Dunmanus-Bantry-Kenmare Catchment Assessment 2010-2015 (HA 21)

Catchment Science & Management Unit

Environmental Protection Agency

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Preface

This document provides a summary of the characterisation outcomes for the water resources of the Dunmanus-Bantry-Kenmare Catchment, which have been compiled and assessed by the EPA, with the assistance of local authorities and RPS consultants. The information presented includes status and risk categories of all water bodies, details on protected areas, significant issues, significant pressures, load reduction assessments, recommendations on future investigative assessments, areas for actions and environmental objectives. The characterisation assessments are based on information available to the end of 2015. Additional, more detailed characterisation information is available to public bodies on the EPA WFD Application via the EDEN portal, and more widely on the catchments.ie website. The purpose of this document is to provide an overview of the situation in the catchment and help inform further action and analysis of appropriate measures and management strategies.

This document is supported by, and can be read in conjunction with, a series of other documents which provide explanations of the elements it contains:

1. An explanatory document setting out the full characterisation process, including water body, subcatchment and catchment characterisation.
2. The Final River Basin Management Plan, which can be accessed on: www.catchments.ie.
3. A published paper on Source Load Apportionment Modelling, which can be accessed at: http://www.jstor.org/stable/10.3318/bioe.2016.22
4. A published paper on the role of pathways in transferring nutrients to streams and the relevance to water quality management strategies, which can be accessed at: http://www.jstor.org/stable/pdf/10.3318/bioe.2016.19.pdf
5. An article on Investigative Assessments which can be accessed at: https://www.catchments.ie/download/catchments-newsletter-sharing-science-stories-june-2016/

Table of contents

1 Introduction

This catchment includes the area drained by all streams entering tidal water in Dunmanus, Bantry and Kenmare Bays between Mizen Head and Glanearagh Head, Co. Kerry, draining a total area of 1,898 km². The largest urban centre in the catchment is Bantry. The other main urban centre is Kenmare. The total population of the catchment is approximately 24,280 with a population density of 13 people per km².

The northern side of the Mizen Peninsula is drained by a series of small streams and rivers flowing into Dunmanus Bay, the largest of which, the Glengarrif River, flows into the bay at Dunmanus Point. The Four Mile Water river, flowing into the head of Dunmanus Bay at Durrus, drains the inland area between the Mizen and Sheep's Head Peninsulas. The Sheep's Head Peninsula is characterised by a nearly continuous hilly ridge running along its length, the north and south slopes of which are drained by a series of small rivers and streams.

The Mearlagh River drains the western slopes of the Maughanaclea Hills, flowing west and into Bantry Bay The area east and north of Ballylicky is drained by the Owvan River, comprising the sub-catchment of the Owngar and Owbeg Rivers, and the Coomhola river, all which flow into Bantry Bay.

The eastern slopes of the Caha Mountains on the Beara Peninsula are drained by several rivers which make their way through the mountains and to the sea at Glengarriff Harbour. This includes, from east to west, The Barony, Reenmeen West, Glengarriff and Magannagan Rivers. The south-central area of the Caha Mountains is drained by the Adrigole and Cappanaparka East Rivers, which flow to Bantry Bay via Adrigole Harbour. The south-western flanks of the Cahas are drained by a series of small rivers including the Lyre, Curryglass, and Derrymihin Rivers, all which flow into Bear Haven on the north side of Bantry Bay.

The western end of the Beara Peninsula is drained by the Inchinagat and Cloghane Rivers to the south, the Ballydonegan River to the west and the Ardacluggin and Kealincha Rivers to the north. The north-western flanks of the Caha Mountains are drained by the Owenagappul River system, the Croanshagh River, the Owenshagh River, the Lehid River, the Cloonee River (including Loughs Cummeenadillure, Inchiquin and Cloonee), the Dromoghty River and the Sheen River at Kenmare bridge. The Roughty River drains the inland part of the catchment to the east of Kenmare. The Roughty rises on the northern slopes of Bealick Mountianand is joined from the south by the Slaheny River. The Owbeg River then flows in from the north, and the Cleady River joins from the north just before the Roughty flows into the head of Kenmare Bay via The Sound.

On the Iveragh Peninsula, the Finnihy River makes its way south from Barfinnihy Lough draining into the northern side of Kenmare Bay. The southern side of Dunkerronridge is drained by several rivers, all which flow into Kenmare Bay including (from east to west) the Blackwater River the Tahilla river, the Sneem River, the Bunnow River, the Liss River, the Behashane River and the Coomnahorna River. The western end of the Dunkerron Mountains on the Iveragh Peninsula is drained by the Waterville River system including the sub-catchments of the Finglas River, the Waterville River (including Lough Currane) and the Cummeragh River (including Loughs Derriana Cloonaghlin and Namona). These rivers flow west and to sea at Waterville via Ballinskelligs Bay.

The Dunmanus-Bantry-Kenmare catchment comprises 20 subcatchments (Table 1, Figure 1) with 91 river water bodies, 39 lakes, twenty transitional and coastal water bodies, and three groundwater bodies. There are no heavily modified or artificial water bodies in the Dunmanus-Bantry-Kenmore Catchment.

Table 1. List of subcatchments in the Dunmanus-Bantry-Kenmare catchment

Subcatchment ID	Subcatchment Name
21_1	COOM_SC_010
21_2	BEHAGHANE_SC_010
21_3	FAHANE_SC_010
21_4	Roughty_SC_020
21_5	Kealduff_SC_010
21_6	Sheen_SC_010
21_7	Roughty_SC_010
21_8	Finglasriver[Waterville]_SC_010
21_9	FANAHY_SC_010
21_10	Inny[Kerry]_SC_010
21_11	FourMile[Water]_SC_010
21_12	Sneem_SC_010
21_13	Finnihy_SC_010
21_14	Dromoghty_SC_010
21_15	Owenshagh_SC_010
21_16	Ownagappul_SC_010
21_17	Clashaduff_SC_010
21_18	Glengarriff_SC_010
21_19	Coomhola_SC_010
21_20	Mealagh_SC_010

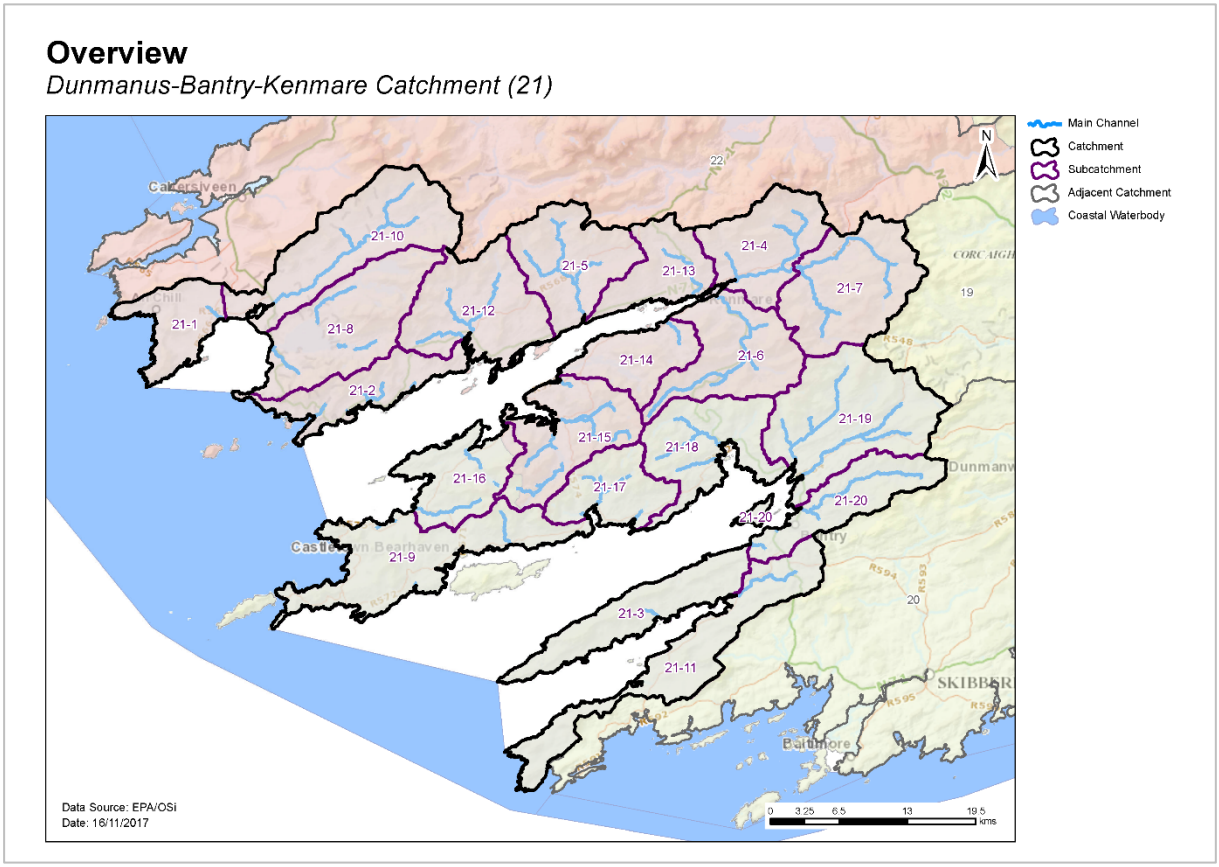


Figure 1. Subcatchments in the Dunmanus-Bantry-Kenmare catchment

2 Water body status and risk of not meeting environmental objectives

2.1 Surface water ecological status

2.1.1 Rivers and lakes

- There were 57 (44%) river and lake water bodies at Good or High status, and seven (5%) at less than Good status in 2015 (Table 2, Figure 2). Sixty-six (51%) river and lake water bodies are unassigned.
- Thirty-six river water bodies and sites and five lakes have a high ecological status objective. In 2015, 26 of these rivers and all five of these lake water bodies were at High status, while ten river water bodies were at Good (Figure 3, Appendix 1).
- The numbers of water bodies at each status class in 2007-09 and 2010-15 are shown in Figures 4 (rivers) and 5 (lakes).
- Since 2007-09 when WFD monitoring began, five water bodies have an improved status whereas 15 have deteriorated (Figure 7).
- The variation in nutrient concentrations and loads in the Inny (Kerry), Cummeragh and Owvane main channels are illustrated in Appendix 2.

2.1.2 Transitional and coastal (TraC)

- There is one coastal water body – Outer Bantry Bay IE_SW_170_0000 – at high status in 2015 (Table 2, Figure 2), two transitional and two coastal water bodies at Good status and one transitional water body at Moderate status. Fourteen TraC water bodies are Unassigned.
- Two coastal water bodies have a High Ecological Status objective – Outer Kenmare River (IE_SW_190_0000) and Outer Bantry Bay (IE_SW_170_0000). In 2015, the former was of Good status while the latter was at High status.
- The numbers of water bodies at each status class in 2007-09 and 2010-15 are shown in Figure 6.
- Note the coastal water body South Western Atlantic Seaboard (HAs 21;22), is shared with catchment 22.

Table 2. Summary of surface water body status and risk categories.

	Number of water bodies	2010-15 Status						Risk Categories		
		High	Good	Mod	Poor	Bad	Unassigned	*Not at Risk*	*Review*	*At Risk*
Rivers	91	26	23	7	0	0	35	64	11	16
Lakes	39	5	3	0	0	0	31	38	1	0
TraCs	20	1	4	1	0	0	14	15	5	0

