# Sampling Fish for the Water Framework Directive

## Summary Report

## 2024

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Iascach Intíre Éireann
Inland Fisheries Ireland

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Cover photo: Lake boats on Lough Corrib © Inland Fisheries Ireland

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## Executive summary

Inland Fisheries Ireland has been assigned the responsibility by the Environmental Protection Agency of delivering the fish monitoring requirements for the Water Framework Directive (WFD) in Ireland. In 2024, 27 lakes, 273 river sites, and nine transitional water bodies were surveyed as part of the national IFI fish surveillance monitoring programme.

All surveys were conducted using a suite of European standard methods, including a range of different net types to sample lakes and transitional waters, and electrofishing methods to sample rivers.

A total of 17 species (sea trout are included as a separate "variety" of trout) and two cyprinid hybrids were captured across the lake waterbodies surveyed in 2024. European eel had the widest distribution, with perch the most abundant species. A total of 26 lake waterbodies surveyed in 2024 were assigned a fish ecological status using the FIL2 ecological classification tool, together with expert opinion. Three lake waterbodies were assigned a status of High; eight as Good; three as Moderate; two as Poor and ten as Bad. All lake waterbodies except Lough Doon had been surveyed previously, and when compared to previous results, fifteen lake waterbodies had an unchanged ecological status, three showed improved status, and eight had deteriorated. In the three-year period between 2022 to 2024, 58.5% long-term surveillance monitoring (SM) lake waterbodies were assigned the required standard of Good or High fish ecological status while the remaining 41.5% failed to meet this standard. This was a decrease from the previous three-year cycle when 75.7% of SM lake waterbodies met or exceeded the Good status threshold. Additionally 14 (26.4%) SM lake waterbodies deteriorated in status while ten lake waterbodies (18.9%) improved in fish ecological status during the 2022 to 2024 cycle. Therefore there was a net deterioration in fish ecological status at SM lake waterbodies since the previous monitoring cycle in 2019-2021.

Fifteen fish species (sea trout are counted as a separate "variety" of trout) and one cyprinid hybrid were recorded across 273 river sites surveyed in 2024, with brown trout the most frequently encountered species. The FCS2-Ireland ecological classification tool was used together with expert opinion to assign ecological status to each river site. A total of seven sites were classified as High status, 66 as Good, 147 as Moderate, 46 as Poor, and six as Bad. One site was unclassified, following a sense check using expert opinion. Of the 272 sites assigned an ecological fish status in 2024, 79 had previously been surveyed and classified. Of these, the status of 44 sites remained the same between surveys, while 26 sites deteriorated and nine improved. Therefore, there was no overall improvement in the fish ecological status of river sites that were previously surveyed. 591 river sites were assigned fish ecological status in the 2022-2024 monitoring cycle. Only 175 (29.5% exceeded the minimum ecological standard of Good. Ninety-seven sites surveyed in this cycle were long-term SM sites. Of

these 34% (33 sites) achieved Good or higher status while 66% (64 sites) failed to meet the minimum ecological threshold. This was a decrease in overall fish ecological status since the 2019-2022 cycle when 40% of sites were assigned Good or higher. Additionally 22.9% (22 sites) of SM sites deteriorated while 12.5% (12 sites) improved in fish ecological status. Therefore there was a net deterioration in fish ecological status at SM river sites since the previous monitoring cycle.

A total of 35 species of fish were recorded in the nine transitional waterbodies surveyed in 2024. Sand goby was the most widely distributed species, occurring in all nine waterbodies. The Estuarine Multimetric Fish Index (EMFI) ecological classification tool, together with expert opinion was used to assign ecological status to each transitional waterbody surveyed. All transitional waterbodies surveyed in 2024 were classified as Moderate status. Six of the waterbodies surveyed had no change in status while two waterbodies, the Gweebarra Estuary and New Ross Port — deteriorated from Good to Moderate. During the current three-year monitoring cycle (2022-2024) 18 waterbodies were assigned fish ecological status and 94% of these failed to meet the minimum threshold of Good fish ecological status; while 83% of these deteriorated in status when compared to the previous monitoring cycle. Of these waterbodies 15 were long-term SM waterbodies and 14 (93%) failed to meet the required ecological standard of Good while all deteriorated in status. Therefore, there was an overall deterioration in fish ecological status at SM TRAC waterbodies since the previous monitoring cycle.

Multiple pressures (including those causing water quality and hydromorphological changes) on waterbodies accounted for the failures and deteriorations in fish ecological status in lake, river and transitional water bodies during the 2022-2024 monitoring cycle.

## 1. INTRODUCTION

In December 2000, the European Union introduced the Water Framework Directive (WFD) (2000/60/EC) as part of a new, standardised approach for all Member States to manage their water resources and protect aquatic ecosystems. The WFD was transposed into Irish law in December 2003 (Water Regulations S.I. No. 722 of 2003).

The fundamental objective of the WFD is to protect and maintain the status of waters that are already of Good or High quality, to prevent any further deterioration, to restore all waters that are impaired so that they achieve at least Good ecological status, and to ensure long-term sustainable use.

River Basin Management Plans (RBMPs) are required under the WFD and set out the government's approach to protect national waters through *Programmes of Measures* for each six-year cycle of the directive. The first RBMP cycle ran from 2009-2014, and the second from 2015-2021. Ireland is currently in its third RBMP cycle, which began in 2022 and will end in 2027.

A key step in the WFD process is for EU Member States to assess the health of their surface waters through national monitoring programmes. Classification tools are the main instruments used to assess status in five discrete bands (High, Good, Moderate, Poor or Bad) for each waterbody (a predefined section in a river, or other surface water). Once each country has determined the current status of their waterbodies, ongoing monitoring helps to track the effectiveness of measures needed to improve them and achieve at least Good status. The responsibility for monitoring fish has been assigned to Inland Fisheries Ireland (IFI) by the Environmental Protection Agency (EPA) (EPA, 2006 and 2021). A national fish stock surveillance monitoring programme for the WFD has been conducted since 2007 at specified locations. This surveillance monitoring programme encompasses lakes, rivers, and transitional waters (freshwater tidal river reaches, estuaries and lagoons) and provides information on species composition, abundance, and age structure (e.g. growth patterns, and population demographics). The river fish monitoring programme has also been updated recently to follow an index catchment approach that will provide a more comprehensive overview of the health of fish stocks in each catchment for IFI, the EPA, and other stakeholders (Matson *et al.,* 2021). For transitional waters the programme will be similarly updated to rationalise monitoring activity and to include waterbodies with substantive deterioration in status.

A team from IFI carried out the 2024 monitoring programme using a suite of European standard methods. Electrofishing was the main survey method used in rivers, with various netting techniques used for both lakes and transitional waters. Field survey work was carried out between June and October (inclusive), the optimum timeframe for sampling fish in Ireland. This included lake surveys

between June and September, rivers between July and September, and transitional waters between September and October.

