

**3<sup>rd</sup> Cycle Draft**  
**Newry, Fane, Glyde and Dee**  
**Catchment Report (HA 06)**



**Catchment Science & Management Unit**

**Environmental Protection Agency**

August 2021

Version no. 1

## Preface

This document provides a summary of the water quality assessment outcomes for the Newry, Fane, Glyde and Dee 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 3<sup>rd</sup> 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 2<sup>nd</sup> Cycle Areas for Action and a list of proposed 3<sup>rd</sup> 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.

<b>Water Framework Directive – key dates and terminology</b>	
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 <sup>nd</sup> 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 <sup>nd</sup> 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 <sup>rd</sup> 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 <sup>rd</sup> Cycle Recommended Areas for Action – Protection/ Restoration/Projects	These recommended Areas for Action have been identified in the draft RBMP 2022-2027 and feedback can be given in the public consultation on this plan. They fall into 3 categories – Areas for Protection, Areas for Restoration and Catchment Projects.

# Table of Contents

1	Introduction.....	6
2	Waterbody Overview.....	7
2.1	Waterbody Status .....	7
2.2	Protected Areas .....	9
2.3	Heavily Modified Waterbodies.....	13
2.4	Artificial Waterbodies .....	13
3	Waterbody Risk .....	13
3.1	Overview of Risk .....	13
3.2	Surface Waters.....	14
3.3	Groundwater.....	17
3.4	Heavily Modified Waterbodies.....	19
3.5	Artificial Waterbodies .....	19
4	Significant Issues in <i>At Risk</i> Waterbodies .....	19
4.1	All Waterbodies .....	19
4.2	High Status Objective Waterbodies .....	21
5	Significant pressures in <i>At Risk</i> Waterbodies.....	21
5.1	All Waterbodies .....	21
6	Source Load Apportionment Modelling (SLAM) .....	26
7	Load Reduction Assessment .....	26
7.1	Nitrogen Load Reduction .....	26
7.2	Phosphorus / Sediment Load Reduction .....	26
8	2 <sup>nd</sup> Cycle Areas for Action .....	27
8.1	Area for Action Overview .....	27
8.2	Status Change in 2 <sup>nd</sup> Cycle Areas for Action .....	29
8.3	Waterbody Risk in 2 <sup>nd</sup> Cycle Areas for Action .....	30
8.4	Significant Issues in 2 <sup>nd</sup> Cycle Areas for Action.....	30
8.5	Significant Pressure in 2 <sup>nd</sup> Cycle Areas for Action .....	31
9	3 <sup>rd</sup> Cycle Recommended Areas for Action .....	32
9.1	Recommended Areas for Action Overview .....	32
10	Catchment Summary .....	34

## List of Figures

Figure 1: Overview of subcatchments in the Newry, Fane, Glyde and Dee catchment.....	6
Figure 2: Waterbody types and numbers in the Newry, Fane, Glyde and Dee Catchment. ....	7
Figure 3: Waterbody Status Breakdown (All waterbodies).....	8
Figure 4: Status Class Changes between Cycle 2 and Cycle 3 .....	9
Figure 5: Protected Areas – Public Health.....	11
Figure 6: Water Dependent SPAs / SACs and Salmonid Waters .....	13
Figure 7: Number of waterbodies in each risk category .....	15
Figure 8: Surface Water Risk Cycle 3 .....	16
Figure 9: Surface Water Risk Change between Cycle 2 and Cycle 3 .....	17
Figure 10: Cycle 3 Groundwater Body Risk .....	18
Figure 11: Groundwater Body Risk Change between Cycle 2 & Cycle 3 .....	19
Figure 12: Significant Issues across all <i>At Risk</i> WBs between Cycle 2 and Cycle 3.....	20
Figure 13: Significant Pressure (All <i>At Risk</i> Waterbodies) .....	22
Figure 14: Locations of Waterbodies where Agriculture is a Significant Pressure.....	25
Figure 15: Locations of Waterbodies where Hydromorphology is a Significant Pressure .....	25
Figure 16: Locations of Waterbodies where Urban Waste Water is a Significant Pressure .....	25
Figure 17: Locations of Waterbodies where urban run-off is a Significant Pressure.....	25
Figure 18: Estimated Proportions of N & P from Each Sector in the Newry, Fane, Glyde and Dee Catchment .....	26
Figure 19: Waterbodies where Agricultural Measures should be Targeted .....	27
Figure 20: 2 <sup>nd</sup> Cycle Areas for Action Locations .....	28
Figure 21: 2 <sup>nd</sup> Cycle Area for Action Waterbody Status Class Changes between Cycle 2 and Cycle 3 .	30
Figure 22: Number of waterbodies in each risk category in 2 <sup>nd</sup> Cycle Areas for Action .....	30
Figure 23: Significant Issues across all 2 <sup>nd</sup> Cycle Areas for Action Waterbodies.....	31
Figure 24: Significant Pressures in 2 <sup>nd</sup> Cycle Area for Action Waterbodies .....	32
Figure 25: 3 <sup>rd</sup> Cycle Recommended Areas for Action Locations .....	33

## List of Tables

Table 1: Waterbody Status Breakdown Table (All Waterbodies).....	8
Table 2: Designated shellfish areas in the catchment.....	10
Table 3: Nutrient sensitive areas in the catchment .....	13
Table 4: Urban Waste Water Treatment Agglomerations identified as significant pressures in <i>At Risk</i> waterbodies in Cycle 3 .....	22
Table 5: Breakdown of Cycle 3 Industry pressures in the Newry, Fane, Glyde and Dee Catchment....	24
Table 6: 2 <sup>nd</sup> Cycle Areas for Action .....	28
Table 7: 3 <sup>rd</sup> Cycle Areas for Action Breakdown .....	33

## 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 3<sup>rd</sup> Cycle River Basin Management Plan. In addition, a comparative overview of the water quality in the Newry, Fane, Glyde and Dee catchment between Cycle 2 and Cycle 3 characterisation is provided along with a summary of the progress made in the 2<sup>nd</sup> Cycle Areas for Action. The recommended list for the 3<sup>rd</sup> Cycle Areas for Action is also provided.

To provide context, the Newry, Fane, Glyde and Dee catchment includes the area drained by the Newry, Fane, Glyde and Dee rivers, and by all streams entering tidal water between Murlough Upper and The Haven, Co. Louth. This is a cross border catchment with a surface area of 2,125 km<sup>2</sup>, 1390 km<sup>2</sup> of which is located within the Republic of Ireland (RoI) (Figure 1). The largest urban centre is Dundalk. The other main urban centres are Carrickmacross, Ardee, Kingscourt, Dunleer and Castleblaney and the total population (in the RoI) is approximately 115,900, with a population density of 83 people per km<sup>2</sup>.

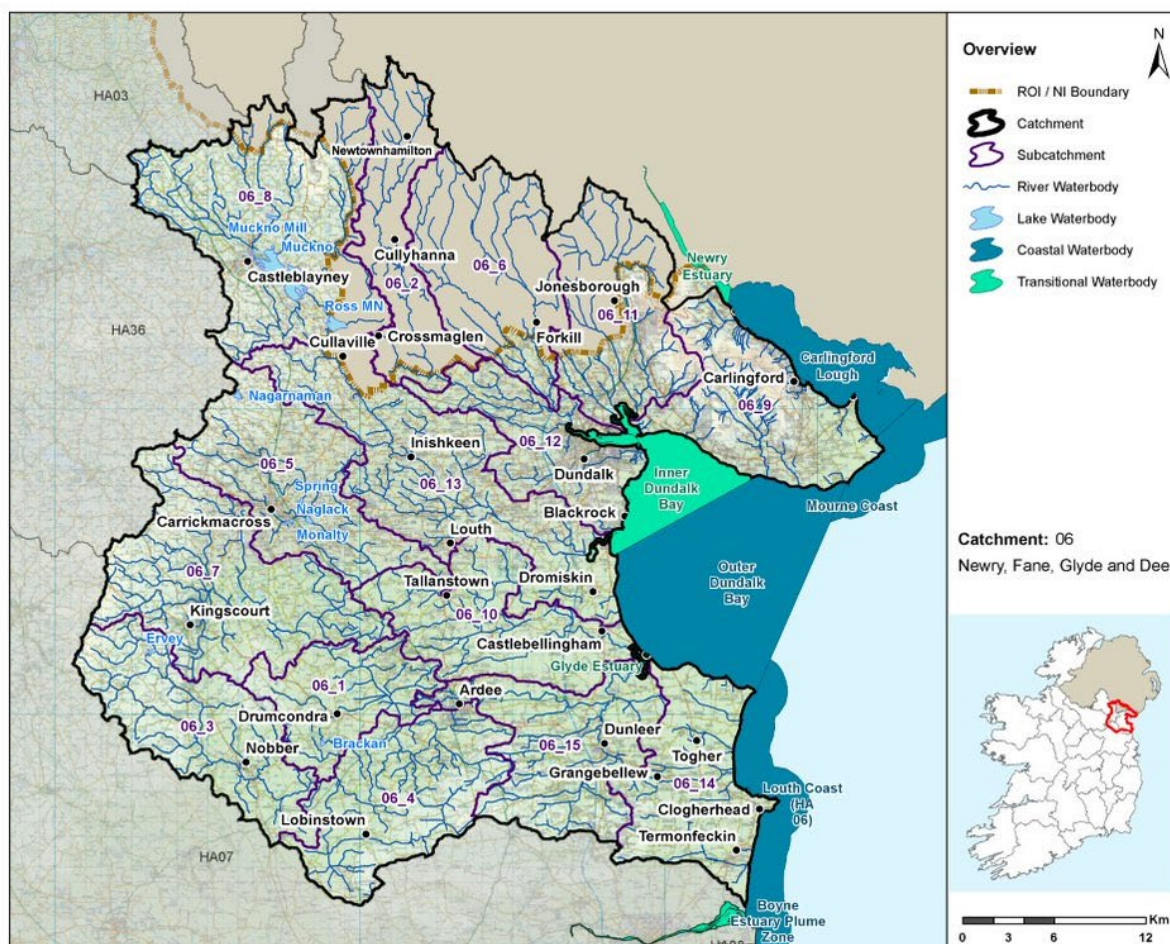


Figure 1: Overview of subcatchments in the Newry, Fane, Glyde and Dee catchment

The Newry, Fane, Glyde and Dee catchment is divided into 15 subcatchments (Figure 1) with 68 river waterbodies, nine lake waterbodies, nine transitional waterbodies, five coastal waterbodies and 19 groundwater bodies (Figure 2).

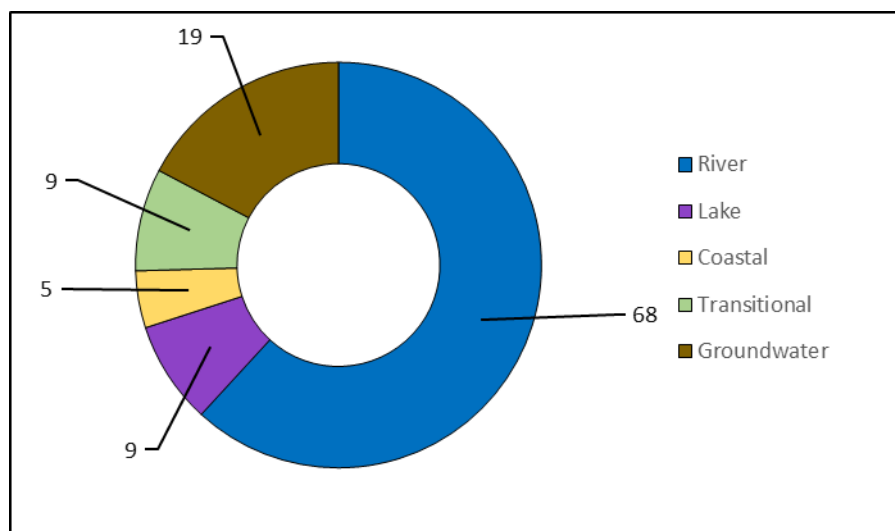


Figure 2: Waterbody types and numbers in the Newry, Fane, Glyde and Dee Catchment.

## 2 Waterbody Overview

### 2.1 Waterbody Status

- ◆ This assessment to inform the 3<sup>rd</sup> 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 no waterbodies achieving High Status, 34 achieving Good Status, 26 achieving Moderate Status, 16 achieving Poor Status and two achieving Bad Status. There are 32 waterbodies that do not have Status assigned for Cycle 3. All waterbodies must achieve at least Good Ecological status.
- ◆ There are no High Ecological Status (HES) waterbodies in this catchment.
- ◆ There has been a reduction of three waterbodies (river, coastal & groundwater) achieving Good Status between Cycle 2 and Cycle 3. There was an increase in nine waterbodies (all rivers) achieving Moderate Status and a reduction in three waterbodies (all rivers) achieving Poor Status (Figure 3 & Table 1). The overall status of lakes has not changed between Cycle 2 and Cycle 3.



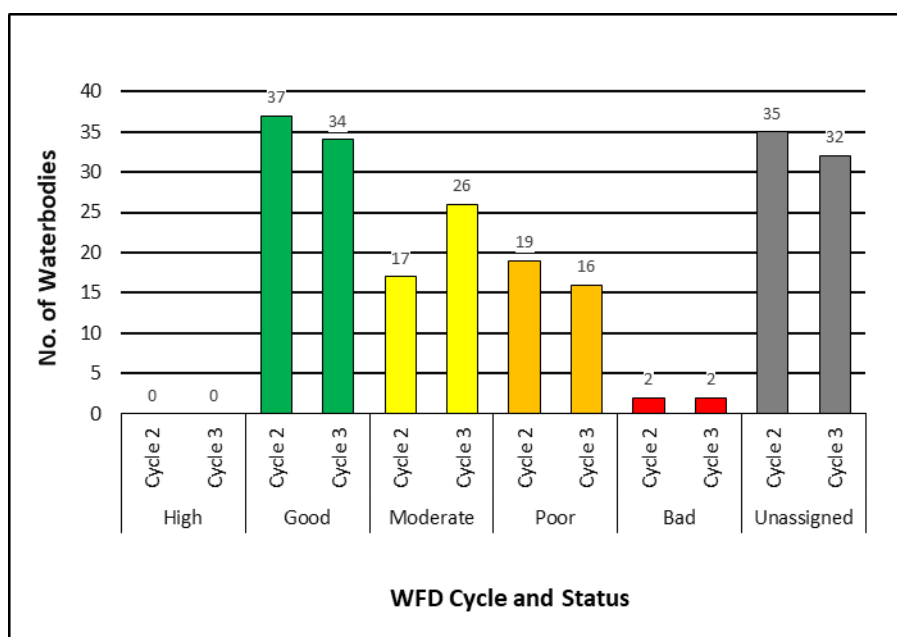


Figure 3: Waterbody Status Breakdown (All waterbodies)

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	0	0	0	0	0	0	0	0	0	0	0	0
Good	16	15	1	1	0	0	2	1	18	17	37	34
Moderate	14	23	1	1	2	1	0	1	0	0	17	26
Poor	17	12	1	1	0	1	0	0	1	2	19	16
Bad	0	0	2	2	0	0	0	0	0	0	2	2
Unassigned	21	18	4	4	7	7	3	3	0	0	35	32
<b>Total</b>	<b>68</b>	<b>68</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>5</b>	<b>5</b>	<b>19</b>	<b>19</b>	<b>110</b>	<b>110</b>

- ◆ 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 14 (19%) waterbodies have improved in status, 52 (69%) waterbodies have remained unchanged and nine (12%) waterbodies have declined in status.<sup>1</sup>
- ◆ There is an overall improvement in the status of five waterbodies across the catchment since the Cycle 2 assessment.

<sup>1</sup> 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.