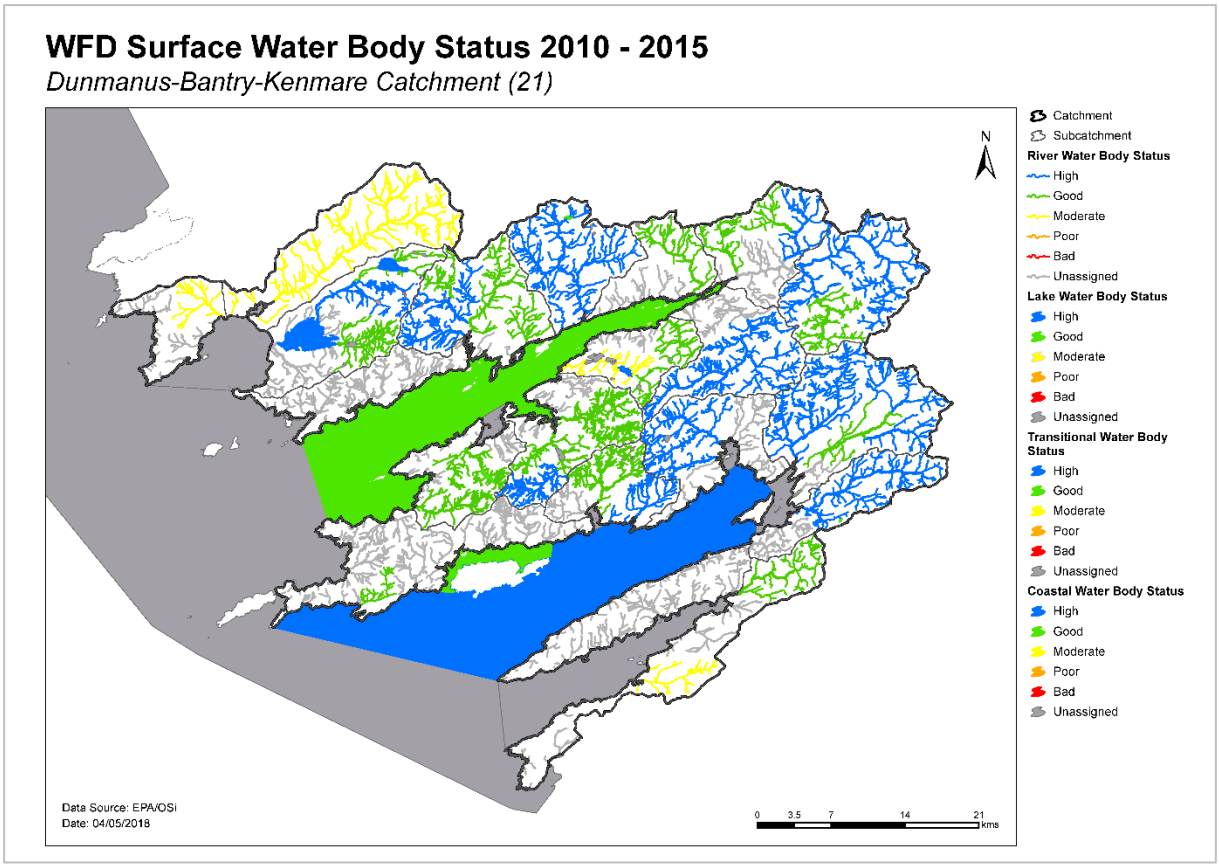


Figure 2. Surface water ecological status

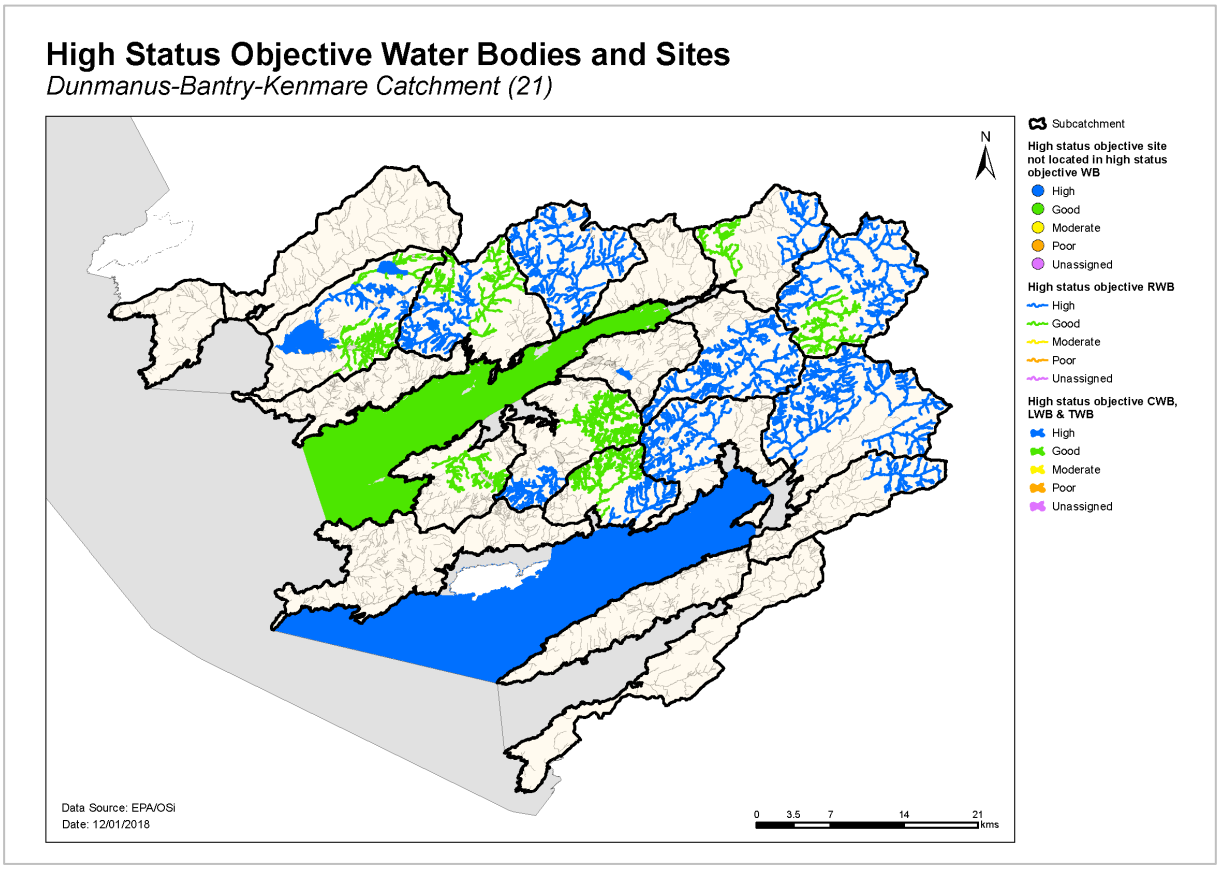


Figure 3. High ecological status objective water bodies and sites

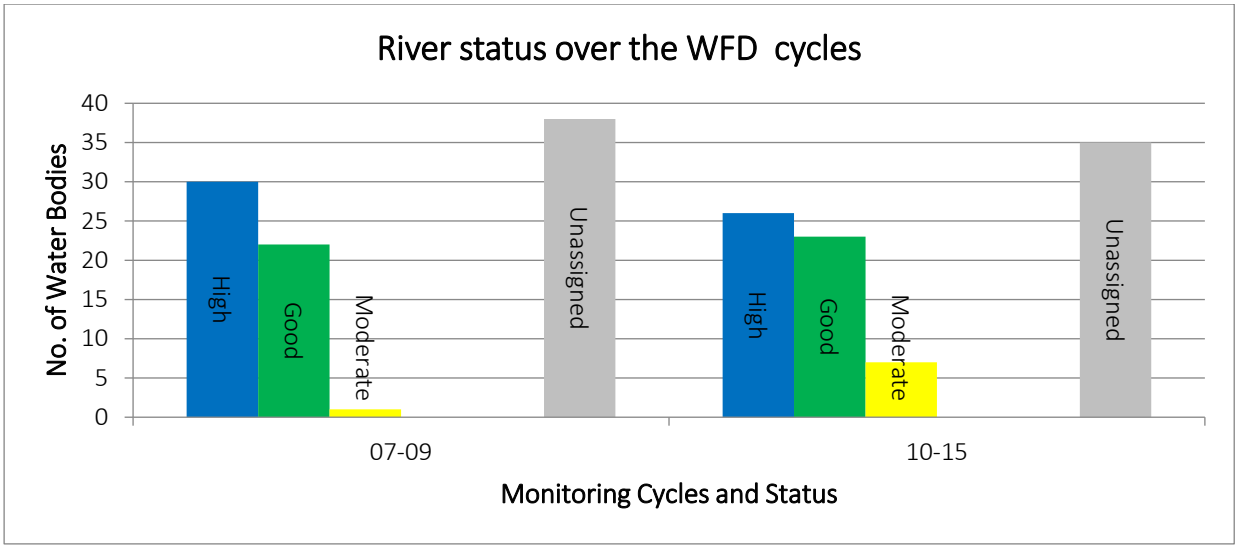


Figure 4. Number of rivers at each status class in 2007-09 and 2010-15

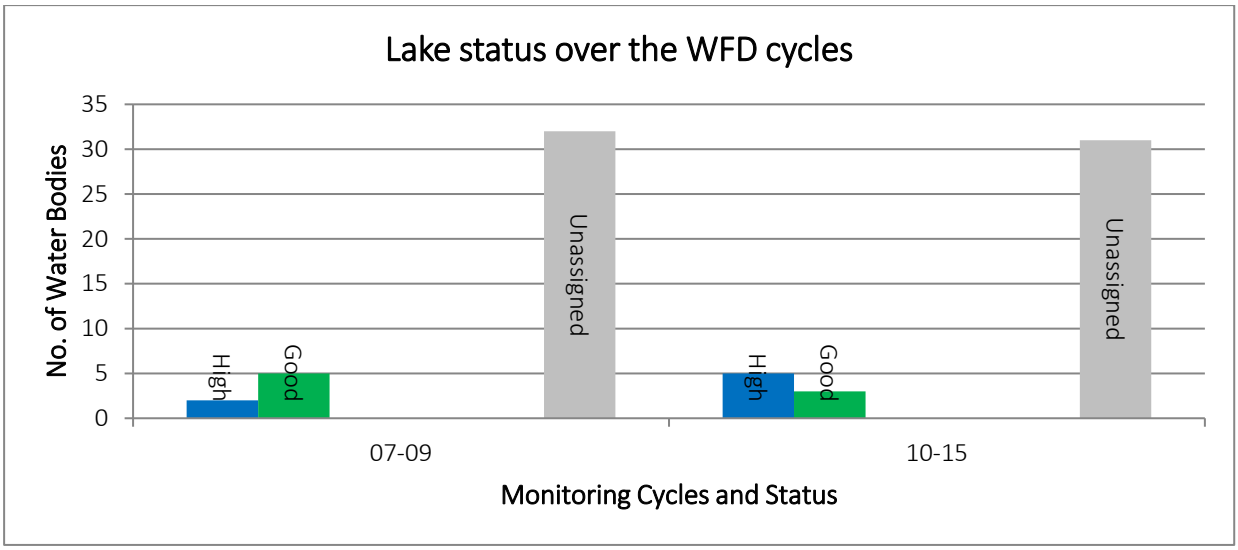


Figure 5. Number of lakes at each status class in 2007-09 and 2010-15

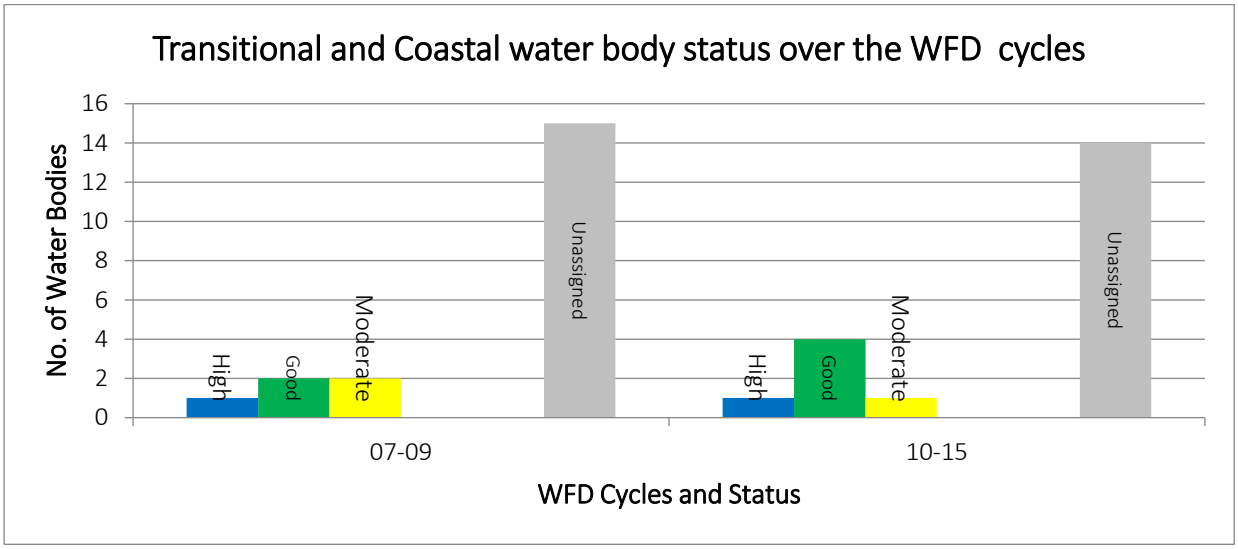


Figure 6. Number of TraCs at each status class in 2007-09 and 2010-15

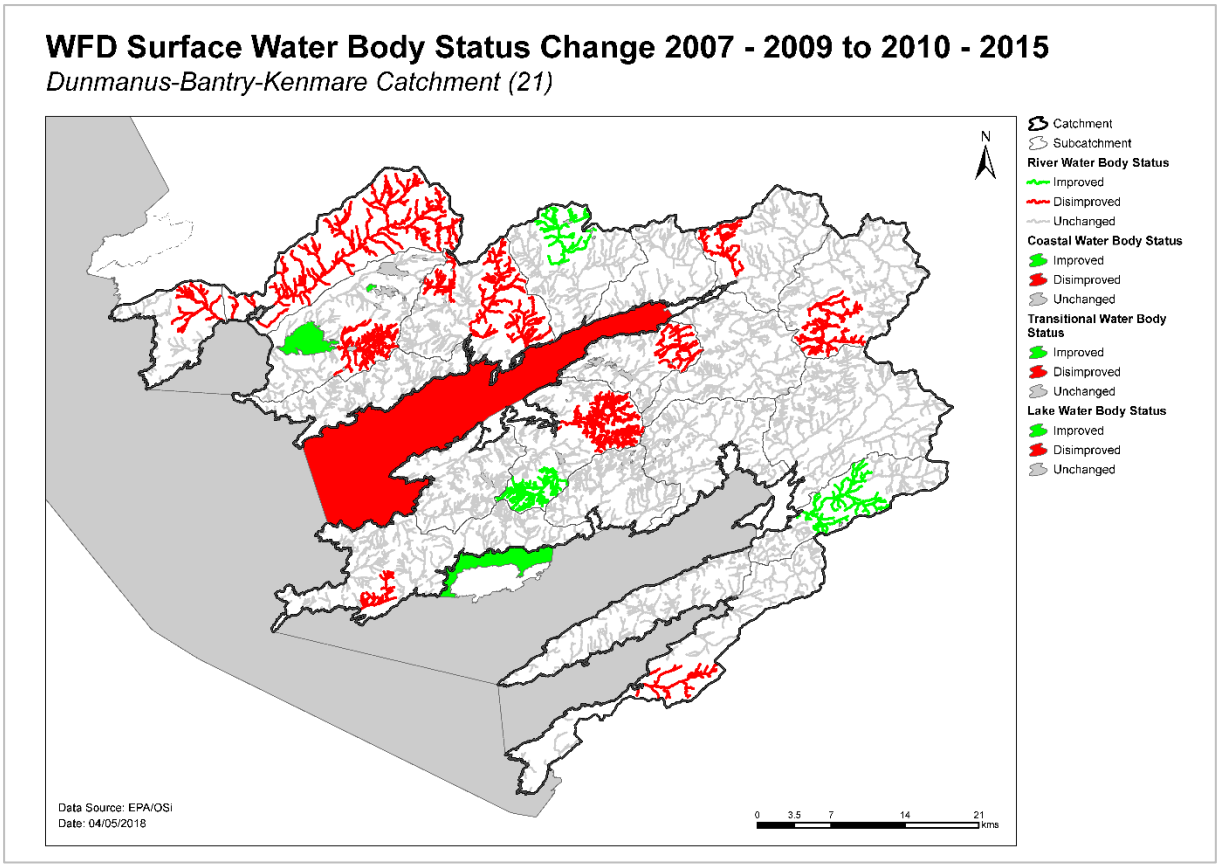


Figure 7. Surface water body status change from 2007-09 to 2010-15

2.2 Groundwater body status

- There were three groundwater bodies at Good status in 2015 (Table 3). All three water bodies (Beara Sneem, Kenmare and Historic Waste Facility (S22-02319) IE_SW_G_093) remained at Good status between 2007-12 and 2010-15.

Table 3. Summary of groundwater body status and risk categories.