This report summarises the main findings of these surveys and reports on the current ecological status and fish stocks in each. Detailed reports on all waterbodies surveyed are available to download from the *Research* section of the IFI corporate website (https://www.fisheriesireland.ie/what-we-do/research/water-framework-directive-fish-monitoring-programme) or from the dedicated WFD fish web page (www.wfdfish.ie). A summary of fish status in each waterbody type from 2022-2024 is also included.

**Plate 1.1 Electrofishing boat on the River Maigue at Toreen, Co. Limerick, September 2024.**

## 2. STUDY AREA

Inland Fisheries Ireland is organised into six River Basin Districts (RBDs); Eastern (ERBD), Northwestern (NWRBD), Shannon (ShRBD), Southeastern (SERBD), Southwestern (SWRBD) and Western (WRBD). Surveys to assess the status of fish stocks were carried out in all six RBDs during 2024 (Figure 2.3).

For ease of navigation through this report, results are presented under three survey types.

- Surveillance monitoring (SM) surveys - normally carried out at prescribed sites on a three-year rolling-cycle as part of the WFD national monitoring programme. Some exceptions/changes to this programme have been agreed with the Environmental Protection Agency. These include surrogate sites where it was not possible to survey at the exact SM site and an alternate site was identified within the SM waterbody.

- Additional value/surveillance monitoring waterbody (AV/SM) - a survey undertaken within a surveillance monitoring waterbody but not at the surveillance monitoring station. Such surveys are intended to provide additional information on the SM waterbody but are not intended to replace the SM site.

- Additional value (AV) surveys - surveys carried out by IFI's research teams for various reasons, including lake surveys for the National Coarse Fish Research Programme and baseline river catchment surveys. These results have been included in this report to provide a more comprehensive overview of fish ecological status in each waterbody or catchment.

### *2.1 Lakes*

Twenty-seven lake waterbodies were surveyed between the 7th of June and the 5th of October 2024. Seven lake waterbodies were in the NWRBD, twelve in the WRBD (including Lough Corrib Upper and Lough Corrib Lower as separate waterbodies), five in the SHRBD, two in the SWRBD and one in the ERBD (Figure 2.1). In total, 14 of those surveyed were surveillance monitoring waterbodies (SM) (Table 4.2 and Figure 2.3). These SM waterbodies are normally surveyed on a three-year rolling cycle as part of the WFD programme, but there are some exceptions to this rule that have been agreed with the Environmental Protection Agency.

Thirteen additional value (AV) lake waterbodies were surveyed and their WFD fish ecological status calculated. Six lakes (Loughs Adrehid, Agraffard, Ateeaun, Bofin, Loughnaphreaghaun and Shanagree), were surveyed as part of IFI's ongoing effectiveness monitoring programme for the Owenriff Fish

Population Rehabilitation Plan (IFI, 2018). Four lakes (Belhavel Lough, Lough Boderg, Lough Ramor and Inniscarra reservoir), were surveyed as part of IFI's ongoing coarse fish programme. Two lakes in the NWRBD (Lough's Doon and Altan), were surveyed as part of IFI's Arctic char Research Programme and one lake (Lough Ennell) as part of the WFD operational monitoring programme and IFIs brown trout programme (Table 4.2 and Figure 2.3).

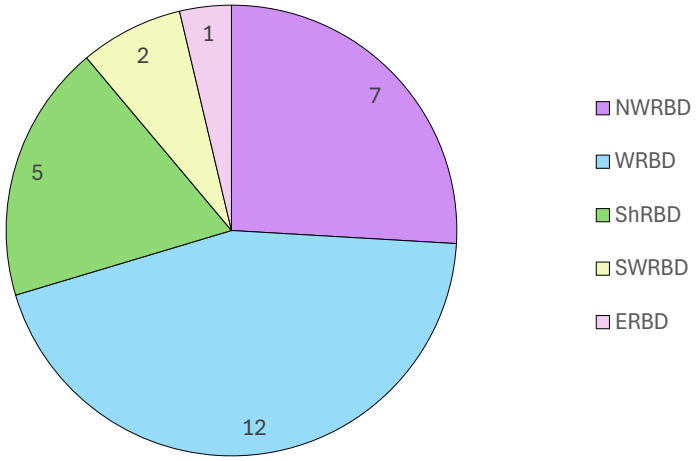


**Figure 2.1. The number of lakes surveyed in each IFI RBD in 2024.**

***2.2 Rivers***

IFI research staff surveyed 273 river sites across five of IFI's RBDS in 2024 between the 1st of July and the 26th of September 2024 (Figures 2.2 and 2.3). Of these 273 sites, IFI's Environmental Drainage Maintenance Research Programme (EDMRP) team surveyed 32 sites as part of a collaboration on the River Maigue catchment. Fifty sites were surveyed in the ERBD, 25 in the NWRBD, 54 in the SERBD, 108 in ShRBD and 36 in SWRBD (Figure 2.2). A total of 32 sites were SM sites, 29 sites were classified as SM/AV sites and 212 sites were classified as AV sites (Figure 2.2 and Table 4.4).

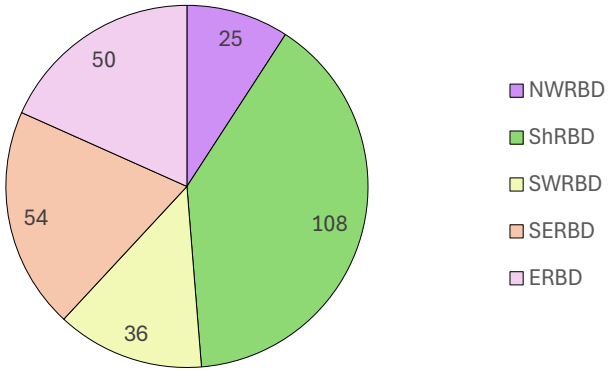


**Figure 2.2. The number of river sites surveyed in each RBD in 2024.**

### *2.3 Transitional waters*

Nine transitional waterbodies were surveyed between the 13th of September and the 19th of October 2024. Eight transitional water bodies were surveyed in the SERBD, and one in the NWRBD (Table 4.5 and Figure 2.3).

The eight waterbodies surveyed in the SERBD were the Barrow Upper Estuary, Barrow Nore Upper Estuary, Barrow Suir Nore Estuary, New Ross Port, Nore Estuary, Suir Upper Estuary, Suir Middle Estuary and the Suir Lower Estuary. All eight water bodies surveyed are part of the WFD SM monitoring programme. These eight waterbodies, when merged, form the Barrow-Nore-Suir Complex. The single waterbody surveyed in the NWRBD during 2024 was the Gweebarra Estuary, which is also a WFD SM waterbody.

