3rd Cycle Draft
Upper Shannon Catchment Report
(HA 26C)

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

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

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

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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 Upper Shannon 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 Upper Shannon covers an area of 1,500km² which is characterised by karstified lowland areas, including much of the western half of the catchment and the area underlying the main Shannon channel north of Lough Ree. The upland areas in the catchment are underlain variously by sandstones and metamorphic rocks. Surface water – groundwater interaction is highly developed in the karst areas of the catchment (Figure 1).

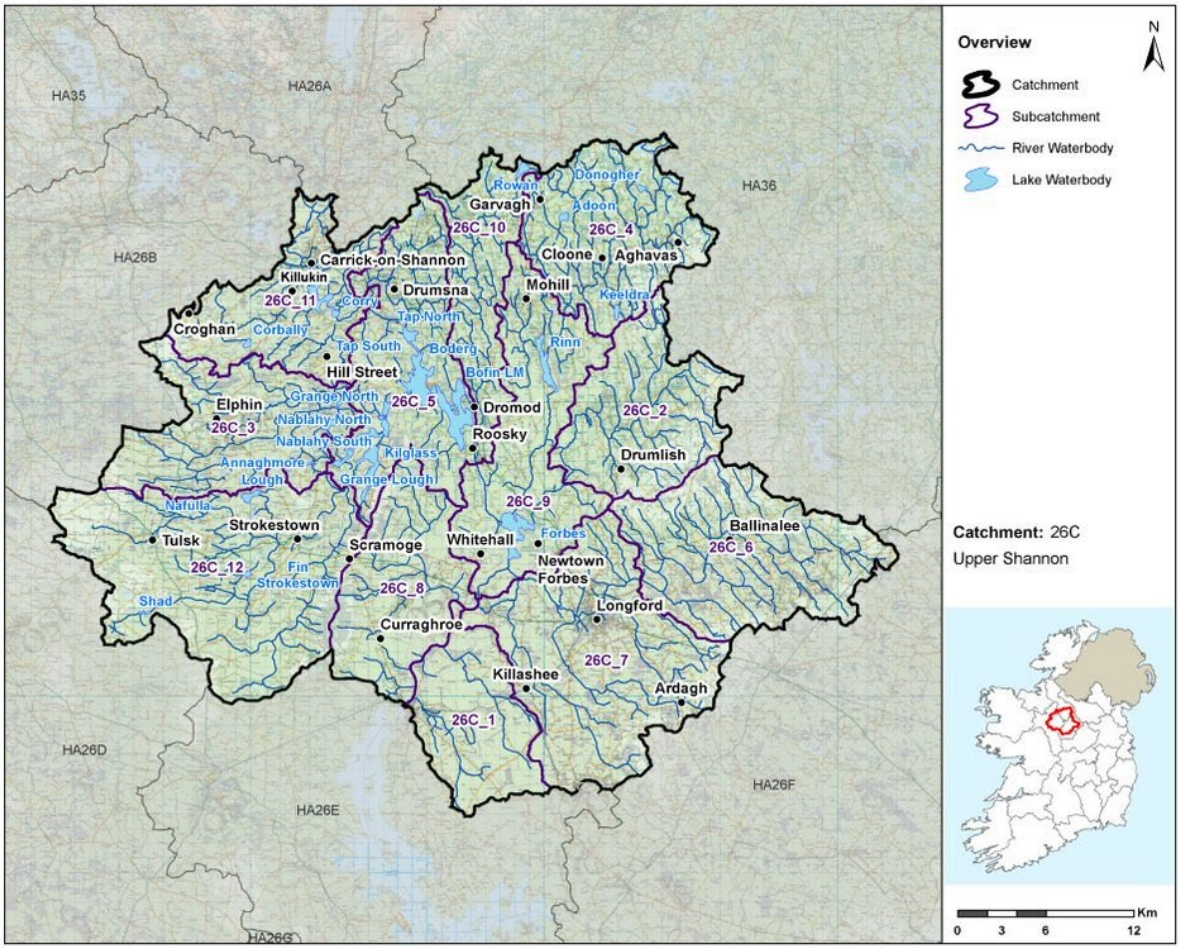


Figure 1: Overview of subcatchments in the Upper Shannon catchment

The Upper Shannon catchment is divided into 12 subcatchments (Figure 1) with 59 river waterbodies[1], 23 lake waterbodies and 19 groundwater bodies (Figure 2).

[1] one of these waterbodies is an artificial waterbody, the Royal Canal Main LineA (Upper Shannon C).

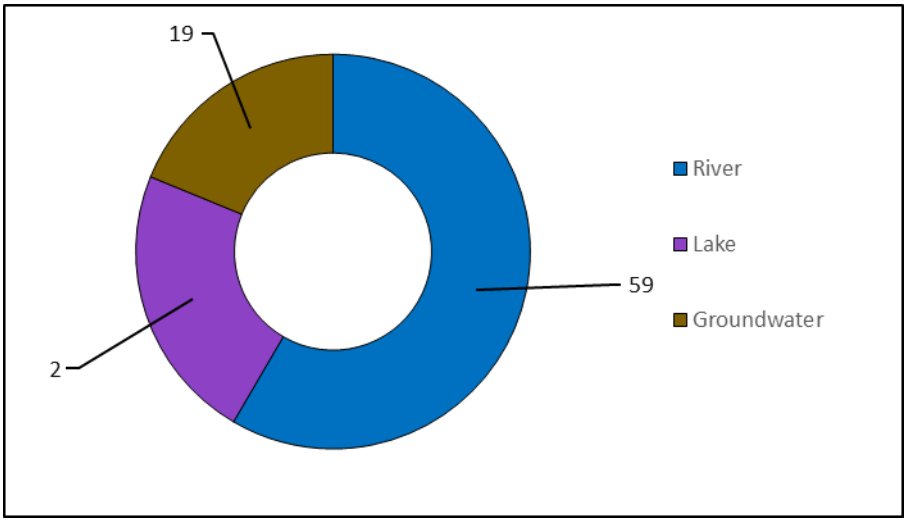


Figure 2: Waterbody types and numbers in the Upper Shannon Catchment.

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 is one waterbody achieving High Status, 42 achieving Good Status, 18 achieving Moderate Status, 16 achieving Poor Status and one waterbody is achieving Bad Status. There are 23 unassigned waterbodies Cycle 3. All waterbodies must achieve at least Good Ecological status.

- There have been reductions of one waterbody achieving Good Status, four waterbodies (all lake waterbodies) achieving Moderate Status between Cycle 2 and Cycle 3. There have been increases in five waterbodies (four river waterbodies and one lake waterbody) achieving Poor Status and one lake waterbody achieving Bad Status (Figure 3 & Table 1). There is one less unassigned waterbody in Cycle 3.

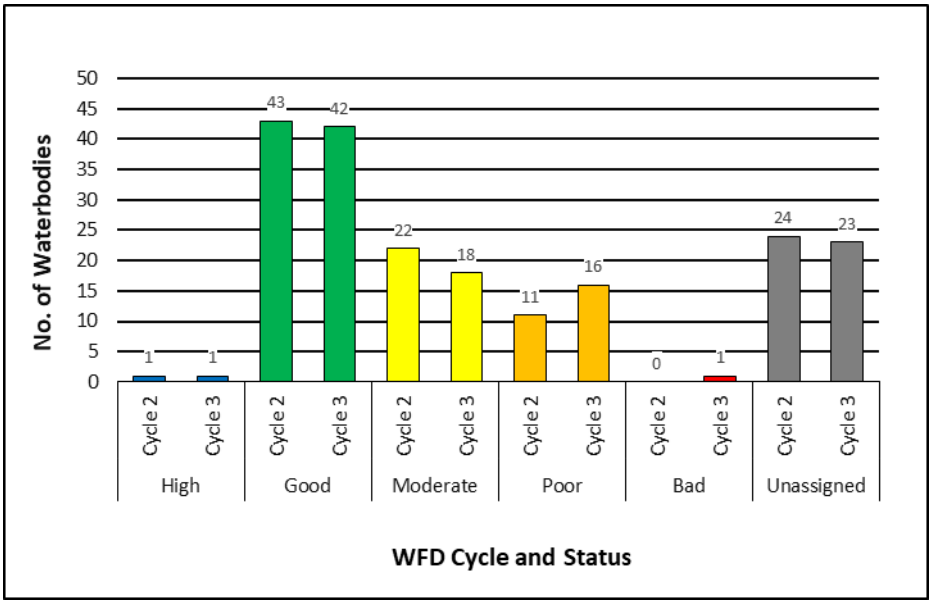


Figure 3: Waterbody Status Breakdown (All waterbodies)

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	1	1	0	0	0	0	0	0	0	0	**1**	**1**
Good	23	19	1	4	0	0	0	0	19	19	**43**	**42**
Moderate	15	15	7	3	0	0	0	0	0	0	**22**	**18**
Poor	11	15	0	1	0	0	0	0	0	0	**11**	**16**
Bad	0	0	0	1	0	0	0	0	0	0	**0**	**1**
Un-assigned	9	9	15	14	0	0	0	0	0	0	**24**	**23**
Total	59	59	23	23	0	0	0	0	19	19	**101**	**101**

- 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, six (8%) waterbodies have improved in status, 59 (77%) waterbodies have remained unchanged and 12 (16%) waterbodies have declined in status.[2]

- There is an overall decline in the status of six waterbodies across the catchment since the Cycle 2 assessment.

[2] 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.

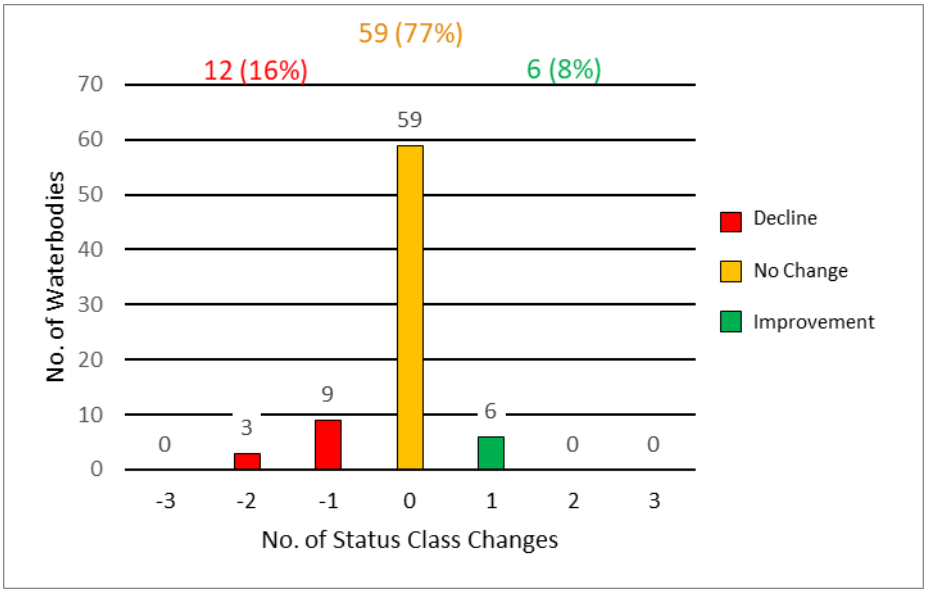


Figure 4: Status Class Changes between Cycle 2 and Cycle 3

2.2 Protected Areas

2.2.1 Drinking Water

- There are six 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*.

- One lake waterbody in the catchment did not meet the DWPA objective in 2019:
  - Forbes (IE_SH_26_723) lake waterbody is the source for the Longford Central (2000PUB1010) public supply which had pesticide exceedances.

- For more detailed information please see the EPA reports on drinking water quality in 2019 for Public Supplies[3] and Private Supplies[4].

2.2.2 Bathing Waters

- There is one lake bathing water in the catchment identified under the Bathing Water Regulations 2008.

- The Keeldra Lough Bathing Water had an Excellent classification for 2020.

- For more detailed information please see the EPA report on bathing water quality in 2020[5].

2.2.3 Shellfish Areas

- There are no designated shellfish areas in the catchment.

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

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

[5] 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.

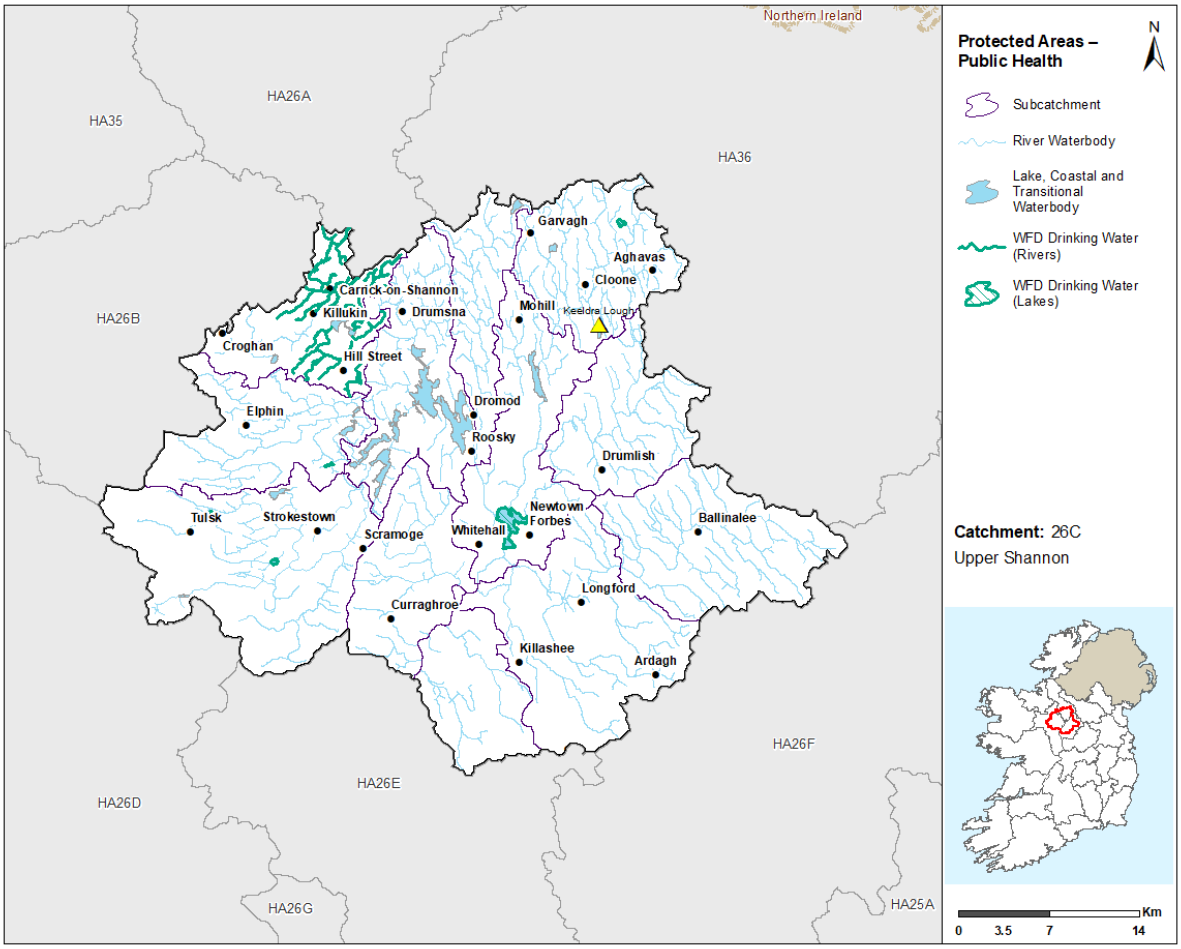


Figure 5: Protected Areas – Public Health

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 eight 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 inTable 2 below, information at a waterbody level can be viewed at Catchments.ie.[6]

Table 2: Natura 2000 Network Assessment Summary

Water Body Type	Total No.	Meeting the Requirements	Did not meet the Requirements	Unknown*
Rivers	3	0	2	1
Lakes	2	1	1	0

**As the waterbody status was unassigned.*

- 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 in the catchment are illustrated in Figure 6.

