Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

National Hydrometric Monitoring Programme

2018-2021

Appendix B

Review of the National hydrometric monitoring programme

Contents

Overview

Hydrometric information is a key requirement to support sustainable water resource management including the assessment of impacts of abstractions. Future developments in water management in Ireland, including abstraction regulation, eflow assessment and hydromorphological characterisation and assessment also act as drivers for collection, assessment and reporting of hydrometric data. Section 64 of the EPA Act requires the EPA to prepare **"a national programme for the collection, analysis and publication of information on the levels, volumes and flows of water in rivers, lakes and groundwaters in the State"** and to review this programme every five years (Appendix A).

In this context the EPA decided to review existing hydrometric operations and to develop a National Hydrometric Monitoring Programme in conjunction with other stakeholders. The objective of the review was to identify and assess the suitability of the existing national hydrometric network to fulfil the requirement of stakeholders including its own. Existing stations that are no longer fit for purpose or where there are data requirement gaps in the existing network were identified. Conclusions regarding the existing network and recommendations for future developments were developed based on an assessment of known pressures and receptors in each hydrometric area. The existing stations were classified based on their importance and function so that stations of strategic value were identified.

The work completed to date has included technical assessments of the adequacy of the existing hydrometric programme(s) both internationally and in the context of Section 64 of the EPA Act, culminating in the proposals set out in this document. This work involved analysing the current configuration of hydrometric monitoring infrastructure in Ireland and has provided draft conclusions and recommendations regarding where additional data (stations) are likely to be required, where data quality should be improved, and where data collection is no longer necessary. The hydrometric area reviews were finalised during early 2016 using the most up to date pressure, and receptor data available at that time. These conclusions are summarised below and are set out in detail in Appendix B. Accompanying maps are contained in Appendix D. An upgraded EPA HydroNet data portal has also been launched this year. This portal contains links to hydrometric stations operated by all members of the National Hydrometric working Group and for the first time in Ireland provides a single portal through which hydrometric data from all providers can be accessed.

The review determined that as of October 2016, the total number of flow rated stations operated by the EPA/LAs is 217 with an additional 33 lake or reservoir level only stations. The OPW operates 238 flow rated stations and 22 level only stations on lakes or reservoirs. The ESB operates 18 flow rated stations and 7 level only stations on lakes and reservoirs. The network of flow rate stations captures runoff volumes from about 68% of the land area nationally. Much of the remaining 32% comprises small coastal catchments. There is, however, a regional imbalance in station coverage which needs to be addressed (Figure 1). This has been considered on a hydrometric by hydrometric area basis (Appendix B).

It is not possible to monitor everywhere. The EPA HydroTool model is a model that estimates hydrological statistics for ungauged catchments in Ireland using the collected data as a basis. The review also considered the needs to support the ongoing operation and development of the HydroTool model.

In conjunction with this document an international comparison between Ireland and hydrometric programmes in other jurisdictions is published together with the technical review of the existing programme in Ireland and the network review outcomes and recommendations. This takes the form of a hydrometric station register and associated maps which are also published for your information.

The regional variations and weaknesses identified in this review have occurred, in part, due to an uneven allocation of funding for hydrometrics across the country. The EPA's national monitoring programme should be managed in such a way as to avoid such regional inconsistencies. A review of the governance and management structure of the national hydrometric monitoring programme is being completed separately and is not within the remit of this consultation. The recent establishment of the five Regional Water & Environment Management Committees may present an opportunity to update the funding mechanism for the EPA/LA hydrometric network in future.

The National Hydrometric Working Group should continue to develop its role and play a central part in the future management of hydrometric data collection in Ireland. The National Hydrometric

Working Group coordinates hydrometric activities in Ireland between its member organisations. Membership currently consists of; EPA, OPW, Marine Institute, Inland Fisheries Ireland, NPWS, ESBI, City and County Managers Association (CCMA), Waterways Ireland, Teagasc, Rivers Agency Northern Ireland, and Irish Water. The National Hydrometric Working Group considers strategic, operational and technical issues within its remit. The National Hydrometric Working Group will facilitate strong governance of hydrometrics in Ireland, including; maintenance of the hydrometric register, data quality standards, station classification, development of a national, multi-organisational approach to station installation and closure processes, adoption of new technology and software, and development of a national hydrometric strategy. The National Hydrometric Working Group meets bi-annually with chairing of meetings alternating between the OPW and EPA.

Overall Conclusions and Recommendations

Flow-Rating Improvement Assessment

The technical feasibility of developing the flow rating at 123 existing stations identified should be explored with the OPW and ESB as a priority (Appendix C). In many cases it may not be possible to flow rate these stations across all flow ranges, but following this assessment, the maximum number of stations will be developed to provide the widest range of flow data possible at existing sites.

Station Closures

8 EPA/LA stations are recommended for closure as there is no existing or foreseeable driver for data collection at these locations. These stations represent 3% of the EPA/LA surface water hydrometric network.

Suspended Stations

As of October 2016 there are 21 hydrometric stations in the south and southwest suspended (inactive), 17 of which are strategically important stations. These stations should be reactivated as soon as possible.

New Strategic Station Requirements

An immediate requirement for two new stations has been identified (Emyvale, and on the Owenmore River in Co. Mayo).

Proposed New Project Stations

A requirement for project stations, to be installed over the coming years, has been identified at 20 locations.

Station Activation/Deactivation Procedure

The EPA will put in place protocol for each new EPA/LA station. All new stations should be activated as project stations for a period of 2 years, after which the station should be reviewed in terms of data requirements, quality, future drivers at the location and any other pertinent issues. Thereafter a station can be reclassified as an operational or strategic station based on the outcome of the review. Consideration will be given to obtaining a 10 year data record when closing sites as a 10 year record enables data from a site to be used for flow duration curve model calibration.

Future Review

Future developments in water management in Ireland, including abstraction licencing, eflow assessment and hydromorphological characterisation and assessment will act as new drivers for hydrometric data. As with all networks, the locations where data is required and the nature of data required will change through time. These drivers are expected to develop significantly over the period of operation of the next River Basin Management Plan. Therefore, it is proposed that a network review following the approach used for the development of this national hydrometric Monitoring Programme should be undertaken again by the end of 2021.

National Hydrometric Working Group

The National Hydrometric Working Group will continue to facilitate strong governance of hydrometrics in Ireland, including; maintenance of the hydrometric register, data quality standards, station classification, development of a national, multi-organisational approach to station installation and closure processes, adoption of new technology and software, and development of a national hydrometric strategy.

Future Network Vision & Purpose

The installation of the recommended flow rated stations will facilitate the provision of a comprehensive national flow dataset which will form part of the overall environmental evidence base into the future. The proposed network will also facilitate hydrometric modelling for abstraction and discharge licencing. The network proposed in this document, in combination with development of hydrometric governance through the National Hydrometric Working Group will facilitate connected and efficient hydrometric data collection and provision in Ireland that is clearly focused on the end use of the data and future challenges and opportunities.

The remainder of this consultation document sets out the approach taken to the technical review and the conclusions arising from this review. Your views on all aspects of this review and its conclusions are welcome.

Figure 1: *Map of Hydrometric Areas in Ireland*

Introduction

This review has been completed using the hydrometric areas as the spatial unit for assessment. The hydrometric areas were chosen as they are delineated by catchment and provide the basis for the Water Framework Directive implementation which is utilising an integrated catchment management approach. Within each hydrometric area the existing hydrometric network was assessed, along with an assessment of the main pressures, and receptors including surface water abstractions, discharges to surface water, protected areas and hydrometric data requirements to meet EPA statutory obligations.

An international comparison of hydrometric data collection in Ireland, Scotland, Wales and New Zealand was completed by JBA Consulting on behalf of the EPA as part of this review process. The international review compared network configuration, network resourcing and network management and governance. The relevant recommendations for this, the technical network configuration element of the review were:

- Set out a clear future vision for hydrometric networks in Ireland.
- Maintain a strong National Hydrometric Working Group.
- Classify all existing stations using the Strategic, Operational, Project framework.
- Improve the metadata contained in the hydrometric register.
- Develop and implement a clear process for new site selection and obsolete site closure selection.
- Maintain ongoing periodic review of the station classifications and network configuration.
- Develop a national strategy for environmental evidence incorporating hydrometric data.
- Integrate hydrometric data with catchment modelling and monitoring.

Outline description

The surface area (km²) of each hydrometric area and the main urban centres in each hydrometric area are listed in this section. The total population and population density (people/km²) for each hydrometric area are also included. Population figures were calculated by assigning District Electoral Divisions to a hydrometric area based on which hydrometric area the

majority of a District Electoral Division falls into. In the case of cross-border hydrometric areas, the statistics quoted refer only to the part of the hydrometric area located within the Republic.

Pressures

Point/Diffuse

The pressures datasets available for this review contain details of point pressures within each hydrometric area. Diffuse pressures were not assessed as part of this review as the data sets required to satisfactorily complete such an assessment do not yet exist on a national scale. For the purposes of this review, point source pressures along with Water Framework Directive river water body status will be used as proxies for diffuse pressures, to enable network assessment to be completed.

Abstractions

All known groundwater and surface water abstractions contained in EPA databases were mapped and described in terms of their number and location within each hydrometric area. The large surface water abstractions were identified in the 2016 abstraction database. For the purposes of this review a large surface water abstraction was taken as all lake, river or spring abstractions >250m³/day. Two daily abstraction volumes are contained in the abstraction database, design capacity and current daily consumption. For the purposes of this review, the largest figure of the two quoted volumes has been used. There are a number of instances where abstractions appear to be duplicated in the database. It is not clear at this time if these are instances of duplication within the database or where abstraction figures have been split evenly between two abstractions from the same location. For the purposes of completeness, all apparently duplicate instances have been included in this review.

Discharges

Details of Urban Waste Water (urban waste water) discharges were obtained from the EPA LEMA dataset. The total number of certified (population equivalent <500) and licenced urban waste water discharges were obtained for each hydrometric area. The total number of mapped Combined Sewer Overflows (CSOs) in each hydrometric area were then listed separately. The total number of licenced urban waste water treatment plants (population equivalent >500, and which is a subset of the urban waste water discharges list) were then identified.

Finally, to identify urban waste water treatment plants that are covered by more stringent conditions under the Urban Waste Water Treatment Directive, urban waste water discharges serving a population equivalent >10,000 and with discharge points to river waterbodies were identified. As a last step, those urban waste water treatment plants with a P.E >10,000 and without tertiary treatment installed were identified and assessed in terms of whether sufficient hydrometric data is available at these locations.

Water Framework Directive Status

The River Waterbody 2014 status was used in this review. The spatial distribution of River Waterbodies in each hydrometric area was briefly described. The spatial distribution of River Waterbodies currently unclassified in each hydrometric area were also described. Lake Waterbody status from 2012 was used in the case of lakes as this was the most recent available status update during the review. Transitional and Coastal waters require flow data for loadings calculations. It is not possible to measure flow in Transitional and Coastal waters waterbodies but robust flow data for rivers flowing into Transitional and Coastal waters will provide this information.

Hydrologically Sensitive Protected Areas

There are a number of hydrologically sensitive protected areas, habitats and species for which river flow and river and lake level data may be required for assessment and monitoring purposes. These areas include Special Areas of Conservation (SAC) water dependent habitat and species conservation objectives, Special Protection Areas water dependent habitat conservation objectives, Nutrient Sensitive Areas, Freshwater Pearl Mussel catchments, and Salmonid Waters. Flow and water level information has been identified as a requirement in the assessment of Freshwater Pearl Mussel sites and these locations were assessed individually in this review. At least some of the remaining protected areas are all likely to require flow or water level information and the approach taken was to group these areas into a single layer showing a single class of hydrologically sensitive protected areas where hydrometric information was likely to be required.

Bathing waters and designated shellfish water have not been included as river flow or water level information may not be required in all cases.

Statutory Reporting requirements

The total number of existing stations in each hydrometric area that are used for statutory reporting (including OSPAR, EU reporting etc.) purposes is presented in this section. Locations where flow data is required for EU reporting purposes, but are not currently available, were also identified.

Existing Stations

The existing EPA/LA hydrometric stations were assessed based on the quality of their flow rating across high to low flows. The most up to date appraisal of rating quality was used in each case. Lake level only stations were not assessed as they are not flow rated. OPW flow rated stations were assessed based on the latest available rating quality assessment available (2008). OPW lake level stations were not assessed as they are not flow rated. OPW river water level only stations were not assessed as flow estimates cannot be derived from them. ESB flow rated and lake stations were treated similarly to the OPW stations. The gauges belonging to other organisations provide valuable strategic tidal and navigation water level data but this information cannot be utilised by the EPA for estimation of river flows. Therefore, these stations were not reviewed here. The suspended, currently inactive EPA/LA stations have been included as active stations in this analysis.

The existing flow rating quality assessment for EPA/LA, OPW and ESB stations is presented in the following format: High flow rating (Good/Medium/Poor/Bad quality), Low flow rating (Good/Medium/Poor/Bad quality). Bad quality = 0, Poor quality = 1, Medium quality = 2 and Good quality =3. A station was deemed to be of acceptable quality if it scored a mark of at least 2 under both high and low flow conditions.

Station Coverage

Assessing hydrometric station coverage for a hydrometric area is a somewhat subjective process that is highly dependent on local knowledge, site scale drainage characteristics, changing pressures and receptors. It also requires an understanding of what constitutes an acceptable degree of precision in terms of flow estimation for a given catchment, sub-catchment or river reach. The suspended, currently inactive EPA/LA stations have been included as active stations in this analysis. The existing network coverage was assessed in relation to the relative location of hydrometric stations to abstractions, discharges, Water Framework Directive waterbodies for which flow data will be required, protected areas and to provide base data for the EPA HydroTool model. Sub-catchments where there is currently a deficit of hydrometric data were identified and recommendations were made as how such data gaps should be filled (station upgrade, project station etc.).

There is an average of 5.4 flow rated and lake level stations per 1,000km² across the country. The density is highest in the Dublin region and lowest in the least populated hydrometric areas along the Atlantic seaboard.

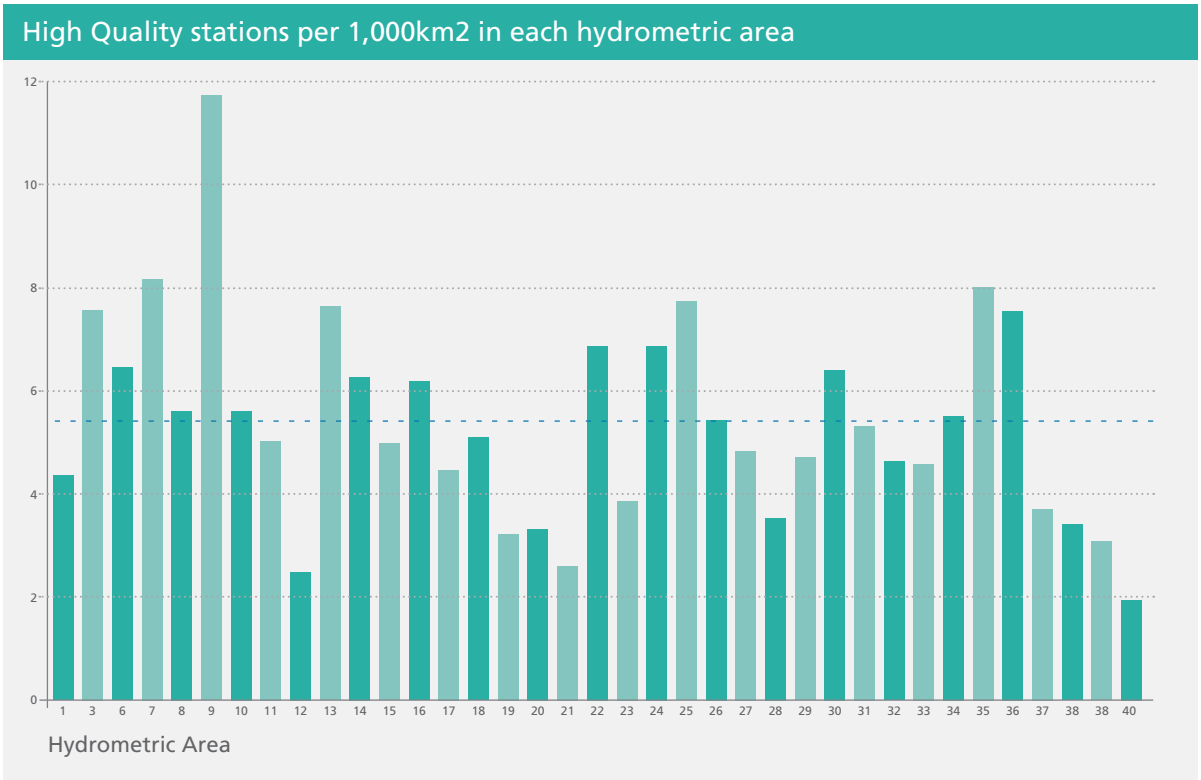


Figure 2: *Flow rated and lake level station density*

The EPA HydroTool model is a Flow Duration Curve based model that estimates hydrological statistics for ungauged catchments in Ireland. The outputs from HydroTool have been compared to observed flow data from hydrometric stations where possible and the results were mapped. Where the modelled results were within +/-20% of the actual flow data these areas were deemed to be modelled to an acceptable level of accuracy. The areas where the model accuracy was assessed to differ from the actual measured values by more than +/-20% were also identified. A third class of catchment was also delineated where the HydroTool outputs have not been assessed yet, either as no data exists or suitable hydrometric stations for assessment have not been selected. Recommendations for development and assessment of the HydroTool model have also been made.

Summary statistics were calculated including the % of each hydrometric area located upstream of a flow rated station of acceptable quality, high/medium quality stations per 1,000km², high/medium quality stations per 1,000km of river channel, high/medium quality stations per 10,000 people and the total number of flow rated stations of high/medium quality and lake level stations in each hydrometric area.

The percentage of land area upstream of flow rated station in each hydrometric area was calculated in each hydrometric area. Nationally, about 68% of the country is located upstream of a flow rated station.

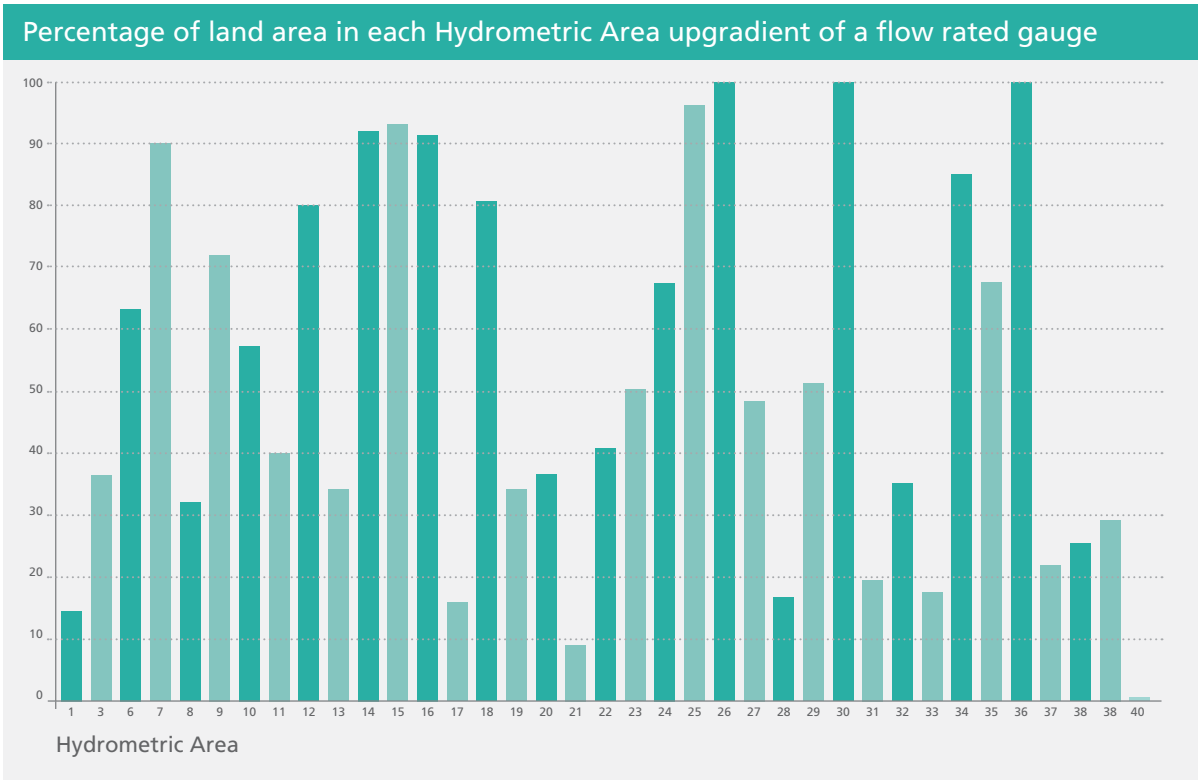


Figure 3: *National network % coverage*

Station Classification

Following discussion with the National Hydrometric Working Group, the station review process has assigned existing stations to one of the three sub-categories as detailed in Table 4. It is important to note that stations can be designated in any of the three categories even if they are not fully rated across all flows. At some strategic sites there may be a requirement for high or low flow only. Where stations are identified that require upgrading of their rating across all flow ranges to fulfil their stated roles, this has been identified in the review and recommendations have been made accordingly. Classification does not denote the overall data quality at a site but rather the importance of data collection at a given site. Its main value is to provide a framework to manage the network into the future in such a way that data collection is not discontinued at important sites without an appropriate station review being undertaken.

Stations were classified as Strategic if they were used in either the EPA HydroTool or the OPW Flood Studies Update (FSU) models, if they were used for statutory reporting obligations, for abstraction assessment, or for climate change monitoring as part of the HydroDetect[1] network. The other organisations in the National Hydrometric Working Group designated stations as Strategic for purposes such as flood management (OPW), navigation (Marine Institute, Waterways Ireland), power generation (ESB) and for various operational drivers.

[1]EPA STRIVE Programme 2007-2013, HydroDetect - The Identification and Assessment of Climate Change Indicators for an Irish Reference Network of River Flow Stations (2010-CCRP-DS-2.2) CCRP REPORT.

Table 1: *Proposed Hydrometric Station Categories*

SUB-CATEGORY	DEFINITION
STRATEGIC	Permanent stations that are strategically important to provide data for many uses and overall provide data required for the fundamental understanding of the hydrology of Ireland. Such stations are particularly important for modelling and statutory reporting requirements.
OPERATIONAL	Long-term stations installed to provide data for ongoing use such as flow at major waste water treatment plants, abstractions etc.
PROJECT	Temporary stations installed for a defined project to provide data for a specific use. Projects may last for extended periods, sometimes in excess of 20 years.

Decision making on the identification of strategically important stations with a full range of flows, or the identification of network gaps, has been led by the EPA. Decision making on the identification of strategically important stations that do not cover a full range of flows and water level only stations is being made jointly with the main organisation(s) responsible for that station.

Assessment of the network and basis for conclusions

Conclusions are presented regarding the adequacy of the existing hydrometric network in each hydrometric area to enable the remit of the EPA to be fulfilled. This includes statutory obligations, support of various EPA workflows and information provision for various stakeholders. The ongoing evolution of the hydrometric network will involve the closure and opening of various stations as existing data gaps are filled and pressures change through time. Therefore, the conclusion regarding the network in each hydrometric area must be seen as temporally dynamic and subject to change should policy or scientific requirements change or develop in future. An example of such change could be flow requirements for hydromorphological assessment, eflow assessment, or further characterisation of protected habitats or species. In cases where it is clearly evident that data gaps exist, that a station requires upgrading, or that a station has become redundant in terms of any drivers for data collection at a given location then recommendations have been made for the installation, upgrading or closure of a station as applicable.

A number of EPA/LA and OPW flow rated stations have been identified as not being flow-rated to an adequate quality across the full range of flows. These stations have been identified in each hydrometric area and are proposed for full flow rating development where technically feasible. It is important to note that these stations have been identified where data would be beneficial in helping to achieve EPA objectives in each hydrometric area. There are instances where OPW stations are not fully-rated across all flow ranges, but these stations have not been flagged in this review as the EPA does not require flow data at these locations. It is also important to note that it will not be possible to improve the rating at these stations in all cases. Many stations were sited to measure low or high flows in places where the river channel geometry was best suited to measuring either low or high flows. For example, a very wide, straight sided channel at the location of a large bridge may be ideal for the measurement of high flows. However, the river bed at such locations is commonly relatively rough and wide, making the accurate measurement of low flows difficult if not impossible. At other locations, a small uniform channel surrounded by a wide flood plain may be ideal for the measurement of low flows, but accurate estimation of high flows may be impossible when the river bursts its banks during flood periods. At sites such as these, development of a high quality rating will not be possible and these stations will continue to provide the (acceptable quality) data within the flow range for which they were originally installed. The EPA Hydrometric and Groundwater Section will work with other relevant EPA units and stakeholders to decide how to proceed in locations where ratings cannot be improved. It may be feasible to install projects stations in some of these areas, but in some cases it may be impossible to deliver an economical solution to provide more accurate data than is currently available.

In many hydrometric areas there will be a requirement for hydrometric data at new locations in the future. There may not be a need for long

term (>10 years) stations at such sites and therefore extensive reference has been made to future use of project stations (<20 years and in most cases probably <5 years with a minimum requirement of 1 full water year's data collection). The aim of the final proposal for each hydrometric area is to identify the monitoring station locations required to provide an efficient, defendable, and dynamic system of hydrometric data collection across the country to fulfil the remit of the EPA and its stakeholders.

HydroTool Accuracy Assessment

The HydroTool model is a model that estimates hydrological statistics for ungauged catchments in Ireland. Figure 4 below shows areas where HydroTool accuracy has been assessed. The three region types denote;

1. Areas where the HydroTool cannot be used, usually due to the fact that flow in such catchments is controlled by dams, weirs or sluices,
2. Areas where HydroTool estimated flows differ <+/-20% of the actual recorded data, and
3. Areas where HydroTool estimated flows differ >+/-20% of the actual recorded data (Figure 4).

HydroTool assessment is an ongoing process and the long term aim is to assess model output in the remaining unassessed areas.

Network Management

Station Activation/Deactivation Procedure

The EPA should put in place a template to be completed internally for each new EPA/LA station that is activated. All new stations should be activated as project stations for a period of 2 years, after which the station should be reviewed in terms of data requirements, quality, future drivers at the location and any other pertinent issues. At the 1 or 2 year review a station can be reclassified as an operational or strategic station based on the outcome of the review. The date of the next station review should also be set at this time. Consideration should be given to obtaining a 10 year data record when closing sites as a 10 year record would enable data from a site to be used for flow duration curve model calibration.

Future Review

Future developments in water management in Ireland, including abstraction licencing, eflow assessment and hydromorphological characterisation and assessment will act as new drivers for hydrometric data. As with all networks, the locations where data is required and the nature of data required will change through time. These drivers should develop significantly over the coming 2-5 years. Therefore, it is proposed that a network review following the template established in this report should be undertaken again in 2021, as required under section 64 of the EPA Act.

Future network vision and purpose

The installation of the recommended flow rated stations will facilitate the provision of a comprehensive national flow dataset which will form part of the overall environmental evidence base into the future. The proposed network will also facilitate hydrometric modelling for abstraction and discharge licencing going forward. The network proposed in this document, in combination with development of hydrometric governance through the National Hydrometric Working Group will facilitate connected and efficient hydrometric data collection and provision in Ireland that is clearly focused on the end use of the data and future challenges and opportunities.

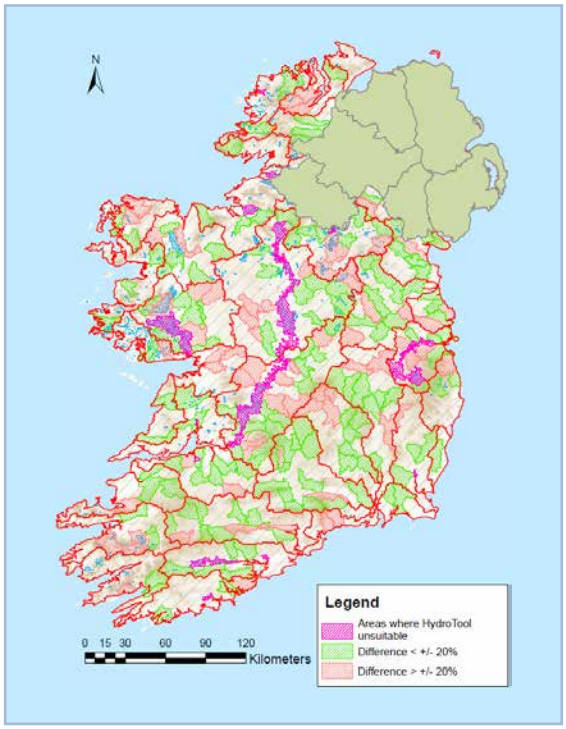


Figure 4: *Map showing HydroTool accuracy nationally*

Network Review Results Summary table by Hydrometric Area

HYDROMETRIC AREA	TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION			PROPOSED INITIAL ACTIONS *(establishment of project stations in the medium-term are not included here as this will depend on future WFD requirements)*
		WATER-LEVEL STATIONS (RIVER OR TIDAL)	WATER LEVEL STATIONS (LAKE)	FLOW-RATED STATIONS		STRATEGIC	OPERATIONAL	PROJECT	
FOYLE (01)	7	0	1	6	**4**	5	1	1	Progress flow-rating improvements (2) where possible
LOUGH FOYLE (02)	-	-	-	-	**-**	-	-	-	-
LOUGH NEAGH AND LOWER BANN (03)	5	1	1	3	**3**	3	2	0	Progress flow-rating improvements (2) where possible. Re-establish Emyvale Weir station (03057)
BUSH AND NORTH EAST COAST (04)	-	-	-	-	**-**	-	-	-	-
BELFAST LOUGH AND EAST DOWN (05)	-	-	-	-	**-**	-	-	-	-
NEWRY, FANE, GLYDE AND DEE (06)	15	3	0	11	**9**	5	10	0	Progress flow-rating improvements (3) where possible. Close Laydyswell station (06036).
BOYNE (07)	40	13	6	21	**23**	20	20	0	Progress flow-rating improvements (3) where possible. Close Derryiron station (07108).
NANNY-DELVIN (08)	9	3	0	6	**4**	5	4	0	Progress flow-rating improvements (2) where possible.
LIFFEY AND DUBLIN BAY (09)	51	29	0	22	**21**	21	29	1	None

OVOCA-VARTRY (10)	10	2	1	7	**8**	6	4	0	None
OWENAVORRAGH (11)	2	0	0	2	**2**	1	1	0	None
SLANEY AND WEXFORD HARBOUR (12)	20	9	0	11	**5**	14	6	0	Progress flow-rating improvements (6) where possible.
BALLYTEIGUE-BANNOW (13)	6	1	2	3	**5**	2	4	0	None
BARROW (14)	45	18	0	27	**19**	16	27	2	Progress flow-rating improvements (8) where possible. Close Ballynafagh (14108) and Ballynafagh Lake O/L (14109) stations.
NORE (15)	20	2	0	18	**13**	13	7	0	Progress flow-rating improvements (5) where possible.
SUIR (16)	49	19	0	30	**22**	20	29	0	Progress flow-rating improvements (8) where possible.
COLLIGAN-MAHON (17)	5	1	1	3	**3**	2	3	0	Progress flow-rating improvements (1) where possible.
BLACKWATER (MUNSTER) (18)	37	19	0	18	**16**	15	22	0	Re-activate the 4 suspended EPA/ LA stations. Progress flow-rating improvements (1) where possible.
LEE, CORK HARBOUR AND YOUGHAL BAY (19)	25	4	2	19	**8**	11	14	0	Re-activate the 3 suspended EPA/ LA stations. Progress flow-rating improvements (12) where possible.
BANDON-ILEN (20)	8	4	0	4	**8**	3	5	0	Re-activate the 1 suspended EPA/ LA station. Progress flow-rating improvements (1) where possible.

Note: this table includes all currently suspended and active stations (i.e. it does not take account of proposed closures or possible new stations).

HYDROMETRIC AREA	TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION			PROPOSED INITIAL ACTIONS *(establishment of project stations in the medium-term are not included here as this will depend on future WFD requirements)*
		WATER-LEVEL STATIONS (RIVER OR TIDAL)	WATER LEVEL STATIONS (LAKE)	FLOW-RATED STATIONS		STRATEGIC	OPERATIONAL	PROJECT	
DUNMANUS-BANTRY-KENMARE (21)	7	0	1	6	**5**	6	1	0	Re-activate the 5 suspended EPA/LA stations. Progress flow-rating improvements (2) where possible.
LAUNE-MINE-DINGLE BAY (22)	17	2	3	12	**14**	7	10	0	Re-activate the 6 suspended EPA/LA stations as soon as possible. Progress flow-rating improvements (1) where possible. Close Kilquane station (22023).
TRALEE BAY-FEALE (23)	13	6	0	7	**7**	6	7	0	Re-activate the 2 suspended EPA/LA stations.
SHANNON ESTUARY SOUTH (24)	28	6	0	22	**13**	13	15	0	Progress flow-rating improvements (9) where possible.
LOWER SHANNON (25)	77	26	5	46	**45**	37	39	1	Progress flow-rating improvements (6) where possible. Close Doon station (25311).
UPPER SHANNON (26)	98	39	9	50	**38**	27	69	2	Progress flow-rating improvements (10) where possible. Close Lysterfield station (26243).
SHANNON ESTUARY NORTH (27)	20	10	2	8	**8**	14	6	0	Progress flow-rating improvements (2) where possible.
MAL BAY (28)	4	0	0	4	**3**	3	1	0	Progress flow-rating improvements (1) where possible.

GALWAY BAY SOUTH EAST (29)	16	5	0	11	**6**	8	8	0	Progress flow-rating improvements (5) where possible.
CORRIB (30)	30	5	3	22	**20**	14	16	0	Progress flow-rating improvements (5) where possible.
GALWAY BAY NORTH (31)	9	3	3	3	**5**	6	3	0	Progress flow-rating improvements (1) where possible.
ERRIFF-CLEW BAY (32)	11	0	1	10	**7**	2	9	0	Progress flow-rating improvements (3) where possible.
BLACKSOD-BROADHAVEN (33)	7	1	1	5	**6**	5	2	0	Establish a station on the Owenmore river.
MOY AND KILLALA BAY (34)	25	3	2	20	**13**	16	9	0	Progress flow-rating improvements (8) where possible.
SLIGO BAY AND DROWSE (35)	21	3	3	15	**15**	11	6	4	Progress flow-rating improvements (3) where possible.
ERNE (36)	42	13	6	23	**19**	14	27	1	Progress flow-rating improvements (10) where possible. Close Balladian station (36030).
DONEGAL BAY NORTH (37)	4	1	0	3	**3**	4	0	0	None
GWEEBARRA-SHEEPHAVEN (38)	6	1	0	5	**5**	5	1	0	None
LOUGH SWILLY (39)	7	1	0	6	**3**	6	1	0	Progress flow-rating improvements (3) where possible.
DONEGAL-MOVILLE (40)	3	2	0	1	**1**	2	1	0	None

Note: this table includes all currently suspended and active stations (i.e. it does not take account of proposed closures or possible new stations).

Conclusions and recommendations

Network coverage

The network of flow rate stations captures runoff volumes from about 68% of the land area nationally. Much of the remaining 32% comprises small coastal catchments. Coastal areas in the West tend to have small populations and few environmental pressures compared to similar areas in the East. There is, however, a regional imbalance in station coverage that needs to be addressed.

Total station numbers

As of June 2016, the total number of flow rated stations operated by the EPA/LAs is 217 with an additional 33 lake or reservoir level only stations. The OPW operates 238 flow rated stations and 22 level only stations on lakes or reservoirs. The ESB operates 18 flow rated stations and 7 level only stations on lakes and reservoirs. The hydrometric register and associated metadata have been improved and updated as part of this review process.

Stations to be further developed

The technical feasibility of developing the flow rating at existing stations identified in this study should be explored with the OPW and ESB as a priority. In many cases it may not be possible to flow rate these stations across all flow ranges, but following this assessment, the maximum number of stations will be developed to provide the widest range of flow data possible at existing sites.

Stations to be closed

The following 8 EPA/LA stations are recommended for closure as there is no existing or foreseeable driver for data collection at these locations: Ladyswell 06036, Derryiron 07108, Ballynafagh 14108, Ballynafagh Lake O/L 14109, Kilquane 22023, Doon 25311, Lysterfield 26243, and Balladian 36030. These stations represent 3% of the EPA/LA surface water hydrometric network.

New stations required

An immediate requirement for new stations has been identified at the following locations: Emyvale, and on the Owenmore River in Co. Mayo.

A requirement for project stations, to be installed over the coming years has been identified at the following locations: hydrometric area 01 Swilly (Burn) river, hydrometric area 09 mid-Liffey between Sallins and Clane, hydrometric area 10 Dargle river, in hydrometric areas 18, 19, 20, 21, 22 and 23 it is recommended that the suspended EPA/LA stations be reactivated immediately, hydrometric area 20 Bandon river at Dunmanway, hydrometric area 21 Roughty and Inny rivers, hydrometric area 23 Brick river, hydrometric area 27 Rine, Owensleive and Cloon rivers, hydrometric area 32 Dowras river, hydrometric area 33 Carrowmore Lake outfall station should be upgraded, hydrometric area 35 Easkey, Drumcliff, Uinshin and Grange rivers, hydrometric area 37 Glen (Carrick), Eany and Ballintra rivers, hydrometric area 39, The Swilly at Letterkenny and hydrometric area 40 Donagh river near Carndonagh.

Station activation/deactivation procedure

The EPA should put in place a template to be completed internally for each new EPA/LA station that is activated. All new stations should be activated as project stations for a period of at least 1 year, but preferably 2 years, after which the station should be reviewed in terms of data requirements, quality, future drivers at the location and any other pertinent issues. During the station activation process the wider need for hydrometric information in the catchment should be considered to maximise efficiencies and to ensure only the optimal number of stations are activated. At the 1 or 2 year review a station can be reclassified as an operational or strategic station based on the outcome of the review. The date of the next station review should also be set at this time. Consideration should be given to obtaining a 10 year data record when closing sites as a 10 year record would enable data from a site to be used for flow duration curve model calibration.

When any organisation deactivates a strategic station, the other members of the National Hydrometric Working Group should be informed prior to deactivation of the station.

Governance

The regional variations and weaknesses identified in this review have occurred, in part, due to an uneven allocation of funding for hydrometrics across the country. The EPA's national monitoring programme should be managed in such a way as

to avoid such regional inconsistencies. A review of the governance and management structure of the national hydrometric morning programme should be completed in tandem with the resourcing proposal. The National Hydrometric Working Group should continue to develop its role and play a central part in the future management of hydrometric data collection in Ireland.

Proposed future review

Future developments in water management in Ireland, including abstraction licencing, eflow assessment and hydromorphological characterisation and assessment will act as new drivers for hydrometric data. As with all networks, the locations where data is required and the nature of data required will change through time. These drivers should develop significantly over the coming 2-5 years. Therefore, it is proposed that a network review following the template established in this report should be undertaken again in 2021, as required under section 64 of the EPA Act.

Future network vision and purpose

The installation of the recommended flow rated stations will facilitate the provision of a comprehensive national flow dataset which will form part of the overall environmental evidence base into the future. The proposed network will also facilitate hydrometric modelling for abstraction and discharge licencing going forward. The network proposed in this document, in combination with development of hydrometric governance through the National Hydrometric Working Group will facilitate connected and efficient hydrometric data collection and provision in Ireland that is clearly focused on the end use of the data and future challenges and opportunities.

Appendix A: Section 64 of the Environmental Protection Agency Act 1992

64. (1) The Agency shall, after consultation with such persons or bodies (if any) as may be prescribed, prepare a national programme for the collection, analysis and publication of information on the levels, volumes and flows of water in rivers, lakes and groundwaters in the State (in this Act referred to as "hydrometric data"), and a copy of such programme shall, as soon as may be, be sent by the Agency to the Minister.

(2) A programme under this section may, after consultation with the persons or bodies (if any) referred to in subsection (1), be revised from time to time by the Agency and shall be reviewed at least every five years.

(3) It shall be the duty of the Agency to take appropriate steps to ensure that a programme under this section is implemented and for that purpose the Agency may

a) direct a local authority to provide, operate and maintain such gauges and other equipment as it may specify and to furnish specified information to the Agency in such manner and at such times as it may specify.

b) make arrangements with any public authority, or other person or body to provide, operate and maintain such gauges and other equipment as it may specify and to furnish specified information to the Agency in such manner and at such times as it may specify.

c) provide, operate and maintain gauges and other equipment for recording hydrometric data.