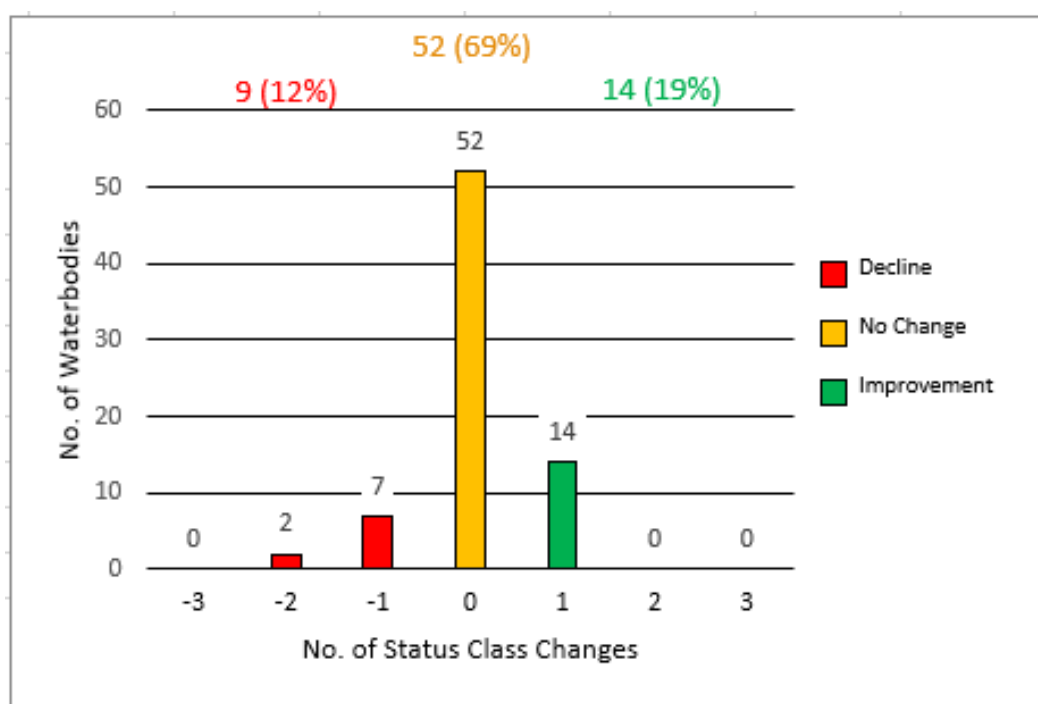


Figure 4: Status Class Changes between Cycle 2 and Cycle 3

## 2.2 Protected Areas

### 2.2.1 Drinking Water

- ◆ There are 10 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](https://gis.epa.ie/EPAMaps/Water-see%20Protected%20Areas%20-%20Drinking%20Water).
- ◆ Two river waterbodies in the catchment did not meet the DWPA objective in 2019:
  - Dee\_060 (IE\_NB\_06D010670) river waterbody is the source for the Ardee (2100PUB1001) public supply which had pesticide/ herbicide (Linuron & MCPA) exceedances.
  - Fane\_050 (IE\_NB\_06F010900) river waterbody is the source for Cavinhill public water supply (2100PUB1018) which had pesticide/ herbicide (MCPA & Fluroxypyr) exceedance.
- ◆ For more detailed information please see the EPA reports on drinking water quality in 2019 for [Public Supplies](#)<sup>2</sup> and [Private Supplies](#)<sup>3</sup>.

### 2.2.2 Bathing Waters

- ◆ There are four designated coastal bathing waters (Seapoint, Clogherhead, Port – Lurganboy & Shelling Hill/Templetown) in the Newry, Fane, Glyde and Dee catchment identified under the Bathing Water Regulations 2008.

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

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

- ◆ All four bathing waters had an Excellent classification for 2020.
- ◆ For more detailed information please see the EPA report on [bathing water quality in 2020<sup>4</sup>](#).

### 2.2.3 Shellfish Areas

- ◆ There are two 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: Designated shellfish areas in the catchmentTable 2.

Table 2: Designated shellfish areas in the catchment

Shellfish Area		Water Body Intersection		Objective met?	
Name	Code	Name	Code	Yes	No
Dundalk Bay	IEPA2_0044	Inner Dundalk Bay	IE_NB_040_0100	✓	
		Outer Dundalk Bay	IE_NB_040_000		
		Mourne Coast	GBNIIIE6NB020		
		Louth Coast (HA06)	IE_NB_025_0000		
Carlingford Lough	IEPA2_0004	Newry Estuary	UKGBNI5NB030010	✓	
		Carlingford Lough	GBNIIIE6NB030		

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

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

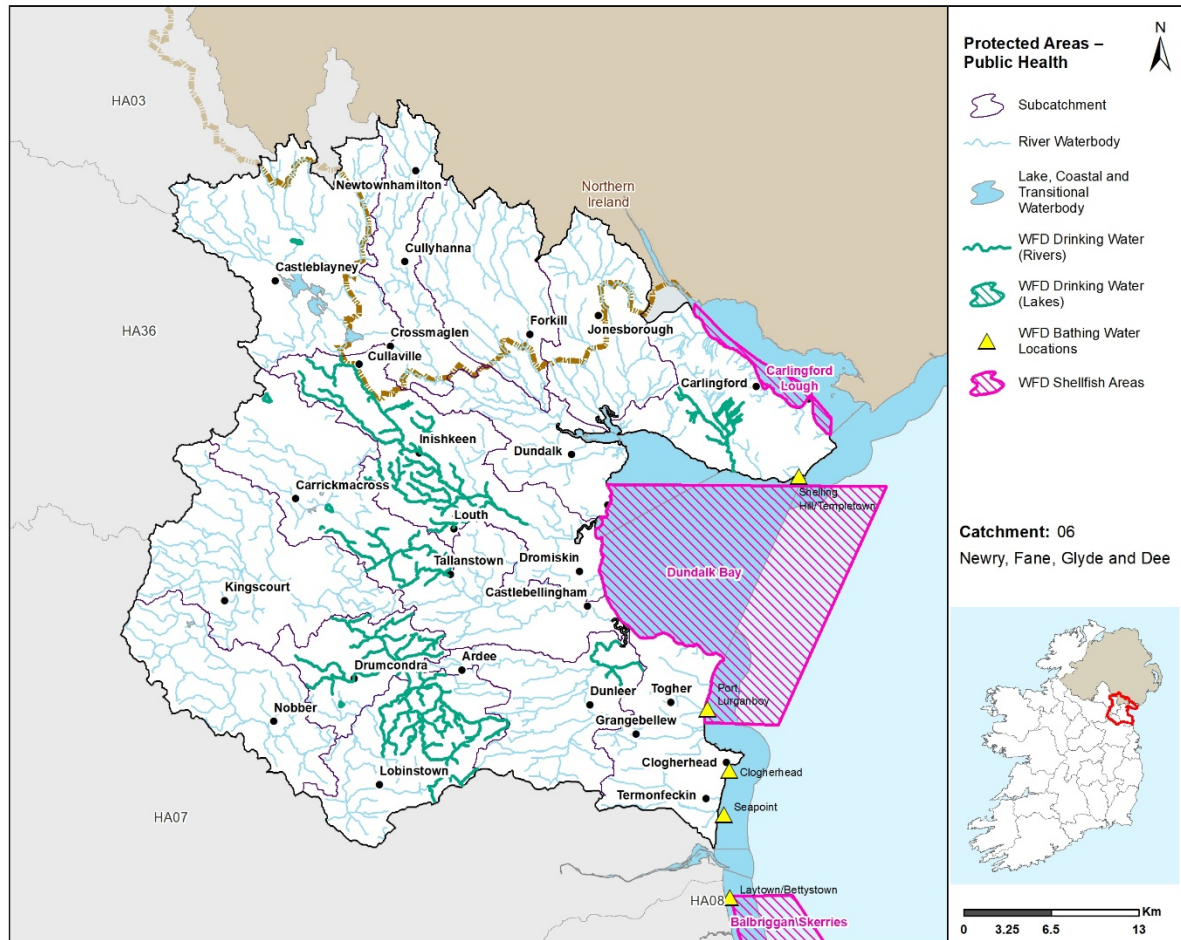
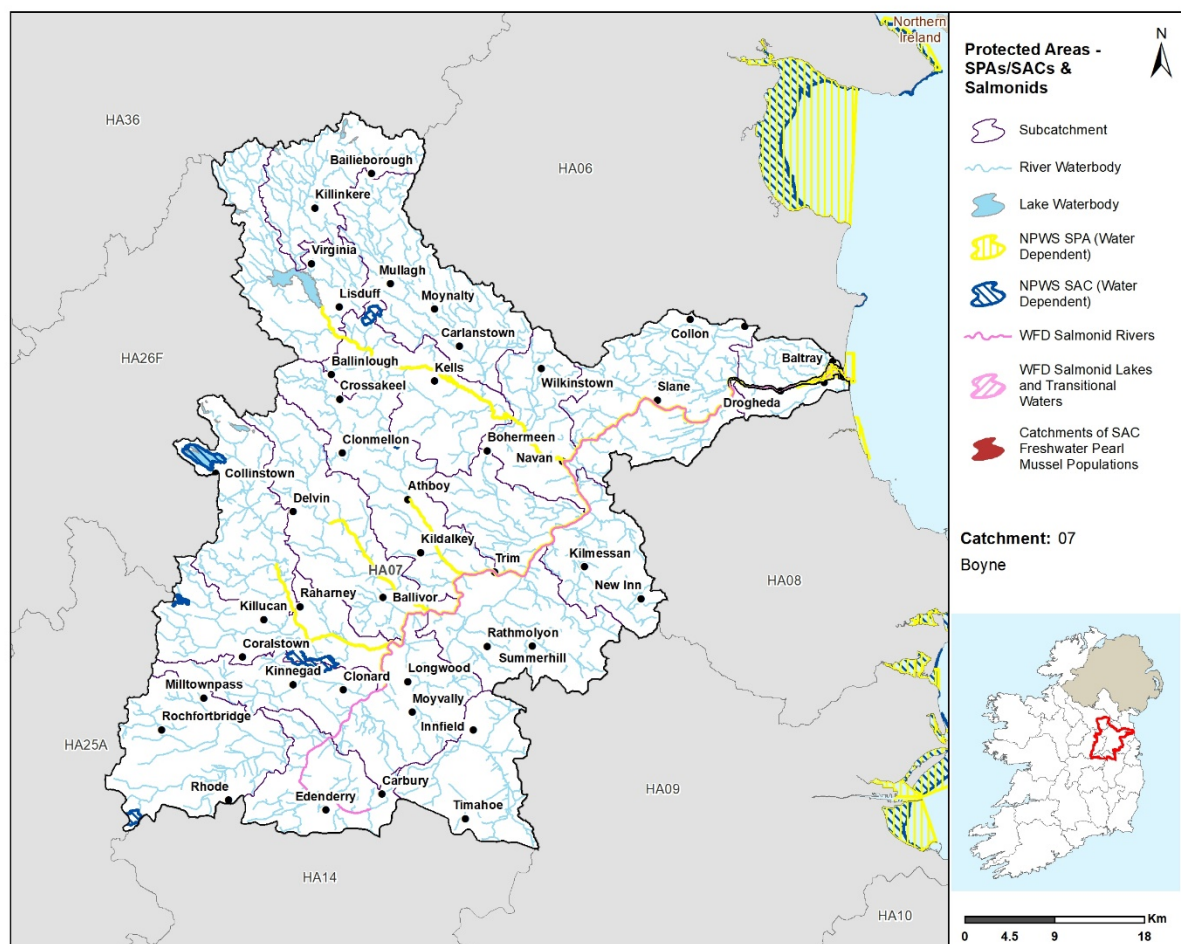


Figure 5: Protected Areas – Public Health

#### 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 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. Information at a waterbody level can be viewed at [Catchments.ie](https://www.catchments.ie).<sup>5</sup>
- ◆ There are no Fresh Water Pearl Mussel (FWPM) habitats present in the Boyne Catchment.
- ◆ There are four groundwater bodies delineated and assessed as Groundwater Dependent Terrestrial Ecosystems (GWDTE) for this catchment. All four are at Good Status and *Not At Risk* in Cycle 3. The GWDTE groundwaters in the catchment are:
  - GWDTE-Mount Hevey Bog (SAC002342)
  - GWDTE-Killyconny Bog (Cloghbally) (SAC000006)
  - GWDTE-Raheenmore Bog (SAC000582)
  - GWDTE-Newtown Lough Fen (SAC002299)
- ◆ Water dependent SACs/ SPAs and salmonid waters in the catchment are illustrated in Figure 6.



<sup>5</sup><https://www.catchments.ie/download/catchments-assessments-protected-areas-supporting-documents/>

Figure 6: Water Dependent SPAs / SACs and Salmonid Waters

## 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 and this assessment will inform the regulations. 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 three urban wastewater agglomerations. The list of NSAs, associated agglomerations and intersecting water bodies are provided in Table 3.
- ◆ NSA Objectives are being met in all three of the 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	
Boyne River (100-120)	Trim	D0137-01	Boyne_100	IE_EA_07B041500	✓		Tertiary Treatment in place
			Boyne_110	IE_EA_07B041600			
			Boyne_120	IE_EA_07B041700			
Boyne River (150-180)	Navan	D0059-01	Boyne_150	IE_EA_07B042010	✓		Tertiary Treatment in place
			Boyne_160	IE_EA_07B042100			
			Boyne_170	IE_EA_07B042150			
			Boyne_180	IE_EA_07B042200			
Boyne Estuary	Drogheda	D0041-01	Boyne Estuary	IE_EA_010_0100	✓		Tertiary Treatment in place

## 2.3 Heavily Modified Waterbodies

- ◆ Based on the 1<sup>st</sup> and 2<sup>nd</sup> RBMPs there are currently no heavily modified water bodies (HMWBs) in the Newry, Fane, Glyde and Dee catchment. There will be a consultation period on HMWBs for the 3<sup>rd</sup> Cycle RBMP and this will be completed for inclusion in the 3<sup>rd</sup> Cycle Final RBMP.

## 2.4 Artificial Waterbodies

- ◆ There are no artificial waterbodies in the Newry, Fane, Glyde and Dee 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 110 waterbodies in the Newry, Fane, Glyde and Dee Catchment and 48 (44%) are *At Risk*, 36 (33%) in *Review* and 26 (24%) are *Not At Risk*.

### 3.2 Surface Waters

- ◆ For the 68 river waterbodies in the catchment, 36 (53%) are *At Risk*, 25 (37%) are in *Review* and seven (10%) are *Not At Risk*.
- ◆ For the nine lake waterbodies in the catchment, three (33%) are in *Review* and six (67%) are *At Risk*.
- ◆ For the nine transitional waterbodies in the catchment, two (22%) are *At Risk*, five (56%) are in *Review* and two (22%) are *Not At Risk*.
- ◆ Of the five coastal waterbodies in the catchment, one (20%) is *Not At Risk*, three (60%) are in *Review* and one (20%) is *At Risk*.
- ◆ The largest proportion of *At Risk* waterbodies are found in river waterbodies with 36 (75%) of 48 waterbodies deemed to be *At Risk*. In addition, there are six lakes waterbodies and two transitional waterbodies and one coastal waterbody *At Risk*. 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 five *At Risk* waterbodies, a decline in five *Review* waterbodies, and no change in *Not At Risk* waterbodies between Cycle 2 and Cycle 3.

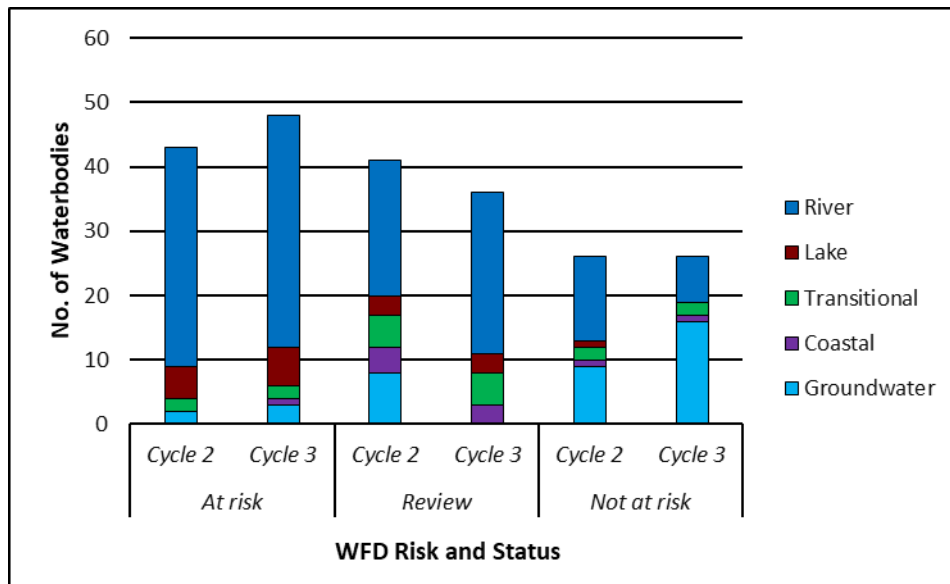


Figure 7: Number of waterbodies in each risk category

- ◆ 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.