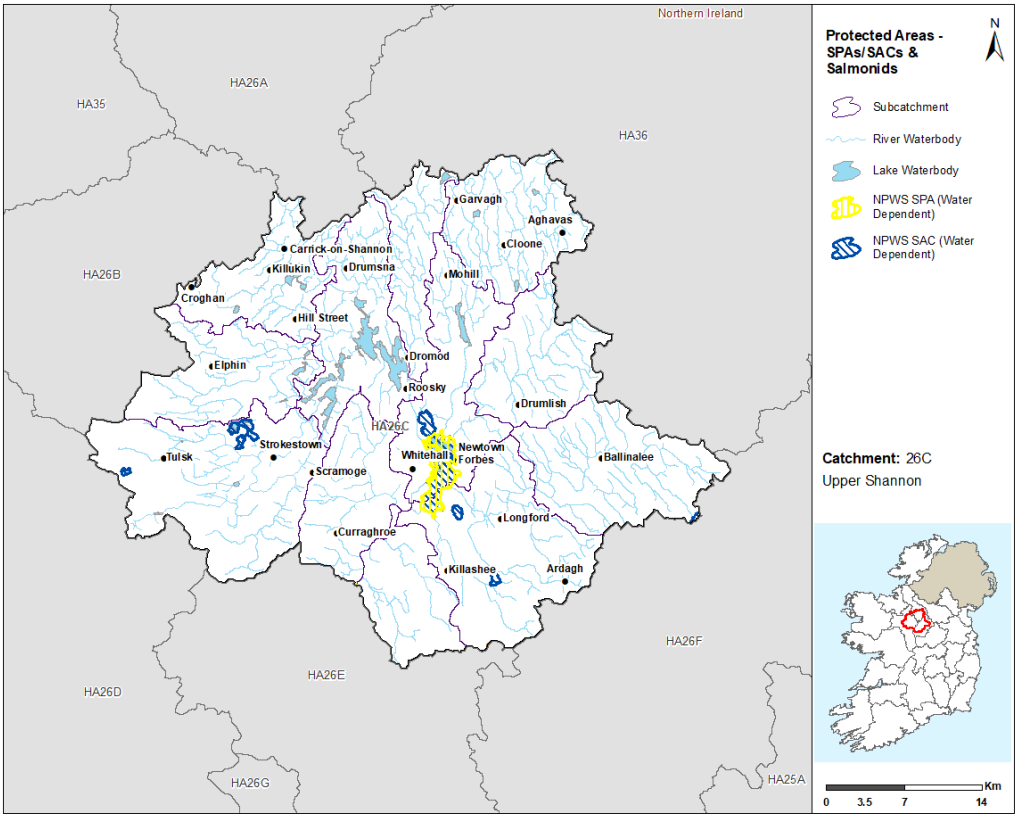


Figure 6: Water Dependent SPAs / SACs and Salmonid Waters

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

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 three NSAs in the catchment and these are downstream of the Longford urban wastewater agglomeration. The list of NSAs, associated agglomerations and intersecting water bodies are provided in Table 3.

- NSA objectives are being met in all three NSAs in the catchment.

Table 3: Nutrient sensitive areas in the catchment

Nutrient Sensitive Area	Agglomeration		Water body		Objective met?		Comment
	Name	Code	Name	Code	Yes	No	
Camlin River (060 & 070)	Longford	D0060-01	Camlin_060	IE_SH_26C010900	✓		Tertiary Treatment in place
			Camlin_070	IE_SH_26C011000			
Shannon Upper (080 - 100)	Longford	D0060-01	Shannon (Upper)_080	IE_SH_26S021510	✓		Tertiary Treatment in place
			Shannon (Upper)_090	IE_SH_26S021530			
			Shannon (Upper)_100	IE_SH_26S021600			
Lough Ree	Longford	D0060-01	Ree	IE_SH_26_750a	✓		Tertiary Treatment in place

2.3 Heavily Modified Waterbodies

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

- In total, there is one artificial waterbody in the Upper Shannon Catchment, Royal Canal Main Line (Upper Shannon C).

- The artificial waterbody is currently at Good Status. Prior to Cycle 3, the waterbody was at Good Status in Cycle 2, therefore, no change in status has been observed over between Cycle 2 and Cycle 3.

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 101 waterbodies in the Upper Shannon Catchment and 38 (38%) are currently *At Risk*, 23 (23%) in *Review* and 40 (40%) are *Not At Risk*.

3.2 Surface Waters

- For the 59 rivers waterbodies, 32 (54%) are *At Risk*, seven (12%) are in *Review* and 20 (34%) are *Not At Risk*.

- For the 23 lake waterbodies, five (22%) are *At Risk*, 14 (61%) are in *Review* and four (17%) are *Not At Risk.* Rinn, Forbes, Rowan, Bofin LM and Boderg are the lake waterbodies *At Risk.*

- The largest proportion of *At Risk* waterbodies are found in river waterbodies, accounting for 32 (84%) of 38 *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 three *At Risk* waterbodies, four *Not At Risk* waterbodies and a reduction of six *Review* waterbodies between Cycle 2 and Cycle 3. Royal Canal Main Line (Upper Shannon C) artificial waterbody that did not have risk assigned in Cycle 2 and is considered *Not At Risk* in Cycle 3.

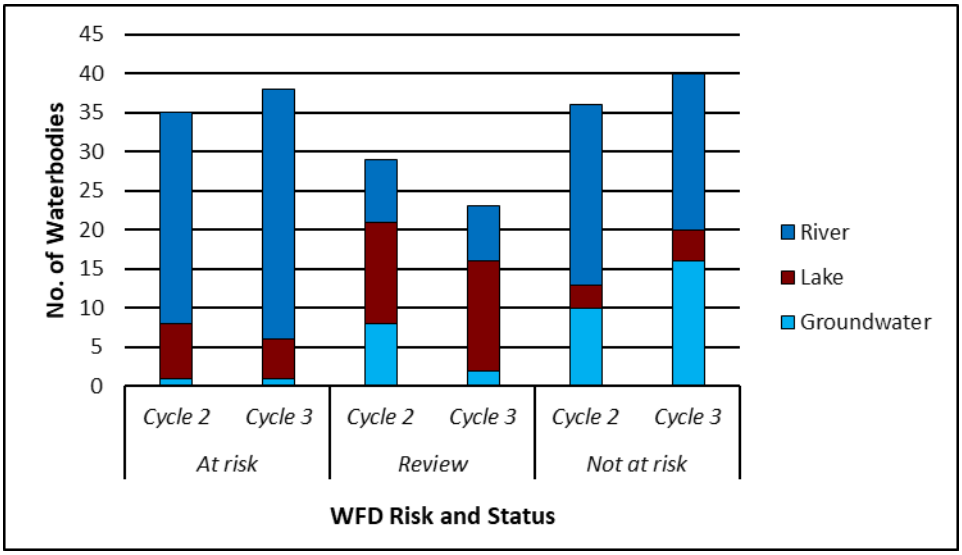


Figure 7: Number of waterbodies in each risk category

- 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.

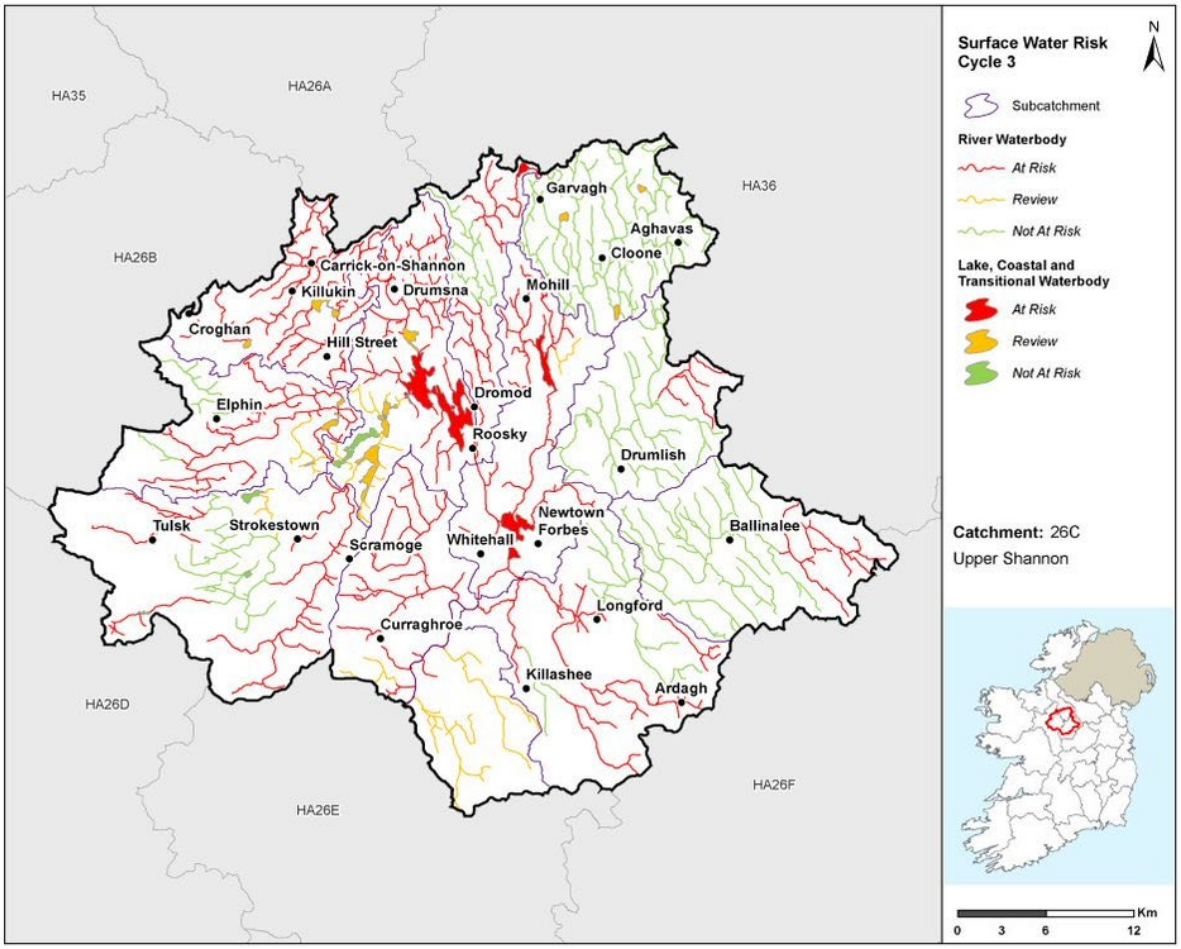


Figure 8: Surface Water Risk Cycle 3

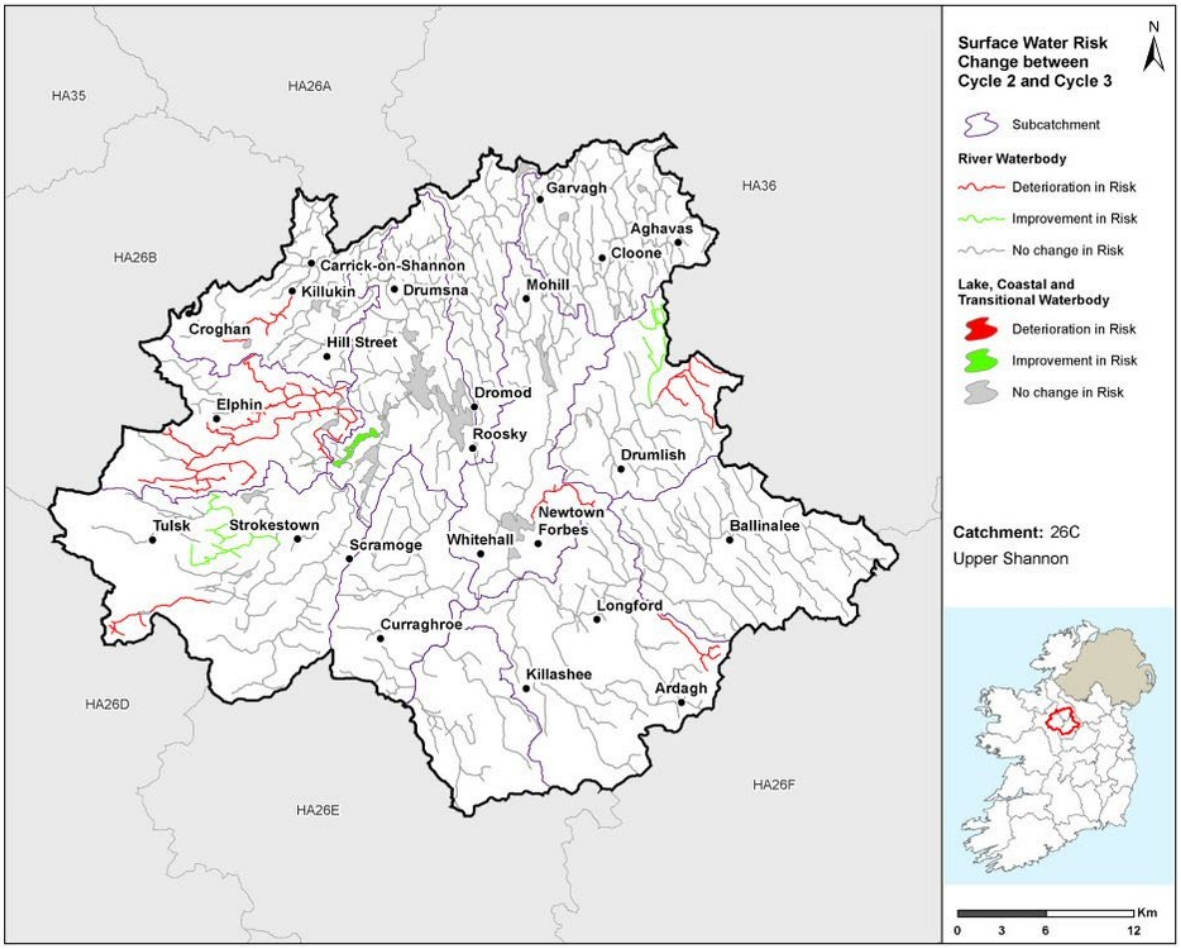


Figure 9: Surface Water Risk Change between Cycle 2 and Cycle 3

3.3 Groundwater

- For the 19 groundwater bodies, one (5%) is *At Risk* (Funshinagh), two (11%) are in *Review* and 16 (84%) are *Not At Risk*.