	Number of water bodies	2010-15 Status		Risk Categories		
		Good	Poor	*Not at Risk*	*Review*	*At Risk*
Groundwater	3	3	0	1	2	0

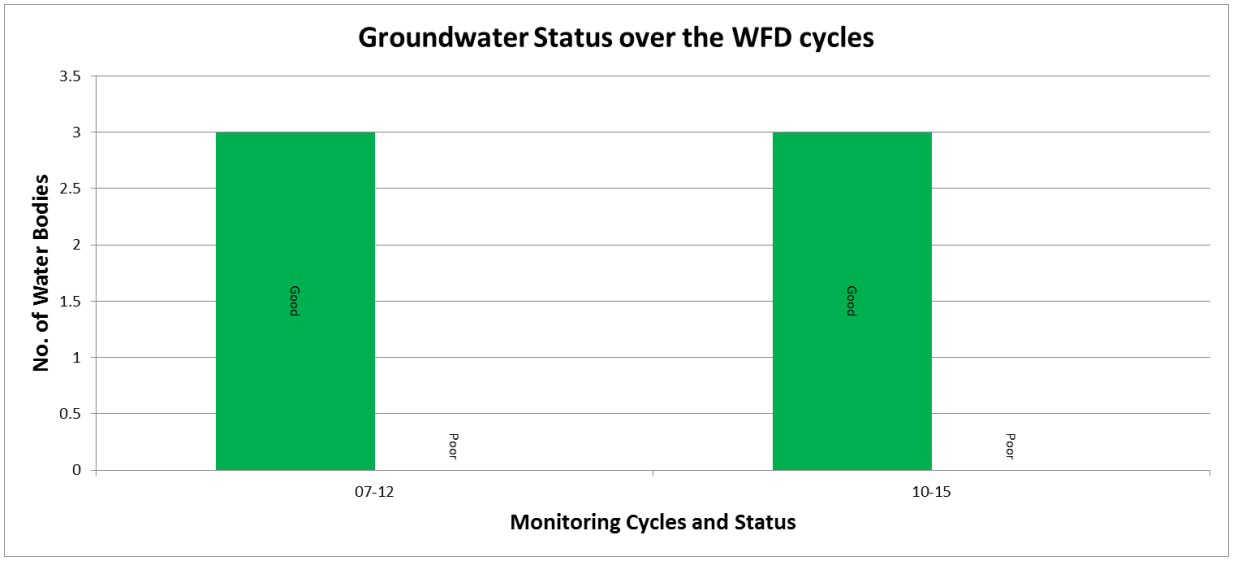


Figure 7a). Change in number of groundwater bodies at each status class in 2007-09 and 2010-15

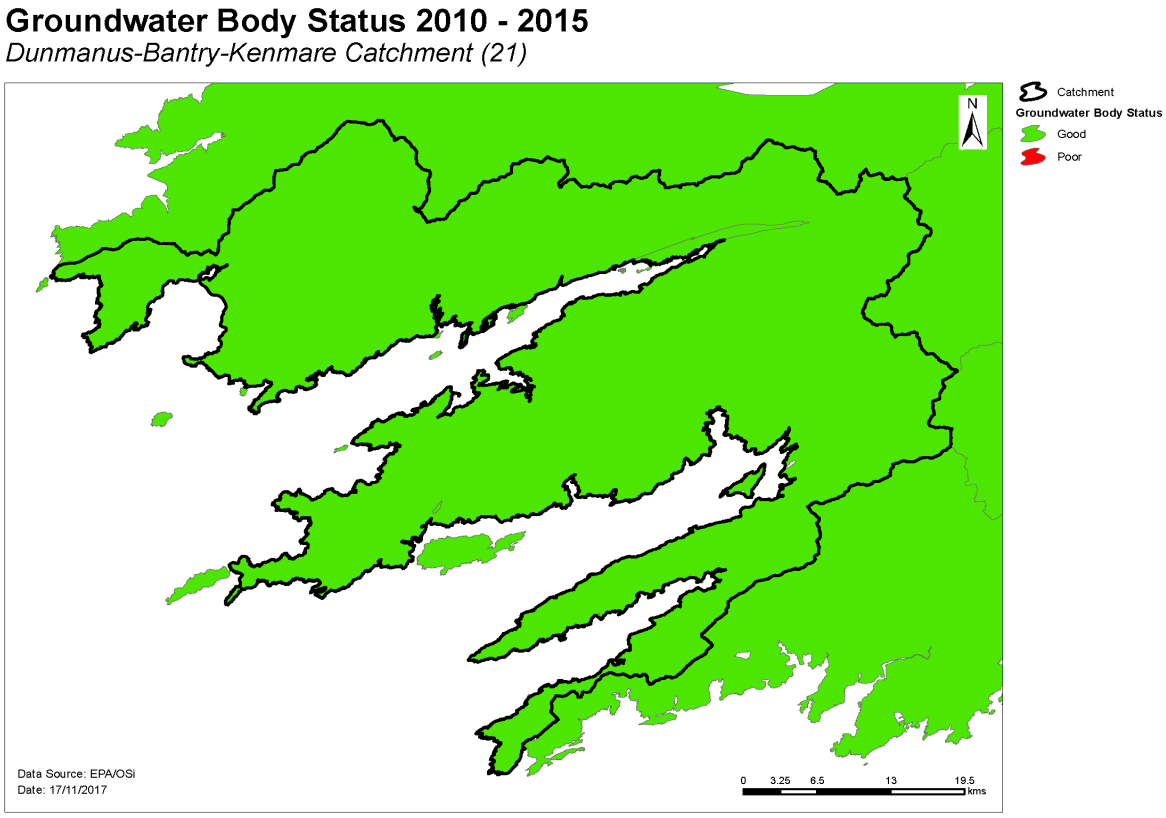


Figure 7b). Groundwater body status

2.3 Risk of not meeting surface water environmental objectives

2.3.1 Rivers and lakes

- There are 102 *Not at Risk* river and lake water bodies (Figure 8, Table 2) and these require no additional investigative assessment or measures to be applied, other than those measures that are already in place.

- There are 12 river and lake water bodies in *Review*. Of these, there are 10 water bodies where more information is required and two water bodies where measures have recently been implemented and improvements have not yet been realised.
- Sixteen river and lake water bodies in the catchment are *At Risk* of not meeting their water quality objectives. Measures will be needed in these water bodies to improve the water quality outcomes. Summary information for the *At Risk* water bodies is given in Appendix 3.

2.3.2 Transitional and coastal (TraC)

- There are fifteen *Not at Risk* TraC water bodies (Figure 8) and therefore these require no additional investigative assessments or measures to be applied, other than those measures that are already in place.
- There are five TraC water bodies in *Review* and will require further information.
- There are no *At Risk* TraC water bodies in the Dunmanus-Bantry-Kenmare Catchment.

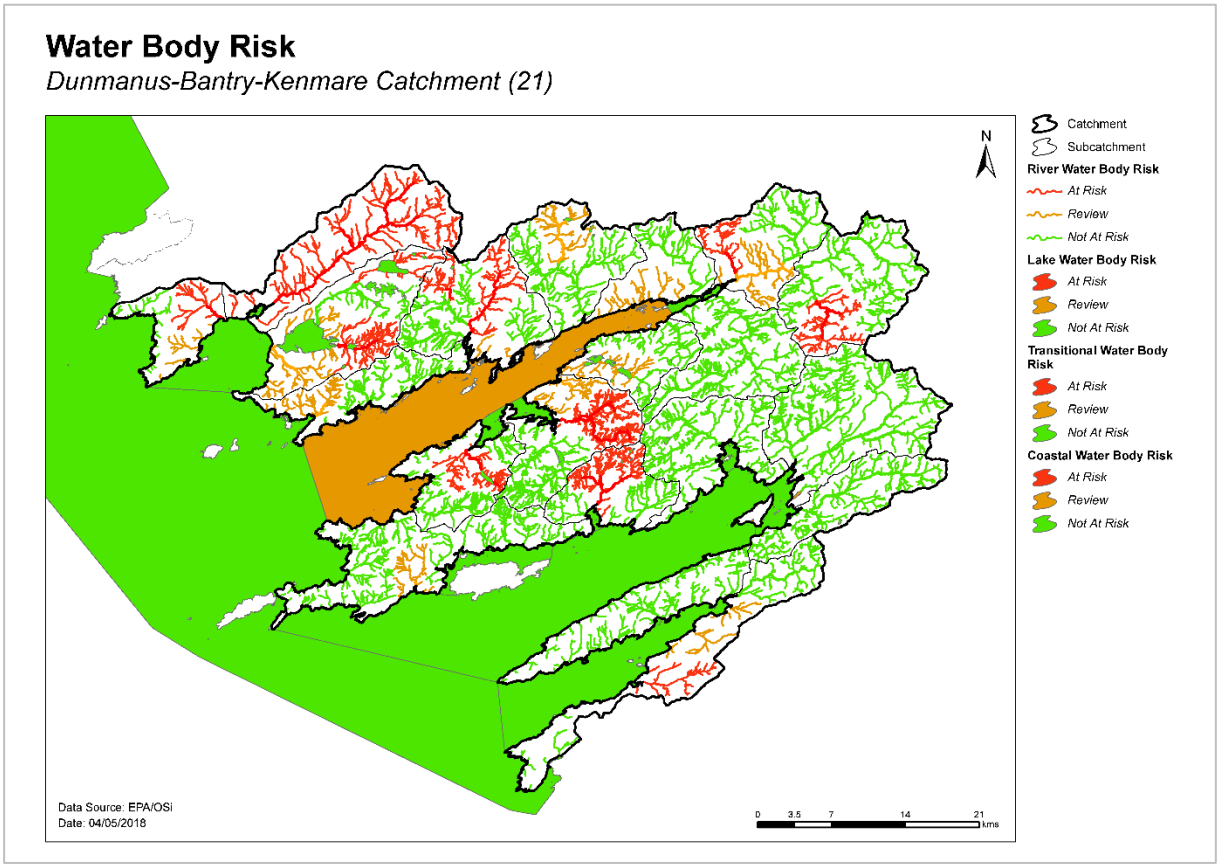


Figure 8. Surface water body risk

2.4 Risk of not meeting groundwater environmental objectives

- One groundwater body (Beara Sneem) is *Not at Risk* (Figure 9, Table 4) and requires no additional investigative assessment or measures to be applied, other than those measures that are already in place.

- Two groundwater bodies (Kenmare and Historic Waste Facility (S22-02310) IE_SE_G_093) are in *Review*. Kenmare groundwater body has elevated nitrate concentrations, and Historic Waste Facility (S22-02310) IE_SW_G_093 has a historic landfill area present.
- There are no *At Risk* groundwater bodies.

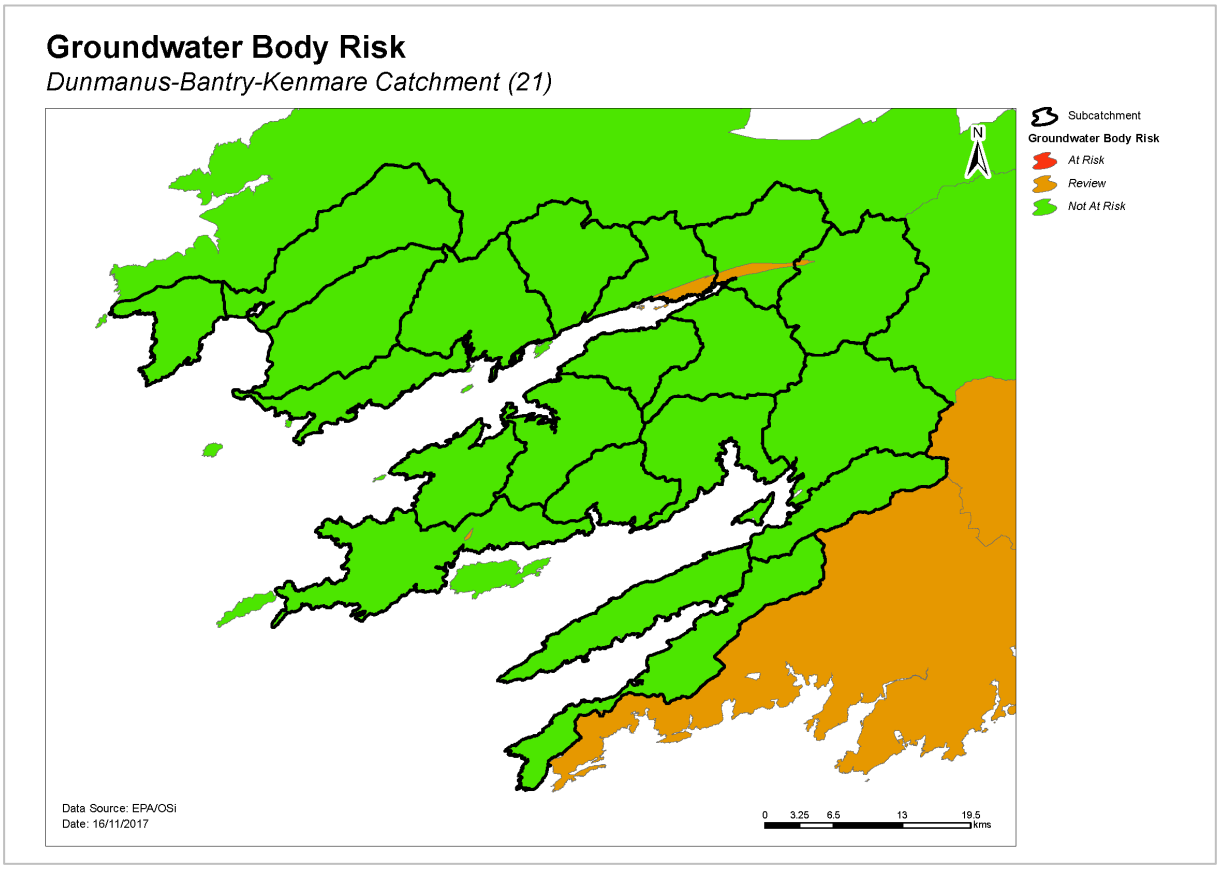


Figure 9. Groundwater body risk

2.5 Protected areas

2.5.1 Drinking water protected areas

- There are 34 abstractions in the Dunmanus-Bantry-Kenmare Catchment, comprising 22 public supply schemes and six other private schemes (Appendix 4).
- Eight of the abstractions are from one groundwater body (Beara Sneem); one from a lake which is a transitional water body (Kilmore Lake, Whiddy Island); four are from four lakes (Bofinna, Eirk, Glenbeg and Currane), and 21 are from 19 river water bodies. The list of the public supplies and the associated water bodies is provided in Appendix 4.
- All drinking water sources were compliant with the standards for nitrate in 2015.
- One of the drinking water sources was non-compliant with the standards for pesticides in 2015 – Rossacoosane_010 river water body (source for scheme 1300PUB1062) – due to MCPA exceedance. The remaining drinking water sources were compliant with the standards for pesticides in 2015.

2.5.2 Bathing waters

- There are four designated bathing waters in the catchment.
- All four of the bathing waters are in satisfactory condition.
- The list of the bathing waters and the associated water bodies is provided in Table 4.

Table 4. Designated bathing waters in the catchment

Bathing Water	Water Body Intersection	Objective met?	Comment	Objective met?		Comment
Name	Code	Name	Code	Yes	No	
Barley Cove	IESWBWC150_0000_0200	South Western Atlantic Seaboard (HAs 21;22)	IE_SW_150_0000	✓		
Doire Fhíonáin (Derrynane)	IESWBWC150_0000_0100	South Western Atlantic Seaboard (HAs 21;22)	IE_SW_150_0000	✓		
Trá na hUíne (Inny Strand, Waterville)	IESWBWC200_0000_0200	Ballinskelligs Bay	IE_SW_200_0000	✓		
Baile an Sceilg (Ballinskelligs)	IESWBWC200_0000_0100	Ballinskelligs Bay	IE_SW_200_0000	✓		

2.5.3 Shellfish areas

- There are nine designated shellfish areas in the catchment.
- Eight are compliant with the relevant standards with no water quality issues of concern.
- Adrigole Harbour, which is a transitional water body, did not meet microbiological standards.
- Details on the shellfish areas and their associated water bodies are summarised in Table 5.

Table 5. Designated shellfish areas in the catchment

Shellfish area		Water body intersection		Objective met?	
Name	Code	Name	Code	Yes	No
Kilmakiloge Harbour	IEPA2_0012	Kilmakilloge Harbour	IE_SW_190_0200	✓	
Glengarriff Harbour	IEPA2_0008	Glengarriff Harbour	IE_SW_170_0400	✓	
		Outer Bantry Bay	IE_SW_170_0000		
Bantry Bay	IEPA2_0003	Inner Bantry Bay	IE_SW_170_0100	✓	
Castletownbere	IEPA2_0017	Berehaven	IE_SW_180_0000	✓	
Kenmare River/Sneem/Ardgroom	IEPA2_0018	Sneem Harbour	IE_SW_190_0600	✓	
		Drongawn Lough, Sneem	IE_SW_190_0500		
		Blackwater K EStuary	IE_SW_190_0400		
		Kilmakilloge Harbour	IE_SW_190_0200		
		Ardgroom	IE_SW_190_0100		
		Outer Kenmare River	IE_SW_190_0000		
Dunmanus Inner	IEPA2_0052	Dunmanus Bay	IE_SW_160_0000	✓	
Bantry Bay South	IEPA2_0053	Outer Bantry Bay	IE_SW_170_0000	✓	
League Point	IEPA2_0054	Outer Bantry Bay	IE_SW_170_0000	✓	
Adrigole Harbour	IEPA2_0055	Adrigole Harbour	IE_SW_170_0500		✓

2.5.4 Nutrient sensitive areas

- There are no nutrient sensitive areas in the catchment.

