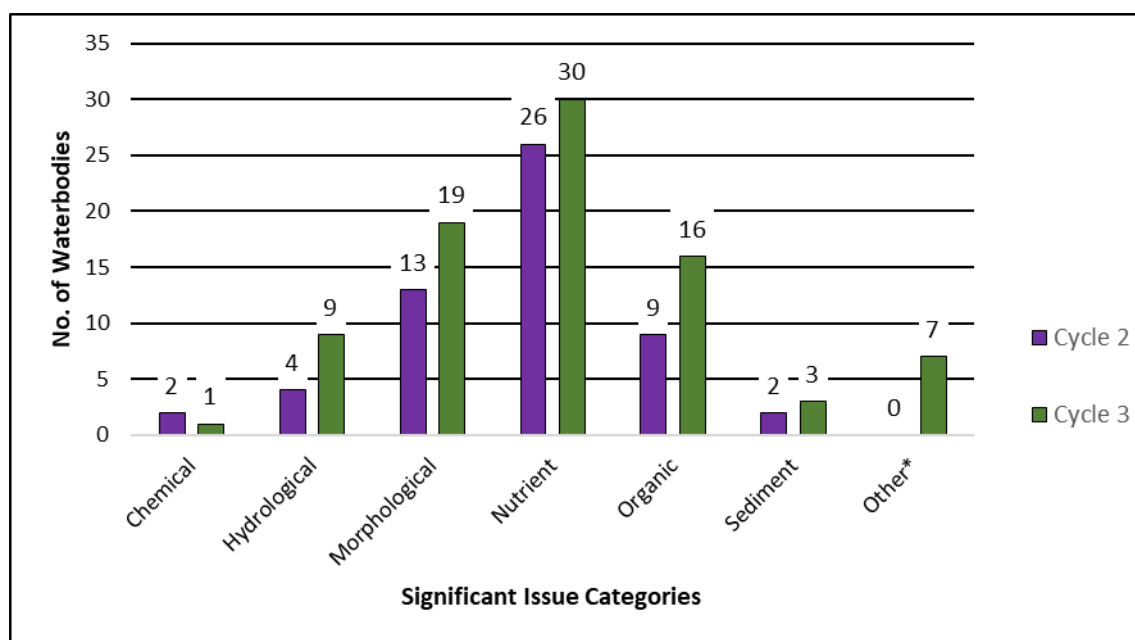
- ◆ There are no Artificial Waterbodies (AWBs) present in the Lee Catchment.

4 Significant Issues in *At Risk* Waterbodies

4.1 All Waterbodies

- ◆ Excess nutrients remain the most prevalent issue in the Lee, Cork Harbour and Youghal Bay Catchment (Figure 12) impacting 31 waterbodies in Cycle 3. Morphological issues are impacting 19 waterbodies and organic pollution and hydrological issues are impacting 16 and nine waterbodies, respectively.

- For rivers, the main significant issues are morphological issues (17), nutrient pollution (16), organic pollution (8), hydrological issues (8) and sediment (3).
 - For Lakes, the main significant issues are nutrient pollution (3), hydrological issues, morphological issues and organic pollution each impacting one waterbody.
 - For transitional waterbodies the significant issues are nutrient (8) and organic (5) pollution. There was also an increase in additional unknown impact types.
 - For coastal waterbodies the significant issues are nutrient (2) and organic (2) pollution.
 - Nutrient pollution is the issue in two of the four *At Risk* groundwater bodies. Chemical pollution and sediment are each impacting one groundwater body. The impacts in the remaining waterbodies are unknown.
- ◆ Between Cycle 2 and Cycle 3 the number of waterbodies impacted by each impact type, with the exception of chemical pollution, have increased between Cycle 2 and Cycle 3 as shown in Figure 12.

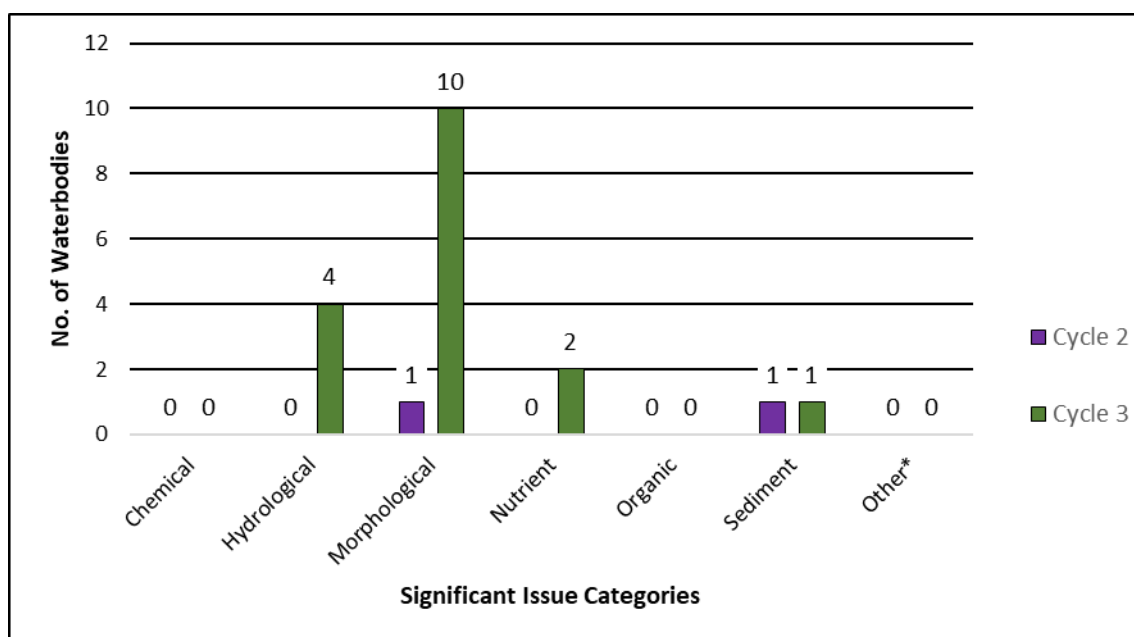


*Other - Acidification, saline intrusion, elevated temperature, litter, microbiological pollution and unknown impacts have all been grouped into the "Other" issues category for the purpose of this report

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

4.2 High Status Objective Waterbodies

- ◆ In Cycle 3 for High Status Objective waterbodies morphological issues are impacting 10 of the 13 High Status Objective waterbodies (all rivers) currently *At Risk* (Figure 13). Hydrological issues are impacting four waterbodies, while nutrient pollution and sediment issues are impacting two & one waterbodies respectively.
- ◆ In Cycle 2 there were no HES waterbodies impacted by hydrological impacts or nutrient pollution, in Cycle 3 they have increased to four and two waterbodies respectively. The number of waterbodies impacted by sediment remain at one since Cycle 2.



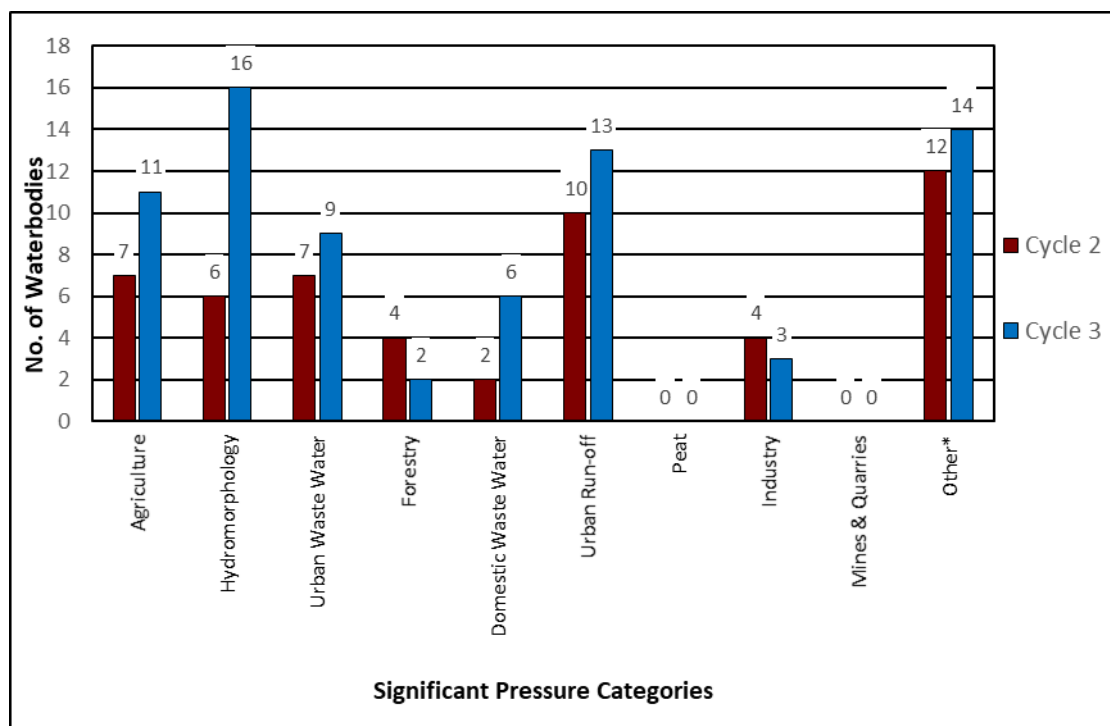
*Other - Acidification, saline intrusion, elevated temperature, litter, microbiological pollution and unknown impacts have all been grouped into the "Other" issues category for the purpose of this report

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 hydromorphology followed by agriculture, urban run-off, urban waste water, domestic waste water, forestry, mines & quarries and industry. There are also two waste related pressures and 11 unknown anthropogenic pressures in the catchment in Cycle 3 where further investigation is required.
- ◆ When comparing Cycle 2 and Cycle 3 the biggest change is an increase of 10 waterbodies where hydromorphological pressures are significant, from six waterbodies in Cycle 2 to 16 waterbodies in Cycle 3.
- ◆ The number of waterbodies associated with agricultural, domestic waste water, urban run-off and urban waste water have also increased between cycle 2 and 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 14: Significant Pressure (All At Risk Waterbodies)

5.1.1 Pressure Type

5.1.1.1 Hydromorphology

- ◆ Hydromorphology is a significant pressure in 15 river waterbodies and one lake waterbody. Channelisation is the dominant hydromorphology subcategory in the catchment with 11 river waterbodies within the catchment subject to extensive modification mainly due to drainage schemes. River bank erosion is the source of sediment in six river waterbodies. Dams, barriers, lock and weirs were identified as the subcategory pressure on five river waterbodies. Embankments were identified as impacting four river waterbodies (Martin_010, Martin_030, Shournagh_020 & Sullane_010). Overgrazing is a hydromorphological pressure subcategory in four river waterbodies (Awboy_010, Dripsey_020, Foherish_010 & Laney_040).

5.1.1.2 Urban run-off

- ◆ Diffuse urban pressures, caused by misconnections, leaking sewers and runoff from paved and unpaved areas and the M8 (in the case of Butlerstown_010), have been identified as a significant pressure in 11 waterbodies (seven river waterbodies, five transitional and one coastal). Nutrient and organic pollution are the significant issues.

5.1.1.3 Agriculture

- ◆ Agriculture is a significant pressure in six river waterbodies, one lake waterbody (Allua), three transitional waterbodies (North Channel Great Island, Glashaboy Estuary, Owenboy Estuary), one coastal waterbody (Youghal Bay) and two groundwater bodies (Glenville & Ballinhassig East) in Cycle 3. Phosphorus loss to surface waters from, for example, direct discharges; or runoff from yards, roadways or other compacted surfaces, or runoff from poorly draining soils remains an issue since Cycle 2 supported by High P PIP. High nitrates concentrations have been identified in Owenboy (Cork)_040 and Shournagh_040 river waterbodies in Cycle 3. With transitional and coastal waterbodies impacted by elevated dissolved inorganic nitrogen. Sediment can also be a problem from land drainage works, bank erosion from animal access or stream crossings.