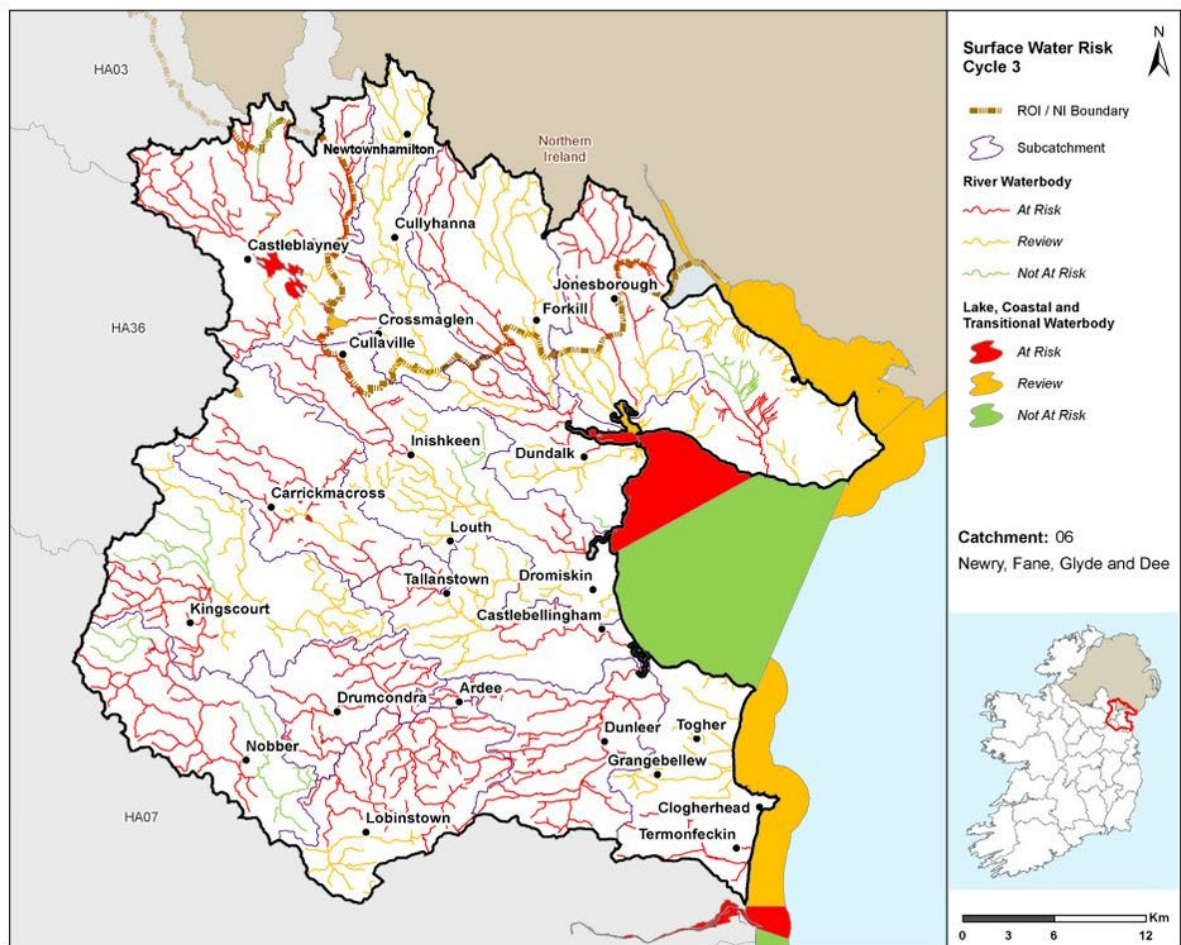


Figure 8: Surface Water Risk Cycle 3

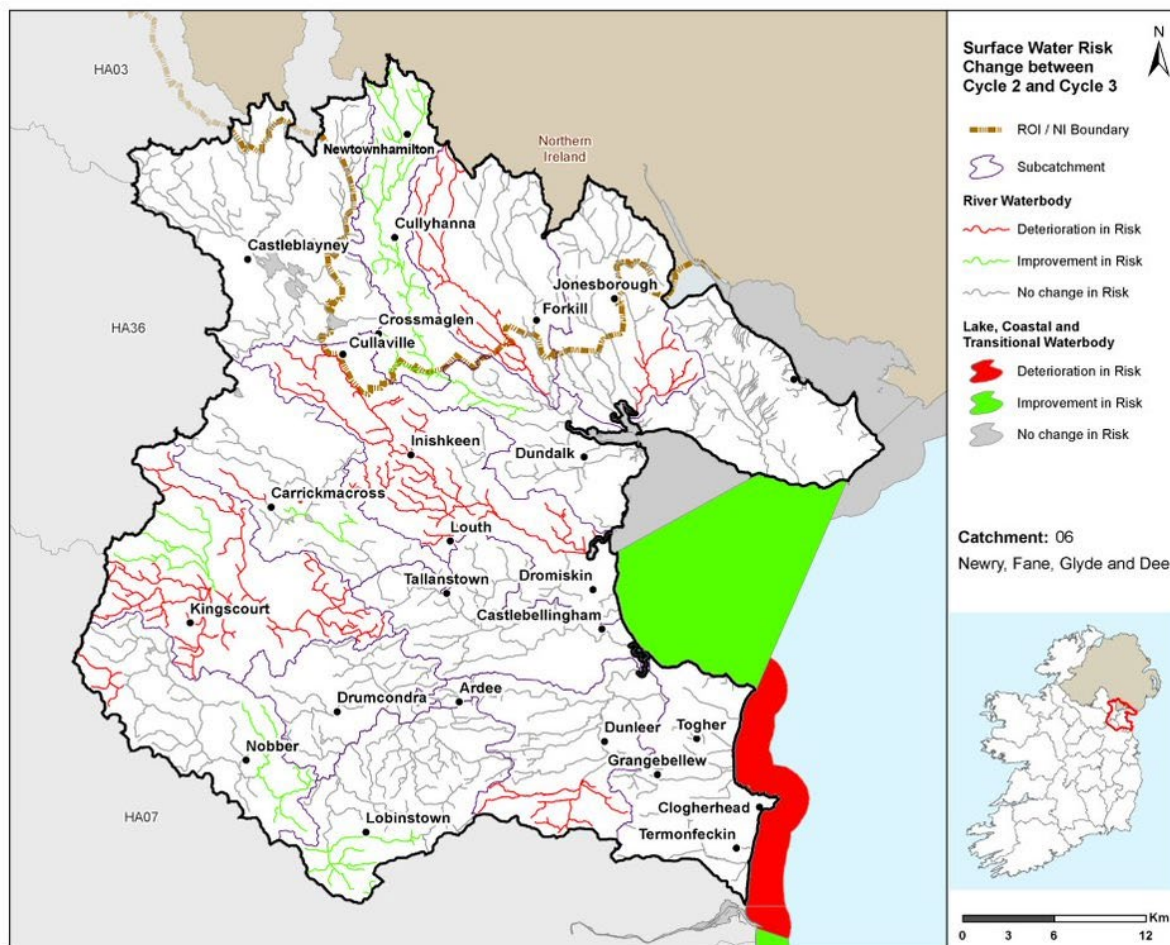


Figure 9: Surface Water Risk Change between Cycle 2 and Cycle 3

### 3.3 Groundwater

- ◆ For the 19 groundwater bodies, three (16%) are *At Risk* (Newry, Ardee & Waste Facility (W0020-01)) and 16 (84%) are *Not At Risk*. The Newry groundwater body falls along the border between the Republic of Ireland and Northern Ireland and covers a large area to the northeast while the Ardee groundwater body covers a smaller proportion of the catchment. The majority of the Newry, Fane, Glyde and Dee catchment is underlain by the Louth groundwater body. The Waste Facility (W0020-01) groundwater body underlies a very small proportion of the catchment and also covers a small proportion of the Lough Neagh and Lower Bann Catchment (HA03).
- ◆ In Cycle 2, there were two groundwater bodies (Wilinstown & Waste Facility (W0020-01)) *At Risk* in this catchment, eight in *Review* and nine *Not At Risk*.
- ◆ The location of the *At Risk*, *Review* and *Not At Risk* groundwater bodies for Cycle 3 are shown in Figure 10 while the groundwater bodies that have experienced a change in risk between Cycle 2 and 3 are shown in Figure 11.

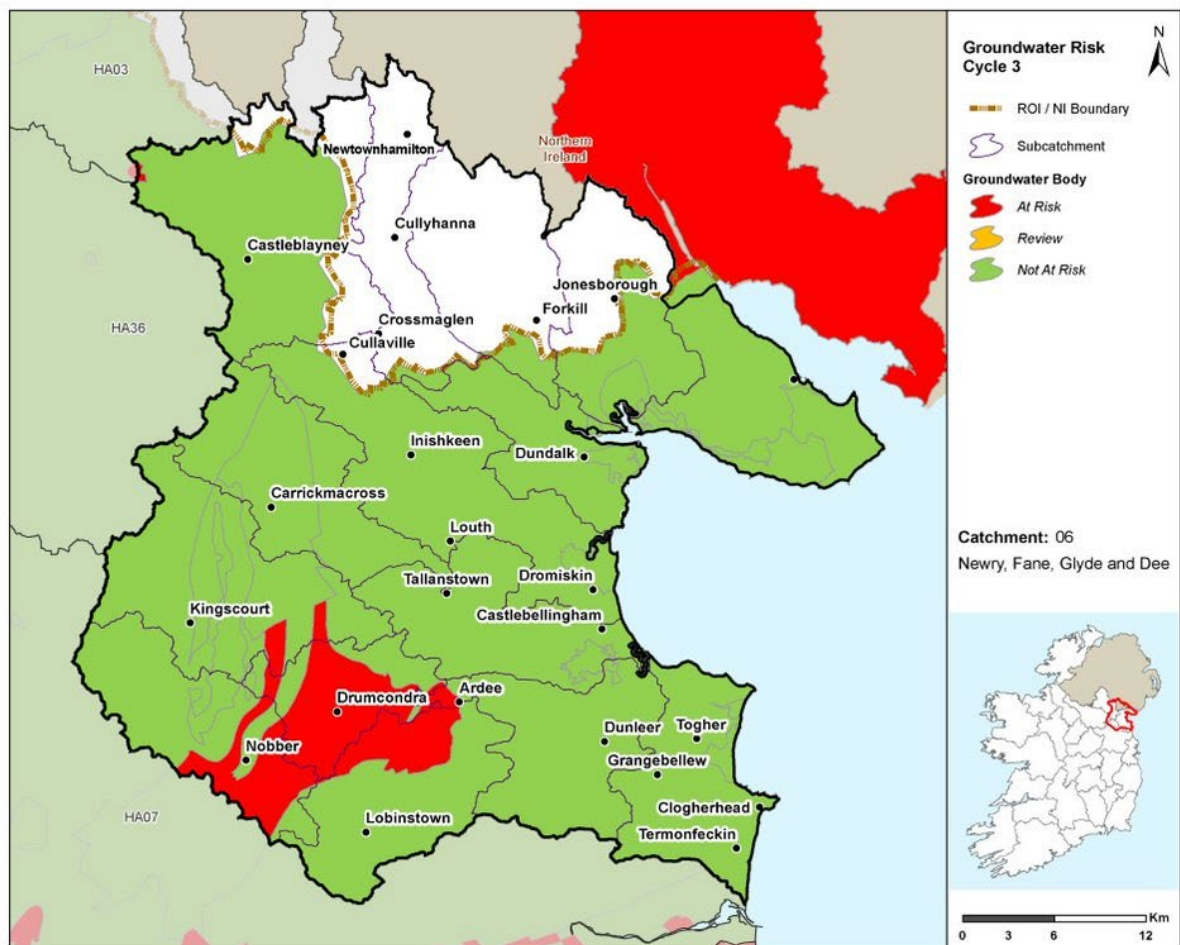


Figure 10: Cycle 3 Groundwater Body Risk



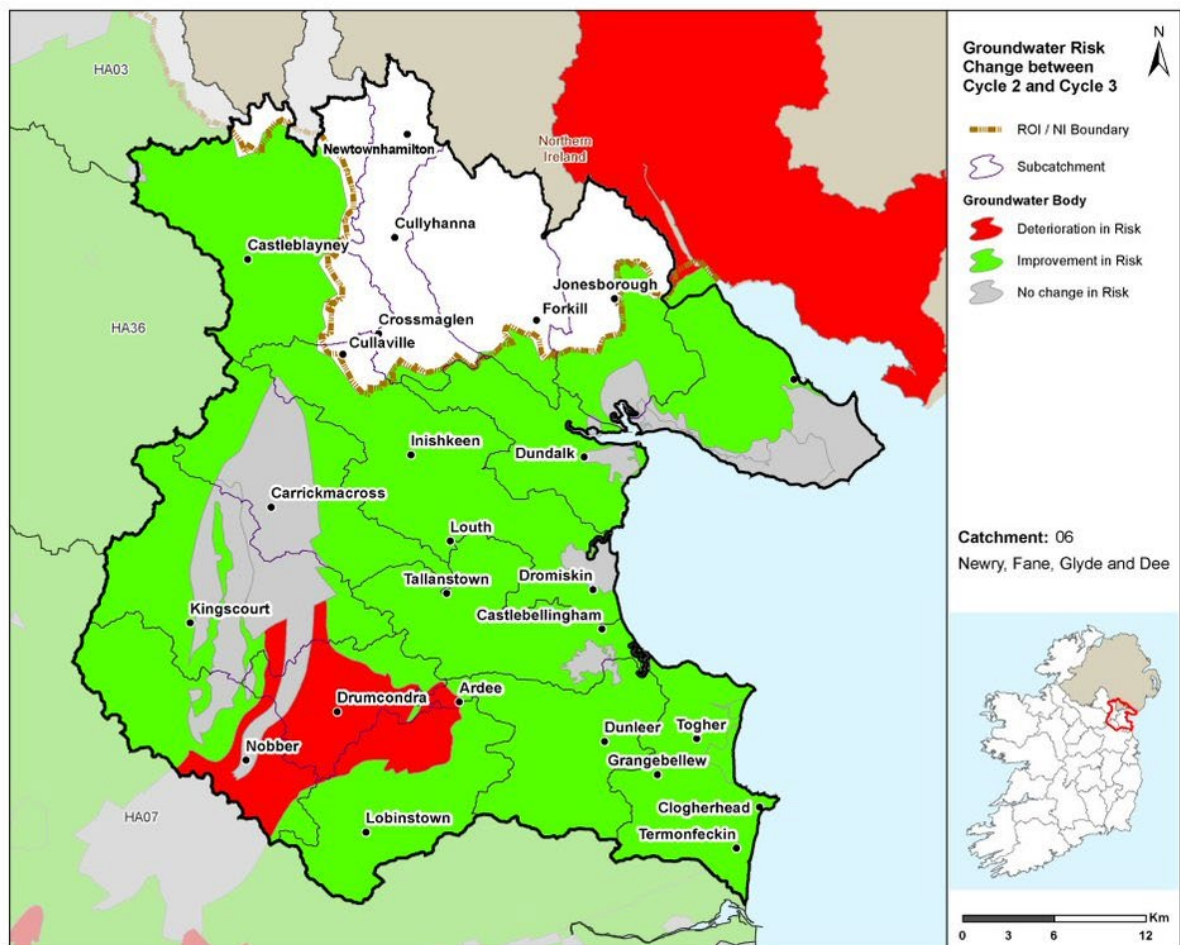


Figure 11: Groundwater Body Risk Change between Cycle 2 & Cycle 3

### 3.4 Heavily Modified Waterbodies

- ◆ Based on the 1<sup>st</sup> and 2<sup>nd</sup> RBMPs there are currently no heavily modified water bodies (HMWBs) in the Newry, Fane, Glyde and Dee catchment. There will be a consultation period on HMWBs for the 3<sup>rd</sup> Cycle RBMP and this will be completed for inclusion in the 3rd Cycle Final RBMP.

### 3.5 Artificial Waterbodies

- ◆ There are no Artificial Waterbodies (AWBs) present in the Newry, Fane, Glyde and Dee Catchment.

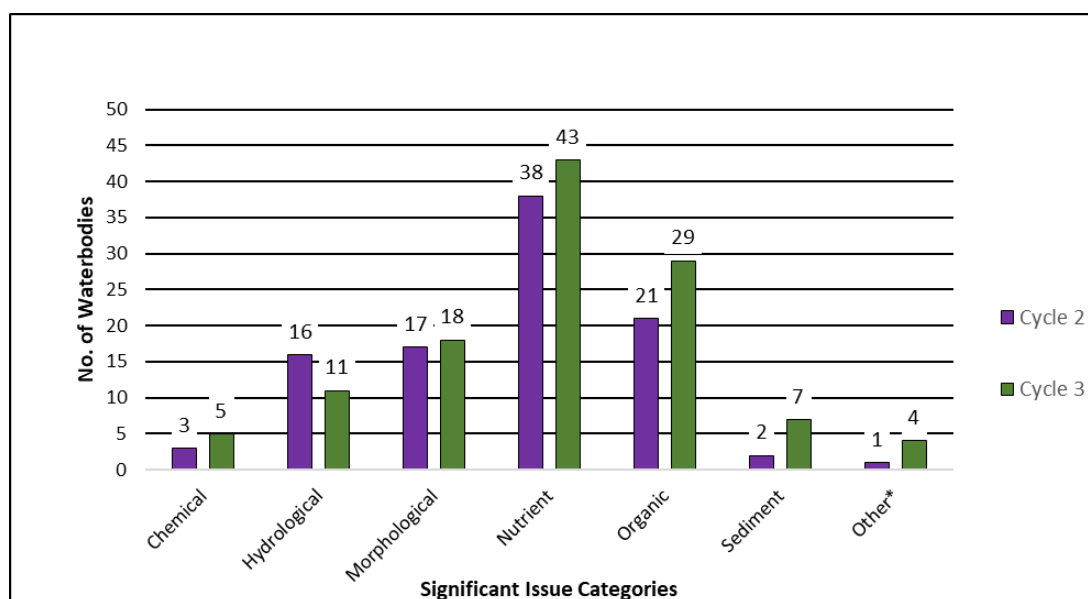
## 4 Significant Issues in *At Risk* Waterbodies

### 4.1 All Waterbodies

- ◆ Excess nutrients and organic impacts remain the most prevalent issues in the Newry, Fane, Glyde and Dee catchment (Figure 12) with nutrients impacting 43 waterbodies and organics impacting 29 waterbodies in Cycle 3. Morphological issues are impacting 18 waterbodies, hydrological issues

are impacting 11 waterbodies, sediment is impacting seven waterbodies, chemicals are impacting five waterbodies and other<sup>6</sup> is impacting four waterbodies.