(4) Where the Agency is not satisfied with the response of a local authority to a direction under subsection (3) (a), it shall consult with the local authority concerned, and, if the Agency is still dissatisfied with the response following such consultation, the Agency shall carry out, cause to be carried out, or arrange for, the monitoring concerned and the costs of the monitoring may be recovered by the Agency from the local authority as a simple contract debt in any court of competent jurisdiction.

Appendix B: Hydrometric Area by Hydrometric Area Assessments

Hydrometric Areas

Hydrometric Area 01 Foyle

Setting

This hydrometric area includes the surface catchment drained by the River Foyle and by all streams entering tidal water between Culmore Point, Co. Derry and Coolkeeragh, Co. Derry. Hydrometric area 01 is a cross border hydrometric area with a surface area of 2,919km², 914km² of which is located within the Republic. The largest urban centre in hydrometric area 01 is Ballybofey and Stranorlar. There are no other large towns in this hydrometric area and the total population of hydrometric area 01 (in the Republic) is approximately 29,651 with a population density of 32 people per km². The statistics included here refer to the portion of hydrometric area 01 located within the Republic only.

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater or spring sources with a small number of surface water abstractions from lakes. There is 1 registered surface water abstraction >250m³/day in this hydrometric area. There are a number of urban waste water discharges located in the hydrometric area including 17 urban waste water treatment plants and 2 combined sewer overflows. There are 8 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are no urban waste water treatment plants >10,000PE in this hydrometric area.

ABSTRACTION NAME	VOLUME (M³/DAY)
LOUGH MOURNE	7,587

Water Framework Directive Status

As of December 2014, there are no High status surface water bodies in hydrometric area 01. The large lakes in hydrometric area 01, Loughs Derg, Mourne and Finnare are classified as at Good, Good and Moderate status respectively. Many of the river channels in the southern and eastern parts of hydrometric area 01 have not been classified. There is a similar proportion of channel classified as a Good and Poor status with marginally less classified as Moderate status. The headwaters of the Swilly Burn River are classified as at Bad status.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Stations

There are currently 4 active EPA/LA hydrometric stations in hydrometric area 01, comprising 1 lake level site and 3 flow rated sites. The flow rating at all 3 of these stations is of good quality across all ranges. There are 3 active OPW flow rated sites, none of which are classified as high quality across all flows. Therefore, there are a total of 3 high quality flow rated sites and one lake level site in this hydrometric area. Currently 15% of hydrometric area 01 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 01, there are 4.4 per 1,000km², 3.2 per 1,000km of stream channel and 1.3 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

There is generally an acceptable coverage of hydrometric stations to characterise river flows and lake levels at the hydrologically sensitive areas, protected rivers and catchments, significant abstractions and discharges in this hydrometric area. Flow data is not available for the Swilly Burn which is currently at Bad status. There are hydrometric stations located downstream of the majority of protected sites but there are parts of the Finn catchment where more detailed flow information may be required in the future. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of good quality in these areas.

Station Classification

Of the 7 active hydrometric stations in hydrometric area 1, 5 are classified as Strategic stations. Two stations are used to calibrate the EPA flow duration

curve model. Three stations are classified as Strategic on the basis of abstraction monitoring. One station, Gortinlieve, is classified as a project station for Water Framework Directive groundwater assessment. One of the other stations is classified as an operational station and the other as a project station.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
7	0	1	6	**4**	5	1	1

Review Conclusion

General

There is scope for the addition of project stations in hydrometric area 01. An additional station may be required on the Swilly Burn and possibly the Finn rivers. The proposed network should be broadly adequate to provide representative flow data for this area. However, the requirement for hydrometric data in the hydrometric area should be reviewed upon completion of Water Framework Directive classification work in hydrometric area 01.

Stations flagged for rating development

Two stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
01041 SANDY MILLS	OPW
01043 BALLYBOFEY	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area, but a project station should be established when possible on the Swilly (Burn) River near Raphoe.

Hydrometric Area 02 Lough Foyle

This hydrometric area includes the surface catchment drained by the Rivers Faughan and Roe and by all streams entering tidal water between Coolkeeragh and The Barmouth, Co. Derry. hydrometric area 02 is located entirely within Northern Ireland and is therefore not within the scope of this review.

Hydrometric Area 03 Lough Neagh and Lower Bann

Setting

This hydrometric area includes the surface catchment drained by the River Bann and by all streams entering tidal water between the Barmouth and Ballyaghran Point, Co. Derry. Hydrometric area 03 is a cross border hydrometric area with a surface area of 5,787km², 374km² of which is located within the Republic. The largest urban centre in hydrometric area 03 is Monaghan town. There are no other large towns in this hydrometric area and the total population of hydrometric area 03 (in the Republic) is approximately 20,567 with a population density of 55 people per km². The statistics included here refer to the portion of hydrometric area 03 located within the Republic only.

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater sources. There are 4 registered surface water abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 11 urban waste water treatment plants and 6 combined sewer overflows. There are 5 licenced urban waste water treatment plants (>500PE) in this hydrometric area. The largest of these are located upstream of an EPA/LA high quality flow rated gauge. There is 1 urban waste water treatment plant >10,000 PE in this hydrometric area at Monaghan town. This plant has Tertiary P removal installed.

ABSTRACTION NAME	VOLUME (M³/DAY)
GLASLOUGH & TYHOLLAND GROUP WATER SUPPLY SCHEME	1,585
TRUAGH GROUP WATER SUPPLY SCHEME	1,107
TYDAVNET GROUP WATER SUPPLY SCHEME	831
MONAGHAN WATER SUPPLY SCHEME	7,717

Water Framework Directive Status

As of December 2014, there are no High status surface water bodies in hydrometric area 03. Many of the river channels in the southern part of hydrometric area 03 are at Poor status, while much of the Mountain Water River in the north and central part of the hydrometric area is at Moderate status. Emy Lough is currently at Bad Status. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels in the northern part of the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Stations

There are currently 3 active EPA/LA hydrometric stations in hydrometric area 03, comprising 1 lake level station and 2 flow rated stations. The flow rating at 1 of these stations is of high quality across all ranges and poor across all ranges at the other flow rated station. There are 2 active OPW flow rated stations, 1 of which is classified as high quality at low flows but poor quality at high flows and the other is poor quality across all ranges. The OPW also maintains 2 level only stations on river channels in hydrometric area 03. Therefore, there are a total of 2 high or medium quality flow rated stations and 1 lake level station in this hydrometric area. Currently 36% of hydrometric area 03 is upstream of high quality flow rated gauges. In terms of high or medium quality flow rated and lake stations in hydrometric area 03, there are 7.6 per 1,000km², 5.7 per 1,000km of stream channel and 1.5 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

Hydrometric station coverage in this hydrometric area is sub-optimal as there are no stations in close proximity to the large abstractions or the largest discharge at Monaghan Town (but this plant does have tertiary P removal treatment installed). There are no hydrometric stations in the north or south eastern parts of the hydrometric area, where there may be future Water Framework Directive related

requirements for flow data. The existing station at Emyvale Weir is required for fisheries etc. but the weir is not functioning properly and this station requires either upgrading or relocation.

Station Classification

Of the active hydrometric stations in hydrometric area 03, 3 are classified as Strategic stations. Two stations are used to calibrate the EPA flow duration curve model, one of which is also used for EU reporting purposes. One station is classified as a Strategic on the basis of abstraction monitoring. The remaining 2 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
5	1	1	3	**3**	3	2	0

Review Conclusion

General

There is currently a deficit of high quality flow information across flow ranges in the northern and central parts of hydrometric area 03. The station at Emyvale Weir should be moved and upgraded to Drumully Bridge to capture reliable flow data for the Mountain Water River. The remaining existing active stations should be maintained and targeted flow measurements obtained to improve ratings where possible and there is a requirement for project stations in the southern part of the hydrometric area, in the vicinity of Monaghan town. The proposed network should be broadly adequate to provide representative flow data for this area. However, the requirement for hydrometric data in the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in this part of hydrometric area 03.

Stations flagged for rating development

Two stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
03055 GLASLOUGH	OPW
03057 EMYVALE WEIR	EPA/LA

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

The existing station at Emyvale Weir should be upgraded or moved to a new location.

Hydrometric Area 04 Bush and North East Coast

This hydrometric area includes the surface catchment drained by the River Bush and by all streams entering tidal water between Ballyaghran point and Curran Point Co. Antrim. hydrometric area 04 is located entirely within Northern Ireland and is therefore not within the scope of this review.

Hydrometric Area 05 Belfast Lough and East Down

This hydrometric area includes the surface catchment drained by the Rivers Lagan and Quoile and by all streams entering tidal water between Curran Point and Murlough Upper, Co. Down. Hydrometric area 05 is located entirely within Northern Ireland and is therefore not within the scope of this review.

Hydrometric Area 06 Newry, Fane, Glyde and Dee

Setting

This hydrometric area includes the surface catchment drained by the Rivers Newry, Fane, Glyde and Dee and by all streams entering tidal water between Murlough Upper and The Haven, Co. Louth. Hydrometric area 06 is a cross border hydrometric area with a surface area of 2,125km², 1,390km² of which is located within the Republic. The largest urban centre in hydrometric area 06 is Dundalk. The other main urban centres in this hydrometric area are Carrickmacross, Ardee, Kingscourt, Dunleer and Castleblaney and the total population of hydrometric area 06 (in the Republic) is approximately 115,938 with a population density of 83 people per km². The statistics included here refer to the portion of hydrometric area 06 located within the Republic only.

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater sources according to current information. There are 10 registered public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 25 urban waste water treatment plants and 10 combined sewer overflows. There are 16 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 2 urban waste water treatment plant >10,000 PE in this hydrometric area at Castleblaney and Carrickmacross. The Carrickmacross plant has tertiary N&P removal installed. The Castleblaney plant has tertiary P removal installed.

ABSTRACTION NAME	VOLUME (M³/DAY)
ARDEE	2,732
CARLINGFORD	405
CAVANHILL	17,366
CHURCHILL & ORAM GROUP WATER SUPPLY SCHEME	660
DONAGHMOYNE GROUP WATER SUPPLY SCHEME	1,460
DRUMCONDRATH	538
GREENMOUNT	1,168
KILLANNY-REAGHSTOWN GROUP WATER SUPPLY SCHEME	1,313
TALLANSTOWN	454
MUCHGRANGE SPRINGS	310

Water Framework Directive Status

As of December 2014, there are 32km of High status surface river channels in hydrometric area 06 located on the Cooley peninsula and including part of the Big River. The largest lake in hydrometric area 06, Lough Muckno is at Bad status. River waterbody status varies across hydrometric area 06 with significant lengths of stream channel classified as Poor, Moderate and Good. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Stations

There are currently 5 active EPA/LA hydrometric stations in hydrometric area 06, comprising 1 water level only station and 4 flow rated stations. The flow rating at 4 of these stations is of high or medium quality across all ranges. There are 7 active OPW flow rated stations, 2 of which is classified as high quality across all flow ranges, 2 with at least medium quality across all flow ranges and 2 with high or medium quality at high flows but low quality at low flows and one that is low quality across all flow ranges. Therefore, there are a total of 8 high to medium quality flow rated stations and one lake level station in this hydrometric area. Currently 63% of hydrometric area 06 is upstream of high or medium quality flow rated gauges. In terms of high or medium quality flow rated stations in hydrometric area 06, there are 6.5 per 1,000km², 6.9 per 1,000km of stream channel and 0.8 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

Most of the larger rivers draining to the coast in hydrometric area 06 have at least 1 hydrometric station along their course. The notable exceptions are the lower reaches of the Castletown River, for which flow information may be required for protected area assessment, and the lower Fane River, where a large abstraction is located. HydroTool output has also been shown to be inaccurate in the Fane catchment.

Station Classification

Of the active hydrometric stations in hydrometric area 06, 5 are classified as Strategic stations. Three stations are used to calibrate the EPA flow duration curve model, one of which is also used for EU reporting purposes and the remaining 2 stations are also part of the HydroDetect network. Two stations are classified as a Strategic on the basis of abstraction monitoring. The remaining 9 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
15	3	0	11	**9**	5	10	0

Review Conclusion

General

The existing network in hydrometric area 06 provides reasonably comprehensive coverage for flow estimation based on existing information. There are currently no stations located in the lower reaches of Castletown and Fane River catchments. The requirement for hydrometric data in these parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in this part of hydrometric area 06.

Stations flagged for rating development

Three stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
06025 BURLEY	OPW
06011 MOYLES MILL	OPW
06026 ACLINT	OPW

Stations to be closed

It is recommended that the station at Ladyswell (06036) is closed as this is a project station and there is no existing or foreseeable data requirement at this location.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 07 Boyne

Setting

This hydrometric area includes the surface catchment drained by the River Boyne and by all streams entering tidal water between The Haven and Mornington Point, Co. Meath. Hydrometric area 07 has a surface area of 2,694km². The largest urban centre in hydrometric area 07 is Drogheda. The other main urban centres in this hydrometric area are Navan, Trim, Kells, Virginia, Bailieborough, Athboy, Kinnegad, Edenderry and Enfield. The total population of hydrometric area 07 is approximately 196,365 with a population density of 73 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater sources according to current information. There are also a number of relatively large surface water abstractions, in particular from Lough Lene and Lough Bane at the Western edge of the hydrometric area. There are 9 registered public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 42 urban waste water treatment plants and 45 combined sewer overflows. There are 23 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 3 urban waste water treatment plant >10,000 PE in this hydrometric area at Trim, Navan and Drogheda. The Drogheda plant discharges to the estuary. The Trim and Navan plants have tertiary P removal installed.

ABSTRACTION NAME	VOLUME (M³/DAY)
BILLIS LAVEY GROUP WATER SUPPLY SCHEME	1,572
CLIFFERNA GROUP WATER SUPPLY SCHEME	1,174
DRUMKEERY GROUP WATER SUPPLY SCHEME	474
EDENDERRY PUBLIC WATER SUPPLY	2,829
KELLS/OLDCASTLE PUBLIC WATER SUPPLY	4,006
NAVAN & MIDMEATH PUBLIC WATER SUPPLY	11,694
ROSEHALL	24,000
STALEEN	24,000
TRIM	3,01

Water Framework Directive Status

As of December 2014, there are 32km of High status surface river channels in hydrometric area 07, located to the west of Bailieborough, including parts of the Chapel Lake stream. The large lakes in hydrometric area 07, Loughs Ramor, Lene and Bane, are classified as at Poor, Bad and Good status respectively. River waterbody status varies across hydrometric area 07 with significant lengths of stream channel classified as Moderate and with slightly less classified Poor or Good. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There is an OSPAR requirement for flow data from the Boyne catchment.

Existing Network

There are currently 14 active EPA/LA hydrometric stations in hydrometric area 07, comprising 5 lake level stations and 9 flow rated stations. The flow rating at 3 of these stations are of high quality across all ranges, high to medium across all flow ranges at 3 stations, and poor at 2 stations. There are 12 active OPW flow rated sites, 2 of which are classified as high quality across all flow ranges, 8 are classified as medium to high across all flow ranges, and 2 classified as medium to poor across all flow ranges. The OPW also maintains a level only station at Ramor Lough and 3 other level only sites on river channels. Therefore, there are a total of 17 high to medium quality flow rated stations and 6 lake level stations in this hydrometric area. Currently 90% of hydrometric area 07 is upstream of high quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 07, there are 8.2 per 1,000km², 9.3 per 1,000km of stream channel and 1.1 per 10,000 persons.

The EPA/LA station at Derryiron (07108) has a poor flow rating and there is no longer a clear driver for data collection at this location.

Station Coverage

This hydrometric area is reasonably well served and all of the major abstraction and (non-tidal) discharge points in this hydrometric area are located upstream of a high or medium quality flow rated gauge. There are stations located on each of the three large lakes. The main channel of the Boyne has a number of stations along its length. There are fewer stations in the western headwaters of the catchment, reflecting the settlement pattern in this region. The station at Derryiron does not have a current driver for hydrometric data and has proven problematic to rate successfully.

Station Classification

Of the active hydrometric stations in hydrometric area 07, 20 are classified as Strategic stations. Of the Strategic stations, 6 stations are used to calibrate the EPA flow duration curve model, 2 are used for EU reporting purposes, and 5 are used to monitor abstractions. Two of these stations are also part of the HydroDetect network. The remaining 7 stations are classified as Strategic on the basis of their use for modelling or flood warning by the OPW. The remaining 20 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
40	13	6	21	**23**	20	20	0

Review Conclusion

General

The existing network in hydrometric area 07 provides reasonably comprehensive coverage for flow estimation based on existing information. The station at Derryiron does not have a clear data driver and therefore should be closed. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 07.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
07006 FYANSTOWN	OPW
07011 O'DALY'S BRIDGE	OPW
07024 CLONYMEATH	EPA/LA

Stations to be closed

It is recommended that station 07108 Derryiron be closed as this station does not have a high quality flow rating and there is no existing or foreseeable driver to collect data at this location.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 08 Nanny-Delvin

Setting

This hydrometric area includes the surface catchment drained by the Rivers Nanny and Delvin and by all streams entering tidal water between Mornington Point and Sea Mount, Co. Dublin. Hydrometric area 08 has a surface area of 711km². The largest urban centre in hydrometric area 08 is Swords. The other main urban centres in this hydrometric area are Donabate, Lusk, Skerries, Balbriggan, Stamullin, Laytown, Bettystown, Duleek, Ashbourne, Ratoath and Dunshaughlin. The total population of hydrometric area 08 is approximately 159,230 with a population density of 224 people per km².

Pressures

All known water abstractions in this hydrometric area are from groundwater sources according to current information. There are a number of urban waste water discharges located in the hydrometric area including 18 urban waste water treatment plants and 36 combined sewer overflows. There are 7 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 3 urban waste water treatment plant >10,000 PE in this hydrometric area at Swords, Balbriggan and Donabate/Rush/Lusk/Portrane. The Balbriggan and Donabate/Rush/Lusk/Portrane plants have secondary treatment installed. The Swords plant has tertiary N&P removal installed. All of the discharge points for these plants are located in tidal or marine waters. Urban development is also likely to be a significant pressure in this hydrometric area as the expansion of Dublin progresses in future years.

Water Framework Directive Status

As of December 2014, there are no High status surface river channels in hydrometric area 08. There are no Water Framework Directive lakes in this hydrometric area. Significant lengths of stream channel are classified as Poor or Moderate and only short stretches of river channel at the western edge of the hydrometric area are classified as at Good status. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There are currently 2 active EPA/LA hydrometric stations in hydrometric area 08, comprising 2 flow rated stations. The flow rating at both of these stations is of high quality across all ranges. There are 4 active OPW flow rated sites, 2 of which are classified as medium to high quality across all flow ranges, 1 classified as medium quality at high flows but poor quality at lower flows and 1 classified as poor quality or unclassified across all ranges. The OPW also maintains 2 level only stations on river channels. Therefore, there are a total of 4 high to medium quality flow rated stations in this hydrometric area. Currently 32% of hydrometric area 08 is upstream of high quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 08, there are 5.6per 1,000km², 5.0 per 1,000km of stream channel and 0.3 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The river network in hydrometric area 08 consists of a number of relatively small rivers draining to the coast, and the majority of discharges from urban waste water treatment plants are to marine or estuarine waters. The majority of sub-catchments have hydrometric stations located within them. There is no station located on the Ballyboghil, Ward or Palmerston rivers, which are protected areas, and may require flow data in the future.

Station Classification

Of the 9 active hydrometric stations in hydrometric area 08, 5 are classified as Strategic stations. Of the Strategic stations, 1 station is used to calibrate the EPA flow duration curve model, 3 are used to calibrate the OPW model and 1 is used for navigation. The remaining 4 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
9	3	0	6	**4**	5	4	0

Review Conclusion

General

The existing network in hydrometric area 08 provides an acceptable level of coverage given the drainage network distribution and coastal nature of the pressures in the hydrometric area. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 08 but it is likely that project stations will be required on the Broadmeadow River (depending on the outcome of OPW station 08008 review), the Ward River and the Ballyboghil River.

Stations flagged for rating development

Two stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
08008 BROADMEADOW	OPW
08020 ABBEYLAND (DULEEK)	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 09 Liffey and Dublin Bay

Setting

This hydrometric area includes the surface catchment drained by the River Liffey and by all streams entering tidal water between Sea Mount and Sorrento Point, Co. Dublin. Hydrometric area 09 has a surface area of 1,616km². The largest urban centre in hydrometric area 09 is Dublin City. The other main urban centres in this hydrometric area are Dun Laoghaire, Lucan, Clonee, Dunboyne, Leixlip, Maynooth, Kilcock, Celbridge, Newcastle, Rathcoole, Clane, Kill, Sallins, Johnstown, Naas, Newbridge, Athgarvan, Kilcullen and Blessington. The total population of hydrometric area 09 is approximately 1,254,926 with a population density of 777 people per km².

Pressures

There are a number of known water abstractions in this hydrometric area from groundwater sources but the most significant abstractions are from surface water sources at Pulaphouca Leixlip and Glenasmole reservoirs. There are 5 registered public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 14 urban waste water treatment plants and 242 combined sewer overflows. There are 7 licenced urban waste water treatment plants (>500PE) in this hydrometric area. A large proportion of the storm overflow emission points are located on tidal stretches of river channels. There are 4 urban waste water treatment plant >10,000 PE in this hydrometric area at Malahide, Ringsend, Upper Liffey Valley and Lower Liffey Valley. The Malahide and Ringsend plants have secondary treatment installed and discharge to estuarine or marine waters. The Upper and Lower Liffey Valley plants have tertiary P removal installed. Urban development will be a significant pressure in this hydrometric area as the expansion of Dublin progresses in future years.

ABSTRACTION NAME	VOLUME (M³/DAY)
POULAPHUCA (DUBLIN CITY COUNCIL ZONE 1)	72,899
GLENASMOLE RESERVOIR (DUBLIN CITY COUNCIL ZONE 2)	13,192
LEIXSLIP RESERVOIR	81,000
BLESSINGTON PUBLIC WATER SUPPLY	1,469
POULAPHUCA PUBLIC WATER SUPPLY	39,000

Water Framework Directive Status

As of December 2014, there are 13km of High status surface river channels in hydrometric area 09, including the Cock Brook and Leomonstown streams, located in the Wicklow Mountains. The lakes in hydrometric area 09, Poulaphouca and Glenasmole, are classified as at Moderate, and Good status respectively. River waterbody status varies across hydrometric area 09 with significant lengths of the Liffey main channel and upland streams in the Wicklow Mountains classified as Good, but the other surface channels in the hydrometric area classified as Moderate or Poor. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There is an OSPAR requirement for flow data from the Liffey catchment.

Existing Network

There are currently 17 active EPA/LA hydrometric stations in hydrometric area 09, all of which are flow rated stations. The flow rating at all of these stations is of high quality across all ranges. There is 1 active OPW flow rated site, which is classified as high quality across all flow ranges. The OPW also maintains 1 level only station on a river channel. The ESB maintains 3 flow rated sites, one of which is rated as high quality across all flow ranges and 2 at which rating quality is currently undetermined. Therefore, there are a total of 19 high to medium quality flow rated stations in this hydrometric area. Currently 72% of hydrometric area 09 is upstream of high quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 09, there are 11.8 per 1,000km², 13.0 per 1,000km of stream channel and 0.2 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

This hydrometric area is reasonably well served and all of the major abstraction and discharge points in this hydrometric area are located upstream of a high or medium quality flow rated gauge. There are Strategic stations located on the large lakes in this hydrometric area. There are few stations located in the Dublin & Wicklow Mountains, reflecting the absence of pressures in this area and few stations in the northwest and south of the hydrometric area. There are no flow rated stations on the mid Liffey between Leixlip and Poulaphouca. There is also an absence of flow data for the upper Tolka. HydroTool accuracy has been assessed in parts of the hydrometric area and has been found to be of variable quality in these areas. The HydroTool cannot be used along the main channel of the Liffey as flow is regulated at the Poulaphouca, Golden Falls and Leixlip ESB dams.

Station Classification

Of the active hydrometric stations in hydrometric area 09, 21 are classified as Strategic stations. Of the Strategic stations, 8 stations are used to calibrate the EPA flow duration curve model, 5 are used to calibrate the OPW model, 4 are used for EU reporting purposes, and 3 are used to monitor abstractions. The remaining stations are classified as Strategic on the basis of their use for flood modelling or flood warning by the OPW. The remaining 29 sites are classified as Operational stations with 1 site classified as a Project station.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
51	29	0	22	**21**	21	29	1

Review Conclusion

General

The existing network in hydrometric area 09 provides reasonably comprehensive coverage for flow estimation based on existing information. The possibility of installing a station in the mid Liffey between Clane and Naas should be investigated. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 09, but it is likely that the existing network will provide acceptable coverage for future requirements.

Stations flagged for rating development

All relevant stations in this hydrometric area have been identified as fully flow rated to a high quality across the full range of flows.

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

Due to urban development in the mid Liffey (Salins to Clane) catchment, the possibility of installing aproject station in this area should be investigated.

Hydrometric Area 10 Ovoca-Vartry

Setting

This hydrometric area includes the surface catchment drained by the Rivers Ovoca and Vartry and by all streams entering tidal water between Sorrento Point and Kilmichael Point, Co. Wexford. Hydrometric area 10 has a surface area of 1,247km². The largest urban centre in hydrometric area 10 is Bray. The other main urban centres in this hydrometric area are Dun Laoghaire-Rathdown, Arklow, Wicklow Town, Rathnew, Newtown Mount Kennedy, Greystones, Delgany and Kilcoole. The total population of hydrometric area 10 is approximately 179,101 with a population density of 144 people per km².

Pressures

The overall number of known water abstractions from groundwater and surface water sources in this hydrometric area is similar according to current information with the largest abstraction being taken from Vartry Reservoir. There are 9 registered public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 23 urban waste water treatment plants and 31 combined sewer overflows. There are 14 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 4 urban waste water treatment plant >10,000 PE in this hydrometric area at Shanganagh, Greystones, Wicklow and Arklow. The Shanganagh, Greystones, and Wicklow plants have secondary treatment installed and discharge to estuarine or marine waters. The Arklow plant has no treatment installed.

ABSTRACTION NAME	VOLUME (M³/DAY)
KILTERNAN PUBLIC SUPPLY	300
UPPER VARTRY RESERVOIR	70,000
ARKLOW PUBLIC SUPPLY	2,834
WICKLOW REGIONAL SUPPLY	3,902
RATHDRUM PUBLIC SUPPLY	442
ENNISKERRY PUBLIC SUPPLY	552
AUGHRIM ANNACURRA PUBLIC SUPPLY	304
AVOCA BALLINACLASH PUBLIC SUPPLY	301
LARAGH ANNAMOE PUBLIC SUPPLY	315

Water Framework Directive Status

As of December 2014, there are 126km of High status surface river channels in hydrometric area 10, located mainly in the Wicklow Mountains and including parts of the Glencullen, Vartry, Avonmore, Ballycreen and Askanagap Rivers. The lakes in hydrometric area 10 which are classified, Upper Glendalough, Vartry Lower, Lough Dan and Lough Tay, are classified as at Good, Good, Moderate and Moderate status respectively. Much of the Avonmore River from Laragh to the meeting of the waters is classified as at Bad status. River waterbody status varies across hydrometric area 10 with the majority of classified rivers classified as Moderate or Good. Some surface channels in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There is an OSPAR requirement for flow data from the Avoca catchment.

Existing Network

There are currently 7 active EPA/LA hydrometric stations in hydrometric area 10, all of which are flow rated stations. The flow rating at 6 of these stations are of high quality across all ranges, and medium quality at the remaining station. The OPW also maintains 2 level only stations at Arklow. The ESB maintains a level only station at Lake Nahanagan. Therefore, there are a total of 7 high to medium quality flow rated stations and 1 lake level station in this hydrometric area. Currently 57% of hydrometric area 10 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 10, there are 5.6 per 1,000km², 5.4 per 1,000km of stream channel and 0.4 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

Due to the coastal nature of this hydrometric area, consisting of a relatively large number of small catchments, many of the smaller discharges in this hydrometric area are not located upstream of a flow rated gauge. The large abstractions in this hydrometric area are located upstream of stations with the exception of the Vartry and Dargle rivers. These two rivers are also protected areas and flow data may be required for conservation purposes.

Station Classification

Of the active hydrometric stations in hydrometric area 10, 5 are classified as Strategic stations. Of the Strategic stations, 4 stations are used to calibrate the EPA flow duration curve model, 3 are used for the OPW model, 3 are used for EU reporting purposes, and 1 is used for drainage monitoring by the OPW. The remaining 2 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
10	2	1	7	**8**	6	4	0

Review Conclusion

General

The existing network in hydrometric area 10 provides comprehensive coverage for flow estimation in the Avonmore river catchment. The requirement for hydrometric data in other parts of the hydrometric area such as the Vartry and Dargle River catchments should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 10.

Stations flagged for rating development

All relevant stations in this hydrometric area have been identified as fully flow rated to a high quality across the full range of flows.

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area. The possibility of installing aproject station on the Dargle river should be investigated to enable hydrological characterisation in this catchment.

Hydrometric Area 11 Owenavorragh

Setting

This hydrometric area includes the surface catchment drained by the River Owenavorragh and by all streams entering tidal water between Kilmichael Point and Raven Point, Co. Wexford. Hydrometric area 11 has a surface area of 395km². The largest urban centre in hydrometric area 11 is Gorey. The other main urban centre in this hydrometric area is Courtown. The total population of hydrometric area 11 is approximately 27,319 with a population density of 69 people per km².

Pressures

All known water abstractions in this hydrometric area are from groundwater sources according to current information. There are a number of urban waste water discharges located in the hydrometric area including 11 urban waste water treatment plants and 1 combined sewer overflow. There are 4 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There is 1 urban waste water treatment plant >10,000 PE in this hydrometric area at Courtown which has secondary treatment installed and discharges to marine waters. There are also a large number of holiday home and small housing estate developments located within the catchments of the small rivers draining to the coast in this hydrometric area.

Water Framework Directive Status

As of December 2014, there are no High status surface river channels in hydrometric area 11. River waterbody status varies across hydrometric area 11 with similar proportions of stream channel classified as at Good, Moderate and Poor status. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels along the coastal fringe of hydrometric area 11 are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There is currently 1 active EPA/LA hydrometric station in hydrometric area 11, this station is a flow rated station. The flow rating at this station is currently being re-evaluated and is likely to be of at least medium quality. There is 1 active OPW flow rated site, which is classified as high quality at high flows and medium quality at low flows. Therefore, there are 2 potentially high to medium quality flow rated stations in this hydrometric area. Currently 40% of this hydrometric area is upstream of a flow rated gauge that will probably be upgraded to high or medium quality rank. In terms of flow rated stations in hydrometric area 11 (based on including both existing stations), there are 5.1 per 1,000km², 4.4 per 1,000km of stream channel and 0.7 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The inland abstractions and discharges in this hydrometric area are relatively small and there is a station located on the Owenavorragh which is the receiving waterbody for the main inland discharges and abstractions. There are small rivers in the southern part of the hydrometric area, the Littermore and Wexford Blackwater, which do not have hydrometric stations but for which flow data may be required in future for conservation requirements. There is currently no flow information for the small coastal rivers which are receiving waters from discharges emanating from new holiday home and housing estate developments.

Station Classification

Of the active hydrometric stations in hydrometric area 11, 1 is classified as a Strategic station as it is used to calibrate the EPA flow duration curve model, and for EU reporting purposes. The other station is classified as Operational.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
2	0	0	2	**2**	1	1	0

Review Conclusion

General

The existing network in hydrometric area 11 would provide acceptable coverage for flow estimation if the quality ranking of both existing stations across all flow ranges could be proven or improved. A programme of targeted flow measurements in the small coastal rivers during dry summer months has been agreed with the LA to characterise the flow regime in these rivers. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 11.

Stations flagged for rating development

All relevant stations in this hydrometric area have been identified as fully flow rated to a high quality across the full range of flows.

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area. One or two project stations may be required to characterise the hydrology of the small coastal catchments in the hydrometric area. This should be investigated through a stepwise approach following a programme of targeted flow measurements based on environmental pressures in this hydrometric area in partnership with the LA.

Hydrometric Area 12 Slaney and Wexford Harbour

Setting

This hydrometric area includes the surface catchment drained by the River Slaney and all streams entering tidal water between the Raven Point and Greenore Point, Co. Wexford. Hydrometric area 12 has a surface area of 1,981km². The largest urban centre in hydrometric area 12 is Wexford Town. The other main urban centres in this hydrometric area are Wexford Town, Enniscorthy, Baltinglass, Tullow, Rosslare and Kilrane. The total population of hydrometric area 12 is approximately 106,203 with a population density of 54 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater sources or springs according to current information. There are also a number of large surface water abstractions. There are 8 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 53 urban waste water treatment plants and 2 combined sewer overflows. There are 20 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 2 urban waste water treatment plant >10,000 PE in this hydrometric area at Enniscorthy and Wexford Town. The Enniscorthy plant has secondary treatment installed. The Wexford Town plant has tertiary N&P removal treatment installed.

ABSTRACTION NAME	VOLUME (M³/DAY)
BALTINGLASS PUBLIC SUPPLY	697
BLACKSTAIRS GROUP WATER SUPPLY SCHEME	1,700
BUNCLODY WATER SUPPLY SCHEME	450
BUNCLODY WATER SUPPLY SCHEME	250
FERNS REGIONAL WATER SUPPLY	898
HACKETSTOWN WATER SUPPLY SCHEME	332
TINAHELY REGIONAL WATER SUPPLY	766
TULLOW REGIONAL WATER SUPPLY	1,200

Water Framework Directive Status

As of December 2014, there are 148km of High status surface river channels in hydrometric area 12, located in the north of the hydrometric area, to the west of Gorey at the southern end of the Wicklow Mountains and the other near Kiltealy in the western part of hydrometric area 12, including parts of the northern headwaters of the river Slaney and the Bann, Clody and Askinvillar Rivers. River waterbody status varies across hydrometric area 12 with the largest proportion of river channel classified as Moderate and with smaller sections classified Poor or Good. There are no river channels in the hydrometric area classified as at Bad status. A number of surface channels in northern and southern parts of the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There is 1 designated Margaritifera catchment in this hydrometric area, Dereen, northeast of Tullow. There is an OSPAR requirement for flow data from the Slaney catchment.

Existing Network

There are currently 8 active EPA/LA hydrometric stations in hydrometric area 12, comprising 8 flow rated stations. The flow ratings are high to medium across all flow ranges at 2 stations, high at low flows to medium-poor at high flows at 2 stations, and poor or undetermined across all ranges at the other 4 stations. There are 3 active OPW flow rated sites, 1 of which are classified as high-medium quality across all flow ranges, the remaining 2 are classified as medium to poor across all flow ranges. The OPW also maintains 7 level only stations in hydrometric area 12, three of which are located in tidal areas. Therefore, there are a total of 5 high to medium quality flow rated stations in this hydrometric area. Currently 80% of hydrometric area 12 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 12, there are 2.5 per 1,000km², 2.4 per 1,000km of stream channel and 0.5 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

This hydrometric area has a relatively good coverage of stations for pressure assessment. The single inland large urban waste water treatment plant discharge is located near a flow rated station but flow rated stations are not generally located close to the large abstractions in the hydrometric area. A large proportion of the upper Slaney is classified as a Margaritifera catchment, for which there is currently no flow data. Much of the main Slaney channel is protected and there is sufficient flow data for assessment in these areas. There are a number of small protected rivers at the southern end of the catchment which drain into TRAC waters for which there is currently no flow data. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of variable quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 12, 14 are classified as Strategic stations. Of the Strategic stations, 3 stations are used to calibrate the EPA flow duration curve model, 2 are used for the OPW model, 2 are used for EU reporting purposes, 4 are used to monitor abstractions. One station is also part of the HydroDetect network. A total of 11 stations, including the level only stations, are classified as Strategic on the basis of their use for modelling or flood warning by the OPW. The remaining 6 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
20	9	0	11	**5**	14	6	0

Review Conclusion

General

The existing network in hydrometric area 12 provides reasonably comprehensive coverage for flow estimation in the larger river channels within the hydrometric area. There are stretches of the upper Slaney, Bann and numerous smaller rivers across the hydrometric area that may require project stations in the future, depending on Water Framework Directive requirements. It is likely that hydrometric data will be required in the designated Margaritifera catchment in this hydrometric area and the possibility of installing a project station in this catchment should be investigated. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 12.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
12013 RATHVILLY	EPA/LA
12016 DUNANORE	EPA/LA
12036 MANGAN	EPA/LA
12039 PALLIS NEW	EPA/LA
12001 SCARAWALSH	OPW
12005 TULLOW TOWN BRIDGE U/S	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area. There is a possibility that a project station may be required in the Margaritifera catchment within the hydrometric area and this should be investigated further.

Hydrometric Area 13 Ballyteigue-Bannow

Setting

This hydrometric area includes the surface catchment drained by all streams entering tidal water between Greenore Point and Railway Bridge, Great Island, Co. Wexford. Hydrometric area 13 has a surface area of 654km². There are no large urban centers in hydrometric area 13. The only urban centres in this hydrometric area are Lady's Island, Kilmore Quay, Bridgetown, Wellingtonbridge, Duncannon, and Campile. The total population of hydrometric area 13 is approximately 26,593 with a population density of 41 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater sources according to current information. There are also a number of surface water abstractions in the hydrometric area. There are no registered surface water abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 17 urban waste water treatment plants and a smaller number of storm overflow emission points. There are 4 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are no urban waste water treatment plants >10,000PE in this hydrometric area.

Water Framework Directive Status

As of December 2014, there are no High status surface river channels in hydrometric area 13. River waterbody status varies across hydrometric area 13 with generally equal lengths of stream channel classified as Poor, Moderate and Good. There are no river channels in the hydrometric area classified as at Bad status. A number of surface channels in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There are currently 3 active EPA/LA hydrometric stations in hydrometric area 13, comprising 3 flow rated stations. The flow rating at all 3 of these stations are of high quality across all ranges. The OPW maintains 3 level only stations at Lady's Island and Tacumshin Lakes and another level only station on a tidal river channel. Therefore, there are a total of 3 high quality flow rated stations, 2 lake level stations and one tidal station in this hydrometric area. Currently 34% of hydrometric area 13 is upstream of high quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 13, there are 7.6 per 1,000km², 8.0 per 1,000km of stream channel and 1.9 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The existing flow gauging network is concentrated in the centre of the hydrometric area. There are no large discharges or abstractions in this hydrometric area but a large proportion of the rivers in the hydrometric area are protected and flow may be required in future for conservation requirements in the western and east-central parts of the hydrometric area. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of good quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 13, 2 are classified as Strategic stations. Of the Strategic stations, 1 station is used to calibrate the OPW model and 1 is used to monitor an abstraction. The remaining 4 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
6	1	2	3	**5**	2	4	0

Review Conclusion

General

The existing network in hydrometric area 13 provides acceptable coverage for flow estimation in the Corock and Owenduff catchments. There may be a future requirement for flow data on the Bridgetown or Duncormick rivers in the east of the hydrometric area and possibly the smaller rivers at the western edge of the hydrometric area. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 13.

Stations flagged for rating development

All relevant stations in this hydrometric area have been identified as fully flow rated to a high quality across the full range of flows.

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area. A programme of river spot flow measurement in the east and west of the hydrometric area has been agreed with the LA which will inform any future requirement for project stations in this hydrometric area.

Hydrometric Area 14 Barrow

Setting

This hydrometric area includes the surface catchment drained by the River Barrow upstream of the River Nore confluence and all streams entering tidal water between the Barrow railway bridge at Great Island and Ringwood, Co. Kilkenny. Hydrometric area 14 has a surface area of 3,025km². The largest urban centre in hydrometric area 14 is Carlow. The other main urban centres in this hydrometric area are New Ross, Graiguenamanagh, Athy, Portlaoise, Mountmellick, Portarlington, Monasterevin and Kildare. The total population of hydrometric area 14 is approximately 188,117 with a population density of 62 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater and spring sources according to current information. There are also a number of surface water abstractions, which, with one exception, are located in the southern half of the hydrometric area. There are 15 registered public or private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 59 urban waste water treatment plants and 34 combined sewer overflows. There are 23 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 5 urban waste water treatment plant >10,000 PE in this hydrometric area at Kildare Town, Portlaoise, Athly, Carlow Town, and Muinebheag/Leighlinbridge. The Kildare Town, Athy and Muinebheag/Leighlinbridge plants have tertiary P removal installed. The Portlaoise and Carlow Town plants have tertiary N&P removal treatment installed.