2.5.5 Natura 2000 sites

- There are 22 Special Areas of Conservation (SACs) in the catchment (Appendix 5), not all of which have water quality and/or quantity conservation objectives for their qualifying interests.
- Eight river water bodies have been prioritised for action as the water conservation objectives for their species and/or habitats are not being supported by ecological status (Appendix 5).
- There are five Special Protected Areas (SPAs) in the catchment:
    - Beara Peninsula SPA
    - Iveragh Peninsula SPA
    - Killarney National Park SPA
    - Puffin Island SPA
    - Sheep's Head to Toe Head SPA

  As there are no specific water quality and quantity supporting conditions identified in the site-specific conservation objectives for these SPAs, the intersecting water bodies are not assigned priority action for WFD protected area purposes in the second cycle.

2.6 Heavily modified water bodies

- There are no designated heavily modified water bodies (HMWB) in the catchment.
- There are no artificially modified water bodies (AWB) in the catchment.

3 Significant issues in *At Risk* water bodies

- Alteration of hydromorphological (or physical) conditions is the dominant issue in rivers in the catchment. This includes inputs of excess fine sediment and alteration of the morphology of the river channel, which in turn alter habitat conditions. This can occur because of, for example, implementing river and field drainage schemes, forestry activities, animal access, and discharge from quarries.
- Excess phosphate leading to eutrophication is also a concern; however, this is only for a limited number of water bodies.
- There are no significant issues for the TraC water bodies in the Catchment.
- There are no significant issues for the groundwater bodies in the catchment.

4 Significant pressures

4.1 Water bodies

- Where water bodies have been classed as *At Risk*, significant pressures have been identified.
- Figure 10 shows a breakdown of the number of *At Risk* river water bodies in each significant pressure category.

4.1.1 Rivers, lakes, transitional and coastal (TraC)

- There are no lake or TraC water bodies that are *At Risk*, and therefore no significant pressures for lakes or TraCs are included in Figure10. Significant pressures have been identified through the initial characterisation process in 16 river water bodies, eight of which have multiple pressures. The significant pressures will be refined as further characterisation is carried out.
- The significant pressure affecting the greatest number of river water bodies is forestry, followed by hydromorphological, peat drainage and extraction, agriculture, unknown, and mines and quarries (Figure 10).

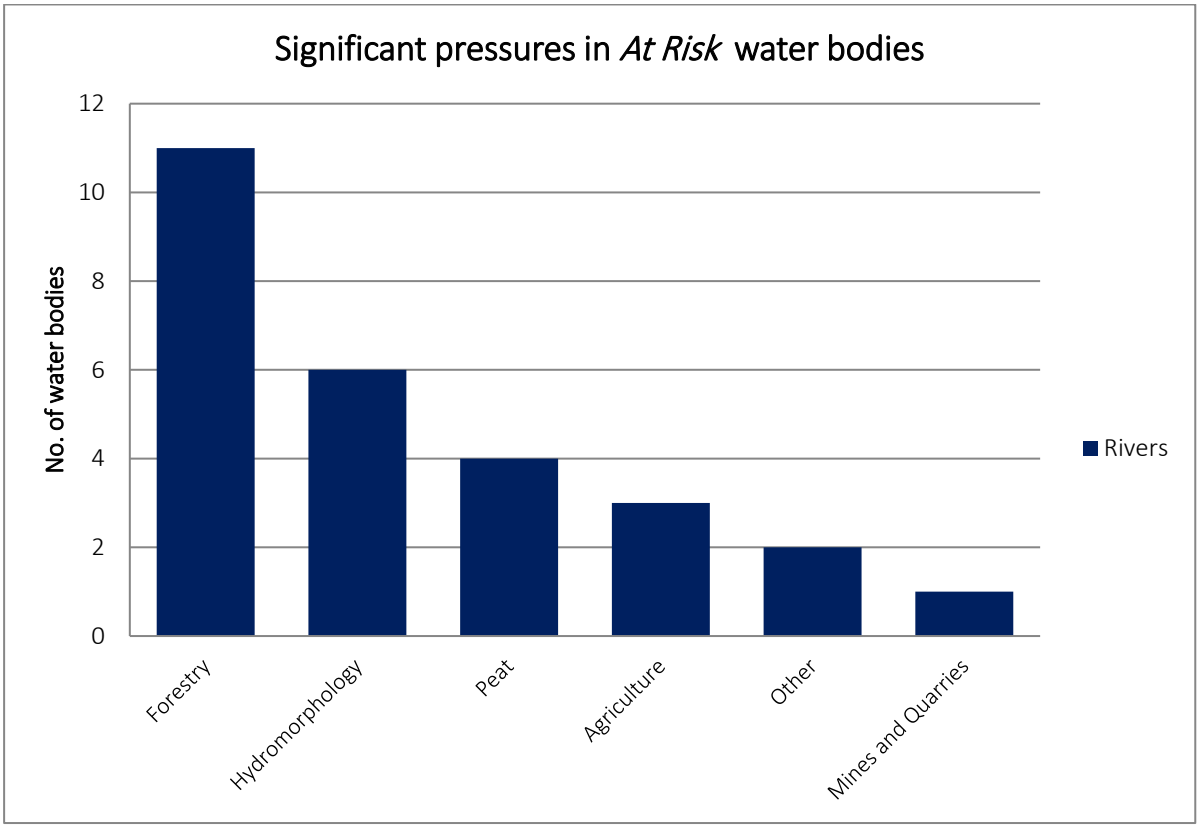


Figure 10. Significant pressures impacting on *At Risk* water bodies

4.1.2 Groundwater

- There are no *At Risk* groundwater bodies in catchment, and therefore there are no significant pressures affecting the groundwater bodies.

4.2 Pressure type

4.2.1 Forestry

- Forestry has been identified as a significant pressure in 11 water bodies (Figure 11). The types of problems that can be encountered from forestry pressures include for example: losses of sediment and/or nutrients during afforestation, tree felling and abstraction; losses of sediment from access roads and during road construction; losses of nutrients during aerial fertilisation and impacts from public access.

4.2.2 Hydromorphology

- One river water body within the Roughty (Cleady_010) (subcatchment is subject to extensive modification, while land drainage is impacting on three rivers in the Inny [Kerry](Owroe_010), Sneem (Sneem_010) and Roughty (Cleady_010)subcatchments. Increased levels of sedimentation have been observed within a river water bodies of the Coom subcatchment (Emlaghmore_010), and Finglas River (Isknagahiny Lough Stream_010) possibly indicating issues such as bank erosion and poaching by livestock.
- See Appendix 3 for information on these water bodies.

4.2.3 Extractive industry

- *Peat*
  Peat drainage and working has been identified as a significant pressure in four water bodies Emlaghmore_010, Ardsheelhane_010, Lough Fadda Stream_010 and Ownagappul_010 (Figure 13). This can lead to increased sediment inputs and elevated nutrient concentrations.
- *Quarrying*
  A quarry has been identified as a significant pressure in the Inny (Kerry) sub-catchment, impact on habitat morphology and nutrient concentrations (Figure 13).

4.2.4 Agriculture

- Agriculture is a significant pressure in three river water bodies (Emlaghmore_010, Glan Stream_010 and Slaheny_010); the water bodies affected by this pressure are shown in Figure 14. The issues related to farming in this catchment are diffuse phosphorus loss of phosphorus and ammonia 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 can also be a problem from land drainage works, bank erosion from animal access or stream crossings. The pollution impact potential map showing areas of relative risk for phosphorus loss from agriculture to surface water is given in Appendix 6.

4.2.5 Other significant pressures

- *Unknown Anthropogenic*
  Two *At Risk* water bodies on the Cummeragh and Owenshagh sub-catchments appear to have been Impacted by unknown anthropogenic pressures (Figure 15).

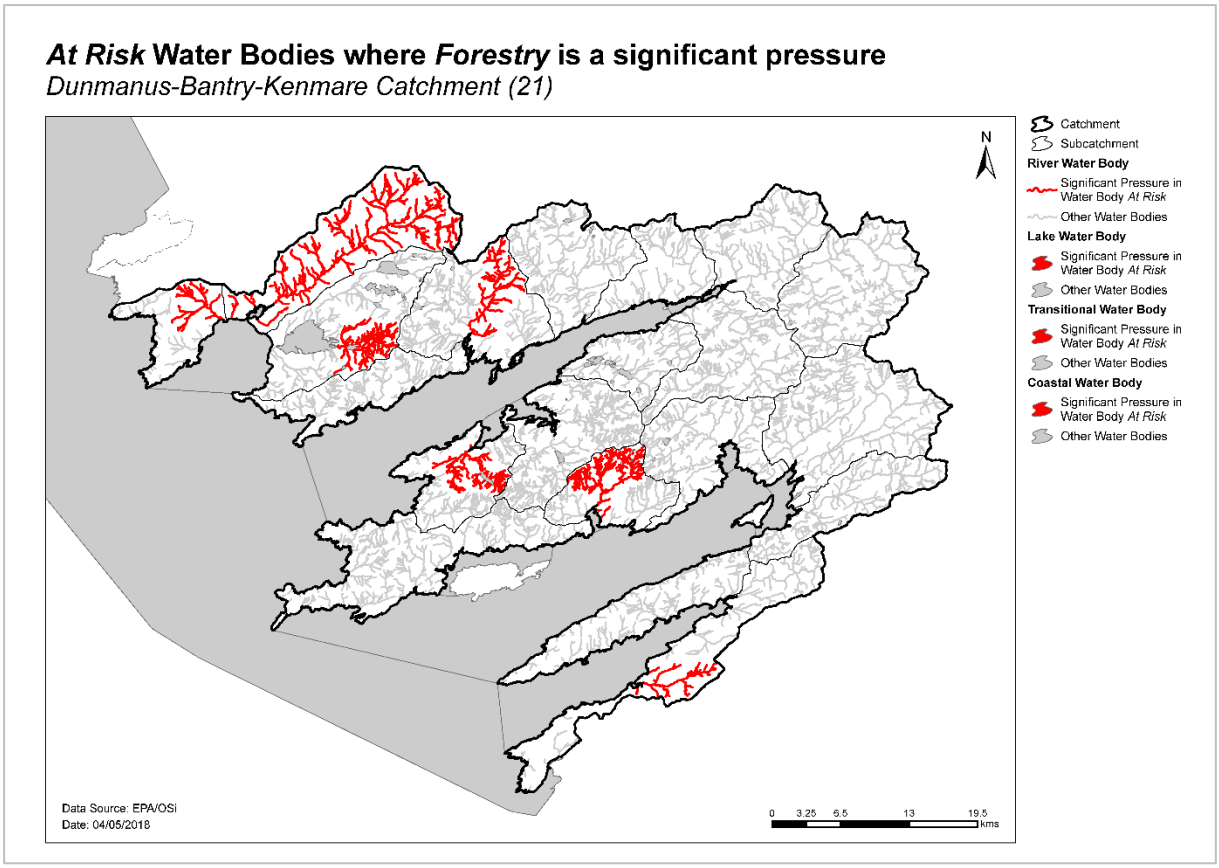


Figure 11. Water bodies that are At *Risk* and are impacted by forestry activities

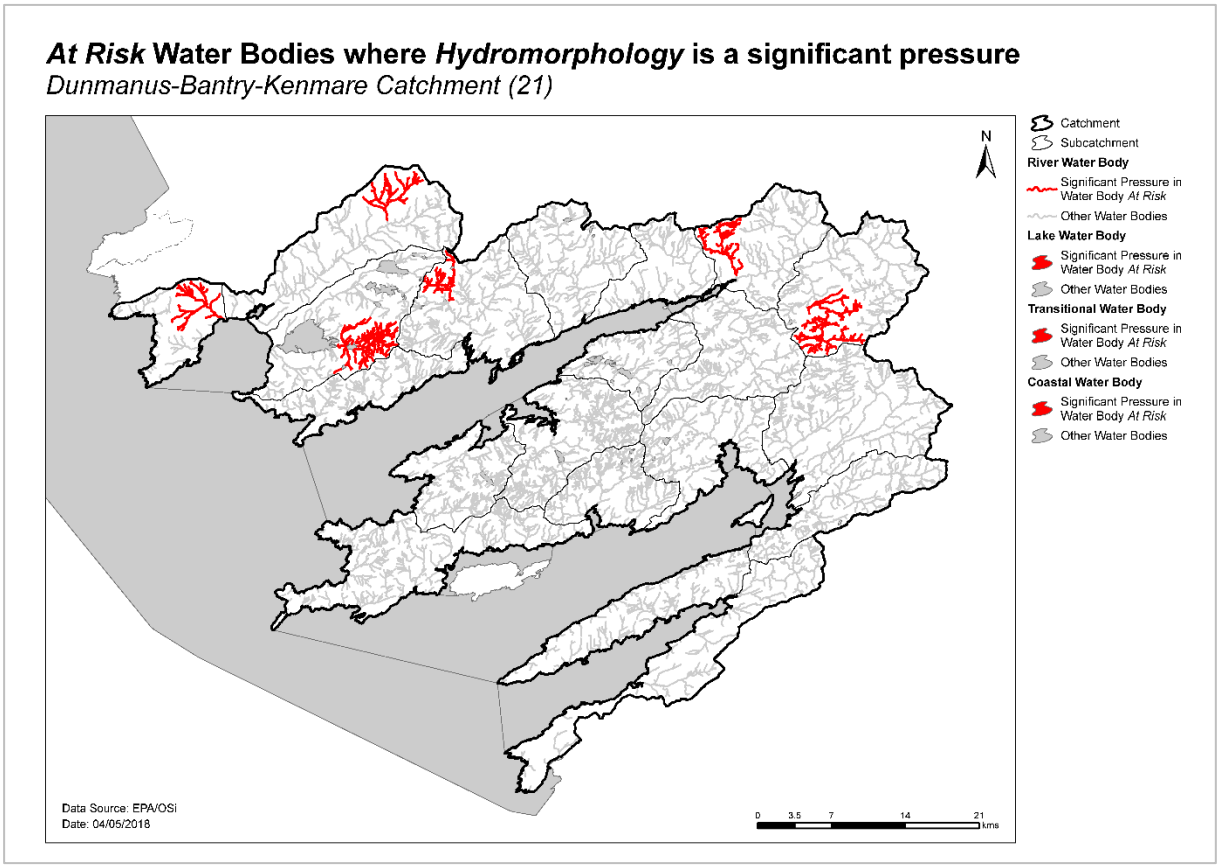


Figure 12. Water bodies that are *At Risk* and are impacted by hydromorphological pressures