**Plate 2.1. The lower Gweebarra Estuary, looking upstream to Gweebarra Bridge.**

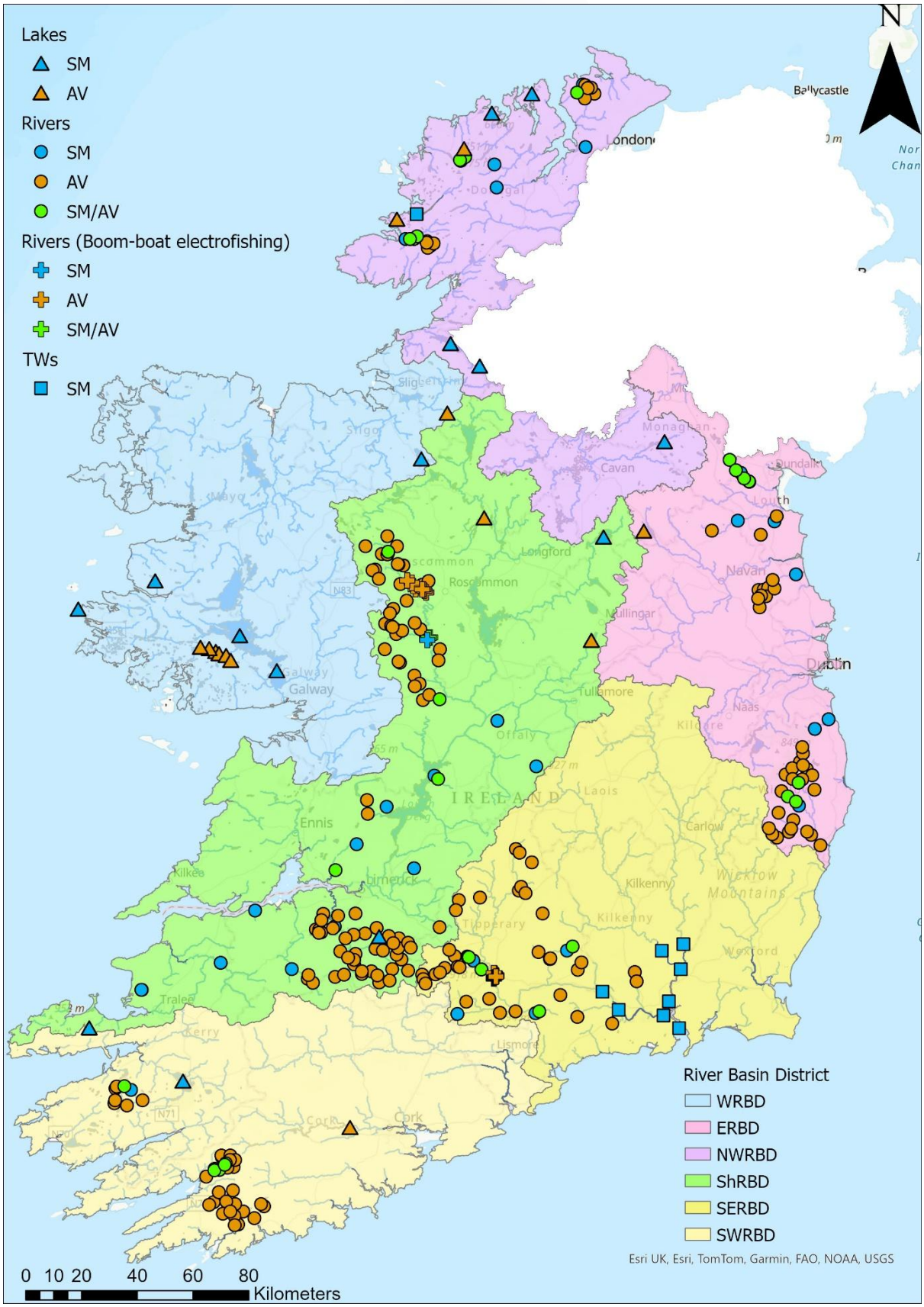


**Figure 2.3. Location of WFD surveillance monitoring and additional value (SM/AV or AV) surveys carried out on lakes, rivers and transitional waters from June to October 2024.**

## 3. METHODS

All surveys were conducted using a suite of European standard methods (CEN, 2003; CEN, 2005; CEN, 2015) and IFI standard operating protocols. Electrofishing is the main survey method used in rivers, while a multi-method netting approach is used in both lakes and transitional waters.

Procedures are required for the disinfection of equipment to prevent the dispersal and introduction of invasive aquatic species and other organisms to unimpacted waters. A standard operating procedure was compiled by Inland Fisheries Ireland for this purpose (Caffrey, 2010) and is followed by staff when moving between water bodies.

### *3.1 Lakes*

Lake water bodies were surveyed using a netting method developed and tested during the NSSHARE Fish in Lakes Project 2005-2006 (Kelly *et al*., 2007a; Kelly *et al*., 2007b; Kelly *et al*., 2008) and updated during an IFI intercalibration exercise (Connor *et al.,* 2017). The method is based on the European CEN standard for sampling fish with multi-mesh monofilament survey gill nets (12 panel, 5-55mm mesh size) using a stratified random sampling design (CEN, 2015). However, the netting effort has been reduced (approximately 50%) for Irish lakes to minimise damage to fish stocks (Kelly *et al*., 2008). Each lake is divided into depth strata (0-2.9 m, 3-5.9 m, 6-11.9 m, 12-19.9 m, 20-34.9 m, 35-49.9 m, 50-75 m, >75 m) where appropriate, and random sampling is conducted within each of these (CEN, 2015). Floating multi-mesh monofilament gill nets, fyke nets (one unit comprised of three fyke nets; leader size 8m x 0.5m) and single panel large mesh multifilament braided gill nets are also used to supplement the CEN standard gill netting effort.

All fish except for perch were measured and weighed on-site, and scales were removed from all brown trout, salmon, pike, roach, bream and roach × bream hybrids. Live fish were returned to the water whenever possible (i.e., when the likelihood of their survival was considered good). Samples of fish were retained for further analysis.

### *3.2 Rivers*

Electrofishing is the method of choice for obtaining a representative sample of fish in rivers. It is a well-established technique used by fishery biologists globally for sampling and is the most non-destructive, effective and cost-efficient method. This technique complies with European Committee for Standardisation (CEN) guidelines for fish stock assessment in rivers (CEN, 2003). In 2024, both wadable electrofishing and non-wadeable boat-based electrofishing were used.

### 3.2.1 Wadeable electrofishing

Two methods of electrofishing were used to sample small wadeable channels (<0.5–0.7 m in depth) in 2024. These were Area Delineated Electrofishing (ADEF) and Ten-Minute timed electrofishing ($TEF_{10}$).

ADEF is the primary quantitative method used to sample surveillance monitoring sites. A wadeable electrofishing set consists of one portable generator (220/240V) or electrofishing backpack with an appropriate control unit (DC converter), a cathode and an anode. The number of sets used on each site is determined by the width of the site and varies between one and three sets. ADEF electrofishing involves between two and more operators depending on the number of sets used. Electrofishing is carried out by wading in an upstream direction, ensuring that the electrical field covers the entire width of the river. A representative sample of the pool-riffle-glide river continuum is desirable; however, at some locations this habitat breakdown may not be available. Three fishing passes are typically conducted using this method, with stop-nets deployed upstream and downstream of the survey stretch to prevent loss or recruitment of fish between each pass.