5.1.1.4 Urban waste water

- ◆ Urban waste water agglomerations have been identified as a significant pressure in nine *At Risk* river waterbodies (
- ◆ Table 5). Apart from Ballingeary, Killeens, and Blarney, all of the agglomerations identified as significant pressures are scheduled to be upgraded.

Table 5: 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 Completion Date ⁶
Cobh D0054	Agglomeration PE > 10,000	Cork Harbour	Moderate	2022
Midleton D0056	Combined Sewer Overflows	Owenacurra Estuary	Moderate	2024
Carrigtwohill and Environs D0044	Agglomeration PE > 10,000	Lough Mahon (Harper's Island)	Moderate	2021
Cork City D0033	Agglomeration PE > 10,000	Lough Mahon	Moderate	2024
Cork City D0033	Combined Sewer Overflows	Lough Mahon	Moderate	2024
Cork City D0033	Combined Sewer Overflows	Lee (Cork) Estuary Lower	Moderate	2024
Cork City D0033	Combined Sewer Overflows	Lee (Cork) Estuary Upper	Moderate	2024
Ballingeary D0431	Agglomeration PE of 500 to 1,000	Allua	Poor	N/A
Killeens D0329	Agglomeration PE of 1,001 to 2,000	BLARNEY_010	Moderate	N/A
Blarney D0043	Agglomeration PE > 10,000	SHOURNAGH_030	Moderate	N/A

- ◆ Urban waste water significant pressures impacted two more waterbodies in Cycle 3 than in Cycle 2 (an increase from seven to nine waterbodies impacted). The following Agglomerations are listed as pressures in Cycle 3 but were not on the list of significant pressures in Cycle 2.
 - Blarney (D0043)
 - Cobh (D0054)
 - Killeens (D0329)
 - Passage Monkstown (D0129)
- In addition, Cork City Agglomeration network is deemed to also be impacting Lough Mahon.
- Crookstown (A0354) has been removed as a significant pressure during Cycle 3 characterisation.

5.1.1.5 Domestic waste water

- ◆ Domestic waste water has been identified as a significant pressure in five river waterbodies. This is due to a concentration of domestic waste water treatment systems in close proximity to the

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

water bodies. The significant issue is excess nutrients entering surface waters. Furthermore, some of these locations are located on areas of high susceptibility to phosphate transport via near surface pathways. Domestic waste water has also been identified as a significant pressure in one groundwater body (Lee Valley Gravels) where an impact on the quality of associated surface waters for chemical reasons was identified as an issue as well as nutrient impacts.

5.1.1.6 Forestry

- ◆ Forestry is a significant pressure in one river waterbody (Foherish_020) and one lake waterbody (Allua) in Cycle 3. The issues arise from forestry activities taking place (particularly on poorly draining soils) that include clearfelling and drainage, which have resulted in excess nutrients in the lake and morphological impacts in Foherish_010.

5.1.1.7 Industry

- ◆ Industry has been identified as a significant pressure in Dungourbey_020 river waterbody causing nutrient and organic issues from an industrial discharge (Table 6).

Table 6: Breakdown of Cycle 3 Industry Significant Pressures in the Lee, Cork Harbour and Youghal Bay Catchment

Waterbody Code	Waterbody Name	Waterbody Type	Emission Type	Name	Impact
IE_SW_19D070700	DUNGOURNEY_020	River	IE	Irish Distillers Limited	Nutrient pollution; Organic pollution

5.1.1.8 Other significant pressures

- ◆ *Waste*
The Martin_010 river waterbody is impacted by illegal dumping activity which has altered river habitat through hydrological and morphological changes. Groundwater body, Waste Facility (W0012-03), is impacted by Kinsale Road Landfill, an EPA licensed waste facility.
- ◆ *Unknown anthropogenic*
The significant pressures impacting eight river waterbodies, two lake waterbodies (Inniscarra & Carrigdrohid) and one groundwater body (Ballinahassig East) are unknown.

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

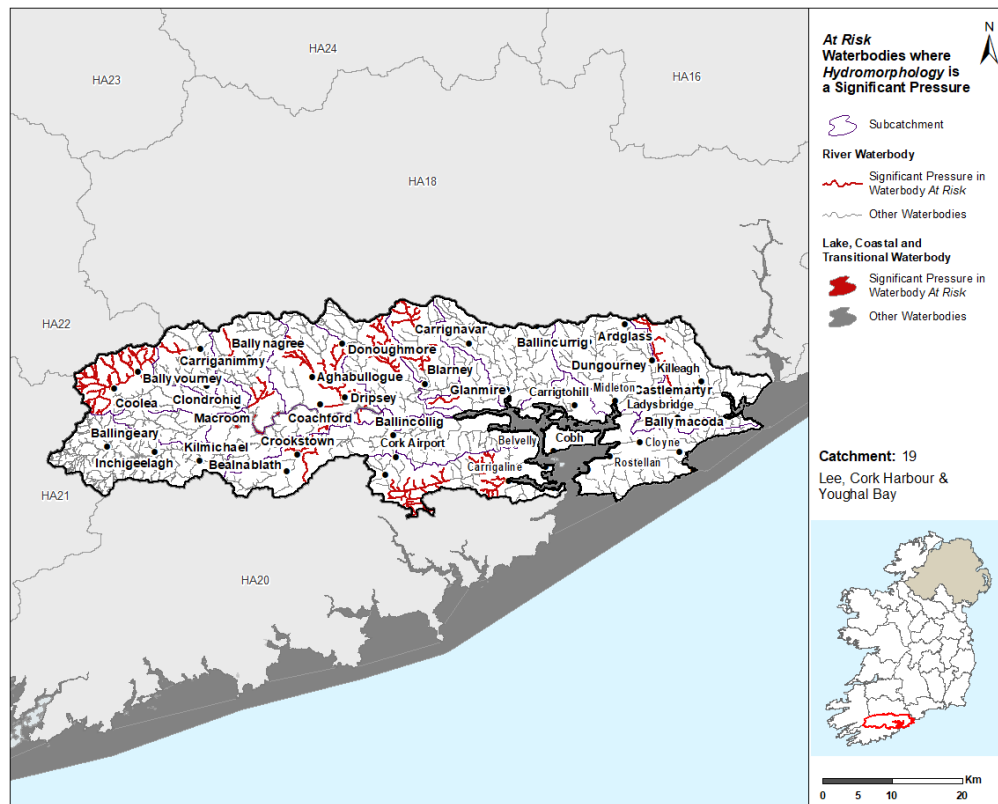


Figure 15: Locations of Waterbodies where Hydromorphology is a Significant Pressure

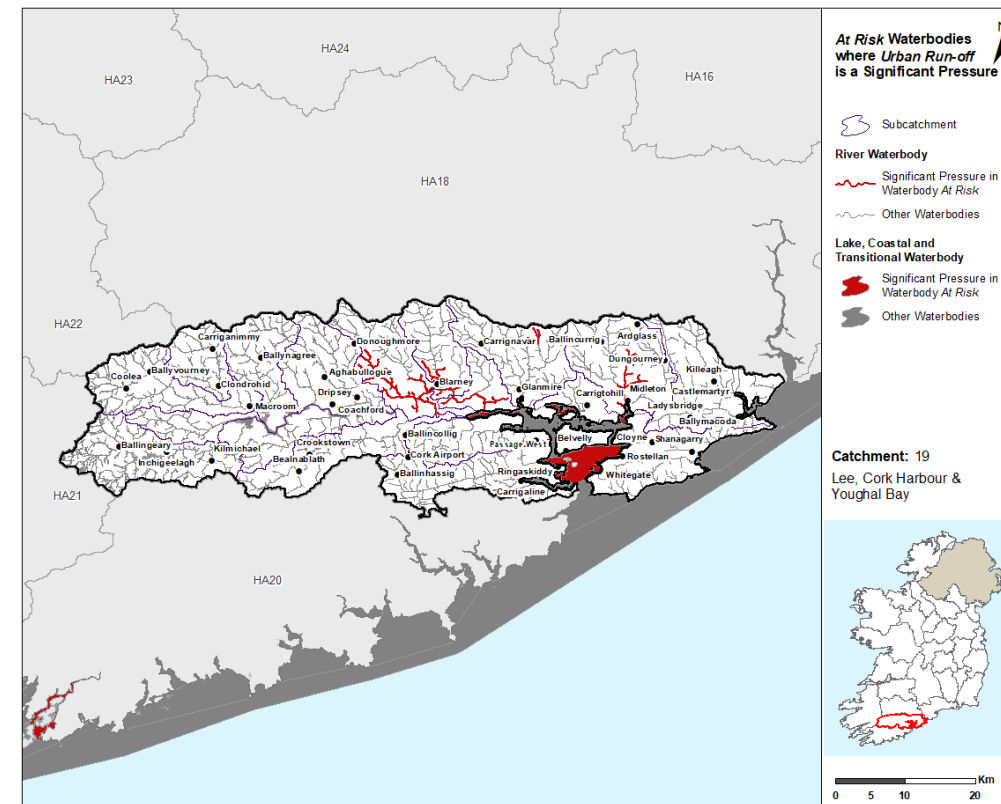


Figure 16: Locations of Waterbodies where Urban Run-off is a Significant Pressure