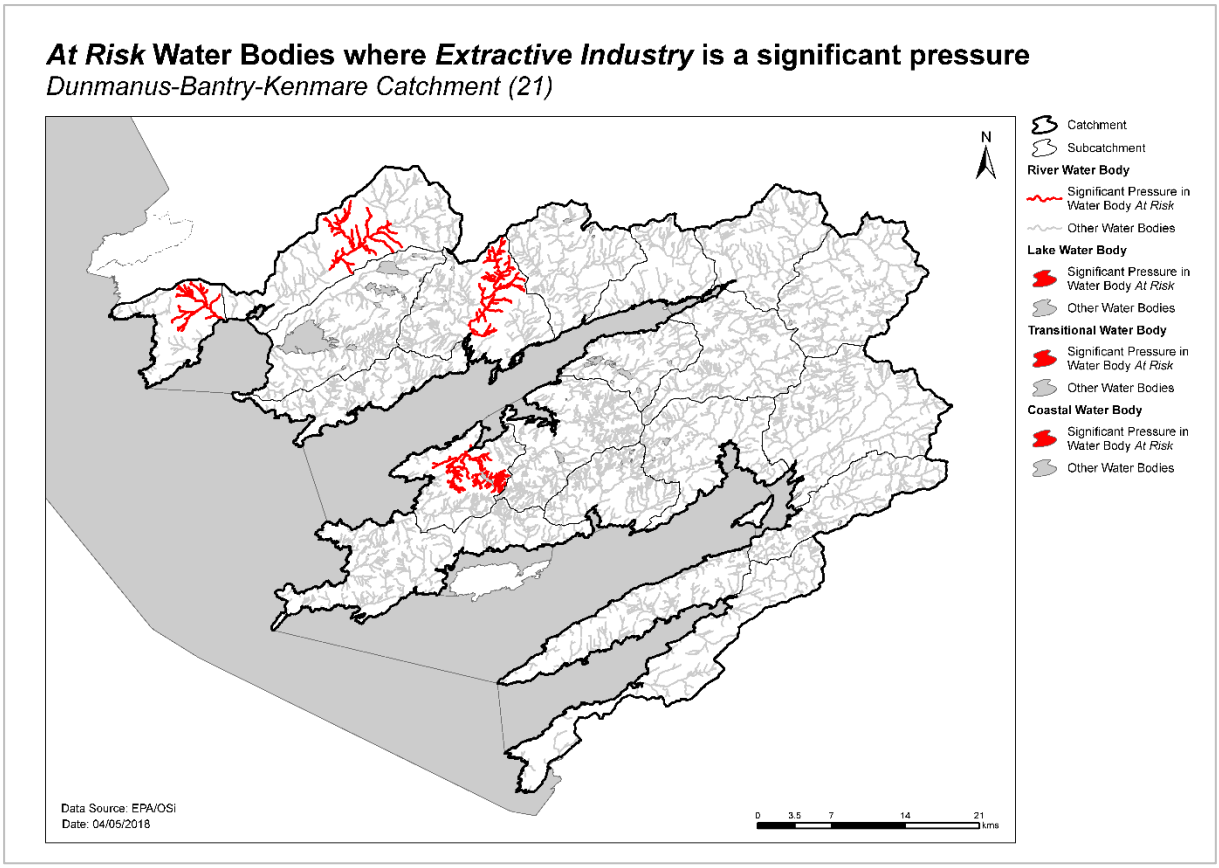


Figure 13. Water bodies that are *At Risk* and are impacted by the Extractive industry

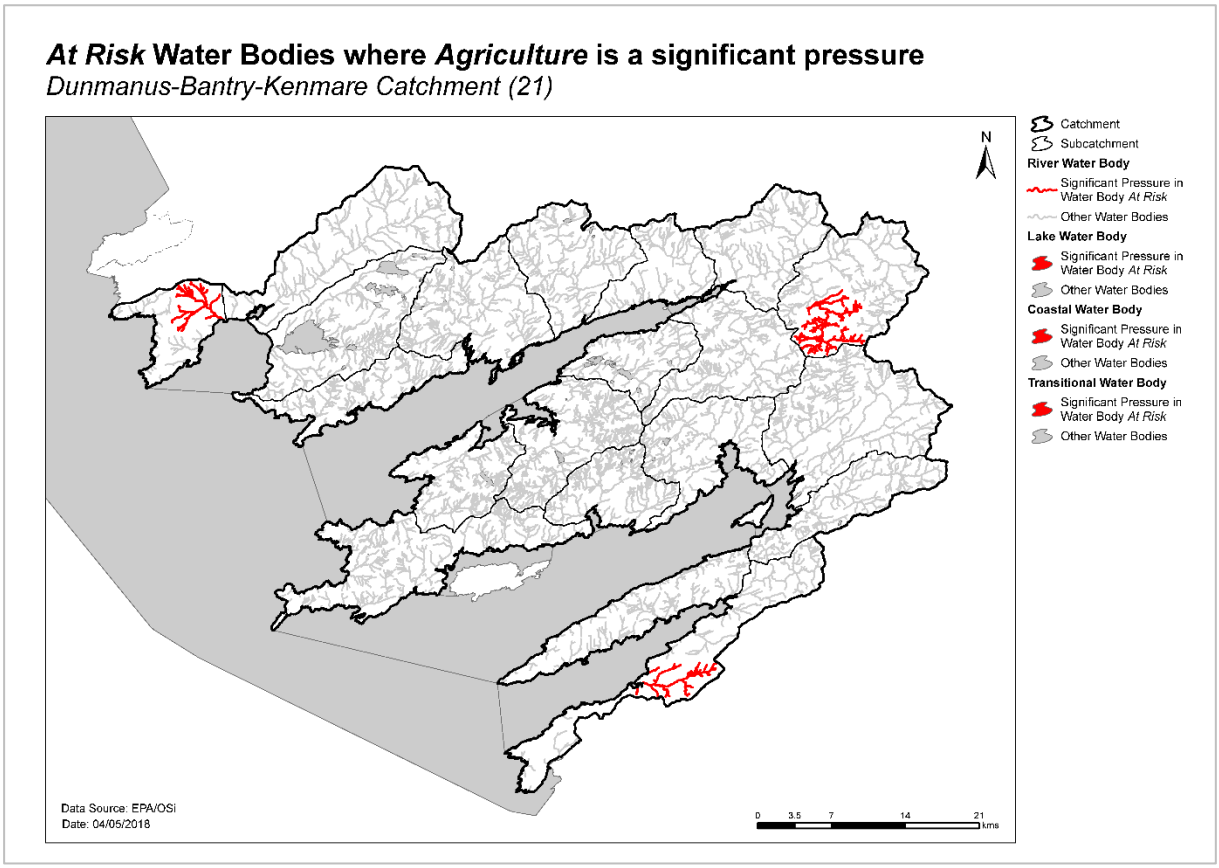


Figure 14. Water bodies that are *At Risk* and are impacted by agricultural activities

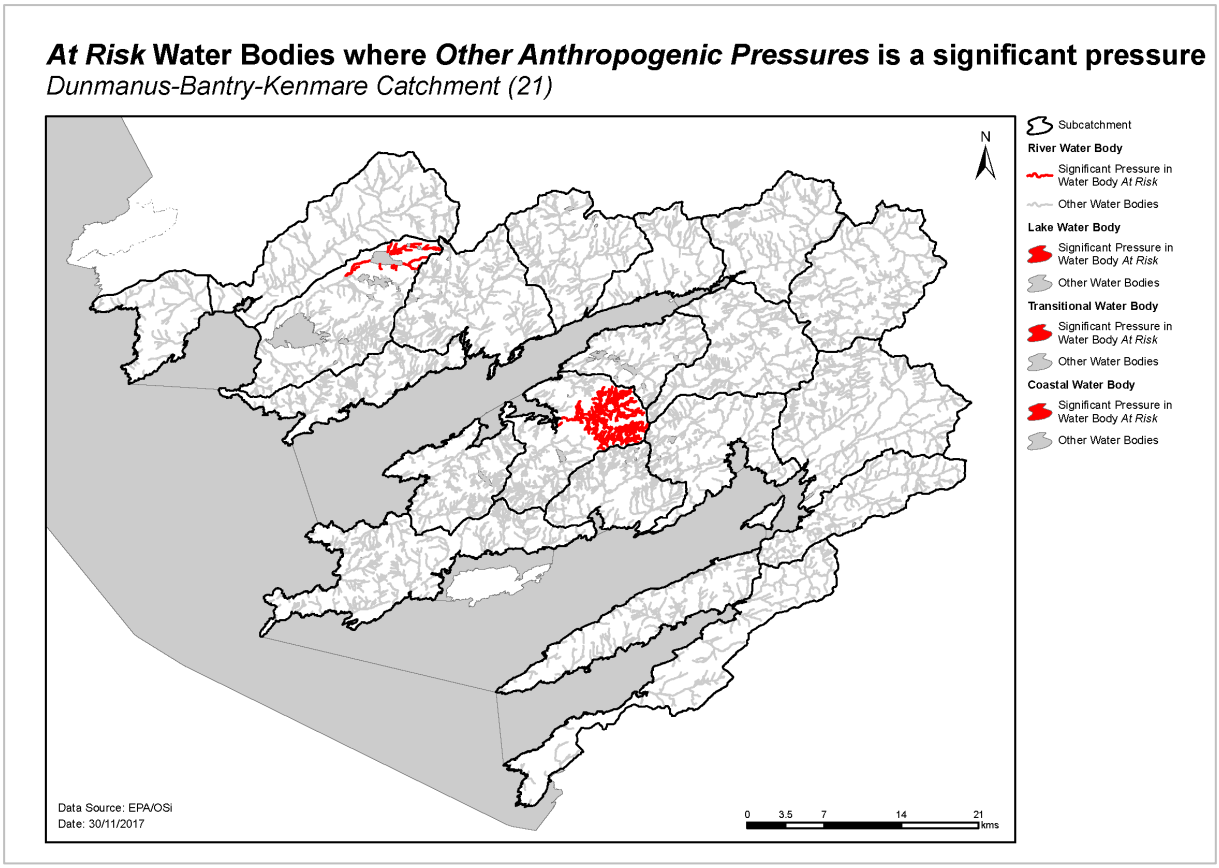


Figure 15. Water bodies that are At *Risk* and are impacted other Anthropogenic pressures

5 Load reduction assessment

5.1 River water body load reductions

- The results of the main channel assessment for the Inny (Kerry), Cummeragh and Owvane rivers indicate that orthophosphate, ammonia and TON concentrations are consistently low (Appendix 2). There is no chemistry data available for the Roughty and Sheen sub-catchments.
- For water bodies where phosphorus monitoring data are available, the reduction in P load that would be required to bring the mean concentration back to the EQS of 0.035 mg/l as P, can be estimated using a simple method based on the average 2013 to 2015 concentration and the average flow, or the estimated 30th percentile flow (Q30) where flow data are not available. The relative load reductions are ranked on a national scale from Very High (>1 kg/Ha/y), to High (0.5-1 kg/Ha/y), to Medium (0.25-0.5 kg/Ha/y) to Low (<0.25 kg/Ha/y). Note that P load reductions may also be required in other water bodies, but without chemistry monitoring data a quantitative estimate cannot be calculated.
- In the Dunmanus-Bantry-Kenmare catchment, water chemistry data are available for 10 of the 90 catchment water bodies. The available data indicate that load reductions are not required in the catchment.

5.2 TraC load reductions

Some 18 estuaries in Ireland have been monitored on a continual basis since 1990 as part of Ireland's commitment under the Convention for the Protection of the Marine Environment of the North-East Atlantic (the Ospar Convention). This has shown that generally over the long term, nutrients have

decreased but further reduction will be required in many cases to support Good Ecological Status. However, many estuaries have not been monitored to the same degree, and where monitoring data in insufficient, an ongoing programme of modelling has been undertaken to estimate potential nutrient load removal from contributing sub-catchments.

Different estuaries may require reductions in different nutrients. Further modelling work is required to determine precisely what load reductions are required, but in the interim, further monitoring will be carried out to assess the improvements resulting from various planned measures, and to confirm the nature of the issues.

- No issues have been identified in the Dunmanus-Bantry-Kenmare catchment area.

6 Further characterisation and local catchment assessments

- Further characterisation through local catchment assessments is needed in 16 of the *At Risk* water bodies to refine the understanding of the significant pressures at the site/field scale so that specific and targeted measures can be identified.
- Further characterisation through local catchment assessment is needed in 12 of the *Review* water bodies to refine the understanding of the significant pressures at the site/field scale so that specific and targeted measures can be identified.
- Brief definitions of the 10 IA assessment scenarios are given in Appendix 7.

Table 6. Number and type of Local catchment assessments required in *At Risk* and *Review* River and Lake Water Bodies.

Risk	IA 1	IA 2	IA 3	IA 4	IA 5	IA 6	IA 7	IA 8	IA 9	IA 10	Total
At Risk	4	0	1	0	2	0	6	7	0	0	20
Review	4	0	9	0	0	1	0	1	0	0	15
Note water bodies may have multiple categories of Local Catchment Assessments											

7 Catchment summary

- Of the 130 river and lake water bodies, 16 are *At Risk* of not meeting their WFD objectives.
- Hydromorphological (or physical) conditions (including the input of excessive fine sediment) and poor habitat quality are one of the significant issues in the catchment, which has arisen from pressures that include forestry, extractive industries, and animal access.
- Excess phosphorus leading to eutrophication is also a significant issue, however it is for a limited number of water bodies, which are subject to agriculture and forestry pressures.
- There are no *At Risk* TraC water bodies in the catchment.
- There are no *At Risk* groundwater bodies in the catchment.

8 Areas for Action

The characterisation outcomes described above have highlighted that there is significant work to do in the catchment to protect and restore water quality, and meet the objectives of the WFD. During the development of the draft river basin management plan it became apparent that there would be a need to prioritise areas for collective action so that the best return on investment could be achieved. 190 Areas for action have been selected nationally in a process as described below. There are 6 areas for action in the Dunmanus-Bantry-Kenmare catchment.

8.1 Process of Selection

Following the publication of the draft river basin management plan in early 2017, the EPA and the Local Authority Waters and Communities Office (LAWCO) jointly led a collaborative regional workshop process to determine where, from a technical and scientific perspective, actions should be prioritised in the second cycle. The prioritisation process was based on the priorities in the draft river basin management plan, the evidence from the characterisation process, and the expertise, data and knowledge of public body staff with responsibilities for water and the different pressure types. The recommended areas for action selected during the workshops were then agreed by the Water and Environmental Regional Committees. Since this selection, the Local Authorities Water and Communities Office (LAWCO) have undertaken public engagement and feedback sessions in each local authority.

The recommended areas for action are an initial list of areas where action will be carried out in the second cycle. All water bodies that are *At Risk* still however, need to be addressed. As issues are resolved, or when feedback from the public engagement process is assessed, areas for action may be removed from the list and new areas will be added. If additional monitoring shows that new issues have arisen, new areas may become a priority and may need to be added to the work programme.

The initial list of areas for action is not therefore considered as a closed or finite list; it simply represents the initial areas where work will be carried out during the second WFD planning cycle from 2018-2021.

8.2 Outcomes of process

The outcomes for the Dunmanus-Bantry-Kenmare catchment are summarised below.

- Six recommended areas for actions (Table 7, Figure 16) were selected.
- These are the Glan, Lough Fadda/ Ownagappul, Adrigole, Owenshagh, Lough Currane and Inny.
- These include:
    - Eleven *At Risk* river water bodies, and
    - One *Not at Risk* transitional water body.
- Neither of the *Review* groundwater bodies intersect with any of the recommended areas for action. There are no *At Risk* groundwater bodies in the catchment.