The $TEF_{10}$ electrofishing method is a qualitative procedure that supplements the ADEF method. $TEF_{10}$ electrofishing generally involves two operators and is used to sample added value (AV) sites where the wetted width of the survey site is <10 metres. This rapid assessment method is quicker and less resource demanding than ADEF fishing and allows for a more comprehensive catchment-wide survey. The equipment used consists of one portable generator (220/240V) or electrofishing backpack with an appropriate control unit (DC converter), a cathode and an anode. No stop-nets are deployed. Electrofishing takes place by wading upstream in a zigzag manner for exactly ten minutes at a steady pace (Matson *et al.,* 2018).

### 3.2.2 Non wadeable boat-based electrofishing

Two methods of electrofishing were used to sample non-wadeable channels in 2024. These were ADEF using boat-based electrofishing equipment and systematic point abundance sampling using boom-boat-based electrofishing equipment.

ADEF using boat-based electrofishing is conducted on larger, deeper channels (>0.5 –1.5 m). Typically, boat-based electrofishing is carried out from a flat-bottomed boat(s) in a downstream direction using a generator, control box, a pair of anodes and a cathode. The width of the channel determines how many boats should be used to sufficiently sample the site. One, two or three fishing passes are conducted using this method, with stop-nets deployed upstream and downstream of the survey

stretch where feasible to prevent loss or recruitment of fish between each pass. Where a river is too wide for the number of boats or resources available are limited to cover the entire channel width, a partial survey may be undertaken along one bank.

On the largest navigable channels (wide and deep), such as the River Shannon, specialised boom-boat electrofishing equipment are used. The boom-boat holds a large high-powered generator, a specialised high-voltage control box, a live well and two wide 'booms', which are deployed into the water to spread the electrical current (Plate 3.1). The sampling method (sPASE) involves moving upstream, collecting fish at numerous evenly distributed point samples (20m apart), along the right or left bank of the study site area. Upon arrival at a sampling point, the electrical power is activated for ten seconds. The catch per unit effort (CPUE; number of activations per site) is determined by the total length of the site surveyed. For the above methods, all fish were counted and measured on site.

### 3.2.3 Habitat assessment

An evaluation of river habitat quality is critical to any bioassessment survey; therefore, a simple habitat assessment was carried out at each site. General physical characteristics of the site were recorded, alongside parameters including river typology, land use, fish pressures, riparian and bank vegetation, instream features, habitat breakdown, flow type, and substrate. Wetted width and depth were typically measured using five transects across each site, with five depth intervals along each. Other physicochemical parameters were also recorded, including water temperature (°C) and conductivity (µS/cm).

**Plate 3.1. Boom-boat electrofishing.**

### *3.3 Transitional waters*

Transitional waters (freshwater tidal river reaches, estuaries, and lagoons) are an interface habitat, where freshwater flows from rivers and mixes with the tide and salinity of the sea. As such, they provide a challenging habitat to survey due to their constantly changing environmental conditions. In every 25-hour period (approximately), the tidal level rises and falls twice, subjecting extensive areas to inundation and exposure.

Wightman *et al.* (2024) describes the multi-method netting approach, including the use of beach-seine netting, beam trawling and fyke netting, utilised by IFI staff to survey transitional waters in 2024.

### *3.4 Fish ecological status*

An essential step in the WFD monitoring process is the classification of the ecological status of lakes, rivers, and transitional waters. These classifications assist in identifying the objectives that must be met in the individual River Basin Management Plans (RBMPs).

Three fish ecological classification tools have been developed to assign status to fish stocks in Irish lakes, rivers, and transitional waters for WFD purposes. The Fish in Lakes (FIL2) ecological classification tool (Kelly *et al.,* 2012) was used to assign ecological status to lakes surveyed in 2024. An ecological classification tool for fish in rivers (Fisheries Classification Scheme 2) was modelled on that used by the Environment Agency in the UK and re-developed in 2011 to assign ecological status to fish in rivers for the Republic of Ireland and Northern Ireland (FCS2-Ireland), along with a separate version for Scotland (SNIFFER, 2011). The Estuarine Multi-Metric Fish Index (EMFI) (Harrison and Kelly, 2013) developed in 2013, was used to assign status to transitional water bodies.

All three models assign a site an Ecological Quality Ratio (EQR). The EQR (ranging from 1-0), determines the ecological status of a water body by quantifying how much it deviates from natural (reference) conditions. The higher the EQR, the closer the ecosystem is to its natural state, placing it in a higher status class (e.g. "High" or "Good"), while lower EQRs reflect increased ecological disturbance, resulting in failing status classifications like "Moderate," "Poor," or "Bad."

## 4. RESULTS

### *4.1 Lakes*

4.1.1 Fish species distribution and abundance

A total of 17 fish species (with sea trout counted as a separate "variety" of trout) and two cyprinid hybrids were recorded across the 27 lake waterbodies surveyed in 2024 (Table 4.1). European eels had the widest distribution, occurring in 21 lakes (77.8%), followed by brown trout in 17 lakes (63.0%) and pike in 15 lakes (55.6%). Perch were recorded in 14 lakes (51.9%), roach in 11 (40.7%), and roach × bream hybrids in 10 (37.0%). Rudd were found in nine lakes (33.3%) and tench in eight lakes (29.6%), while bream and three-spined stickleback were present in seven (25.9%). Arctic char were recorded in five lakes (18.5%), gudgeon in four (14.8%), and Atlantic salmon in three (11.1%). Sea trout and minnow were each recorded in two lakes (7.4%), while flounder, nine-spined stickleback, rudd × bream hybrids, stone loach, and Killarney shad were each noted in one lake waterbody (3.7%) (Table 4.1 and Figures 4.11 to 4.25).