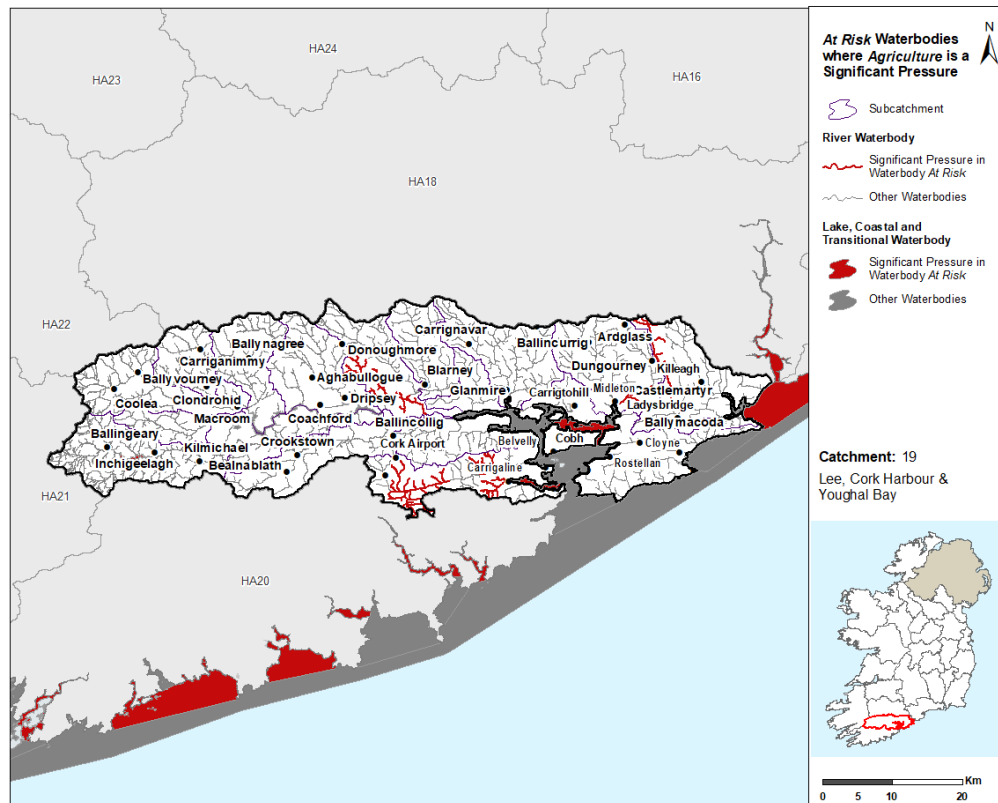


Figure 17: Locations of Waterbodies where Agriculture is a Significant Pressure

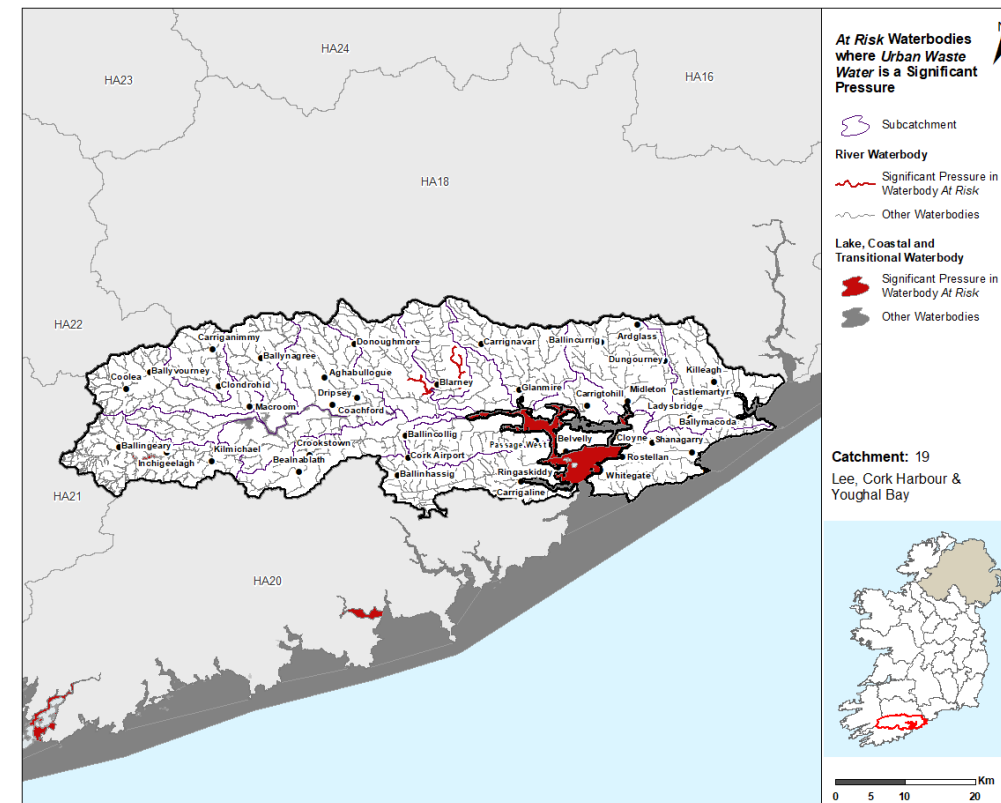
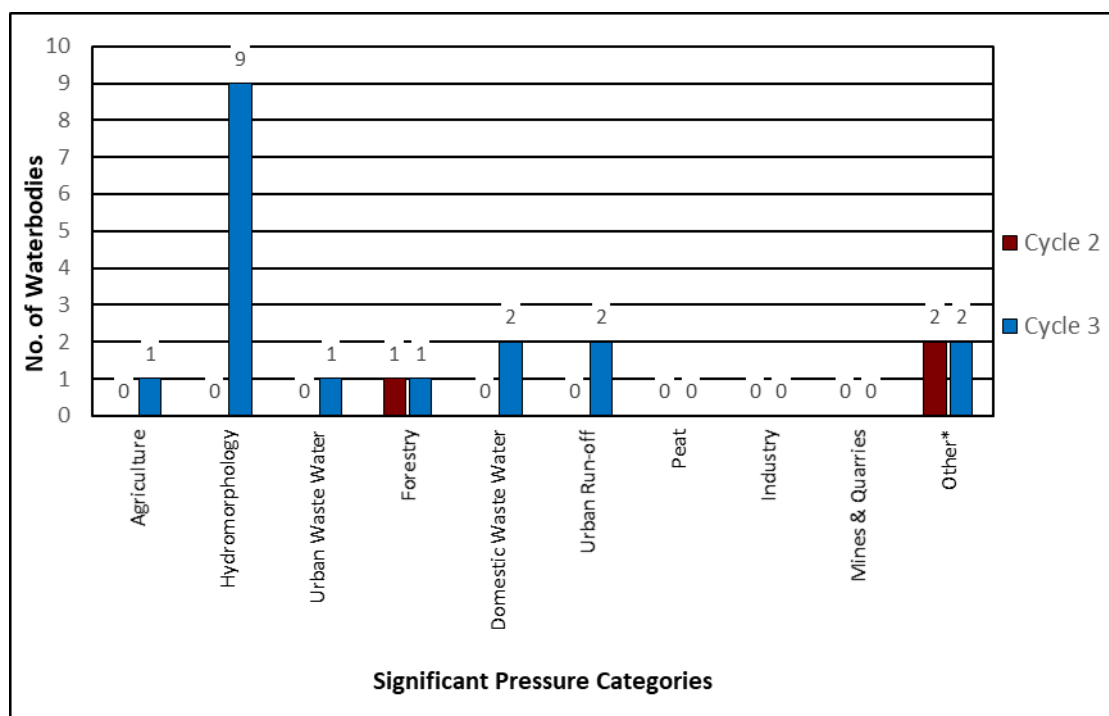


Figure 18: Locations of Waterbodies where Urban Waste Water is a Pressure

5.2 High Status Objective Waterbodies

- ◆ Hydromorphology is also the dominant significant pressure in High Status Objective waterbodies, with hydromorphological pressures identified in nine out of the 13 *At Risk* High Status Objective waterbodies.



*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, discharges from urban wastewater and arable land is responsible for 76%, 12% and 8% of the nitrogen load respectively while discharges from urban waste water, land in pasture, and diffuse urban run-off contribute 75%, 9% and 7% of the phosphorus loadings for the catchment respectively (Figure 17).

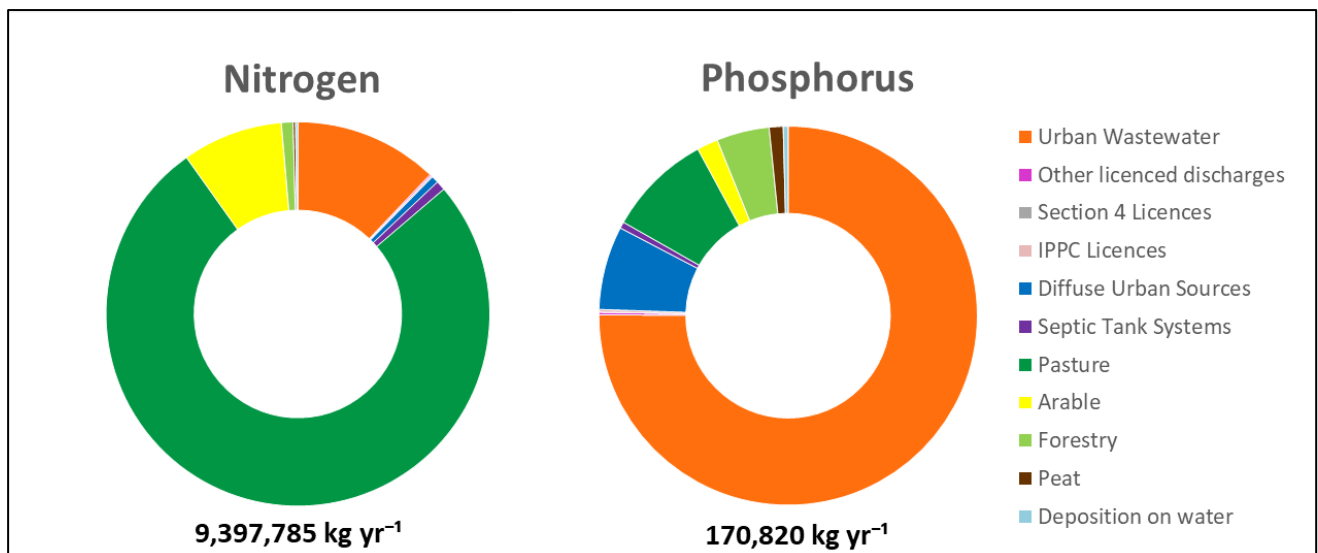


Figure 20: Estimated Proportions of N & P from Each Sector in the Lee, Cork Harbour and Youghal Bay Catchment

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. The assessment report can be found at <https://www.catchments.ie/assessment-of-the-catchments-that-need-reductions-in-nitrogen-concentrations-to-achieve-water-quality-objectives>.
- ◆ The N reduction required in the Lee Catchment is considered to be medium and ranges from 100-500 t N/yr.
- ◆ Source load apportionment modelling indicates that the main sources of N in the catchment are 76% pasture, 8% arable, 12% Urban waste water and 3% from miscellaneous sources.

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 nitrogen, sediment and phosphorus should be targeted. Waterbodies with orange fill are areas where nitrogen measures 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 2.

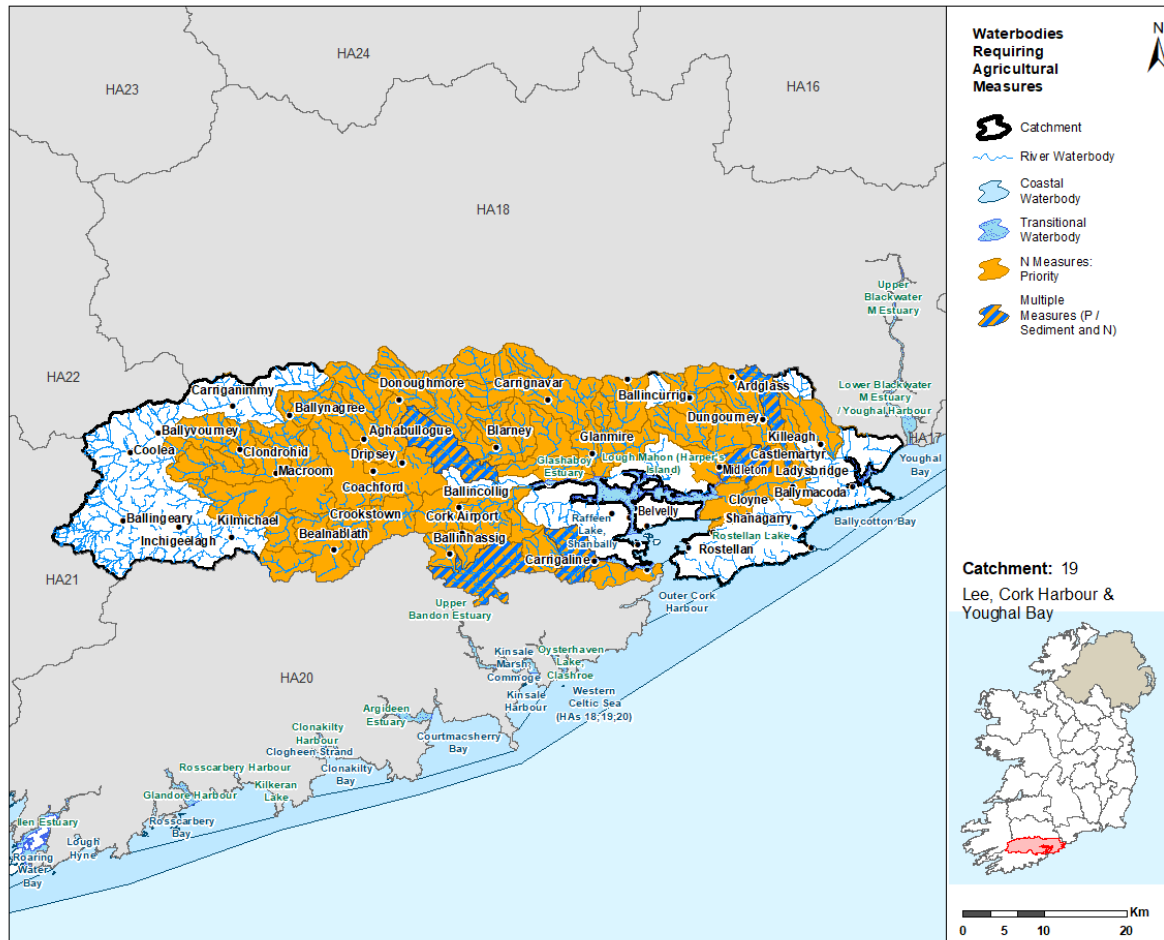


Figure 21: Waterbodies where Agricultural Measures should be Targeted

8 2nd Cycle Areas for Action

8.1 Area for Action Overview

- ◆ There were seven Areas for Action, comprising of 15 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 7 and shown in Figure 22. LAWPRO, in conjunction with local authorities and stakeholders from the South-western Regional Operational Committee, have been working in these areas since 2018.