- In Cycle 2 there was one groundwater body (Carrick on Shannon) *At Risk* in this catchment, eight in *Review* and 10 *Not At Risk*.

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

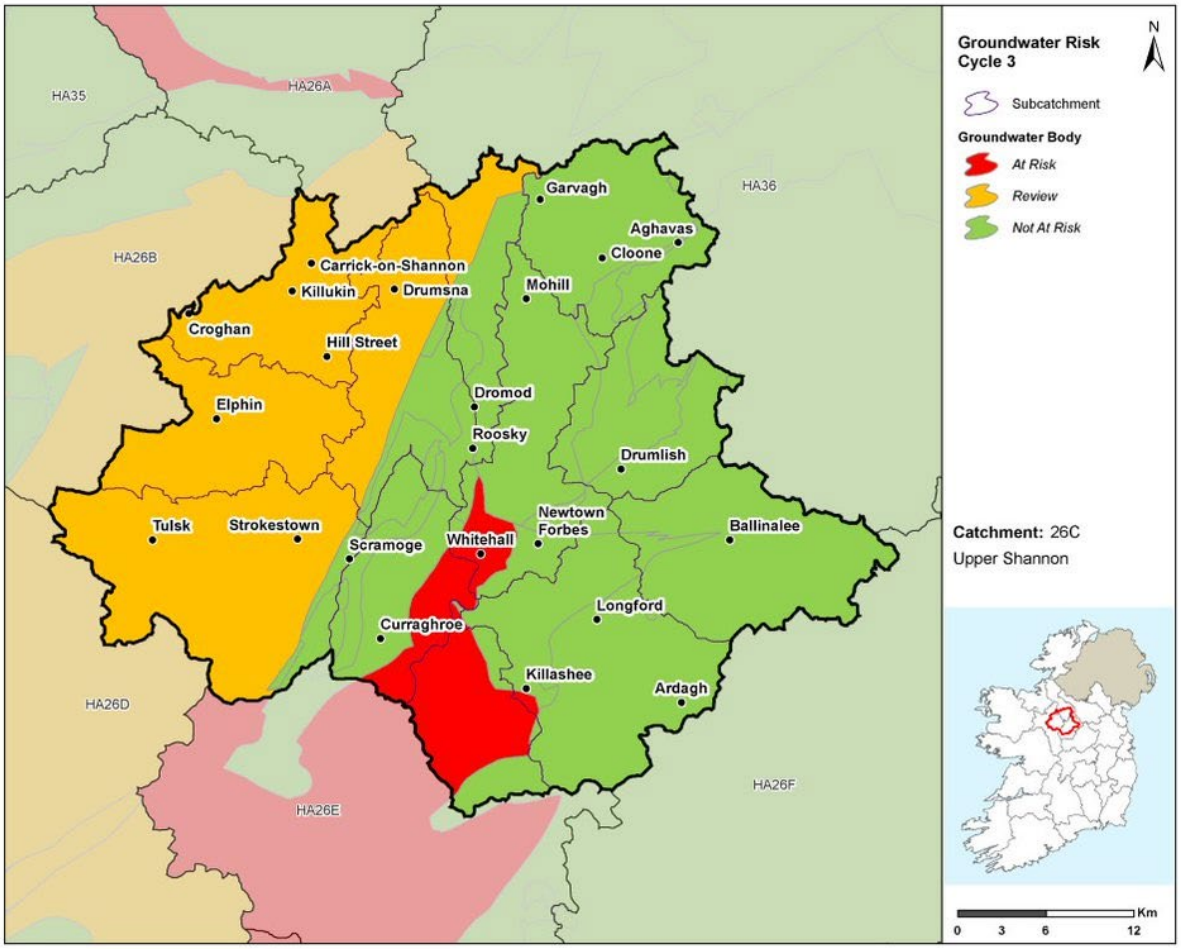


Figure 10: Cycle 3 Groundwater Body Risk

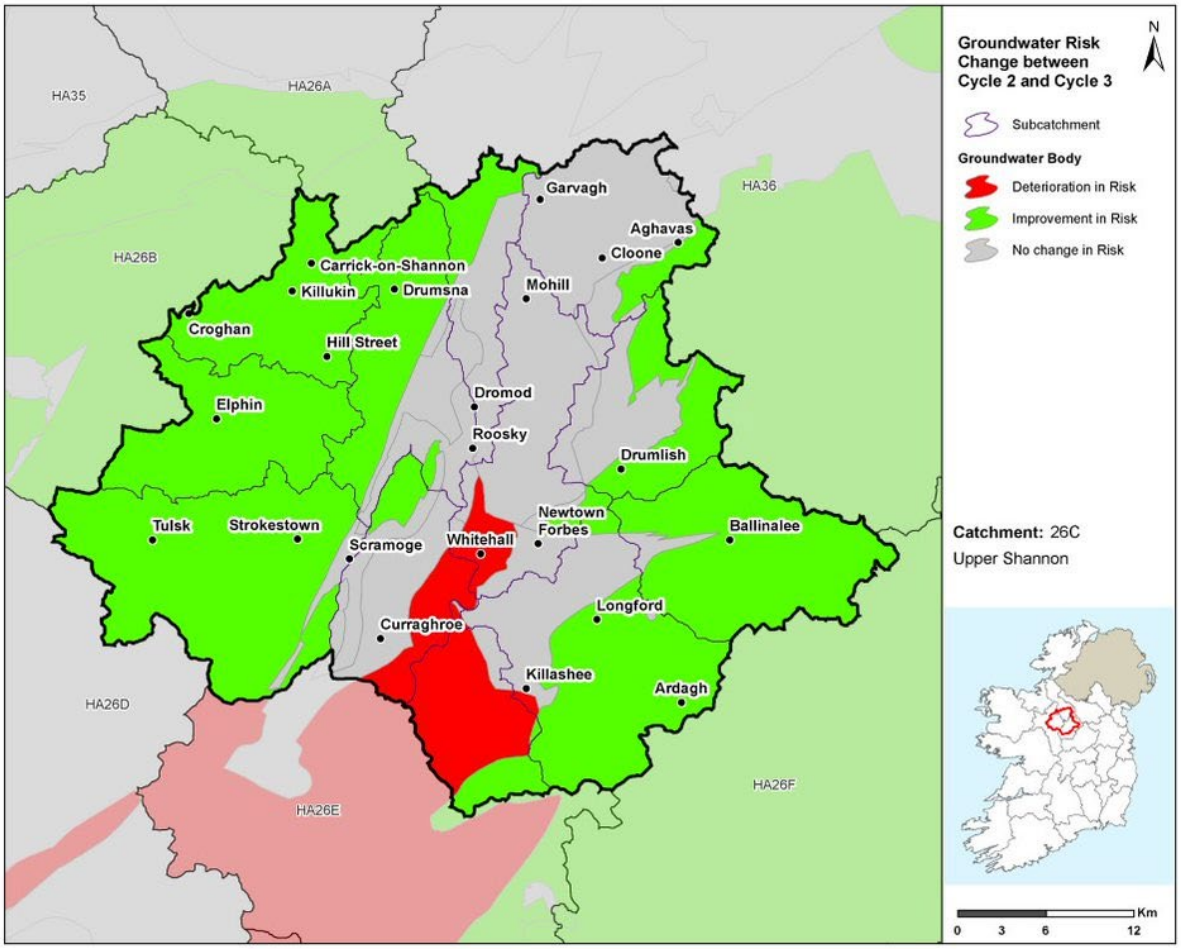


Figure 11: Groundwater Body Risk Change between Cycle 2 & Cycle 3

3.4 Heavily Modified Waterbodies

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

3.5 Artificial Waterbodies

- There is one Artificial Waterbody (AWB) in the Upper Shannon Catchment (Royal Canal Main Line (Upper Shannon C)), which is currently *Not At Risk*.

4 Significant Issues in *At Risk* Waterbodies

4.1 All Waterbodies

- Excess nutrients and morphological impacts remain the most prevalent issues in the Upper Shannon catchment (Figure 12) impacting 30 and 23 waterbodies, respectively, in Cycle 3. Sediment is impacting 11 waterbodies and organics are impacting seven waterbodies.

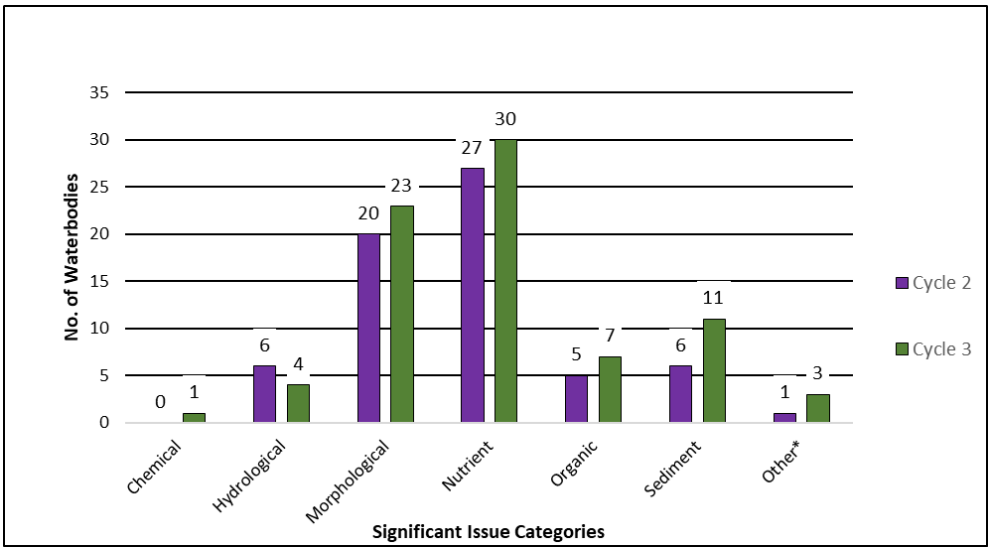
- For river waterbodies, the main significant issues are nutrient pollution (25), morphological impacts (19), sediment (8), organic pollution (6), other (3) and hydrological impacts (2).
- For lake waterbodies, the main significant issues are nutrient pollution (5), morphological (4), sediment (3), hydrological impacts (2) and organic (1).
- For the one *At Risk* groundwater body (Funshinagh) the significant issue is chemical pollution.

- Between Cycle 2 and Cycle 3, the number of waterbodies with nutrients issues have increased by three from 27 to 30 and the number of waterbodies impacted by morphological issues has increased by three from 20 to 23.

- Similarly, sediment issues have also increased between both cycles. Although, it is the third highest category impacting waterbodies, it has seen the highest increase between cycles. Sediment issues have increased by five from six to 11 waterbodies impacted.

- The numbers of waterbodies with hydrological issues have reduced from six in Cycle 2 to four in Cycle 3.

- The number of waterbodies impacted by organic and other impacts have both increased by two between Cycle 2 and Cycle 3.



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

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

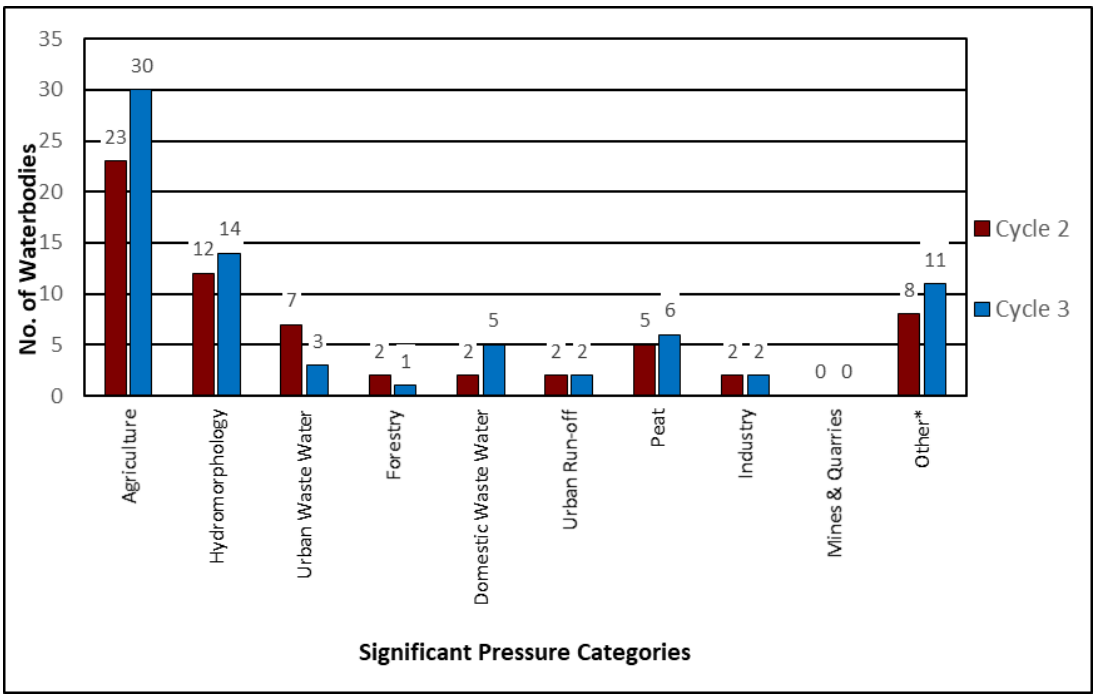
4.2 High Status Objective Waterbodies

- The Upper Shannon Catchment currently does not have any 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 hydromorphology, other[7], peat, domestic waste water, urban waste water, urban run-off, industry and forestry.
- When comparing Cycle 2 and Cycle 3, the biggest change is an increase of seven waterbodies where agriculture and is a significant pressure from 23 in Cycle 2 to 30 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 24 river waterbodies and five lake waterbodies as well as Funshinagh groundwater body. The issues related to farming in this catchment are diffuse phosphorus loss to surface waters from, for example, direct discharges; or runoff from yards, roadways or other compacted surfaces, or runoff from poorly draining soils. Sediment and heavy siltation can also be a problem from land drainage works, bank erosion from animal access or stream crossings.