**Plate 4.1. Survey boat on Lough Caum, Co. Kerry in 2024.**

**Table 4.1. Fish species (including cyprinid hybrids and sea trout) recorded in lake waterbodies surveyed in 2024.**

| | Scientific name | Common name | Number of lakes | % of lakes |
|---|---|---|---|---|
| 1 | *Anguilla anguilla* | European eel | 21 | 77.8 |
| 2 | *Salmo trutta* | Brown trout | 17 | 63.0 |
| | *Salmo trutta trutta* | *Sea trout | 2 | 7.4 |
| 3 | *Esox lucius* | Pike | 15 | 55.6 |
| 4 | *Perca fluviatilis* | Perch | 14 | 51.9 |
| 5 | *Rutilus rutilus* | Roach | 11 | 40.7 |
| 6 | *Rutilus rutilus × Abramis brama* | Roach × Bream hybrid | 10 | 37.0 |
| 7 | *Scardinius erythrophthalmus* | Rudd | 9 | 33.3 |
| 8 | *Tinca tinca* | Tench | 8 | 29.6 |
| 9 | *Gasterosteus aculeatus* | Three-spined stickleback | 7 | 25.9 |
| 10 | *Abramis brama* | Bream | 7 | 25.9 |
| 11 | *Salvelinus alpinus* | Arctic char | 5 | 18.5 |
| 12 | *Gobio gobio* | Gudgeon | 4 | 14.8 |
| 13 | *Salmo salar* | Atlantic salmon | 3 | 11.1 |
| 14 | *Phoxinus phoxinus* | Minnow | 2 | 7.4 |
| 15 | *Platichthys flesus* | Flounder | 1 | 3.7 |
| 16 | *Pungitius pungitius* | Nine-spined stickleback | 1 | 3.7 |
| 17 | *Barbatula barbatula* | Stone loach | 1 | 3.7 |
| 18 | *Scardinus erythrophthalmus × Abramis brama* | Rudd × Bream hybrid | 1 | 3.7 |
| 19 | *Alosa fallax killarnensis* | Killarney shad | 1 | 3.7 |

*Note: *sea trout are counted as a separate "variety" of trout and not a species.*

Relative species abundance was recorded as Catch-Per-Unit-Effort (CPUE), which is the number of fish captured per metre of survey net (fish/m). Although a species may have been recorded in a lake, it might not have been in high abundance or dominant. The six lakes that form part of the Owenriff Fish Population Rehabilitation Plan (Loughs Adrehid, Agraffard, Ateeaun, Bofin, Loughaphreaghaun and Shanagree), produced low numbers of fish during the netting surveys. No fish were recorded in two lakes - Lough Adrehid and Loughaphreaghaun. Due to the associated low CPUE values, no dominant species was identified for these lakes.

Of the remaining 21 lake waterbodies, perch was the most abundant species captured during the 2024 survey season and was the dominant species in 11 lake waterbodies surveyed. The highest CPUE of perch was recorded in White Lough (0.911 fish/m of net) (Figure 4.14).

Roach was the second most abundant species recorded and was the dominant species in two lake waterbodies. The highest CPUE for roach (0.722 fish/m of net) was also recorded in White Lough (Figure 4.15).

Brown trout was the dominant species in four lake waterbodies, with highest CPUE (0.275 fish/m of net) recorded in Lough Doon (Figure 4.11). Three-spined stickleback was the most dominant species in two lake waterbodies surveyed. The highest CPUE for three-spined stickleback (1.551 fish/m of net) was recorded in Sessiagh Lough (Figure 4.18). Rudd was the dominant species in two lake waterbodies, with a highest CPUE (0.739 fish/m of net) recorded in Lough Gur (Figure 4.20).

The distribution and abundance of the most common fish species captured amongst all lakes surveyed in 2024 is shown in Figures 4.11 to 4.25. In addition to the species displayed in the figures, sea trout were captured in two lakes: Lough Leane in the SWRBD and Doo Lough in the WRBD. Nine-spined stickleback were captured in Lough Sheelin (ShRBD). Rudd × bream hybrids, flounder, and Killarney shad were recorded in Lough Leane (SWRBD).


**Plate 4.2. Lake boats on the shore of Lough Corrib, Co. Galway in 2024.**

4.1.2 Fish ecological status classification in lakes

A total of 26 lake waterbodies surveyed in 2024 were assigned a fish ecological status using the FIL2 ecological classification tool. One lake, Lough Doon was not assigned a status due to the absence of fyke nets from the survey. A total of 11 lake waterbodies (42.3%) were classified as High or Good ecological status, 15 lake waterbodies (57.7%) were assigned a status of Moderate or worse (Table 4.2, Figure 4.1, and 4.9). Of the 26 lake waterbodies assigned status in 2024, all 26 had previously been sampled and assigned a fish ecological status. Fifteen lake waterbodies (57.7%) had an unchanged ecological status, three (11.5%) showed an improvement in status, while the remaining eight (30.8%) had deteriorated (Table 4.2, Figures 4.2 and 4.9).

A total of 14 long-term surveillance monitoring (SM) lakes were surveyed in 2024. Of these eight (57.1%) were assigned a fish ecological status of High or Good, the remaining six sites (42.9%) were assigned a status of Moderate or worse (Table 4.2, Figures 4.3 and 4.9). All 14 lakes had previously been assigned status. Seven lakes (50.0%) had an unchanged ecological status, five lakes (35.7%) had deteriorated, while the remaining two sites showed an improvement in status (14.3%) (Table 4.2, Figures 4.4 and 4.9).

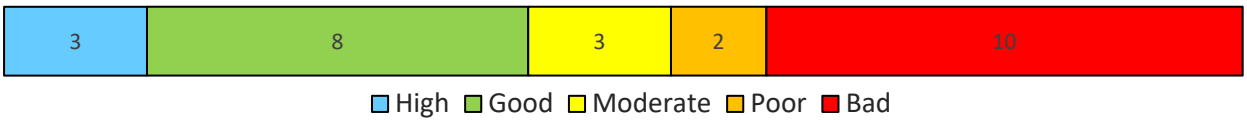


**Figure 4.1. Fish ecological status for lake waterbodies surveyed in 2024.**


**Figure 4.2. Change in fish ecological status for lake waterbodies surveyed in 2024.**

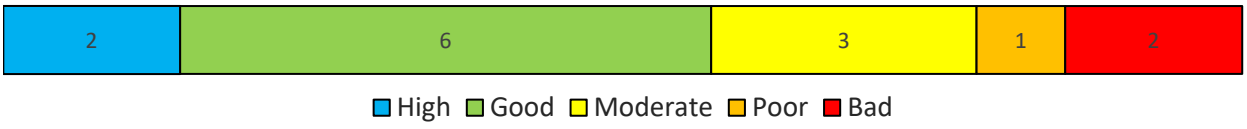


**Figure 4.3. Fish ecological status for SM lake waterbodies surveyed in 2024.**


**Figure 4.4. Change in fish ecological status for SM lake waterbodies surveyed in 2024.**

4.1.3 Lakes ecological status three-year summary 2022-2024

A total of 77 lake waterbodies were assigned fish ecological status in the three-year period between 2022 and 2024. Of these sites, 39 (50.7%) were assigned a status of Good or High, 38 sites (49.3%) were assigned a status of Moderate or worse (Figures 4.5 and 4.10). All 77 lake waterbodies had previously been assigned a fish ecological status. A total of 15 (19.5%) lake waterbodies improved in ecological status compared to the previous survey, 41 (53.2%) sites showed no change in status and 21 (27.3%) deteriorated in ecological status (Figure 4.6).