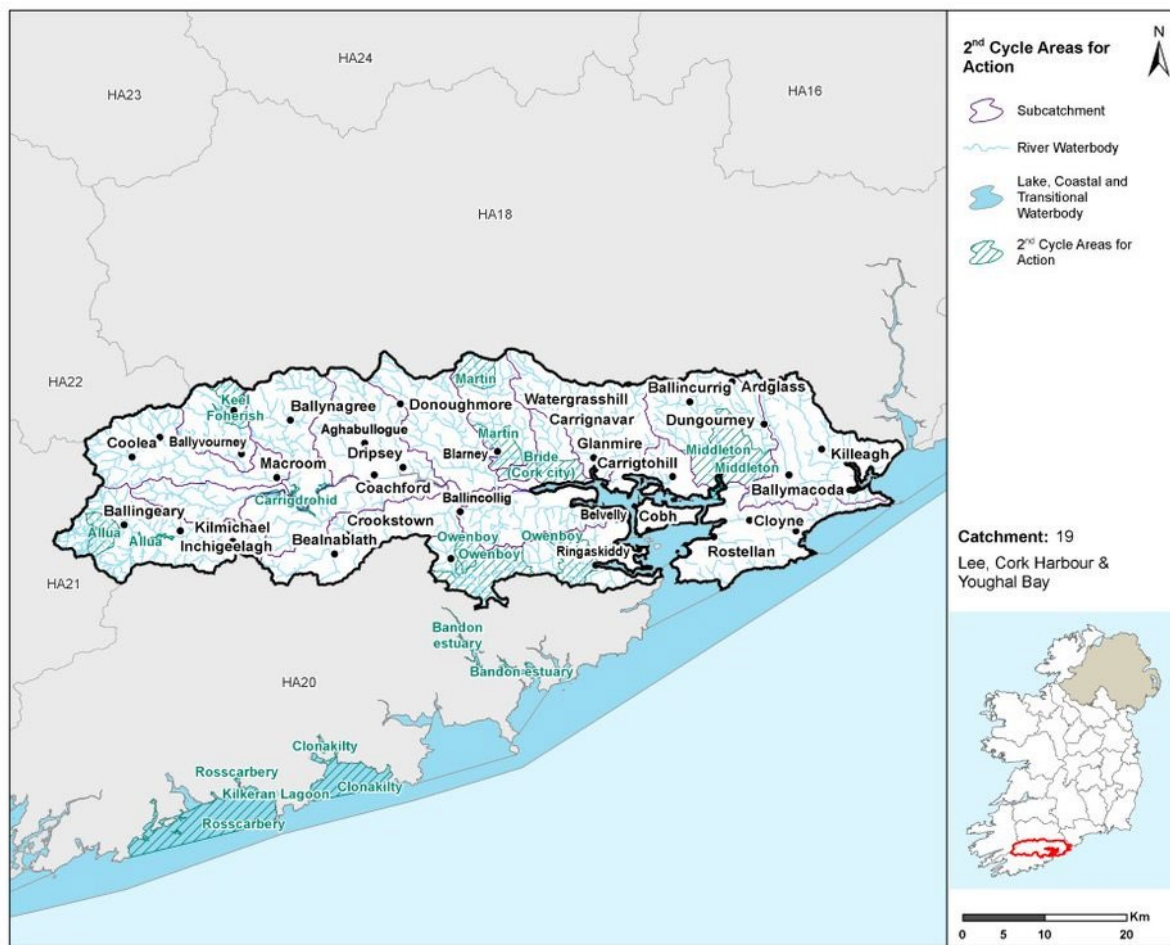


Figure 22: 2nd Cycle Areas for Action Locations

Table 7: 2nd Cycle Areas for Action

2 nd Cycle Area for Action	Number of Waterbodies	Sub-catchment	Local Authority	Reason for Selection
Allua	2	19_14	Cork	<ul style="list-style-type: none"> • Building on proposed improvements at Ballingeary WWTP. • Opportunity to examine how to address water quality issues arising from agricultural practices on steep sloping rivers. • Active community groups that mentioned Lough Allua during public consultations. • Heritage: pre-Christian and monastic sites. • One deteriorated water body. • Lough Allua is failing to meet its protected area objectives for salmonids.
Owenboy	3	19_15	Cork	<ul style="list-style-type: none"> • Building on existing work completed by Cork County Council. • Opportunity develop appropriate measures for dealing with diffuse agriculture. • Two deteriorated water bodies. • Headwaters to Owenboy estuary which is <i>At Risk</i>.

2 nd Cycle Area for Action	Number of Waterbodies	Sub-catchment	Local Authority	Reason for Selection
Martin	2	19_5	Cork	<ul style="list-style-type: none"> • Building on improvements as a result of the removal of pressures (completion of railway line improvement works) in the headwaters. • Headwaters and tributary to the main channel of the river Lee. • One deteriorated water body.
Bride (Cork city)	2	19_1	Cork	<ul style="list-style-type: none"> • Cork city council have completed work and have a good understanding of issues - potential easy wins. • Pilot project in urban diffuse issues • Invasive species present. • OPW flood relief scheme on the Bride.
Keel Foherish	2	19_4	Cork	<ul style="list-style-type: none"> • Multi agency approach between Forestry Service, Coillte and Cork County Council. • Potential to examine impacts from wind farms. • Two deteriorated water bodies. • One of the deteriorated water bodies is a High Ecological Status objective water body.
Carrigdrohid	1	19_3	Cork	<ul style="list-style-type: none"> • Heavily Modified Water Body - opportunity to examine ecological potential, as opposed to status. • Potential to tie in with EPA project that will examine nutrient release from lake sediments. • Opportunity to tie in with management plan that is currently being developed for the Gearagh. • Opportunity to address fish passage at the dam. • One deteriorated water body.
Midleton	3	19_13	Cork	<ul style="list-style-type: none"> • Potential pilot project to examine links between groundwater in a karst aquifer to the overlying streams. • Important to address intermittent phytoplankton blooms in the estuary. • Midleton area is flagged for significant development. • One deteriorated water body. • One water body (Owenacurra_040) is failing to meet protected area objectives for drinking water.

8.2 Status Change in 2nd Cycle Areas for Action

- ◆ For Cycle 3, of the 15 waterbodies in the 2nd Cycle Areas for Action, there are two waterbodies at Good Status (Foherish_020 & Keel_010), eight waterbodies at Moderate Status, three waterbodies at Poor Status (Dungourney_020, Martin_010 & Allua) and two waterbodies (Bride (Cork City)_010 & Bride (Cork City)_020) 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.⁷
- ◆ Of the 13 waterbodies within the 2nd Cycle Areas for Action which had status assigned, eight experienced no change in status between Cycle 2 and Cycle 3, four waterbodies (Keel_010, Owenboy (Cork)_020, Owenboy (Cork)_040 river water bodies & Carrigdrohid lake waterbody) experienced an improvement and one river waterbody (Owenboy (Cork)_010) was subject to deterioration in status (Figure 23). The four waterbody improvements were across Owenboy, Carrigdrohid and Keel Foherish Areas for Action. The waterbody which experienced decline was also in Owenboy Areas for Action.

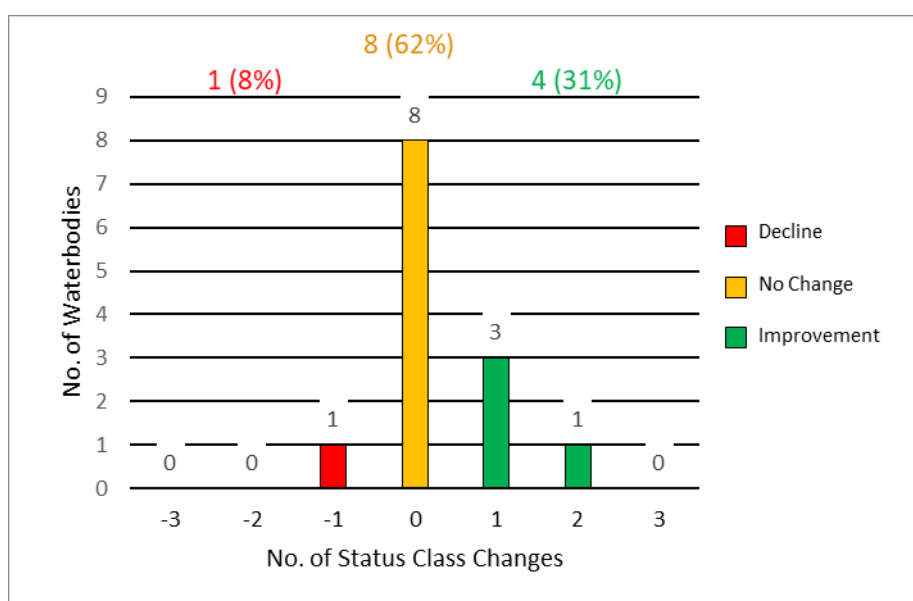


Figure 23: 2nd Cycle Area for Action Waterbody Status Class Changes between Cycle 2 and Cycle 3

8.3 Waterbody Risk in 2nd Cycle Areas for Action

- ◆ For the 15 waterbodies in the 2nd Cycle Areas for Action, 14 (93%) of these are currently *At Risk* and one (7%) is in *Review*.
- ◆ For the 12 river waterbodies, 11 (92%) are *At Risk* and one (8%) is in *Review*.

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.

- ◆ Both lake waterbodies (Carrigdrohi & Allua) are *At Risk*.
- ◆ Owenacurra Estuary is *At Risk*.
- ◆ The largest proportion of *At Risk* waterbodies are found in river waterbodies, accounting for 11 (79%) of 14 *At Risk* 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 no change in the number of *At Risk* waterbodies in 2nd Cycle AF Areas for Action between Cycle 2 and Cycle 3.