5.1.1.2 Hydromorphology

- 11 waterbodies within the Shannon subcatchments are subject to extensive modification due to both historic dredging and the presence of drainage schemes. The presence of weirs and barriers

[7] 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

are likely to be impacting on both the hydromorphological conditions and fish migration in three river waterbodies (Shannon (Upper)_060, Shannon (Upper)_090 and Shannon (Upper)_100) within the Shannon subcatchments. A weir at the outlet of a lake waterbody (Rinn) within the Shannon [Upper] (SC26C_9) subcatchment is impacting hydrological conditions.

5.1.1.3 Other

- *Invasive species*
  Invasive species have been identified as a significant pressure in one river waterbody and four lake waterbodies across several subcatchments (Shannon (Upper)_100, Bofin LM, Boderg, Forbes and Rinn). The invasive species present within lakes in the catchment are Zebra mussels, while Shannon (Upper)_100 has Asian Clam in addition to Zebra mussels where temperatures are elevated due to discharges from a power station. The invasive species impact nutrient levels and cause negative impacts on native species in water bodies.

- *Anthropogenic unknown*
  The significant pressures in four river waterbodies (Shannon (Upper)_070, Killukin_020, Mountain (Roscommon)_010 and Owenur_010) are unknown.

- *Historically polluted sites*
  There is a historic landfill site present which has been identified as a significant pressure for Clooncoose Stream_010 river waterbody. Nutrient enrichment was noted at the site.

- *Illegal dumping*
  Illegal dumping was noted as a pressure in the upper reaches of the Rinn_010. Due to a mix of electronic and household waste, the significant issues are unknown.

- *Other Anthropogenic - Tourism*
  Tourism is impacting two lake waterbodies, Rinn and Bofin LM. Camping facilities and an international rowing course are impacting the Rinn.

5.1.1.4 Peat

- Peat drainage and extraction has been identified as a significant pressure in five river waterbodies (Annaghcooleen_010, Shannon (Upper)_100, Feorish (Tarmonbarry)_010, (Feorish (Tarmonbarry)_020, Curraghroe Stream_010) and one lake waterbody (Forbes). Eutrophication, likely from elevated nutrient concentrations, and sediment impacting habitat quality are the significant issues.

5.1.1.5 Domestic Waste Water

- Domestic waste water has been identified as a significant pressure in four river waterbodies (Killukin_010, Killukin_020, Mountain (Roscommon)_010, Shannon (Upper)_060 and Rinn). This is due to significant numbers of domestic waste water treatment systems in close proximity to the waterbodies, which are on areas of poorly draining soils where there is inadequate soil percolation. The significant issues are a combination of excess nutrients and organic pollution, causing signs of enrichment.

5.1.1.6 Urban Waste Water

- Urban Waste Water Treatment Agglomerations have been identified as a significant pressure in three *At Risk* river waterbodies. The Mohill agglomeration, which impacts Rinn_010, was upgraded in 2020, so time will be needed to assess the improvements in water quality. The Granard and

Longford agglomerations are not scheduled for upgrades under Irish Water's current Capital Investment Programme (2020-2024).

Table 4: 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[8]
Mohill D0277	Agglomeration PE of 1,001 to 2,000	Rinn_010	Poor	2020
Granard D0187	Agglomeration PE of 2,001 to 10,000	Rhine_010	Poor	N/A
Longford D0060	Combined Sewer Overflows	Camlin_060	Unassigned	N/A

- Urban waste water significant pressures impacted four less waterbodies than in Cycle 2 (a reduction from seven to three 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.
    - Hodson Bay (D0377)
    - Ballyleague (D0229)
    - Carrick on Shannon (D0154)
    - Tulsk (A0285)

5.1.1.7 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 two river water bodies in the Shannon [Upper]_SC_060 subcatchment (Camlin_060 and Camlin_070). Nutrient and organic pollution are the significant issues.

5.1.1.8 Industry

- Elevated temperatures resulting from an industrial discharge from an EPA licenced site, Electricity Supply Board (Lough Ree Power), is the main issue of concern regarding Shannon (Upper)_100, while the nutrient and organic impacts from an industrial discharge (Section 4) are the issues of concern regarding Lough Rinn.

Table 5: Breakdown of Cycle 3 Industry Significant Pressures in the Upper Shannon Catchment

Waterbody Code	Waterbody Name	Waterbody Type	Emission Type	Name	Impact
IE_SH_26S021600	SHANNON (Upper)_100	River	IPC	Electricity Supply Board (Lough Ree Power)	Elevated temperatures
IE_SH_26_700	Rinn	Lake	Section 4	N/A*	Nutrient & Organic

*Name of facility not provided during characterisation

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

5.1.1.9 Forestry

- Forestry has been identified as a significant pressure in one waterbody, Fallan_010. The significant issue is sedimentation resulting from clear felling activities.

Figure 14 – Figure 19 illustrates the locations of waterbodies for the four most common pressures in order of prevalence (agriculture, hydromorphology, other, peat, domestic waste water and urban waste water) within the catchment in Cycle 3.

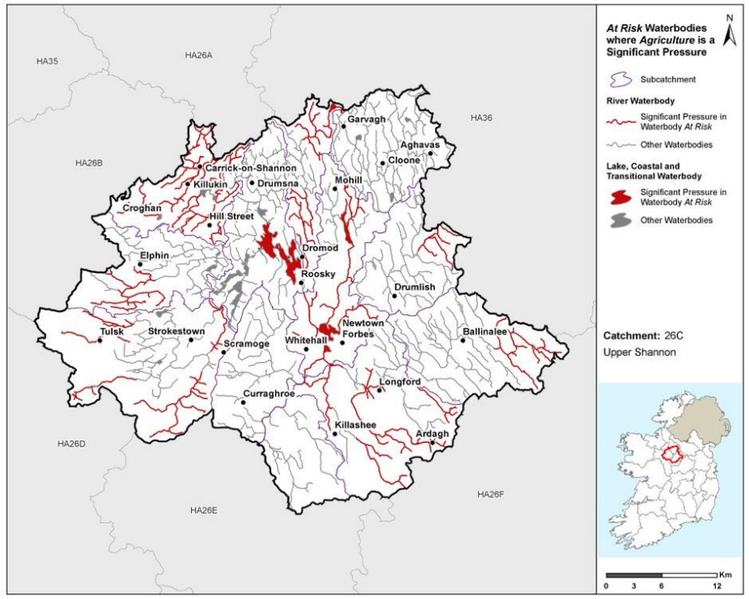


Figure 14: Locations of Waterbodies where Agriculture is a Significant Pressure

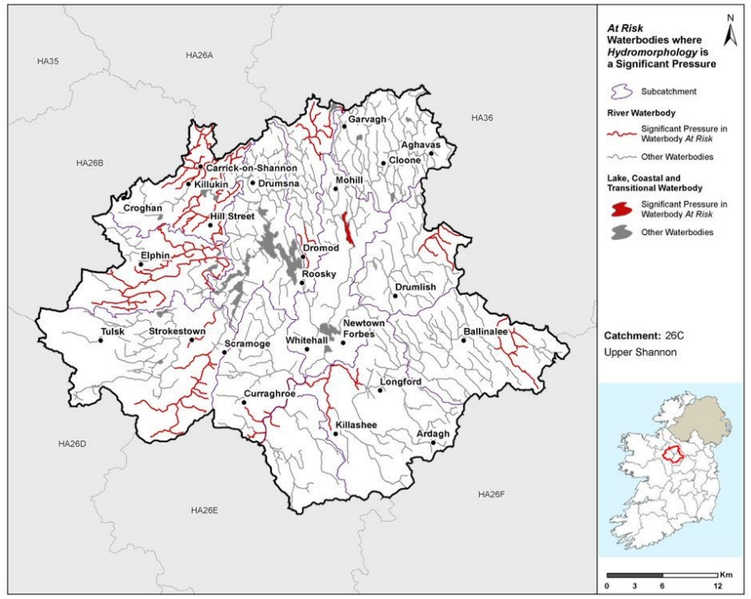


Figure 15: Locations of Waterbodies where Hydromorphology is a Significant Pressure

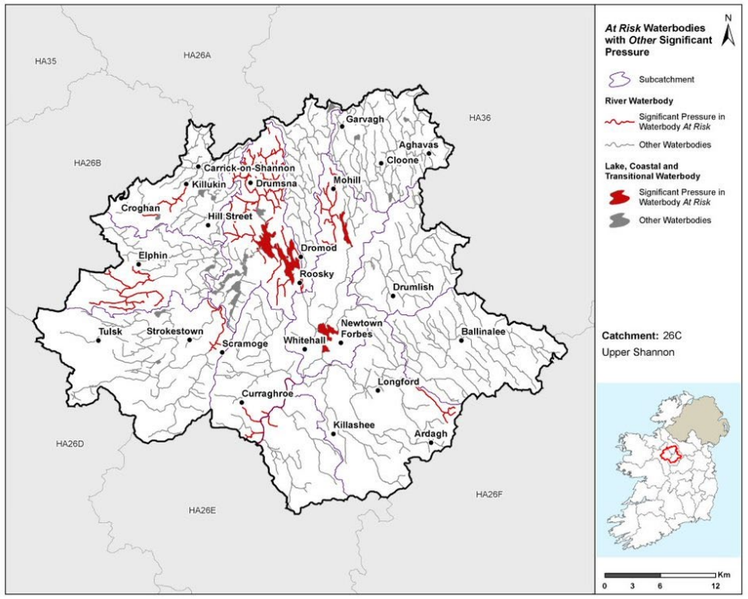


Figure 16: Locations of Waterbodies where Other is a Significant Pressure

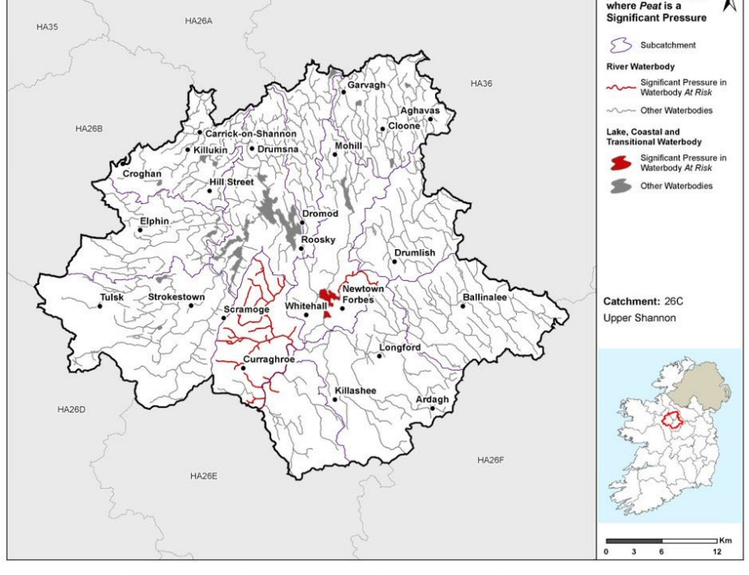


Figure 17: Locations of Waterbodies where Peat is a Significant Pressure

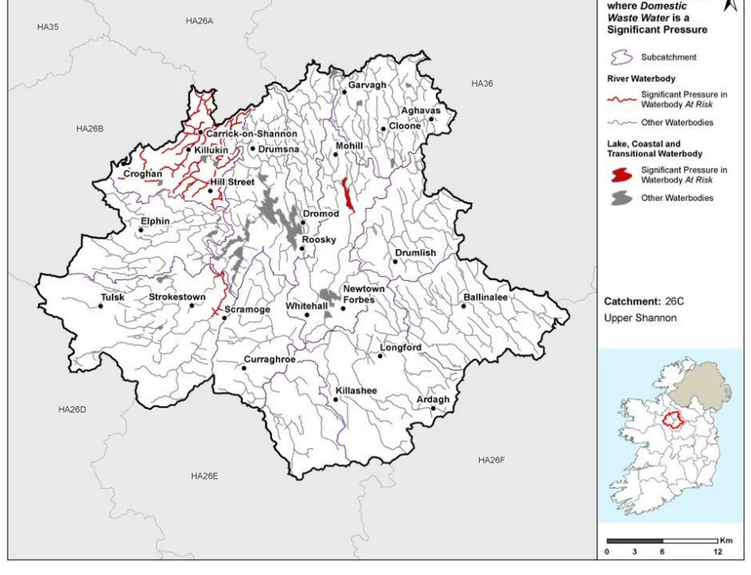


Figure 18: Locations of Waterbodies where Domestic Wastewater is a Significant Pressure

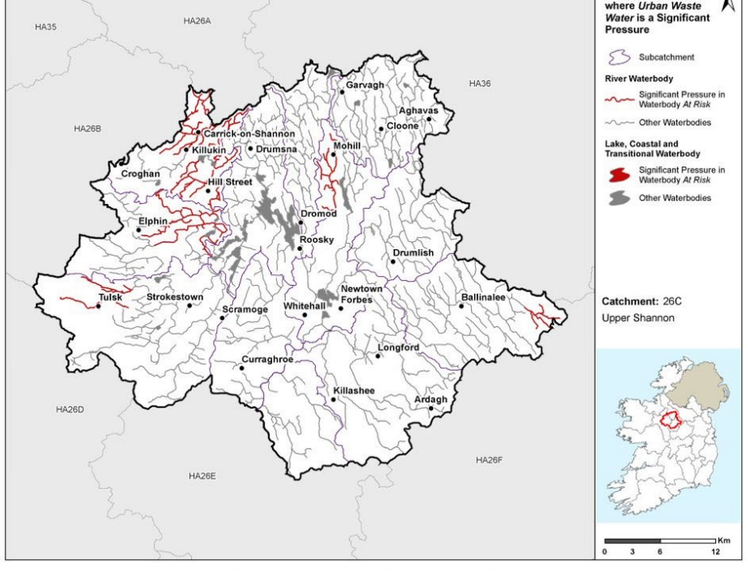


Figure 19: Locations of Waterbodies where Urban Waste Water is a Significant Pressure

5.2 High Status Objective Waterbodies

- As stated in 4.2, the Upper Shannon Catchment does not have any waterbodies with High Status Objectives.