ABSTRACTION NAME	VOLUME (M³/DAY)
BARROW SUPPLY	13,300
CARLOW TOWN	4,500
BORRIS WATER SUPPLY SCHEME	400
GEASHILL PUBLIC WATER SUPPLY	401
GOWRAN / GORESBRIDGE / PAULSTOWN WATER SUPPLY SCHEME	795
GRAIGUENAMANAGH WATER SUPPLY SCHEME	572
GRAIGUENAMANAGH WATER SUPPLY SCHEME	416
LEIXLIP REGIONAL	26,000
LIPSTOWN NARRAGHMORE	400
MONASTEREVIN	2,500
NEW ROSS TOWN & ENVIRONS	4,545
NEW ROSS TOWN & ENVIRONS	1,021
PORTARLINGTON PUBLIC WATER SUPPLY	2,095
RHODE REGIONAL WATER SUPPLY SCHEME	1,865
SOUTH EAST REGIONAL SCHEME (KYLE)	1,300

Water Framework Directive Status

As of December 2014, there are 90km of High status surface river channels in hydrometric area 14, located on the eastern slopes of the Slieve Bloom Mountains west of Mountmellick and on the eastern slopes of the Castlecomer Plateau to the west of Leighlinbridge, including parts of the source of the River Barrow, the Bothoge, Stradbally, Oldleighlin, Burren and Duiske Rivers. River waterbody status varies across hydrometric area 14 with a slight majority of stream channel classified as Moderate and with slightly less classified Good and less again as Poor. The Poor, Moderate and Good status waterbodies are relatively evenly distributed apart from the narrow central section of the hydrometric area which contains nearly exclusively Moderate status channels. There are no river channels in the hydrometric area classified as at Bad status. Relatively few surface channels in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are 3 small designated Margaritifera catchments in this hydrometric area; Mountain catchment, Ballymurphy and Aughavaud all to the east of

Graiguenamanagh. There is an OSPAR requirement for flow data from the Barrow catchment.

Existing Network

There are currently 16 active EPA/LA hydrometric stations in hydrometric area 14, comprising 1 level only station and 15 flow rated stations. The flow rating at 10 of these stations are of high quality across all ranges, high to medium across all flow ranges at 5 stations, and medium at low flows to poor at high flows at 1 station. There are 12 active OPW flow rated sites, 1 of which are classified as high quality across all flow ranges, 3 are classified as medium to high across all flow ranges, 5 classified as medium to poor across all flow ranges and 3 that are currently unclassified. The OPW also maintains 3 level only stations on river channels. Therefore, there are a total of 19 high to medium quality flow rated stations in this hydrometric area. Currently 92% of hydrometric area 14 is upstream of high quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 14, there are 5.6 per 1,000km², 7.7 per 1,000km of stream channel and 0.9 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

This hydrometric area is well served by stations and all large discharges and abstractions are located relatively close to flow rated gauges with the exception of the abstractions located between Graiguenamanagh and New Ross. The protected stretches of river in this hydrometric area are also satisfactorily covered by flow rated stations with the exception of the Ballymurphy and Aughavaud Margaritifera catchments. The HydroTool accuracy has been assessed in many sub-catchments in this hydrometric area and has been found to be acceptably accurate in the majority of cases.

Station Classification

Of the active hydrometric stations in hydrometric area 14, 16 are classified as Strategic stations. Of the Strategic stations, 5 stations are used to calibrate the EPA flow duration curve model, 9 are used for the OPW model, 1 is used for EU reporting purposes, and 7 are used to monitor abstractions. Two of these stations are also part of the HydroDetect network. The remaining 7 stations are classified as Strategic on the basis of their use for modelling or flood warning by the OPW. There are 2 project stations in hydrometric area 14. The remaining 27 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
45	18	0	27	**19**	16	27	2

Review Conclusion

General

The existing network in hydrometric area 14 provides reasonably comprehensive coverage for flow estimation based on existing information. The 2 project stations at Ballynafagh are no longer required for their original purpose and no additional data driver has been identified at this location. Therefore, it is proposed that these stations be made inactive. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 14.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
14003 BORNESS	OPW
14004 CLONBULLOGE	OPW
14005 PORTARLINGTON	OPW

14006 PASS BRIDGE	OPW
14009 CUSHINA	OPW
14011 RATHANGAN	OPW
14013 BALLINACARRIG	OPW
14018 ROYAL OAK	OPW

Stations to be closed

The 2 existing stations at Ballynafagh in the north of the hydrometric area, Ballynafagh (14108) and Ballynafagh Lake O/L (14109) are proposed to be closed.

New stations required

There are no immediate requirements for new stations in this hydrometric area. A programme of targeted flow measurements should be instituted with a view to assessing the requirement for project stations in the Ballymurphy and Aughavaud Margaritifera catchments.

Hydrometric Area 15 Nore

Setting

This hydrometric area includes the surface catchment drained by the River Nore and all streams entering tidal water between its confluence with the River Barrow at Ringwood, and the Barrow railway bridge at Drumdowney, Co. Kilkenny. Hydrometric area 15 has a surface area of 2,595km². The largest urban centre in hydrometric area 15 is Kilkenny. The other main urban centres in this hydrometric area are Abbeyleix, Callan and Thomastown. The total population of hydrometric area 15 is approximately 94,734 with a population density of 37 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater and spring sources according to current information. There are also a number of surface water abstractions, located mainly in the Ballyragget-Castlecomer area. There are 17 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 41 urban waste water treatment plants and 24 combined sewer overflows. There are 15 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There is 1 urban waste water treatment plant >10,000 PE in this hydrometric area at Kilkenny city and which has tertiary P removal treatment installed.

ABSTRACTION NAME	VOLUME (M³/DAY)
ABBEYLEIX NO 1 PUBLIC WATER SUPPLY (AUGHFEERISH)	792
PRIVATE SUPPLY	3,000
BALLYROAN PUBLIC WATER SUPPLY	804
BALLYROAN PUBLIC WATER SUPPLY	971
BENNETTSBRIDGE REGIONAL WATER SUPPLY SCHEME	4,045
BENNETTSBRIDGE REGIONAL WATER SUPPLY SCHEME	3,328
CALLAN WATER SUPPLY SCHEME	840
CLOGH / CASTLECOMER REGIONAL WATER SUPPLY SCHEME	1,196
PRIVATE SUPPLY	4,400
PRIVATE SUPPLY	5,500
PRIVATE SUPPLY	3,250
INISTIOGE WATER SUPPLY SCHEME	1,500
PRIVATE SUPPLY	256
KILKENNY CITY & ENVIRONS & FRESHFORD WATER SUPPLY SCHEME	6,815
KILKENNY CITY (RADESTOWN) WATER SUPPLY	4,992
PRIVATE SUPPLY	250
ROSCREA PUBLIC WATER SUPPLY	1,200

Water Framework Directive Status

As of December 2014, there are 161km of High status surface river channels in hydrometric area 15, located on the southern slopes of the Slieve Bloom Mountains norths of Coolrain and Mountrath, at the eastern edge of the hydrometric area on the Castlecomer Plateau, and a small number north of Inistioge, including parts of the Delour, Mountrath, Needleford, Dinin and Arrigle Rivers. River waterbody status varies across hydrometric area 15 with significant lengths of stream channel classified as Moderate or Good, and less than a quarter classified as Poor status. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels across the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There is 1 large designated Margaritifera catchments in this hydrometric area, the Nore, located northwest of Kilkenny city. There is an OSPAR requirement for flow data from the Nore catchment.

Existing Network

There are currently 6 active EPA/LA hydrometric stations in hydrometric area 15, comprising 6 flow rated stations. The flow rating at 4 of these stations are of high quality across all ranges, high to medium across all flow ranges at 1 station, and medium to

poor across all ranges at 1 flow rated station. There are 14 active OPW flow rated sites, 3 of which are classified as high quality across all flow ranges, 5 are classified as medium to high across all flow ranges and 4 classified as medium to poor across all flow ranges. The OPW also maintains 2 level only stations on river channels in the hydrometric area. Therefore, there are a total of 13 high to medium quality flow rated stations in this hydrometric area. Currently 93% of hydrometric area 15 is upstream of high quality flow rated gauges. In terms of high quality flow rated stations in hydrometric area 15, there are 5.0 per 1,000km², 5.8 per 1,000km of stream channel and 1.4 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

There is a satisfactory spread of hydrometric stations in this hydrometric area. The large abstractions and discharges are located near flow rated stations. The entire upper part of the Nore catchment is designated as a Margaritifera catchment and there are 10 flow rated stations in this area. In the southern half of the hydrometric area there are a number of protected rivers that do not currently have flow rated stations on them. The HydroTool accuracy has been assessed as variable in a limited part of this hydrometric area and there is no clear pattern as to what level of accuracy could be expected in the untested parts of the hydrometric area.

Station Classification

Of the active hydrometric stations in hydrometric area 15, 13 are classified as Strategic stations. Of the Strategic stations, 5 stations are used to calibrate the EPA flow duration curve model, 9 are used for the OPW model, 1 is used for EU reporting purposes, and 3 are used to monitor abstractions. Three of these stations are also part of the HydroDetect network. The remaining 2 stations are classified as Strategic on the basis of their use for modelling or flood warning by the OPW. The remaining 7 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
20	2	0	18	**13**	13	7	0

Review Conclusion

General

The existing network in hydrometric area 15 provides reasonable coverage for flow estimation based on existing information. There may be a requirement for additional project stations based on Water Framework Directive monitoring requirements in the future but the existing network provides a good quality framework for current drivers. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 15.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
15013 CASTLECOMER	EPA/LA
15008 BORRIS IN OSSORY	OPW
15009 CALLAN	OPW
15010 BALLYBOODIN	OPW
15050 BLACKFRIAR'S BRIDGE	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 16 Suir

Setting

This hydrometric area includes the surface catchment drained by the River Suir and all streams entering tidal water between Drumdowney and Cheekpoint, Co. Waterford. Hydrometric area 16 has a surface area of 3,542km². The largest urban centre in hydrometric area 16 is Waterford. The other main urban centres in this hydrometric area are Carrick-on-Suir, Clonmel, Caher, Thurles, Tipperary, Fethard and Templemore. The total population of hydrometric area 16 is approximately 184,861 with a population density of 52 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater or spring sources according to current information. There are a number of significant surface water abstractions in the southern part of the hydrometric area. There are 24 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 66 urban waste water treatment plants and 44 combined sewer overflows. There are 24 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 5 urban waste water treatment plant >10,000 PE in this hydrometric area at Thurles, Cashel, Tipperary Town, Clonmel and Waterford City. The Thurles, Cashel, and Tipperary Town plants have tertiary P removal installed. The Clonmel plant has tertiary N&P removal treatment installed. The Waterford City plant has secondary treatment installed and discharges to estuarine waters.

ABSTRACTION NAME	VOLUME (M³/DAY)
PRIVATE SUPPLY	2,955
MOONCOIN REGIONAL WATER SUPPLY SCHEME	2,955
PRIVATE SUPPLY	9,092
PILTOWN / FIDDOWN WATER SUPPLY SCHEME	900
PRIVATE SUPPLY	39,860
PILTOWN / FIDDOWN WATER SUPPLY SCHEME	1,581
PRIVATE SUPPLY	3,000
GRAIGUE PUBLIC WATER SUPPLY	1,501
TIPPERARY PUBLIC WATER SUPPLY	900
GALTEE REGIONAL WATER SUPPLY SCHEME	10,000
GALTEE REGIONAL WATER SUPPLY SCHEME	3,000
GORTNAPISHA REGIONAL WATER SUPPLY SCHEME	1,161
KILCASH PUBLIC WATER SUPPLY	318
MULLINBAWN PUBLIC WATER SUPPLY	3,229
SPRINGMOUNT	1,200
THURLES PUBLIC WATER SUPPLY	700
BORRISOLEIGH PUBLIC WATER SUPPLY	650
CLORAN REGIONAL WATER SUPPLY SCHEME	1,495
DUNDRUM REGIONAL WATER SUPPLY SCHEME	5,132
BOULADUFF PUBLIC WATER SUPPLY	550
BURNCOURT REGIONAL WATER SUPPLY SCHEME	1,545
ARDFINNAN REGIONAL WATER SUPPLY SCHEME	3,000
ARDFINNAN REGIONAL WATER SUPPLY SCHEME	4,500
PORTLAW	428

Water Framework Directive Status

As of December 2014, there are 439km of High status surface river channels in hydrometric area 16, located across the hydrometric area and including parts of the Clodiagh, Aughnaglanny, Multeen, Aherlow, Tar, Nier, Glasha and Lingaun Rivers. The Water Framework Directive lakes in hydrometric area 16, Ballyshonnock, Knockaderry and Ballyscanlan, are classified as at Moderate, Poor and Good status

respectively. River waterbody status varies across hydrometric area 16 with similar proportion stream channel lengths classified as Good, Moderate or Poor. There are no river channels in the hydrometric area classified as at Bad status. A number of surface channels in the hydrometric area are currently unclassified, particularly those in the south eastern part of the hydrometric area that drain into the tidal stretch of the Suir estuary.

Hydrologically Sensitive Protected Areas

There is 1 designated Margaritifera catchments in this hydrometric area, Clodiagh, south of Carrick-on-Suir. There is an OSPAR requirement for flow data from the Suir catchment.

Existing Network

There are currently 14 active EPA/LA hydrometric stations in hydrometric area 16, comprising 14 flow rated stations. The flow rating at 5 of these stations are of high quality across all ranges, at least medium across all flow ranges at 8 stations, and medium to poor across all flow ranges at 1 station. This hydrometric area is a pilot catchment for OPW flood warning systems and therefore there are 16 active OPW flow rated sites, 3 of which are classified as high quality across all flow ranges, 6 are classified as at least medium across all flow ranges, 5 classified as medium to poor across all flow ranges and 2 classified as poor quality across all flow ranges. The OPW also maintains 19 level only stations on river channels in hydrometric area 16. Therefore, there are a total of 22 high to medium quality flow rated stations and 19 level only stations in this hydrometric area. Currently 91% of hydrometric area 16 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated stations in hydrometric area 16, there are 6.2 per 1,000km², 6.4 per 1,000km of stream channel and 1.2 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The hydrometric stations in this hydrometric area are reasonably well spread across the hydrometric area with the a large number of stations on the main channel of the Suit upstream of Clonmel and a number of stations on the smaller rivers draining to the estuarine part of the Suir channel. All of the large abstractions and discharges are located within an acceptable distance from a flow rated station with the exception of the main channel stretch between Clonmel and Carrick-on-Suir. There is a station located within the single Margaritifera catchment in this hydrometric area and the protected river reaches upstream of Clonmel are well served by stations. There are a number of protected rivers around the estuarine part of the hydrometric area that do not have flow rated stations on them.

Station Classification

Of the active hydrometric stations in hydrometric area 16, 20 are classified as Strategic stations. Of the Strategic stations, 6 stations are used to calibrate the EPA flow duration curve model, 13 are used for the OPW model, 3 are used for EU reporting purposes, and 4 are used to monitor abstractions. Two of these stations are also part of the HydroDetect network. The remaining stations are classified as Strategic on the basis of their use for modelling or flood warning by the OPW. The remaining 29 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
49	19	0	30	**22**	20	29	0

Review Conclusion

General

The existing network in hydrometric area 16 provides reasonably comprehensive coverage for flow estimation based on existing information. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 16.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
16045 BALLYSHONNOCK	EPA/LA
16001 ATHLUMMON	OPW
16002 BEAKSTOWN	OPW
16004 THURLES	OPW
16005 AUGHNAGROSS	OPW
16006 BALLINACLOGH	OPW
16007 KILLARDRY	OPW
16051 CLOBANNA	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 17 Colligan-Mahon

Setting

This hydrometric area includes the surface catchment drained by the Rivers Colligan and Mahon and all streams entering tidal water between Cheekpoint and East Point, Co. Waterford. Hydrometric area 17 has a surface area of 665km². The largest urban centre in hydrometric area 17 is Tramore. The other main urban centres in this hydrometric area are Dungarvan and Dunmore East. The total population of hydrometric area 17 is approximately 41,320 with a population density of 62 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater or spring sources according to current information. There are also a small number of surface water abstractions in the hydrometric area. There are 3 known surface water abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 11 urban waste water treatment plants and 7 combined sewer overflows. There are 6 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 2 urban waste water treatment plant >10,000 PE in this hydrometric area at Tramore and Dungarvan. Both plants have secondary treatment installed and discharge to estuarine or marine waters.

ABSTRACTION NAME	VOLUME (M³/DAY)
EAST WATERFORD WATER SUPPLY SCHEME	27,000
BALLYLANEEN	284
RING/HELVICK/SEAVIEW	255

Water Framework Directive Status

As of December 2014, there are 136km of High status surface river channels in hydrometric area 17, all of which drain the southern slopes of the Comeragh Mountains and including parts of the Tay, Dalligan and Colligan Rivers. The Water Framework Directive lakes in hydrometric area 17, Belle Lake and Carrigavantry, are both classified as at Moderate status. River waterbody status varies across hydrometric area 17 with a relatively small proportion of channels classified as at Moderate status in the east of the hydrometric area while river bodies in the centre of the hydrometric area are classified as at Moderate status, rising to High Status on the Comeragh Mountains and Good status to the west of the Comeraghs. There are no river channels in the hydrometric area classified as at Bad status. A large proportion of surface channels in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There are currently 4 active EPA/LA hydrometric stations in hydrometric area 17, comprising 1 lake level station and 3 flow rated stations. The flow rating at 2 of these stations are of medium quality across all ranges, low to medium across all flow ranges at 1 station. There are no active OPW flow rated sites in this hydrometric area. The OPW maintains a level only station at Dunmore East. Therefore, there are 2 high to medium quality flow rated station and 1 lake level station in this hydrometric area. Currently 16% of hydrometric area 17 is upstream of high to medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 17, there are 4.5 per 1,000km², 4.7 per 1,000km of stream channel and 0.7 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

There is a reasonable distribution and density of hydrometric stations in this hydrometric area. The main discharges are to marine waters and the single large abstraction is located within a catchment that has a flow rated gauge. There are protected rivers in the east and west parts of the hydrometric area that are currently not served by hydrometric stations, but which may require flow gauging in the future. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of poor quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 17, 2 are classified as Strategic stations. Both of the Strategic stations are used to monitor abstractions. The remaining 3 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
5	1	1	3	**3**	2	3	0

Review Conclusion

General

The existing network in hydrometric area 17 is sparse but may be able to provide adequate data for flow estimation in this hydrometric area if the flow rating at all existing stations was improved to high quality. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 17.

Stations flagged for rating development

A station in this hydrometric area has been identified as not being fully flow rated to a high quality across the full range of flows. The following station is proposed for full flow rating development if technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
17001 KILMACTHOMAS	EPA/LA

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 18 Blackwater (Munster)

Setting

This hydrometric area includes the surface catchment drained by the River Blackwater and all streams entering tidal water between East Point and Knockaverry, Youghal, Co. Cork. Hydrometric area 18 has a surface area of 3,310km². The largest urban centre in hydrometric area 18 is Mallow. The other main urban centres in this hydrometric area are Fermoy, Mitchelstown, Youghal, Kanturk and Millstreet. The total population of hydrometric area 18 is approximately 109,030 with a population density of 33 people per km².

Pressures

The vast majority of known water abstractions in this hydrometric area are from groundwater or spring sources according to current information. There are also a small number of surface water abstractions. There are 22 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

As of December 2014, there are a number of urban waste water discharges located in the hydrometric area including 54 urban waste water treatment plants and 43 combined sewer overflows. There are 23 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 3 urban waste water treatment plant >10,000 PE in this hydrometric area at Mallow, Fermoy and Youghal. The Mallow and Fermoy plants have tertiary P removal installed. The Youghal Plant has no treatment installed and discharges to estuarine waters.

ABSTRACTION NAME	VOLUME (M³/DAY)
ALLOW REGIONAL	2,662
CASTLETOWNROCHE	1,155
CONNA REGIONAL	1,500
CONNA VILLAGE	250
FERMOY	4,116
BALLYCLOUGH	1,780
BALLYHOOLY	1,008
LOMBARDSTOWN/GLANTANE	455
MALLOW	5,288
MOUNT NORTH	1,736
BANTEER	6,080
MILLSTREET	2,934
BALLYKENLEY/JOHNSTOWN	1,327
MITCHELSTOWN NORTH	1,500
NEWMARKET/BALLINATONA	8,134
YOUGHAL REGIONAL	2,000
RATHMORE PUBLIC WATER SUPPLY SCHEME	440
RATHMORE PUBLIC WATER SUPPLY SCHEME	840
LISMORE (FILTER BEDS)	563
TALLOW	323
ALLOW REGIONAL	2,662
CASTLETOWNROCHE	1,155

Water Framework Directive Status

There are 562km of High status surface river channels in hydrometric area 18, including a number of rivers near Ballyduff, Lismore and Cappoquin draining the southern slopes of the Knockmealdowns, parts of the headwaters of the River Funsion draining the southern slopes of the Galtees, the River Ogeen draining the southern slopes of the Ballyhoura hills, the Glen River, south of Banteer, and the Clyda Riverm draining the northern slopes of the Boggeragh Mountains. River waterbody status varies across hydrometric area 18 with High and Good status channels mainly located in upland parts of the hydrometric area. The majority of river water bodies in the hydrometric area are classified as Good or Moderate status with a relatively small proportion classified as at Poor status. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are 3 designated Margaritifera catchments in this hydrometric area; the Licky, Allow and Munster Blackwater. The latter two areas occupy the entire

hydrometric area upstream of Fermoy. There is an OSPAR requirement for flow data from the Blackwater catchment.

Existing Network

There are currently 2 active and 4 suspended EPA/LA hydrometric stations in hydrometric area 18, comprising 1 lake level station and 5 flow rated stations (the 4 suspended stations have been suspended pending completion of H&S upgrade works). The flow ratings at 2 of these stations are of high quality across all ranges and high to medium across all flow ranges at 3 stations. Similarly to hydrometric area 16, this hydrometric area is a pilot catchment for OPW flood warning systems. There are 12 active OPW flow rated sites, 4 of which are classified as high quality across all flow ranges, 7 are classified as medium to high across all flow ranges and 1 is unclassified or of Poor quality. The OPW also maintains 18 level only stations on river channels in this hydrometric area. Therefore, there are a total of 17 high to medium quality flow rated stations (4 of which are suspended for H&S reasons) in this hydrometric area. Currently 81% of hydrometric area 18 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 18 (including the suspended stations), there are 5.1 per 1,000km², 5.5 per 1,000km of stream channel and 1.6 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

Provided the suspended EPA/LA stations are reactivated, there is an acceptable distribution and density of stations in this hydrometric area. The large discharges in this hydrometric area are located close to flow rated stations. The large abstractions are not generally located close to flow rated stations, especially in the east of the hydrometric area where the main channel of the Blackwater is tidal. The entire upper two thirds of the hydrometric area is a designated Margaritifera catchment and there would be a reasonably dense network of stations in this area if the suspended stations were to be reactivated. There is also a Margaritifera catchment in the east of the hydrometric area where there is currently no station located. Most of the existing stations are located on or near the main channel of the Blackwater and headwater catchments may be under represented in this hydrometric area. In relation to other protected river channels, there is reasonable coverage upstream of Fermoy, with less coverage in the eastern, estuarine part of the hydrometric area. There is an absence of flow data for small headwater catchments in this hydrometric area. The HydroTool model accuracy has been assessed as acceptable across much of this hydrometric area.

Station Classification

Of the active and suspended hydrometric stations in hydrometric area 18, 15 are classified as Strategic stations. Of the Strategic stations, 4 stations are used to calibrate the EPA flow duration curve model, 8 are used for the OPW model, 3 are used for EU reporting purposes, and 4 are used to monitor abstractions. Five of these stations are also part of the HydroDetect network. Three of the suspended stations are classified as Strategic. The remaining strategic stations are classified on the basis of their use for modelling or flood warning by the OPW. The remaining 21 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
37	19	0	18	**16**	15	22	0

Review Conclusion

General

The existing network in hydrometric area 18 would provide a reasonably comprehensive coverage for flow estimation, particularly in the main rivers in this hydrometric area, provided the suspended stations are reactivated. It is likely that additional operational or project stations may be required to provide localised sub-catchment flow data as Water Framework Directive assessment work progresses, especially in smaller headwater catchments within the hydrometric area. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 18.

Stations flagged for rating development

A station in this hydrometric area has been identified as not being fully flow rated to a high quality across the full range of flows. The following station is proposed for full flow rating development if technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
18108 ARAGLIN BRIDGE	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area but the suspended EPA/LA stations should be reactivated as a priority.

Hydrometric Area 19 Lee, Cork Harbour and Youghal Bay

Setting

This hydrometric area includes the surface catchment drained by the River Lee and all streams entering tidal water in Cork Harbour and Youghal Bay and between Knockaverry and Templebreedy Battery, Co. Cork. Hydrometric area 19 has a surface area of 2,153km². The largest urban centre in hydrometric area 19 is Cork City. The other main urban centres in this hydrometric area are Ballincollig, Macroom, Carrigaline, Crosshaven, Blarney, Glanmire, Midleton, Carrigtohill, Cobh, Passage West and Belvelly. The total population of hydrometric area 19 is approximately 328,854 with a population density of 153 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater and spring sources according to current information. However, the main drinking water supplies for Cork City are surface water abstraction taken from the river Lee. There are 9 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 42 urban waste water treatment plants and 75 combined sewer overflows. There are 17 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 5 urban waste water treatment plant >10,000 PE in this hydrometric area at Ballincollig, Cork City, Midleton, Cobh and Ringaskiddy. The Ballincollig and Midleton plants have tertiary N removal installed. The Cork City Plant has secondary treatment installed. The Cobh plant has no treatment installed and the Ringaskiddy plant has preliminary treatment installed. The Cork City, Midleton, Cobh and Ringaskiddy plants discharge to estuarine or marine waters.

ABSTRACTION NAME	VOLUME (M³/ DAY)
CORK CITY WATER SUPPLY	48,027
GLANMIRE	900
MACROOM	1,500
MIDLETON	2,500
WHITEGATE REGIONAL	7,100
TIBBOTSTOWN	4,800
MOGEELY	972
GLASHABOY	16,500
CORK HARBOUR & CITY	66,000

Water Framework Directive Status

As of December 2014, there are 543km of High status surface river channels in hydrometric area 19, located in the eastern half of the hydrometric area including reaches of the Butlerstown, Shournagh, Glashagarriff, Laney, Foherish, Sullane, Derrintogher Rivers and parts of the River Lee headwaters upstream of Lough Allua. The large lakes in hydrometric area 19, Loughs Allua and Carrigdrohid, are both classified as at Moderate status. River waterbody status varies across hydrometric area 19 with the majority of river channels in the western half of the hydrometric area at High or Good status, a variation from High to Poor in the central part of the hydrometric area and Good, Moderate and some Poor in the eastern part of the hydrometric area. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There is an OSPAR requirement for flow data from the Lee catchment.

Existing Network

There are currently 3 suspended EPA/LA hydrometric stations in hydrometric area 19, comprising 1 level only lake station and 2 flow rated stations. The flow rating at 1 of these stations is of high quality across all ranges, and high to medium across all flow ranges at 1 station. There are 9 active OPW flow rated sites, 1 of which are classified as high to medium quality across all flow ranges, 2 classified as medium to poor across all flow ranges and 6 currently unclassified as they are relatively new stations. The OPW also maintains 2 level only stations in the hydrometric area. The ESB maintains 9 flow rated stations in this hydrometric area, comprising 1 station of high quality across all flow ranges, 2 stations of at least medium quality across all flow ranges, 3 station of medium to poor quality and 3 unclassified stations. Therefore, there are

a total of 6 high to medium quality flow rated stations and 1 level only lake stations in this hydrometric area (including suspended stations). Currently 27% of hydrometric area 19 is upstream of high quality flow rated gauges (excluding the suspended stations) or 34% when the suspended stations are included. In terms of high quality flow rated and lake stations in hydrometric area 19 (including the suspended stations), there are 3.3 per 1,000km², 3.6 per 1,000km of stream channel and 0.2 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution of stations in this hydrometric area is heavily influenced by ESB requirements in the Lee Valley. The distribution and density of stations would be considered acceptable if the EPA/LA suspended stations were reactivated. The central Lee Valley is well served with flow rated stations but the quality of these stations needs to be improved. The large abstractions and discharges are well served by stations generally. Again, provided the suspended stations are reactivated, there is acceptable coverage of stations to provide flow data for protected river water bodies in this hydrometric area. The HydroTool cannot be used in the main Lee Channel catchment as flow is regulated at the Inniscarra and Carrigadrohid ESB dams.

Station Classification

Of the active and suspended hydrometric stations in hydrometric area 19, 11 are classified as Strategic stations. Of the Strategic stations, 4 stations are used to calibrate the EPA flow duration curve model, 5 are used for the OPW model, 5 are used for EU reporting purposes, and 2 are used to monitor abstractions. One of these stations is also part of the HydroDetect network. All 3 suspended stations are classified as Strategic. The remaining 13 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
25	4	2	19	**8**	11	14	0

Review Conclusion

General

The existing network in hydrometric area 19 does not provide acceptable coverage for flow estimation without the inclusion of the suspended stations. There is an urgent requirement for the rating accuracies of the ESB stations to be upgraded, and for the EPA/LA stations to be reactivated. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 19.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
19044 KILMONA	OPW
19045 GOTHIC	OPW
19054 BALLYVOURNEY BRIDGE	OPW
19055 BALLYMAKEERY BRIDGE	OPW
19056 BALLINCOLLY	OPW
19057 GLEN PARK	OPW
19058 BLACKPOOL RETAIL PARK	OPW

19059 GLENAMOUGHT BRIDGE	OPW
19011 LEEMOUNT U/S	ESB
19015 HEALY'S BRIDGE	ESB
19016 OVENS	ESB
19028 DRIPSEY	ESB

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area provided the existing ESB stations are improved and the suspended EPA/LA stations should be reactivated as a priority.

Hydrometric Area 20 Bandon-Ilen

Setting

This hydrometric area includes the surface catchment drained by the Rivers Bandon and Ilen and all streams entering tidal water between Templebreedy Battery and Mizen Head, Co. Cork. Hydrometric area 20 has a surface area of 1,803km². The largest urban centre in hydrometric area 20 is Bandon. The other main urban centres in this hydrometric area are Kinsale, Clonakilty, Skibbereen and Dunmanway. The total population of hydrometric area 20 is approximately 71,211 with a population density of 39 people per km².

Pressures

Known water abstractions in this hydrometric area are from a combination of surface water, spring and groundwater sources according to current information. There are 10 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 30 urban waste water treatment plants and 26 combined sewer overflows. There are 12 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 2 urban waste water treatment plant >10,000 PE in this hydrometric area at Bandon and Clonakilty. Both plants have secondary treatment installed. The Clonakilty Plant discharges to estuarine waters.

ABSTRACTION NAME	VOLUME (M³/ DAY)
BANDON REGIONAL	2,500
INNISHANNON WATER SUPPLY SCHEME	270
INNISHANNON	7,250
DRIMOLEAGUE	333
CLONAKILITY	7,364
DUNMANWAY	714
SCHULL	427
BALTIMORE LAKECROSS	1,090
LEAP	385
SKIBBEREEN BALLYHILTY	3,308

Water Framework Directive Status

As of December 2014, there are 326km of High status surface river channels in hydrometric area 20, located mainly in the western half of the hydrometric area and including most of the River Ilen catchment, the headwaters of the Caha River and parts of the Brinny River north of Bandon. The Water Framework Directive lakes in hydrometric area 20, Curraghalicky, Coolkellure, Ballin, Abisdealy and Skeagh are classified as at Poor, Good, Poor, Poor and Moderate status respectively. River waterbody status across the majority of hydrometric area 20 is at Good status, with High status water bodies predominantly in the west of the hydrometric area and parts of the Bandon River in the centre of the hydrometric area at Moderate status. There are no river channels in the hydrometric area classified as at Poor or Bad status. Many surface channels in the Sheehy Mountains and along the coastal fringe of the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There is 1 designated Margaritifera catchment in this hydrometric area, Bandon/Caha. There is an OSPAR requirement for flow data from the Bandon catchment.

Existing Network

There are currently 1 active and 1 suspended EPA/ LA hydrometric stations in hydrometric area 20, comprising 2 flow rated stations. The flow rating at the suspended station is of medium to high quality across all ranges, while the rating at the active station is medium across all flow ranges. There are 2 active OPW flow rated sites, 1 of which are classified as medium quality across all flow ranges, and the other was installed two years ago and has not been classified yet. The OPW also maintains 4 other level only sites on river channels. Therefore, there are a total of 3 high to medium quality flow rated stations (one of which is suspended) and 6 level only stations in this hydrometric area. Currently 37% of hydrometric area 20 is upstream of high quality flow rated gauges, or 41% if the suspended station is included. In terms of high quality flow rated and lake stations in hydrometric area 20 (including the suspended station), there are 1.7 per 1,000km², 1.7 per 1,000km of stream channel and 0.4 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is relatively sparse, especially considering that one of EPA/LA stations is suspended. The large inland discharge at Bandon is located near a flow rated station, but the large abstractions in the hydrometric area are not located near flow rated stations. There is a Margaritifera catchment upstream of Dunmanway for which there is no flow data and there are a number of protected rivers throughout the hydrometric area for which there is currently no flow data. HydroTool accuracy has only been assessed in a small part of the hydrometric area and has not been found to be of variable quality.

Station Classification

Of the active and suspended hydrometric stations in hydrometric area 20, 3 are classified as Strategic stations. Of the 3 Strategic stations, 1 station is used to calibrate the EPA flow duration curve model, 2 are used for the OPW model, 1 is used for EU reporting purposes, and 2 are used to monitor abstractions. The suspended station is classified as Strategic. The remaining 5 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
8	4	0	4	**8**	3	5	0

Review Conclusion

General

The existing network in hydrometric area 20 is sparse, but could provide reasonably comprehensive coverage for flow estimation with the reactivation of the suspended EPA/LA station. There may be a future requirement for short term project stations based on the outcome of Water Framework Directive assessment. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 20.

Stations flagged for rating development

A single station in this hydrometric area has been identified as not being fully flow rated to a high quality across the full range of flows. The following station is proposed for full flow rating development if technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
20019 CLONAKILTY	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area but the suspended EPA/LA stations should be reactivated as a priority. The feasibility of a project station on the Bandon River in the vicinity of Dunmanway should be investigated to provide accurate flow data for the Margaritifera catchment at this location.

Hydrometric Area 21 Dunmanus-Bantry-Kenmare

Setting

This hydrometric area includes the surface catchment drained by all streams entering tidal water in Dunmanus, Bantry and Kenmare Bays between Mizen Head and Glanearagh Head, Co. Kerry.

HA21 has a surface area of 1,898km². The largest urban centre in hydrometric area 21 is Bantry. The other main urban centre in this hydrometric area is Kenmare. The total population of hydrometric area 21 is approximately 24,280 with a population density of 13 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from surface water sources according to current information. There are 15 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are 12 urban waste water treatment plants and 5 combined sewer overflows in this hydrometric area. There are 4 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are no urban waste water treatment plants >10,000PE in this hydrometric area.

ABSTRACTION NAME	VOLUME (M³/DAY)
BANTRY DERRYGINAGH	1,500
KEALKILL	336
CASTLETOWNBERE	1,490
GLENGARRIFF	424
BAILE AN SCEILG PUBLIC WATER SUPPLY SCHEME	483
CAHERDANIEL PUBLIC WATER SUPPLY SCHEME	369
CAHERDANIEL PUBLIC WATER SUPPLY SCHEME	600
CASTLECOVE PUBLIC WATER SUPPLY SCHEME	600
WATERVILLE PUBLIC WATER SUPPLY SCHEME	1,992
WATERVILLE PUBLIC WATER SUPPLY SCHEME	680
KENMARE PUBLIC WATER SUPPLY SCHEME	960
KILGARVAN PUBLIC WATER SUPPLY SCHEME	576
SNEEM PUBLIC WATER SUPPLY SCHEME	576
MAULIN PUBLIC WATER SUPPLY SCHEME	475
DAWROS	1,680

Water Framework Directive Status

As of December 2014, there are 1479km of High status surface river channels in hydrometric area 21, and the majority of classified river water bodies in this hydrometric area are at High Status. The Water Framework Directive lakes in hydrometric area 21 are classified as follows; Namona and Cloonaghlin at High status, Bofinna, Inchiquin, Brin and Currane at Good status, and Glenbeg at Moderate status. Approximately one third of river channels in the hydrometric area are classified as Good status with half that number classified as at Moderate status. There are no river channels in the hydrometric area classified as at Poor or Bad status. Many surface channels in the hydrometric area, particularly along the extensive coastline, are currently unclassified.

Hydrologically Sensitive Protected Areas

There are 3 designated Margaritifera catchments in this hydrometric area; Currane, the Kerry Blackwater and Owenagappul. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There are currently 1 active and 5 suspended EPA/LA hydrometric stations in hydrometric area 21, comprising 1 lake level station (suspended) and 5 flow rated stations (4 of which are suspended). The flow rating at the active station is high quality across all flow ranges, high to medium across all flow ranges at 3 suspended stations, and medium to poor across all flow ranges at the other suspended flow rated station. There is 1 active OPW flow rated site, which was installed in 2014 and has not yet been classified. Therefore, there are a total of 4 high to medium quality flow rated stations (3 of which are suspended) and 1 lake level station (suspended) in

this hydrometric area. Currently 9% of hydrometric area 21 is upstream of high to medium quality flow rated gauges, or 14% if the suspended stations were reactivated. In terms of high quality flow rated and lake stations in hydrometric area 21 (including the suspended stations), there are 2.6 per 1,000km², 1.5 per 1,000km of stream channel and 2.0 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is relatively sparse, especially considering that 5 of EPA/LA stations are suspended. There are no large inland discharges in this hydrometric area. The large abstractions in the hydrometric area are not located near flow rated stations. The Margaritifera catchments are not located near active flow rated stations and there are a large number of protected rivers throughout the hydrometric area, especially on the Beara and Iveragh peninsulas for which there is currently no flow data. HydroTool accuracy has only been assessed in a small part of the hydrometric area and has been found to be of variable quality in these areas.

Station Classification

Of the active and suspended hydrometric stations in hydrometric area 21, 6 are classified as Strategic stations including all five suspended stations. Of the Strategic stations, 3 stations are used to calibrate the EPA flow duration curve model, 1 is used for the OPW model, 3 are used for EU reporting purposes, and 3 are used to monitor abstractions. One of these stations is also part of the HydroDetect network. All 5 suspended stations are classified as Strategic. The remaining site is classified as an Operational station.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
7	0	1	6	**5**	6	1	0

Review Conclusion

General

The existing network in hydrometric area 21 is inadequate and at a minimum the suspended stations should be reactivated. New project stations may be required on the Roughty and Inny Rivers, and possibly on the Sheen, Four Mile Water, Croanshagh, Owenshagh, Currane, Owenagappul and Blackwater Rivers (these three representing the margaritifera catchments). The precise requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 21.

Stations flagged for rating development

Two stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development if technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
21018 SNEEM D/S	OPW
21005 ADRIGOLE	EPA/LA

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area but the suspended EPA/LA stations should be reactivated as a priority. When resources allow the Roughty and Inny rivers should be assessed for the installation of project stations.

Hydrometric Area 22 Laune-Mine-Dingle Bay

Setting

This hydrometric area includes the surface catchment drained by the Rivers Laune and Maine and all streams entering tidal water between Glanearagh Head and Clogher Head, Co. Kerry. Hydrometric area 22 has a surface area of 2,036km². The largest urban centre in hydrometric area 22 is Killarney. The other main urban centres in this hydrometric area are Cahersiveen, Kilorglin, Castleisland and Dingle. The total population of hydrometric area 22 is approximately 62,006 with a population density of 30 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from surface water and spring sources with relatively few (4) groundwater abstractions. There are 21 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 15 urban waste water treatment plants and 6 combined sewer overflows. There are 9 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There is 1 urban waste water treatment plant >10,000PE in this hydrometric area at Killarney. This plant has tertiary P removal installed.