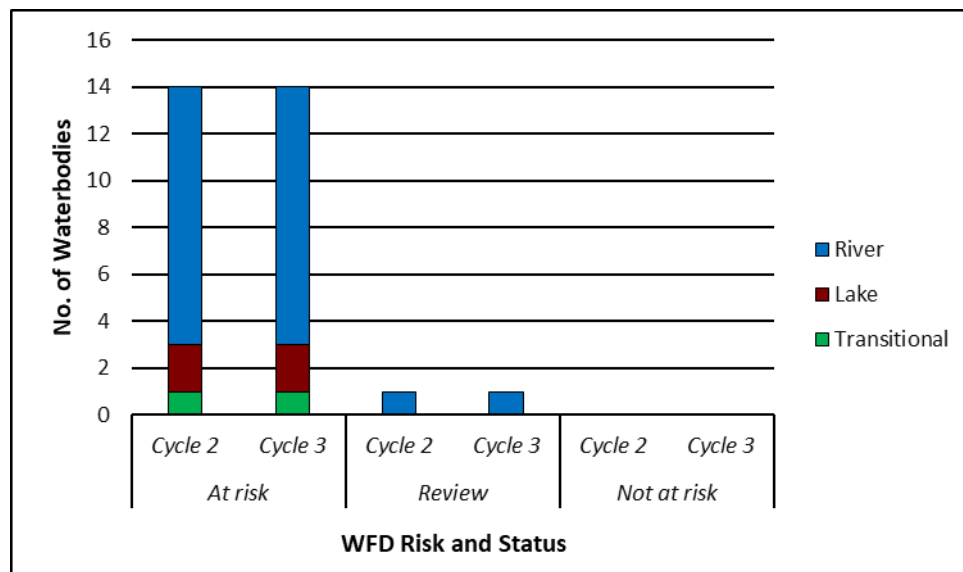
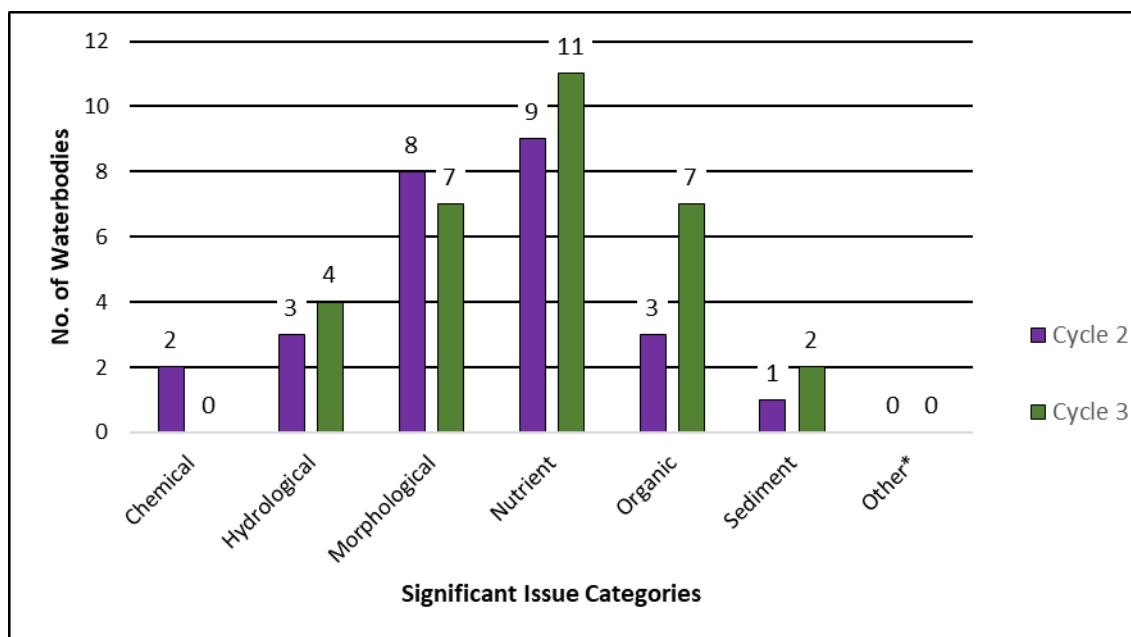


Figure 24: Number of waterbodies in each risk category in 2nd Cycle Areas for Action

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 11 waterbodies (Figure 25). This is followed by organic pollution and morphological issues which are both impacting seven waterbodies, hydrological issues impacting four waterbodies and sediment impacting two waterbodies.
- ◆ The number of 2nd Cycle Areas for Action waterbodies associated with each impact type, with the exception of chemical pollution have increased between Cycle 2 and Cycle 3. The increase in organic pollution from three to seven waterbodies is the most notable increase.

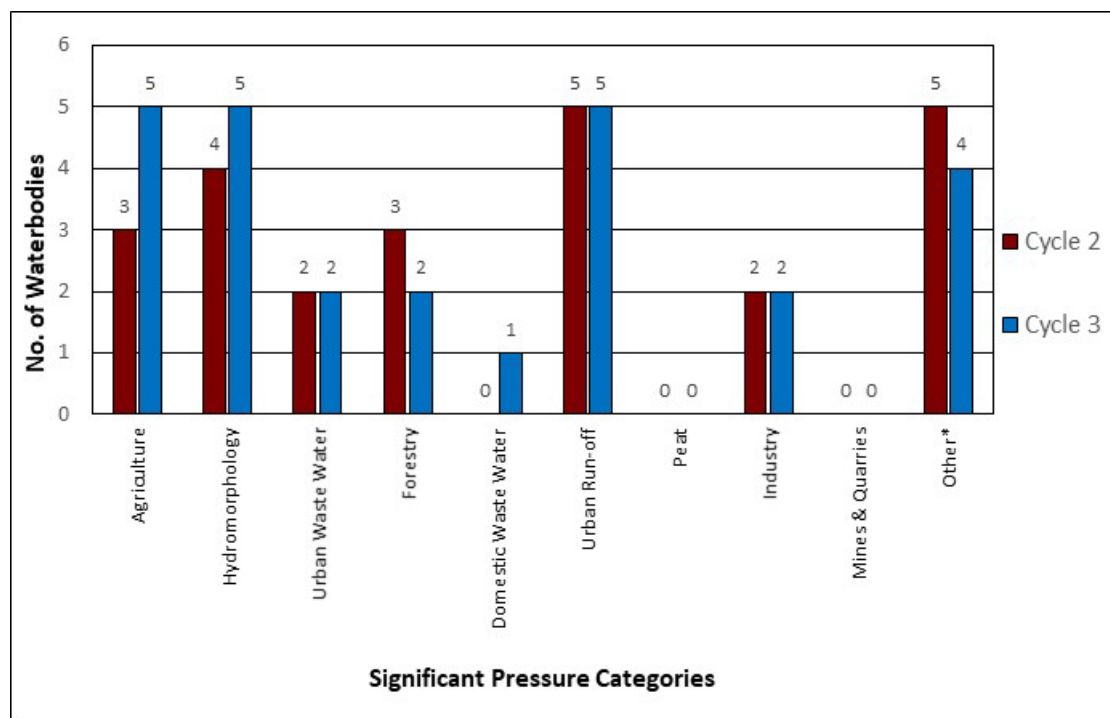


*Other - Acidification, saline intrusion, elevated temperature, litter, microbiological pollution and unknown impacts have all been grouped into the "Other" issues category for the purpose of this report

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 compared to three waterbodies impacted in Cycle 2.
 - Hydromorphology - five waterbodies impacted in Cycle 3 compared to four waterbodies impacted in Cycle 2.
 - Urban Run-off – five waterbodies remain impacted in Cycle 3.
 - Urban Waste Water – two waterbodies (Allua lake waterbody and Owenacurra Estuary transitional waterbody) remain impacted in Cycle 3
 - Forestry – two waterbodies (Foherish_020 river waterbody and Allua lake waterbody remain impacted in Cycle 3. Keel_010 is no longer impacted by forestry pressures in Cycle 3.
 - Domestic Waste Water – Owenboy (Cork)_010 is impacted in Cycle 3.
 - Industry - two waterbodies (Dungourney_020 & Owenacurra Estuary) remain impacted in Cycle 3.
 - Other – waterbodies impacted by pressures in the other category have reduced from five to four due to Keel_010 changing from *At Risk* to *Review* between Cycle 2 and Cycle 3. Three out of the four pressures are unknown, and the remaining pressure is in relation to illegal dumping in Martin_010 river waterbody.
- ◆ When comparing the significant pressures in the 2nd Cycle Areas for Action between Cycle 2 and 3 the main changes are in the number of waterbodies affected by agricultural pressures, increasing from three to five waterbodies impacted. The number of waterbodies impacted by hydromorphological pressures and domestic waste water pressures both increased by one (from four to five and from zero to one respectively). The number of waterbodies impacted by forestry pressures which decreased by one waterbody, with Keel_010 no longer *At Risk*.



*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 15 Areas for Action, comprising of 51 waterbodies, recommended for further characterisation and action in the catchment for the 3rd Cycle River Basin Management Plan.
- ◆ 26 of the 51 waterbodies in the 3rd Cycle Recommended Areas for Action are *At Risk*, 12 are in *Review* and 13 are *Not At Risk*. The 15 Recommended Areas for Action consist of two Areas for Protection and 13 Areas for Restoration.
- ◆ LAWPRO are the proposed lead organisation in 11 Recommended Areas for Action and NFGWS are the proposed lead in two Recommended Areas for Action (Farran & Kilcreden). Cork County Council are the proposed lead for Blarney Recommended Area for Action and East Ballyvergan Recommended Area for Action. The Recommended Areas for Action in the

catchment are listed in Table 8 and shown in Figure 27. The reason for selecting each waterbody in a Recommended Areas for Action is provided in Appendix 3.

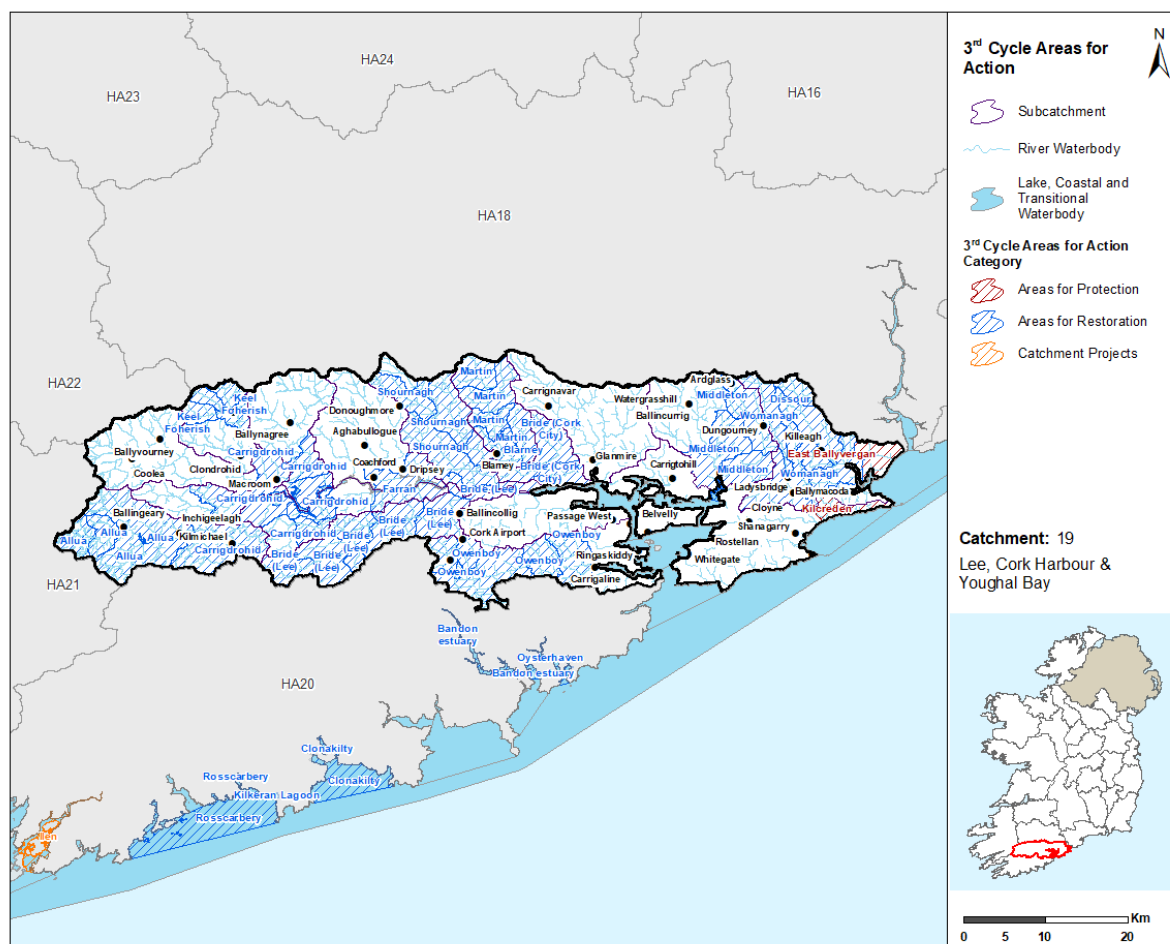


Figure 27: 3rd Cycle Recommended Areas for Action Locations

Table 8: 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
Owenboy	5	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Blarney	1	Restoration	LA Areas for Restoration Local Authorities	Cork County Council
Bride (Lee)	6	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Bride (Cork City)	3	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Carrigrohoid	7	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Dissour	2	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Middleton	4	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
East Ballyvergan	1	Protection	LA Areas for Protection Local Authorities	Cork County Council