6 Source Load Apportionment Modelling (SLAM)

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

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

- In the catchment pasture is responsible for 74% of the nitrogen load while land in pasture, forestry, peat and discharges from urban waste water contribute 56%, 13%, 10% and 8% of the phosphorus loadings for the catchment respectively (Figure 17).

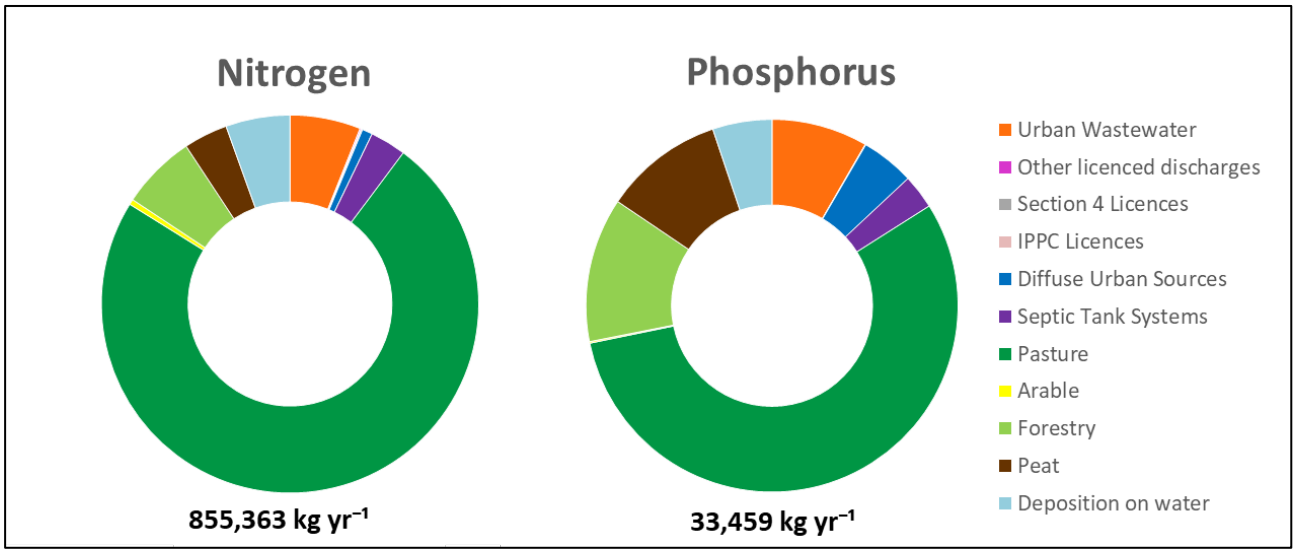


Figure 20: Estimated Proportions of N & P from Each Sector in the Upper Shannon Catchment

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 Upper Shannon catchment.

7.2 Phosphorus / 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 sediment and phosphorus should be targeted. Waterbodies with blue fill are areas where sediment or phosphorus should be targeted. Pollution Impact Potential mapping for both phosphorus and nitrogen in the catchment are provided in Appendix 2.

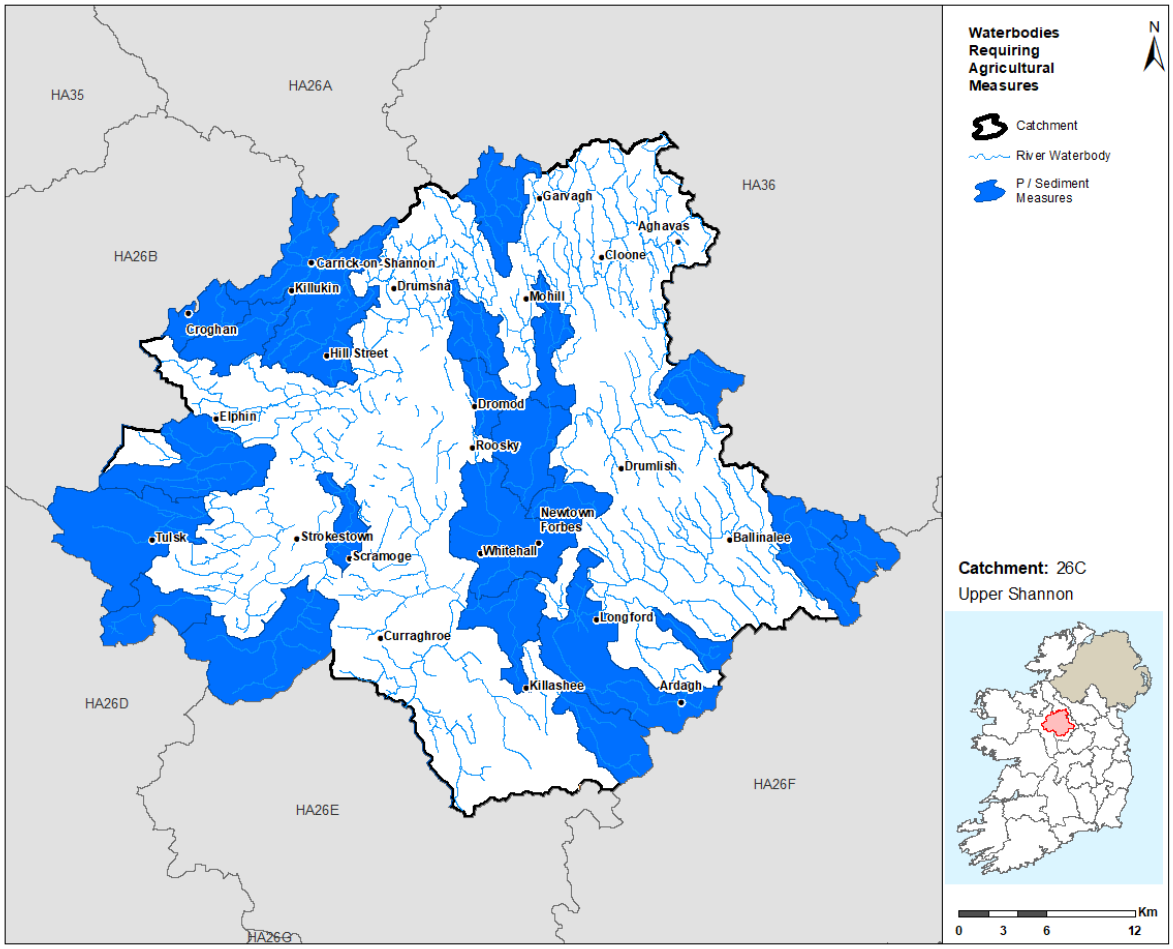


Figure 21: Waterbodies where Agricultural Measures should be Targeted

8 2nd Cycle Areas for Action

8.1 Area for Action Overview

- There were four Areas for Action, comprising of 23 waterbodies, selected for further characterisation and action in the catchment for the 2nd Cycle River Basin Management Plan. The Areas for Action in the catchment are listed in Table 6 and shown in Figure 22. LAWPRO, in conjunction with local authorities and stakeholders from the Borders, Western, Midlands and Eastern Regional Operational Committees, have been working in these areas since 2018.

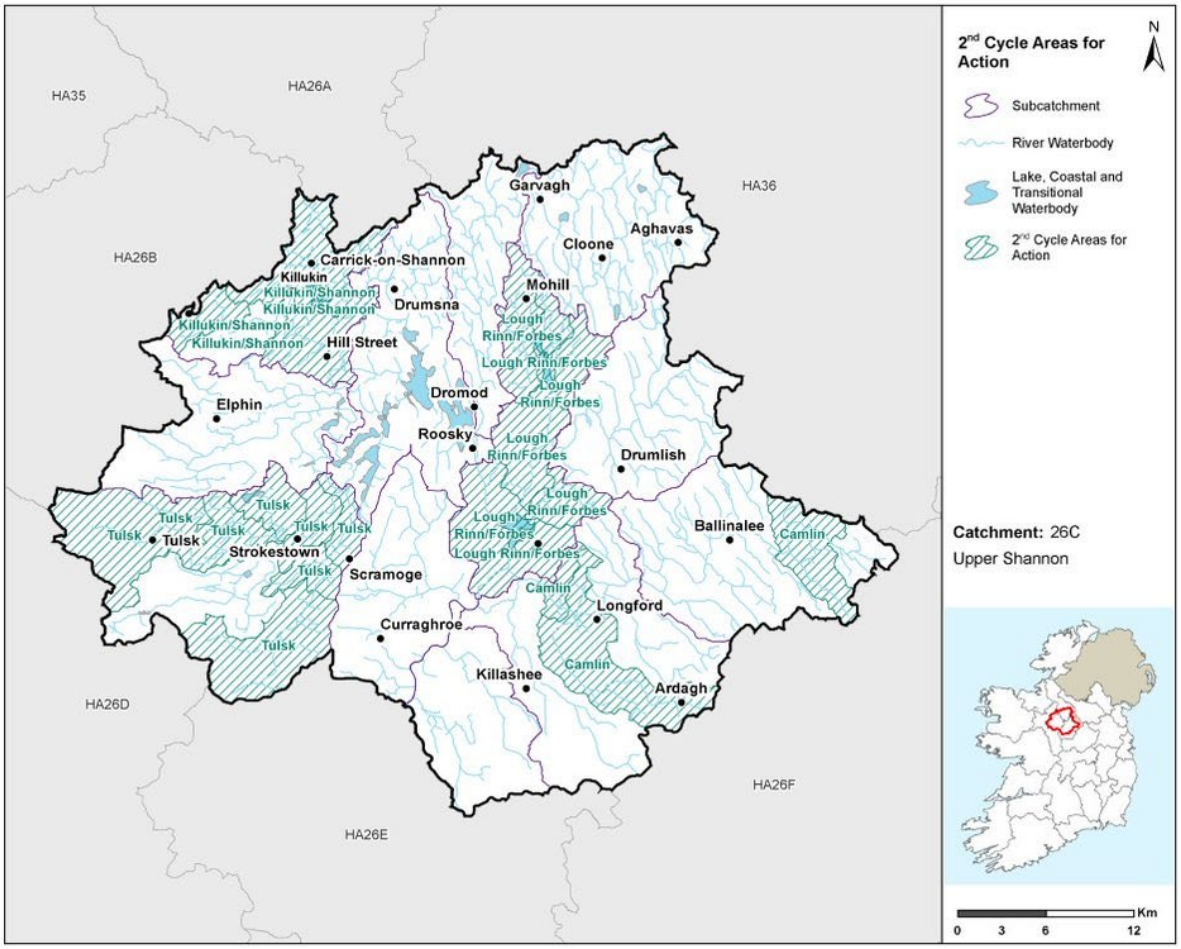


Figure 22: 2nd Cycle Areas for Action Locations

Table 6: 2nd Cycle Areas for Action

2nd Cycle Area for Action	Number of waterbodies	Sub-catchment	Local Authority	Reason for Selection
Killukin/ Shannon	4	26C_11	Leitrim	• Building on planned optimisation work at Carrick on Shannon WWTP. • Building on improvements in status, 2 water bodies improved from Poor to Moderate. • 1 waterbody didn't meet drinking water objective. • Headwaters
Lough Rinn/Forbes	8	26C_9	Leitrim	• Lough Rinn is a centre of excellence for rowing (1million euro invested). • Lough Rinn is important for Tourism. • Building on improvements: Lough Rinn has improved from Bad to Moderate. • Building on planned improvements at Mohill WWTP. • Lough Rinn is DWPA with MCPA issues.

2nd Cycle Area for Action	Number of waterbodies	Sub-catchment	Local Authority	Reason for Selection
				• River water bodies are headwaters to the Lough Rinn
Camlin	3	26C_6 26C_7	Longford	• Potential river restoration project. To be completed in collaboration with IFI. • Primary spawning area for Lough Ree and contributor to trout stock in Lough Ree. • Headwaters of the Camlin. • Socio economic value - the Camlin flows through Longford town. • 1 potential 'quick win'.
Tulsk	8	26C_12	Roscommon	• Building on Group Water Scheme work at Scramoge_010. • Building on recent WWTP (Tulsk and Environs) improvements. • 4 deteriorated water bodies. • Headwaters to Scramoge_030, a Good Status waterbody.

8.2 Status Change in 2nd Cycle Areas for Action

- For Cycle 3, of the 23 waterbodies in the 2nd Cycle Areas for Action, there is one waterbody at Good Status, six waterbodies at Moderate Status, eight waterbodies at Poor Status, one waterbody at Bad Status and seven waterbodies where status has not been assigned.

- There is an overall decline in the status of two of the 2nd cycle Areas for Action waterbodies across the catchment.[9]

- Of the 16 waterbodies within the 2nd Cycle Areas for Action which had status assigned, 10 experienced no change in status between Cycle 2 and Cycle 3, two waterbodies experienced an improvement and four were subject to deterioration in status (Figure 23). The two waterbody improvements were across Camlin Area for Action and Tulsk Area for Action. Of the four waterbodies which experienced decline, two were in Lough Rinn/Forbes Area for Action and there was one deterioration each in both Tulsk Area for Action and Killukin/Shannon Area for Action.

[9] 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.

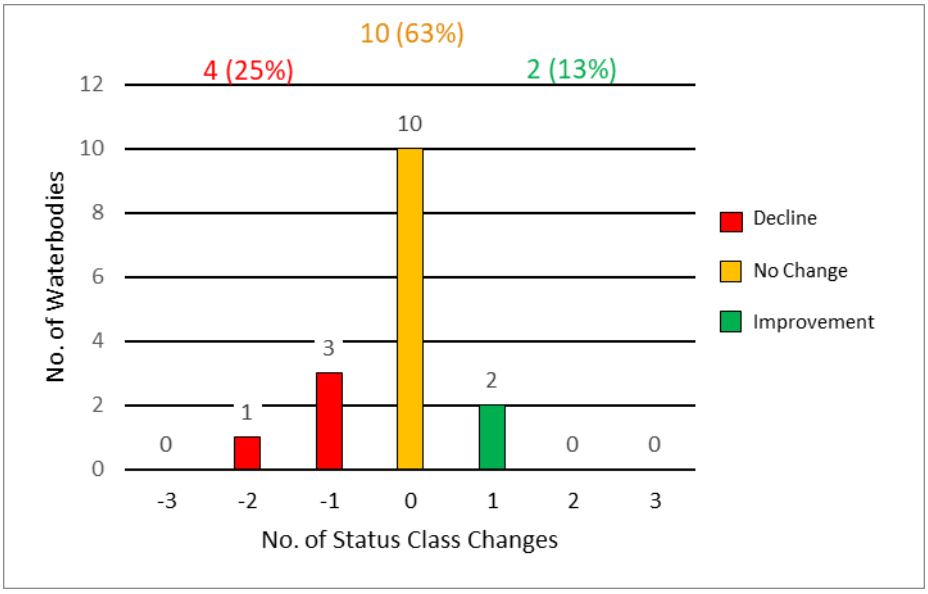


Figure 23: 2nd Cycle Area for Action Waterbody Status Class Changes between Cycle 2 and Cycle 3

8.3 Waterbody Risk in 2nd Cycle Areas for Action

- For the 23 waterbodies in the 2nd Cycle Areas for Action, 17 (74%) of these are currently *At Risk,* five (22%) are in *Review* and one (4%) is *Not At Risk*.