ABSTRACTION NAME	VOLUME (M³/DAY)
BARRADUFF PUBLIC WATER SUPPLY SCHEME	864
CENTRAL REGIONAL: LOUGH GUITANE	3,583
ANNASCAUL PUBLIC WATER SUPPLY SCHEME	576
AN BAILE MOR PUBLIC WATER SUPPLY SCHEME	614
AN BAILE MOR PUBLIC WATER SUPPLY SCHEME	864
AN DAINGEAN PUBLIC WATER SUPPLY SCHEME	1,556
AN DAINGEAN PUBLIC WATER SUPPLY SCHEME	2,400
INCH PUBLIC WATER SUPPLY SCHEME	792
AN MHIN AIRD PUC NO . 1 PUBLIC WATER SUPPLY SCHEME	458
CEANN TRÁ PUBLIC WATER SUPPLY SCHEME	840
CARAGH LAKE PUBLIC WATER SUPPLY SCHEME	1,013
CAHERSIVEEN PUBLIC WATER SUPPLY SCHEME	1,680
PORTMAGEE PUBLIC WATER SUPPLY SCHEME	466
MID KERRY : GEARHA PUBLIC WATER SUPPLY SCHEME	14,664
MID KERRY : GEARHA PUBLIC WATER SUPPLY SCHEME	3,914
BREANLEE PUBLIC WATER SUPPLY SCHEME	1,320
AN MHÍN AIRD GUALAINN PUBLIC WATER SUPPLY SCHEME	960
MID KERRY: KNOCKNAVOTA PUBLIC WATER SUPPLY SCHEME	600
MOUNTAIN STAGE PUBLIC WATER SUPPLY SCHEME	615
SHRONE PUBLIC WATER SUPPLY SCHEME	864
SHRONE PUBLIC WATER SUPPLY SCHEME	507

Water Framework Directive Status

As of December 2014, there are 716km of high status surface river channels in hydrometric area 22, consisting of the Emlaghmore and Owenascaul Rivers draining the Sieve Mish Mountains, parts of the River Main draining the Stack's Mountains, the Brown Flesk southeast of Castleisland, the headwaters of the Fertra River east of Cahersiveen, the Loe and Geathameen River draining Macgillycuddy's Reeks and the Black Valley, the Long Range, Owengarriff and parts of the Flesk Rivers draining into Lough Leane,. The Water Framework Directive lakes in hydrometric area 22 are classified as follows; Muckross Lake at High status, Cummernamuck, Guitane and Leane

at Good status, and Caragh, Acoose and the Upper Lake at Moderate status. River waterbody status varies across hydrometric area 22 with significant lengths of stream channel classified as good or moderate and with a smaller proportion located in the inland, more intensively farmed parts of the hydrometric area classified poor. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels in the hydrometric area are currently unclassified, particularly along the coastal fringes of the hydrometric area.

Hydrologically Sensitive Protected Areas

There are 2 designated Margaritifera catchments in this hydrometric area; Caragh and Gearhameen. There is an OSPAR requirement for flow data from the Laune catchment.

Existing Network

There are currently 1 active and 6 suspended EPA/LA hydrometric stations in hydrometric area 22, comprising 2 lake level stations (both suspended) and 5 flow rated stations (4 suspended). The flow rating at the active station is high quality across all flow ranges, and high to medium quality across all ranges at the four suspended stations. There are 7 active OPW flow rated sites, 3 of which are classified as high quality across all flow ranges, 2 are classified as medium to high across all flow ranges, 3 classified as high or medium to poor across all flow ranges. The OPW also maintains 3 level only stations in this hydrometric area (2 on lakes and 1 tidal). Therefore, there are a total of 10 high to medium quality flow rated stations (4 of which are suspended), and 4 lake level stations in this hydrometric area. Currently 41% of hydrometric area 22 is upstream of high quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 22 (including suspended stations), there are 6.9per 1,000km², 5.4 per 1,000km of stream channel and 2.3 per 10,000 persons. Current or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area with the exception of 22023 Kilquane, which is now considered obsolete.

Station Coverage

The distribution and density of stations in this hydrometric area is relatively sparse, especially considering that 6 of EPA/LA stations are suspended. The single large inland discharge at Killarney is located near active flow rated stations. The large abstractions in the hydrometric area are not located near flow rated stations. The 2 Margaritifera catchments are not located near active flow rated stations and there are a large number of protected rivers throughout the hydrometric area for which there is currently no flow data. There is a particular absence of flow rated stations in the peninsular parts of the hydrometric area (Dingle and Iveragh regions). HydroTool accuracy has only been assessed in a small part of the hydrometric area and has been found to be of variable quality in these areas.

Station Classification

Of the active and suspended hydrometric stations in hydrometric area 22, 7 are classified as Strategic stations (including 2 suspended stations). Of the Strategic stations, 3 stations are used to calibrate the EPA flow duration curve model, 4 are used in the OPW model, 1 is used for EU reporting purposes, and 1 is used to monitor abstractions. Two of the suspended stations are classified as Strategic. The remaining 10 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
17	2	3	12	**14**	7	10	0

Review Conclusion

General

The existing network in hydrometric area 22 provides sub-optimal coverage for flow estimation. The suspended stations should be reactivated in this hydrometric area. There are no stations located in the peninsular parts of the hydrometric area and few stations located in the small catchments draining the highest upland areas in the country. Given the increase in average annual precipitation that has been recorded for the south west in the 1980-2010 Met Éireann data set, very little hydrometric data has been collected in these regions to support research and planning in such areas. It is likely that additional stations will be required to fill these gaps. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 22.

Stations flagged for rating development

One station in this hydrometric area has been identified as not being fully flow rated to a high quality across the full range of flows. The following station is proposed for full flow rating development if technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
22005 TORC WEIR	OPW

Stations to be closed

It is recommended that station 22023 Kilquane be closed as there is no existing or foreseeable driver to collect data at this location.

New stations required

There are no immediate requirements for new stations in this hydrometric area but the suspended EPA/LA stations should be reactivated as a priority. When resources allow, project stations should be installed on the Iveragh peninsula to characterise flow in small mountainous catchments in the region.

Hydrometric Area 23 Tralee Bay-Feale

Setting

This hydrometric area includes the surface catchment drained by the River Feale and all streams entering tidal water in Tralee Bay and between Clogher Head and Kilconly Point, Co. Kerry. Hydrometric area 23 has a surface area of 1,784km². The largest urban centre in hydrometric area 23 is Tralee. The other main urban centres in this hydrometric area are Listowel, Abbeyfeale and Ballybunnion. The total population of hydrometric area 23 is approximately 77,832 with a population density of 44 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from spring or groundwater sources according to current information. There are also a number of surface water abstractions located throughout the hydrometric area. There are 15 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 27 urban waste water treatment plants and a smaller number of storm overflow emission points. There are 11 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There is 1 urban waste water treatment plant >10,000PE in this hydrometric area at Tralee. This plant has secondary treatment installed and discharges to estuarine waters.

ABSTRACTION NAME	VOLUME (M³/DAY)
LISROE	252
FENIT PUBLIC WATER SUPPLY SCHEME	525
LYREACROMPANE REGIONAL WATER SUPPLY	4,080
BROSNA/KNOCKNAGOSHEL PUBLIC WATER SUPPLY SCHEME	1,680
AUGHACASLA PUBLIC WATER SUPPLY SCHEME	576
CÉ BHRÉANAINN PUBLIC WATER SUPPLY SCHEME	288
CAMP PUBLIC WATER SUPPLY SCHEME	585
CASTLEGREGORY PUBLIC WATER SUPPLY SCHEME	850
AN CLOCHAN PUBLIC WATER SUPPLY SCHEME	480
BAILE NA BHFIONNÚRACH PUBLIC WATER SUPPLY SCHEME	480
BAILE AN FHEIRTARAIGH PUBLIC WATER SUPPLY SCHEME	450
AN FHEOTHANACH PUBLIC WATER SUPPLY SCHEME	259
AN MHUIRÍOCH / BAILE BREACH PUBLIC WATER SUPPLY SCHEME	576
LISTOWEL WATER TREATMENT PLANT	14,400
ABBEYFEALE PUBLIC WATER SUPPLY SCHEME	2,360

Water Framework Directive Status

As of December 2014, there are 298km of high status surface river channels in hydrometric area 23, located along the peninsular part of the hydrometric area and in the Stacks Mountains including the headwaters of the River Smearlagh. The Water Framework Directive lakes in hydrometric area 23, Cam and Gill, are classified as at Moderate and Poor status respectively. River waterbody status varies across hydrometric area 23 with some Good and Moderate status river channels located along the Dingle peninsula and the majority of the inland part of the hydrometric area dominated by Good status rivers with about a third classified as Moderate status and a small number of channels flowing towards Abbeydorney classified as at Poor status. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels in the hydrometric area are currently unclassified, predominantly along the coast.

Hydrologically Sensitive Protected Areas

There is 1 designated Margaritifera catchments in this hydrometric area, Owenmore. There is an OSPAR requirement for flow data from the Feale catchment.

Existing Network

There are currently 2 active and 2 suspended EPA/LA hydrometric stations in hydrometric area 23, comprising 4 flow rated stations. The flow rating at the two active stations is medium to high quality across all ranges, and medium to high quality at the 2 suspended stations. There are 3 active OPW flow rated sites, all 3 of which are classified as high to medium quality across all flow ranges. The OPW also maintains 6 level only sites (5 of which are tidal) on river channels in this hydrometric area. Therefore, there are a total of 7 high to medium quality flow rated stations in this hydrometric area (5 of which are active). Currently 50% of hydrometric area 23 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 23, there are 3.9 per 1,000km², 3.3 per 1,000km of stream channel and 0.9 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is relatively sparse, especially considering that 2 of EPA/LA stations are suspended. There are no large inland discharges in this hydrometric area. The large abstractions in the hydrometric area are not located near flow rated stations. The single Margaritifera catchment is not located near an active flow rated station and there are a large number of protected rivers throughout the hydrometric area for which there is currently no flow data. There is a particular absence of flow rated stations on the Dingle Peninsula and on the River Brick. HydroTool accuracy has only been assessed in a small part of the hydrometric area and has been found to be of good quality in these areas but HydroTool is not suitable for use in large parts of this hydrometric area due to a paucity of hydrometric data and the presence of karst in the central parts of the hydrometric area.

Station Classification

Of the active and suspended hydrometric stations in hydrometric area 23, 6 are classified as Strategic stations. Of the Strategic stations, 4 stations are used to calibrate the EPA flow duration curve model, 2 are used in the OPW model and 3 are used to monitor abstractions. One of these stations is also part of the HydroDetect network. A single station is classified as Strategic on the basis of its use for modelling or flood warning by the OPW. Both of the suspended stations are classified as Strategic. The remaining 7 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
13	6	0	7	**7**	6	7	0

Review Conclusion

General

The existing network in hydrometric area 23 provides sub-optimal coverage for flow estimation. At a minimum, the suspended stations should be reactivated. Additional stations would also be of value in the peninsular part of the hydrometric area and in parts of the River Feale catchment far from existing stations such as the headwaters of the Feale, and sub-catchments that are currently un monitored such as the River Brick. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 23.

Stations flagged for rating development

All relevant stations in this hydrometric area have been identified as fully flow rated to a high quality across the full range of flows.

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area but the suspended EPA/LA stations should be reactivated as a priority. The feasibility of establishing a project station on the river Brick should be investigated, resources permitting.

Hydrometric Area 24 Shannon Estuary South

Setting

This hydrometric area includes the surface catchment drained by the Rivers Deel and Maigue and all streams entering tidal water in Shannon Estuary between Kilconly Point and Thomond Bridge, Limerick. Hydrometric area 24 has a surface area of 2,033km². The largest urban centre in hydrometric area 24 is the southern part of Limerick City. The other main urban centres in this hydrometric area are Newcastle West, Charleville, Kilmallock Rathkeale and Mungret. The total population of hydrometric area 24 is approximately 112,430 with a population density of 55 people per km².

Pressures

The vast majority of known water abstractions in this hydrometric area are from groundwater sources according to current information. There are also a small number of surface water abstractions. There are 10 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 44 urban waste water treatment plants and 2 combined sewer overflows. There are 17 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 2 urban waste water treatment plants >10,000PE in this hydrometric area at Charleville and Limerick. Both plants have secondary treatment installed. The Limerick plant discharges to estuarine waters.

ABSTRACTION NAME	VOLUME (M³/DAY)
TIERACLEA (TARBERT) PUBLIC WATER SUPPLY SCHEME	600
ADARE PUBLIC WATER SUPPLY SCHEME	936
BALLINGARRY PUBLIC WATER SUPPLY SCHEME	705
SKAGH, CROOM	720
FOYNES/SHANNON ESTUARY PUBLIC WATER SUPPLY SCHEME	17,483
KILMALLOCK PUBLIC WATER SUPPLY SCHEME	1,049
CASTLEMAHON PUBLIC WATER SUPPLY SCHEME	3,058
RATHKEALE PUBLIC WATER SUPPLY SCHEME	2,062
SOUTH WEST REGIONAL WATER SUPPLY	1,125
MARTINSTOWN PUBLIC WATER SUPPLY SCHEME	286

Water Framework Directive Status

As of December 2014, there are 22km of High status surface river channels in hydrometric area 24, including parts of the Owvane River in the west of the hydrometric area. The Water Framework Directive lakes in hydrometric area 24, Loughs Gur and Bleach, are classified as at Poor, and High status respectively. River waterbody status varies throughout hydrometric area 24 with broadly similar proportions of river water bodies classified as at Good, Moderate and Poor status across the hydrometric area. The Ahavarraga stream is classified as at Bad status, downstream of Dromcolliher. A number of small surface channels along the Shannon Estuary in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There is an OSPAR requirement for flow data from the Deel and Maigue catchments.

Existing Network

There are currently 8 active EPA/LA hydrometric stations in hydrometric area 24, comprising 8 flow rated stations. The flow rating at 1 of these stations are of high quality across all ranges, high to medium across all flow ranges at 4 stations, high or medium to poor across all flows at 2 stations, and unclassified at 1 flow rated station. There are 14 active OPW flow rated sites, 1 of which are classified as high quality across all flow ranges, 6 classified as high or medium across all flow ranges, and 7 classified as medium to poor or bad across all flow ranges. The OPW also maintains 6 other level only sites on river channels, 4 of which are tidal. Therefore, there are a total of 14 high to medium quality flow rated stations in this hydrometric area. Currently 68% of hydrometric area 24 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 24, there are 6.9 per 1,000km², 6.6 per 1,000km of stream channel and 1.2 per 10,000 persons. Existing or foreseeable drivers

for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is relatively good. The single large inland discharge in this hydrometric area at Charleville is located close to a flow rated station. The large abstractions in the hydrometric area are also located near flow rated stations. There are a large number of protected rivers along the coastal/estuarine fringe of the hydrometric area for which there is currently limited flow data. There may be a requirement for flow data on the Greanagh River for Water Framework Directive purposes. HydroTool accuracy has only been assessed in a small part of the hydrometric area and has been found to be of variable quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 24, 13 are classified as Strategic stations. Of the Strategic stations, 4 stations are used to calibrate the EPA flow duration curve model, and 10 are used for the OPW model, 4 are used for EU reporting purposes, and 2 are used to monitor abstractions. The remaining 15 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
28	6	0	22	**13**	13	15	0

Review Conclusion

General

The existing network in hydrometric area 24 provides reasonably comprehensive coverage for flow estimation based on existing information. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 24.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
24033 BALLYHAHILL	EPA/LA
24046 GORTNALUGGIN BRIDGE	EPA/LA
24002 GRAY'S BRIDGE	OPW
24003 GARROOSE	OPW
24005 ATHLACCA	OPW
24006 CREGGANE	OPW
24012 GRANGE BRIDGE	OPW
24013 RATHKEALE	OPW
24047 ROSSBRIEN RAILWAY BRIDGE	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area. A project station may be required in future on the Greanagh River.

Hydrometric Area 25 Lower Shannon

Setting

This hydrometric area includes the surface catchment drained by the River Shannon and all tributary streams entering it between Thomond Bridge and its confluence with the River Suck between Shannonbridge, Co. Offaly and Clonfert, Co. Galway. Hydrometric area 25 has a surface area of 5,032km². The largest urban centre in hydrometric area 25 is Limerick City. The other main urban centres in this hydrometric area are Castleconnell, Newport, Killaloe, Ballina, Nenagh, Roscrea, Portumna, Birr, Clara, Moate, Tullamore and Mullingar. The total population of hydrometric area 25 is approximately 242,041 with a population density of 48 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater and spring sources according to current information. There are also a number of relatively large surface water abstractions, in particular from Lough Derg and the main channel of the Shannon. There are 24 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 67 urban waste water treatment plants and 31 combined sewer overflows. There are 28 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 6 urban waste water treatment plants >10,000PE in this hydrometric area at Mullingar, Tullamore, Birr, Roscrea, Nenagh and Limerick. The Mullingar plant has tertiary N&P treatment installed. The other 5 plants have tertiary P removal installed.

ABSTRACTION NAME	VOLUME (M³/DAY)
WHITEGATE SPRINGS	259
WOODFORD	256
LIMERICK CITY WATER SUPPLY	32,612
CAHERCONLISH PUBLIC WATER SUPPLY SCHEME	565
COOGA, DOON	398
FOILEEN	270
CLOGHADALTON, OOLA	277
BANAGHER PUBLIC WATER SUPPLY SCHEME	2,165
BIRR PUBLIC WATER SUPPLY SCHEME	2,560
CLARA/FERBANE PUBLIC WATER SUPPLY SCHEME	1,681
BANAGHER PUBLIC WATER SUPPLY SCHEME	2,165
KILLEIGH/CLONEYGOWEN	1,500
TULLAMORE PUBLIC WATER SUPPLY SCHEME	6,981
BALLINAGAR	650
BOHER LEAMONAGHAN	450
CLAREEN	664
ARDNAPONDRA RESERVOIR	1,200
GLENGAR PUBLIC WATER SUPPLY SCHEME	375
ARDCRONEY GROUP WATER SCHEME	720
KILRIFFITH/KILMORE/BAWN GROUP WATER SCHEME	420
ROSCREA PUBLIC WATER SUPPLY SCHEME	1,582
NEWPORT PUBLIC WATER SUPPLY SCHEME	1,513
NENAGH PUBLIC WATER SUPPLY SCHEME	5,000
BORRISOKANE PUBLIC WATER SUPPLY SCHEME	860

Water Framework Directive Status

As of December 2014, there are 324km of High status surface river channels in hydrometric area 25, located mainly in the southern half of the hydrometric area including the headwaters of the Blackwater (Clare), Doonane, Tooreenbrien, Nenagh, Knockadromin, Ardcloony, Cloghaun Rivers, the Ballinlough and Drumkeary streams, and parts of the Silver and Camcor Rivers in the northeastern part of the hydrometric area. The Water Framework Directive

lakes in hydrometric area 25, Ennell, Derg TN, Derg HMWB, Alewnaghta and Graney, are classified as at Moderate, Poor, High, Bad and Moderate status respectively. The Fynagh River northwest of Banagher is classified as at Bad status. There are a number of channels in the hydrometric area currently unclassified, located mainly in the southern and western parts of the hydrometric area. River waterbody status varies across hydrometric area 25 with the majority of stream channels classified equally as at Moderate or Good status and a much smaller proportion classified as at Poor status, located mainly around Lough Ennell and to the west of Lough Derg.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There is an OSPAR requirement for flow data from the Shannon catchment.

Existing Network

There are currently 17 active EPA/LA hydrometric stations in hydrometric area 25, comprising 2 lake level stations and 15 flow rated stations. The flow rating at 3 of these stations are of high quality across all ranges, high to medium across all flow ranges at 10 stations, and high to poor across all flow ranges at 1 station. There are 26 active OPW flow rated sites, 5 of which are classified as high quality across all flow ranges, 16 are classified as medium to high across all flow ranges and 5 classified as high or medium to poor across all flow ranges. The OPW also maintains 7 level only stations in this hydrometric area. The ESB operates 7 flow rated stations in this hydrometric area, 2 of which are rated as medium quality across all flow ranges and 5 are unclassified. The ESB also operates 2 level only stations in this hydrometric area. Therefore, there are a total of 39 high to medium quality flow rated stations and 3 lake level stations in this hydrometric area. Currently 96% of hydrometric area 25 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 25, there are 7.8 per 1,000km², 8.9 per 1,000km of stream channel and 1.6 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area with the exception of stations 25311 Doon and 25329 Derrinlough.

Station Coverage

The distribution and density of stations in this hydrometric area is relatively good. The large inland discharges in this hydrometric area are all located close to flow rated stations. The large abstractions in the hydrometric area are generally not located near flow rated stations. There are a large number of protected rivers in this hydrometric area and they are reasonably well covered by existing flow rated stations. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of variable quality in these areas. The HydroTool cannot be used along the main channel of the Shannon as flow is regulated at the Parteen ESB weir.

Station Classification

Of the active hydrometric stations in hydrometric area 25, 37 are classified as Strategic stations. Of the Strategic stations, 10 stations are used to calibrate the EPA flow duration curve model, 27 are used for the OPW model, 4 are used for EU reporting purposes, and 4 are used to monitor abstractions. Four of these stations are also part of the HydroDetect network. The remaining 2 stations are classified as Strategic on the basis of their use for modelling or flood warning by the OPW. The remaining 39 sites are classified as Operational stations with one site classified as a project site.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
77	26	5	46	**45**	37	39	1

Review Conclusion

General

The existing network in hydrometric area 25 provides reasonably comprehensive coverage for flow estimation based on existing information. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 25.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
25204 BALLYBOUGHLIN	EPA/LA
25027 GOURDEEN	OPW
25029 CLARIANNA	OPW
25149 TULLAMORE	OPW
25213 CULLEEN FISH FARM	OPW
25301 BRACKNAGH BRIDGE	OPW

Stations to be closed

It is recommended that station 25311 Doon be closed as there is no existing or foreseeable driver to collect data at this location.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 26 Upper Shannon

Setting

This hydrometric area includes the surface catchment drained by the Rivers Shannon and Suck and all tributary streams upstream of their confluence between Shannonbridge and Clonfert. Hydrometric area 26 has a surface area of 6,610km². The largest urban centre in hydrometric area 26 is Athlone. The other main urban centres in this hydrometric area are Ballinasloe, Roscommon, Ballymahon, Edgeworthstown, Longford, Castlerea, Ballyjamesduff, Ballaghaderreen, Mohill, Boyle, Drumshambo and Carrick-on-Shannon. The total population of hydrometric area 26 is approximately 187,567 with a population density of 28 people per km².

Pressures

There is an approximately even spread of known water abstractions in this hydrometric area from groundwater, spring and surface water sources according to current information. There are 33 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 75 urban waste water treatment plants and 56 combined sewer overflows. There are 29 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 4 urban waste water treatment plants >10,000PE in this hydrometric area at Longford, Athlone, Monksland and Ballinasloe. The Longford, Ballinasloe and Monksland plants have tertiary P treatment installed. The Athlone plant has tertiary N&P removal installed.

ABSTRACTION NAME	VOLUME (M³/DAY)
GLANGEVLIN GROUP WATER SCHEME	250
MENLOUGH/SKEHANA GROUP WATER SCHEME	500
BALLINASLOE	3,577
BALLYGAR	293
BALLYMOE	574
KILKERRINMOYLOUGH	1,107
MOUNTBELLEW	1,283
WILLIAMSTOWN	489
SOUTH LEITRIM REGIONAL WATER SUPPLY SCHEME	9,322
BALLYMAHON	3,700
GRANARD	1,300
LONGFORD CENTRAL	7,000
NEWTOWNCASHEL	350
KILMOVEE/URLAUR	540
TUBBER	400
CLOONEYGRASSON	560
CLOONEYQUINN	250
POLECAT SPRINGS CO-OP	400
MOUNT TALBOT/FOUR ROADS	2,440
ROSCOMMON CENTRAL WATER SUPPLY SCHEME	3,101
KNOCKCROGHERY	582
SRRWSS - KILLEGLAN	4,310
NERWSS - STROKESTOWN/ELPHIN	3,750
NORTH ROSCOMMON REGIONAL WATER SUPPLY SCHEME	6,960
GRANGEMORE	970
BALLINLOUGH/LOUGHGLYNN	3,700
CASTLEREA	938
LECARROW WATER SUPPLY SCHEME	900
CASTLEREA REGIONAL	2,000
BOYLE/ARDCARNE	5,000
ATHLONE WATER SUPPLY SCHEME	3,998
FREWIN HILL HIGH LEVEL RESERVOIR	1,255

ABSTRACTION NAME	VOLUME (M^3/DAY)
KILLINURE WATER TREATMENT PLANT	40,900

Water Framework Directive Status

As of December 2014, there are 364km of high status surface river channels in hydrometric area 26, located mainly in the northwestern part of the hydrometric area including parts of the Diffagher and Suck Rivers and Derrymullan stream in the south of the hydrometric area. The Water Framework Directive lakes in hydrometric area 26 are classified as follows; Ree (Moderate), Killinure (High), Coosan (Good), Ballaghkeeran (Good), Owel (Good), Derravaragh (Good), Sheelin (Moderate), Nadreegeal (Modetare), Kinale (Moderate), Forbes (Moderate), Bofin (Moderate), Rinn (Bad), Grange (Good), O'Flynn (Good) Annaghmore (Moderate), Glinn (Moderate), Urlaur (Bad), Gara (Moderate), Key (Good), Cavetown (Moderate), Meelagh (Poor), Acres (Moderate) and Allen (Poor). There are a small number of river channels in the hydrometric area classified as at Bad status including a tributary of Lough Key, part of the Hind River west of Lough Ree and tributaries of the River Suck in the southern part of the hydrometric area. River waterbody status varies across hydrometric area 26 with broadly equal lengths of river channel classified as Good, Moderate and Poor across the hydrometric area. Relatively few surface channels in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There are currently 24 active EPA/LA hydrometric stations in hydrometric area 26, comprising 1 level only station and 23 flow rated stations. The flow rating at 17 of these stations are of high or medium quality across all ranges, and high to low across all flow ranges or undetermined at 6 stations. There are 26 active OPW flow rated sites, 11 of which are classified as high to medium quality across all flow ranges, 12 are high or medium to poor across all flow ranges, and 3 are unclassified. The OPW also maintains 7 level only stations on lakes and 8 other level only sites on river channels in this hydrometric area. The ESB also maintains 1 high quality flow rated station and 2 level only stations on lakes in this hydrometric area. Therefore, there are a total of 36 high to medium quality flow rated stations and 7 lake level stations in this hydrometric area. Currently 100% of hydrometric area 26 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 26, there are 5.4 per 1,000km^2, 6.9 per 1,000km of stream channel and 1.9 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area with the exception of station 26243 Lysterfield.

Station Coverage

The distribution and density of stations in this hydrometric area is relatively good. The large inland discharges in this hydrometric area are all located close to flow rate stations. The large abstractions in the hydrometric area are generally not located near flow rated stations. There are a large number of protected rivers in this hydrometric area and they are covered to a limited extent by existing flow rated stations. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of variable quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 26, 27 are classified as Strategic stations. Of the Strategic stations, 3 stations are used to calibrate the EPA flow duration curve model, 18 are used for the OPW model, and 9 are used to monitor abstractions. Two of these stations are also part of the HydroDetect network. The remaining 68 sites are classified as Operational stations with 2 stations classified as Project stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
98	39	9	50	**38**	27	69	2

Review Conclusion

General

The existing network in hydrometric area 26 provides reasonably comprehensive coverage for flow estimation based on existing information. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 26.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
26046 MOUNTMURRAY	EPA/LA
26204 BALLYMARTIN	EPA/LA
26332 TOBERBREEOGUE	EPA/LA
26335 TOGHER	EPA/LA
26140 AHASCRAGH PUMP HSE.	OPW
26108 BOYLE ABBEY BR.	OPW
26104 BALLINALACK	OPW
26025 CAMAGH	OPW
26021 BALLYMAHON	OPW
26020 ARGAR	OPW
26018 BELLAVAHAN	OPW
26017 GILLSTOWN	OPW
26010 RIVERSTOWN	OPW
26009 BELLANTRA BR.	OPW
26006 WILLSBROOK	OPW
26005 DERRYCAHILL	OPW
26004 BOOKALA	OPW
26002 ROOKWOOD	OPW
26001 BALLINAMORE	OPW

Stations to be closed

It is recommended that station 26243 Lysterfield be closed as there is no existing or foreseeable driver to collect data at this location.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 27 Shannon Estuary North

Setting

This hydrometric area includes the surface catchment drained by the River Fergus and all streams entering tidal water between Thomond Bridge and George's Head, Co. Clare. Hydrometric area 27 has a surface area of 1,658km². The largest urban centre in hydrometric area 27 is Ennis. The other main urban centres in this hydrometric area are Shannon, Clarecastle, Kilrush, Kilkee and Sixmilebridge. The total population of hydrometric area 27 is approximately 78,397 with a population density of 47 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from surface water sources according to current information. There are also a number of groundwater and spring abstractions, in particular from the Burren area in the north of the hydrometric area. There are 5 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 16 urban waste water treatment plants and a smaller number of storm overflow emission points. There are 11 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 2 urban waste water treatment plants >10,000PE in this hydrometric area at Ennis and Shannon. Both plants have secondary treatment installed. The Athlone plant has tertiary N&P removal installed. The Shannon plant discharges to estuarine waters.

ABSTRACTION NAME	VOLUME (M³/DAY)
PRIVATE	1,455
KILLADYSERT PUBLIC WATER SUPPLY	1,000
ENNIS PUBLIC WATER SUPPLY	15,880
CORROFIN PUBLIC WATER SUPPLY	454
SHANNON/SIXMILEBRIDGE REGIONAL WATER SUPPLY SCHEME	13,500

Water Framework Directive Status

As of December 2014, there are 56km of High status surface river channels in hydrometric area 27, located away from the peninsular part of the hydrometric area and including parts of the Rine, Owenogarney, and Inch Rivers. The Water Framework Directive lakes in hydrometric area 27 are classified as follows; Rosroe (High), Castle (Moderate), Cullaunyheeda (Good), Bridget (Moderate), Inchicronan (Good), Dromore (Good), Atedaun (Moderate), Inchiquin (Modetare), Cullaun (Good), and Muckanagh (Moderate). River waterbody status varies across hydrometric area 27 approximately equal lengths of river water bodies classified as Good, Moderate or Poor. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels in the hydrometric area are currently unclassified, particularly along the coastal fringe of the hydrometric area.

Hydrologically Sensitive Protected Areas

There is 1 small designated Margaritifera catchment in this hydrometric area, Cloon. There is an OSPAR requirement for flow data from the Fergus catchment.

Existing Network

There are currently 4 active EPA/LA hydrometric stations in hydrometric area 27, comprising 2 lake level stations and 2 flow rated stations. The flow rating at the 2 flow rated stations are of good quality. There are 6 active OPW flow rated sites, 4 of which are classified as high or medium quality across all flow ranges, and 2 which are high or medium to low quality across all flow ranges. The OPW also maintains 9 level only stations on river channels in this hydrometric area. Therefore, there are a total of 6 high to medium quality flow rated stations and 2 lake level stations in this hydrometric area. Currently 48% of hydrometric area 27 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 27, there are 4.8 per 1,000km², 6.1 per 1,000km of stream channel and 1.0 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is relatively good apart from the absence of stations to the southwest of Ennis. The large inland discharge at Ennis in this hydrometric area is located close to a flow rated station. Two of the three large abstractions in the hydrometric area are not located near flow rated stations. The single

Margaritifera catchment in this hydrometric area does not have a flow rated station within the catchment. There are a large number of protected rivers in this hydrometric area and they are not covered extensively by existing flow rated stations. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of good quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 27, 14 are classified as Strategic stations. Of the Strategic stations, 1 station is used to calibrate the EPA flow duration curve model, 4 are used for the OPW model, 1 is used for EU reporting purposes, and 1 is used to monitor an abstraction. One station is also part of the HydroDetect network. Some 10 stations are classified as Strategic on the basis of their use for drainage monitoring by the OPW. The remaining 6 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
20	10	2	8	**8**	14	6	0

Review Conclusion

General

The existing network in hydrometric area 27 provides reasonable coverage for flow estimation based on existing information and the karstic nature of much of this hydrometric area. The requirement for hydrometric data in specific parts of the hydrometric area is likely to be most efficiently supplemented via project type station deployments for specific purposes, although there could be benefit from stations located on the Rine River. Requirements should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 27.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
27001 INCH BRIDGE	OPW
27003 CORROFIN	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area. Should future resources allow, it would be beneficial for model development to install stations in the Rine, Owenslieve and Cloon Rivers.

Hydrometric Area 28 Mal Bay

Setting

This hydrometric area includes the surface catchment drained by all streams entering tidal water in Mal Bay and between George's Head and Black Head, Co. Clare. Hydrometric area 28 has a surface area of 848km². The largest urban centre in hydrometric area 28 is Lehinch. The other main urban centres in this hydrometric area are Milltown Malbay, Inagh, Ennistimon and Lisdoonvarna. The total population of hydrometric area 28 is approximately 18,590 with a population density of 22 people per km².

Pressures

Nearly all known water abstractions in this hydrometric area are from surface water sources according to current information. There are 5 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 10 urban waste water treatment plants and a smaller number of storm overflow emission points. There are 7 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are no urban waste water treatment plants >10,000PE in this hydrometric area.

ABSTRACTION NAME	VOLUME (M³/DAY)
KILMALEY/INAGH	1,300
ENNISTYMON REGIONAL WATER SUPPLY	6,000
MILLTOWN MALBAY PUBLIC WATER SUPPLY	550
W. CLARE RWS (OLD PLANT)	3,500
W. CLARE RWS (NEW PLANT)	11,500

Water Framework Directive Status

As of December 2014, there are 17km of High status surface river channels in hydrometric area 28, comprising parts of the upper reaches of the Inagh River. The Water Framework Directive lakes in hydrometric area 28 are classified as follows; Doo (Good), Naminna (Good), Keagh (Moderate) and Lickeen (Bad). River waterbody status varies across hydrometric area 28 with the majority of river water bodies classified as at Good status with some at Poor status and a small number at Moderate status in the northern part of the hydrometric area. There are no river channels in the hydrometric area classified as at Bad status. There are a small number of river channels in the coastal fringe of the hydrometric area currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There are currently 2 active EPA/LA hydrometric stations in hydrometric area 28, comprising 2 flow rated stations located at lake outflows. The flow rating at 1 station is of high quality and of medium quality at the other station. There are 2 active OPW flow rated sites, 1 of which is classified as high quality across all flow ranges and 1 classified as high quality at high flows but bad quality at low flows. Therefore, there are a total of 3 high to medium quality flow rated stations in this hydrometric area. Currently 17% of hydrometric area 28 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 28, there are 3.5 per 1,000km², 3.2 per 1,000km of stream channel and 1.6 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is relatively good. There are no large inland discharges in this hydrometric area. The large abstractions in the hydrometric area are not located near flow rated stations. There are a large number of protected rivers in this hydrometric area and they are not covered by existing flow rated stations. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of good quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 28, 3 are classified as Strategic stations. Of the Strategic stations, 1 station is used to calibrate the EPA flow duration curve model and 2 are used to monitor abstractions. The remaining site is classified as Operational.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
4	0	0	4	**3**	3	1	0

Review Conclusion

General

The existing network in hydrometric area 28 provides sub-optimal coverage for flow estimation given the coastal nature of the hydrometric area and based on existing information. There is definite scope for project stations to characterise the hydrology of the large number of relatively small coastal catchments in this hydrometric area. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 28.

Stations flagged for rating development

A single station in this hydrometric area has been identified as not being fully flow rated to a high quality across the full range of flows. The following station is proposed for full flow rating development if technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
28001 ENNISTYMON	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 29 Galway Bay South East

Setting

This hydrometric area includes the surface catchment drained by all streams entering tidal water in Galway Bay between Black Head and Renmore Point, Galway. Hydrometric area 29 has a surface area of 1,270km². The largest urban centre in hydrometric area 29 is the eastern part of Galway City. The other main urban centres in this hydrometric area are Athenry, Loughrea, Gort, and Oranmore. The total population of hydrometric area 29 is approximately 74,365 with a population density of 59 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater sources in this area with only 1 surface water abstraction databaseed at Lough Cutra. There are 2 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are only 3 urban waste water treatment plants located in the hydrometric area and 6 combined sewer overflows. There are 3 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are no urban waste water treatment plants >10,000PE in this hydrometric area.

ABSTRACTION NAME	VOLUME (M³/DAY)
GORT	477
LOUGHREA	1158

Water Framework Directive Status

As of December 2014, there are 141km of High status surface river channels in hydrometric area 29, located in the southeast of the hydrometric area including parts of the Owendalulleegh, and Boleyneendorrish Rivers. An integrated surface water drainage network is absent from much of the western parts of the hydrometric area as karstic drainage predominates in these areas. The Water Framework Directive lakes in hydrometric area 29 are classified as follows; Bunny (High), Cutra (Good) and Rea (Good). River waterbody status varies across hydrometric area 29 with a majority of classified river waterbodies at Good status and some shorter stretches of channel classified as at Moderate or Poor status, particularly in the northeast of the hydrometric area. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels in the central and western parts of the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There are currently 2 active EPA/LA hydrometric stations in hydrometric area 29, comprising 2 flow rated stations. The flow rating at both of these stations are of high or medium quality across all ranges. There are 9 active OPW flow rated sites, 4 of which are classified as high or medium quality across all flow ranges and 5 of which are classified as low or poor quality across all flow ranges. The OPW also maintains 4 level only stations on river channels in this hydrometric area. Therefore, there are a total of 6 high to medium quality flow rated stations in this hydrometric area. Currently 51% of hydrometric area 29 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 29, there are 4.7 per 1,000km², 7.9 per 1,000km of stream channel and 0.8 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is relatively good. The absence of stations to the south of Galway bay is due to the highly karstic nature of drainage in this area. There are no large inland discharges in this hydrometric area. The large abstractions in the hydrometric area are located near flow rated stations. The protected rivers in this hydrometric area are not well covered by existing flow rated stations. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of poor quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 29, 8 are classified as Strategic stations. Of the Strategic stations, 1 is used to monitor an abstraction, 4 are used to calibrate the OPW model and 3 are used for drainage monitoring by the OPW. The remaining 8 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
16	5	0	11	**6**	8	8	0

Review Conclusion

General

The existing network in hydrometric area 29 provides reasonable coverage for flow estimation based on existing information and the karstic nature of the hydrometric area. The requirement for hydrometric data in specific parts of the hydrometric area should be supplemented by the installation of project stations and, similarly to other karst areas of the country, be assessed in a framework that also considers hydrogeology. The network should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 29.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
29001 RATHGORGIN	OPW
29002 RAHASANE TURLOUGH	OPW
29010 AGGARD BRIDGE	OPW
29011 KILCOLGAN	OPW
29015 ORANMORE BRIDGE	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 30 Corrib

Setting

This hydrometric area includes the surface catchment drained by the River Corrib and all streams entering tidal water between Renmore Point and Nimmo's Pier, Galway. Hydrometric area 30 has a surface area of 3,112km². The largest urban centre in hydrometric area 30 is Galway City. The other main urban centres in this hydrometric area are Tuam, Ballinrobe, Claremorris and Ballyhaunis. The total population of hydrometric area 30 is approximately 116,866 with a population density of 38 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from surface water and spring sources according to current information. There are also a number of groundwater abstractions, in the northern part of the hydrometric area. There are 16 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 19 urban waste water treatment plants and 7 combined sewer overflows. There are 10 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 2 urban waste water treatment plants >10,000PE in this hydrometric area at Tuam and Galway City. The Tuam plant has tertiary P removal installed and the Galway City plant is located offshore and discharges to marine waters.

ABSTRACTION NAME	VOLUME (M³/DAY)
TERRYLAND	42,000
BOYOUNAGH/BALLYEDMOND	300
GALLAGH/BROWNSGROVE	482
DUNMORE GLENAMADDY	2,264
GLENAMADDY	348
MID GALWAY	1,771
TUAM	23,881
GLENCORRIB GROUP WATER SCHEME	400
GURTEEN GROUP WATER SCHEME	380
LOUGH MASK CREEVAGH GROUP WATER SCHEME	300
ROBEEN GROUP WATER SCHEME	637
LOUGH CARRA GROUP WATER SCHEME	450
CONG WATER SUPPLY SCHEME	765
KILMAINE WATER SUPPLY SCHEME	1,000
LOUGH MASK WATER SUPPLY SCHEME	30,000
SHRULE WATER SUPPLY SCHEME	403

Water Framework Directive Status

As of December 2014, there are 196km of High status surface river channels in hydrometric area 30, located to the west and northwest of Lough Mask including parts of the Cammanagh and Aille Rivers and the Finny River including a number of tributaries flowing into Lough Nafooey. The Water Framework Directive lakes in hydrometric area 30 are classified as follows; Carra (High), Mask (Good), Mask Upper (High), Corrib Upper (Poor), Corrib Lower (Moderate), Maumwee (High), Loughanillaun Maam Cross (Good), Bofin (High), Lettercraffroe (Good), Ross (Poor) and Ballyquirke (Poor). The majority of river water bodies in hydrometric area 30 are classified as at Good status. There are small stretches of river at Moderate status in the west of the hydrometric area and some stretches of channel at Moderate and Poor status in the northeast of the hydrometric area. Large parts of the central and south eastern part of the hydrometric area are underlain by karstified bedrock and are largely devoid of an integrated surface drainage network. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels, particularly of small streams draining into Loughs Mask and Corrib in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There is 1 designated Margaritifera catchment in this hydrometric area, Owenriff. There is an OSPAR requirement for flow data from the Corrib catchment.