**Figure 4.5. Fish ecological status for lake waterbodies in the survey period of 2022 to 2024.**


**Figure 4.6. Change in fish ecological status for lake waterbodies in the survey period of 2022 to 2024.**

A total of 53 long term surveillance monitoring lake waterbodies were assigned status between 2022 and 2024. Of these, 31 were classified as having High or Good status (58.5%), the remaining 22 lake waterbodies (41.5%) were classified as having a status of Moderate or lower (Figures 4.7 and 4.10). All 53 SM lakes had previously been assigned a fish ecological status. Of these, the status of 29 (54.7%) lakes remained the same between surveys, while 14 waterbodies (26.4%) deteriorated in status, and 10 sites (18.9%) improved (Figure 4.8).


**Figure 4.7. Fish ecological status for SM lake waterbodies in the survey period of 2022 to 2024.**


**Figure 4.8. Change in fish ecological status for SM lakes in the survey period of 2022 to 2024.**

**Plate 4.3. Boat electrofishing on the River Suck in the ShRBD (2024)**

**Table 4.2. Summary details and fish ecological status of lake waterbodies surveyed for the WFD fish monitoring programme.**

| Lake Waterbody Name | Lake Code | Survey type | Catchment | FIL2 Typology | Area (ha) | Previous Status | 2024 Status |
|---|---|---|---|---|---|---|---|
| **ERBD** | | | | | | | |
| Ramor | EA_07_275 | AV | Boyne | 1 | 712.6 | B (2019) | Bad |
| **NWRBD** | | | | | | | |
| Altan | NW_38_19 | AV | Tullaghobegly | 2 | 131.8 | H (2005) | High |
| Doon | NW_38_64 | AV | Coastal | 1 | 17.0 | - | N/A |
| Kindrum | NW_38_670 | SM | Coastal | 3 | 60.8 | M (2021) | Moderate |
| Lattone | NW_35_143 | SM | Drowes | 1 | 32.8 | P (2021) | Moderate |
| Melvin | NW_35_160 | SM | Drowes | 2 | 2197.0 | G (2021) | Good |
| Sessiagh | NW_38_61 | SM | Coastal | 2 | 24.1 | H (2021) | High |
| White | NW_36_647 | SM | Erne | 3 | 53.8 | P (2018) | Bad |
| **ShRBD** | | | | | | | |
| Boderg | SH_26_747b | AV | Shannon | 3 | 970.0 | B (2019) | Bad |
| Caum | SH_23_74 | SM | Owencashla | 1 | 8.0 | G (2018) | High |
| Ennell | SH_25_188 | AV | Brosna | 4 | 1151.0 | M (2017) | Poor |
| Gur | SH_24_99 | SM | Shannon | 3 | 78.9 | M (2021) | Poor |
| Sheelin | SH_26_709 | SM | Inny | 3 | 1808.2 | G (2021) | Good |
| **SWRBD** | | | | | | | |
| Inniscarra | SW_19_138 | AV | Lee | 2 | 489.0 | G (2019) | Good |
| Leane | SW_22_185 | SM | Laune | 2 | 1944.3 | G (2021) | Moderate |
| **WRBD** | | | | | | | |
| Adrehid | WE_30_215 | AV | Corrib | 1 | 7.5 | B (2021) | Bad |
| Agraffard | WE_30_334 | AV | Corrib | 1 | 29.0 | P (2020) | Bad |
| Arrow | WE_35_159 | SM | Ballysadare | 4 | 1247.0 | G (2018) | Good |
| Ateeaun | WE_30_235 | AV | Corrib | 1 | 3.8 | B (2021) | Bad |
| Aughrusbeg | WE_32_436 | SM | Coastal | 1 | 50.2 | P (2021) | Bad |
| Belhavel | WE_35_155 | AV | Garvogue | 1 | 100.9 | G (2019) | Good |
| Bofin | WE_30_335 | AV | Corrib | 1 | 92.0 | P (2020) | Bad |
| Corrib Lower | WE_30_666a | SM | Corrib | 3 | 5062.8 | G (2021) | Good |
| Corrib Upper | WE_30_666b | SM | Corrib | 4 | 11568.3 | G (2021) | Good |
| Doo | WE_32_490 | SM | Erriff | 2 | 154.5 | H (2018) | Good |
| Loughaphreaghaun | WE_30_346 | AV | Corrib | 1 | 65.0 | B (2021) | Bad |
| Shanagree | WE_30_307 | AV | Corrib | 1 | 4.3 | B (2021) | Bad |