- For the 18 river waterbodies, one (6%) is *Not At Risk*, two (11%) are in *Review* and 15 (83%) are *At Risk*.

- Of the five lake waterbodies (Nafulla, Corbally, Rinn, Corry and Forbes) three (60%) are in *Review* and two (40%) are *At Risk*.

- The largest proportion of *At Risk* waterbodies are found in river waterbodies, accounting for 15 (88%) of the 17 *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 Areas for Action between Cycle 2 and Cycle 3, with 17 waterbodies *At Risk* in both cycles.

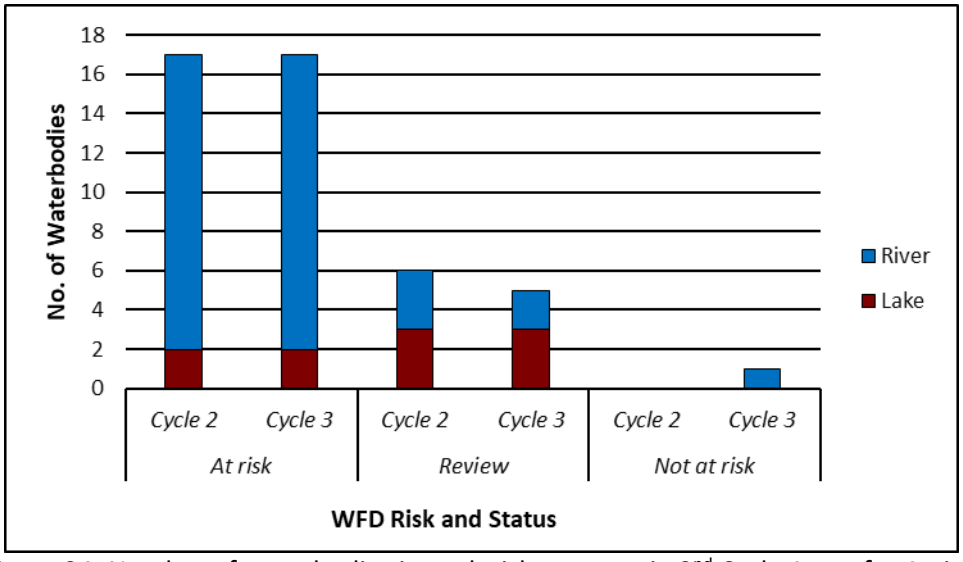
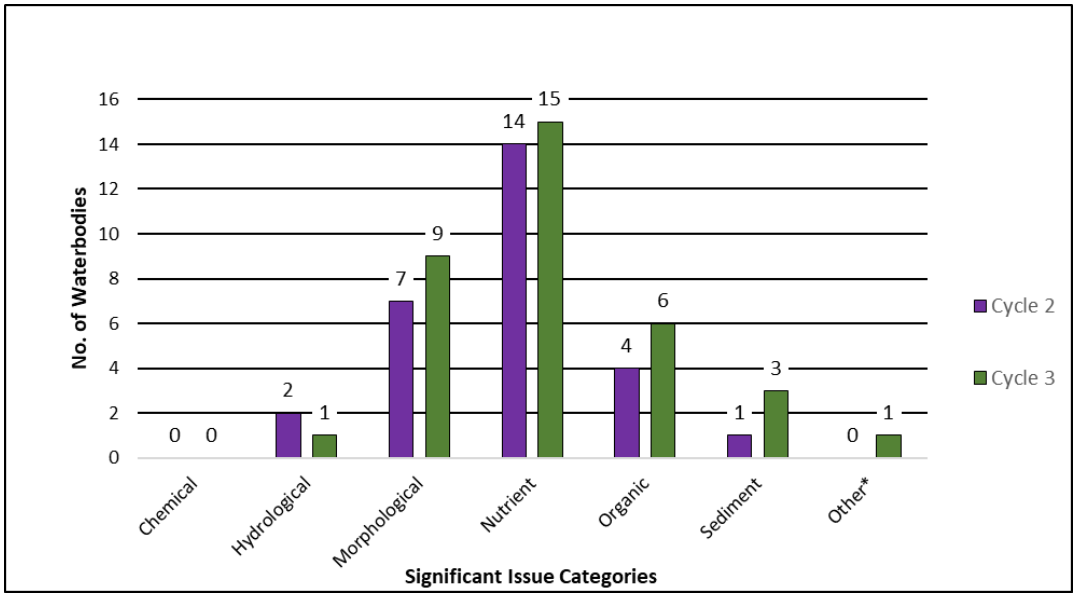


Figure 24: Number of waterbodies in each risk category in 2nd Cycle Areas for Action

8.4 Significant Issues in 2nd Cycle Areas for Action

- Based on the EPA assessment for Cycle 3, the significant issues in the 2nd Cycle Areas for Action are nutrient pollution and morphological impacts, each impacting 15 and nine waterbodies respectively (Figure 25). This is followed by organic pollution which is impacting six waterbodies and sediment impacts three waterbodies.

- The number of 2nd Cycle Areas for Action waterbodies associated with each of the significant issues categories has increased between Cycle 2 and Cycle 3 except for hydrological issues which has decreased from two to one waterbody.



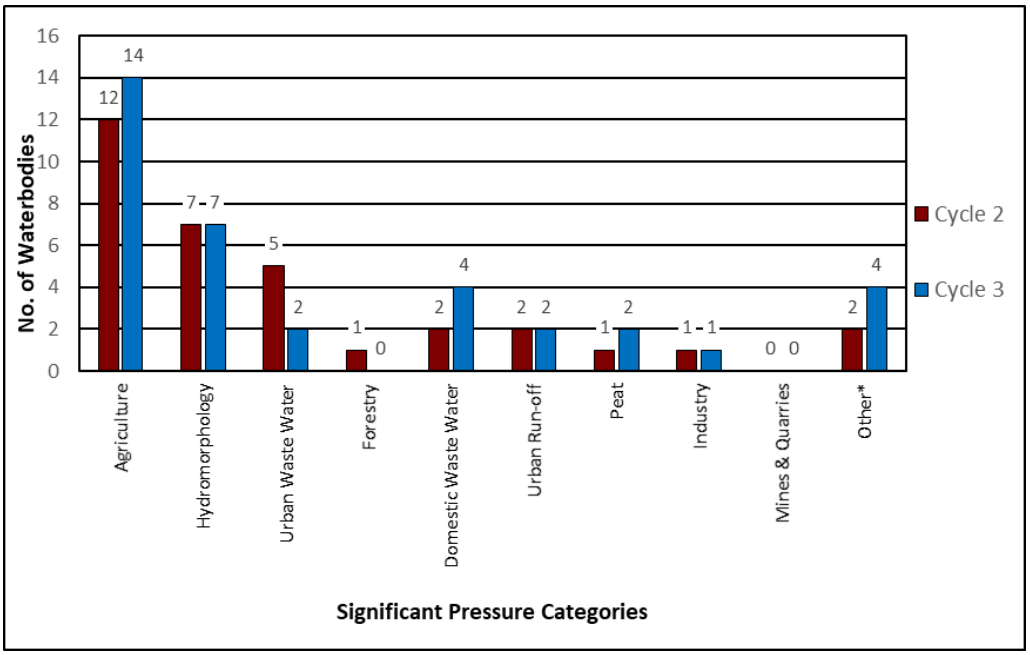
*Other - Acidification, saline intrusion, elevated temperature, litter, microbiological pollution and unknown impacts have all been grouped into the "Other" issues category for the purpose of this report

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 - 14 waterbodies are impacted compared to 12 impacted in Cycle 2.
  - Hydromorphology pressures when compared with the number of waterbodies impacted in Cycle 2 remains unchanged and continues to impact seven waterbodies.
  - Domestic waste water and other pressure both increased by two waterbodies over the 2 cycles, from two to four waterbodies.
  - Urban Waste Water Significant Pressures impacted three less waterbodies in Cycle 3 than in Cycle 2 (a reduction of five to two waterbodies impacted).
  - Urban run-off and industry pressures both remain unchanged between both cycles, while peat pressures have increased by one waterbody and forestry has decreased by one waterbody.

- When comparing the significant pressures in the 2nd Cycle Areas for Action between Cycle 2 and 3 there has been an increase or no change in all significant pressure categories in the catchment with the exception of urban waste water and forestry.



*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 seven Areas for Action, comprising of 41 waterbodies, recommended for further characterisation and action in the catchment for the 3rd Cycle River Basin Management Plan. 25 of the 41 waterbodies in the 3rd Cycle Recommended Areas for Action are *At Risk*, seven are in *Review* and nine are *Not At Risk.* The seven Recommended Areas for Action consist of six Areas for Restoration and one Catchment Project. LAWPRO are the proposed lead organisation in five Recommended Areas for Action, Longford County Council are the proposed lead on one Recommended Area for Action and GSI are the proposed lead on the remaining Recommended Area for Action. The Recommended Areas for Action in the catchment are listed in Table 7 and shown in Figure 27. The reason for selecting for each waterbody in a Recommended Area for Action is provided in Appendix 3.