Existing Network

There are currently 9 active EPA/LA hydrometric stations in hydrometric area 30, comprising 9 flow rated stations. The flow rating at 8 of these stations are of high to medium quality across all ranges, and poor across all ranges at the other flow rated station. There are 13 active OPW flow rated sites, 9 of which are classified as high or medium quality across all flow ranges, and 4 are classified as medium to poor or unclassified across all flow ranges. The OPW also maintains 8 level only stations including 3 on lakes and 5 on river channels. Therefore, there are a total of 20 high to medium quality flow rated stations and 3 lake level stations in this hydrometric area. In terms of high or medium quality flow rated and lake stations in hydrometric area 30, there are 6.4 per 1,000km², 7.6 per 1,000km of stream channel and 1.7 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is relatively good along the eastern shores of Loughs Corrib and Mask, but less dense on the western side of the lakes and in the eastern parts of the hydrometric area. The large inland discharge at Tuam in this hydrometric area is located close to a flow rate station. The existing EPA/LA station at Claregalway requires upgrading, possibly being moved to a new location and there is an absence of flow data in the vicinity of Ballinrobe. The large abstractions in the hydrometric area are located near flow rated stations. The single Margaritifera catchment in this hydrometric area contains a flow rated station. There are a number of protected river and lakes in this hydrometric area and they are reasonably well covered by existing flow rated stations. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of variable quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 30, 14 are classified as Strategic stations. Of the Strategic stations, 2 are used for EU reporting purposes, and 5 are used to monitor abstractions. Also, 9 stations are classified as Strategic on the basis of their use in the OPW model or for fisheries management. The remaining 16 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
30	5	3	22	**20**	14	16	0

Review Conclusion

General

The existing network in hydrometric area 30 provides an acceptable level of coverage for flow estimation based on existing information and given the extensive karstic drainage in the hydrometric area. It is likely that future hydrometric work in this hydrometric area will have to involve a hydrogeological element in the karstic areas and that the installation of project stations may be advantageous. For OSPAR reporting requirements accurate flow data for the Corrib River and Galway is imperative. The flow rating should be further developed at the existing OPW Wolfe Tone Bridge station or an additional station should be installed. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 30.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
30005 FOXHILL	OPW
30017 CARROWNAGOWER	OPW
30034 CREGAREE	OPW
30037 CLOONCORMICK	OPW
30106 KILMAINE SPRING	EPA/LA

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

A new station may be required on the Robe River.

Hydrometric Area 31 Galway Bay North

Setting

This hydrometric area includes the surface catchment drained by all streams entering tidal water between Nimmo's Pier and Slyne Head, Co. Galway. Hydrometric area 31 has a surface area of 936km². The largest urban centre in hydrometric area 31 is the western part of Galway City. The other main urban centres in this hydrometric area are Bearna and Spiddle. The total population of hydrometric area 31 is approximately 47,288 with a population density of 51 people per km².

Pressures

All known water abstractions in this hydrometric area are from surface water sources according to current information. There are 2 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are no urban waste water discharges located inland from the coast in this hydrometric area and 2 combined sewer overflows. There are no urban waste water treatment plants >10,000PE in this hydrometric area.

ABSTRACTION NAME	VOLUME (M³/DAY)
CARNA/KILKIERAN REGIONAL WATER SUPPLY SCHEME	1,798
SPIDDAL PUBLIC WATER SUPPLY	2,996

Water Framework Directive Status

As of December 2014, there are 334km of High status surface river channels in hydrometric area 31, located throughout the hydrometric area and including parts of the Recess, Owengowla, Gowlabeg, Cashla, and Owenboliska Rivers. The Water Framework Directive lakes in hydrometric area 31 which are currently classified are at the following status; Loughanwillan (Good), Illauntrasna (Good), Loughaunfree (Good), Arderry (Good), Shindilla (High), Derryclare (High), Ballynahinch (High), Anaserd (Good). River waterbody status in hydrometric area 31 is a patchwork of Good and High status water bodies, with small stretches of Moderate status channels in the central and eastern parts of the hydrometric area. There are no river channels in the hydrometric area classified as at Poor or Bad status. Many surface channels in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There are currently 5 active EPA/LA hydrometric stations in hydrometric area 31, comprising 3 lake level stations and 2 flow rated stations. The flow ratings at the 2 flow rated stations are of high or medium quality across all ranges. There is 1 active OPW flow rated site, classified as medium quality at high flows but bad quality at low flows. The OPW also maintains a level only station at Rossaveel Pier. Therefore, there are a total of 2 high to medium quality flow rated stations and 3 lake level stations in this hydrometric area. Currently 20% of hydrometric area 31 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 31, there are 5.3 per 1,000km², 4.3 per 1,000km of stream channel and 1.1 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is reasonable given the coastal nature of the hydrometric area. There are no large inland discharges in this hydrometric area. One of the two large abstractions in the hydrometric area is located near a flow rated station. Nearly all rivers in this hydrometric area are protected and the majority are not well covered by existing flow rated stations. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of variable quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 31, 6 are classified as Strategic stations. Of the Strategic stations, 1 station is used to calibrate the EPA flow duration curve model, 2 are used for the OPW model, 1 is used for EU reporting purposes, and 3 are used to monitor abstractions. The remaining 3 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
9	3	3	3	**5**	6	3	0

Review Conclusion

General

The existing network in hydrometric area 31 provides acceptable coverage for flow estimation relating to abstraction and discharge pressures. However, due to the relatively large number of High status and protected water bodies in the hydrometric area, additional project stations may be required to achieve Water Framework Directive objectives. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 31.

Stations flagged for rating development

A single station in this hydrometric area has been identified as not being fully flow rated to a high quality across the full range of flows. The following station is proposed for full flow rating development if technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
31075 SHANNAGURRAUN	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 32 Erriff-Clew Bay

Setting

This hydrometric area includes the surface catchment drained by the River Erriff and all streams entering tidal water between Slyne Head and Corraun Point, Co. Mayo. Hydrometric area 32 has a surface area of 1,504km². The largest urban centre in hydrometric area 32 is Westport. The other main urban centres in this hydrometric area are Clifden, Newport and Louisburgh. The total population of hydrometric area 32 is approximately 23,747 with a population density of 16 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from surface water sources according to current information. There are also a small number of groundwater and spring abstractions. There are 9 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are 11 urban waste water treatment plants located in the hydrometric area including 5 primary emission points and 2 combined sewer overflows. There are 4 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There is 1 urban waste water treatment plant >10,000PE in this hydrometric area at Westport. This plant has tertiary N&P treatment installed and discharges to estuarine waters.

ABSTRACTION NAME	VOLUME (M³/DAY)
BALLYCROY GROUP WATER SCHEME	500
BURRISHOOLE GROUP WATER SCHEME	250
FAHY/KILMACLASSER GROUP WATER SCHEME	460
KILMEENA GROUP WATER SCHEME	267
CLEW BAY GROUP WATER SCHEME	350
LOUISBURGH WATER SUPPLY SCHEME	358
MULRANNY WATER SUPPLY SCHEME	450
NEWPORT WATER SUPPLY SCHEME	269
WESTPORT WATER SUPPLY SCHEME	2,855

Water Framework Directive Status

As of December 2014, there are 496km of High status surface river channels in hydrometric area 32, located throughout the hydrometric area and including parts of the Altaconey, Newport, Owennabrockagh, Lackaun, Erriff, Bunowen, Carrownisky, Bundorragha, Dawros, Derryehorraun, Streamstown, Keelkyle, Rosleague and Traheen Rivers. The Water Framework Directive lakes in hydrometric area 32 which are currently classified are at the following status; Fadda (High), Enask (High), Nambrackmore Crushatrower (High), Beaghcauneen (Moderate), Aughrusbeg (Bad), Ballynakill (Good), Pollacappul (Good), Kylemore (Good), Tully, (Moderate), Doo (Good), Glencullin (High), Moher (Good), Knappaghbeg (Moderate), Ballin (Moderate), Beltra (Good), and Feeagh (Good). River waterbody status varies across hydrometric area 32 with the largest proportion of river water bodies classified as at Good status, slightly less at High status, less again at Moderate status and a relatively small proportion classified as at Poor status in the northern part of the hydrometric area. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels in the hydrometric area are currently unclassified, especially smaller streams and river along the coast.

Hydrologically Sensitive Protected Areas

There are 3 designated Margaritifera catchments in this hydrometric area; Dawros, Bundorragha and Newport. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There are currently 8 active EPA/LA hydrometric stations in hydrometric area 32, comprising 1 lake level station and 7 flow rated stations. The flow rating at 6 of these stations are of high or medium quality across all ranges, high to poor quality across all flow ranges at 1 station. There are 3 active OPW flow rated sites, all 3 of which are classified as poor quality across all flow ranges. Therefore, there are a total of 6 high to medium quality flow rated stations and 1 lake level station in this hydrometric area. Currently 35% of hydrometric area 32 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in

hydrometric area 32, there are 4.7 per 1,000km², 2.8 per 1,000km of stream channel and 2.9 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is relatively good. There are no large inland discharges in this hydrometric area. The large abstractions in the hydrometric area are generally not located near flow rated stations. There is a deficit of flow information for the Bunowen River, which has water quality issues. There are flow rated stations located in two of the three Margaritifera catchments in this hydrometric area. There are a significant number of protected rivers in this hydrometric area and flow rated stations are somewhat lacking for many of these rivers. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of good quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 32, 2 are classified as Strategic stations. Of the Strategic stations, 2 stations are used to calibrate the EPA flow duration curve model, and 1 is used to monitor an abstraction. One of these stations is also part of the HydroDetect network. The remaining 9 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
11	0	1	10	**7**	2	9	0

Review Conclusion

General

The existing network in hydrometric area 32 provides reasonable coverage for flow estimation based on existing information. There are a number of locations where stations could be installed or reactivated depending on future Water Framework Directive requirements such as Louisburgh on the Bunowen River and on the Carrownisky River. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 32.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
32070 LOUGH FEEAGH	EPA/LA
32060 ASLEAGH BRIDGE	OPW
32014 OWENMORE BRIDGE	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

Installation of a project station should be investigated in the Margaritifera catchment on the Dawros River.

Hydrometric Area 33 Blacksod-Broadhaven

Setting

This hydrometric area includes the surface catchment drained by all streams entering tidal water in Blacksod and Broadhaven Bays and between Corraun Point and Benwee Head, Co. Mayo. Hydrometric area 33 has a surface area of 1,302km². The largest urban centre in hydrometric area 33 is Belmullet. The other main urban centres in this hydrometric area are Bangor and Keel. The total population of hydrometric area 33 is approximately 12,549 with a population density of 10 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from surface water and spring sources according to current information. There are also a number of ground water abstractions in the hydrometric area. There are 2 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are 6 urban waste water treatment plants located in the hydrometric area and 3 combined sewer overflows. There are 4 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are no urban waste water treatment plants >10,000PE in this hydrometric area.

ABSTRACTION NAME	VOLUME (M³/DAY)
ACHILL REGIONAL WATER SUPPLY SCHEME	1,730
ERRIS REGIONAL WATER SUPPLY SCHEME	3,160

Water Framework Directive Status

As of December 2014, there are 478km of High status surface river channels in hydrometric area 33, located in the Carrowmore, Glenamoy, Ballinglen and Owenduff catchments. The Water Framework Directive lakes in hydrometric area 33 which are currently classified are at the following status; Acorrymore (Moderate), Keel (Good), Cross (Moderate), Carrowmore (Moderate). River waterbody status varies across hydrometric area 33 with similar proportions of channel classified as Good and High across the hydrometric area. There are only a small number of river water bodies classified as at Moderate status, on the Belmullet peninsula and one river classified at Poor status, located north of Gweesalia. There are no river channels in the hydrometric area classified as at Bad status. Many surface channels in the hydrometric area are currently unclassified including most of the river water bodies on Achill Island, the Belmullet peninsula and numerous smaller coastal rivers.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There are currently 6 active EPA/LA hydrometric stations in hydrometric area 33, comprising 1 lake level station and 5 flow rated stations. The flow rating at all 5 of these stations are of high or medium quality across all ranges. The OPW has no stations in hydrometric area 33. Therefore, there are a total of 5 high to medium quality flow rated stations and 1 lake level station in this hydrometric area. Currently 17% of hydrometric area 33 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 33, there are 4.6 per 1,000km², 3.2 per 1,000km of stream channel and 4.8 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is reasonable given the coastal nature of this hydrometric area, with the exception of the Owenmore River. There are no large inland discharges in this hydrometric area. The large abstraction at Carrowmore Lake has a lake level station installed. There are a significant number of protected rivers around the coastal fringes of this hydrometric area which are not well covered by existing flow rated stations. There are no stations located in the catchment of the Carrowmore River, which is one of the largest ungauged catchments in the country. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of variable quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 33, 5 are classified as Strategic stations. Of the Strategic stations, 1 station is used to calibrate the EPA

flow duration curve model, 2 are used for the OPW model, 2 are used for EU reporting purposes, and 2 are used to monitor abstractions. One station is also part of the HydroDetect network. The remaining 2 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
7	1	1	5	**6**	5	2	0

Review Conclusion

General

The existing network in hydrometric area 33 provides reasonable coverage for flow estimation based on existing information. It is possible that flow rated stations would be beneficial if installed in at least one location in the Carrowmore catchment. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 33.

Stations flagged for rating development

There are no stations in the hydrometric area that require flow rating development. The existing station at Carrowmore Lake should be upgraded.

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

It would be beneficial for model development to install a station on the Owenmore River.

Hydrometric Area 34 Moy and Killala Bay

Setting

This hydrometric area includes the surface catchment drained by the River Moy and all streams entering tidal water in Killala Bay between Benwee Head and Lenadoon Point, Co. Sligo. Hydrometric area 34 has a surface area of 2,345km². The largest urban centre in hydrometric area 34 is Castlebar. The other main urban centres in this hydrometric area are Ballina, Tubbercurry, Kiltimagh, Swinford, Foxford, Enniscrone and Crossmolina. The total population of hydrometric area 34 is approximately 77,262 with a population density of 33 people per km².

Pressures

There are a similar number of known water abstractions in this hydrometric area from groundwater, spring and surface water sources spread throughout the hydrometric area according to current information. There are 15 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are 22 urban waste water treatment plants and 20 combined sewer overflows in this hydrometric area. There are 14 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 2 urban waste water treatment plants >10,000PE in this hydrometric area at Castlebar and Ballina. The Castlebar plant has tertiary N&P treatment installed and the Ballina Plant has tertiary P treatment installed. The Ballina plant discharges to estuarine waters.

ABSTRACTION NAME	VOLUME (M³/DAY)
ATTYMASS GROUP WATER SCHEME	340
KILLASSER GROUP WATER SCHEME	760
PARKE GROUP WATER SCHEME	391
SHRAHEEN/FOXFORD GROUP WATER SCHEME	300
TOREEN/AGHAMORE GROUP WATER SCHEME	450
CLOONMORE/ROOSKEY	450
CALLOW LAKE GROUP WATER SCHEME	1,400
PBKS GROUP WATER SCHEME	500
BALLINA (WHERREW)	2,500
BALLINA (LISGLENNON)	9,000
BONNICONLON WATER SUPPLY SCHEME	270
FOXFORD WATER SUPPLY SCHEME	566
KILTIMAGH WATER SUPPLY SCHEME	736
SWINFORD WATER SUPPLY SCHEME	793
LOUGH TALT REGIONAL WATER SUPPLY	7,706

Water Framework Directive Status

As of December 2014, there are 532km of High status surface river channels in hydrometric area 34, located in the central and eastern parts of the hydrometric area and including parts of the Pollagh, Cloonlavis, Gweestion, Crumlin, Owengarve, Yellow, Eighnagh and Genree Rivers, and parts of the River Moy headwaters near Cloonacool in the Ox Mountains. River waterbody status varies across hydrometric area 34 with the majority of river water bodies in the hydrometric area at Good status and with smaller proportions at Moderate and Poor status, with these located mainly in the south and east of the hydrometric area. There are a small number of river channels classified as at Bad in the hydrometric area, located around Tubbercurry. The Water Framework Directive lakes in hydrometric area 34 which are currently classified as at the following status; Talt (Good), Washpool (High), Castlebar (Poor), Cullin (Poor), Levally (Good) and Conn (Good). Some surface channels in the hydrometric area are currently unclassified, particularly in the western and estuarine parts of the hydrometric area.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There is an OSPAR requirement for flow data from the Moy catchment.

Existing Network

There are currently 8 active EPA/LA hydrometric stations in hydrometric area 34, comprising 8 flow rated stations. The flow rating at 7 of these stations are of high or medium quality across all ranges, and

medium to poor at 1 station. There are 11 active OPW flow rated sites, 5 of which are classified as high or medium quality across all flow ranges, and 6 are classified as medium to poor across all flow ranges. The OPW also maintains 2 level only stations on lakes and 1 other level only station on a river channel. Therefore, there are a total of 11 high to medium quality flow rated stations and 2 lake level stations in this hydrometric area. Currently 85% of hydrometric area 34 is upstream of high quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 34, there are 5.5 per 1,000km², 4.1 per 1,000km of stream channel and 1.7 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is good. The large inland discharge at Castlebar in this hydrometric area is located near a flow rated station. The large abstractions in the hydrometric area are generally not located near flow rated stations. There are a significant number of protected rivers in this hydrometric area and the majority of them are located upstream of flow rated stations. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of variable quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 34, 16 are classified as Strategic stations. Of the Strategic stations, 1 is used for the EPA model, 1 is used for EU reporting purposes, and 7 are used to monitor abstractions. One station is also part of the HydroDetect network. A total of 6 stations are classified as Strategic on the basis of their use for modelling by the OPW. The remaining 8 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
25	3	2	20	**13**	16	9	0

Review Conclusion

General

The existing network in hydrometric area 34 provides reasonably comprehensive coverage for flow estimation based on existing information. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 34.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
34049 INISHCRONE	EPA/LA
34021 SWINFORD	EPA/LA
34004 BALLYLAHAN	OPW
34005 SCARROWNAGEERAGH	OPW
34007 BALLYCARROON	OPW
34010 CLOONACANNANA	OPW
34013 BANADA	OPW
34014 MILL BRIDGE	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 35 Sligo Bay and Drowse

Setting

This hydrometric area includes the surface catchment drained by the River Drowes and all streams entering tidal water in Sligo Bay and between Lenadoon Point and Aughrus Point, Co. Donegal. Hydrometric area 35 has a surface area of 1,866km². The largest urban centre in hydrometric area 35 is Sligo. The other main urban centres in this hydrometric area are Ballymote, Collooney, Ballysadare and Manorhamilton. The total population of hydrometric area 35 is approximately 59,184 with a population density of 32 people per km². A small part of this hydrometric area, 109km² is located within Northern Ireland. The statistics presented here refers only to the part of hydrometric area 35 located within the Republic.

Pressures

The majority of known water abstractions in this hydrometric area are from spring sources, with a smaller number from surface water sources and a minority from groundwater sources according to current information. There are 11 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 31 urban waste water treatment plants and 15 combined sewer overflows. There are 12 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are 2 urban waste water treatment plants >10,000PE in this hydrometric area at Sligo and Bundoran. The Sligo plant has tertiary P removal and the Bundoran plant has preliminary treatment installed. Both plants discharge to estuarine or marine waters.

ABSTRACTION NAME	VOLUME (M³/DAY)
BUNDORAN URBAN	2,512
NORTH LEITRIM REGIONAL WATER SUPPLY SCHEME	3,700
KINLOUGH & TULLAGHAN	1,021
CASTLEBALDWIN GROUP WATER SCHEME	378
GEEVAGH/HIGHWOOD GROUP WATER SCHEME	760
FOXES DEN PUBLIC WATER SUPPLY	4,892
LOUGH EASKEY REGIONAL WATER SUPPLY	2,557
NORTH SLIGO REGIONAL WATER SUPPLY	1,918
KILSELLAGH PUBLIC WATER SUPPLY	4,872
RIVERSTOWN PUBLIC WATER SUPPLY	310
LOUGH GILL (CARNS HILL) PUBLIC WATER SUPPLY	5,711

Water Framework Directive Status

As of December 2014, there are 474km of high status surface river channels in hydrometric area 35, located throughout the catchment and including parts of the Finned, Easkey, Unshin, Killanummery, Shanvanus, Bonet, Glenaniff and Duff Rivers. River waterbody status varies across hydrometric area 35 with a patchwork of High, Good and Moderate status across the hydrometric area. There are no river channels in the hydrometric area classified as at Bad status and only a short length of channel classified as at Poor status west of Bunnanaddan. Many surface channels across the hydrometric area are currently unclassified. The Water Framework Directive lakes in hydrometric area 35 which are currently classified are at the following status; Easkey (Good), Templehouse (Bad), Arrow (Good), Belhavel (Moderate), Gill (Moderate), Glencar (Moderate), Glenade (Moderate), Melvin (Moderate) and Lattone (Bad).

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There is an OSPAR requirement for flow data from the Garravogue catchment.

Existing Network

There are currently 9 active EPA/LA hydrometric stations in hydrometric area 35, comprising 1 lake level station and 8 flow rated stations. The flow rating at all 8 of these stations are of high or medium quality across all ranges. There are 7 active OPW flow rated sites, 4 of which are classified as high or medium quality across all flow ranges, and 3 of which are classified as having a poor rating at either high or low flows. The OPW also maintains 2 level only stations on lakes and 2 other level only sites on river channels in hydrometric area 35. Therefore, there are a total of 12 high to medium

quality flow rated stations and 3 lake level stations in this hydrometric area. Currently 68% of hydrometric area 35 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 35, there are 8.0 per 1,000km², 6.9 per 1,000km of stream channel and 2.5 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is reasonable. There are no large inland discharges in this hydrometric area. The large abstractions in the hydrometric area are generally not located near flow rated stations apart from lake abstractions which all have lake level stations installed. There are a significant number of protected rivers in the central and northern coastal parts of this hydrometric area and flow rated stations are lacking for many of these rivers. There are no flow rated stations on rivers in the western part of the hydrometric area, or on the Drumcliff or Grange Rivers. There is no flow data for the Uinshin River south of Ballysadare. There are 4 stations in the river Drowes catchment installed for a project that has now been completed. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of variable quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 35, 11 are classified as Strategic stations. Of the Strategic stations, 2 are used for EU reporting purposes, 7 are used for the OPW model, and 5 are used to monitor abstractions. Two of these stations are also part of the HydroDetect network. Four stations in the River Drowes catchment are classified as Project stations. The remaining 6 sites are classified as Operational stations.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
21	3	3	15	**15**	11	6	4

Review Conclusion

General

The existing network in hydrometric area 35 provides reasonable coverage for flow estimation based on existing information. A number of river catchments within hydrometric area 35 may benefit from flow rated project stations for characterisation purposes including the River Easkey, Drumcliff River, and the Duff River. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 35.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
35002 BILLA BRIDGE	OPW
35011 DROMAHAIR	OPW
35028 NEW BRIDGE (MANORHAMILTON)	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area. During the next five years, the potential for installation of project stations on the Easkey, Drumcliff, Uinshin and Grange rivers should be investigated.

Hydrometric Area 36 Erne

Setting

This hydrometric area includes the surface catchment drained by the River Erne and all streams entering tidal water between Aughrus Point and Kildoney Point, Co. Donegal. Hydrometric area 36 is a cross border hydrometric area with a surface area of 4,415km², 2,512km² of which is located within the Republic. The largest urban centre in hydrometric area 36 is Cavan Town. The other main urban centres in this hydrometric area are Bundoran, Ballyshannon, Clones, Ballybay, Cootehill and Belturbet. The total population of hydrometric area 36 (in the Republic) is approximately 85,992 with a population density of 34 people per km². The hydrometric area is located in the Republic in three separate locations, one around Ballyshannon, one near Blacklion and the southern part occupying much of Counties Cavan and Monaghan. The statistics included here refer to the parts of hydrometric area 36 located within the Republic only.

Pressures

The majority of known water abstractions in this hydrometric area are from surface water sources according to current information. There are also a number of spring and groundwater sources in the south western part of the hydrometric area. There are 22 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 37 urban waste water treatment plants and 12 combined sewer overflows. There are 17 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There is 1 urban waste water treatment plant >10,000PE in this hydrometric area at Cavan Town. This plant has tertiary P treatment installed.

ABSTRACTION NAME	VOLUME (M³/DAY)
ANNAGH GROUP WATER SCHEME	1,000
BARRAGHY GROUP WATER SCHEME	500
CROSSDONEY GROUP WATER SCHEME	500
CROSSERLOUGH GROUP WATER SCHEME	1,334
DERNAKESH GROUP WATER SCHEME	287
DHUISH GROUP WATER SCHEME	573
ERNE VALLEY GROUP WATER SCHEME	3,000
KILL GROUP WATER SCHEME	252
MILLTOWN GROUP WATER SCHEME	250
MOUNTAINLODGE GROUP WATER SCHEME	1,029
BALLYSHANNON	1,603
ESB SALMON HATCHERY, BALLYSHANNON	8,808
GOWNA	2,000
AUGHNASHALVEY GROUP WATER SCHEME	730
CORDUFF-CORRACHARRA GROUP WATER SCHEME	526
DOOHAMLET GROUP WATER SCHEME	524
DRUMGOLE GROUP WATER SCHEME	679
MAGHERACLOONE GROUP WATER SCHEME	1,250
STRANOODAN GROUP WATER SCHEME	1,938
LEITRIM REGIONAL WATER SUPPLY SCHEME	6,811
CLONES	603
CLONES	650

Water Framework Directive Status

As of December 2014, there are 86km of High status surface river channels in hydrometric area 36, located in the southwest of the hydrometric area and including parts of the Woodford, Swanlibar and Aghacashlaun Rivers. River waterbody status in the northern part of hydrometric area 36 near

Ballyshannon is classified as Good and Moderate status and the river water bodies are classified as Good status near Blacklion. In the southern part of the hydrometric area, the largest proportion of river water bodies are classified as at Moderate status with roughly equal proportions classified as at Good and Poor status across the hydrometric area. There are no river channels in the hydrometric area classified as at Bad status. The Water Framework Directive lakes in hydrometric area 36 which are currently classified are at the following status; Eglish (Bad), White Rockcorry (Bad), Inner (Bad), Dromlona (Poor), Dromore (Poor), Avaghon (Moderate), Bawn MN (Bad), Tacker (Poor), Sillan (Poor), Gorman (Good), Unshin (Moderate), Golagh (Good), Tullynassidagh (Good), Vearty (Good), Macnean (Poor), Macnean Upper (Moderate), Erne Upper (Poor), Killcoran (Moderate), Corconnelly (Moderate), Mushlin (Bad), Gowna South (Poor), Gowna North (Poor), Garty (Bad), Scur (Poor), Drumlaheen (Poor), Garadice (Poor), Bunerky (Moderate), Derrycassan West (Poor), Glasshouse (Poor), Cullinaghan (Poor), Bawn CN (Moderate), Mill (Moderate), Oughter South (Poor), Atrain (Moderate), Farnhan (Bad), Corglass (Bad), Derrybrick (Poor), Ardan (Moderate), Annagh (Moderate). A relatively small number of surface channels in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There is an OSPAR requirement for flow data from the Erne catchment.

Existing Network

There are currently 8 active EPA/LA hydrometric stations in hydrometric area 36, comprising 3 lake level stations, 4 flow rated stations and 1 level only station on a river. The flow rating at all 4 of the rated stations are of high or medium quality across all ranges. There are 18 active OPW flow rated sites, 8 of which are classified as high or medium quality across all flow ranges, and 10 are classified as having poor quality ratings at some flow level. The OPW also maintains level only stations on 3 lakes and 1 on a river channel. The ESB also maintains 1 flow rated station that is classified as medium quality across all flow ranges in this hydrometric area. Therefore, there are a total of 13 high to medium quality flow rated stations and 6 lake level stations in this hydrometric area. Currently 100% of hydrometric area 36 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 36, there are 7.6 per 1,000km², 6.1 per 1,000km of stream channel and 2.2per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is good. The single large inland discharge at Cavan Town in this hydrometric area is located near a flow rated station. The large abstractions in the hydrometric area are generally not located near flow rated stations. There are a number of protected rivers in this hydrometric area and they are reasonably well covered by existing flow rated stations. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of variable quality in these areas. The HydroTool cannot be used in the main Erne catchment near Ballyshannon as flow is regulated at the Cathleen's falls and Cliff ESB dams.

Station Classification

Of the active hydrometric stations in hydrometric area 36, 14 are classified as Strategic stations. Of the Strategic stations, 5 stations are used to calibrate the EPA flow duration curve model, and 10 are used for the OPW model, 2 are used for EU reporting purposes, and 5 are used to monitor abstractions. One of these stations is also part of the HydroDetect network. The remaining 26 sites are classified as Operational stations with one classified as a project station.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
42	13	6	23	**19**	14	27	1

Review Conclusion

General

The existing network in hydrometric area 36 provides reasonably comprehensive coverage for flow estimation based on existing information. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 36.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
36011 BELLAHILLAN	OPW
36012 SALLAGHAN	OPW
36013 DERRESKIT	OPW
36018 ASHFIELD	OPW
36022 AGHACASHLAUN	OPW
36027 BELLAHEADY	OPW
36029 TOMKINROAD	OPW
36037 URNEY BRIDGE	OPW
36071 GOWLY	OPW
36171 FOALIES BRIDGE	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 37 Donegal Bay North

Setting

This hydrometric area includes the surface catchment drained by all streams entering tidal water between Kildoney Point and Rossan Point, Co. Donegal. Hydrometric area 37 has a surface area of 804km². The largest urban centre in hydrometric area 37 is Donegal Town. The other main urban centre in this hydrometric area is Killybegs. The total population of hydrometric area 37 is approximately 18,646 with a population density of 23 people per km².

Pressures

The vast majority of known water abstractions in this hydrometric area are from surface water sources according to current information. There are 4 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 14 urban waste water treatment plants and a smaller number of storm overflow emission points. There are 4 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There is 1 urban waste water treatment plant >10,000PE in this hydrometric area at Killybegs. This plant has no treatment installed and discharges to marine waters.

ABSTRACTION NAME	VOLUME (M³/DAY)
KILLYBEGS	3,352
FROSSES-INVER	895
DONEGAL, RIVER ESKE	3,073
PRIVATE SUPPLY	552

Water Framework Directive Status

As of December 2014, there are 309km of High status surface river channels in hydrometric area 37, located across the hydrometric area and including parts of the Bridgetown, Clogher, Lowerymore, Corabber, Eany Beg, Bunlacky, Oily and Fintragh Rivers. River waterbody status varies across hydrometric area 37 with a patchwork of approximately equal proportions of river water bodies classified as at High, Good, Moderate and Poor status. There are no river channels in the hydrometric area classified as at Bad status. The Water Framework Directive lake in hydrometric area 37 is currently classified at the flowing status; Lough Eske (Good). Many surface channels draining into the eastern part of Donegal Bay in the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There is 1 designated Margaritifera catchment in this hydrometric area, Eske. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There are currently 3 active EPA/LA hydrometric stations in hydrometric area 37, comprising 3 flow rated stations. The flow rating at all 3 of these stations are of high to medium quality across all ranges. There are no OPW stations in this hydrometric area. Therefore, there are a total of 3 high to medium quality flow rated stations in this hydrometric area. Currently 12% of hydrometric area 37 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 37, there are 3.7 per 1,000km², 1.7 per 1,000km of stream channel and 1.6 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is relatively poor. There are no large inland discharges in this hydrometric area. The large abstractions in the hydrometric area are not located near flow rated stations. There is a flow rated station located in the Margaritifera catchment in this hydrometric area. There are a large number of protected rivers in this hydrometric area and they are not well covered by existing flow rated stations. There is currently no flow data available for the Eske River near Donegal Town. There is also a poor geographical spread of stations in the hydrometric area, and additional stations would be beneficial on the Glen (Carrick), Eany (Water) and Ballintra Rivers. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of good quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 37, all 4 are classified as Strategic stations, 1 is used for EU reporting purposes, and 3 are used to monitor abstractions. One station is classified as strategically important for tidal monitoring.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
4	1	0	3	**3**	4	0	0

Review Conclusion

General

The existing network in hydrometric area 37 provides an acceptable to possibly sub-optimal level of coverage for flow estimation based on existing information. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 37.

Stations flagged for rating development

All relevant stations in this hydrometric area have been identified as fully flow rated to a high quality across the full range of flows.

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area but the feasibility of establishing project stations would be beneficial on the Glen (Carrick), Eany (Water) and Ballintra Rivers.

Hydrometric Area 38 Gweebarra-Sheephaven

Setting

This hydrometric area includes the surface catchment drained by all streams entering tidal water in Gweebarra River, Sheephaven Bay and between Rossan Point and Fanad Head, Co. Donegal. Hydrometric area 38 has a surface area of 1,450km². The largest urban centre in hydrometric area 38 is Falcarragh. The other main urban centres in this hydrometric area are Glenties, Dunglow, Dunfanaghy, Creeslough and Carrowkeel. The total population of hydrometric area 38 is approximately 28,130 with a population density of 19 people per km².

Pressures

All known water abstractions in this hydrometric area are from surface water or spring sources except a single groundwater source in northern Fanad according to current information. There are 16 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 8 urban waste water treatment plants and a smaller number of storm overflow emission points. There are 6 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are no urban waste water treatment plants >10,000PE in this hydrometric area.

ABSTRACTION NAME	VOLUME (M³/DAY)
CARRIGART-DOWNINGS	288
CARRIGART-DOWNINGS	432
GORTAHORK-FALCARRAGH	1,735
ROSSES REGIONAL WATER SUPPLY SCHEME	840
ROSSES REGIONAL WATER SUPPLY SCHEME	3,960
LETTERMACAWARD	1,226
GLENTIE - ARDARA	1,560
CRESSLOUGH	359
CRESSLOUGH	1,438
LETTERKENNY - GOLDRUM	2,400
LETTERKENNY - GOLDRUM	4,080
LETTERKENNY - GOLDRUM	2,273
PRIVATE SUPPLY	6,048
PRIVATE SUPPLY	34,560
PRIVATE SUPPLY	3,884
PRIVATE SUPPLY	288

Water Framework Directive Status

As of December 2014, there are 67km of high status surface river channels in hydrometric area 38, located in the northern part of the hydrometric area and including parts of the Lough Agher, Owenveagh and Lackagh Rivers. The largest proportion of classified river water bodies are classified as at Good status, with less but approximately equal proportions at Moderate and Poor status. Part of the Bracky River in the south of the hydrometric area is currently classified as at Bad status. The Water Framework Directive lakes in hydrometric area 38 are currently classified at the following status; Kiltooris (High), Nasnanida (Good), Dunglow (Good), Anure (Good), Keel Crotty (Good), Barra (High), Veagh (Good), Glen DL (Good), an tSeisigh (Good), Greenan (High), Salt (High), Keel Kilmacranan (Good), Naglea (Moderate), Kindrum (Moderate), Kinny (Good) and Shannagh (Moderate). There is a relatively high proportion of unclassified surface water bodies in the hydrometric area, particularly in the northern and western parts of the hydrometric area.

Hydrologically Sensitive Protected Areas

There are 3 designated Margaritifera catchments in this hydrometric area; Owenea, Clady and Owencarrow. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There are currently 3 active EPA/LA hydrometric stations in hydrometric area 38, comprising 3 flow rated stations. The flow rating at 3 of these stations are of high quality across all ranges. There is 1 active OPW flow rated site which is classified as high quality across all flow ranges. There is 1 active ESB flow rated site which is classified as medium quality across all flow ranges. Therefore, there are a total of 5 high to medium quality flow rated stations in this

hydrometric area. Currently 25% of hydrometric area 38 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 38, there are 3.4 per 1,000km², 2.3 per 1,000km of stream channel and 1.8 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution of stations in this hydrometric area is good but the density of stations in this hydrometric area is poor. There are no large inland discharges in this hydrometric area. The large abstractions in the hydrometric area are not located near flow rated stations. There is a particular absence of flow data for the Gweedore and Big (Burn) Rivers, both of which have numerous surface water abstractions. There is a flow rated station located in two of the three Margaritifera catchments in this hydrometric area. There are a large number of protected rivers in this hydrometric area and they are not well covered by existing flow rated stations. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of good quality in these areas. The HydroTool cannot be used in the Clady catchment as flow is regulated at the Clady dam.

Station Classification

Of the active hydrometric stations in hydrometric area 38, 5 are classified as Strategic stations. Of the Strategic stations, 1 station is used to calibrate the EPA flow duration curve model, 1 is used in the OPW model, 1 is used for EU reporting purposes, and 3 are used to monitor abstractions. One of these stations is also part of the HydroDetect network. The remaining site is classified as an Operational station.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
6	1	0	5	**5**	5	1	0

Review Conclusion

General

The existing network in hydrometric area 38 provides acceptable cover on a strategic level but many smaller catchments in the hydrometric area are unmonitored. Additional operational or project stations may be required on an ongoing basis in hydrometric area 38. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 38.

Stations flagged for rating development

All relevant stations in this hydrometric area have been identified as fully flow rated to a high quality across the full range of flows.

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area.

Hydrometric Area 39 Lough Swilly

Setting

This hydrometric area includes the surface catchment drained by all streams entering tidal water in Lough Swilly between Fanad Head and Dunaff Head, Co. Donegal. Hydrometric area 39 has a surface area of 965km². The largest urban centre in hydrometric area 39 is Letterkenny. The other main urban centre in this hydrometric area is Buncrana. The total population of hydrometric area 39 is approximately 55,455 with a population density of 57 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from surface water sources with some large groundwater abstractions in the south of the hydrometric area according to current information. There are 5 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 9 urban waste water treatment plants and 7 combined sewer overflows. There are 9 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There is 1 urban waste water treatment plant >10,000PE in this hydrometric area at Letterkenny. This plant has secondary treatment installed and discharges to estuarine waters.

ABSTRACTION NAME	VOLUME (M³/DAY)
BUNCRANA	1,025
FULLERTON POLLAN DAM	7,592
MILFORD	2,206
RATHMULLAN	301
PRIVATE SUPPLY	7,200

Water Framework Directive Status

As of December 2014, there are 151km of High status surface river channels in hydrometric area 39, including parts of the Leannan and Mill Rivers. The Water Framework Directive lakes in hydrometric area 39 which are currently classified are at the following status; Gartan (Good), Akibbon (Moderate) and Fern (Poor). River waterbody status varies across hydrometric area 39 with broadly equal proportions of river water bodies classified as at Good, Moderate and Poor status across the hydrometric area. The surface water body Maggy's Burn at the southern end of the Fanad peninsula is classified as at Bad status. Many surface channels in the central and northern parts of the hydrometric area are currently unclassified.

Hydrologically Sensitive Protected Areas

There is 1 large designated Margaritifera catchment in this hydrometric area, Leannan. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There are currently 2 active EPA/LA hydrometric stations in hydrometric area 39, comprising 2 flow rated stations. The flow rating at both of these stations is of high or medium quality across all ranges. There are 4 active OPW flow rated sites, 1 of which is classified as high quality across all flow ranges, and 3 which are classified as high to poor quality across all flow ranges. The OPW also maintains 1 level only station on a tidal river channel. Therefore, there are a total of 3 high to medium quality flow rated stations in this hydrometric area. Currently 29% of hydrometric area 39 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 39, there are 3.1 per 1,000km², 2.0 per 1,000km of stream channel and 0.5 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is low but reasonable. There are no large inland discharges in this hydrometric area. The large abstractions in the hydrometric area are generally not located near flow rated stations. There are no flow rated stations located in the Margaritifera catchment in this hydrometric area. There are a large number of protected rivers in this hydrometric area and they are reasonably, but not comprehensively covered by existing flow rated stations. There is also currently a deficit of flow data for the Swilly at Letterkenny. HydroTool accuracy has only been assessed in parts of the hydrometric area and has been found to be of variable quality in these areas.

Station Classification

Of the active hydrometric stations in hydrometric area 39, 6 are classified as Strategic stations. Of the

Strategic stations, 3 stations are used to calibrate the OPW model, 2 are used for EU reporting purposes, and 2 are used to monitor abstractions. One of these stations is also part of the HydroDetect network. The remaining site is classified as an Operational station.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
7	1	0	6	**3**	6	1	0

Review Conclusion

General

The existing network in hydrometric area 39 provides sub-optimal but potentially acceptable coverage for flow estimation based on existing information. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 39.

Stations flagged for rating development

A number of stations in this hydrometric area have been identified as not being fully flow rated to a high quality across the full range of flows. The following stations are proposed for full flow rating development where technically feasible:

STATION CODE & NAME	ORGANISATION RESPONSIBLE
39001 NEW MILLS	OPW
39003 TULLYARVAN	OPW
39008 GARTAN BRIDGE	OPW

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area. The feasibility of installing a project station on the Swilly at Letterkenny should be investigated.

Hydrometric Area 40 Donegal-Moville

Setting

This hydrometric area includes the surface catchment drained by the River Donagh and all streams entering tidal water between Dunaff Head and Culmore Point, Co. Derry. Hydrometric area 40 has a surface area of 507km². The largest urban centre in hydrometric area 40 is Carndonagh. The other main urban centre in this hydrometric area is Moville. The total population of hydrometric area 40 is approximately 18,338 with a population density of 36 people per km².

Pressures

The majority of known water abstractions in this hydrometric area are from groundwater sources according to current information. There are 4 known public and private surface water and spring abstractions >250³/day in this hydrometric area.