3rd Cycle Recommended Areas for Action	Number of Waterbodies	Recommended Areas for Action Category	Recommended Areas for Action Sub-category	Lead Organisation
Keel Foherish	4	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Allua	4	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Farran	1	Restoration	Public Health Areas for Restoration NFGWS, IW, HSE, LAs, SFPA	NFGWS
Martin	4	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Womanagh	4	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Shournagh	4	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Kilcreden	1	Protection	Public Health Areas for Protection NFGWS, IW, HSE, LAs, SFPA	NFGWS

10 Catchment Summary

- Of the 92 river waterbodies, 32 are *At Risk* of not meeting their WFD objectives.
- All three lake waterbodies are *At Risk* of not meeting their WFD objectives.
- Of the 13 transitional waterbodies, eight are *At Risk* of not meeting their WFD objectives.
- Of the six Coastal waterbodies, two are *At Risk* of not meeting their WFD objectives.
- Four out of 22 groundwater bodies are *At Risk*.
- There has been an overall deterioration across the catchment with 49 waterbodies *At Risk* in Cycle 3 compared to 36 waterbodies *At Risk* in Cycle 2.
- The main significant issues are impacts from nutrient pollution, followed by morphological impacts, organic pollution and hydrological impacts.
- The main significant pressures are hydromorphological pressures, followed by Urban run-off, agriculture and urban waste water.
- The main impacts and pressures driving the change between Cycle 2 and Cycle 3 are increases in waterbodies impacted by hydromorphological pressures. This increase is likely to be associated with a stronger evidence base and increasing awareness of hydromorphology rather than new significant hydromorphological pressures since Cycle 2. Between Cycle 2 and Cycle 3 there was an increase in the number of waterbodies impacted by nutrient, morphological, organic, hydrological and sediment issues. There were also increases in the numbers of waterbodies affected by pressures associated with hydromorphology, urban run-off, agriculture urban waste water and domestic waste water.
- Overall, there is no change in the number of *At Risk* waterbodies in 2nd Cycle AFAs between Cycle 2 and Cycle 3.
- There are 15 3rd Cycle Recommended Areas for Action for Cycle 3. They comprise of 51 waterbodies with 26 waterbodies *At Risk*, 12 in *Review* and 13 *Not At Risk*.

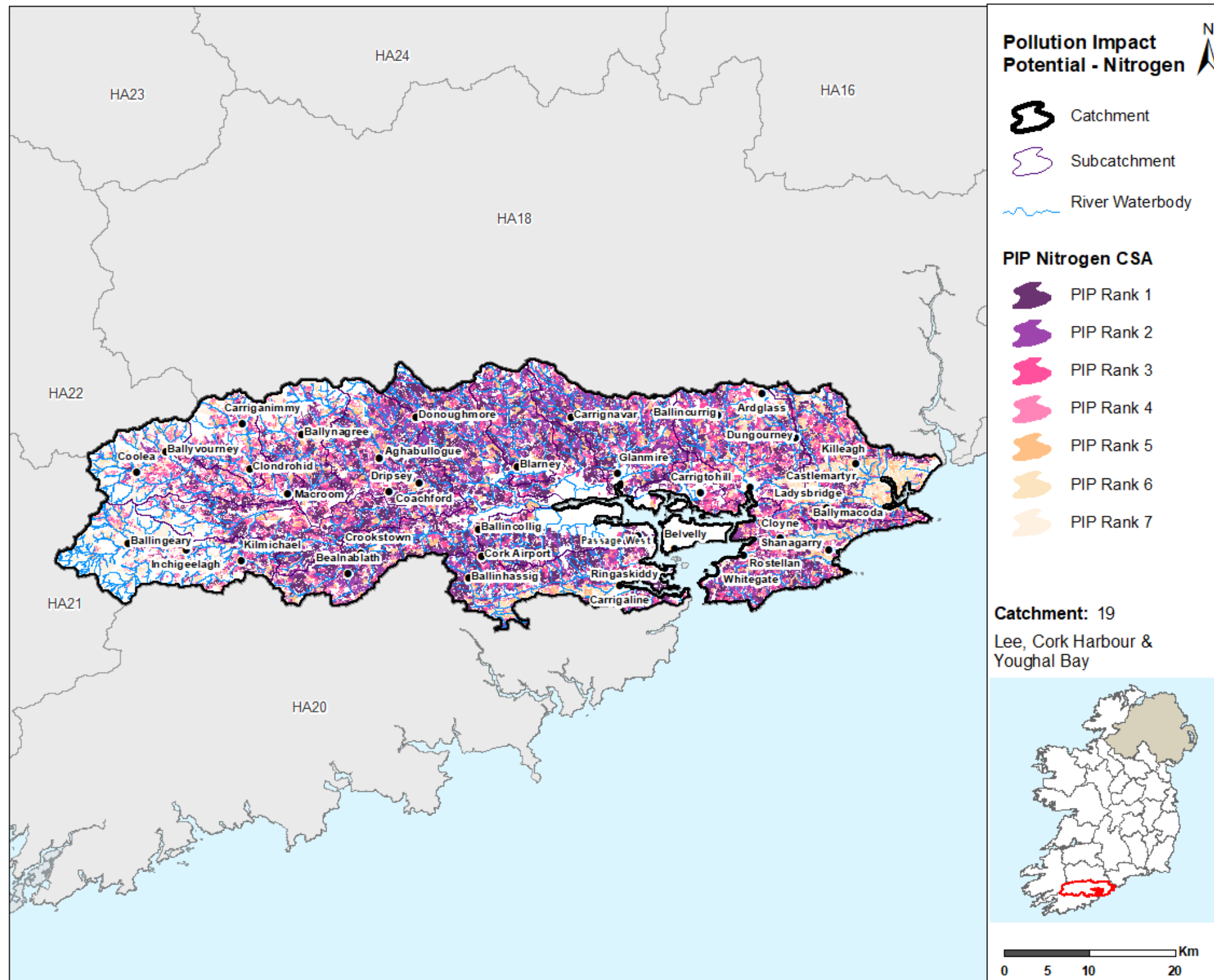
Appendix 1

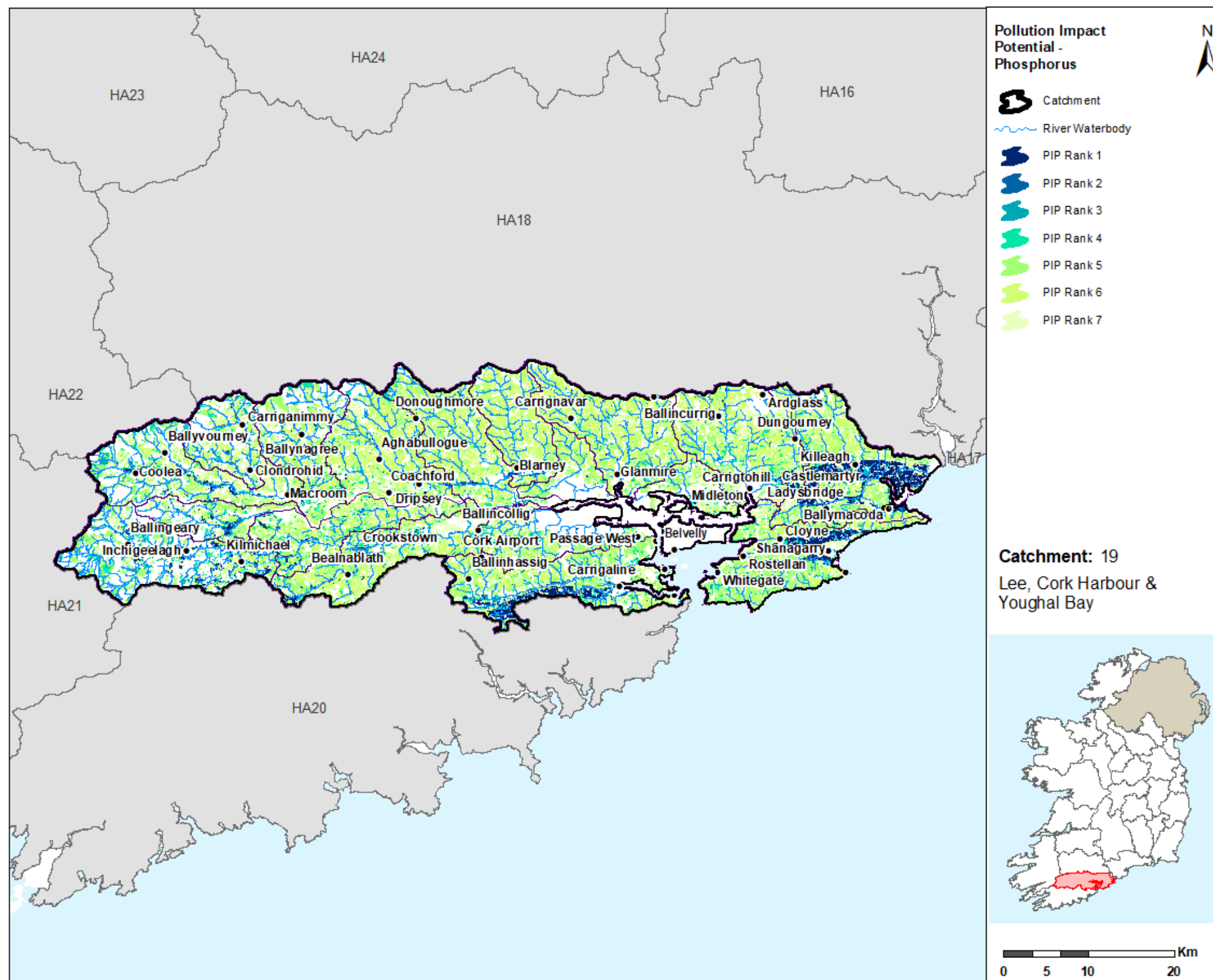
High ecological status objective waterbodies

Waterbody Name	Waterbody Type	Waterbody Code	Status 2013-2018
AWBOY_010	River	IE_SW_19A030200	Good
BRIDE (LEE)_030	River	IE_SW_19B040900	Good
BUTLERSTOWN_020	River	IE_SW_19B060500	High
DOUGLAS (SULLANE)_010	River	IE_SW_19D040700	High
DRIPSEY_020	River	IE_SW_19D060400	Good
FOHERISH_010	River	IE_SW_19F020100	Good
FOHERISH_020	River	IE_SW_19F020300	Good
FOHERISH_040	River	IE_SW_19F020600	High
LANEY_010	River	IE_SW_19L010100	High
LANEY_020	River	IE_SW_19L010200	High
LANEY_030	River	IE_SW_19L010400	High
LANEY_040	River	IE_SW_19L010500	Good
LEE (CORK)_040	River	IE_SW_19L030300	High
MARTIN_030	River	IE_SW_19M010400	Good
SHOURNAGH_020	River	IE_SW_19S010200	Good
SHOURNAGH_030	River	IE_SW_19S010300	Moderate
SHOURNAGH_040	River	IE_SW_19S010500	Moderate
SULLANE_010	River	IE_SW_19S020100	Good
SULLANE_020	River	IE_SW_19S020170	Good
SULLANE_030	River	IE_SW_19S020200	High
SULLANE_040	River	IE_SW_19S020300	Good
SULLANE_050	River	IE_SW_19S020400	High