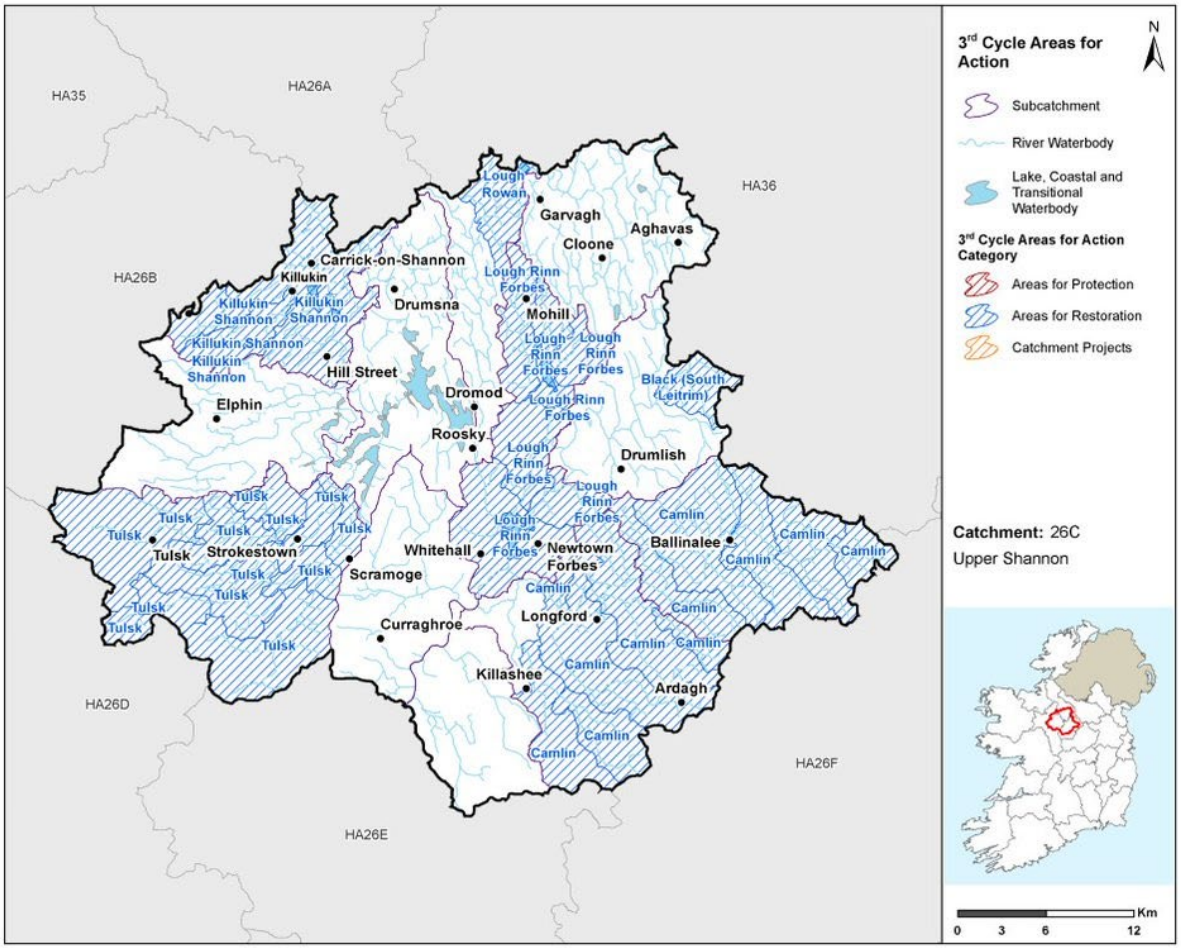


Figure 27: 3rd Cycle Recommended Areas for Action Locations

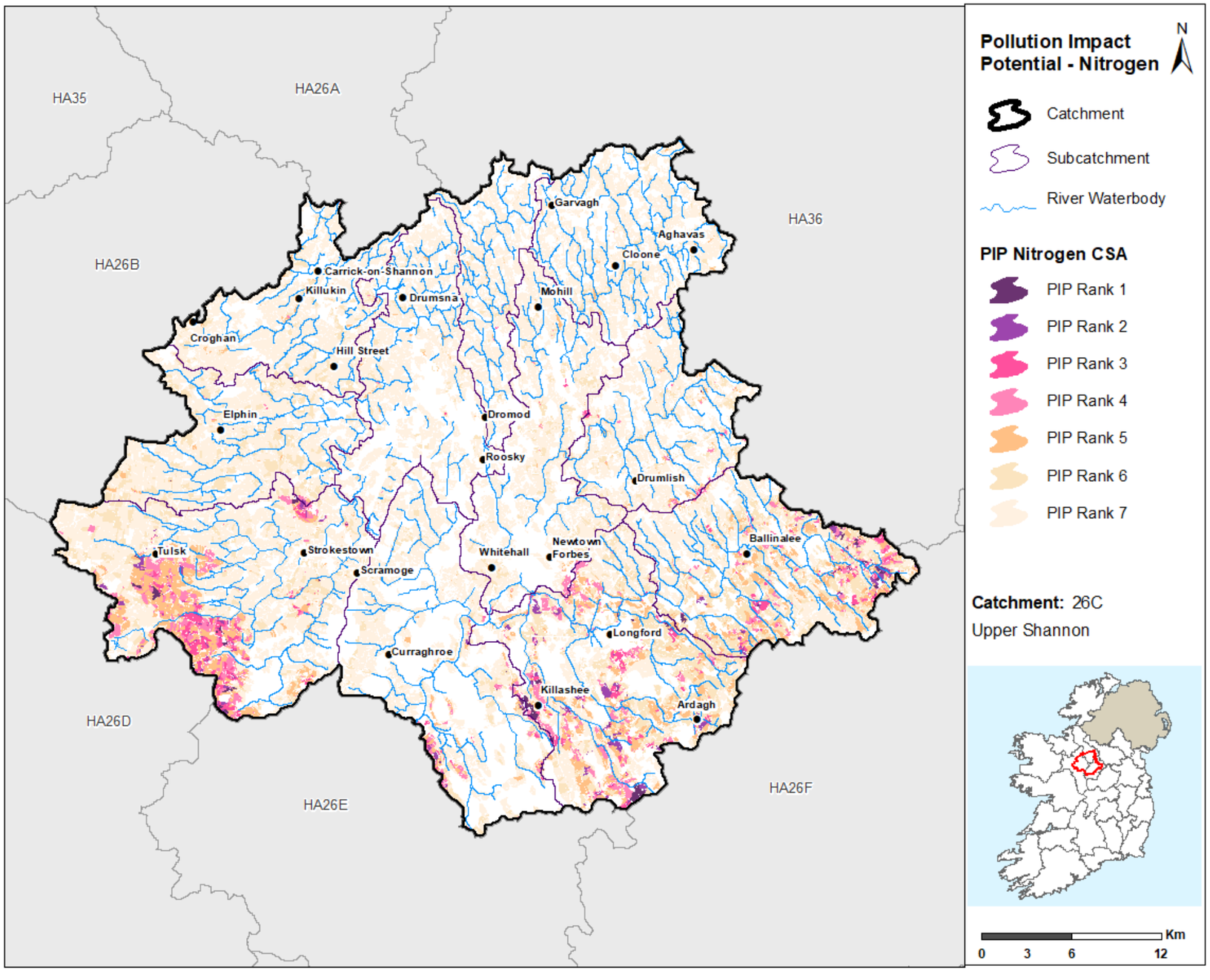
Table 7: 3rd Cycle Recommended Areas for Action Breakdown

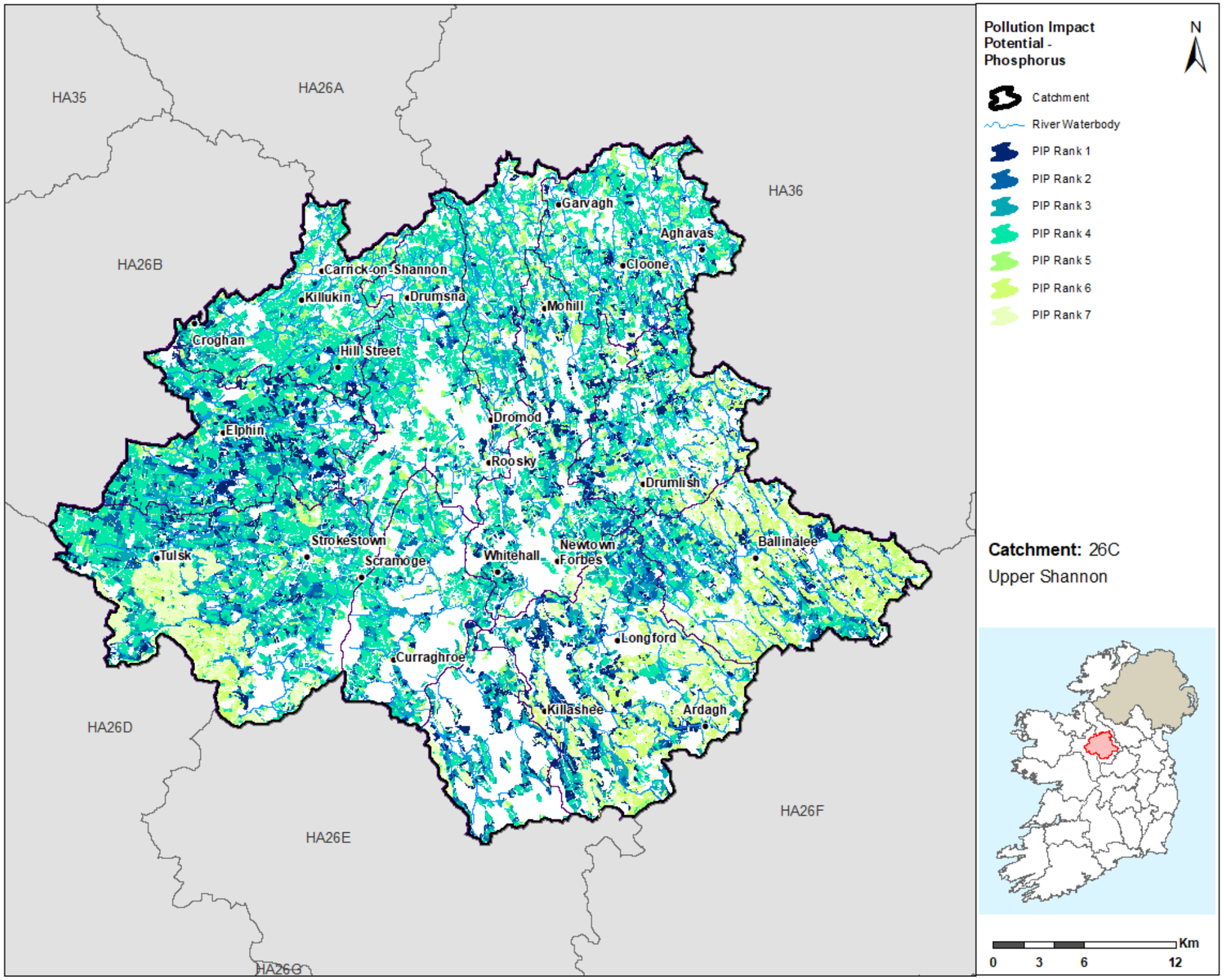
3rd Cycle Recommended Areas for Action	Number of Waterbodies	Recommended Areas for Action Category	Recommended Areas for Action Sub-category	Lead Organisation
Lough Rinn Forbes	8	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Black (South Leitrim)	1	Restoration	LA Areas for Restoration Local Authorities	Longford County Council
Camlin	11	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Tulsk	13	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Lough Rowan	2	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Killukin Shannon	5	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Suck South GWB	1	Catchment Projects	Public Body Research	GSI

10 Catchment Summary

- Of the 59 river waterbodies, 32 are *At Risk* of not meeting their WFD objectives.
- Five out of 23 lake waterbodies are *At Risk* of not meeting their WFD objectives.
- One out of 19 groundwater bodies, (Funshinagh)is*At Risk.*
- There are 38 waterbodies *At Risk* in Cycle 3 compared to 35 waterbodies *At Risk* in Cycle 2.
- The main significant issues are from nutrients pollution and morphological impacts, followed by sediment, organic, other and hydrological impacts.
- The main significant pressures are agriculture followed by hydromorphological pressures, other, peat, domestic waste water, urban waste water, urban run-off, industry and forestry.
- The main impacts and pressures driving the change between Cycle 2 and Cycle 3 are increases in waterbodies impacted by sediment, nutrient, morphological, other and organic.
- There was an overall no change in the 2nd Cycle Areas for Action since Cycle 2. 17 waterbodies were *At Risk* in Cycle 2 and 17 waterbodies remain *At Risk* in Cycle 3.
- There are seven 3rd Cycle Recommended Areas for Action for Cycle 3. They comprise of 41 waterbodies with 25 waterbodies *At Risk*, seven in *Review* and nine *Not At Risk*.

Appendix 2
Pollution Impact Potential Mapping




HA35
HA26A
HA36
HA26B
HA26D
HA26E
HA26F
HA26G
Garvagh
Aghavas
Cloone
Carrick-on-Shannon
Killukin
Drumsna
Mohill
Croghan
Hill Street
Elphin
Dromod
Roosky
Drumlish
Strokestown
Tulsk
Scramoge
Whitehall
Newtown
Forbes
Ballinalee
Longford
Curraghroe
Killashee
Ardagh
Pollution Impact Potential - Phosphorus
N
Catchment
River Waterbody
PIP Rank 1
PIP Rank 2
PIP Rank 3
PIP Rank 4
PIP Rank 5
PIP Rank 6
PIP Rank 7
Catchment: 26C
Upper Shannon
Km
0
3
6
12

Appendix 3
Summary information on all waterbodies in the Upper Shannon 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)
	IE_26C_AWB_RCMLW	Royal Canal Main Line (Upper Shannon C)	River		Not at risk	Good	Good	No			
26C_9	IE_SH_26A430910	ANNAGHCOOLEEN_010	River	Review	At risk	Unassigned	Unassigned	No	Ag, Peat	Lough Rinn Forbes	Existing PAA - unassigned Further characterisation
26C_2	IE_SH_26B040080	BLACK (SOUTH LEITRIM)_010	River	Not at risk	At risk	Good	Moderate	No	Ag, Hymo	Black (South Leitrim)	Maintenance work undertaken in 2017. Deteriorated WB.
26C_2	IE_SH_26B040100	BLACK (SOUTH LEITRIM)_020	River	Not at risk	Not at risk	Good	Good	No			
26C_2	IE_SH_26B040200	BLACK (SOUTH LEITRIM)_030	River	Not at risk	Not at risk	Good	Good	No			
26C_2	IE_SH_26B040300	BLACK (SOUTH LEITRIM)_040	River	Not at risk	Not at risk	Good	Good	No			
26C_1	IE_SH_26B220790	BALLYNAKILL_010	River	Review	Review	Unassigned	Unassigned	No			
26C_6	IE_SH_26C010050	CAMLIN_010	River	At risk	At risk	Poor	Moderate	No	Ag, Hymo	Camlin	Existing PAA Ag and Hymo Significant pressures 2027 EO Expand to include other WBs in area - protect and at risk
26C_6	IE_SH_26C010200	CAMLIN_020	River	Not at risk	Not at risk	Good	High	No		Camlin	expand Camlin PAA - protect function
26C_6	IE_SH_26C010600	CAMLIN_030	River	Not at risk	Not at risk	Good	Good	No		Camlin	expand Camlin PAA - protect function
26C_6	IE_SH_26C010700	CAMLIN_040	River	Not at risk	Not at risk	Good	Good	No		Camlin	expand Camlin PAA - protect function
26C_7	IE_SH_26C010800	CAMLIN_050	River	Not at risk	Not at risk	Good	Good	No		Camlin	expand Camlin PAA - protect function
26C_7	IE_SH_26C010900	CAMLIN_060	River	At risk	At risk	Unassigned	Unassigned	No	Ag, UR, UWW	Camlin	Existing Camlin PAA - unassigned PAA expanded
26C_7	IE_SH_26C011000	CAMLIN_070	River	At risk	At risk	Poor	Poor	No	Hymo, UR	Camlin	Existing Camlin PAA - expanded Hymo, URO and UWW significant pressures 2027 EO
26C_4	IE_SH_26C050100	CLOONE_010	River	Not at risk	Not at risk	Good	Good	No			
26C_4	IE_SH_26C050250	CLOONE_020	River	Not at risk	Not at risk	High	Good	No			
26C_4	IE_SH_26C050400	CLOONE_030	River	Not at risk	Not at risk	Good	Good	No			
26C_8	IE_SH_26C150180	CURRAGHROE STREAM_010	River	At risk	At risk	Poor	Poor	No	Peat		
26C_7	IE_SH_26C200300	CLOONCOOSE STREAM_010	River	Not at risk	At risk	Good	Moderate	No	Ag, Other	Camlin	Expanded Camlin PAA; Waterbody has deteriorated from good to moderate probable agricultural pressures in the area which may

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)
											have contributed to the decline in status.
26C_2	IE_SH_26C220800	CREELAGHTA_010	River	Not at risk	Not at risk	Good	Good	No			
26C_3	IE_SH_26C240750	CUILMORE_010	River	Review	Review	Unassigned	Unassigned	No			
26C_12	IE_SH_26D100810	DOON_010	River	Review	Review	Unassigned	Unassigned	No		Tulsk	In a PAA. Currently unassigned and awaiting characterisation to confirm impact or not impacted.
26C_9	IE_SH_26D560860	DRUMBAD_010	River	Review	Review	Unassigned	Unassigned	No		Lough Rinn Forbes	Existing PAA - unassigned Further characterisation
26C_10	IE_SH_26E010100	ESLIN_010	River	At risk	At risk	Moderate	Moderate	No	Ag, Hymo	Lough Rowan	Sub-basin of L Rowan
26C_10	IE_SH_26E010300	ESLIN_020	River	Not at risk	Not at risk	Good	Good	No			
26C_10	IE_SH_26E010400	ESLIN_030	River	At risk	At risk	Moderate	Moderate	No	Ag		
26C_10	IE_SH_26E010500	ESLIN_040	River	At risk	At risk	Moderate	Moderate	No	Ag, Hymo		
26C_7	IE_SH_26F010040	FALLAN_010	River	At risk	At risk	Moderate	Moderate	No	Ag, For	Camlin	Expanded Camlin PAA; Headwaters; important for fish; channel maintenance Forestry and Ag significant pressures 2027 EO
26C_7	IE_SH_26F010200	FALLAN_020	River	Not at risk	Not at risk	Good	Good	No		Camlin	Expanded Camlin PAA; to complete sub catchment
26C_8	IE_SH_26F030200	FEORISH (TARMONBARRY)_010	River	At risk	At risk	Poor	Poor	No	Peat		
26C_8	IE_SH_26F030400	FEORISH (TARMONBARRY)_020	River	At risk	At risk	Poor	Poor	No	Peat		
26C_2	IE_SH_26F060400	FARDRUMMAN STREAM_010	River	At risk	Not at risk	Moderate	Good	No			
26C_8	IE_SH_26G470700	GORTGALLAN_010	River	Review	Review	Unassigned	Unassigned	No			
26C_11	IE_SH_26K020100	KILLUKIN_010	River	At risk	At risk	Moderate	Moderate	No	Ag, DWW	Killukin Shannon	Existing PAA - requires further characterisation
26C_11	IE_SH_26K020700	KILLUKIN_020	River	Not at risk	At risk	Good	Moderate	No	Ag, DWW, Other	Killukin Shannon	Expansion of existing PAA - requires further characterisation
26C_3	IE_SH_26K070500	KINARD_010	River	Not at risk	Not at risk	Good	Good	No			
26C_12	IE_SH_26L040500	LISSAPHOBBLE_010	River	At risk	At risk	Poor	Poor	No	Ag, Hymo	Tulsk	Awaiting characterisation.
26C_1	IE_SH_26L120100	LOUGH BANNOW STREAM_010	River	Review	Review	Unassigned	Unassigned	No			
26C_12	IE_SH_26M030100	MOUNTAIN (ROSCOMMON)_010	River	At risk	At risk	Moderate	Poor	No	Ag, DWW, Other	Tulsk	Awaiting characterisation.
26C_3	IE_SH_26M130080	MANTUA STREAM_010	River	Not at risk	Not at risk	Good	Good	No			
26C_3	IE_SH_26O060300	OWENUR_010	River	Not at risk	At risk	Good	Moderate	No	Ag, Hymo, Other		
26C_3	IE_SH_26O060500	OWENUR_020	River	Not at risk	At risk	Good	Poor	No	Ag, Hymo		
26C_5	IE_SH_26O060890	OWENUR_030	River	Review	Review	Unassigned	Unassigned	No			
26C_9	IE_SH_26R020100	RINN_010	River	At risk	At risk	Poor	Poor	No	Ag, Other, UWW	Lough Rinn Forbes	Existing PAA - Further characterisation UWW significant pressure - upgrade 2027 EO