There are a number of urban waste water discharges located in the hydrometric area including 11 urban waste water treatment plants and 1 combined sewer overflow. There are 4 licenced urban waste water treatment plants (>500PE) in this hydrometric area. There are no urban waste water treatment plants >10,000PE in this hydrometric area.

Water Framework Directive Status

As of December 2014, there are 21km of High status surface river channels in hydrometric area 40, including the Ballymagaraghy and Loughnastachan Rivers. The single Water Framework Directive lake in hydrometric area 40 that has been classified, Fad Meendoran, as at High status. River waterbody status varies throughout hydrometric area 40 and comprises a patchwork of Good and Poor status river water bodies across the hydrometric area with many smaller coastal rivers currently unclassified. The Bredagh River is currently classified as at Bad status.

ABSTRACTION NAME	VOLUME (M³/DAY)
INISHOWEN EAST	362
INISHOWEN EAST	1,446
INISHOWEN WEST	2,205
GREENCASTLE	464

Hydrologically Sensitive Protected Areas

There are no designated Margaritifera catchments in this hydrometric area. There are no OSPAR related flow data requirements in this hydrometric area.

Existing Network

There is currently 1 active EPA/LA hydrometric station in hydrometric area 40, which is a flow rated station. The flow rating at this station is of high to medium quality across all ranges. There is 1 OPW level only station, located in a tidal position in this hydrometric area. Therefore, there are a total of 1 high to medium quality flow rated station in this hydrometric area. Currently 1% of hydrometric area 40 is upstream of high or medium quality flow rated gauges. In terms of high quality flow rated and lake stations in hydrometric area 40, there are 2.0 per 1,000km², 1.4 per 1,000km of stream channel and 0.5 per 10,000 persons. Existing or foreseeable drivers for data collection have been identified at all existing stations in this hydrometric area.

Station Coverage

The distribution and density of stations in this hydrometric area is low. There are no large inland discharges in this hydrometric area. The large abstractions in the hydrometric area are generally not located near flow rated stations. There are a number of protected rivers in this hydrometric area and they are not comprehensively covered by existing flow rated stations. HydroTool accuracy has not been assessed in this hydrometric area.

Station Classification

Of the active hydrometric stations in hydrometric area 40, 2 are classified as Strategic stations. One is used to monitor an abstraction and the other for tidal monitoring. The remaining site is classified as an Operational station.

TOTAL NUMBER OF STATIONS	STATION DATA RECORD TYPE			TOTAL FLOW-RATED STATIONS WITH A GOOD FLOW-RATING, AND LAKE LEVEL STATIONS	NATIONAL CLASSIFICATION		
	WATER-LEVEL ONLY STATIONS (RIVER OR TIDAL)	WATER LEVEL ONLY STATIONS (LAKE)	FLOW-RATED STATIONS		NATIONALLY STRATEGIC STATIONS	OPERATIONAL STATIONS	PROJECT STATIONS
3	2	0	1	**1**	2	1	0

Review Conclusion

General

The existing network in hydrometric area 40 provides sparse but potentially acceptable coverage for flow estimation based on existing information. The requirement for hydrometric data in specific parts of the hydrometric area should be reviewed upon completion of Water Framework Directive classification work and abstraction assessment in hydrometric area 40.

Stations flagged for rating development

All relevant stations in this hydrometric area have been identified as fully flow rated to a high quality across the full range of flows.

Stations to be closed

There are no proposed station closures in this hydrometric area.

New stations required

There are no immediate requirements for new stations in this hydrometric area. A project station should be installed, at least temporarily on the Donagh River near Carndonagh to provide flow data for this region.

Appendix C: Stations where flow rating development is to be investigated

HYDROMETRIC AREA	STATION CODE & NAME	ORGANISATION RESPONSIBLE
FOYLE (01)	01041 SANDY MILLS	OPW
	01043 BALLYBOFEY	OPW
LOUGH NEAGH AND LOWER BANN (03)	03055 GLASLOUGH	OPW
	03057 EMYVALE WEIR	EPA/LA
NEWRY, FANE, GLYDE AND DEE (06)	06025 BURLEY	OPW
	06011 MOYLES MILL	OPW
	06026 ACLINT	OPW
BOYNE (07)	07006 FYANSTOWN	OPW
	07011 O'DALY'S BRIDGE	OPW
	07024 CLONYMEATH	EPA/LA
NANNY-DELVIN (08)	08008 BROADMEADOW	OPW
	08020 ABBEYLAND (DULEEK)	OPW
SLANEY AND WEXFORD HARBOUR (12)	12013 RATHVILLY	EPA/LA
	12016 DUNANORE	EPA/LA
	12036 MANGAN	EPA/LA
	12039 PALLIS NEW	EPA/LA
	12001 SCARAWALSH	OPW
	12005 TULLOW TOWN BRIDGE U/S	OPW

HYDROMETRIC AREA	STATION CODE & NAME	ORGANISATION RESPONSIBLE
BARROW (14)	14003 BORNESS	OPW
	14004 CLONBULLOGE	OPW
	14005 PORTARLINGTON	OPW
	14006 PASS BRIDGE	OPW
	14009 CUSHINA	OPW
	14011 RATHANGAN	OPW
	14013 BALLINACARRIG	OPW
	14018 ROYAL OAK	OPW
NORE (15)	15013 CASTLECOMER	EPA/LA
	15008 BORRIS IN OSSORY	OPW
	15009 CALLAN	OPW
	15010 BALLYBOODIN	OPW
	15050 BLACKFRIAR'S BRIDGE	OPW
SUIR (16)	16045 BALLYSHONNOCK	EPA/LA
	16001 ATHLUMMON	OPW
	16002 BEAKSTOWN	OPW
	16004 THURLES	OPW
	16005 AUGHNAGROSS	OPW
	16006 BALLINACLOGH	OPW
	16007 KILLARDRY	OPW
	16051 CLOBANNA	OPW
COLLIGAN-MAHON (17)	17001 KILMACTHOMAS	EPA/LA
BLACKWATER (MUNSTER) (18)	18108 ARAGLIN BRIDGE	OPW

HYDROMETRIC AREA	STATION CODE & NAME	ORGANISATION RESPONSIBLE
LEE, CORK HARBOUR AND YOUGHAL BAY (19)	19044 KILMONA	OPW
	19045 GOTHIC	OPW
	19054 BALLYVOURNEY BRIDGE	OPW
	19055 BALLYMAKEERY BRIDGE	OPW
	19056 BALLINCOLLY	OPW
	19057 GLEN PARK	OPW
	19058 BLACKPOOL RETAIL PARK	OPW
	19059 GLENAMOUGHT BRIDGE	OPW
	19011 LEEMOUNT U/S	ESB
	19015 HEALY'S BRIDGE	ESB
	19016 OVENS	ESB
	19028 DRIPSEY	ESB
BANDON-ILEN (20)	20019 CLONAKILTY	OPW
DUNMANUS-BANTRY-KENMARE (21)	21018 SNEEM D/S	OPW
	21005 ADRIGOLE	EPA/LA
LAUNE-MINE-DINGLE BAY (22)	22005 TORC WEIR	OPW
SHANNON ESTUARY SOUTH (24)	24033 BALLYHAHILL	EPA/LA
	24046 GORTNALUGGIN BRIDGE	EPA/LA
	24002 GRAY'S BRIDGE	OPW
	24003 GARROOSE	OPW
	24005 ATHLACCA	OPW
	24006 CREGGANE	OPW
	24012 GRANGE BRIDGE	OPW
	24013 RATHKEALE	OPW
	24047 ROSSBRIEN RAILWAY BRIDGE	OPW

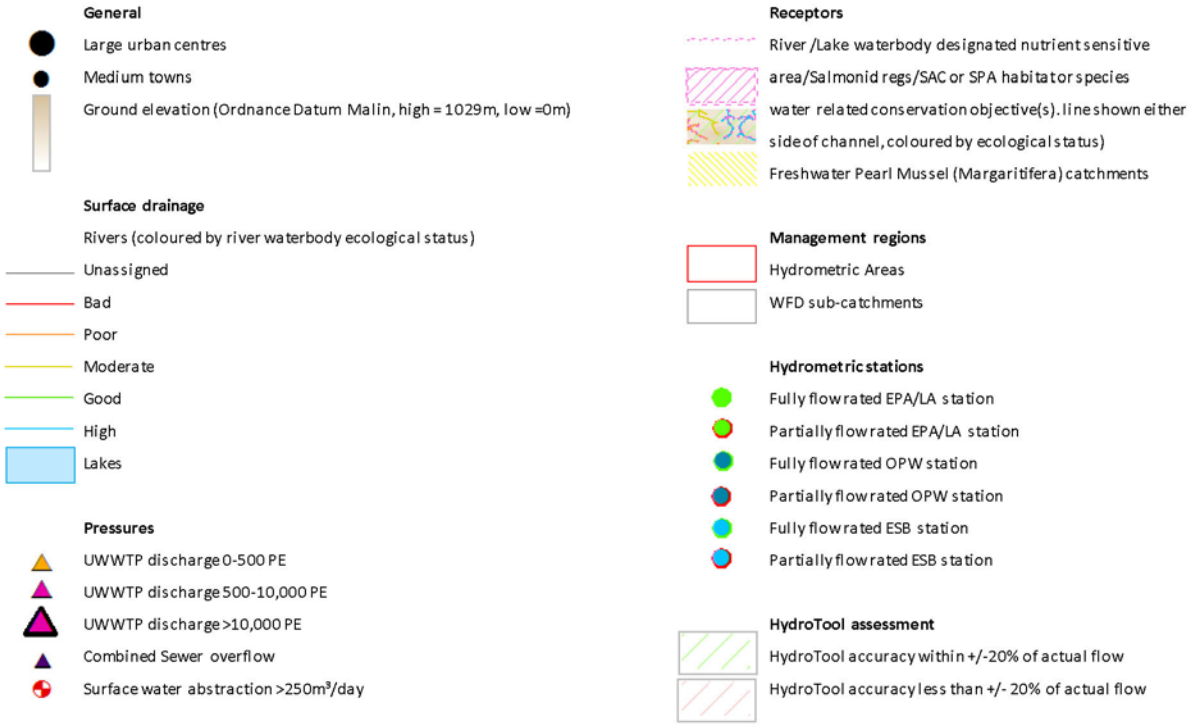
HYDROMETRIC AREA	STATION CODE & NAME	ORGANISATION RESPONSIBLE
LOWER SHANNON (25)	25204 BALLYBOUGHLIN	EPA/LA
	25027 GOURDEEN	OPW
	25029 CLARIANNA	OPW
	25149 TULLAMORE	OPW
	25213 CULLEEN FISH FARM	OPW
	25301 BRACKNAGH BRIDGE	OPW
UPPER SHANNON (26)	26046 MOUNTMURRAY	EPA/LA
	26204 BALLYMARTIN	EPA/LA
	26332 TOBERBREEOGUE	EPA/LA
	26335 TOGHER	EPA/LA
	26140 AHASCRAGH PUMP HSE.	OPW
	26108 BOYLE ABBEY BR.	OPW
	26104 BALLINALACK	OPW
	26025 CAMAGH	OPW
	26021 BALLYMAHON	OPW
	26020 ARGAR	OPW
	26018 BELLAVAHAN	OPW
	26017 GILLSTOWN	OPW
	26010 RIVERSTOWN	OPW
	26009 BELLANTRA BR.	OPW
	26006 WILLSBROOK	OPW
	26005 DERRYCAHILL	OPW
	26004 BOOKALA	OPW
	26002 ROOKWOOD	OPW
	26001 BALLINAMORE	OPW

HYDROMETRIC AREA	STATION CODE & NAME	ORGANISATION RESPONSIBLE
SHANNON ESTUARY NORTH (27)	27001 INCH BRIDGE	OPW
	27003 CORROFIN	OPW
MAL BAY (28)	28001 ENISTYMON	OPW
GALWAY BAY SOUTH EAST (29)	29001 RATHGORGIN	OPW
	29002 RAHASANE TURLOUGH	OPW
	29010 AGGARD BRIDGE	OPW
	29011 KILCOLGAN	OPW
	29015 ORANMORE BRIDGE	OPW
CORRIB (30)	30005 FOXHILL	OPW
	30017 CARROWNAGOWER	OPW
	30034 CREGAREE	OPW
	30037 CLOONCORMICK	OPW
	30106 KILMAINE SPRING	EPA/LA
GALWAY BAY NORTH (31)	31075 SHANNAGURRAUN	OPW
ERRIFF-CLEW BAY (32)	32070 LOUGH FEEAGH	EPA/LA
	32060 ASLEAGH BRIDGE	OPW
	32014 OWENMORE BRIDGE	OPW
MOY AND KILLALA BAY (34)	34049 INISHCRONE	EPA/LA
	34021 SWINFORD	EPA/LA
	34004 BALLYLAHAN	OPW
	34005 SCARROWNAGEERAGH	OPW
	34007 BALLYCARROON	OPW
	34010 CLOONACANNANA	OPW
	34013 BANADA	OPW
	34014 MILL BRIDGE	OPW

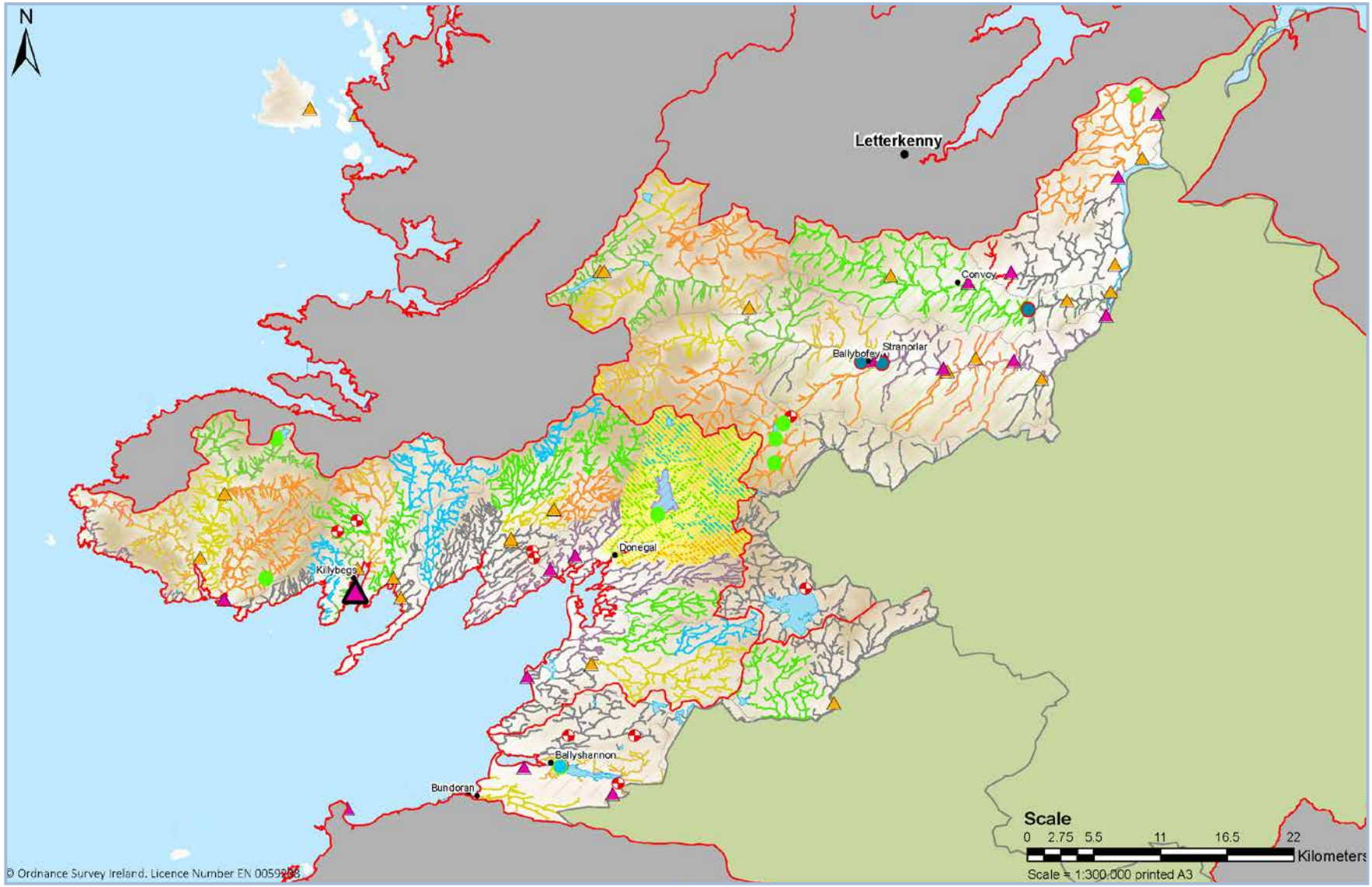
HYDROMETRIC AREA	STATION CODE & NAME	ORGANISATION RESPONSIBLE
SLIGO BAY AND DROWSE (35)	35002 BILLA BRIDGE	OPW
	35011 DROMAHAIR	OPW
	35028 NEW BRIDGE (MANORHAMILTON)	OPW
ERNE (36)	36011 BELLAHILLAN	OPW
	36012 SALLAGHAN	OPW
	36013 DERRESKIT	OPW
	36018 ASHFIELD	OPW
	36022 AGHACASHLAUN	OPW
	36027 BELLAHEADY	OPW
	36029 TOMKINROAD	OPW
	36037 URNEY BRIDGE	OPW
	36071 GOWLY	OPW
	36171 FOALIES BRIDGE	OPW
LOUGH SWILLY (39)	39001 NEW MILLS	OPW
	39003 TULLYARVAN	OPW
	39008 GARTAN BRIDGE	OPW

Appendix D: Hydrometric review maps

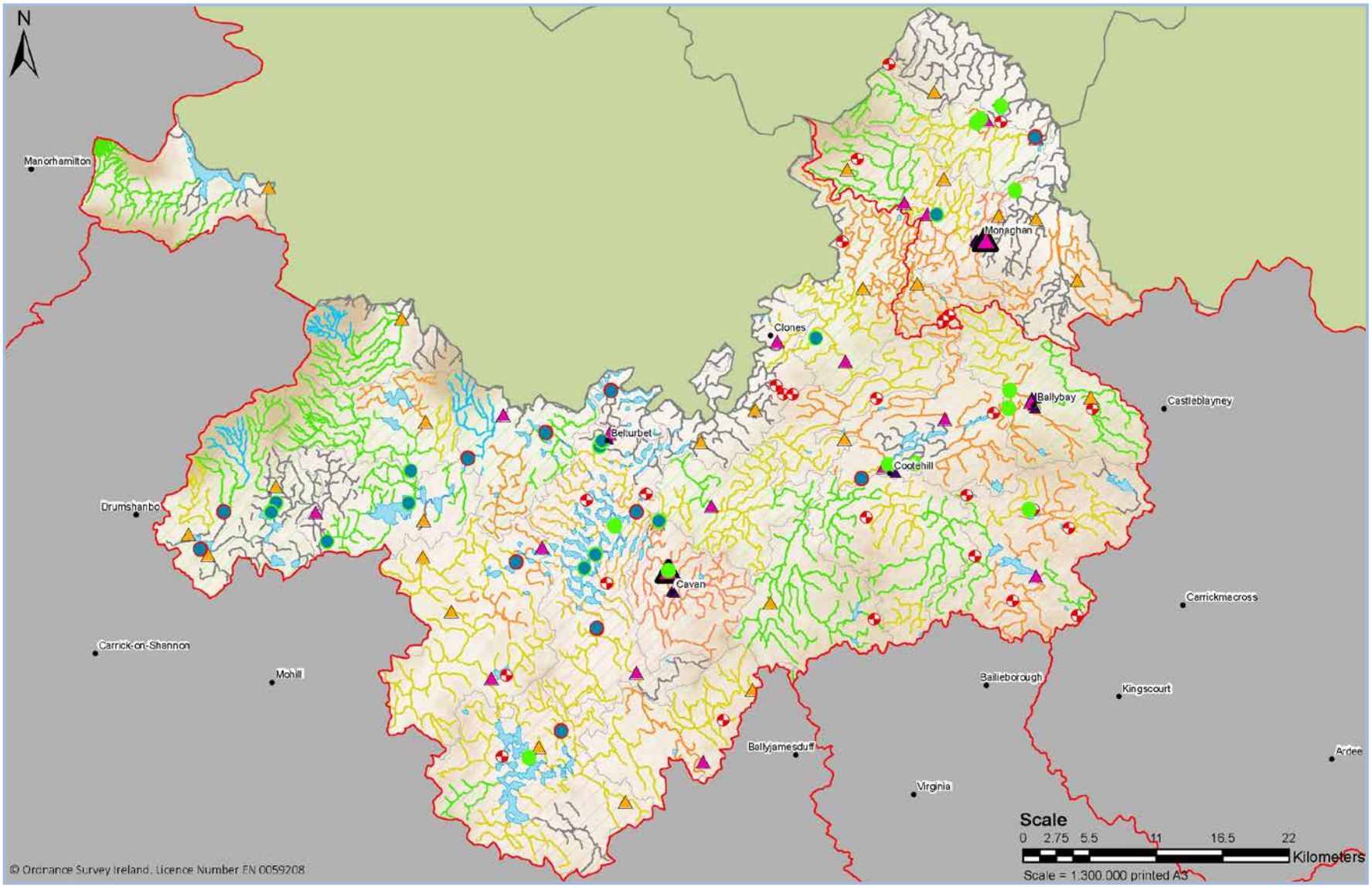
National Hydrometric Network Review - Map Legend



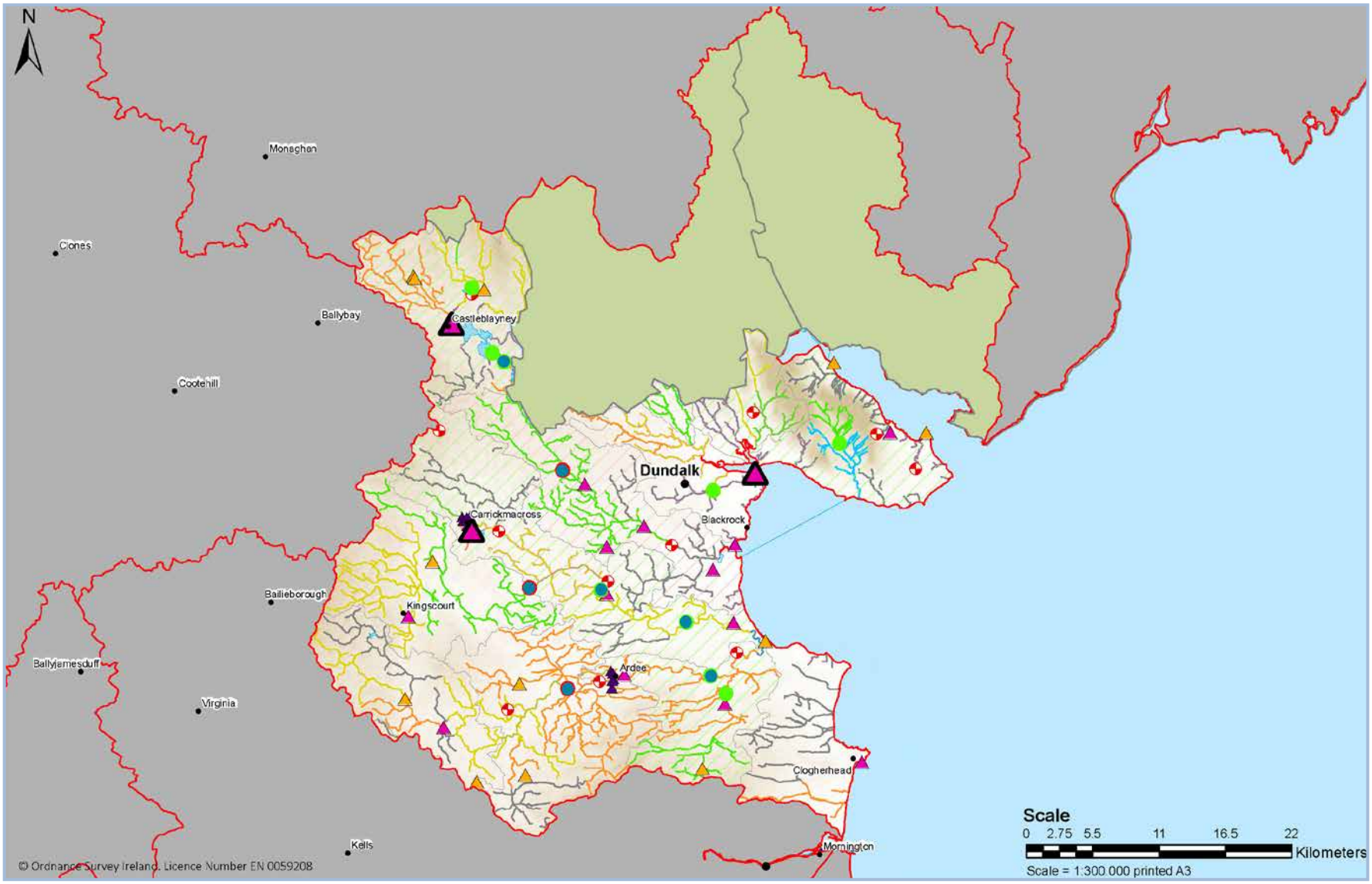
Hydrometric Areas 1, 36 (northern section) & 37



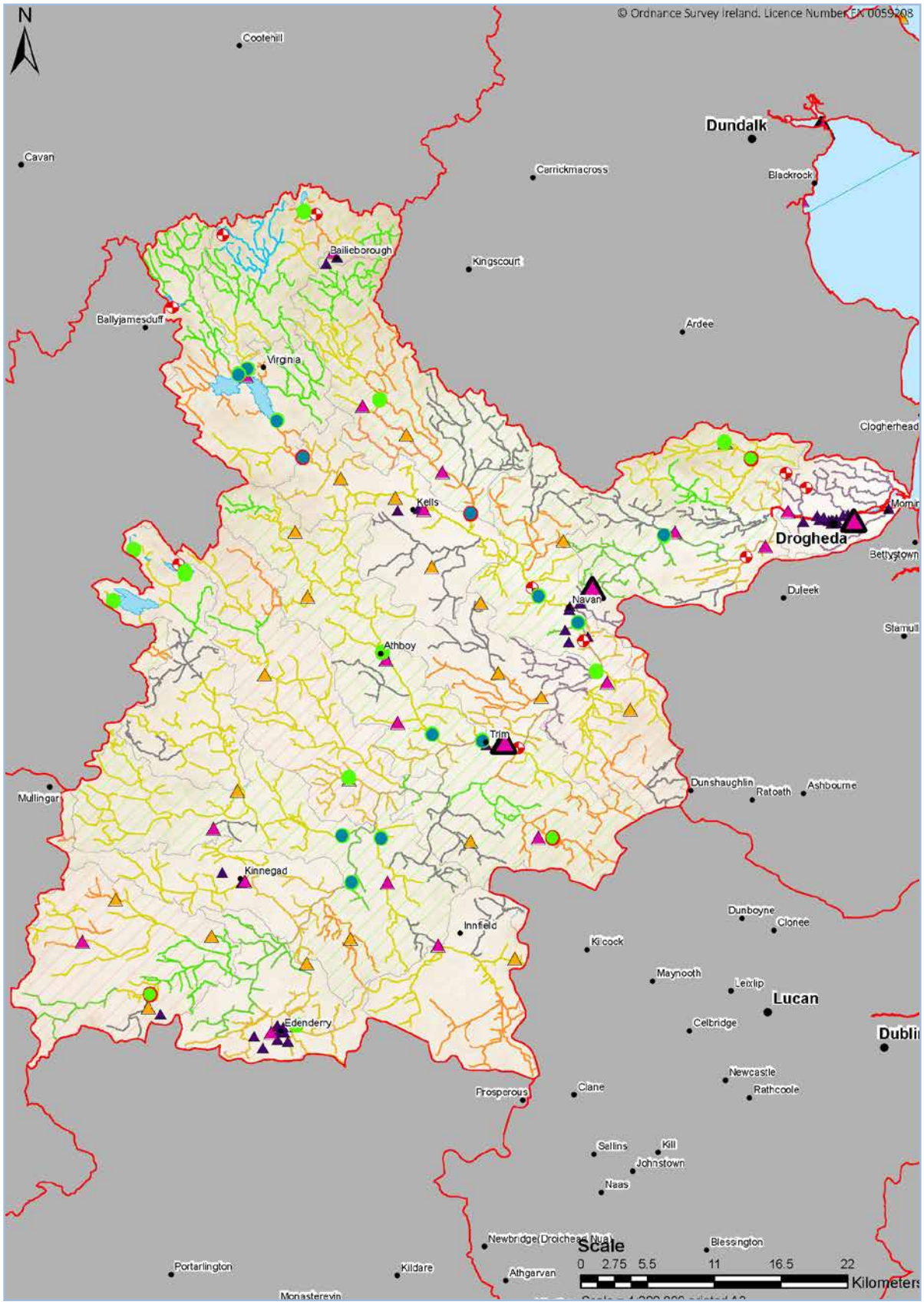
Hydrometric Areas 3 & 36 (southern section)