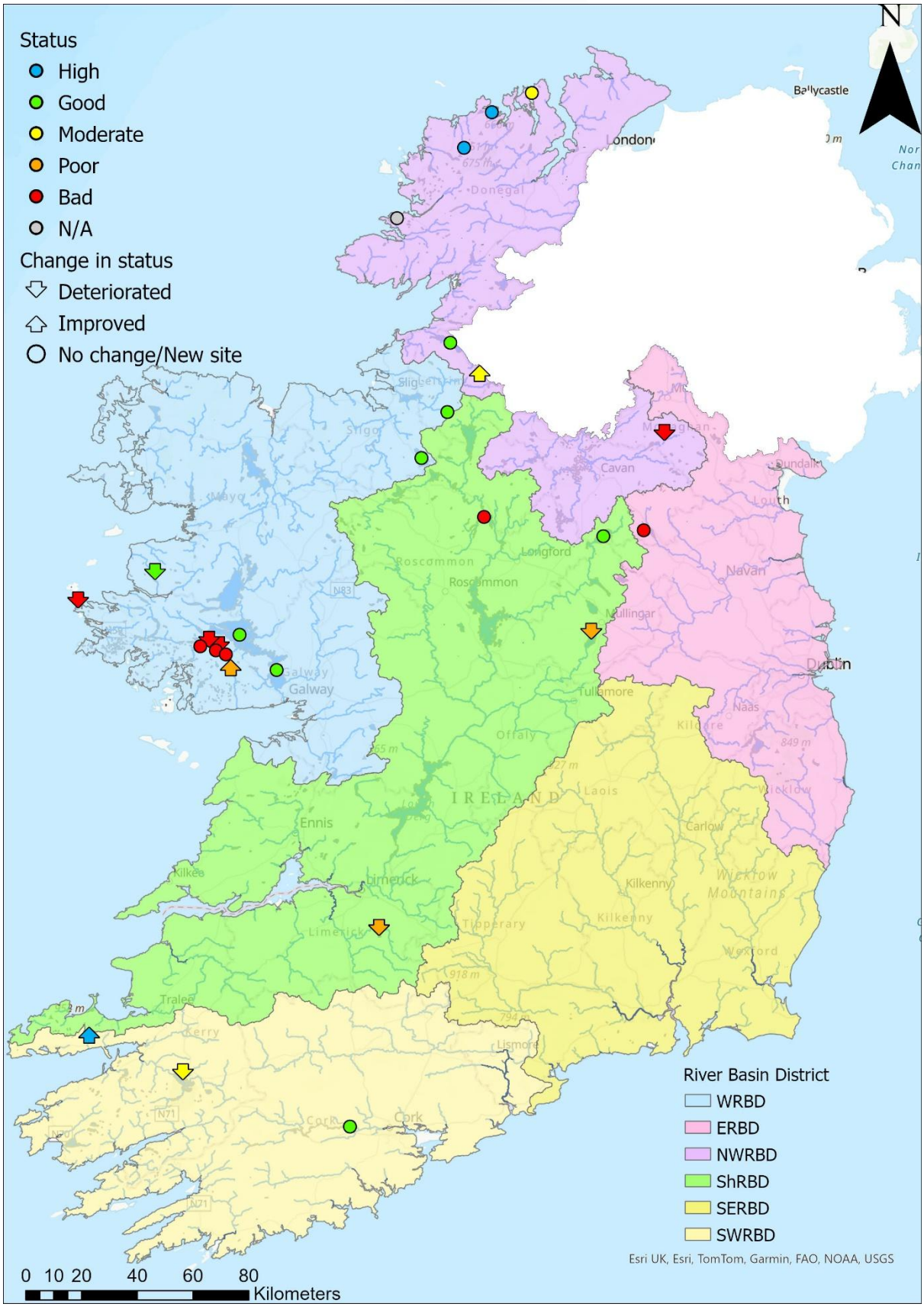


**Figure 4.9. Fish ecological status for lake waterbodies surveyed in 2024. Improvements or deteriorations in fish ecological status since the previous survey is indicated by an arrow where applicable.**

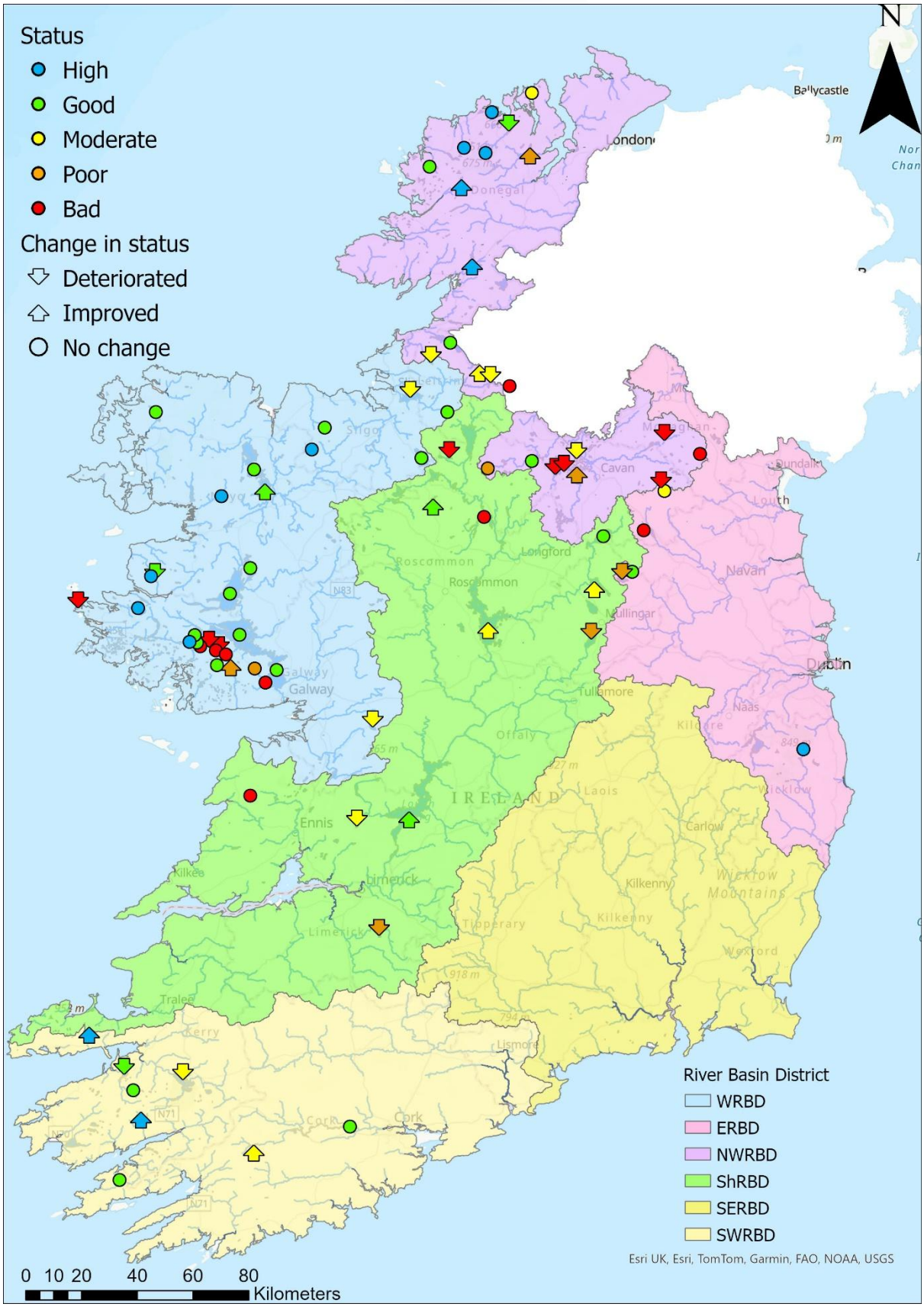


**Figure 4.10. Ecological status of lake waterbodies surveyed between 2022-2024 using the FCS2-Ireland ecological classification tool. Improvements or deteriorations in fish ecological status since the previous survey is indicated by an arrow where applicable.**