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)
26C_9	IE_SH_26R020200	RINN_020	River	At risk	At risk	Moderate	Moderate	No	Ag	Lough Rinn Forbes	Existing PAA - Further characterisation Ag - significant pressures poor drainage - Beyond 2027 EO
26C_9	IE_SH_26R020400	RINN_030	River	At risk	At risk	Moderate	Moderate	No	Ag	Lough Rinn Forbes	Existing PAA - Further characterisation Ag - significant pressures poor drainage - Beyond 2027 EO
26C_6	IE_SH_26R040700	RHINE_010	River	At risk	At risk	Poor	Poor	No	Ag, UWW	Camlin	Expanded Camlin PAA UWWT/SWO to be upgraded. LD carried out LCA. Resources to focus on getting UWWT measure. Feeds into Camlin_010. UWW and Ag significant pressures 2027 EO
26C_4	IE_SH_26R050900	RELAGH_010	River	Not at risk	Not at risk	Good	Good	No			
26C_12	IE_SH_26S010050	SCRAMOGE_010	River	At risk	At risk	Moderate	Moderate	No	Ag	Tulsk	Awaiting characterisation.
26C_12	IE_SH_26S010200	SCRAMOGE_020	River	At risk	Not at risk	Moderate	Good	No		Tulsk	Improved water body? Watching brief.
26C_12	IE_SH_26S010300	SCRAMOGE_030	River	Not at risk	Not at risk	Good	Good	No		Tulsk	included based on subcatchment approach.
26C_12	IE_SH_26S010600	SCRAMOGE_040	River	At risk	At risk	Poor	Poor	No	Hymo	Tulsk	Existing AR PAA WB. Awaiting characterisation.
26C_11	IE_SH_26S021010	SHANNON (Upper)_060	River	At risk	At risk	Moderate	Poor	No	Ag, DWW, Hymo	Killukin Shannon	Existing PAA - requires further characterisation
26C_5	IE_SH_26S021415	SHANNON (Upper)_070	River	At risk	At risk	Moderate	Moderate	No	Other		
26C_9	IE_SH_26S021510	SHANNON (Upper)_080	River	At risk	At risk	Moderate	Poor	No	Ag	Lough Rinn Forbes	Existing PAA - Further characterisation Ag - significant pressures poor drainage - Beyond 2027 EO SAC ONM
26C_7, 26C_8	IE_SH_26S021530	SHANNON (Upper)_090	River	At risk	At risk	Moderate	Moderate	No	Ag, Hymo		
26C_1, 26C_8	IE_SH_26S021600	SHANNON (Upper)_100	River	At risk	At risk	Poor	Poor	No	Hymo, Ind, Other, Peat		
26C_12	IE_SH_26S080200	STROKESTOWN_010	River	At risk	At risk	Poor	Poor	No	Hymo	Tulsk	Awaiting characterisation.
26C_12	IE_SH_26S130250	SHAD LOUGH STREAM_010	River	Not at risk	At risk	Good	Poor	No	Ag	Tulsk	Expand existing PAA. AR water body.
26C_12	IE_SH_26_281	Nafulla	Lake	Review	Review	Unassigned	Unassigned	No		Tulsk	Within existing PAA. Unassigned lakes work ongoing.
26C_12	IE_SH_26_489	Fin Strokestown	Lake	Not at risk	Not at risk	Unassigned	Unassigned	No		Tulsk	included based on subcatchment approach.
26C_11	IE_SH_26_582	Corbally	Lake	Review	Review	Unassigned	Unassigned	No		Killukin Shannon	Existing PAA - requires further characterisation
26C_12	IE_SH_26_611	Shad	Lake	Not at risk	Review	Unassigned	Unassigned	No		Tulsk	included based on subcatchment approach.

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26C_4	IE_SH_26_624	Keeldra	Lake	Review	Review	Unassigned	Unassigned	No			
26C_12	IE_SH_26_669	Annaghmore Lough	Lake	Not at risk	Not at risk	Good	Good	No		Tulsk	included based on subcatchment approach.
26C_9	IE_SH_26_700	Rinn	Lake	At risk	At risk	Moderate	Bad	No	Ag, DWW, Hymo, Ind, Other	Lough Rinn Forbes	Existing PAA - Further characterisation Ag,DWW,Hymo,Ind,Oth - significant pressures Zebra muussles/ poor drainage - Beyond 2027 EO
26C_3	IE_SH_26_706	Grange	Lake	At risk	Review	Moderate	Good	No			
26C_11	IE_SH_26_710	Corry	Lake	Review	Review	Unassigned	Unassigned	No		Killukin Shannon	Existing PAA - requires further characterisation
26C_9	IE_SH_26_723	Forbes	Lake	At risk	At risk	Moderate	Moderate	No	Ag, Other, Peat	Lough Rinn Forbes	Existing PAA - Further characterisation Ag,Peat, Oth - significant pressures poor drainage - Beyond 2027 EO SAC ONM DWPA ONM IW Pesticides & THMs. EPA Pesticide Act and Watch list - Action. Very large catchment size. LAWPRO coordinates NPDWAG local catchment focus group to traget persistent pesticide issues.
26C_4	IE_SH_26_734	Donogher	Lake	Review	Review	Unassigned	Unassigned	No			
26C_10	IE_SH_26_738	Rowan	Lake	At risk	At risk	Moderate	Moderate	No	Ag	Lough Rowan	Lough Rowan is a 100 acre put and take fishery managed by Rinn Shannon District Angling Club. It has impressive stock of rainbow trout. Water quality status has remained at'Moderate' from 2015-2018. It is categorised as 'at risk' status.
26C_4	IE_SH_26_745	Adoon	Lake	Review	Review	Unassigned	Unassigned	No			
26C_5	IE_SH_26_746	Grange Lough	Lake	Review	Not at risk	Unassigned	Good	No			
26C_5	IE_SH_26_747a	Bofin LM	Lake	At risk	At risk	Moderate	Poor	No	Ag, Other		
26C_5	IE_SH_26_747b	Boderg	Lake	At risk	At risk	Moderate	Moderate	No	Ag, Other		
26C_5	IE_SH_26_747c	Tap South	Lake	Review	Review	Unassigned	Unassigned	No			
26C_5	IE_SH_26_747d	Tap North	Lake	Review	Review	Unassigned	Unassigned	No			
26C_5	IE_SH_26_748	Kilglass	Lake	Review	Review	Unassigned	Unassigned	No			
26C_5	IE_SH_26_749	Grange North	Lake	Review	Review	Unassigned	Unassigned	No			
26C_1, 26C_8, 26E_1, 26E_2,	IE_SH_26_750a	Ree	Lake	At risk	Not at risk	Moderate	Good	No			

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26E_3, 26E_5, 26E_6, 26G_3											
26C_3	IE_SH_26_751	Nablahy South	Lake	Review	Review	Unassigned	Unassigned	No			
26C_3	IE_SH_26_752	Nablahy North	Lake	Review	Review	Unassigned	Unassigned	No			
03_5, 03_6, 06_5, 06_7, 06_8, 07_10, 07_5, 26C_2, 26C_4, 26C_6, 26F_3, 26F_6, 26F_7, 36_10, 36_11, 36_12, 36_14, 36_16, 36_17, 36_18, 36_19, 36_21, 36_3, 36_4, 36_5, 36_8, 36_9	IE_NW_G_061	Cavan	Groundwater	Review	Not at risk	Good	Good	No			
26C_4, 36_13, 36_19, 36_21, 36_4, 36_5, 36_7	IE_NW_G_062	Killashandra	Groundwater	Not at risk	Not at risk	Good	Good	No			
26C_2, 26C_4, 26C_9	IE_SH_G_007	Annaghmore	Groundwater	Not at risk	Not at risk	Good	Good	No			
26A_3, 26B_1, 26B_2, 26B_3, 26B_4, 26B_5, 26B_6, 26C_10, 26C_11, 26C_12, 26C_3, 26C_4, 26C_5, 26D_7, 26D_9, 26E_3, 34_4, 36_15	IE_SH_G_048	Carrick on Shannon	Groundwater	At risk	Review	Good	Good	No			
26A_2, 26A_3, 26A_6, 26B_2, 26B_3, 26B_4, 26B_5, 26B_6, 26C_11, 34_1, 34_17, 34_18, 35_7, 35_9, 36_15	IE_SH_G_073	Curlew Mountains	Groundwater	Review	Not at risk	Good	Good	No			
26C_12, 26C_5, 26C_8,	IE_SH_G_075	Curraghroe	Groundwater	Not at risk	Not at risk	Good	Good	No			

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26C_9, 26E_3, 26E_5, 26E_6											
26C_1, 26C_12, 26C_7, 26C_8, 26C_9, 26D_5, 26D_6, 26D_7, 26E_1, 26E_2, 26E_3, 26E_5, 26E_6, 26G_2, 26G_3	IE_SH_G_091	Funshinagh	Groundwater	Review	At risk	Good	Good	No	Ag		
07_10, 07_12, 07_13, 07_7, 07_9, 25A_10, 25A_8, 25A_9, 25B_2, 26C_1, 26C_6, 26C_7, 26E_1, 26E_4, 26E_6, 26F_1, 26F_10, 26F_2, 26F_3, 26F_4, 26F_5, 26F_6, 26F_7, 26F_8, 26F_9, 26G_1, 26G_2, 26G_3, 36_18, 36_8, 36_9	IE_SH_G_110	Inny	Groundwater	Review	Not at risk	Good	Good	No			
26C_10, 26C_12, 26C_4, 26C_5, 26C_8, 26C_9	IE_SH_G_120	Kilglass Dromod	Groundwater	Not at risk	Not at risk	Good	Good	No			
26C_1, 26C_2, 26C_4, 26C_6, 26C_7, 26C_9, 26E_1, 26F_10, 26F_7, 26F_8, 36_18, 36_19	IE_SH_G_149	Longford Ballinalee	Groundwater	Review	Not at risk	Good	Good	No			
26C_7	IE_SH_G_151	Historic Waste Facility (S22-02489)	Groundwater	Not at risk	Not at risk	Good	Good	No			
26C_12, 26C_5, 26C_8	IE_SH_G_156	Lough Ackrick	Groundwater	Review	Not at risk	Good	Good	No			
26C_10, 26C_2, 26C_4, 26C_5, 26C_9,	IE_SH_G_171	Mohill	Groundwater	Not at risk	Not at risk	Good	Good	No			

Subcatchment Code	Waterbody Code	Waterbody Name	Waterbody Type	Risk 10-15	Risk 13-18	Status 10-15	Status 13-18	High Ecological Status Objective Waterbody	Significant Pressures	Recommended Areas for Action Name	Recommended Areas for Action (reasons for selection)
36_15, 36_19, 36_7											
26C_1, 26C_6, 26C_7, 26C_8, 26C_9	IE_SH_G_192	Newtown Forbes	Groundwater	Not at risk	Not at risk	Good	Good	No			
26C_10, 26C_12, 26C_5, 26C_8	IE_SH_G_201	Scramoge North	Groundwater	Not at risk	Not at risk	Good	Good	No			
26C_12, 26C_5, 26C_8, 26E_3	IE_SH_G_202	Scramoge South	Groundwater	Not at risk	Not at risk	Good	Good	No			
26C_12, 26C_8, 26E_3	IE_SH_G_208	Slieve Bawn Telton	Groundwater	Review	Not at risk	Good	Good	No			
26B_1, 26C_12, 26D_1, 26D_10, 26D_11, 26D_2, 26D_3, 26D_4, 26D_5, 26D_6, 26D_7, 26D_8, 26D_9, 26E_2, 26E_3, 26E_5, 26G_1, 26G_2, 29_5, 30_10, 30_12, 30_19, 30_8	IE_SH_G_225	Suck South	Groundwater	Review	Review	Good	Good	No		Suck South GWB	This GWB is in Review as it is hydrologically linked to surface waters that are not meeting water quality objectives where it is considered likely that groundwater is a contributing source of phosphorus. So this type of deterioration may be observed in the future. Also there are numerous groundwater fed drinking water sources with water quality issues in the area. GSI are involved in karst mapping and flood monitoring within this GWB. A PAA status would allow this already existing work to be highlighted via the WFD process. Risk of GWB deteriorating; Public health areas for restoration. Build on existing programmes and community group initiatives.
26A_3, 26A_6, 26C_10, 26C_4, 36_13, 36_14, 36_15, 36_19, 36_21, 36_22, 36_23, 36_6, 36_7	IEGBNI_NW_G_031	Newtown-Ballyconnell	Groundwater	Not at risk	Not at risk	Good	Good	No			

Ag: Agriculture

DWW: Domestic Waste Water

For: Forestry

Hymo: Hydromorphology

Ind: Industry

M+Q: Mines and Quarries

Peat: Peat Drainage and Extraction

UR: Urban Run-off

UWW: Urban Waste Water

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