Appendix 2

Pollution Impact Potential Mapping





Appendix 3

Summary information on all waterbodies in the Lee, Cork Harbour and Youghal Bay 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)
19_15	IE_SW_19A020300	AUGHNABOY (CORK)_010	River	Not at risk	Review	Good	Good	No		Owenboy	Headwaters. Expand PAA
19_7	IE_SW_19A030200	AWBOY_010	River	Not at risk	At risk	High	Good	Yes	Hymo		
19_12	IE_SW_19A200870	Ardnahinch_010	River	Review	Review	Unassigned	Unassigned	No			
19_12	IE_SW_19A220720	Ardra More_010	River	Not at risk	Not at risk	Unassigned	Unassigned	No			
19_5	IE_SW_19B020500	BLARNEY_010	River	Review	At risk	Good	Moderate	No	DWW, UWW	Blarney	Builds on existing work of CCC (Highly intensive dairy farming catchment. Some tillage. Free range poultry in upper part of catchment. The station is likely to be in the mixing zone for the WWTP which is likely to be the significant pressure). Upstream of Martin PAA. Review status waterbody failing to meet its WFD objectives.
19_9	IE_SW_19B040400	BRIDE (LEE)_010	River	Not at risk	Not at risk	Good	High	No		Bride (Lee)	Include under SC approach 19_9
19_9	IE_SW_19B040610	BRIDE (LEE)_020	River	At risk	Review	Moderate	Good	No		Bride (Lee)	Include under SC approach 19_9
19_9	IE_SW_19B040900	BRIDE (LEE)_030	River	Review	At risk	High	Good	Yes	Hymo	Bride (Lee)	Deteriorated HSO waterbody. 'Include under SC approach 19_9
19_9	IE_SW_19B041300	BRIDE (LEE)_040	River	At risk	At risk	Poor	Poor	No	DWW	Bride (Lee)	AR waterbody 'Include under SC approach 19_9
19_9	IE_SW_19B041600	BRIDE (LEE)_050	River	Not at risk	Review	High	Good	No		Bride (Lee)	Upstream and possibly impacting on AFA proposed for CCC (Lee 90) Cork City PWS. Possible impact on Cork Estuary.
19_11	IE_SW_19B060200	BUTLERSTOWN_010	River	At risk	At risk	Moderate	Moderate	No	UR		
19_11	IE_SW_19B060500	BUTLERSTOWN_020	River	Not at risk	Not at risk	High	High	Yes			
19_11	IE_SW_19B060800	BUTLERSTOWN_030	River	Not at risk	Not at risk	Good	Good	No			
19_1	IE_SW_19B140110	BRIDE (Cork City)_010	River	At risk	At risk	Unassigned	Unassigned	No	Hymo, UR	Bride (Cork City)	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete
19_1	IE_SW_19B140300	BRIDE (Cork City)_020	River	At risk	At risk	Unassigned	Unassigned	No	UR	Bride (Cork City)	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete
19_7	IE_SW_19C010200	CUSLOURA_010	River	Not at risk	Not at risk	Good	Good	No			
19_6	IE_SW_19C020500	CUMMER_010	River	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)
19_6	IE_SW_19C020800	CUMMER_020	River	Not at risk	Not at risk	Good	Good	No		Carrigdrohid	Expand PAA to include inputting waterbodies
19_17	IE_SW_19C120740	CURRAGHEEN (Cork City)_010	River	At risk	At risk	Unassigned	Unassigned	No	Other		
19_16	IE_SW_19D030200	DISSOUR_010	River	Not at risk	Not at risk	High	High	No		Dissour	Headwaters to Dissour 20, proposed AFA
19_16	IE_SW_19D030600	DISSOUR_020	River	Review	Review	High	Good	No		Dissour	Review status waterbody. Multiple complexes pressures including urban, agriculture and quarry/sandpit Delta Lady Project here
19_10	IE_SW_19D040700	DOUGLAS (SULLANE)_010	River	Not at risk	Not at risk	High	High	Yes			
19_18	IE_SW_19D060150	DRIPSEY_010	River	At risk	Not at risk	Poor	Good	No			
19_18	IE_SW_19D060400	DRIPSEY_020	River	Not at risk	At risk	High	Good	Yes	Hymo		
19_13	IE_SW_19D070500	DUNGOURNEY_010	River	Not at risk	Review	Good	Good	No		Middleton	groundwater abstraction sources proposed for inclusion as an Area for Action Expand PAA to include headwaters
19_13	IE_SW_19D070700	DUNGOURNEY_020	River	At risk	At risk	Poor	Poor	No	Ag, Ind	Middleton	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete
19_16	IE_SW_19E040700	East Ballyvergan_010	River	Review	Review	Unassigned	Unassigned	No		East Ballyvergan	River WB on western side of Youghal bay, adjoins 3 identified bathing waters, Youghal Front Strand, Claycastle, & Redbarn. Builds on existing work of CCC Groundwater abstraction sources proposed for inclusion as an Area for Action NPWS priority habitat/species
19_4	IE_SW_19F010300	FINNOW (FOHERISH)_010	River	Not at risk	Not at risk	Good	Good	No			
19_4	IE_SW_19F020100	FOHERISH_010	River	Not at risk	At risk	High	Good	Yes	Hymo	Keel Foherish	Deteriorated HES objective waterbody Expand PAA to include headwaters
19_4	IE_SW_19F020300	FOHERISH_020	River	At risk	At risk	Good	Good	Yes	For, Other	Keel Foherish	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete
19_4	IE_SW_19F020400	FOHERISH_030	River	Not at risk	Not at risk	Good	Good	No			
19_4	IE_SW_19F020600	FOHERISH_040	River	Not at risk	Not at risk	High	High	Yes			
19_12	IE_SW_19F110740	Farrannamanagh_010	River	Not at risk	Not at risk	Unassigned	Unassigned	No			
19_11	IE_SW_19G010200	GLASHABOY (LOUGH MAHON)_010	River	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)
19_11	IE_SW_19G010400	GLASHABOY (LOUGH MAHON)_020	River	Not at risk	Review	Good	Good	No			
19_11	IE_SW_19G010600	GLASHABOY (LOUGH MAHON)_030	River	Not at risk	Not at risk	High	Good	No			
19_4	IE_SW_19G030200	GARRANE (LEE)_010	River	Not at risk	Not at risk	Good	Good	No		Keel Foherish	Include under expanded PAA and SC approach for 19_4
19_17	IE_SW_19G040700	GLASHEEN (Cork City)_010	River	At risk	At risk	Unassigned	Unassigned	No	Other		
19_16	IE_SW_19G840560	Gortavadda_010	River	Review	Review	Unassigned	Unassigned	No			
19_1	IE_SW_19G880990	GLENNAMOUGHT TRIB BRIDE_010	River	Review	Review	Unassigned	Unassigned	No		Bride (Cork City)	Expand PAA to include inputting waterbody
19_15	IE_SW_19H050470	HILLTOWN_010	River	Review	Review	Unassigned	Unassigned	No			
19_4	IE_SW_19K020200	KEEL_010	River	At risk	Review	Poor	Good	No		Keel Foherish	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete
19_12	IE_SW_19K580980	KILLMACAHILL_010	River	Review	Review	Unassigned	Unassigned	No			
19_15	IE_SW_19K620850	KILNAGLERY_010	River	Review	Review	Unassigned	Unassigned	No			
19_12	IE_SW_19K630910	KNOCKNAMADDEREE_010	River	Review	Review	Unassigned	Unassigned	No			
19_7	IE_SW_19L010100	LANEY_010	River	Not at risk	Not at risk	High	High	Yes			
19_7	IE_SW_19L010200	LANEY_020	River	Not at risk	Not at risk	High	High	Yes			
19_7	IE_SW_19L010400	LANEY_030	River	Not at risk	Not at risk	High	High	Yes			
19_7	IE_SW_19L010500	LANEY_040	River	Not at risk	At risk	High	Good	Yes	Hymo	Carrigdrohid	Deteriorated HES objective waterbody Expand PAA to include inputting waterbodies
19_14	IE_SW_19L030040	LEE (CORK)_010	River	Not at risk	Not at risk	Good	High	No		Allua	Expand PAA to include inputting waterbody
19_14	IE_SW_19L030100	LEE (CORK)_020	River	At risk	At risk	Moderate	Moderate	No	Other	Allua	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete
19_14	IE_SW_19L030200	LEE (CORK)_030	River	Not at risk	Not at risk	Good	Good	No		Allua	Connects waterbodies identified for restoration/protection-expand PAA
19_14	IE_SW_19L030300	LEE (CORK)_040	River	Not at risk	Not at risk	High	High	Yes		Carrigdrohid	
19_3, 19_6	IE_SW_19L030360	LEE (CORK)_050	River	Not at risk	Not at risk	Unassigned	Unassigned	No		Carrigdrohid	Expand PAA to include inputting waterbodies
19_6, 19_7	IE_SW_19L030400	LEE (CORK)_060	River	Not at risk	Not at risk	Unassigned	Unassigned	No		Carrigdrohid	Expand PAA to include inputting waterbodies
19_18, 19_6	IE_SW_19L030500	LEE (CORK)_070	River	Not at risk	Not at risk	Unassigned	Unassigned	No			
19_18, 19_6	IE_SW_19L030600	LEE (CORK)_080	River	At risk	At risk	Moderate	Moderate	No	Hymo	Farran	Groundwater abstraction sources proposed for inclusion as an Area for Action
19_8, 19_9	IE_SW_19L030800	LEE (CORK)_090	River	Review	At risk	Moderate	Moderate	No	Other	Bride (Lee)	Complex pressures At Risk Waterbody

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)
19_5	IE_SW_19M010200	MARTIN_010	River	At risk	At risk	Poor	Poor	No	Hymo, Other	Martin	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete
19_5	IE_SW_19M010300	MARTIN_020	River	Not at risk	Not at risk	Good	Good	No		Martin	Upstream of deteriorated HSO waterbody Active community group Expand PAA to include inputting waterbodies
19_5	IE_SW_19M010400	MARTIN_030	River	Not at risk	At risk	High	Good	Yes	Hymo	Martin	Deteriorated HSO waterbody Expand PAA to include inputting waterbodies Active community group
19_5	IE_SW_19M010600	MARTIN_040	River	At risk	At risk	Moderate	Moderate	No	UR	Martin	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete
19_16	IE_SW_19M290850	MOANLAHAN_010	River	Review	Review	Unassigned	Unassigned	No		Womanagh	Inputting waterbody to Womanagh 30. Include in Womanagh AFA
19_17	IE_SW_19M300900	MONEYGURNEY_010	River	Review	Review	Unassigned	Unassigned	No			
19_15	IE_SW_19O010400	OWENBOY (CORK)_010	River	Review	At risk	Good	Moderate	No	Ag, DWW	Owenboy	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete
19_15	IE_SW_19O010800	OWENBOY (CORK)_020	River	At risk	At risk	Poor	Moderate	No	Ag, Hymo	Owenboy	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete
19_15	IE_SW_19O011000	OWENBOY (CORK)_030	River	Review	Review	Unassigned	Unassigned	No		Owenboy	Connects waterbodies identified for restoration/protection-expand PAA
19_15	IE_SW_19O011400	OWENBOY (CORK)_040	River	At risk	At risk	Poor	Moderate	No	Ag, Hymo	Owenboy	Existing PAA waterbody. FC not yet commence so ASSAP work programme won't be complete
19_13	IE_SW_19O030050	OWENNACURRA_010	River	Not at risk	Not at risk	High	High	No			
19_13	IE_SW_19O030220	OWENNACURRA_020	River	Not at risk	Not at risk	High	High	No			
19_13	IE_SW_19O030400	OWENNACURRA_030	River	Not at risk	Not at risk	Good	Good	No			
19_13	IE_SW_19O030500	OWENNACURRA_040	River	At risk	At risk	Moderate	Moderate	No	UR	Middleton	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete Proposed by IW for Midleton DW supply
19_8	IE_SW_19R450050	Rathcoola_010	River	At risk	Not at risk	Moderate	Good	No			
19_8	IE_SW_19S010100	SHOURNAGH_010	River	Not at risk	Not at risk	Good	Good	No		Shournagh	Headwaters to HSO waterbodies. Include under SC approach for 19_8