A remaining twenty-two *At Risk* and *Review* water bodies were not included in the recommended areas for action for the second cycle. The distribution of these is presented in Figure 17. These include:

- Seventeen river and lake water bodies – five *At Risk* and 12 *Review*.
- Five *Review* transitional and coastal water bodies.

Table 7. Recommended Areas for Action in the Dunmanus-Bantry-Kenmare Catchment

Recommended area for action	Number of water bodies	SCs	Local authority	Reason for Selection
Glan	1	21_11	Cork	• Building on upcoming work by Cork County Council. • One deteriorated water body.
Lough Fadda/ Ownagappul	2	21_16	Cork	• Priority 8 Freshwater Pearl Mussel water bodies. • Upcoming European Innovation Partnership (EIP) scheme that could lead the project with support from Cork County Council. • Building on existing work completed by National Parks and Wildlife Services. • Building on current work by Forest Service and Coillte. • Two potential 'quick wins'.
Adrigole	2	21_17	Cork	• Amenity value. • Important oyster, rock lobster and crab fisheries. • Adrigole Harbour is failing to meet protected area objectives for Shellfish. • One *At Risk* High Ecological Status objective water body.
Owenshagh	1	21_15	Kerry	• One deteriorated High Ecological Status objective water body. • One potential 'quick win'. • Headwaters to Kilmakiloge Harbour shellfish area.
Lough Currane	2	21_8	Kerry	• Two water bodies are failing to meet protected area objectives for Priority 8 Freshwater Pearl Mussels. • Opportunity to work with Waterville rivers trust and interested local community. • Major sea trout and salmon fishery (unique sea trout) • One deteriorated water body. • Two *At Risk* High Ecological Status objective water bodies. • One potential 'quick win'.
Inny	4	21_10	Kerry	• Discharges into designated bathing area (Trá na hUíne (Inny Strand), Waterville) • Opportunity to work with Waterville rivers trust and interested local community. • Four deteriorated water bodies. • Two water bodies are failing to meet their protected area objectives for salmon.

9 Environmental Objectives

The environmental objectives are the target status for each *At Risk* or *Review* water body and the date by which that status is expected to be achieved (Appendix 3). Where a water body is *Not at Risk* and is already at its target status, the environmental objective is deemed to have been met.

9.1 Surface Water

- Assuming resources are available and actions are taken in the recommended areas for action, of the 11 *At Risk* river water bodies, it is predicted that four (36%) will improve by 2021 and seven (64%) will achieve their objective by 2027. One of the *Not at Risk* transitional water bodies is in a recommended area for action because it met its 2015 environmental objective for ecological status but failed to meet its protected area objectives, see Table 8

Table 8. Environmental objective dates for water bodies in the Recommended Areas for Action

Risk Category	No. of Water Bodies	No. of WBs for 2021 Improvement	No. of WBs for 2027 Status Improvement
Rivers			
At Risk	11	4	7
Review	0	0	0
Lakes			
At Risk	0	0	0
Review	0	0	0
TraC's			
At Risk	0	0	0
Review	0	0	0
Not at Risk	1	0	0
Total	12	4	7

- One hundred and seventeen surface water bodies have met their 2015 environmental objective.

- As action is not yet planned to be taken in the remaining five *At Risk* surface water bodies, a 2027 date is applied to all five water bodies. For the 17 *Review* surface water bodies, the absence of information on these water bodies means that there is no scientific basis to quantify an environmental objective date and therefore a 2027 date is set for these water bodies, see Table 9.

Table 9. Environmental objectives dates in the *At Risk* and *Review* water bodies not included in Recommended Areas for Action

Risk Category	No. of Water Bodies	No. of WBs for 2021 Improvement	No. of WBs for 2027 Status Improvement
Rivers			
At Risk	5	0	5
Review	11	0	11
Lake			
At Risk	0	0	0
Review	1	0	1
TraC			
At Risk	0	0	0
Review	5	0	5
Total	22	0	22

9.2 Groundwater

All three groundwater bodies in the catchment are Good status and, therefore, have met their environmental objectives.

10 Acknowledgements

This Dunmanus-Bantry-Kenmare Catchment (Version 3) has been produced by the Catchment Science & Management Unit, EPA, with the assistance of the following:

- Cork County Council
- Kerry County Council.
- Inland Fisheries Ireland.
- Local Authorities Waters & Communities Office.
- Irish Water.
- RPS Group.
- Ecological Monitoring & Assessment Unit, EPA.
- Hydrometric & Groundwater Section, EPA.
- Informatics Section, EPA.
- Laboratories, EPA.
- Office of Environmental Enforcement, EPA.
- Department of Housing, Planning and Local Government.
- DAFM Agriculture.
- DAFM Forest Service.
- Coillte.
- Teagasc.
- National Federation of Group Water Schemes.
- National Parks and Wildlife Service.
- Waterways Ireland.
- Board Iascaigh Mhara.
- Marine Institute.
- Sea Fisheries Protection Authority.
- Raptor LIFE IRD Duhallow.
- Kerry LIFE.

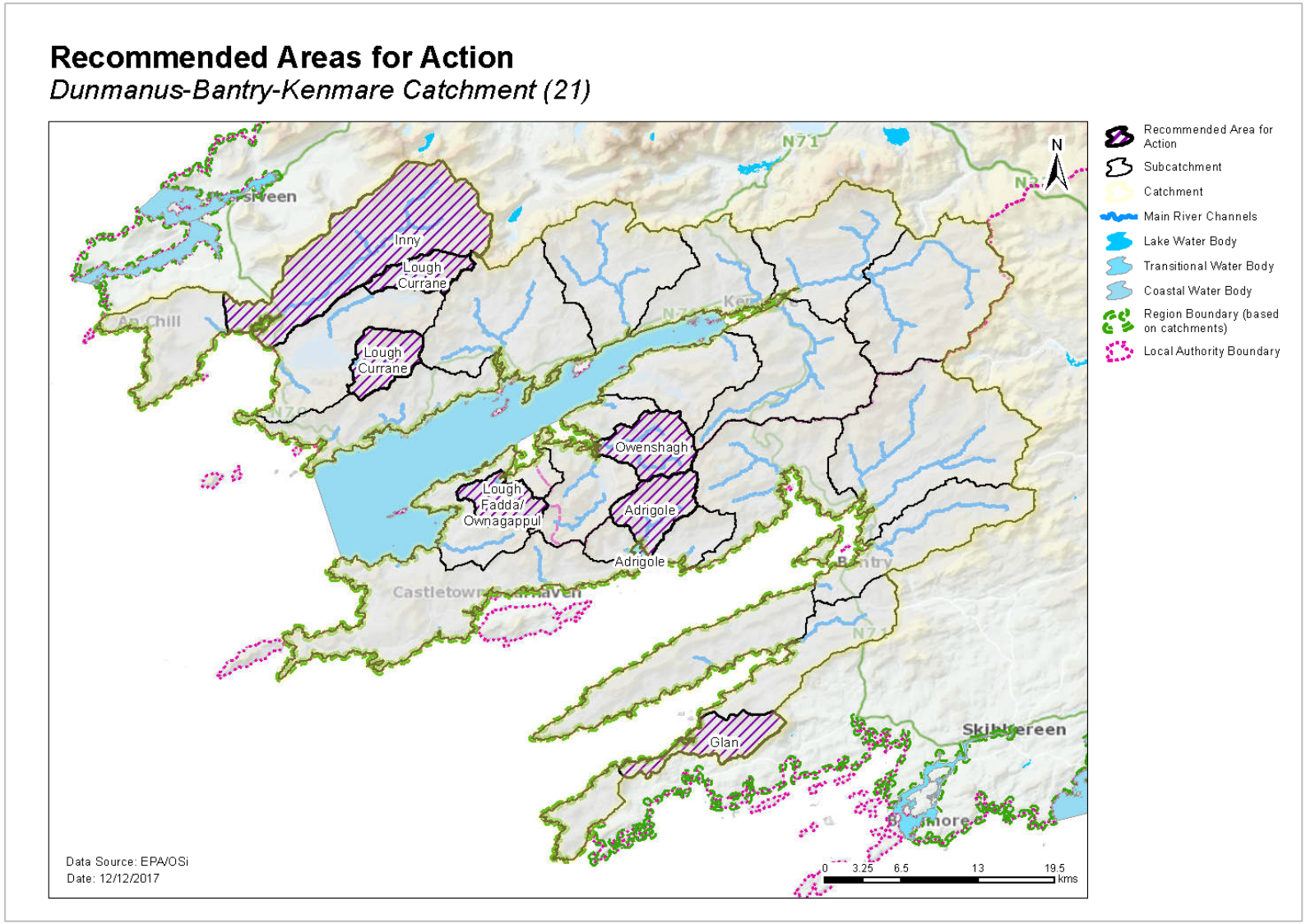


Figure 16. Location of Recommended Areas for Action in the Dunmanus-Bantry-Kenmare Catchment

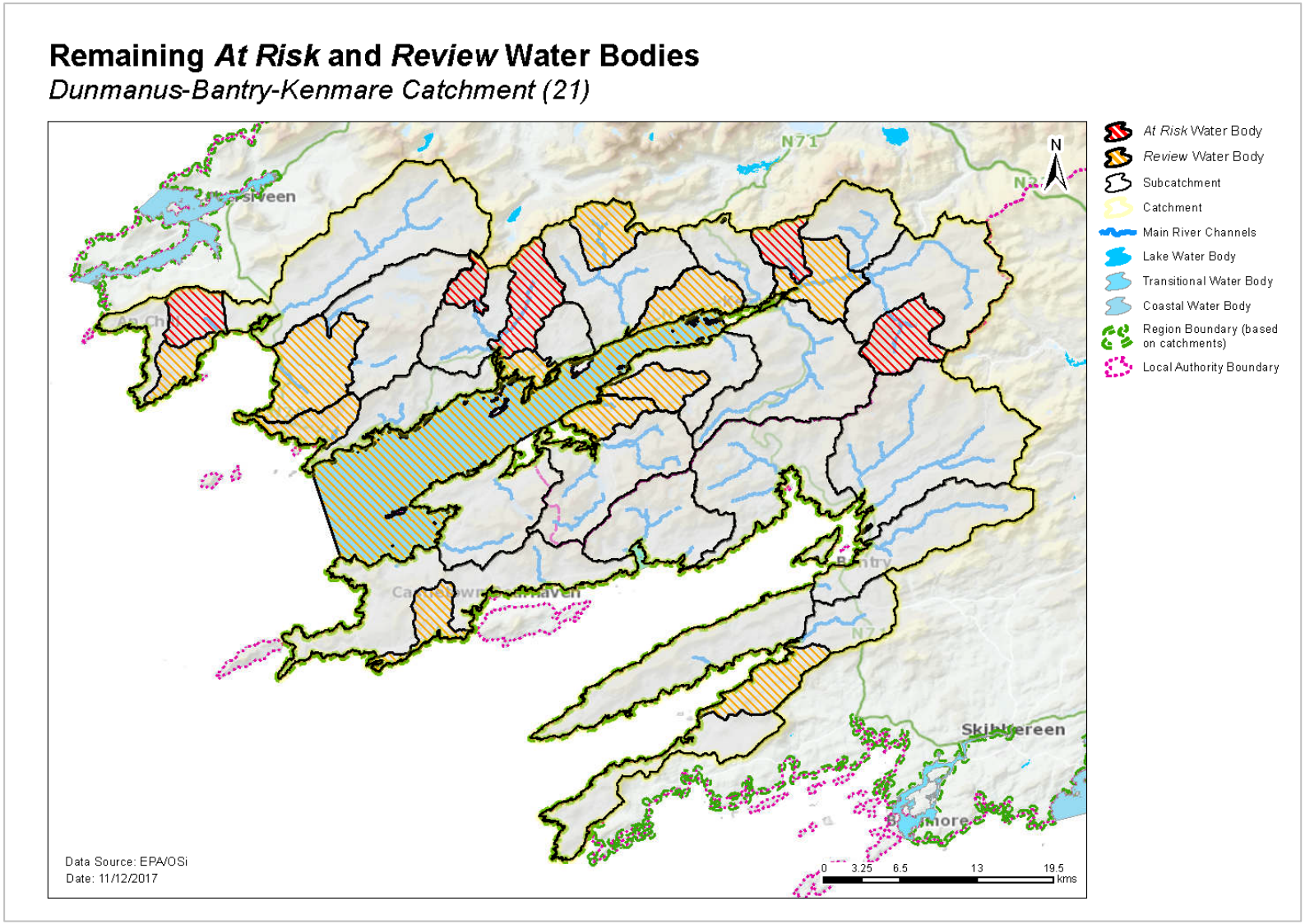


Figure 17. Location of *At Risk* and *Review* water bodies located outside Recommended Areas for Action in the Dunmanus-Bantry-Kenmare Catchment

Appendix 1 High ecological status objective water bodies

Water body/ Site	Type	Codes	2015 Status
KEALDUFF_010	River	IE_SW_21K010100	High
ARDSHEELHANE_010	River	IE_SW_21A020200	Good
OWREAGH_010	River	IE_SW_21O050300	High
SNEEM_010	River	IE_SW_21S030200	Good
SNEEM_020	River	IE_SW_21S030400	High
Inchiquin KY	Lake	IE_SW_21_452	High
CROANSHAGH_010	River	IE_SW_21C050100	High
OWENSHAGH_010	River	IE_SW_21O080100	Good
LOUGH FADDA STREAM_010	River	IE_SW_21L030100	Good
OWNAGAPPUL_010	River	IE_SW_21O090200	Good
ADRIGOLE_010	River	IE_SW_21A010200	Good
TRAFRASK STREAM_010	River	IE_SW_21T030300	High
GLENGARRIFF_010	River	IE_SW_21G030100	High
GLENGARRIFF_020	River	IE_SW_21G030300	High
MAGANNAGAN STREAM_010	River	IE_SW_21M020100	High
COOMHOLA_010	River	IE_SW_21C030200	High
COOMHOLA_020	River	IE_SW_21C030500	High
OWENBEG (OWVANE)_010	River	IE_SW_21O030200	High
OWNGAR (CORK)_010	River	IE_SW_21O040400	High
OWVANE (CORK)_010	River	IE_SW_21O070200	High
MEALAGH_010	River	IE_SW_21M010200	High
CLEADY_010	River	IE_SW_21C020300	Good
OWBEG (ROUGHTY)_020	River	IE_SW_21O020500	High
BLACKWATER (KERRY)_010	River	IE_SW_21B030100	High
BLACKWATER (KERRY)_020	River	IE_SW_21B030200	High
DERREENDARRAGH_010	River	IE_SW_21D030300	High
COOMEELAN STREAM_010	River	IE_SW_21C140200	High
SHEEN_010	River	IE_SW_21S010100	High
SHEEN_020	River	IE_SW_21S010600	High
ROUGHTY_010	River	IE_SW_21R010020	High
ROUGHTY_020	River	IE_SW_21R010070	High
ROUGHTY_030	River	IE_SW_21R010250	High
SLAHENY_010	River	IE_SW_21S020300	Good
Namona	Lake	IE_SW_21_421	High
Cloonaghlin	Lake	IE_SW_21_443	High
Derriana	Lake	IE_SW_21_449	High
Currane	Lake	IE_SW_21_457	High
CUMMERAGH_010	River	IE_SW_21C040400	Good