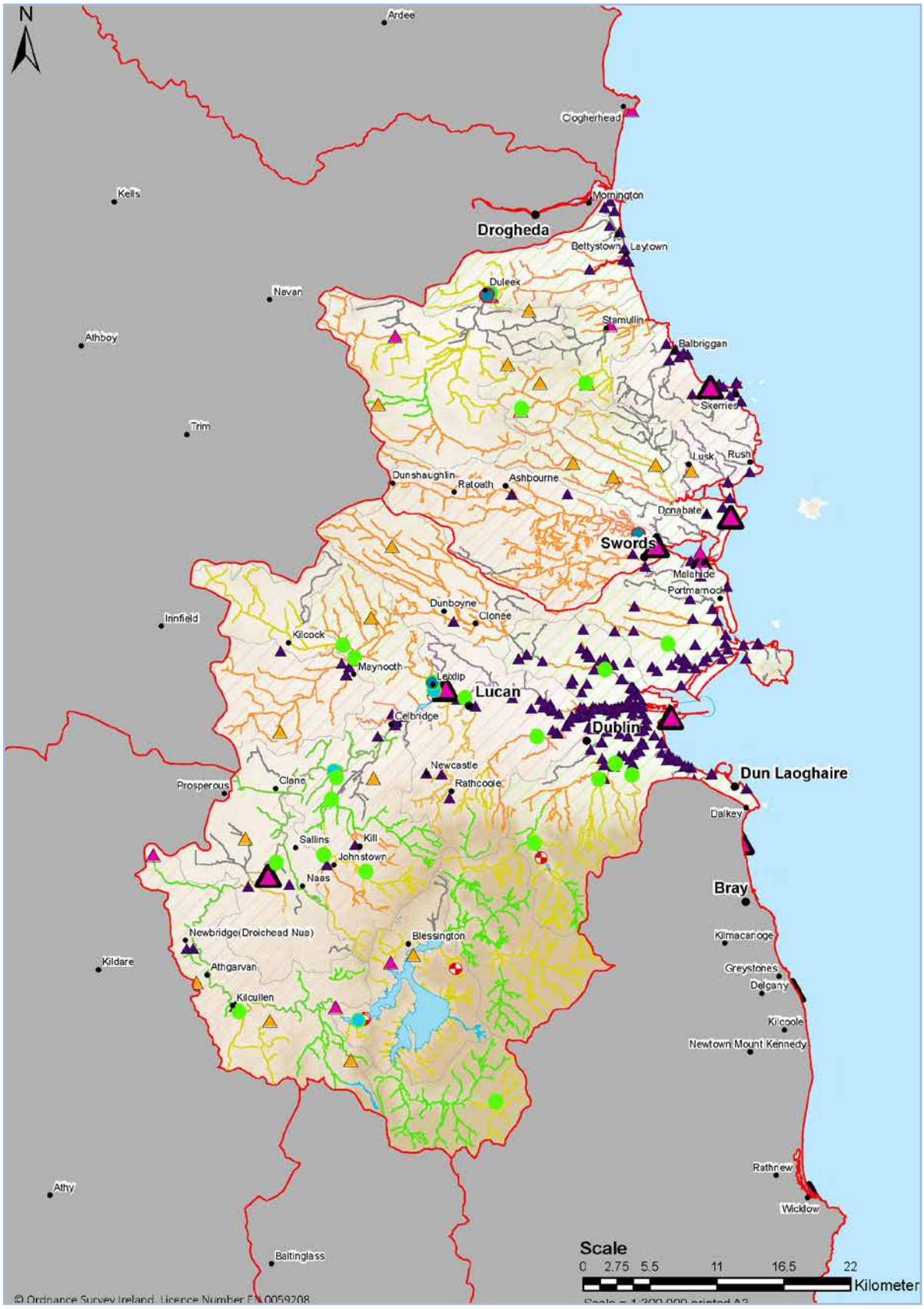
Hydrometric Area 6



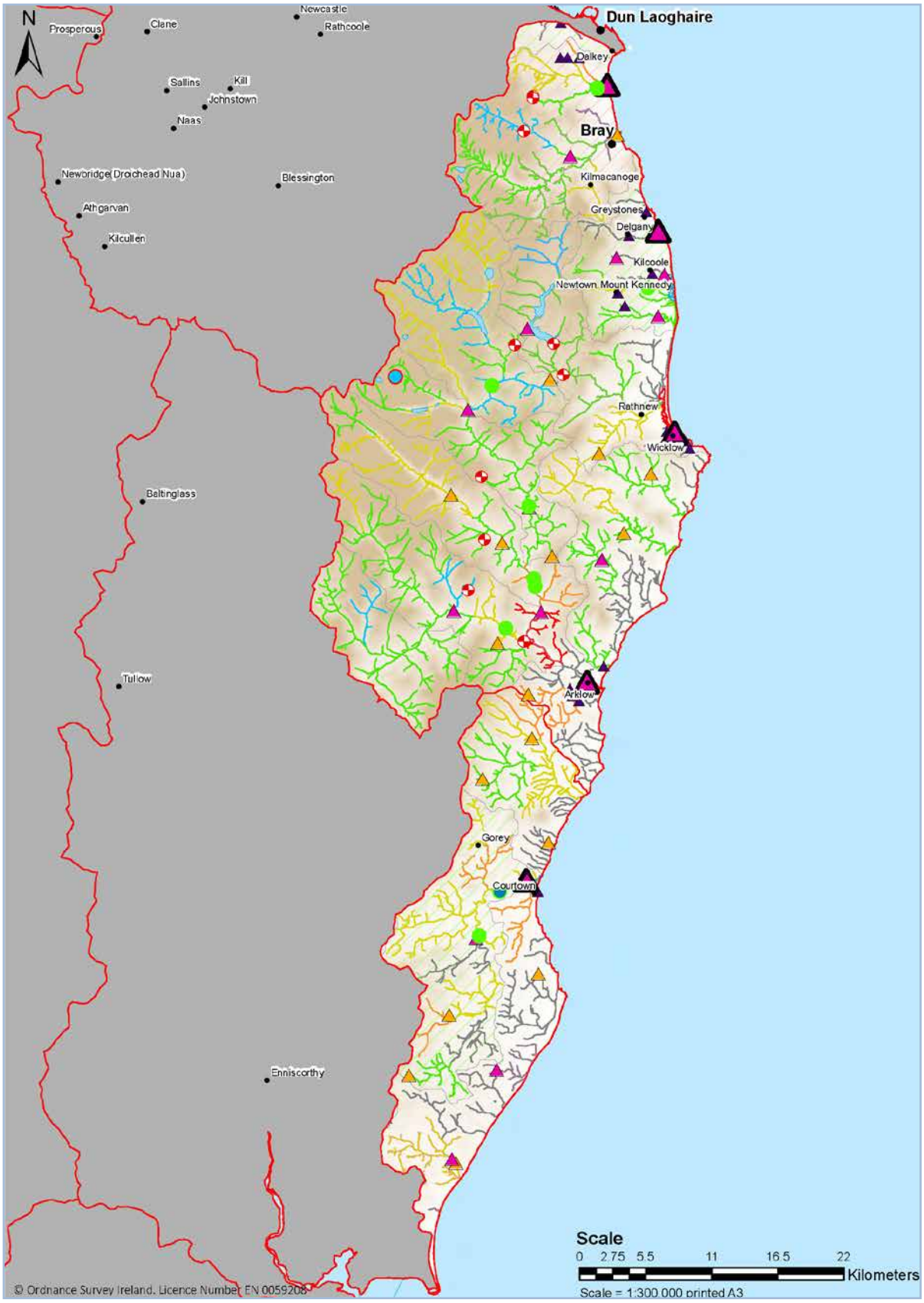
Hydrometric Area 7



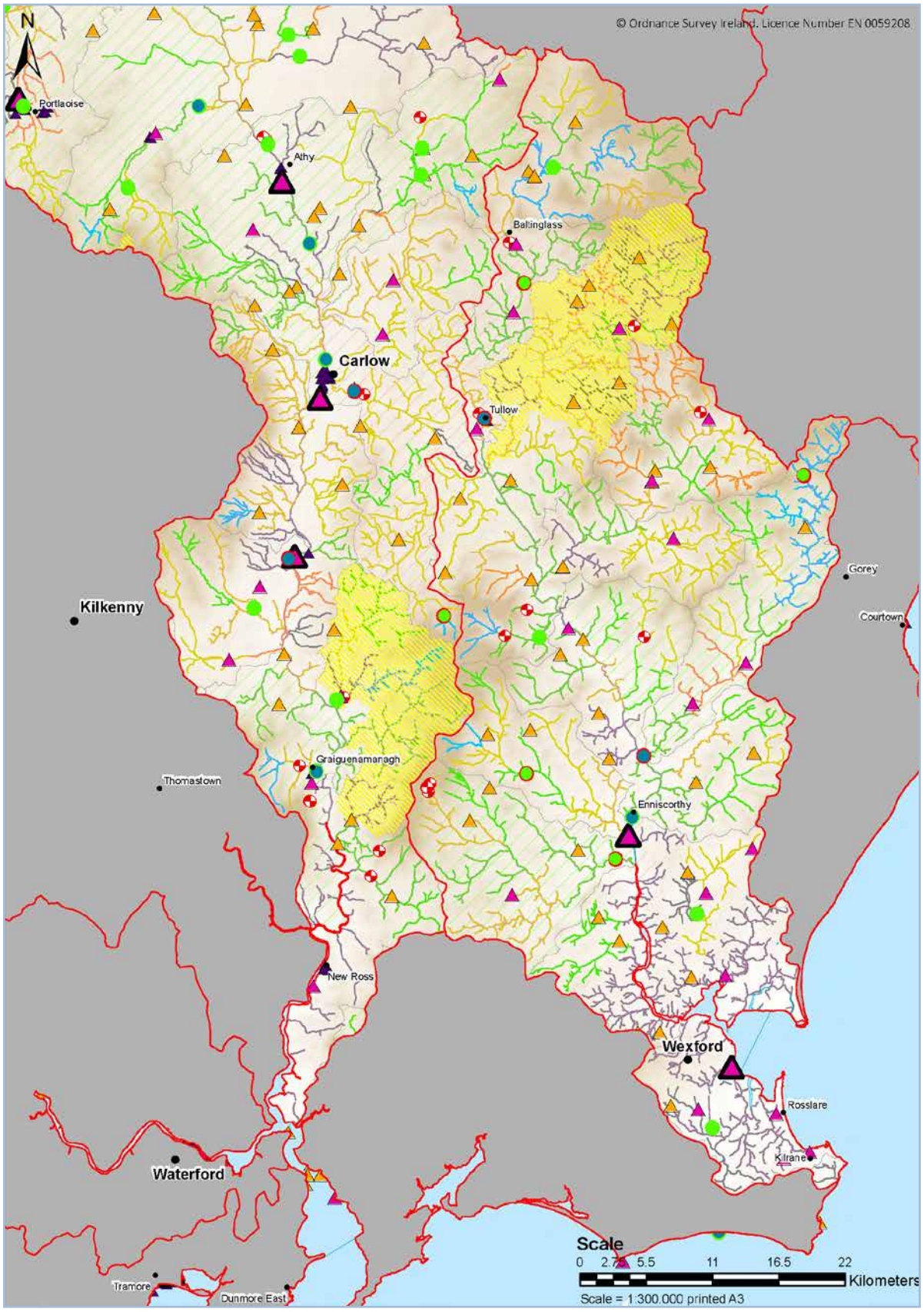
Hydrometric Area 8 & 9



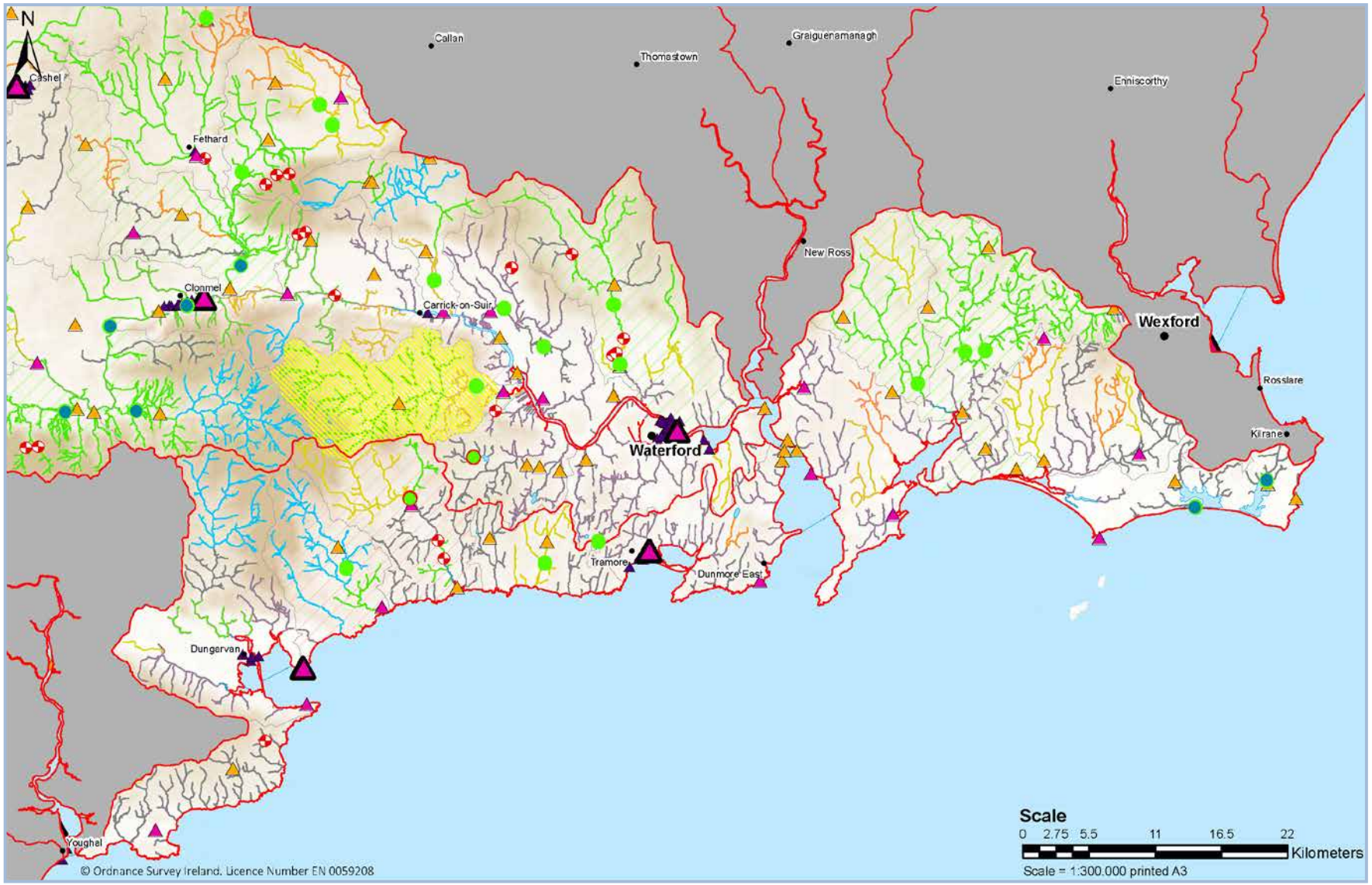
Hydrometric Area 10 & 11



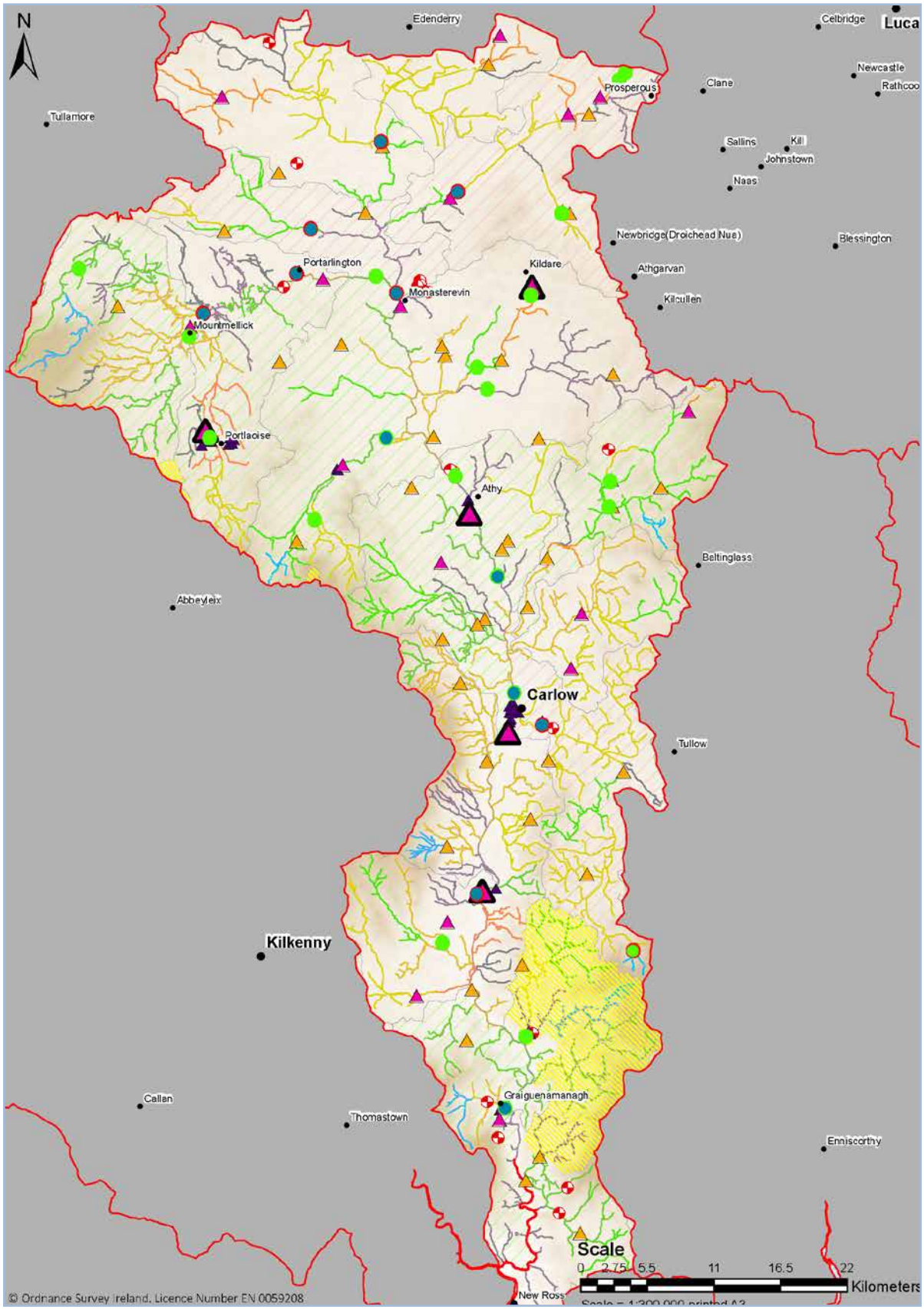
Hydrometric Area 12 & 14



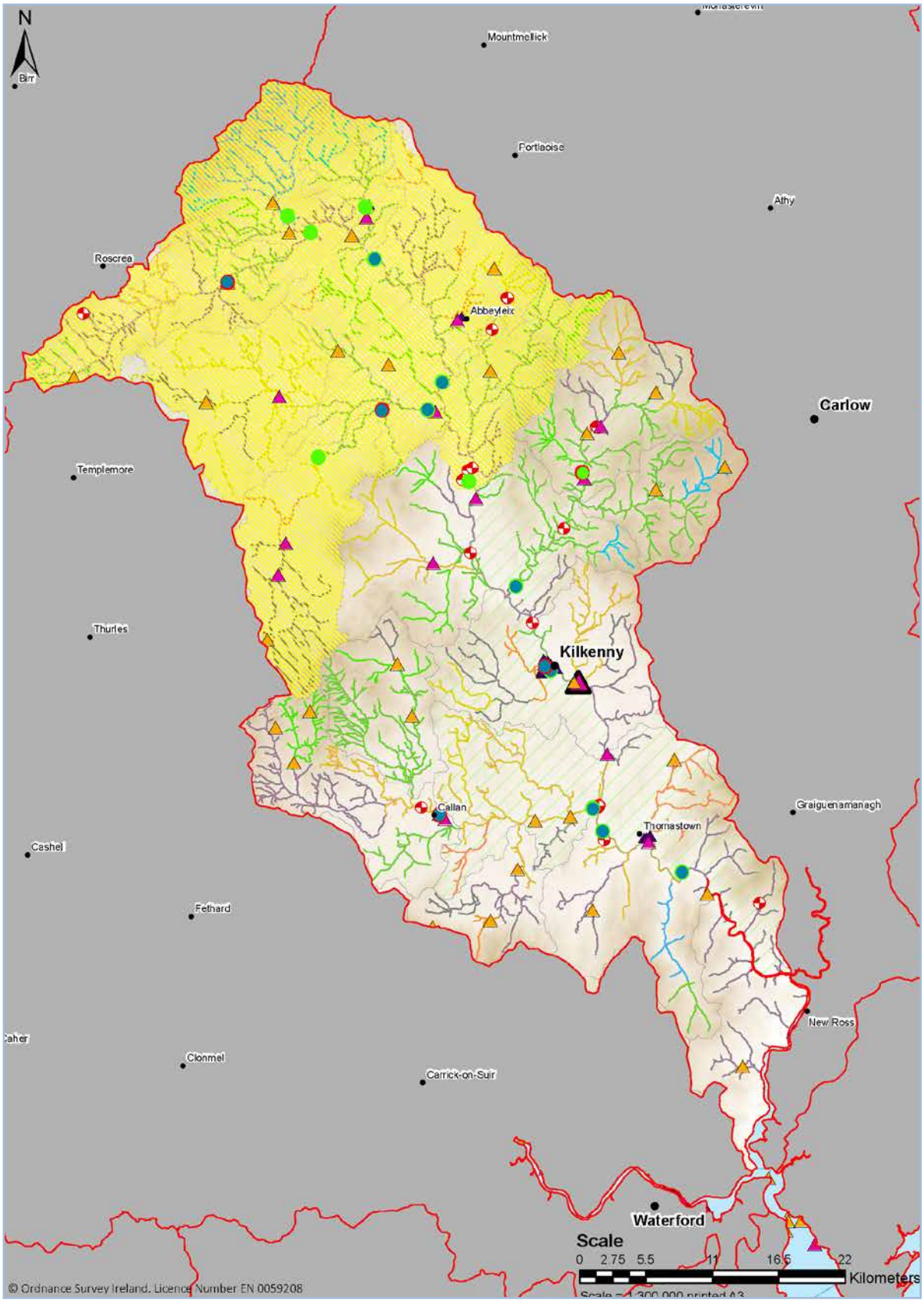
Hydrometric Area 13, 16 (southern section) & 17