- For river waterbodies, the main significant issues are nutrient pollution (33), organic pollution (25), morphological impacts (18), hydrological impacts (10), sediment (5), chemical pollution (4) other<sup>6</sup> impacts (2).
  - For lakes waterbodies, the main significant issues are nutrient pollution (5), organic pollution (4), sediment (2) and hydrological impacts (1).
  - For the two *At Risk* transitional waterbodies (Inner Dundalk Bay & Castletown Estuary) the significant issue is nutrient pollution.
  - For the three *At Risk* groundwater bodies (Ardee, Newry & Waste Facility (W0020-01) the significant issues are nutrient pollution, chemical pollution and other<sup>6</sup>.
  - For the one *At Risk* coastal waterbody (Boyne Estuary Plume Zone) the significant issue is nutrient pollution.
- ◆ Between Cycle 2 and Cycle 3 the number of waterbodies with nutrients issues have increased by four from 38 to 42, the number of waterbodies impacted by organic issues has increased by eight from 21 to 29 and the number of waterbodies impacted by morphological issues has increased by one from 17 to 18.
  - ◆ The numbers of waterbodies impacted by sediment, chemical and other issues have increased from seven, five and three respectively in Cycle 2 to two, three and one in Cycle 3.
  - ◆ The numbers of waterbodies with hydrological issues have reduced from 16 in Cycle 2 to 11 in 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

<sup>6</sup> 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

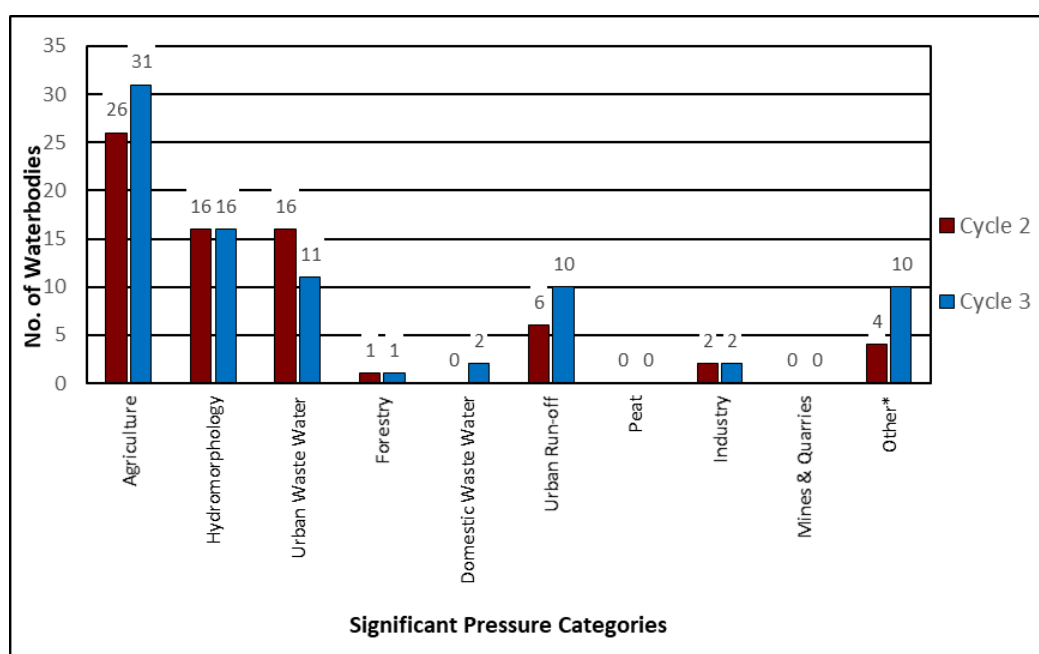
## 4.2 High Status Objective Waterbodies

- ◆ There are no High Status objective waterbodies in this catchment.

## 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, urban waste water, other<sup>7</sup>, urban runoff, domestic waste water, industry and forestry.
- ◆ When comparing Cycle 2 and Cycle 3, there is an increase of five waterbodies from 26 in Cycle 2 to 31 waterbodies in Cycle 3 where agriculture. Urban run-off is a pressure in four additional waterbodies in Cycle 3.
- ◆ 'Other' pressures have increased from four in Cycle 2 to 10 waterbodies in Cycle 3. This increase is associated with evidence of waste as a significant pressure and continued pressure from invasive species and water abstraction. Some significant pressures are unknown.
- ◆ The number of waterbodies impacted by urban wastewater has reduced from 16 to 11 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

<sup>7</sup> 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 27 rivers and three lakes (Spring, Brackan and Ervey) and one groundwater body (Ardee) in Cycle 3. The issues related to farming in this catchment are predominantly due to phosphorus loss from pastures to surface waters, for example, direct discharges; or runoff from yards, roadways or other compacted surfaces, or runoff from poorly draining soils. One lake waterbody (Brackan) is confirmed to be affected by eutrophication. Sediment can also be a problem from land drainage works, bank erosion from animal access or stream crossings. A significant proportion of the catchment is underlain by poorly draining soils and subsoils, and there are significant areas of high pollution impact potential for phosphate to surface water.

#### 5.1.1.2 Hydromorphology

- ◆ Hydromorphology has remained a significant pressure in 16 river waterbodies. Channelisation is the dominant hydromorphology subcategory in the catchment with several river waterbodies within the catchment subject to extensive modification due to arterial drainage. The Glyde & Dee Arterial Drainage Scheme is present covering all of the Dee and its tributaries in this area. Drainage schemes lead to altered flow, high levels of siltation and habitat degradation. Barriers to migrations are identified in the White Stream (White (Louth)\_010, White (Louth)\_020, White (Louth)\_030).

#### 5.1.1.3 Urban Waste Water

- ◆ Urban Waste Water Treatment Agglomerations have been identified as a significant pressure in 11 *At Risk* waterbodies (seven river waterbodies, two transitional waterbodies and two lakes) as shown in Table 4. Of the eight agglomerations that are impacting, apart from Tallanstown and Dunleer, all are included in the current Irish Water CIP (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	Expected Completion Date <sup>8</sup>
Dundalk D0053	Agglomeration PE > 10,000	Inner Dundalk Bay	Moderate	2021
Dundalk D0053	Agglomeration PE > 10,000	Castletown Estuary	Poor	2021
Carrickmacross D0062	Agglomeration PE > 10,000	Naglack	Bad	2024
Castleblayney D0205	Agglomeration PE of 2,001 to 10,000	Muckno	Bad	2021
Ardee D0117	Agglomeration PE of 2,001 to 10,000	DEE_070	Moderate	2021
Kingscourt D0083	Agglomeration PE of 2,001 to 10,000	GLYDE_010	Good	2024

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



Tallanstown Sewerage Scheme D0270	Combined Sewer Overflows	GLYDE_050	Moderate	N/A
Nobber D0487	Agglomeration PE of 500 to 1,000	MOYNAGH_040	Poor	N/A
Carrickmacross D0062	Agglomeration PE > 10,000	PROULES_020	Poor	2024
Dunleer D0111	Agglomeration PE of 2,001 to 10,000	WHITE (LOUTH)_020	Moderate	N/A
Dunleer D0111	Agglomeration PE of 2,001 to 10,000	WHITE (LOUTH)_030	Moderate	N/A

- ◆ Urban waste water as a significant pressure impacted five less waterbodies than in Cycle 2 (a reduction from 16 to 11 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:
  - Castletown (A0044)
  - Drumconrath (D0483)
  - Castlebellingham (D0269)
- ◆ Kingscourt (D0083) has been added to the list of significant pressures in Cycle 3.

#### 5.1.1.4 Other Significant Impacts

##### ◆ Invasive species

Invasive species (zebra mussels) have been identified as a significant pressure in two lake waterbodies (Monalty and Naglack).

##### ◆ Unknown anthropogenic

The significant pressures impacting two river waterbodies (Kilmainham (Dee)\_010, and Cully Water\_010), one coastal waterbody (Boyne Estuary Plume Zone) and two groundwater bodies (Newry & Ardee) are unknown.

##### ◆ Abstractions

Abstraction for Inniskeen Public water supply and Drumcondrath public water supply were identified as a significant pressure in Fane\_040 river waterbody and Brackan lake waterbody respectively, with altered habitat due to hydrological changes identified as the issue. Brackan is a small lake that is impacted by eutrophication.

##### ◆ Waste

An EPA licensed facility, Scotch Corner Landfill, was identified as a significant pressure in one groundwater body (Waste Facility (W0020-01) with nutrient pollution due to Ammonia identified as the issue. Illegal dumping of spent mushroom compost (SMC) was also identified as a significant pressure in the Proules\_010.

#### 5.1.1.5 Urban run-off

- ◆ Diffuse urban pressures, caused by misconnections, leaking sewers and runoff from paved and unpaved areas, has been identified as a significant pressure in nine river waterbodies and one coastal waterbody. Elevated concentrations of phosphates, fuel storage and oil contamination are the significant issues. These issues are associated with towns including Dundalk, Carrickmacross, Castlebellingham, Drogheda and Kingscourt.

#### 5.1.1.6 Domestic Waste Water

- ◆ Domestic waste water has been identified as a significant pressure in two river waterbodies (Fane\_010 and Fane\_40). The significant issues arise from inadequate domestic waste water

systems, many of which are sited on areas of high pollution impact potential/poorly draining soils, that result in enrichment and potential for microbial/organic contamination. Fuel storage and septic tanks have also been identified as a significant pressure in the Fane\_040.

#### 5.1.1.7 Industry

- ◆ Industry has been identified as a significant pressure in two river waterbodies (Fane\_010 and Big (Louth)\_020). These point source discharges, causing nutrient and organic issues, arise from industrial discharges and also an abstraction in Big (Louth)\_020, (Table 5).

Table 5: Breakdown of Cycle 3 Industry pressures in the Newry, Fane, Glyde and Dee Catchment.

Waterbody Code	Waterbody Name	Waterbody Type	Emission Type	Name	Impact
IE_NB_06F010200	FANE_010	River	IE	Scotch Corner Landfill	Organic
IE_NB_06B010300	BIG (LOUTH)_020	River	Section 4	N/A	Nutrient
IE_NB_06B010300	BIG (LOUTH)_020	River	IPC	Cooley Distillery	Altered Habitats due to Hydrological changes

#### 5.1.1.8 Forestry

- ◆ Forestry has remained a significant pressure in one river waterbodies (Flurry\_020). The significant issues are a combination of nutrient pollution and altered habitat due to morphological impacts.

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

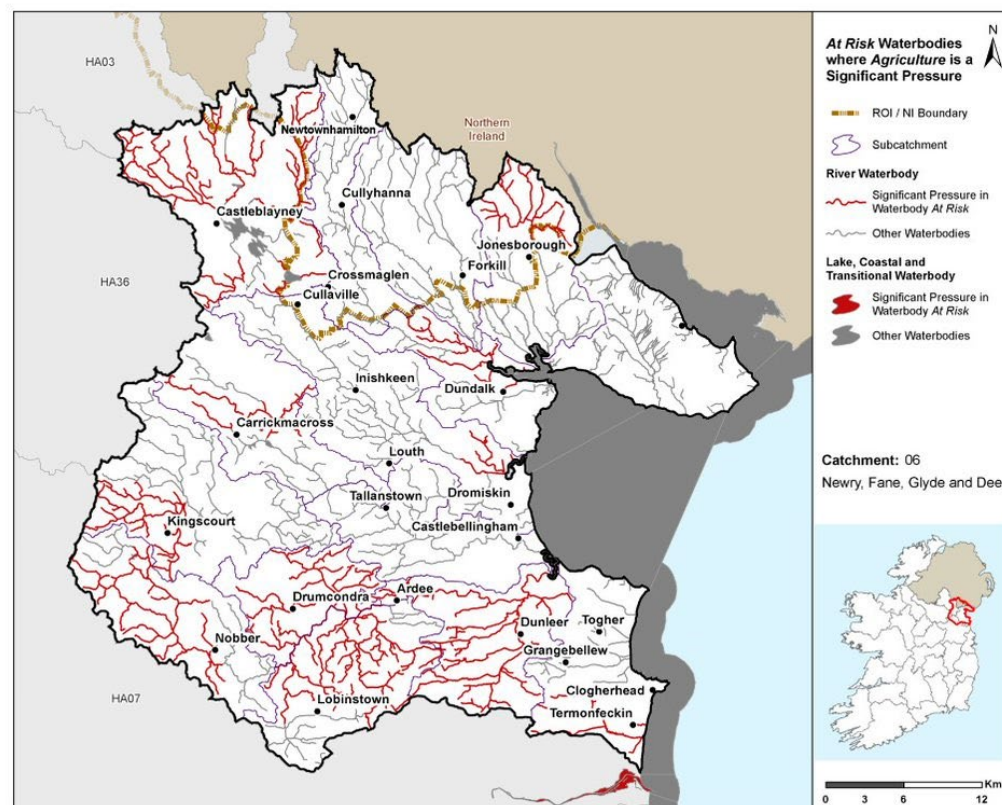


Figure 14: Locations of Waterbodies where Agriculture is a Significant Pressure

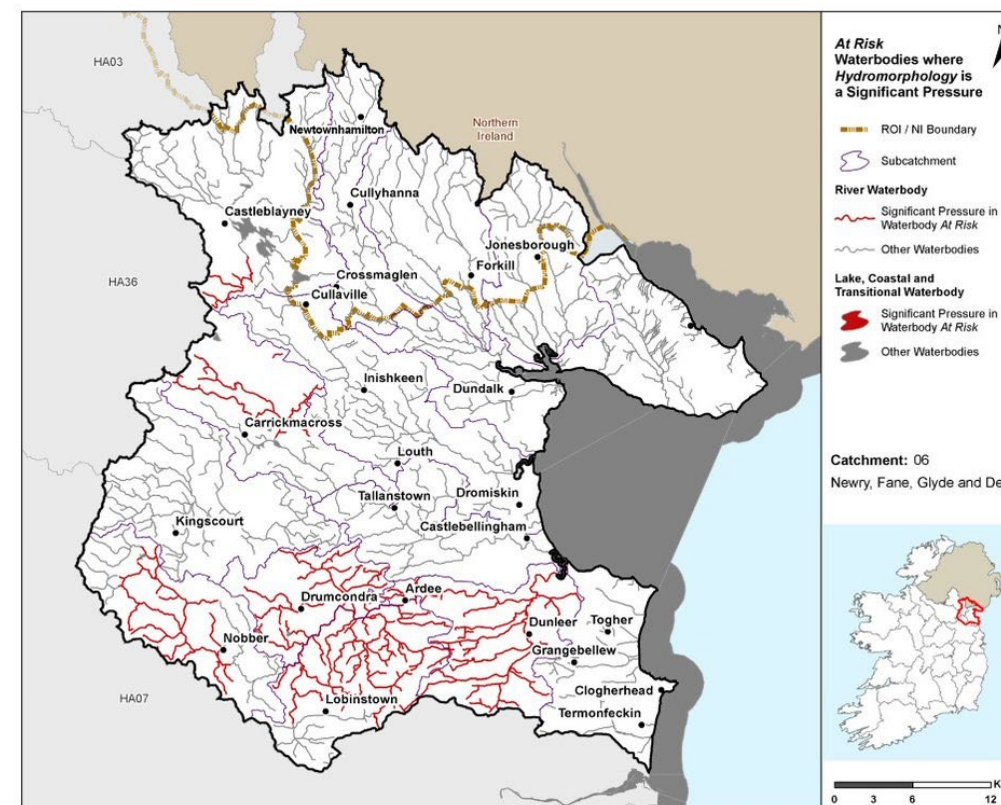


Figure 15: Locations of Waterbodies where Hydromorphology is a Significant Pressure