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)
19_8	IE_SW_19S010200	SHOURNAGH_020	River	Not at risk	At risk	High	Good	Yes	Hymo	Shournagh	Deteriorated HSO waterbody Groundwater abstraction sources proposed for inclusion as an Area for Action Include under SC appraoch for 19_8
19_8	IE_SW_19S010300	SHOURNAGH_030	River	Not at risk	At risk	High	Moderate	Yes	DWW, UR, UWW	Shournagh	Deteriorated HSO waterbody Multitple pressures
19_8	IE_SW_19S010500	SHOURNAGH_040	River	Not at risk	At risk	High	Moderate	Yes	Ag, DWW, UR	Shournagh	Deteriorated HSO waterbody. Builds on existing work of CCC Multiple pressures on this waterbody Lower part of catchment is in Cork City area.
19_10	IE_SW_19S020100	SULLANE_010	River	Not at risk	At risk	High	Good	Yes	Hymo		
19_10	IE_SW_19S020170	SULLANE_020	River	Not at risk	At risk	High	Good	Yes	Hymo		
19_10	IE_SW_19S020200	SULLANE_030	River	Not at risk	Not at risk	High	High	Yes			
19_10	IE_SW_19S020300	SULLANE_040	River	At risk	At risk	Good	Good	Yes	Other		
19_10	IE_SW_19S020400	SULLANE_050	River	Not at risk	Not at risk	High	High	Yes			
19_10	IE_SW_19S020480	SULLANE_060	River	Not at risk	Not at risk	Good	Good	No		Carrigdrohid	Expand Carrigdrohid PAA to include inputting waterbodies EPA Pesticide Act and Watch list - Watch
19_12	IE_SW_19S270790	SHANAGARRY_010	River	Review	Review	Unassigned	Unassigned	No			
19_12	IE_SW_19S290720	SCHOOLGARDENS_010	River	Not at risk	Not at risk	Unassigned	Unassigned	No		Kilcreden	Groundwater abstraction sources proposed for inclusion as an Area for Action
19_13	IE_SW_19T010100	TEMPLEBODAN_010	River	Not at risk	Not at risk	Good	High	No			
19_3	IE_SW_19T020700	TOON_010	River	Not at risk	Not at risk	Good	Good	No			
19_17	IE_SW_19T050890	TWO POT (Cork City)_010	River	At risk	At risk	Unassigned	Unassigned	No	Other		
19_2	IE_SW_19T250870	Tibbotstown_010	River	Review	Review	Unassigned	Unassigned	No			
19_16	IE_SW_19W011000	WOMANAGH_010	River	At risk	At risk	Moderate	Moderate	No	Ag, Hymo, Ind, Other	Womanagh	Headwaters to Womanagh 30.
19_16	IE_SW_19W011300	WOMANAGH_020	River	Review	Review	Good	Good	No		Womanagh	Inoutting waterbody to Womanagh 30. Include in Womanagh AFA
19_16	IE_SW_19W011400	WOMANAGH_030	River	Review	Review	Unassigned	Unassigned	No		Womanagh	Elevated ammonia. Possible impact on Youghal Bay. NPWS priority habitat/species Groundwater abstraction sources proposed for inclusion as an Area for Action
19_18, 19_6, 19_7	IE_SW_19_138	Inniscarra	Lake	At risk	At risk	Moderate	Moderate	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)
19_3, 19_6, 19_7	IE_SW_19_139	Carrigdrohid	Lake	At risk	At risk	Poor	Moderate	No	Hymo, Other	Carrigdrohid	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete
19_14	IE_SW_19_4	Allua	Lake	At risk	At risk	Poor	Poor	No	Ag, For, UWW	Allua	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete
17_5, 19_12, 20_1, 20_11, 20_13, 20_14, 20_15, 20_3, 20_4	IE_SW_010_0000	Western Celtic Sea (HAS 18;19;20)	Coastal	Not at risk	Not at risk	Unassigned	Unassigned	No			
17_5, 18_27, 18_8, 19_12, 19_16	IE_SW_020_0000	Youghal Bay	Coastal	At risk	At risk	Good	Moderate	No	Ag		
19_12	IE_SW_040_0000	Ballycotton Bay	Coastal	Not at risk	Not at risk	Unassigned	Unassigned	No			
19_12, 19_15, 20_14	IE_SW_050_0000	Outer Cork Harbour	Coastal	Review	Not at risk	Good	Good	No			
19_12, 19_15, 19_2	IE_SW_060_0000	Cork Harbour	Coastal	Review	At risk	Good	Moderate	No	UR, UWW		
19_15	IE_SW_060_1000	Raffeen Lake, Shanbally	Coastal	Review	Review	Unassigned	Unassigned	No			
19_16	IE_SW_030_0100	Womanagh Estuary	Transitional	Review	Review	Unassigned	Unassigned	No			
19_12	IE_SW_060_0100	Rostellan Lake	Transitional	Review	Review	Unassigned	Unassigned	No			
19_2	IE_SW_060_0200	Cuskinny Lake	Transitional	Review	Review	Unassigned	Bad	No			
19_12, 19_2	IE_SW_060_0300	North Channel Great Island	Transitional	Review	At risk	Good	Moderate	No	Ag		
19_12, 19_13, 19_2	IE_SW_060_0400	Owenacurra Estuary	Transitional	At risk	At risk	Moderate	Moderate	No	Ind, UR, UWW	Middleton	Existing PAA waterbody. FC not yet commenced so ASSAP work programme won't be complete
19_2	IE_SW_060_0600	Slatty Bridge, Fota Island	Transitional	Review	Review	Unassigned	Unassigned	No			
19_2	IE_SW_060_0700	Lough Mahon (Harper's Island)	Transitional	At risk	At risk	Moderate	Moderate	No	UR, UWW		
19_1, 19_11, 19_15, 19_17, 19_2	IE_SW_060_0750	Lough Mahon	Transitional	At risk	At risk	Moderate	Moderate	No	UWW		
19_11	IE_SW_060_0800	Glashaboy Estuary	Transitional	At risk	At risk	Poor	Good	No	Ag, UR		
19_1, 19_17	IE_SW_060_0900	Lee (Cork) Estuary Lower	Transitional	At risk	At risk	Moderate	Moderate	No	UR, UWW		
19_1, 19_17, 19_8, 19_9	IE_SW_060_0950	Lee (Cork) Estuary Upper	Transitional	At risk	At risk	Moderate	Moderate	No	UR, UWW		
19_15	IE_SW_060_1100	Lough Beg / Curraghbinny	Transitional	Review	Review	Unassigned	Unassigned	No			
19_15	IE_SW_060_1200	Owenboy Estuary	Transitional	At risk	At risk	Unassigned	Unassigned	No	Ag		
19_1, 19_11, 19_17, 19_8, 19_9	IE_SW_G_002	Ballincollig	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)
18_11, 18_19, 18_23, 18_25, 18_7, 18_8, 19_1, 19_10, 19_11, 19_13, 19_14, 19_15, 19_16, 19_17, 19_18, 19_2, 19_3, 19_5, 19_6, 19_7, 19_8, 19_9, 20_10, 20_13, 20_14, 20_5	IE_SW_G_004	Ballinhassig East	Groundwater	Review	At risk	Good	Good	No	Other		
18_4, 18_7, 18_9, 19_10, 19_14, 19_18, 19_3, 19_4, 19_6, 19_7, 19_9, 20_10, 20_6, 21_19, 21_7, 22_8	IE_SW_G_005	Ballinhassig West	Groundwater	Not at risk	Not at risk	Good	Good	No			
19_15, 19_17	IE_SW_G_009	Waste Facility (W0023-01)	Groundwater	Not at risk	Not at risk	Good	Good	No			
19_10, 19_14, 20_17, 20_3, 20_6, 20_7, 21_1, 21_10, 21_11, 21_12, 21_13, 21_14, 21_15, 21_16, 21_17, 21_18, 21_19, 21_2, 21_20, 21_3, 21_4, 21_5, 21_6, 21_7, 21_8, 21_9, 22_10, 22_11, 22_13, 22_14, 22_6, 22_7, 22_8	IE_SW_G_019	Beara Sneem	Groundwater	Not at risk	Not at risk	Good	Good	No			
18_12, 18_9, 19_10, 19_4, 21_1, 21_10, 21_12, 21_13, 21_4, 21_5, 21_7, 22_10, 22_11, 22_12, 22_13, 22_14, 22_16, 22_3, 22_6, 22_7, 22_8	IE_SW_G_022	Cahersiveen	Groundwater	Not at risk	Review	Good	Good	No			
19_12	IE_SW_G_028	Cloyne	Groundwater	Review	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)
17_5, 17_6, 18_10, 18_11, 18_12, 18_14, 18_15, 18_19, 18_21, 18_23, 18_25, 18_27, 18_28, 18_4, 18_5, 18_7, 18_8, 18_9, 19_11, 19_13, 19_16, 19_18, 19_4, 19_5, 19_7, 19_8, 22_16, 22_8	IE_SW_G_037	Glenville	Groundwater	Review	At risk	Good	Good	No	Other		
19_12, 19_16	IE_SW_G_045	Knockadoon East	Groundwater	Review	Not at risk	Good	Good	No			
19_2	IE_SW_G_046	Knockadoon West	Groundwater	Review	Not at risk	Good	Good	No			
18_8, 19_12, 19_13, 19_16, 19_2	IE_SW_G_058	Midleton	Groundwater	Review	Review	Good	Good	No			
19_15	IE_SW_G_072	Ringaskiddy	Groundwater	Review	Not at risk	Good	Good	No			
19_12	IE_SW_G_079	Whitegate	Groundwater	Review	Not at risk	Good	Good	No			
19_15	IE_SW_G_083	Haulbowline Island	Groundwater	Review	Not at risk	Good	Good	No			
19_14, 19_15, 19_9, 20_10, 20_12, 20_13, 20_14, 20_2, 20_4, 20_5, 20_6, 20_7, 20_8, 20_9, 21_19, 21_20	IE_SW_G_086	Bandon	Groundwater	Review	Review	Good	Good	No			
19_15, 20_5	IE_SW_G_087	Brinny Gravels East	Groundwater	Review	Review	Good	Good	No			
19_15, 20_5	IE_SW_G_088	Brinny Gravels West	Groundwater	Review	Review	Good	Good	No			
19_2	IE_SW_G_089	Industrial Facility (P0016-02)	Groundwater	Not at risk	Not at risk	Good	Good	No			
19_2	IE_SW_G_090	Littleisland	Groundwater	Review	Not at risk	Good	Good	No			
19_17	IE_SW_G_091	Waste Facility (W0012-03)	Groundwater	At risk	At risk	Poor	Poor	No	Other		
19_2	IE_SW_G_092	Industrial Facility (P0028-01)	Groundwater	At risk	Not at risk	Poor	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)
19_1, 19_17, 19_8, 19_9	IE_SW_G_094	Lee Valley Gravels	Groundwater	At risk	At risk	Good	Good	No	DWW		

Ag: Agriculture

M+Q: Mines and Quarries

DWW: Domestic Waste Water

Peat: Peat Drainage and Extraction

For: Forestry

UR: Urban Run-off

Hymo: Hydromorphology

UWW: Urban Waste Water

Ind: Industry

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