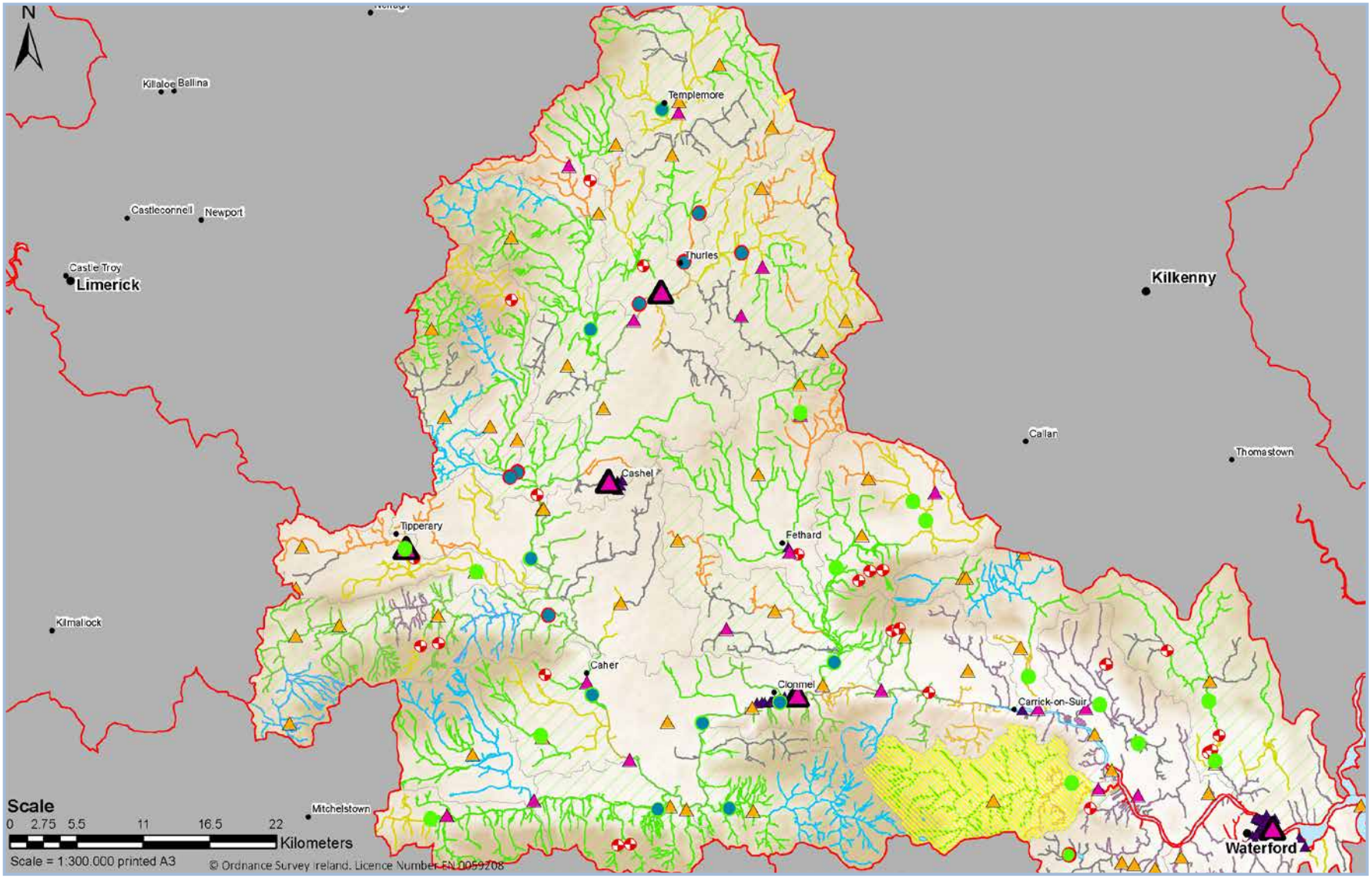
Hydrometric Area 14



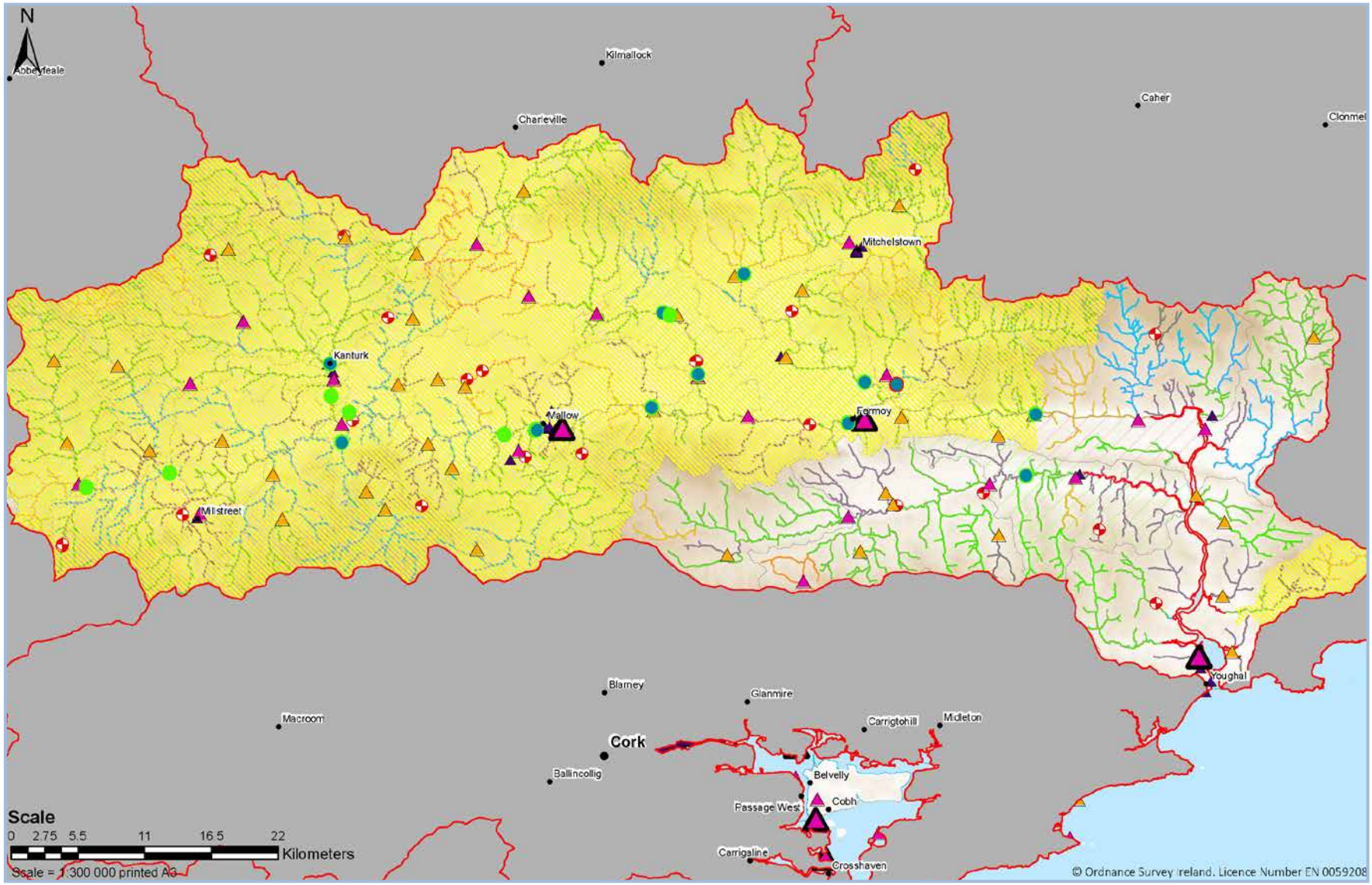
Hydrometric Area 15



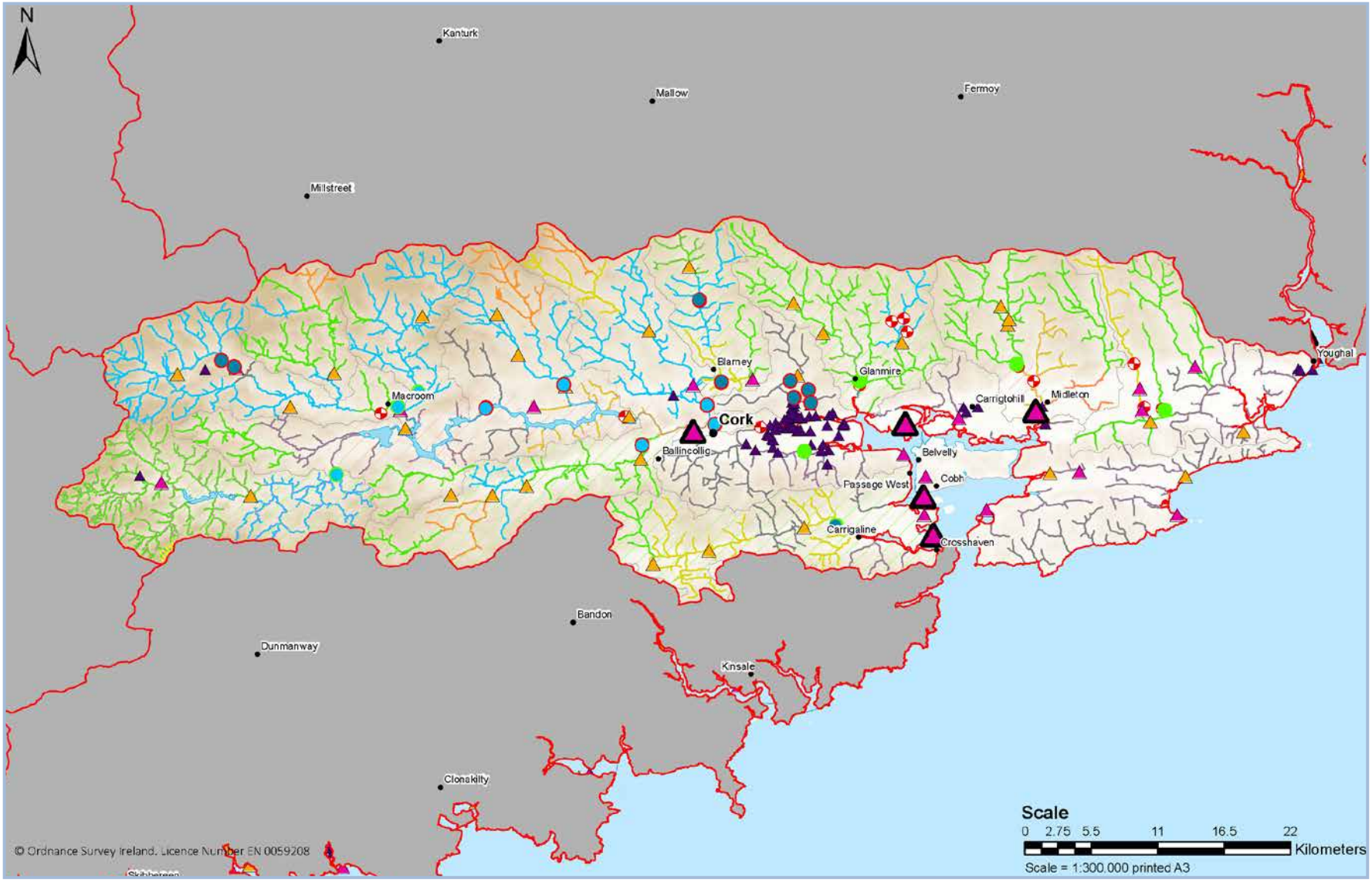
Hydrometric Area 16



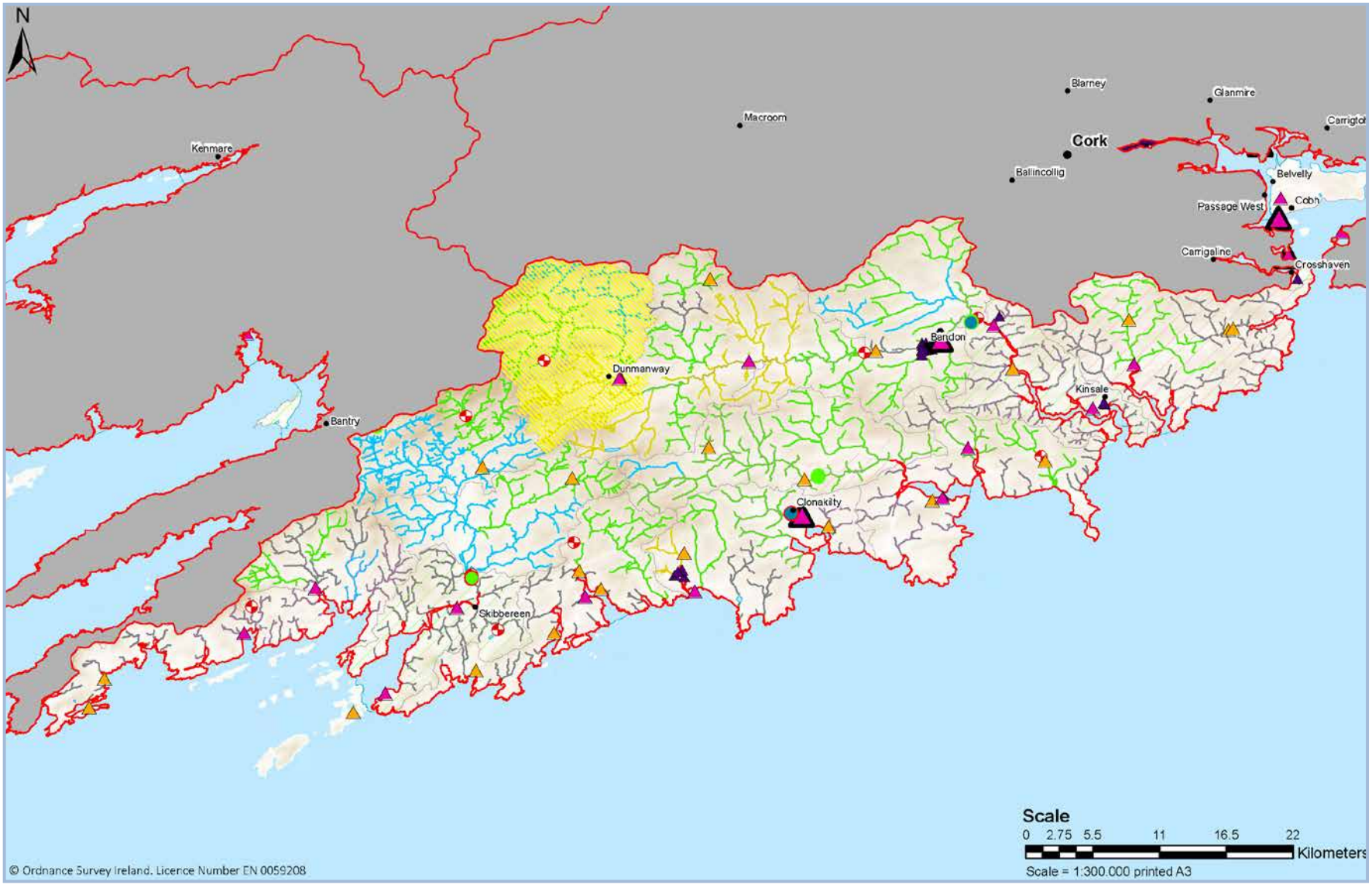
Hydrometric Area 18



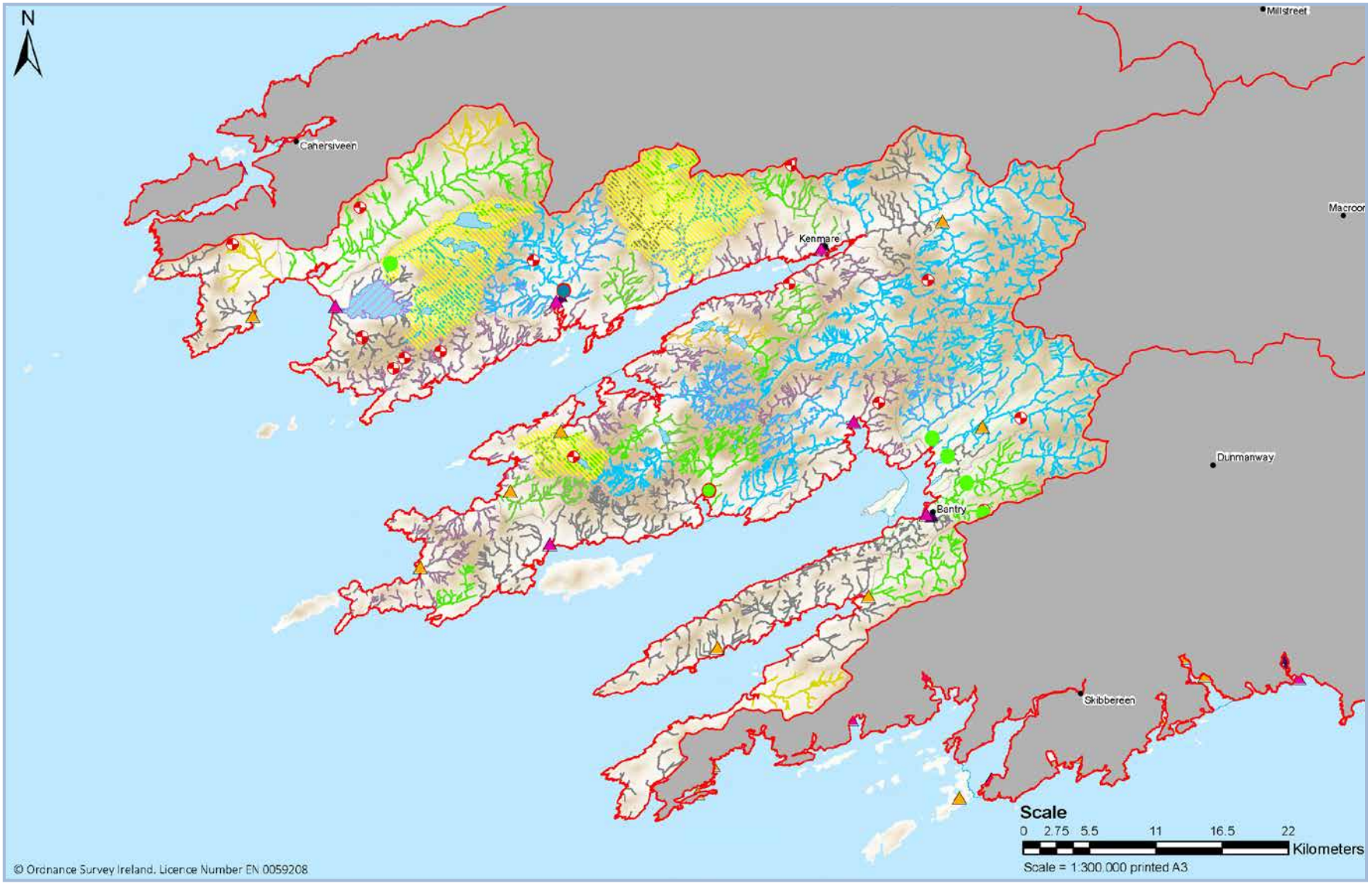
Hydrometric Area 19



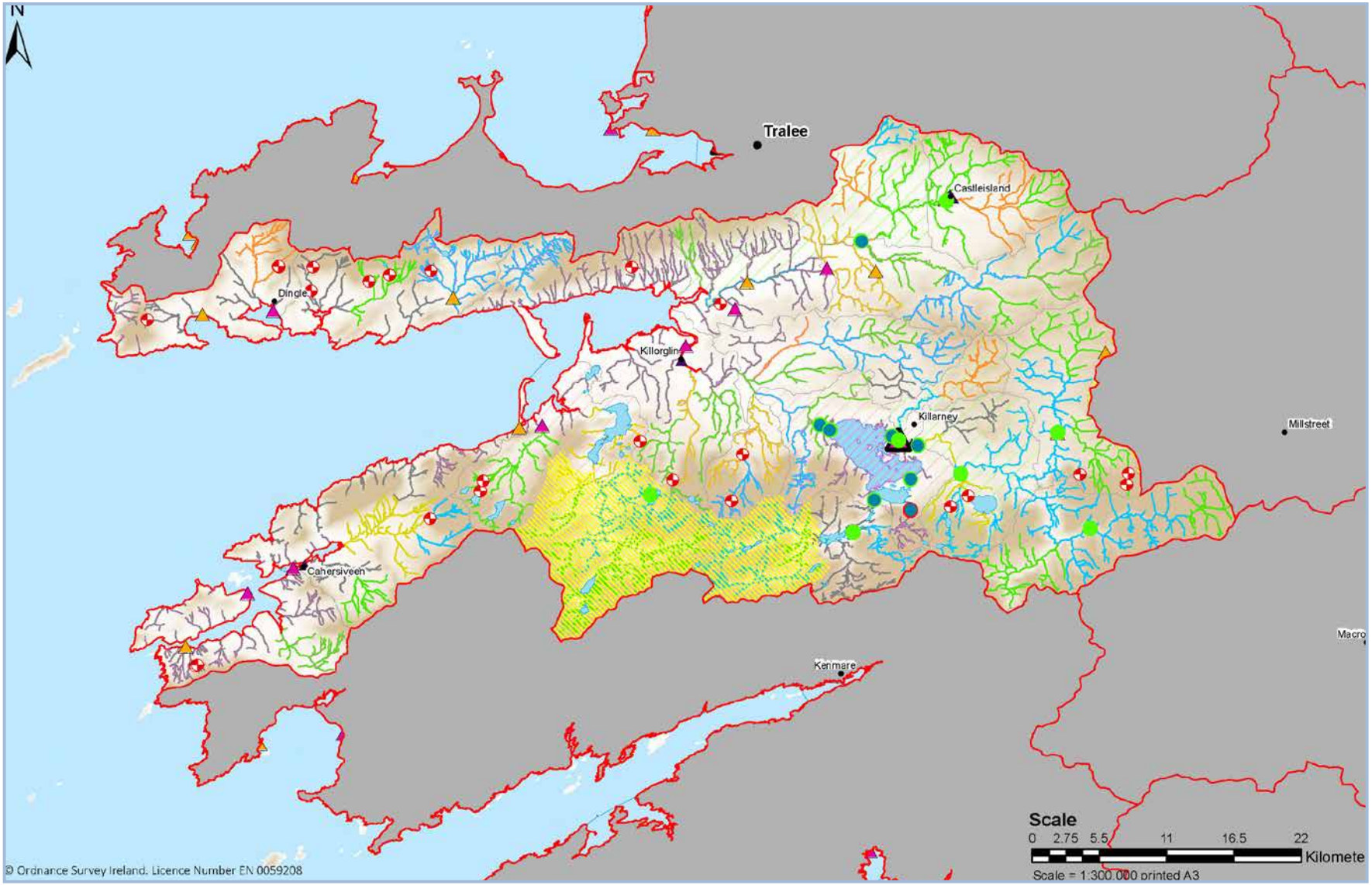
Hydrometric Area 20



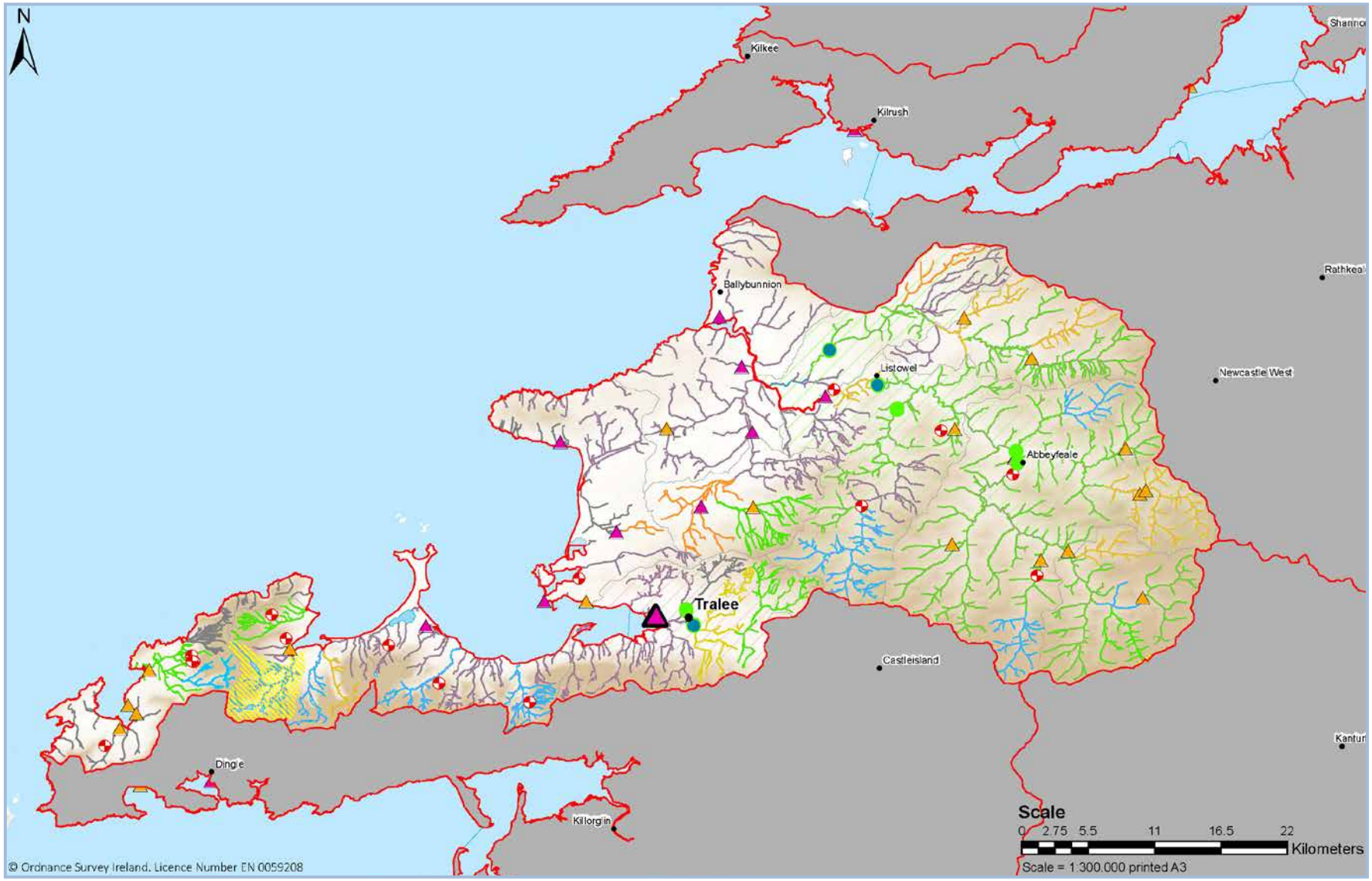
Hydrometric Area 21



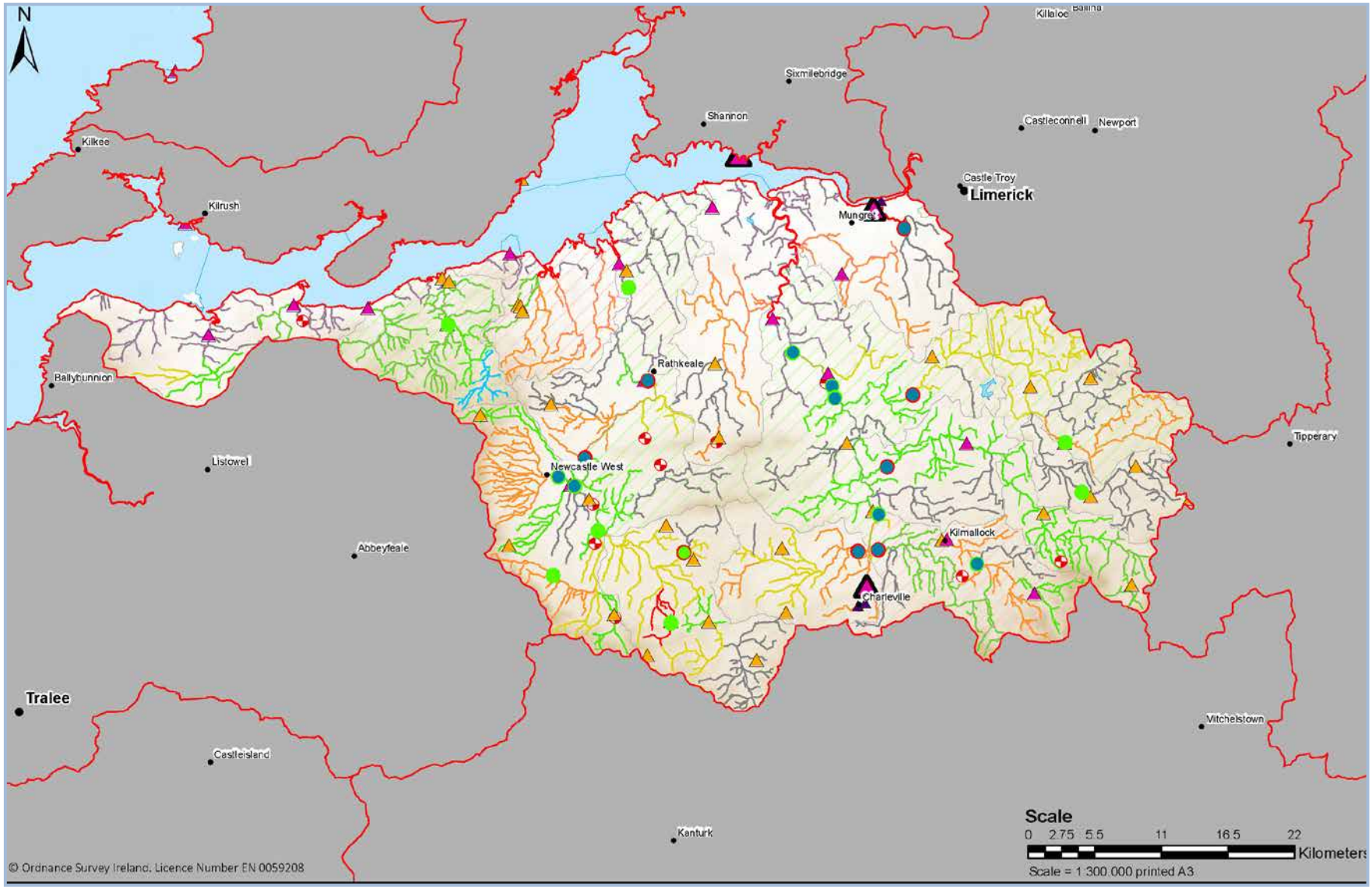
Hydrometric Area 22



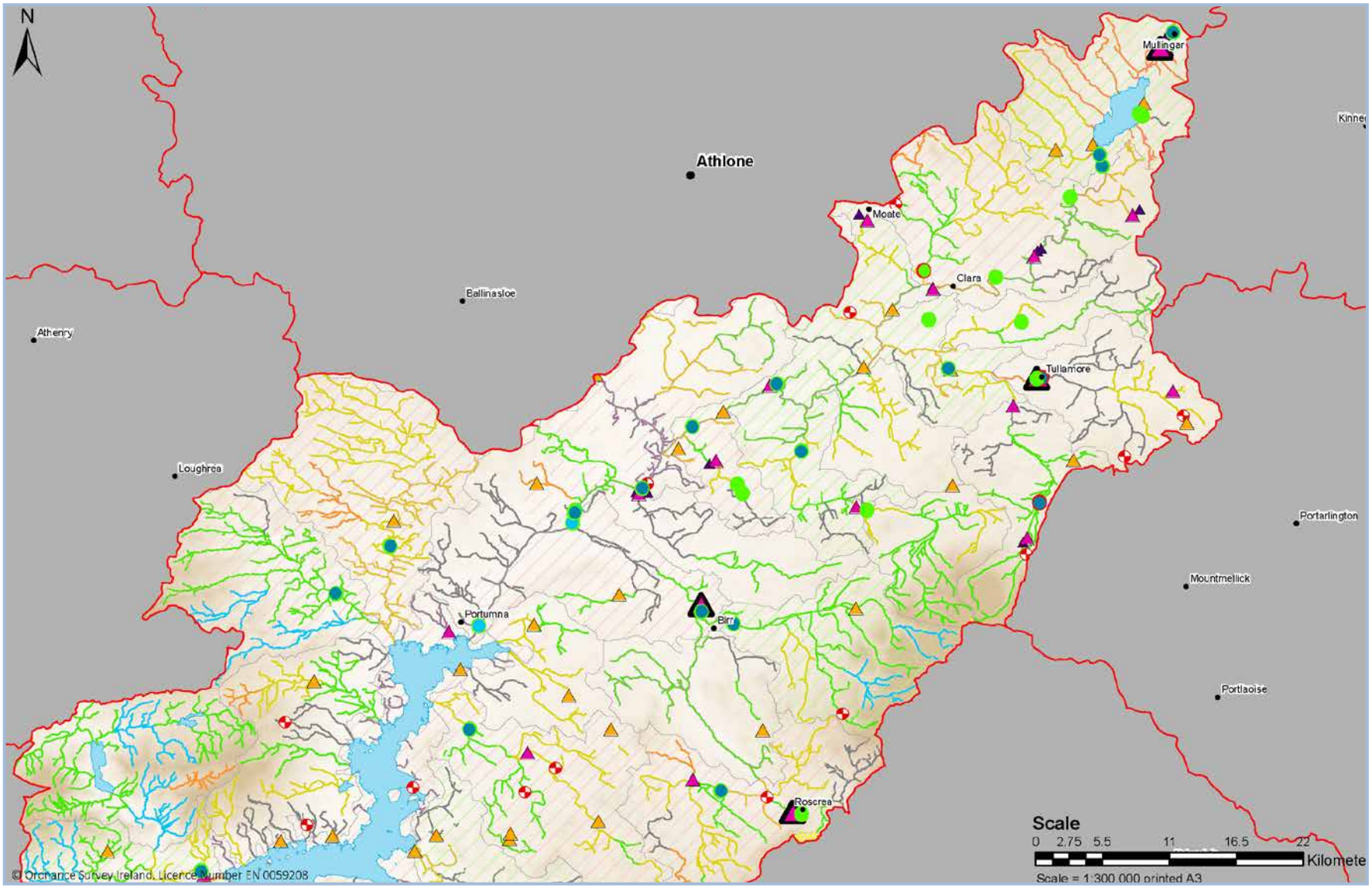
Hydrometric Area 23



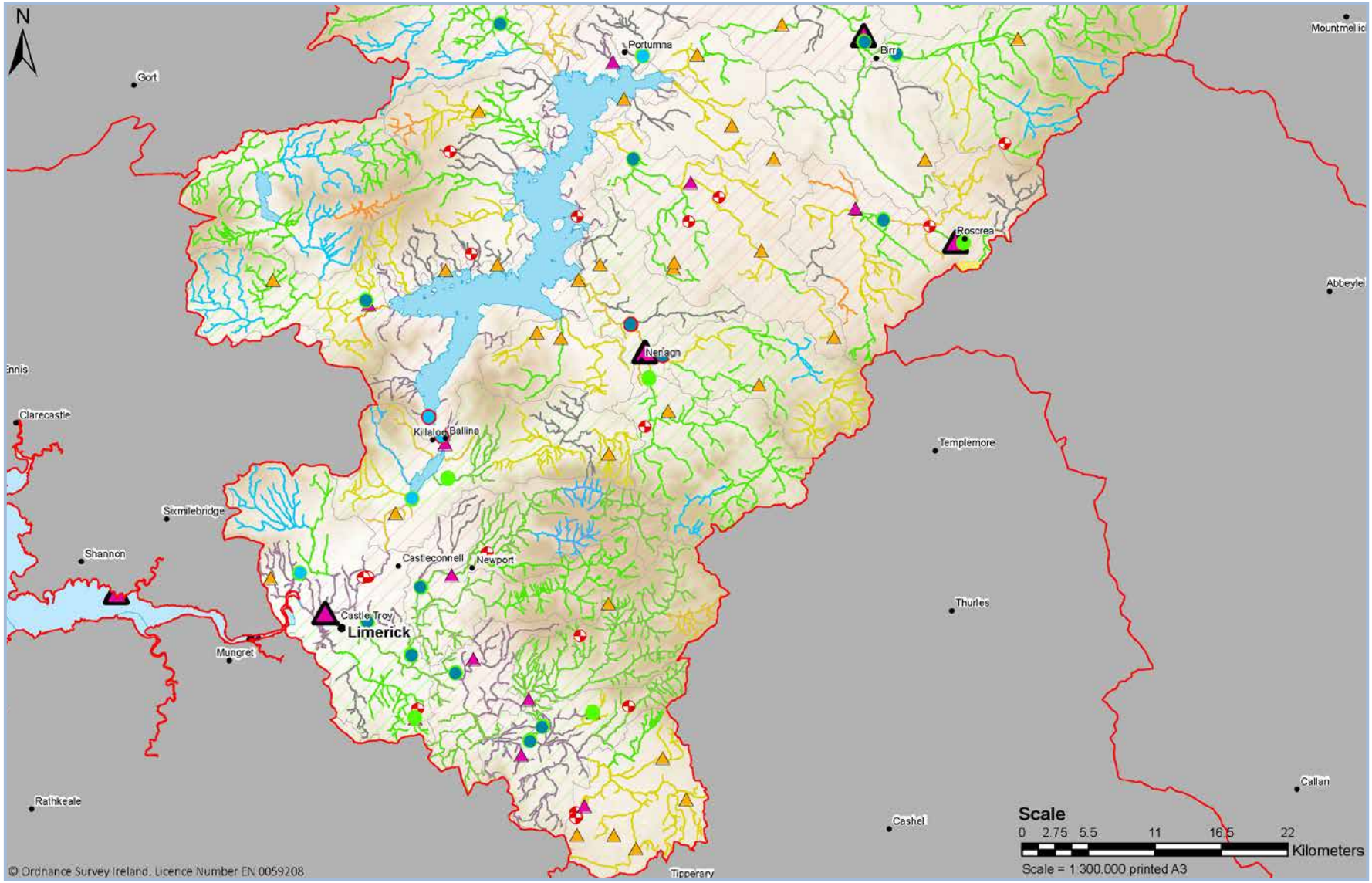
Hydrometric Area 24



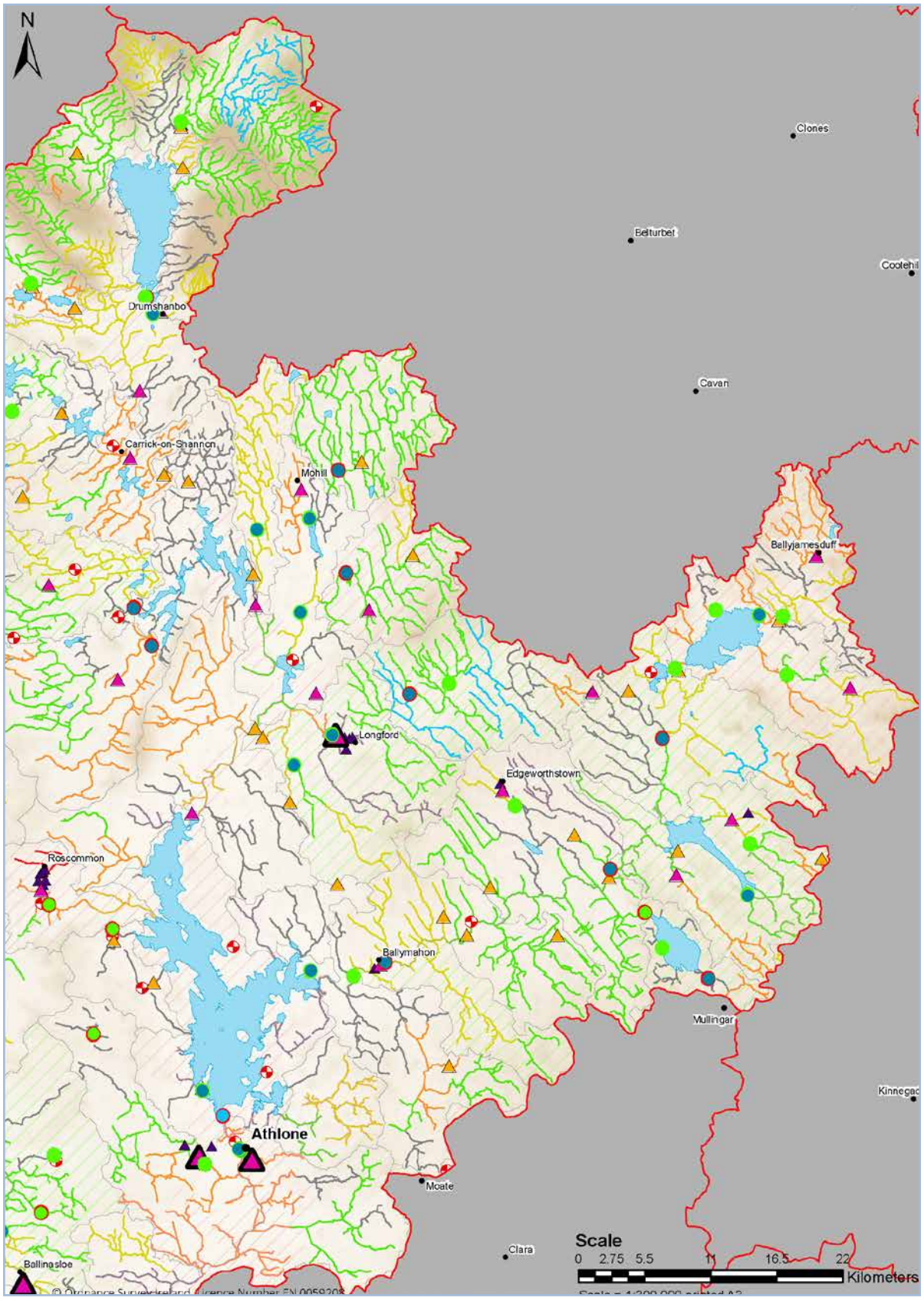
Hydrometric Area 25 (northern section)



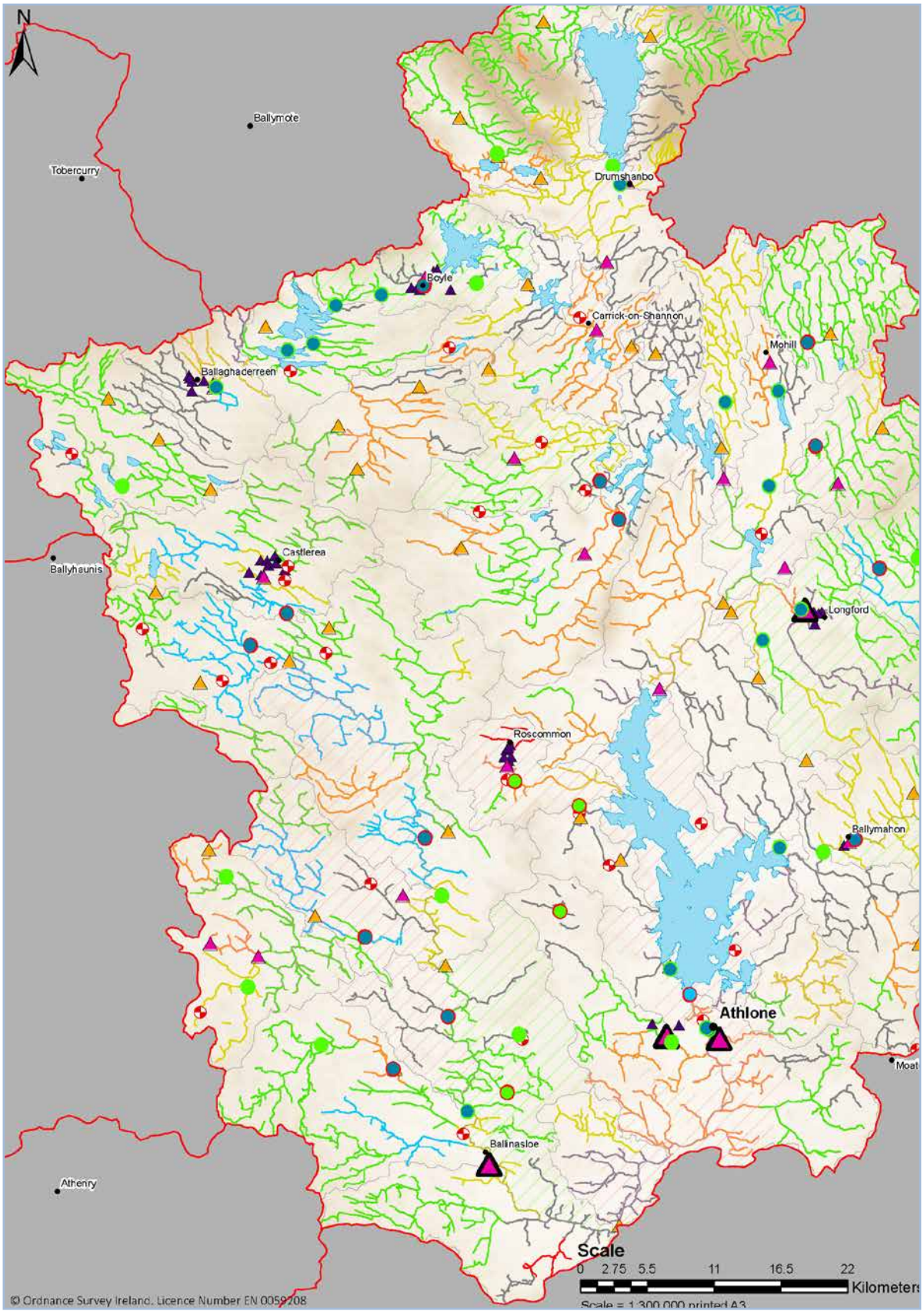
Hydrometric Area 25 (southern section)



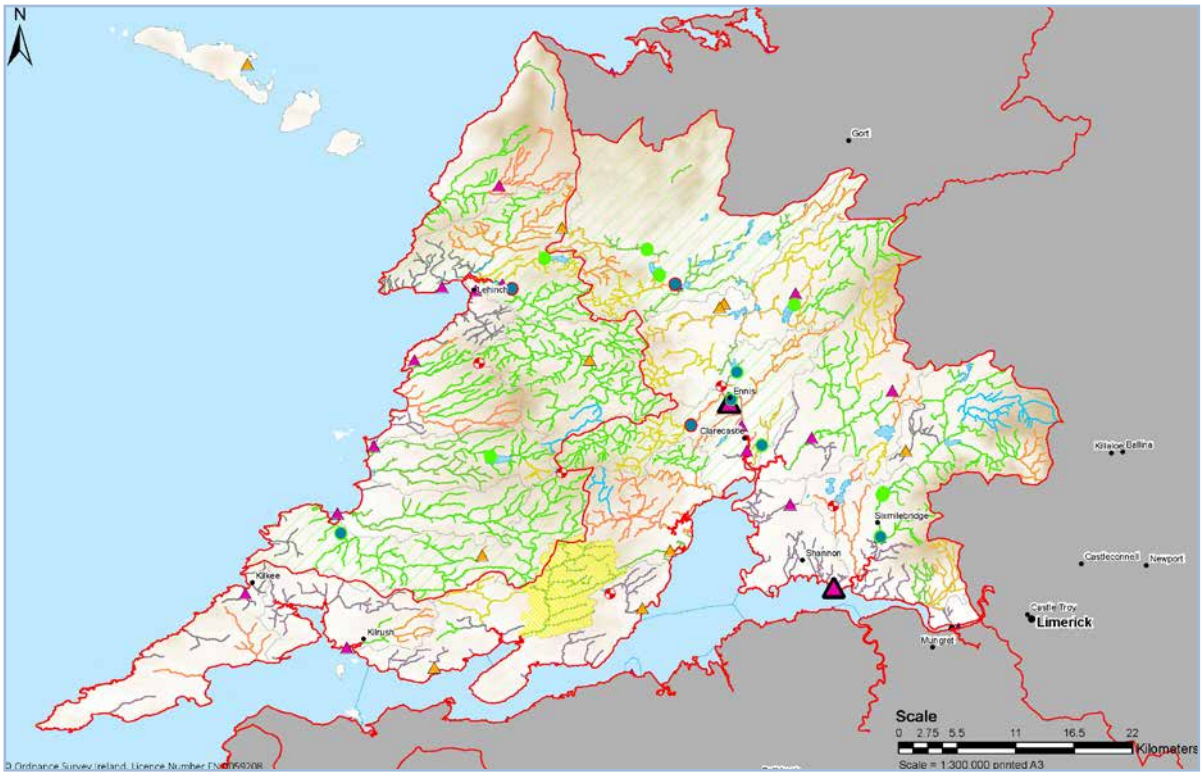
Hydrometric Area 26 (eastern section)



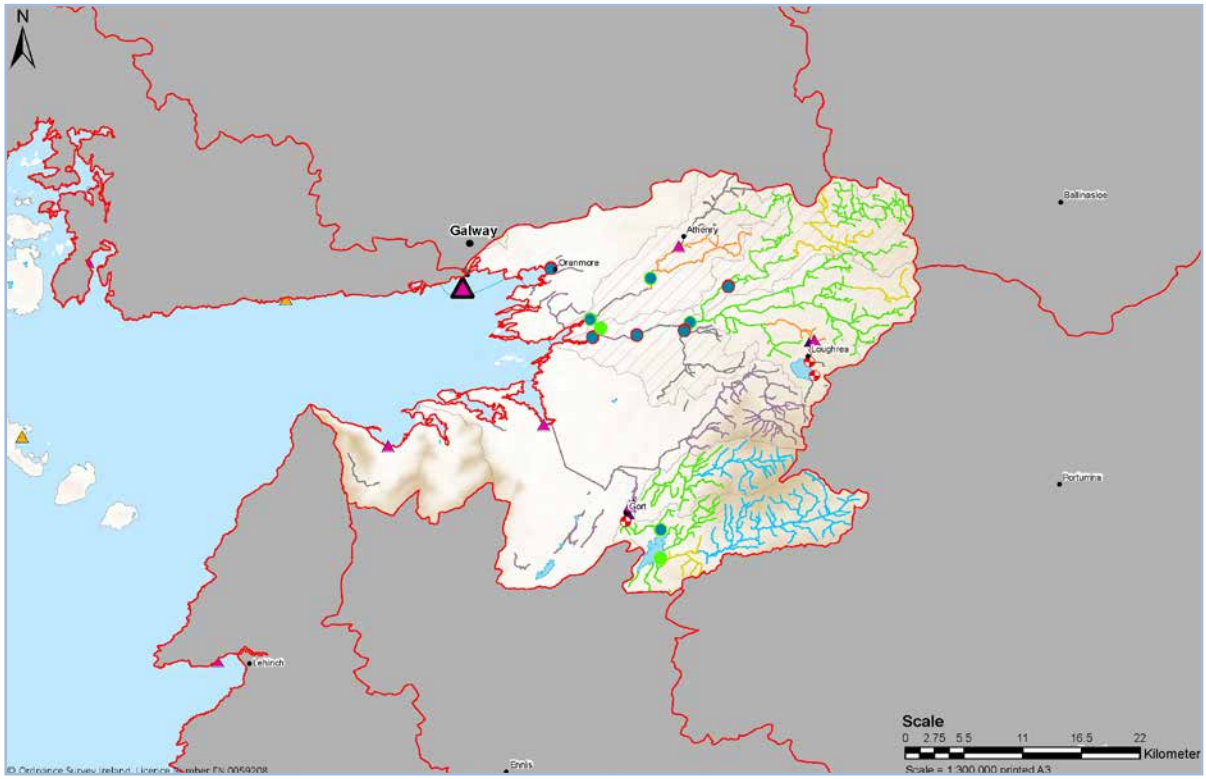
Hydrometric Area 26 (western section)



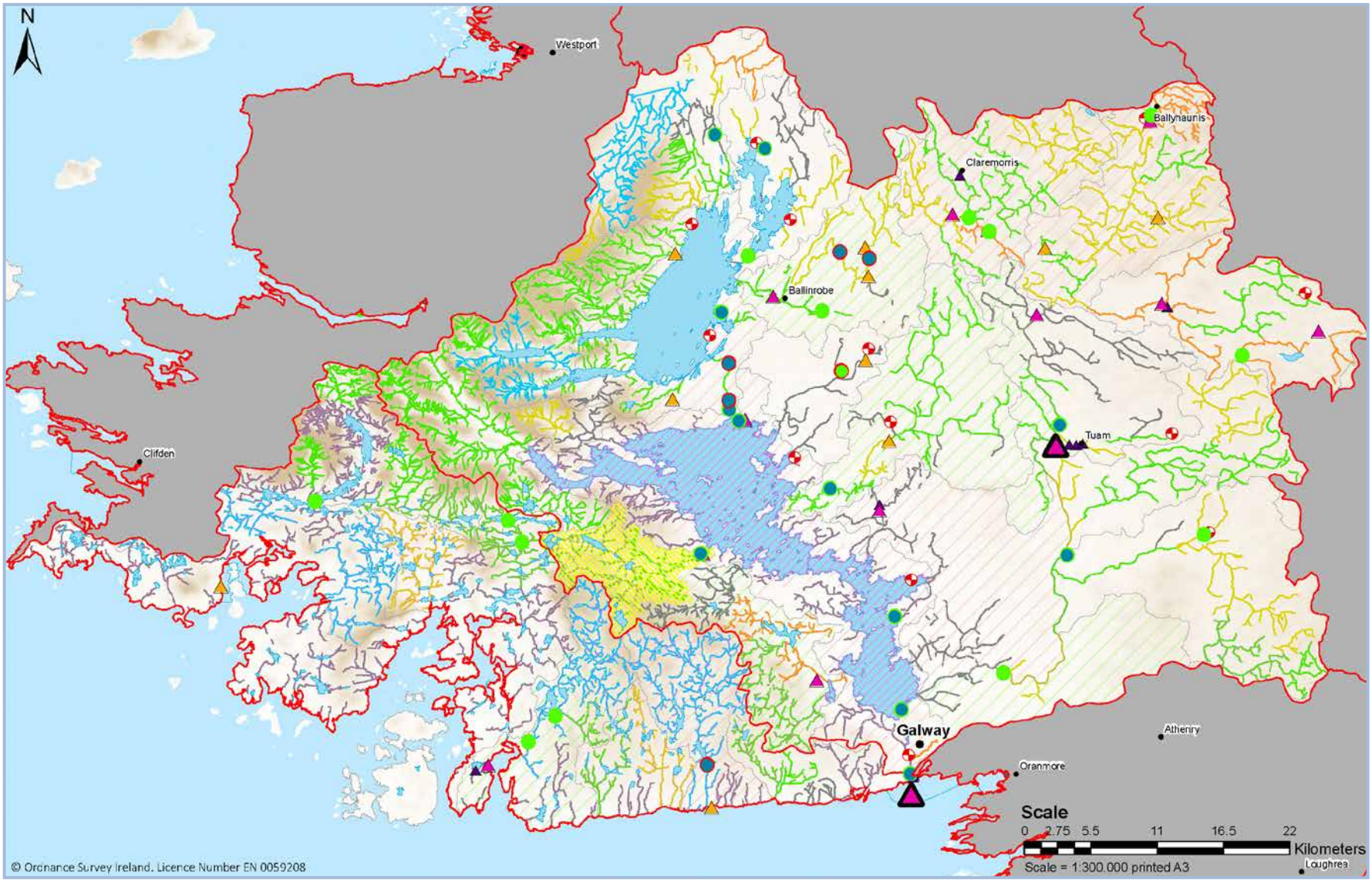
Hydrometric Area 27 & 28



Hydrometric Area 29



Hydrometric Area 30 & 31



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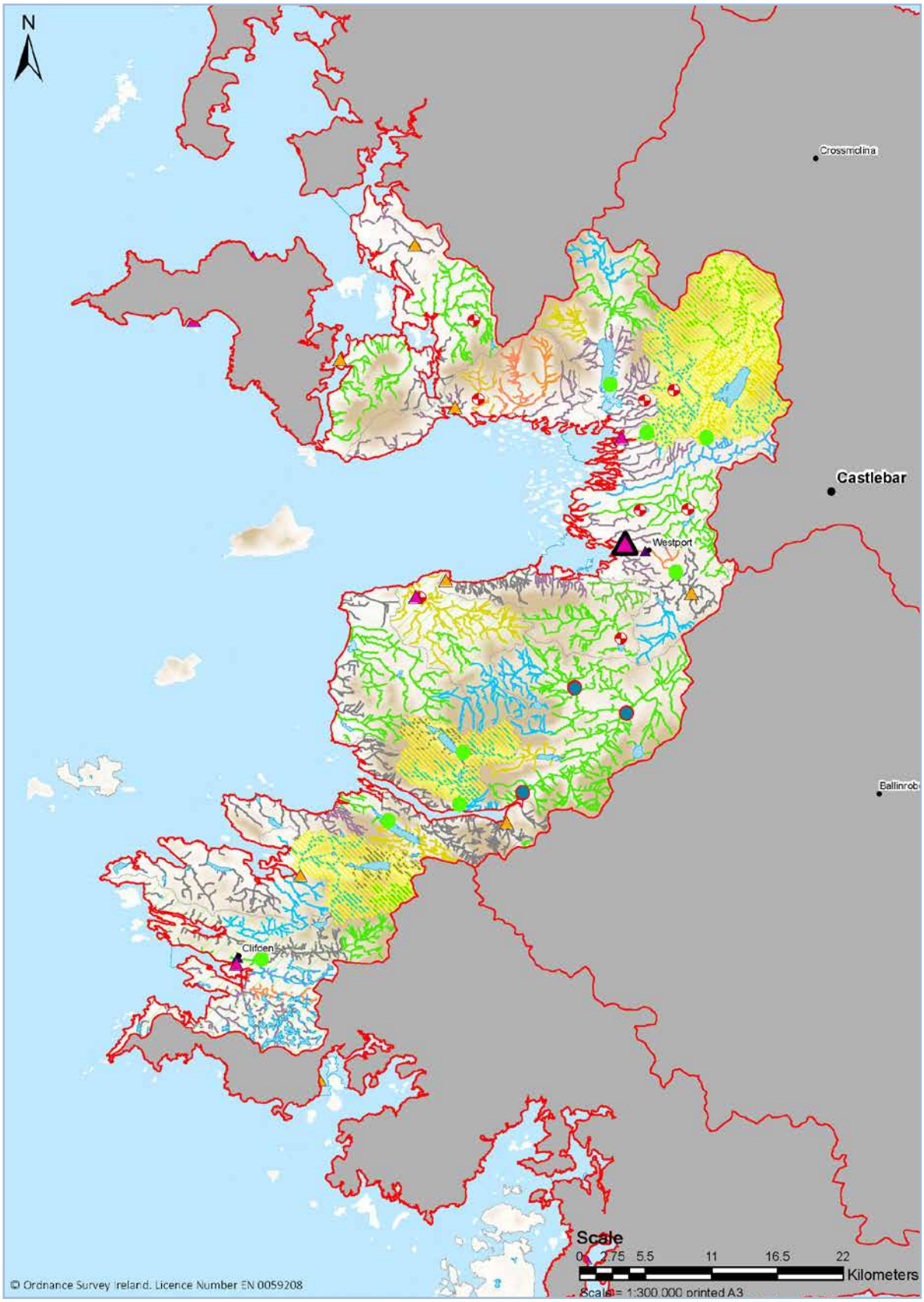
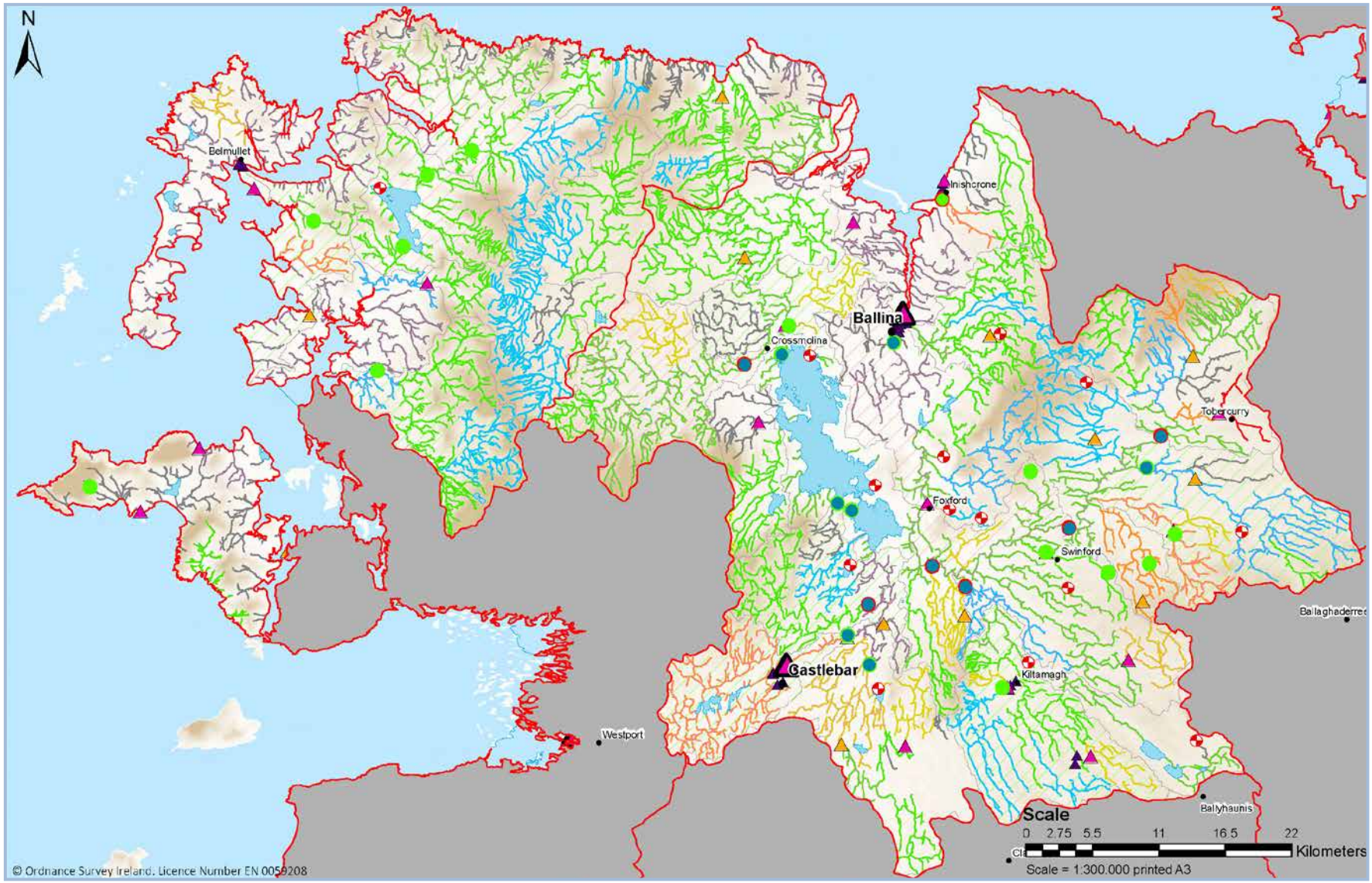


Hydrometric Area 33 & 34



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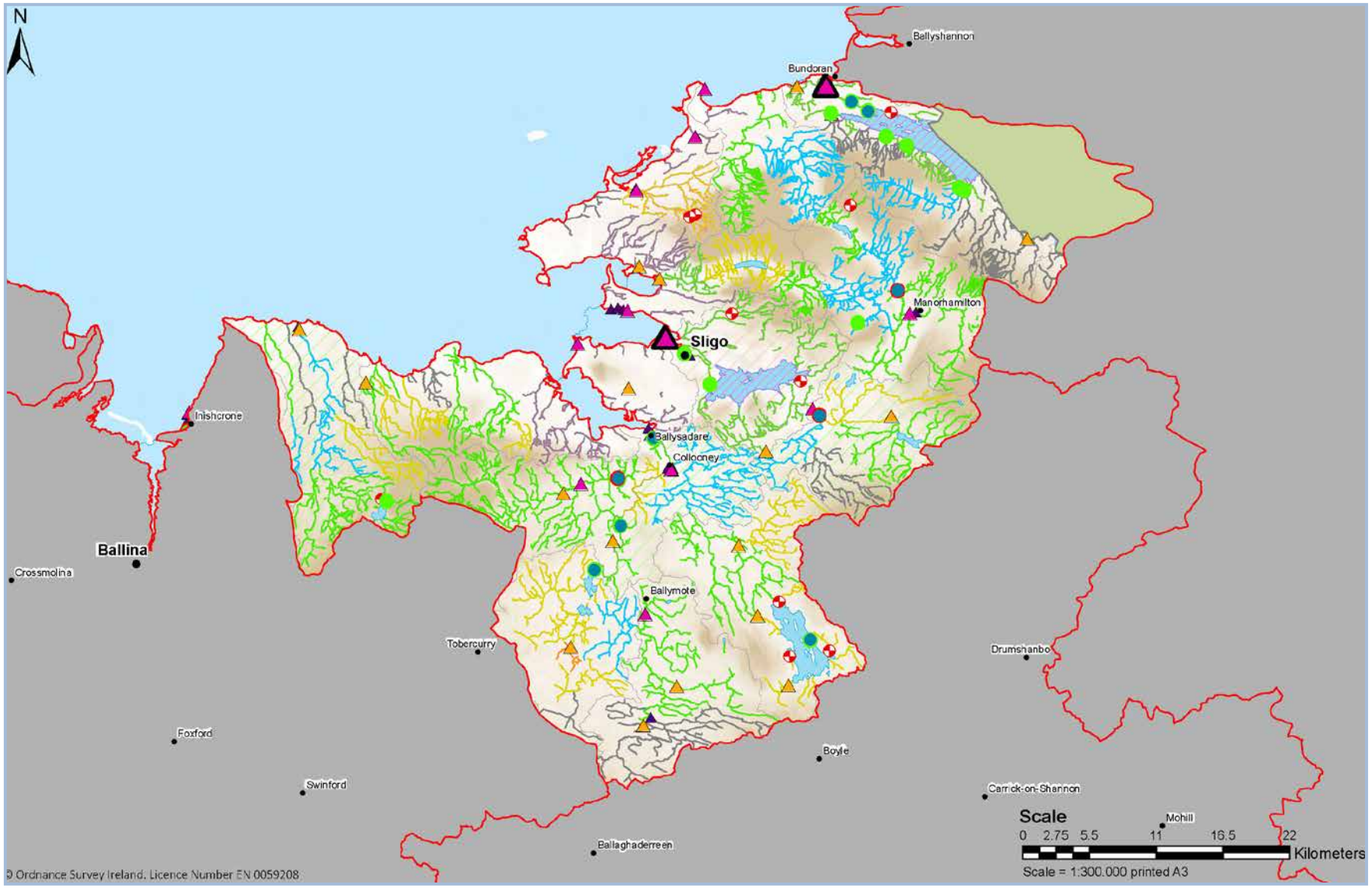

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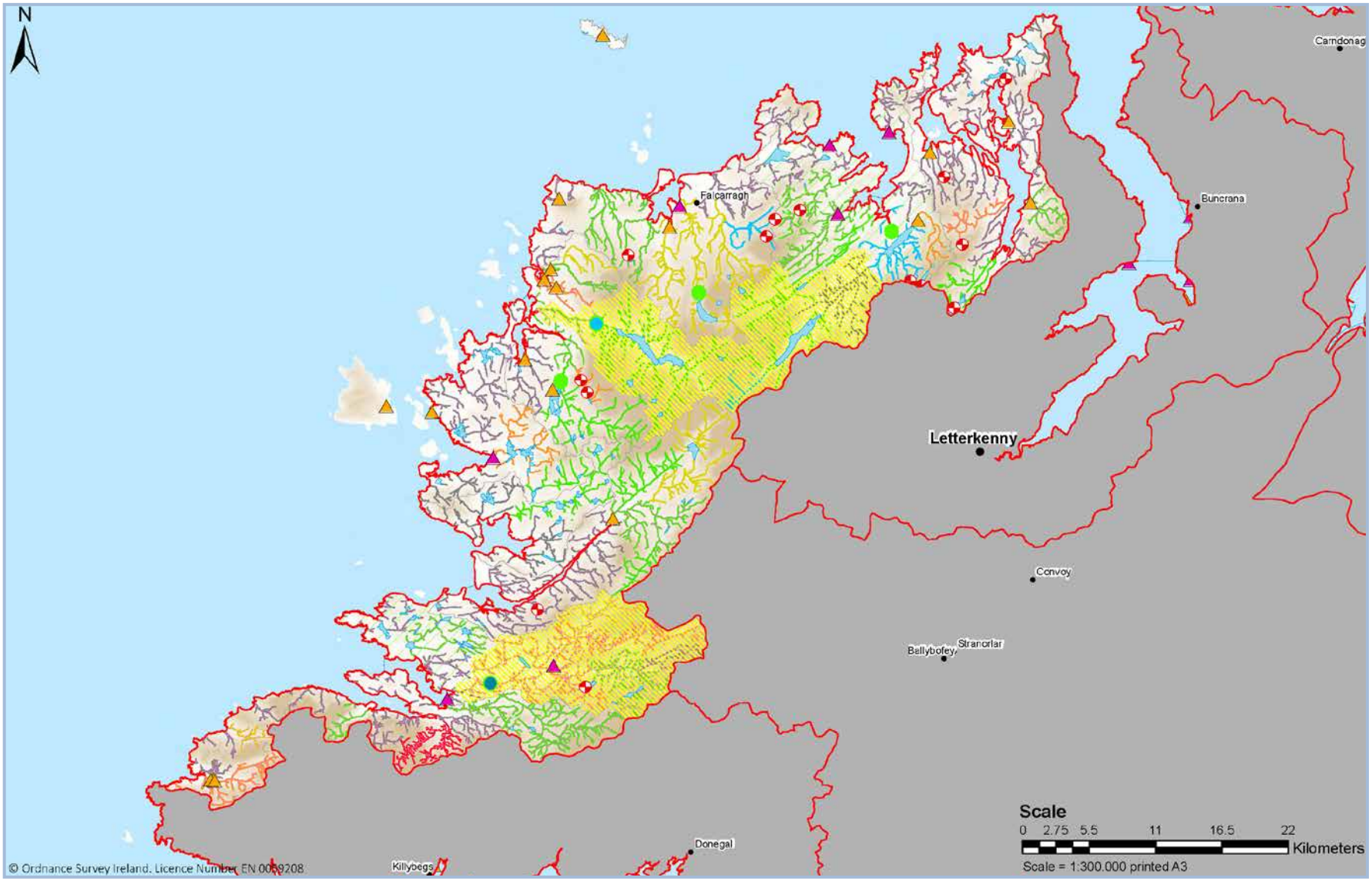

Hydrometric Area 39 & 40