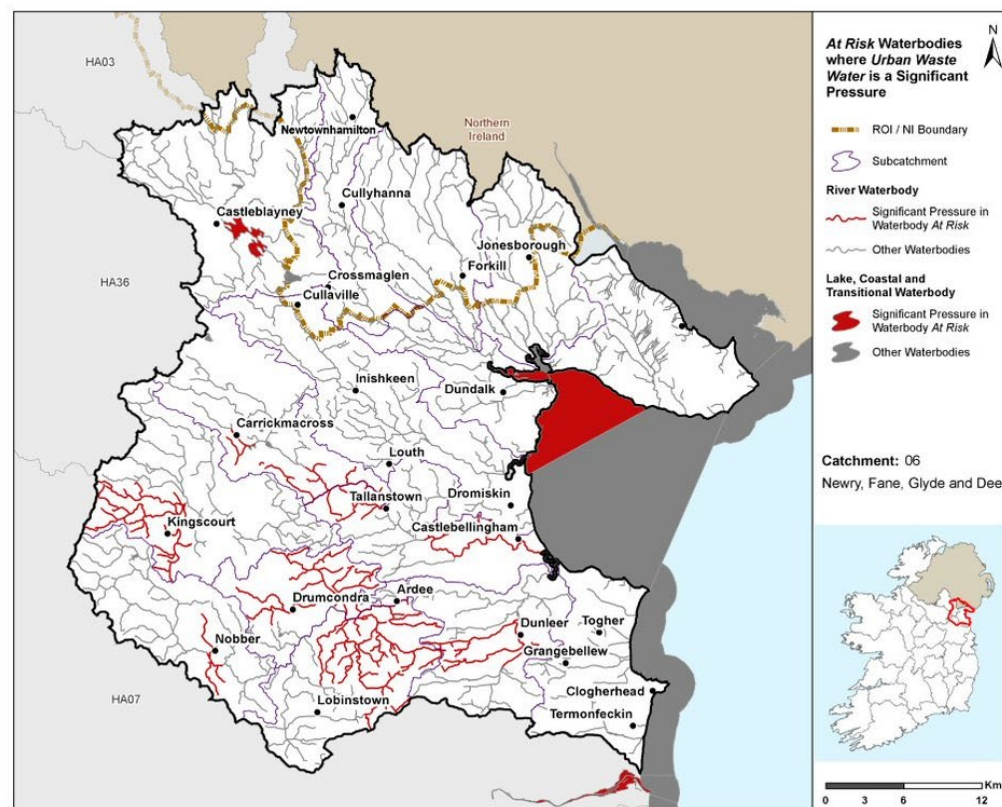


Figure 16: Locations of Waterbodies where Urban Waste Water is a Significant Pressure

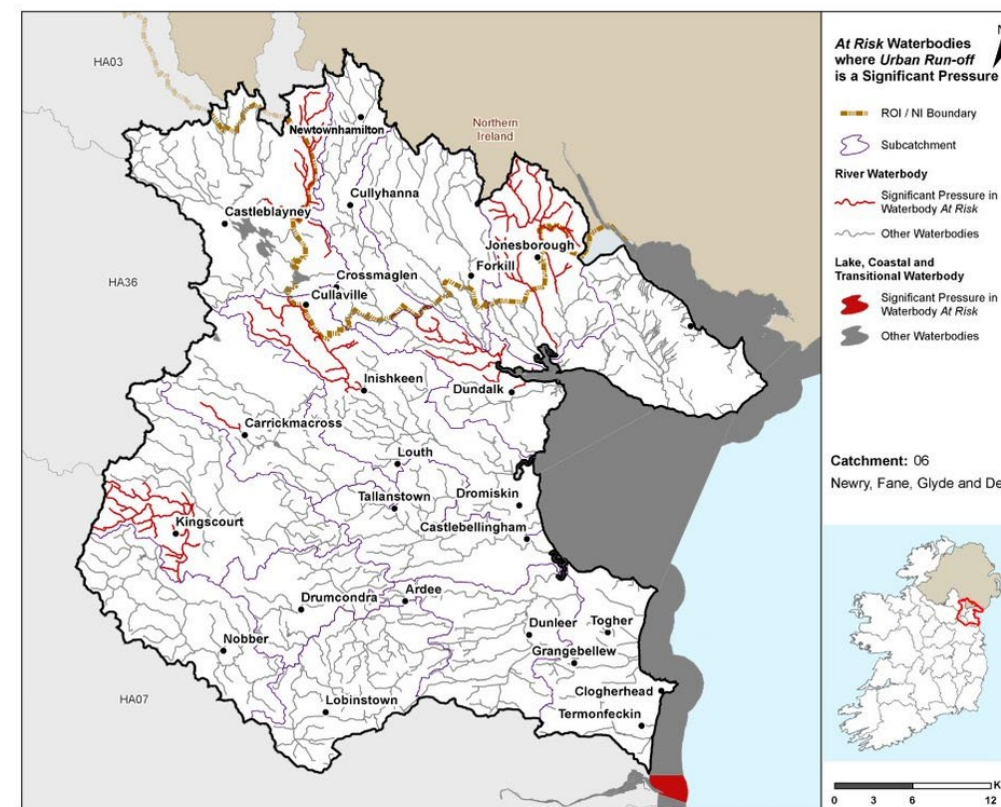


Figure 17: Locations of Waterbodies where urban run-off is a Significant Pressure



## 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 as illustrated in Figure 18.
- ◆ The main data inputs for the model for agriculture are the 2018 land parcel (LPIS) and animal (AIMs) data from the Department of Agriculture Food and the Marine. The Urban Waste Water (UWW) data comes from Irish Water's discharge monitoring data. The model also calculates the inputs from a range of other sectors, including for example, forestry, septic tanks, peat, urban runoff and atmospheric deposition.
- ◆ In the catchment pasture and arable land are responsible for 75% and 16% of the nitrogen load respectively while discharges from urban waste water and pastures contribute 49% and 26% of the phosphorus loadings for the catchment respectively (Figure 18).

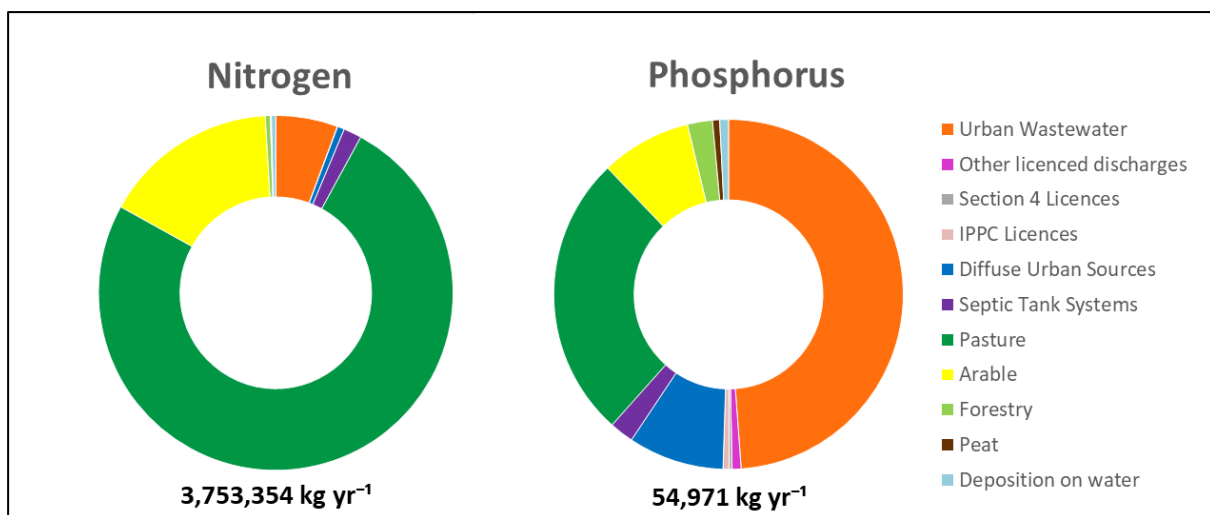


Figure 18: Estimated Proportions of N & P from Each Sector in the Newry, Fane, Glyde and Dee Catchment

## 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 Newry, Fane, Glyde and Dee Catchment.

### 7.2 Phosphorus / Sediment Load Reduction

- ◆ Further modelling work is required to determine precisely what load reductions are required.

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

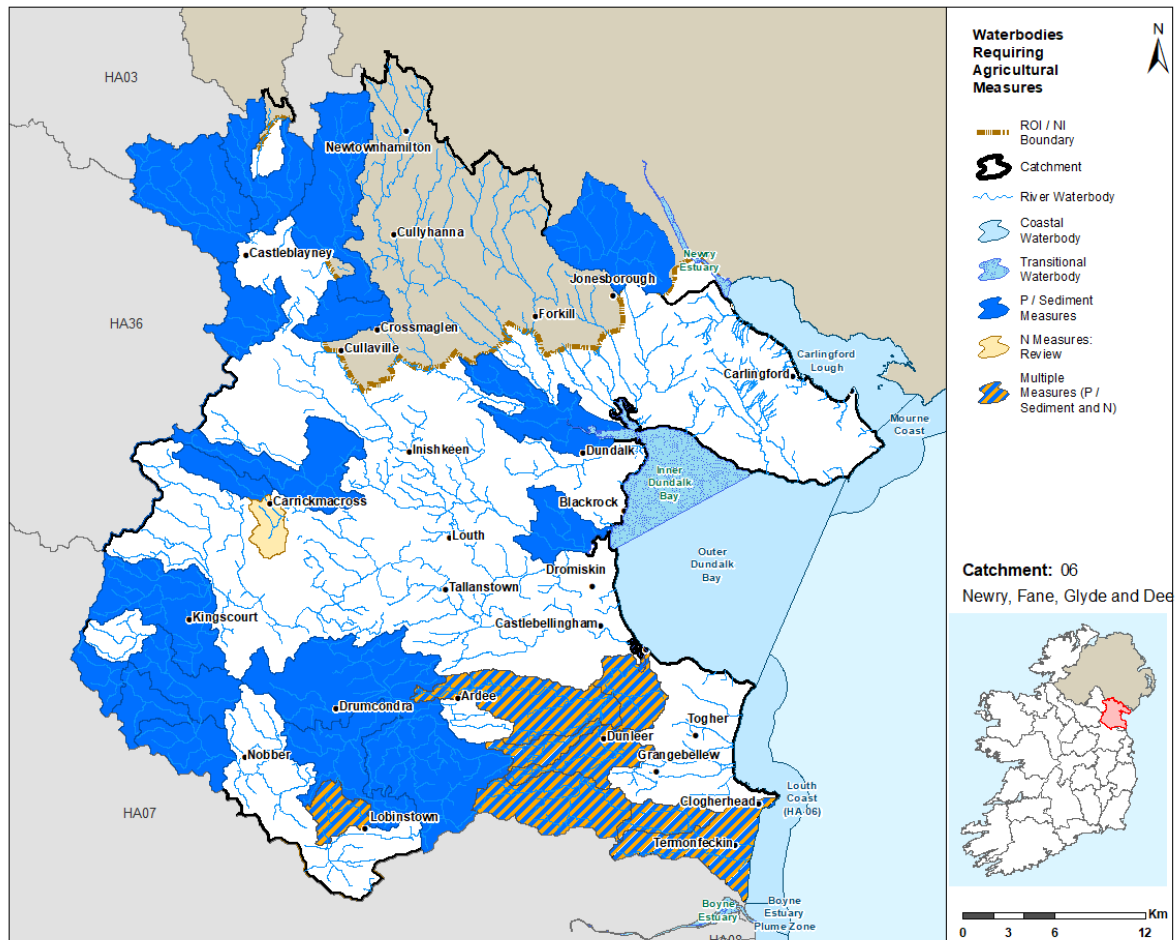


Figure 19: Waterbodies where Agricultural Measures should be Targeted

## 8 2<sup>nd</sup> Cycle Areas for Action

### 8.1 Area for Action Overview

- ◆ There were four Areas for Action, comprising of 19 waterbodies, selected for further characterisation and action in the catchment for the 2<sup>nd</sup> Cycle River Basin Management Plan. The Areas for Action in the catchment are listed in Table 6 and shown in Figure 20. LAWPRO, in conjunction with local authorities and stakeholders from the Borders and Midlands and Eastern Regional Operational Committees, have been working in these areas since 2018.

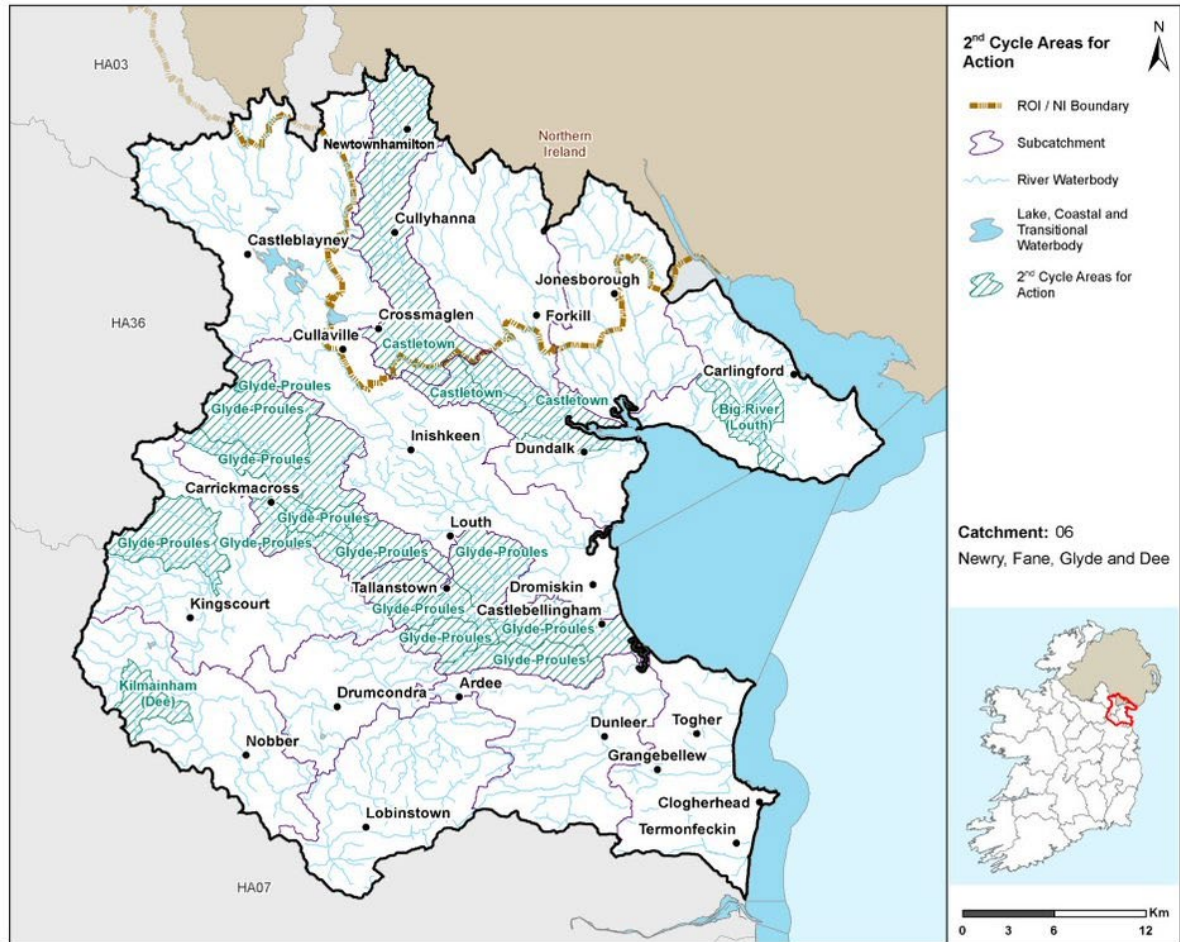


Figure 20: 2<sup>nd</sup> Cycle Areas for Action Locations

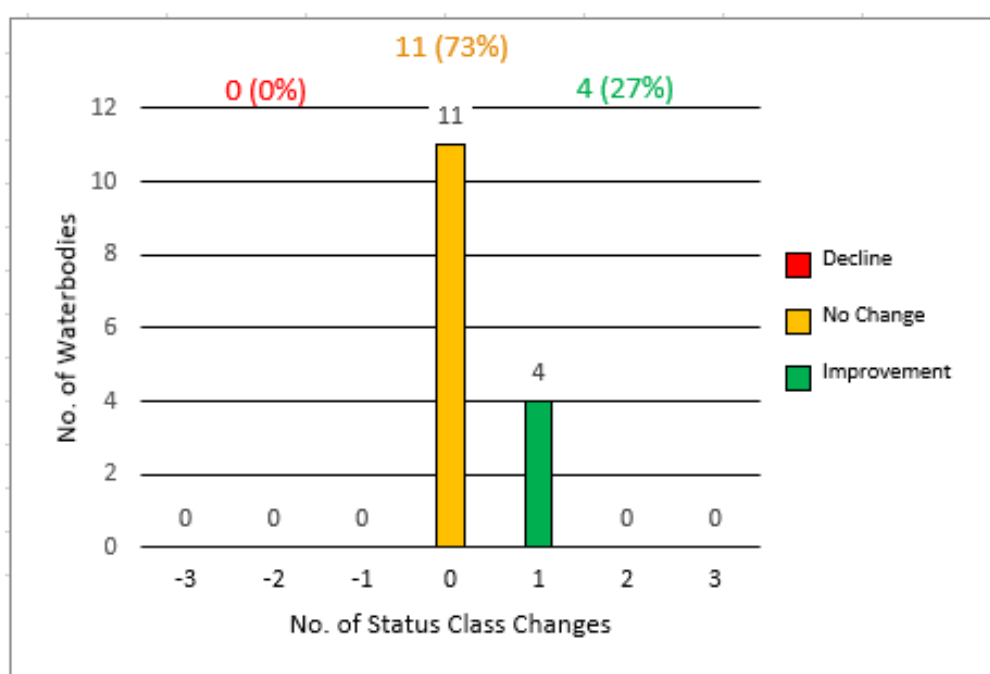
Table 6: 2<sup>nd</sup> Cycle Areas for Action