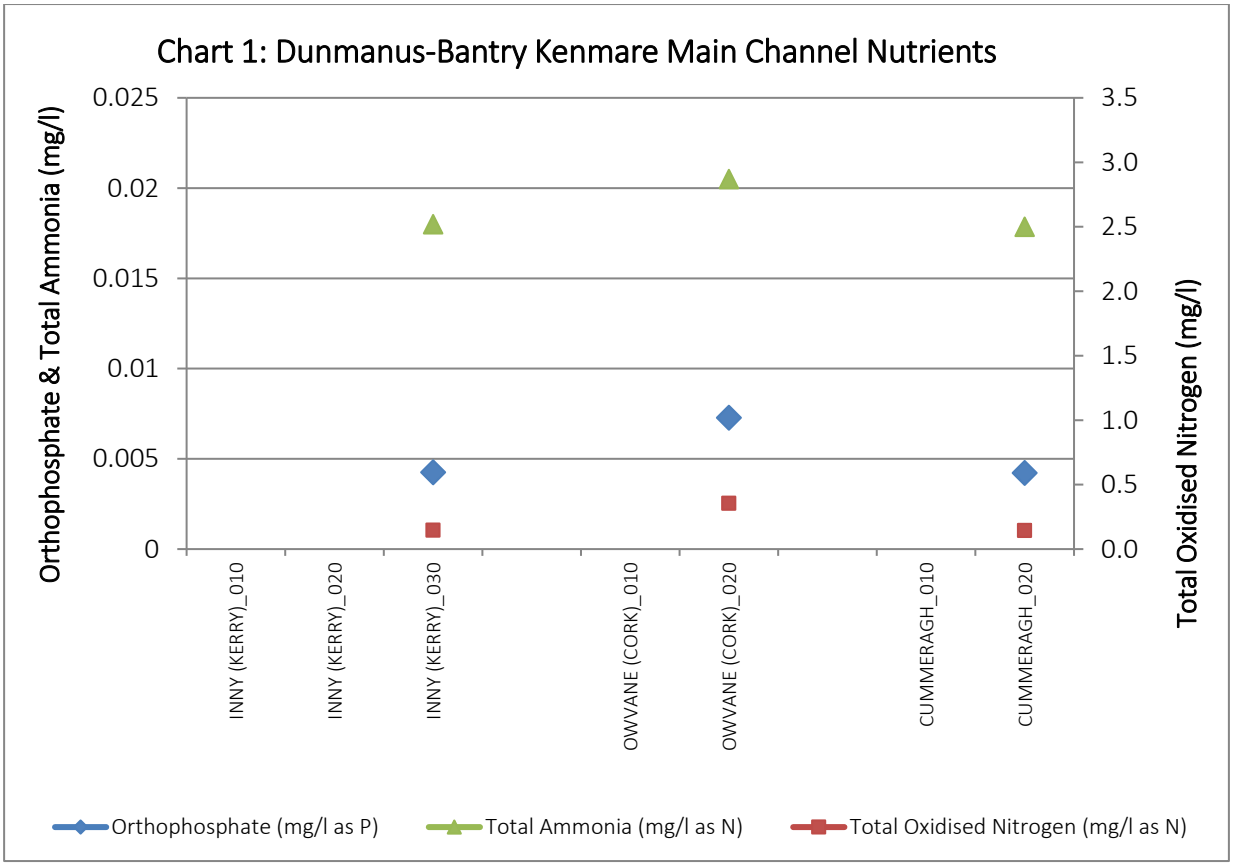
CUMMERAGH_020	River	IE_SW_21C040700	High
ISKNAGAHINY LOUGH STREAM_010	River	IE_SW_21I030100	Good
OUTER KENMARE RIVER	Coastal	IE_SW_190_0000	Good
OUTER BANTRY BAY	Coastal	IE_SW_170_0000	High

Appendix 2 Catchment scale nutrient concentrations and in-stream loads

The results of the water quality assessment for the Dunmanus-Bantry-Kenmare catchment main channels are illustrated in Chart 1. The assessment is based on the mean concentrations between 2013 and 2015 at each site from the headwaters down to the estuary.

Water chemistry data is currently unavailable for the two largest rivers in the catchment, the Roughty and Sheen Rivers. Of the catchment water bodies, which do have water chemistry data, the Inny (Kerry), Cummeragh and Owvane Rivers are the largest with maximum Q30 flows of 5.3, 3.9 and 3.6m^3/s, respectively. This data is presented below in Chart 1 for information.

At the Inny (Kerry), Owvane and Cummeragh Rivers, orthophosphate concentrations are well below the EQS (0.035mg/l) at all water bodies where data is available, ranging from 0.004 to 0.007mg/l. Total Oxidised Nitrogen (TON) concentrations only marginally exceed the limits of detection along the three rivers. Similarly, ammonia concentrations are uniformly low, ranging from 0.018 to 0.021mg/l. The EQS thresholds for TON (2.6mg/l) and ammonia (0.065mg/l) are not exceeded at any of the main channel water bodies where data is available.



Appendix 3 Summary information on *At Risk* and Review surface water bodies and *Not At Risk* surface water bodies that are included in Recommended Areas for Actions

Subcatchment code	Water body code	Water body name	Water body type	Risk	Ecological Status 07-09	Ecological Status 10-15	High Ecological Status Objective Water Body Y/N	Significant Pressures	Date to Meet Environmental Objective	Recommended Area for Action Name
21_1	IE_SW_21C940730	Coom 21_010	River	Review	Unassigned	Unassigned	N		2027	
21_1	IE_SW_21E010400	Emlaghmore_010	River	At risk	Good	Moderate	N	Ag,For,Hymo,Peat	2027	
21_2	IE_SW_21C070720	Coomnahorna_River_010	River	Review	Unassigned	Unassigned	N		2027	
21_3	IE_SW_150_0100	Reen Point Pool	Transitional	Review	Unassigned	Unassigned	N		2027	
21_4	IE_SW_21R010350	Roughty_040	River	Review	Unassigned	Unassigned	N		2027	
21_4	IE_SW_21C020300	Cleady_010	River	At risk	High	Good	Y	Hymo	2027	
21_5	IE_SW_21K010100	Kealduff_010	River	Review	Good	High	Y		2027	
21_7	IE_SW_21S020300	Slaheny_010	River	At risk	High	Good	Y	Ag,Hymo	2027	
21_8	IE_SW_21F051000	Finglas (Waterville)_010	River	Review	Unassigned	Unassigned	N		2027	
21_8	IE_SW_21C040400	Cummeragh_010	River	At risk	Good	Good	Y	Other	2027	Lough Currane
21_8	IE_SW_21I030100	Isknagahiny Lough Stream_010	River	At risk	High	Good	Y	For,Hymo	2021	Lough Currane
21_9	IE_SW_21F090700	Fanahy_010	River	Review	Unassigned	Unassigned	N		2027	
21_10	IE_SW_21I010300	Inny (Kerry)_010	River	At risk	Good	Moderate	N	For	2027	Inny
21_10	IE_SW_21I010500	Inny (Kerry)_020	River	At risk	Good	Moderate	N	For,M+Q	2027	Inny
21_10	IE_SW_21I010900	Inny (Kerry)_030	River	At risk	Good	Moderate	N	For	2027	Inny
21_10	IE_SW_21O060200	Owroe_010	River	At risk	Good	Moderate	N	For,Hymo	2027	Inny
21_11	IE_SW_21D470940	Drishane_010	River	Review	Unassigned	Unassigned	N		2027	
21_11	IE_SW_21G130400	Glan Stream_010	River	At risk	Good	Moderate	N	Ag,For	2027	Glan
21_12	IE_SW_21D750520	Drimna_More_010	River	Review	Unassigned	Unassigned	N		2027	
21_12	IE_SW_21A020200	Ardsheelhane_010	River	At risk	High	Good	Y	For,Peat	2027	
21_12	IE_SW_21S030200	Sneem_010	River	At risk	High	Good	Y	Hymo	2027	
21_12	IE_SW_190_0000	Outer Kenmare River	Coastal	Review	High	Good	Y		2027	
21_12	IE_SW_190_0500	Drongawn Lough, Sneem	Transitional	Review	Good	Moderate	N		2027	
21_13	IE_SW_21_369	Eirk	Lake	Review	Unassigned	Unassigned	N		2027	
21_13	IE_SW_21R130950	Rossacoosane_010	River	Review	Unassigned	Unassigned	N		2027	
21_14	IE_SW_21C060400	Cloonee (Kerry)_020	River	Review	Moderate	Moderate	N		2027	
21_15	IE_SW_21L010940	Lehid_010	River	Review	Unassigned	Unassigned	N		2027	
21_15	IE_SW_21O080100	Owenshagh_010	River	At risk	High	Good	Y	Other	2021	Owenshagh

Subcatchment code	Water body code	Water Body Name	Water body type	Risk	Ecological Status 07-09	Ecological Status 10-15	High Ecological Status Objective Water Body Y/N	Significant Pressures	Date to Meet Environmental Objective	Recommended Area for Action Name
21_16	IE_SW_21L030100	Lough Fadda Stream_010	River	At risk	Good	Good	Y	For,Peat	2021	Lough Fadda/Ownagappul
21_16	IE_SW_21O090200	Ownagappul_010	River	At risk	Good	Good	Y	For,Peat	2021	Lough Fadda/Ownagappul
21_17	IE_SW_21A010200	Adrigole_010	River	At risk	Good	Good	Y	For	2027	Adrigole
21_17	IE_SW_170_0500	Adrigole Harbour	Transitional	Not at risk	Unassigned	Unassigned	N			Adrigole
21_19	IE_SW_170_0300	Reenydonagan Lough	Transitional	Review	Unassigned	Unassigned	N		2027	
21_20	IE_SW_170_0200	Kilmore Lake, Whiddy Island	Transitional	Review	Unassigned	Unassigned	N		2027	

Ag: Agriculture

DWW: Domestic Waste Water

For: Forestry

Hymo: Hydromorphology

Ind: Industry

M+Q: Mines and Quarries

Peat: Peat Drainage and Extraction

DU: Diffuse Urban

UWW: Urban Waste Water

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

Protected Area: If a water body is one or more of the following: Drinking Water Protected Area; Bathing Water; Shellfish Area; Nutrient Sensitive Area or; a Natura 2000 site with a water dependent qualifying interest with a water quality and/or quantity conservation objective, then it has been highlighted as a protected area in this table.

Appendix 4 Drinking water supplies in the catchment

Scheme Code	Scheme Name	Water Body	Water Body Code	Objective met? Yes /No	Reason why not met
1300PRI3053	Rinneen	Beara Sneem	IE_SW_G_019	N/A	No data
1300PRI3058	Dromerkeen	Beara Sneem	IE_SW_G_019	N/A	No data
1300PRI3059	Toor	Beara Sneem	IE_SW_G_019	N/A	No data
0500PRI4701	Ballydonegan	Beara Sneem	IE_SW_G_019	N/A	No data
1300PRI2022	Bonane	SHEEN_020	IE_SW_21S010600	Yes	N/A
1300PRI2025	Tuosist	Lehid_010	IE_SW_21L010940	N/A	No data
1300PUB1052	Castlecove PWSS 023H	Beara Sneem	IE_SW_G_019	Yes	N/A
	Castlecove PWSS 023H	LISS_010	IE_SW_21L150970	Yes	N/A
0500PUB4104	Durrus	Beara Sneem	IE_SW_G_019	Yes	N/A
0500PUB4104	Durrus	FOUR MILE WATER_020	IE_SW_21F020500	Yes	N/A
0500PUB4106	Kilcrohane	Beara Sneem	IE_SW_G_019	N/A	No data
1300PUB1115	Maulin PWSS 066H	Beara Sneem	IE_SW_G_019	Yes	N/A
0500PUB4101	Bantry Derryginagh	Bofinna	IE_SW_21_448	Yes	N/A
0500PUB4202	Allihies	BALLYDONEGAN_010	IE_SW_21B040880	Yes	N/A
1300PUB1058	Kenmare PWSS 045A	Eirk	IE_SW_21_369	Yes	N/A
0500PUB4205	Castletownbere	Glenbeg	IE_SW_21_444	Yes	N/A
1300PUB1059	Kilgarvan PWSS 046A	ROUGHTY_030	IE_SW_21R010250	Yes	N/A
1300PUB1060	Lauragh PWSS 051A	CROANSHAGH_020	IE_SW_21C050180	Yes	N/A
1300PUB1061	Sneem PWSS 068A	SNEEM_020	IE_SW_21S030400	Yes	N/A
1300PUB1062	Templenoe PWSS 073A	ROSSACOOSANE_010	IE_SW_21R130950	No	MCPA (and in 2016)
0500PUB4201	Adrigole	ADRIGOLE_010	IE_SW_21A010200	Yes	N/A
0500PUB4204	Cahermore	Hill Loughanemore_010	IE_SW_21H060770	N/A	No data
0500PUB4208	Glengarriff	Barony_010	IE_SW_21B010910	Yes	N/A
0500PUB4105	Kealkill	OWNGAR (CORK)_010	IE_SW_21O040400	Yes	N/A
0500PUB4108	Whiddy Island	Kilmore Lake, Whiddy Island	IE_SW_170_0200	N/A	No data
1300PUB1049	Baile an Sceilg PWSS 008H	EMLAGHMORE_010	IE_SW_21E010400	Yes	N/A
1300PUB1051	Caherdaniel PWSS 019H	COOMNAHORNA_RIVER_010	IE_SW_21C070720	Yes	N/A

Scheme Code	Scheme Name	Water Body	Water Body Code	Objective met? Yes /No	Reason why not met
	Caherdaniel PWSS 019H	COOMNAHORNA_RIVER_010	IE_SW_21C070720	Yes	N/A
1300PUB1057	Waterville PWSS 075H	Currane	IE_SW_21_457	Yes	N/A
	Waterville PWSS 075H	FINGLAS (WATERVILLE)_010	IE_SW_21F051000	Yes	N/A
	Waterville PWSS 075H	FINGLAS (WATERVILLE)_010	IE_SW_21F051000	Yes	N/A
1300PUB1098	An Ghleann PWSS 039H	ALACHAÍ_BEAG_THEAS_010	IE_SW_21A160930	Yes	N/A
1300PUB1115	Maulin PWSS 066H	INNY (KERRY)_030	IE_SW_21I010900	Yes	N/A
1300PUB1206	Dawros WTP	DRUMOGHTY_010	IE_SW_21D040400	N/A	No data

Appendix 5 Prioritisation of water bodies with Natura 2000 site qualifying interests

Note that additional water dependent species have been added that are not qualifying interests within the SACs (i.e. Arctic char (Salvelinus alpinus) has been added to Cloonee and Inchiquin Loughs, Uragh Wood SAC).

SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Ballinskelligs Bay And Inny Estuary SAC 000335	none							
Barley Cove to Ballyrisode Point SAC 001040	none							
Blackwater River (Kerry) SAC 002173	1029 (8 priority catchments)	High	River	Kealduff_010	High (R - HES Obj)	Yes	IE_SW_21K010100	Yes
			River	Derreendarragh_010	High (NAR - HES Obj)	No	IE_SW_21D030300	Yes
			River	Blackwater (Kerry)_010	High (NAR - HES Obj)	No	IE_SW_21B030100	Yes
			River	Blackwater (Kerry)_020	High (NAR - HES Obj)	No	IE_SW_21B030200	Yes
	1106	Good	River	Kealduff_010	High (R - HES Obj)	No	IE_SW_21K010100	Yes
			River	Derreendarragh_010	High (NAR - HES Obj)	No	IE_SW_21D030300	Yes
			River	Blackwater (Kerry)_010	High (NAR - HES Obj)	No	IE_SW_21B030100	Yes
			River	Blackwater (Kerry)_020	High (NAR - HES Obj)	No	IE_SW_21B030200	Yes
Caha Mountains SAC 000093	Potential 3110	At least Good	Lake	Barley	Unassigned (NAR)	No	IE_SW_21_428	Yes
			Lake	Deereenadarodia	Unassigned (NAR)	No	IE_SW_21_411	Yes
			Lake	Shanoge	Unassigned (NAR)	No	IE_SW_21_442	Yes
			Lake	Moredoolig	Unassigned (NAR)	No	IE_SW_21_435	Yes
			Lake	Glenkeel	Unassigned (NAR)	No	IE_SW_21_451	Yes
Kilgarvan Ice House SAC 000364	none							
Cleanderry Wood SAC 001043	none							

SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Cloonee And Inchiquin Loughs, Uragh Wood SAC 001342	3110	At least Good	Lake	Cloonee Lower	Unassigned (NAR)	No	IE_SW_21_459	Yes
			Lake	Cloonee Middle	Unassigned (NAR)	No	IE_SW_21_458	Yes
			Lake	Cloonee Upper	Unassigned (NAR)	No	IE_SW_21_424	Yes
			Lake	Inchiquin KY	High (NAR - HES Obj)	No	IE_SW_21_452	Yes
			Lake	Napeasta	Unassigned (NAR)	No	IE_SW_21_453	Yes
			Lake	Cummenadillure	Unassigned (NAR)	No	IE_SW_21_396	Yes
	1833	At least Good	Lake	Cloonee Lower	Unassigned (NAR)	No	IE_SW_21_459	Yes
			Lake	Cloonee Middle	Unassigned (NAR)	No	IE_SW_21_458	Yes
			Lake	Cloonee Upper	Unassigned (NAR)	No	IE_SW_21_424	Yes
			Lake	Inchiquin KY	High (NAR - HES Obj)	No	IE_SW_21_452	Yes
			Lake	Napeasta	Unassigned (NAR)	No	IE_SW_21_453	Yes
	Arctic char (not listed)	Good	Lake	Cloonee Lower	Unassigned (NAR)	No	IE_SW_21_459	No
			Lake	Cloonee Middle	Unassigned (NAR)	No	IE_SW_21_458	No
			Lake	Cloonee Upper	Unassigned (NAR)	No	IE_SW_21_424	No
			Lake	Inchiquin KY	High (NAR - HES Obj)	No	IE_SW_21_452	No
Derryclogher (Knockboy) Bog SAC 001873	none							
Drongawn Lough SAC 002187	1150	Good	Transitional	Drongawn Lough, Sneem	Moderate (AT RISK)	Yes	IE_SW_190_0500	Yes
Dunbeacon Shingle SAC 002280	none							
Farranamanagh Lough SAC 002189	1150	Good	Transitional	Farranamagh Lough	Unassigned (NAR)	No	IE_SW_160_0100	No
Glanmore Bog SAC 001879	3110	At least Good	Lake	Glenbeg	Good (NAR)	No	IE_SW_21_444	No
	1029 (8 priority catchments)	High	River	Ownagappul_010	Good (AT RISK - HES Obj)	Yes	IE_SW_21O090200	Yes
			River	Lough Fadda Stream_010	Good (AT RISK - HES Obj)	Yes	IE_SW_21L030100	Yes
Glengarriff Harbour And Woodland SAC 000090	none							
Kenmare River SAC 002158	none							

SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Killarney National Park, Macgillycuddy's Reeks And Caragh River Catchment SAC 000365	3110	At least Good	Lake	Currane	High (NAR - HES Obj)	No	IE_SW_21_457	No
			Lake	Coomrooanig	Unassigned (NAR)	No	IE_SW_21_450	No
			Lake	Isknagahiny	Unassigned (NAR)	No	IE_SW_21_423	No
			Lake	Iskanamacteery	Unassigned (NAR)	No	IE_SW_21_437	No
			Lake	Namona	High (NAR - HES Obj)	No	IE_SW_21_421	No
			Lake	Cloonaghlin	High (NAR - HES Obj)	No	IE_SW_21_443	No
			Lake	Coomeathcun	Unassigned (NAR)	No	IE_SW_21_410	No
			Lake	Slievenashaska	Unassigned (NAR)	No	IE_SW_21_445	No
			Lake	Derriana	High (NAR - HES Obj)	No	IE_SW_21_449	No
			Lake	Coomavanniha	Unassigned (NAR)	No	IE_SW_21_389	No
			Lake	Tooreenbog	Unassigned (NAR)	No	IE_SW_21_377	No
			Lake	Adoolig	Unassigned (NAR)	No	IE_SW_21_372	No
			Lake	Eagles	Unassigned (NAR)	No	IE_SW_21_385	No
			Lake	Brin	Good (NAR)	No	IE_SW_21_402	No
			Lake	Fadda KY	Unassigned (NAR)	No	IE_SW_21_406	No
			Lake	Beg KY	Unassigned (NAR)	No	IE_SW_21_373	No
			Lake	Barfinnihy	Unassigned (NAR)	No	IE_SW_21_419	No
			Lake	Eirk	Unassigned (R)	No	IE_SW_21_369	No
	1029 (8 priority catchments)	High	River	Cummeragh_010	Good (AT RISK - HES Obj)	Yes	IE_SW_21C040400	Yes
			River	Cummeragh_020	High (NAR - HES Obj)	No	IE_SW_21C040700	Yes
			River	Isknagahiny Lough Stream_010	Good (AT RISK - HES Obj)	Yes	IE_SW_21I030100	Yes
			River	Kealduff_010	High (R - HES Obj)	Yes	IE_SW_21K010100	Yes
			River	Derreendarragh_010	High (NAR - HES Obj)	No	IE_SW_21D030300	Yes
			River	Blackwater (Kerry)_010	High (NAR - HES Obj)	No	IE_SW_21B030100	Yes
			River	Blackwater (Kerry)_020	High (NAR - HES Obj)	No	IE_SW_21B030200	Yes

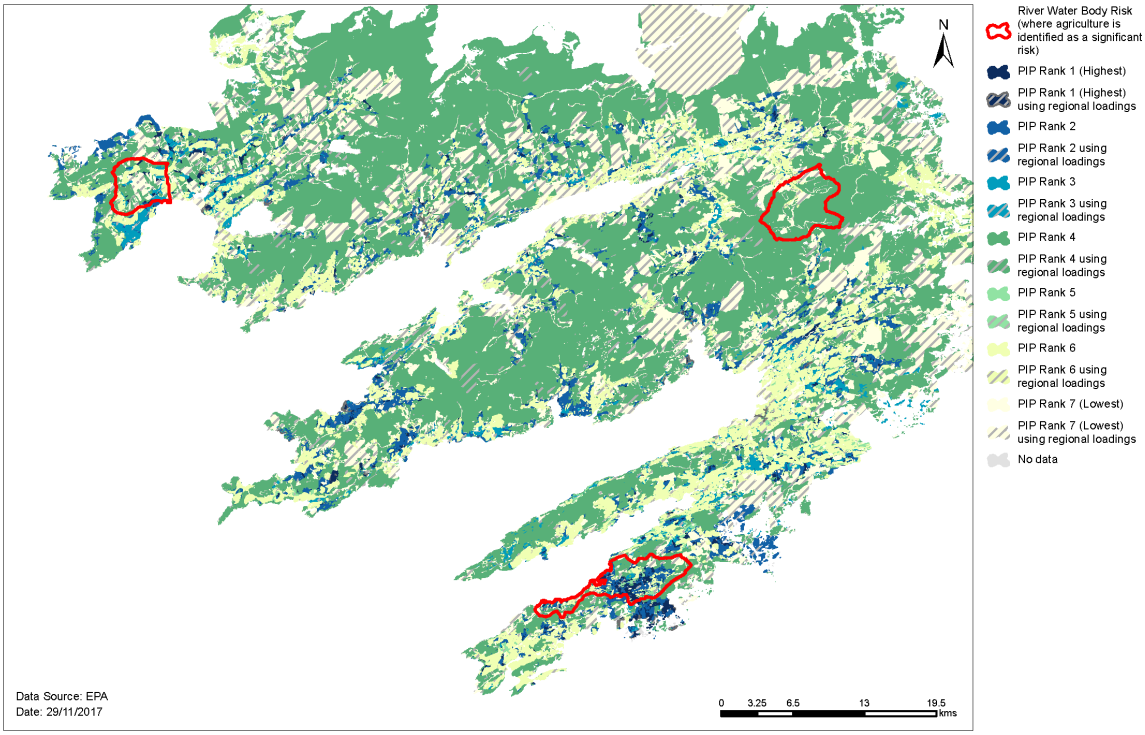
SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC 000365	1106	Good	River	Finglas (Waterville)_010	Unassigned (R)	No	IE_SW_21F051000	No
			River	Coomnahorna_River_010	Unassigned (R)	No	IE_SW_21C070720	No
			River	Liss 21_010	Unassigned (NAR)	No	IE_SW_21L150970	No
			River	Isknagahiny Lough Stream_010	Good (AT RISK - HES Obj)	No	IE_SW_21I030100	No
			River	Cummeragh_010	Good (AT RISK - HES Obj)	No	IE_SW_21C040400	No
			River	Cummeragh_020	High (NAR - HES Obj)	No	IE_SW_21C040700	No
			River	Kealduff_010	High (R - HES Obj)	No	IE_SW_21K010100	No
			River	Derreendarragh_010	High (NAR - HES Obj)	No	IE_SW_21D030300	No
			River	Blackwater (Kerry)_010	High (NAR - HES Obj)	No	IE_SW_21B030100	No
			River	Blackwater (Kerry)_020	High (NAR - HES Obj)	No	IE_SW_21B030200	No
			River	Owreagh_010	High (NAR - HES Obj)	No	IE_SW_21O050300	No
			River	Sneem_010	Good (AT RISK - HES Obj)	No	IE_SW_21S030200	No
			River	Sneem_020	High (NAR - HES Obj)	No	IE_SW_21S030400	No
			River	Inny (Kerry)_010	Moderate (AT RISK)	Yes	IE_SW_21I010300	No
			River	Owroe_010	Moderate (AT RISK)	Yes	IE_SW_21O060200	No
			River	Ardsheelhane_010	Good (AT RISK - HES Obj)	No	IE_SW_21A020200	No
			River	Finnihy_010	Good (NAR)	No	IE_SW_21F010200	No
			River	Finnihy_020	Good (NAR)	No	IE_SW_21F010510	No
			River	Cleady_010	Good (AT RISK - HES Obj)	No	IE_SW_21C020300	No
			River	Owbeg (Roughty)_010	Good (NAR)	No	IE_SW_21O020200	No
			River	Owbeg (Roughty)_020	High (NAR - HES Obj)	No	IE_SW_21O020500	No

SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC 000365	1833	At least Good	Lake	Currane	High (NAR - HES Obj)	No	IE_SW_21_457	No
			Lake	Coomrooanig	Unassigned (NAR)	No	IE_SW_21_450	No
			Lake	Isknagahiny	Unassigned (NAR)	No	IE_SW_21_423	No
			Lake	Iskanamacteery	Unassigned (NAR)	No	IE_SW_21_437	No
			Lake	Namona	High (NAR - HES Obj)	No	IE_SW_21_421	No
			Lake	Cloonaghlin	High (NAR - HES Obj)	No	IE_SW_21_443	No
			Lake	Coomeathcun	Unassigned (NAR)	No	IE_SW_21_410	No
			Lake	Slievenashaska	Unassigned (NAR)	No	IE_SW_21_445	No
			Lake	Derriana	High (NAR - HES Obj)	No	IE_SW_21_449	No
			Lake	Coomavanniha	Unassigned (NAR)	No	IE_SW_21_389	No
			Lake	Tooreenbog	Unassigned (NAR)	No	IE_SW_21_377	No
			Lake	Adoolig	Unassigned (NAR)	No	IE_SW_21_372	No
			Lake	Eagles	Unassigned (NAR)	No	IE_SW_21_385	No
			Lake	Brin	Good (NAR)	No	IE_SW_21_402	No
			Lake	Fadda KY	Unassigned (NAR)	No	IE_SW_21_406	No
			Lake	Beg KY	Unassigned (NAR)	No	IE_SW_21_373	No
			Lake	Barfinnihy	Unassigned (NAR)	No	IE_SW_21_419	No
			Lake	Eirk	Unassigned (R)	No	IE_SW_21_369	No
Maulagowna Bog SAC 001881	none							
Mucksna Wood SAC 001371	none							
Old Domestic Building, Askive Wood SAC 002098	none							
Old Domestic Building, Dromore Wood SAC 000353	none							
Reen Point Shingle SAC 002281	none							
Sheep's Head SAC 000102	none							
Three Castle Head to Mizen Head SAC 000109	none							

Natura Codes of Qualifying interests with water conservation objectives, with defined supporting water requirements			
3110	Oligotrophic waters containing very few minerals of sandy plains	1106	Salmon (Salmo salar)
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea	1029, 1990	Freshwater pearl mussel (Margaritifera margaritifera)
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp	1092	White-clawed Crayfish
3150	Natural eutrophic lakes with Magnopotamin or Hydrocharition type vegetation	21A0	Machairs (in Ireland)
3160	Natural dystrophic lakes and ponds.	2190	Humid dune slacks
3180	Turloughs	7220	Petrifying springs with tufa deposits
1833	Slender Naiad (Najas flexilis)	7230	Alkaline fens
1150	Coastal Lagoons	Arctic char	Arctic Char has no Natura Code

Appendix 6 Pollution Impact Potential (PIP) Map for Phosphorus

For areas where agriculture is deemed as the significant pressure, areas of high risk to surface water can be targeted. The map below shows relative risk of loss of phosphorus to surface water. The risk of phosphorus losses is strongly correlated on whether the land is poorly draining or free draining and the loadings applied i.e. significant loadings applied on poorly draining areas result in a high potential risk to surface water. However, this figure does not imply that actual losses from these areas are occurring but is a useful tool for informing where resources should be focused (i.e. by allowing high risk areas to be identified and prioritised for further investigation). PIP maps are available online at a scale of 1:20,000 and can be accessed by public bodies via the EDEN process.



Appendix 7 Local Catchment Assessment Categories

Category	Assessment & Measures Evaluation Details
IA1	Further information provision (e.g. from IFI, LAs, EPA)
IA2	Point source desk-based assessment
IA3	Assessment of unassigned status water bodies, requiring field visit(s)
IA4	Regulated point sources, requiring field visit/s
IA5	Stream (catchment) walk to evaluate multiple sources in a defined (1 km) river stretch (used as the basis for estimating resource requirements)
IA6	Stream (catchment) walk in urban areas
IA7	Stream (catchment) walk along >1 km river stretches
IA8	Stream (catchment) walk along high ecological status (HES) objective rivers
IA9	Lakes assessment, requiring field visits
IA10	Groundwater assessments, requiring field visits