2 <sup>nd</sup> Cycle Area for Action	Number of waterbodies	Sub-catchment	Local Authority	Areas for Action Reason for Selection
<b>Glyde-Proules</b>	14	06_5, 06_7, 06_10	Monaghan/ Louth	<ul style="list-style-type: none"> <li>• Five deteriorated waterbodies.</li> <li>• One of the deteriorated waterbodies, Glyde_050, is also not meeting its Protective Area objective.</li> <li>• Build on recent improvements in two waterbodies.</li> <li>• Upgrade works are planned for Carrickmacross WWTP.</li> </ul>
<b>Kilmainham (Dee)</b>	1	06_3	Meath	<ul style="list-style-type: none"> <li>• Restore deteriorated waterbody.</li> </ul>
<b>Castletown</b>	3	06_2, 06_12	Louth/ NIEA	<ul style="list-style-type: none"> <li>• One deteriorated river waterbody, Castletown_030.</li> <li>• Build on recent improvements in the two waterbodies upstream feeding into Castletown_030.</li> <li>• Improvements would benefit Castletown estuary.</li> <li>• Cross Border Partnership may be required.</li> </ul>

2 <sup>nd</sup> Cycle Area for Action	Number of waterbodies	Sub-catchment	Local Authority	Areas for Action Reason for Selection
Big River (Louth)	1	06_9	Louth	<ul style="list-style-type: none"> <li>• Desk study into abstraction regime.</li> <li>• Was at High status in the recent past.</li> <li>• Engagement possibilities with interested farmers in the area.</li> </ul>

## 8.2 Status Change in 2<sup>nd</sup> Cycle Areas for Action

- ◆ For Cycle 3, of the 19 waterbodies in the 2<sup>nd</sup> Cycle Areas for Action, there are no waterbodies at High Status, four waterbodies at Good Status, eight waterbodies at Moderate Status, two waterbodies at Poor Status, one waterbody at Bad Status and four waterbodies where status has not been assigned.
- ◆ There is an overall improvement in status of four of the 2<sup>nd</sup> cycle waterbodies across the catchment.<sup>9</sup>
- ◆ Of the 15 waterbodies within the 2<sup>nd</sup> Cycle Areas for Action which had status assigned, 11 experienced no change in status between Cycle 2 and Cycle 3, four waterbodies experienced an improvement (Castletown\_010, Castletown\_020, Proules\_030 and Monalty) and none were subject to deterioration in status. (Figure 21). The four waterbody improvements were across the Castletown and Glyde-Proules Areas for Action.



<sup>9</sup> 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 15. 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 21: 2<sup>nd</sup> Cycle Area for Action Waterbody Status Class Changes between Cycle 2 and Cycle 3

### 8.3 Waterbody Risk in 2<sup>nd</sup> Cycle Areas for Action

- ◆ For the 19 waterbodies in the 2<sup>nd</sup> Cycle Areas for Action, 10 (53%) of these are *At Risk*, eight (42%) in *Review* and one (5%) is *Not At Risk* (Figure 22).
  - For the 16 river waterbodies in 2<sup>nd</sup> Cycle Areas for Action, eight (50%) are *At Risk*, seven (44%) are in *Review* and one (6%) is *Not At Risk*.
  - Of the three lake waterbodies in 2<sup>nd</sup> Cycle Areas for Action, two (67%) are *At Risk* and one (33%) is in *Review*.
- ◆ The largest proportion of *At Risk* waterbodies are found in river waterbodies, accounting for eight (80%) of 10 *At Risk* waterbodies.
- ◆ There were 13 waterbodies *At Risk* within 2<sup>nd</sup> Cycle Areas for Action in Cycle 2, in Cycle 3 there are 10 waterbodies *At Risk*.

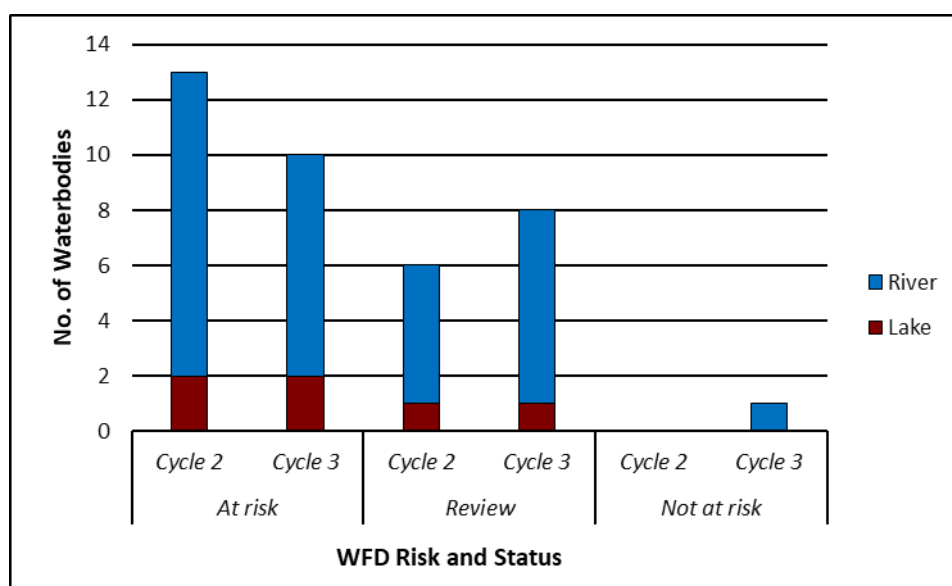
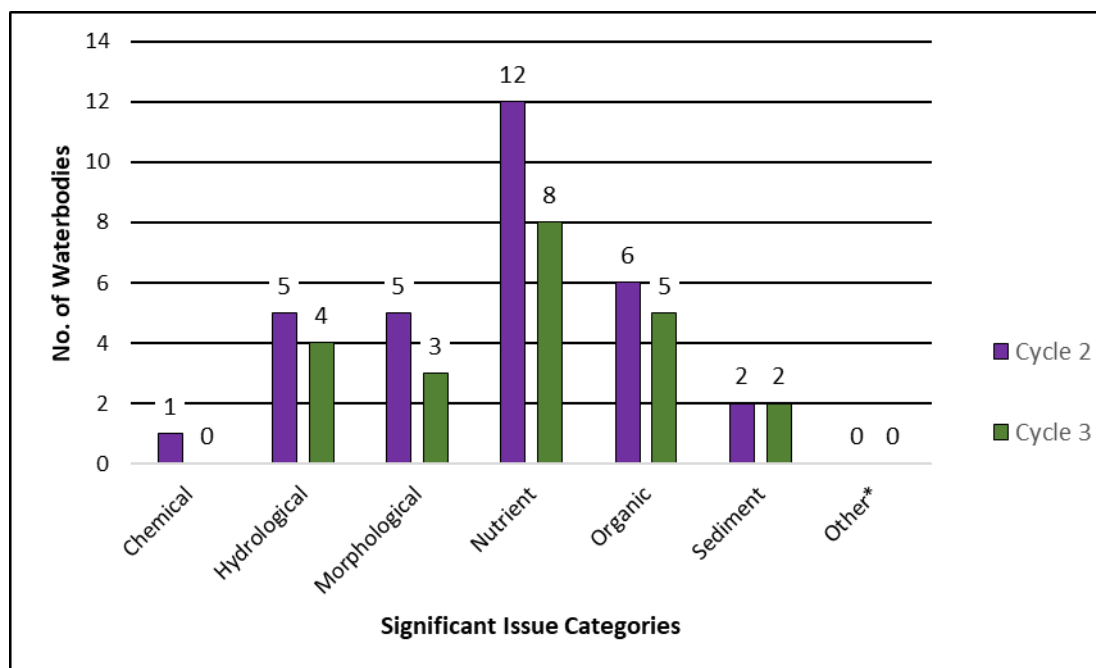


Figure 22: Number of waterbodies in each risk category in 2<sup>nd</sup> Cycle Areas for Action

### 8.4 Significant Issues in 2<sup>nd</sup> Cycle Areas for Action

- ◆ Based on the EPA assessment for Cycle 3, the significant issue in the 2<sup>nd</sup> Cycle Areas for Action in the 2<sup>nd</sup> Cycle Areas for Action the significant issue is nutrient pollution, impacting eight waterbodies (Figure 23). This is followed by organic pollution which is impacting five waterbodies, hydrological impacts which is impacting four waterbodies and morphological and sediment which are impacting three and two waterbodies, respectively.
- ◆ The number of 2<sup>nd</sup> Cycle Areas for Action waterbodies associated with each of the significant issues categories has reduced between Cycle 2 and Cycle 3 except for sediment which has not changed.

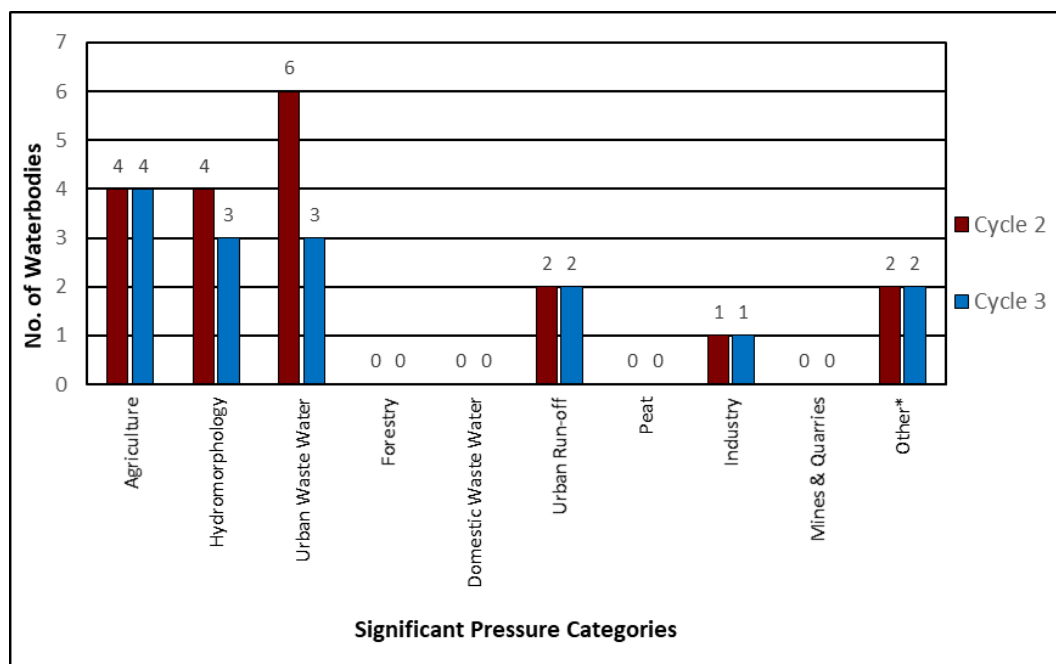


\*Other - Acidification, saline intrusion, elevated temperature, litter, microbiological pollution and unknown impacts have all been grouped into the "Other" issues category for the purpose of this report

Figure 23: Significant Issues across all 2<sup>nd</sup> Cycle Areas for Action Waterbodies

## 8.5 Significant Pressure in 2<sup>nd</sup> Cycle Areas for Action

- ◆ For Cycle 3, in 2<sup>nd</sup> Cycle Areas for Action waterbodies in the catchment the dominant significant pressures are:
  - Urban Waste Water significant pressures impacted three less waterbodies (Proules\_030, Glyde\_070 & Monalty lake) in Cycle 3 than in Cycle 2 (a reduction of six 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.
    - Castlebellingham (D0269)
  - Hydromorphology - three waterbodies are impacted compared to four impacted in Cycle 2.
  - Agriculture – four waterbodies remain impacted in Cycle 3.
  - Other – two waterbodies remain impacted in Cycle 3.
  - Urban Run-off – two waterbodies remain impacted in Cycle 3.
  - Industry - one waterbody is impacted which remains unchanged since Cycle 2.
- ◆ When comparing the significant pressures in the 2<sup>nd</sup> Cycle Areas for Action between Cycle 2 and 3 there has been a decrease in all significant pressure categories in the catchment with the exception of Industry (Section 4 licence and IPC Coolery Distillery considered a Cycle 3 pressure in Big (Louth)\_020) and Other (the presence of the invasive Zebra Mussel considered a pressure in Moynalty and Naglack Lake).



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

Figure 24: Significant Pressures in 2<sup>nd</sup> Cycle Area for Action Waterbodies

## 9 3<sup>rd</sup> Cycle Recommended Areas for Action

### 9.1 Recommended Areas for Action Overview

- ◆ For the 3<sup>rd</sup> 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 3<sup>rd</sup> Cycle Plan is to capture all activity that is working to restore, improve and/or protect waterbodies.
- ◆ There are 12 Recommended Areas for Action, comprising of 49 waterbodies, selected for further characterisation and action in the catchment for the 3<sup>rd</sup> Cycle River Basin Management Plan. 32 of the 49 waterbodies in the 3<sup>rd</sup> Cycle Recommended Areas for Action are *At Risk*, 14 are *in Review* and three are *Not At Risk*. The 12 Recommended Areas for Action consist of 12 Areas for Restoration. LAWPRO are the proposed lead organisation in five Recommended Areas for Action, Meath County Council are the proposed lead organisation in three Recommended Areas for Action, the NFGWS are the proposed lead in two Recommended Areas for Action and Louth County Council and Cavan County Council are the proposed lead on the remaining two Recommended Areas for Action. The Recommended Areas for Action in the catchment are listed in Table 7 and shown in Figure 25. The reason for selection for each waterbody in the catchment included as part of a Recommended Areas for Action is provided in Appendix 2.

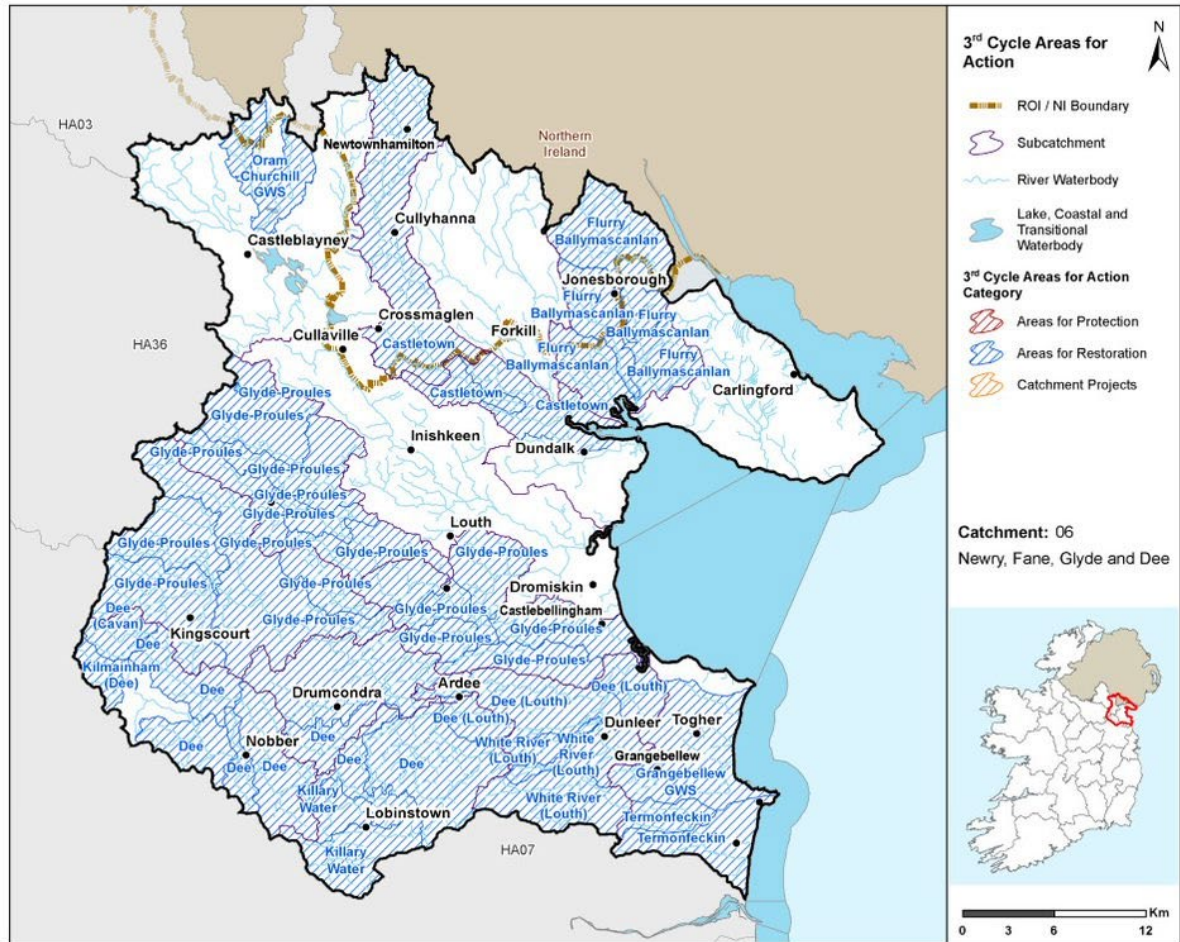


Figure 25: 3<sup>rd</sup> Cycle Recommended Areas for Action Locations

Table 7: 3<sup>rd</sup> Cycle 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
Glyde-Proules	19	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Castletown	3	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Dee (Cavan)	1	Restoration	LA Areas for Restoration Local Authorities	Cavan County Council
Dee	8	Restoration	LA Areas for Restoration Local Authorities	Meath County Council
Dee (Louth)	3	Restoration	LA Areas for Restoration Local Authorities	Louth County Council
Flurry Ballymascanlan	5	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO

3rd Cycle Recommended Areas for Action	Number of Waterbodies	Recommended Areas for Action Category	Recommended Areas for Action Sub-category	Lead Organisation
Killary Water	2	Restoration	LA Areas for Restoration Local Authorities	Meath County Council
Kilmainham (Dee)	1	Restoration	LA Areas for Restoration Local Authorities	Meath County Council
Grangebellew GWS	1	Restoration	Public Health Areas for Restoration NFGWS, IW, HSE, LAs, SFPA	NFGWS
Termonfeckin	2	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
White River (Louth)	3	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Oram Churchill GWS	1	Restoration	Public Health Areas for Restoration NFGWS, IW, HSE, LAs, SFPA	NFGWS

## 10 Catchment Summary

- Of the 68 river waterbodies, 36 are *At Risk* of not meeting their WFD objectives.
- Six out of nine lake waterbodies are *At Risk* of not meeting their WFD objectives.
- Two out of nine transitional waterbodies are *At Risk* of not meeting their WFD objectives.
- One out of five coastal waterbodies are *At Risk* of not meeting their WFD objectives.
- There are three groundwater bodies are *At Risk* of not meeting their WFD objectives.
- There has been an overall deterioration across the catchment with 48 waterbodies *At Risk* in Cycle 3 compared to 43 waterbodies *At Risk* in Cycle 2.
- The main significant issues are from nutrient and organic pollution, followed by morphological impacts, hydrological impacts, sediment, chemical pollution and other<sup>10</sup>.
- The main significant pressures are agricultural pressures followed by hydromorphology, urban waste water, other<sup>11</sup>, urban run-off, domestic waste water, industry and forestry.
- The main impacts and pressures driving the change between Cycle 2 and Cycle 3 are increases in waterbodies impacted by agriculture, other and urban run-off. Excess phosphorus is the dominant issues in river waterbodies, while eutrophication is a significant pressure in lake waterbodies.
- There was an overall improvement in the 2<sup>nd</sup> Cycle Areas for Action since Cycle 2. 13 waterbodies were *At Risk* in Cycle 2 and 10 waterbodies are *At Risk* in Cycle 3. These improvements have occurred in waterbodies where agriculture, urban waste water,

<sup>10</sup> \*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

<sup>11</sup> \*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

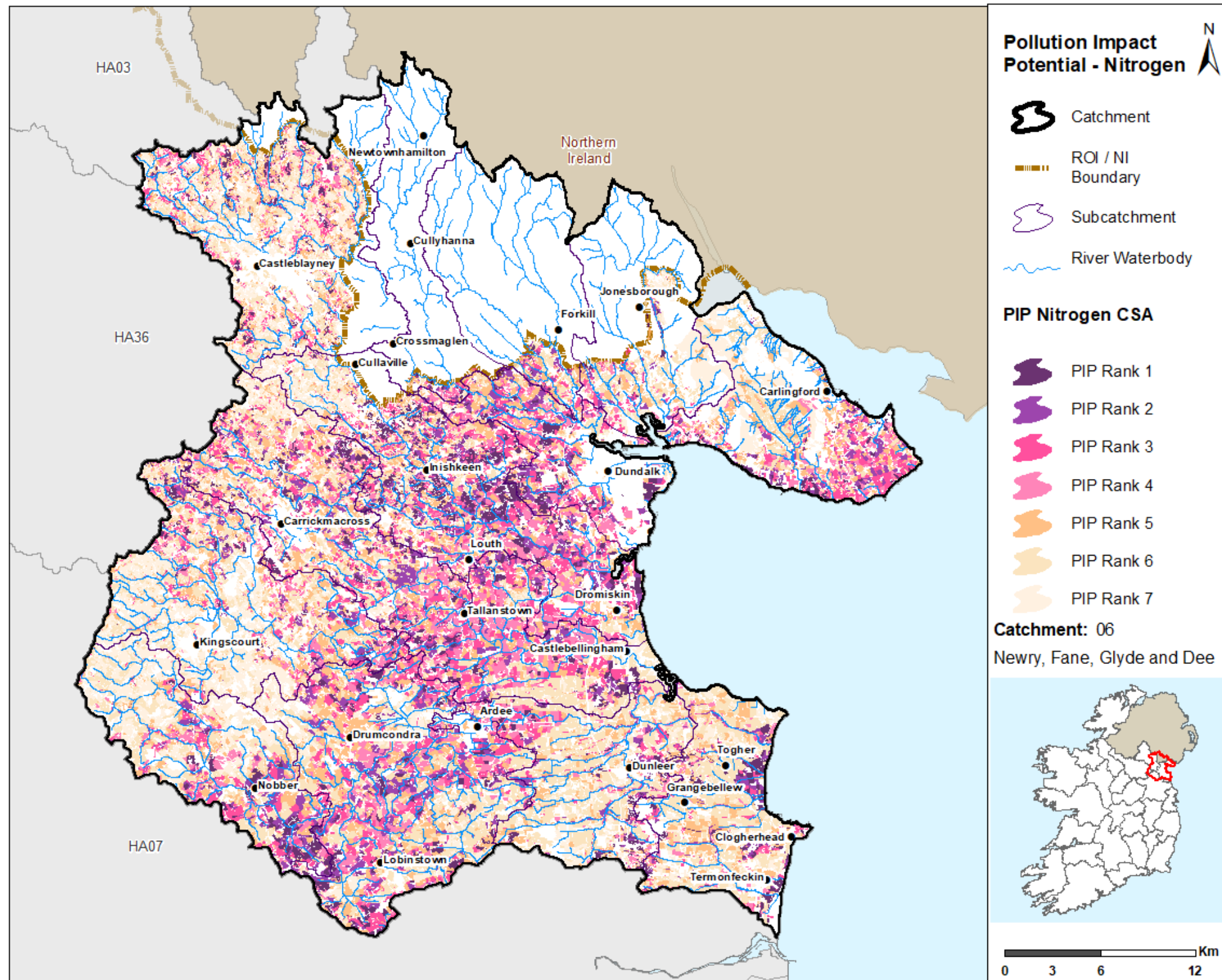


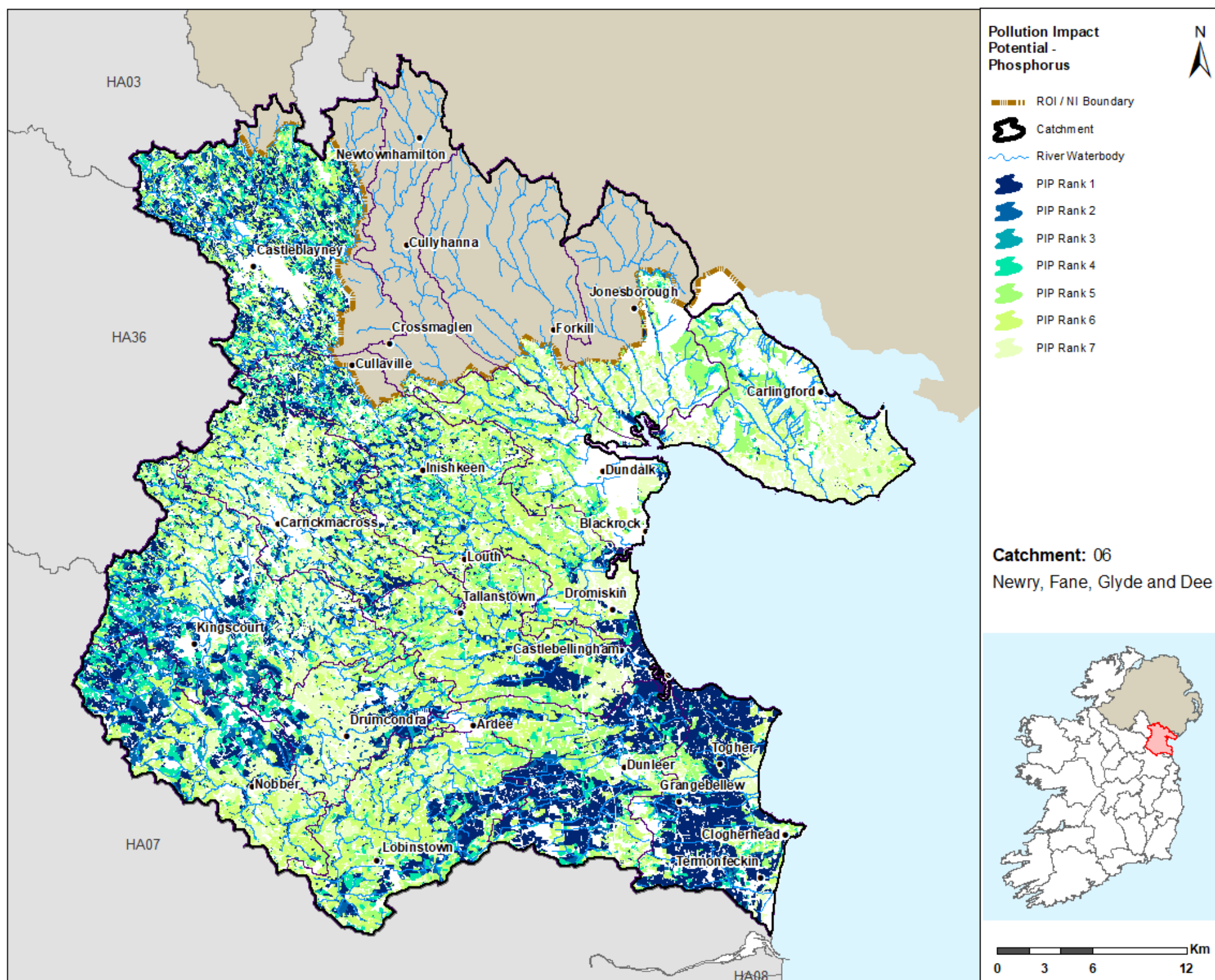
hydromorphology and urban run-off were a significant pressure in Cycle 2 but are no longer a significant pressure in Cycle 3.

- There are 12 3<sup>rd</sup> Cycle Recommended Areas for Action recommended for Cycle 3. They comprise of 49 waterbodies with 32 waterbodies *At Risk*, 14 in *Review* and three *Not At Risk*.

## Appendix 1

### Pollution Impact Potential Mapping







## Appendix 2

### Summary information on all waterbodies in the Newry, Fane, Glyde and Dee Catchment

Subcatchment Code	Water Body Code	Waterbody Name	Water Body 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)
06_8	IE_NB_06A011000	ANNAHALE STREAM_010	River	At Risk	At Risk	Unassigned	Poor	No	Ag, Hymo		
06_9	IE_NB_06B010100	BIG (LOUTH)_010	River	Not At Risk	Not At Risk	Good	Good	No			
06_9	IE_NB_06B010300	BIG (LOUTH)_020	River	At Risk	At Risk	Moderate	Moderate	No	Ind		
06_10	IE_NB_06B280720	BAWN_010	River	Review	Review	Unassigned	Unassigned	No		Glyde-Proules	Existing PAA - needs further characterisation
06_9	IE_NB_06B460680	BALLYNAMAGHERY_010	River	Review	Review	Unassigned	Unassigned	No			
06_12	IE_NB_06C010200	CASTLETOWN_020	River	At Risk	Review	Moderate	Good	No		Castletown	Existing PAA - requires further characterisation
06_12	IE_NB_06C010310	CASTLETOWN_030	River	At Risk	At Risk	Moderate	Moderate	No	Ag, UR	Castletown	Existing PAA - requires further characterisation. Also proposed by NPWS
06_13	IE_NB_06C370890	CARRICKROBIN_010	River	Not At Risk	Not At Risk	Unassigned	Unassigned	No			
06_9	IE_NB_06C620800	Carlingford_010	River	Review	Review	Unassigned	Unassigned	No			
06_3	IE_NB_06D010016	DEE_010	River	Not At Risk	Not At Risk	Good	Good	No		Dee (Cavan)	To be included under SC approach for Dee PAA recommended by M&E
06_3	IE_NB_06D010035	DEE_020	River	At Risk	At Risk	Poor	Moderate	No	Ag, Hymo	Dee	At Risk WB Beyond 2027 Ag Poor drainage
06_3	IE_NB_06D010150	DEE_030	River	At Risk	At Risk	Poor	Moderate	No	Ag, Hymo	Dee	At Risk WB Beyond 2027 Ag Poor drainage
06_3	IE_NB_06D010360	DEE_040	River	At Risk	Not At Risk	Moderate	Good	No		Dee	IFI research Water abstraction/ Historic weirs , Migration - Salmon/ River lamprey Within area of At Risk waterbodies that are under Restoration Same subcatchment as Kilmainahm (Dee)_010 LA area for restoration.
06_1, 06_4	IE_NB_06D010600	DEE_050	River	At Risk	At Risk	Moderate	Moderate	No	Ag, Hymo	Dee	At Risk WB Beyond 2027 Ag Poor drainage

Subcatchment Code	Water Body Code	Waterbody Name	Water Body 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)
06_1, 06_4	IE_NB_06D010670	DEE_060	River	At Risk	At Risk	Poor	Poor	No	Ag, Hymo, UWW	Dee	IW EPA Pesticide Act and Watch list - Watch. WTPs large population served.
06_15, 06_4	IE_NB_06D010710	DEE_070	River	At Risk	At Risk	Poor	Moderate	No	Hymo, UWW	Dee (Louth)	To be included under SC approach for Dee PAA recommended by M&E
06_15	IE_NB_06D011000	DEE_080	River	At Risk	At Risk	Poor	Moderate	No	Ag, Hymo	Dee (Louth)	To be included under SC approach for Dee PAA recommended by M&E
06_15	IE_NB_06D011100	DEE_090	River	At Risk	At Risk	Poor	Poor	No	Ag, Hymo	Dee (Louth)	To be included under SC approach for Dee PAA recommended by M&E
06_13	IE_NB_06D470300	DRUMMEENAGH_010	River	Review	Review	Unassigned	Unassigned	No			
06_8	IE_NB_06F010200	FANE_010	River	At Risk	At Risk	Poor	Poor	No	Ag, DWW, Ind		
06_13	IE_NB_06F010900	FANE_050	River	Not At Risk	Review	Good	Good	No			
06_13	IE_NB_06F010950	FANE_060	River	Review	At Risk	Unassigned	Unassigned	No	Ag		
06_11	IE_NB_06F020700	FLURRY_030	River	Not At Risk	Review	Good	Poor	No		Flurry Ballymascanlan	Cross border rivers, catchment not subject to intensive agricultural as in other catchments in Louth, no IW treatment plants in catchment, although there are treatment plants in Northern Ireland. Pre 2000 EPA Biological monitoring records show high Qs in the upper reaches of both channels so a possibility to get back to these type of levels. No major industrialisation along catchment but there are number of section 4's at Flurry_10 Catchment which are in general compliant. The catchments have valuable fisheries habitats supporting good numbers of salmon and trout. A number of tributaries flow through forested



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											areas so possible impacts from forestry. The Council have carried out farm surveys within this catchment.
06_7	IE_NB_06G020070	GLYDE_010	River	Not At Risk	At Risk	Good	Good	No	Ag, UR, UWW	Glyde-Proules	Expansion of existing PAA under sub-catchment approach
06_7	IE_NB_06G020100	GLYDE_020	River	Review	Not At Risk	Good	Good	No		Glyde-Proules	Existing PAA - needs further LCA
06_7	IE_NB_06G020400	GLYDE_030	River	Not At Risk	Review	Good	Good	No		Glyde-Proules	Expansion of existing PAA under sub-catchment approach
06_7	IE_NB_06G020500	GLYDE_040	River	Not At Risk	Review	Good	Good	No		Glyde-Proules	Expansion of existing PAA under sub-catchment approach
06_10, 06_5	IE_NB_06G020700	GLYDE_050	River	At Risk	At Risk	Moderate	Moderate	No	UWW	Glyde-Proules	Existing PAA - needs further LCA
06_10	IE_NB_06G020900	GLYDE_060	River	Review	Review	Good	Good	No		Glyde-Proules	Existing PAA - needs further LCA
06_10	IE_NB_06G021230	GLYDE_070	River	At Risk	At Risk	Moderate	Moderate	No	Ag, UR	Glyde-Proules	Existing PAA - needs further LCA
06_9	IE_NB_06G180630	GREENORE_010	River	Review	Review	Unassigned	Unassigned	No			
06_12	IE_NB_06H080570	HAGGARDSTOWN_010	River	Not At Risk	Not At Risk	Unassigned	Unassigned	No			
06_14	IE_NB_06J020630	JOHNSTOWN (Louth)_010	River	Review	Review	Unassigned	Unassigned	No			

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06_4	IE_NB_06K010100	KILLARY WATER_010	River	At Risk	Review	Moderate	Good	No		Killary Water	Meath CC has done a lot of survey work in this catchment in 2019. Potential to build on this and get improvements.
06_4	IE_NB_06K010500	KILLARY WATER_020	River	At Risk	At Risk	Poor	Poor	No	Ag, Hymo	Killary Water	Meath CC has done a lot of survey work in this catchment in 2019. Potential to build on this and get improvements.
06_3	IE_NB_06K040055	KILMAINHAM (DEE)_010	River	Not At Risk	At Risk	Good	Moderate	No	Ag, Other	Kilmainham (Dee)	Upstream of current PAA in 2nd cycle, LA has already done a lot in this area, building on this.
06_3	IE_NB_06K040100	KILMAINHAM (DEE)_020	River	At Risk	At Risk	Moderate	Moderate	No	Ag, Hymo		
06_13	IE_NB_06K210970	KILLINCOOLE_010	River	Review	Review	Unassigned	Unassigned	No			
06_9	IE_NB_06K250770	KNOCKNAGORAN_010	River	Review	Review	Unassigned	Unassigned	No			
06_10	IE_NB_06M170410	MAPASTOWN_010	River	Review	Review	Unassigned	Unassigned	No		Glyde-Proules	Expansion of existing PAA under sub-catchment approach - Unassigned WB
06_3	IE_NB_06M460800	MOYNAGH_040	River	At Risk	At Risk	Unassigned	Poor	No	Ag, Hymo, UWW	Dee	At Risk WB Include to complete sub-catchment
06_5	IE_NB_06P010110	PROULES_010	River	Not At Risk	At Risk	Good	Moderate	No	Ag, Other, UR	Glyde-Proules	Expansion of existing PAA - Recent decline in status. Potential for catchment scale research related to groundwater influences due to the unique groundwater features here
06_5	IE_NB_06P010300	PROULES_020	River	At Risk	At Risk	Poor	Poor	No	UWW	Glyde-Proules	Existing PAA - needs further LCA
06_5	IE_NB_06P010600	PROULES_030	River	At Risk	Review	Poor	Moderate	No		Glyde-Proules	Existing PAA - needs further LCA
06_12	IE_NB_06R010300	RAMPARTS_010	River	Review	Review	Unassigned	Unassigned	No			
06_5	IE_NB_06R030260	ROSSDREENAGH STREAM_010	River	At Risk	At Risk	Moderate	Moderate	No	Hymo	Glyde-Proules	Existing PAA - needs further LCA
06_5	IE_NB_06R030400	ROSSDREENAGH STREAM_020	River	At Risk	At Risk	Moderate	Moderate	No	Ag, Hymo	Glyde-Proules	Existing PAA - needs further LCA
06_9	IE_NB_06R330950	ROCKMARSHALL_010	River	Review	Review	Unassigned	Unassigned	No			

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06_14	IE_NB_06S160790	SLIEVEBOY_010	River	Review	Review	Unassigned	Unassigned	No		Grangebellew GWS	The NFGWS would like to highlight that the Grangebellew GWS groundwater Zone of Contribution is situated within the Slieveboy_010 and therefore would like to propose its inclusion for selection as a PAA.
06_14	IE_NB_06T010250	TERMONFECKIN_010	River	At Risk	At Risk	Unassigned	Poor	No	Ag	Termonfeckin	Poor, <i>At Risk</i> - included as headwater of NPWS proposal
06_14	IE_NB_06T010400	TERMONFECKIN_020	River	At Risk	At Risk	Poor	Moderate	No	Ag	Termonfeckin	Moderate, <i>At Risk</i> - proposed by NPWS
06_15	IE_NB_06W010100	WHITE (LOUTH)_010	River	Not At Risk	At Risk	Good	Moderate	No	Ag, Hymo	White River (Louth)	Teagasc have over the last number of years carried out their catchments programme in an area west of Dunleer village so a valuable information resource. Upper reaches of catchment are at acceptable status so a possibility for increasing water quality in downstream areas with a more detailed investigation of tributary streams and main channel. The pressures are largely agricultural so a possibility for ASSAP input to advise agricultural community on preventing diffuse and point discharges, cattle access and fertiliser management. The catchment has a large portion of heavy soils so inputs from the land to the channel occur quite quickly. Other pressures include Tenure WWTP , Dunleer WWTP, septic tanks and Hydromorphology,

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											Dunleer WWTP which is generally compliant has an historic problem with elevated ammonia discharges and possible inputs from storm overflows. Tenure WWTP has been previously the subject of an EPA investigation. Louth has carried out survey farms and reinspected farms within this catchment
06_15	IE_NB_06W010400	WHITE (LOUTH)_020	River	At Risk	At Risk	Poor	Moderate	No	Ag, Hymo, UWW	White River (Louth)	Same reasons as WHITE (LOUTH)_010
06_15	IE_NB_06W010500	WHITE (LOUTH)_030	River	At Risk	At Risk	Poor	Moderate	No	Ag, Hymo, UWW	White River (Louth)	Same reasons as WHITE (LOUTH)_010
06_10	IE_NB_06W040900	WHITECROSS_010	River	Review	Review	Unassigned	Unassigned	No		Glyde-Proules	Existing PAA - needs further LCA
06_11	UKGBNI1NB060602038	BALLYMASCANLAN_010	River	At Risk	At Risk	Poor	Poor	No	UR	Flurry Ballymascanlan	See reasons for FLURRY_030. Included under SC approach
06_8	UKGBNI1NB060603027	COUNTY WATER_010	River	At Risk	At Risk	Poor	Moderate	No	Ag, UR		
06_6	UKGBNI1NB060608228	KILCURRY_010	River	Review	Review	Good	Good	No			
06_8	UKGBNI1NB060608229	FANE_020	River	Review	Review	Unassigned	Unassigned	No			
06_6	UKGBNI1NB060608235	CULLY WATER_010	River	Review	At Risk	Good	Good	No	Other		
06_2	UKGBNI1NB060608246	CASTLETOWN_010	River	At Risk	Review	Moderate	Good	No		Castletown	Existing PAA - requires further characterisation
06_11	UKGBNI1NB060608247	FLURRY_010	River	At Risk	At Risk	Poor	Poor	No	Ag, UR	Flurry Ballymascanlan	See reasons for FLURRY_030. Included under SC approach
06_8	UKGBNI1NB060608248	GENTLE OWEN'S LAKE STREAM_010	River	Not At Risk	Not At Risk	Good	Good	No			
06_13	UKGBNI1NB060608249	FANE_040	River	Review	At Risk	Good	Moderate	No	DWW, Other, UR		
06_8	UKGBNI1NB060608250	FANE_030	River	At Risk	At Risk	Poor	Poor	No	Ag		
06_11	UKGBNI1NB060608251	RASKEAGH_010	River	Review	Review	Unassigned	Unassigned	No		Flurry Ballymascanlan	See reasons for FLURRY_030. Included under SC approach
06_11	UKGBNI1NB060608252	FLURRY_020	River	At Risk	At Risk	Moderate	Moderate	No	For, UR	Flurry Ballymascanlan	See reasons for FLURRY_030. Included under SC approach
06_8	UKGBNI1NB060608253	GENTLE OWEN'S LAKE STREAM_020	River	At Risk	At Risk	Moderate	Moderate	No	Ag	Oram Churchill GWS	At Risk - not proposed The NFGWS would like to

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											propose that Milltown Lough is included within a PAA. The lake is used for water abstraction by Oram & Churchill GWS. While the lake is not currently assigned a WFD classification, the upstream / downstream waterbody (Gentle Owens Lake Stream_020) is of 'Moderate' water quality and could be targeted for restoration. The headwater (Gentle Owens Lake Stream_010) is of 'Good' status and could be included in the PAA for protection.
06_5	IE_NB_06_198	Spring	Lake	<i>Not At Risk</i>	<i>At Risk</i>	Good	Good	No	Ag	Glyde-Proules	Expansion of existing PAA under sub-catchment approach - Unassigned WB
06_1	IE_NB_06_209	Brackan	Lake	<i>At Risk</i>	<i>At Risk</i>	Moderate	Moderate	No	Ag, Other	Dee	IW THMs. Plant struggles with poor raw water quality; algal growth in lake resulting in THMs.
06_5	IE_NB_06_234	Monalty	Lake	<i>At Risk</i>	<i>At Risk</i>	Bad	Poor	No	Other	Glyde-Proules	Existing PAA - needs further characterisation
06_8	IE_NB_06_244	Muckno Mill	Lake	<i>Review</i>	<i>Review</i>	Unassigned	Unassigned	No			
06_3	IE_NB_06_54	Ervey	Lake	<i>At Risk</i>	<i>At Risk</i>	Unassigned	Unassigned	No	Ag	Dee	<i>At Risk</i> WB Unassigned Beyond 2027 Ag Poor drainage
06_5	IE_NB_06_55	Naglack	Lake	<i>At Risk</i>	<i>At Risk</i>	Bad	Bad	No	Other, UWW	Glyde-Proules	Existing PAA - needs further characterisation
06_8	IE_NB_06_56	Muckno	Lake	<i>At Risk</i>	<i>At Risk</i>	Poor	Bad	No	UWW		
06_5	IE_NB_36_383	Nagarnaman	Lake	<i>Review</i>	<i>Review</i>	Unassigned	Unassigned	No		Glyde-Proules	Existing PAA - needs further characterisation
06_8	UKGBNI3NB0020	Ross MN	Lake	<i>Review</i>	<i>Review</i>	Unassigned	Unassigned	No			



Subcatchment Code	Water Body Code	Waterbody Name	Water Body 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)
06_9	GBNIE6NB020	Mourne Coast	Coastal	Review	Review	Unassigned	Unassigned	No			
06_9	GBNIE6NB030	Carlingford Lough	Coastal	Review	Review	Unassigned	Unassigned	No			
06_14, 07_17	IE_EA_010_0000	Boyne Estuary Plume Zone	Coastal	Review	At Risk	Good	Moderate	No	Other, UR		
06_14, 07_17	IE_NB_025_0000	Louth Coast (HA 06)	Coastal	Not At Risk	Review	Unassigned	Unassigned	No			
06_10, 06_13, 06_14, 06_15, 06_9	IE_NB_040_0000	Outer Dundalk Bay	Coastal	Review	Not At Risk	Good	Good	No			
06_9	IE_NB_030_0200	Carlingford Lagoons	Transitional	Review	Review	Unassigned	Unassigned	No			
06_9	IE_NB_030_0250	Shilties Lough	Transitional	Review	Review	Unassigned	Unassigned	No			
06_12, 06_13, 06_9	IE_NB_040_0100	Inner Dundalk Bay	Transitional	At Risk	At Risk	Moderate	Moderate	No	UWW		
06_11, 06_12, 06_9	IE_NB_040_0200	Castletown Estuary	Transitional	At Risk	At Risk	Moderate	Poor	No	UWW		
06_11, 06_12, 06_9	IE_NB_040_0300	Ballymascanlan Estuary	Transitional	Review	Review	Unassigned	Unassigned	No			
06_13	IE_NB_040_0400	Fane Estuary	Transitional	Not At Risk	Not At Risk	Unassigned	Unassigned	No			
06_10, 06_14, 06_15	IE_NB_040_0500	Glyde Estuary	Transitional	Not At Risk	Not At Risk	Unassigned	Unassigned	No			
06_14	IE_NB_040_0600	Corstown Lagoon	Transitional	Review	Review	Unassigned	Unassigned	No			
06_9	UKGBNI5NB030010	Newry Estuary	Transitional	Review	Review	Unassigned	Unassigned	No			
06_11	GBNI4NB009	Newry	Groundwater	Review	At Risk	Good	Poor	No	Other		
06_3, 06_7, 07_10, 07_13, 07_14, 07_5, 07_8, 26F_3, 26F_6, 36_11, 36_16, 36_9	IE_EA_G_006	Bailieborough	Groundwater	Review	Not At Risk	Good	Good	No			
06_14, 06_15, 06_3, 06_4, 07_14, 07_15, 07_17, 07_18, 07_8	IE_EA_G_010	Wilkinstown	Groundwater	At Risk	Not At Risk	Good	Good	No			
06_3, 07_14, 07_18, 07_8	IE_EA_G_015	Moynalty	Groundwater	Not At Risk	Not At Risk	Good	Good	No			
06_14, 07_1, 07_15, 07_17, 08_5	IE_EA_G_025	Drogheda	Groundwater	Review	Not At Risk	Good	Good	No			

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06_11, 06_12, 06_9	IE_NB_G_015	Dundalk	Groundwater	Not At Risk	Not At Risk	Good	Good	No			
06_1, 06_13, 06_3, 06_5, 06_7	IE_NB_G_016	Carrickmacross	Groundwater	Not At Risk	Not At Risk	Good	Good	No			
06_1, 06_3, 06_5, 06_7	IE_NB_G_017	Kingscourt	Groundwater	Not At Risk	Not At Risk	Good	Good	No			
06_1, 06_15, 06_3, 06_4, 06_7, 07_14	IE_NB_G_018	Ardee	Groundwater	Review	At Risk	Good	Good	No	Other		
06_10, 06_15	IE_NB_G_021	Williamstown Gravels	Groundwater	Not At Risk	Not At Risk	Good	Good	No			
06_13	IE_NB_G_022	Dromiskin Gravels	Groundwater	Not At Risk	Not At Risk	Good	Good	No			
06_14	IE_NB_G_023	Clogher Head Gravels	Groundwater	Review	Not At Risk	Good	Good	No			
06_11, 06_9	IE_NB_G_024	Dundalk Gravels	Groundwater	Not At Risk	Not At Risk	Good	Good	No			
03_5, 06_8	IE_NB_G_026	Waste Facility (W0020-01)	Groundwater	At Risk	At Risk	Poor	Poor	No	Other		
06_12	IE_NB_G_031	Dundalk Gravels	Groundwater	Not At Risk	Not At Risk	Good	Good	No			
06_11, 06_12	IE_NB_G_044	Waste Facility (W0034-03)	Groundwater	Not At Risk	Not At Risk	Good	Good	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			
03_1, 03_5, 03_6, 06_2, 06_8, 36_10, 36_12, 36_17, 36_3	IEGBNI_NB_G_011	Keady	Groundwater	Review	Not At Risk	Good	Good	No			
03_1, 03_5, 06_1, 06_10, 06_11, 06_12, 06_13, 06_14, 06_15, 06_2, 06_3, 06_4, 06_5, 06_6, 06_7, 06_8, 06_9, 07_14, 07_15,	IEGBNI_NB_G_019	Louth	Groundwater	Review	Not At Risk	Good	Good	No			

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07_17, 07_18, 07_5, 36_12, 36_16											

**Ag:** Agriculture

**DWW:** Domestic Waste Water

**For:** Forestry

**Hymo:** Hydromorphology

**Ind:** Industry

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

**M+Q:** Mines and Quarries

**Peat:** Peat Drainage and Extraction

**UR:** Urban Run-off

**UWW:** Urban Waste Water