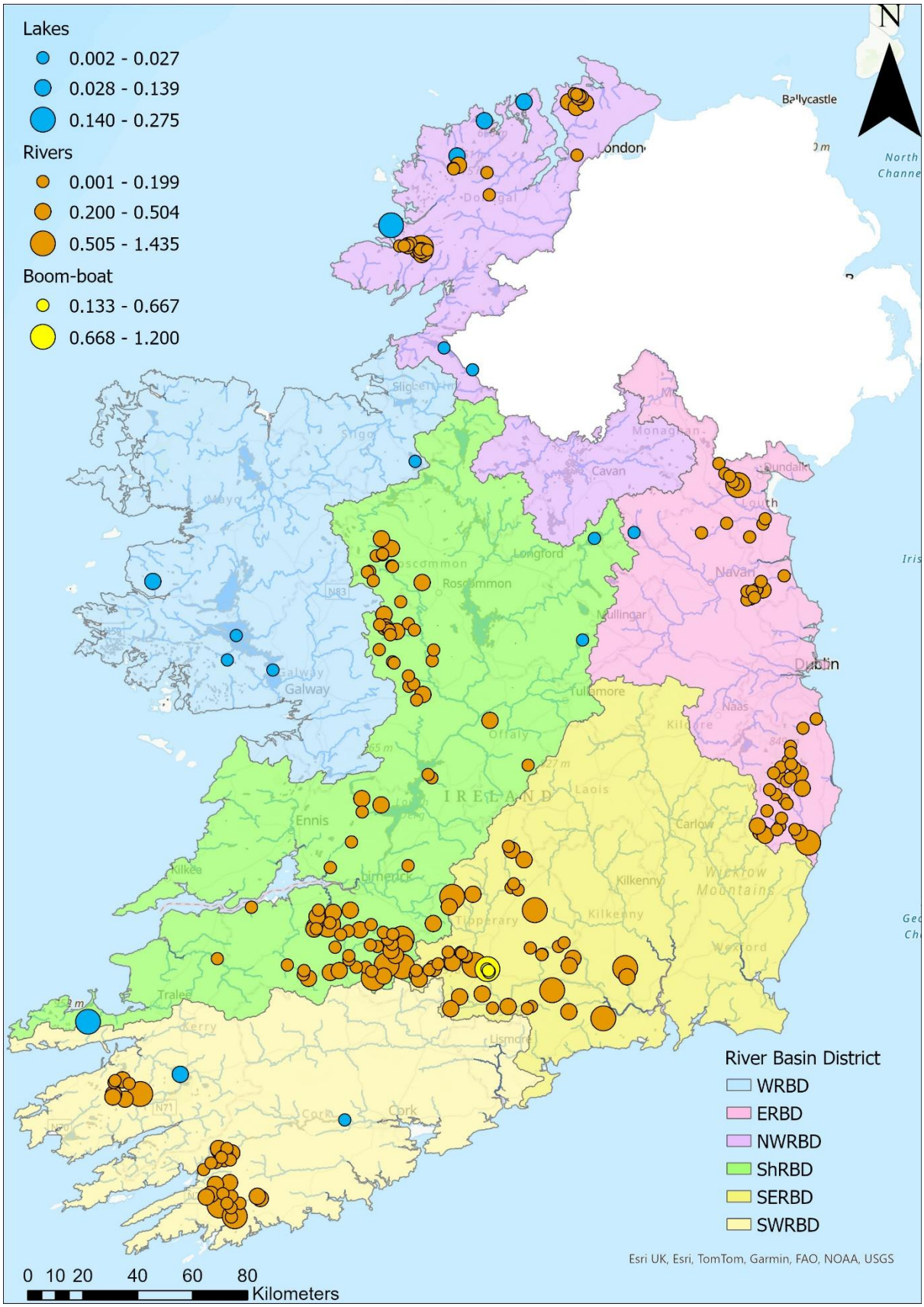


**Figure 4.11. Brown trout distribution and abundance in lake waterbodies (CPUE (no. fish/m net)), rivers (density (no. fish/m$^2$)) and boom-boat river sites (CPUE (no. fish per activation)) surveyed in 2024 (CPUE and density are not comparable).**

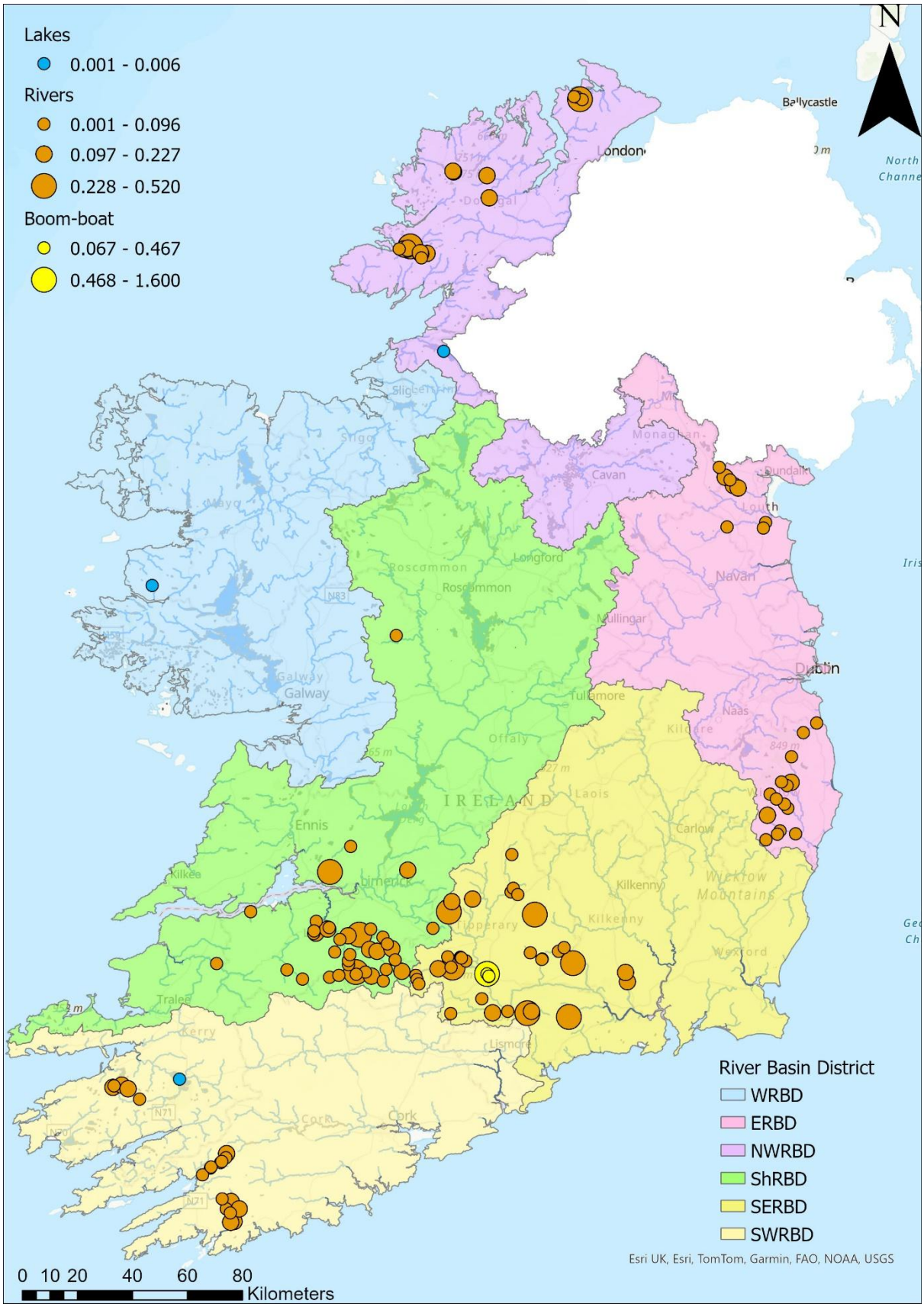


**Figure 4.12. Atlantic salmon distribution and abundance in lake waterbodies (CPUE (no. fish/m net)), rivers (density (no. fish/m$^2$)) and boom-boat river sites (CPUE (no. fish per activation)) surveyed in 2024 (CPUE and density are not comparable).**

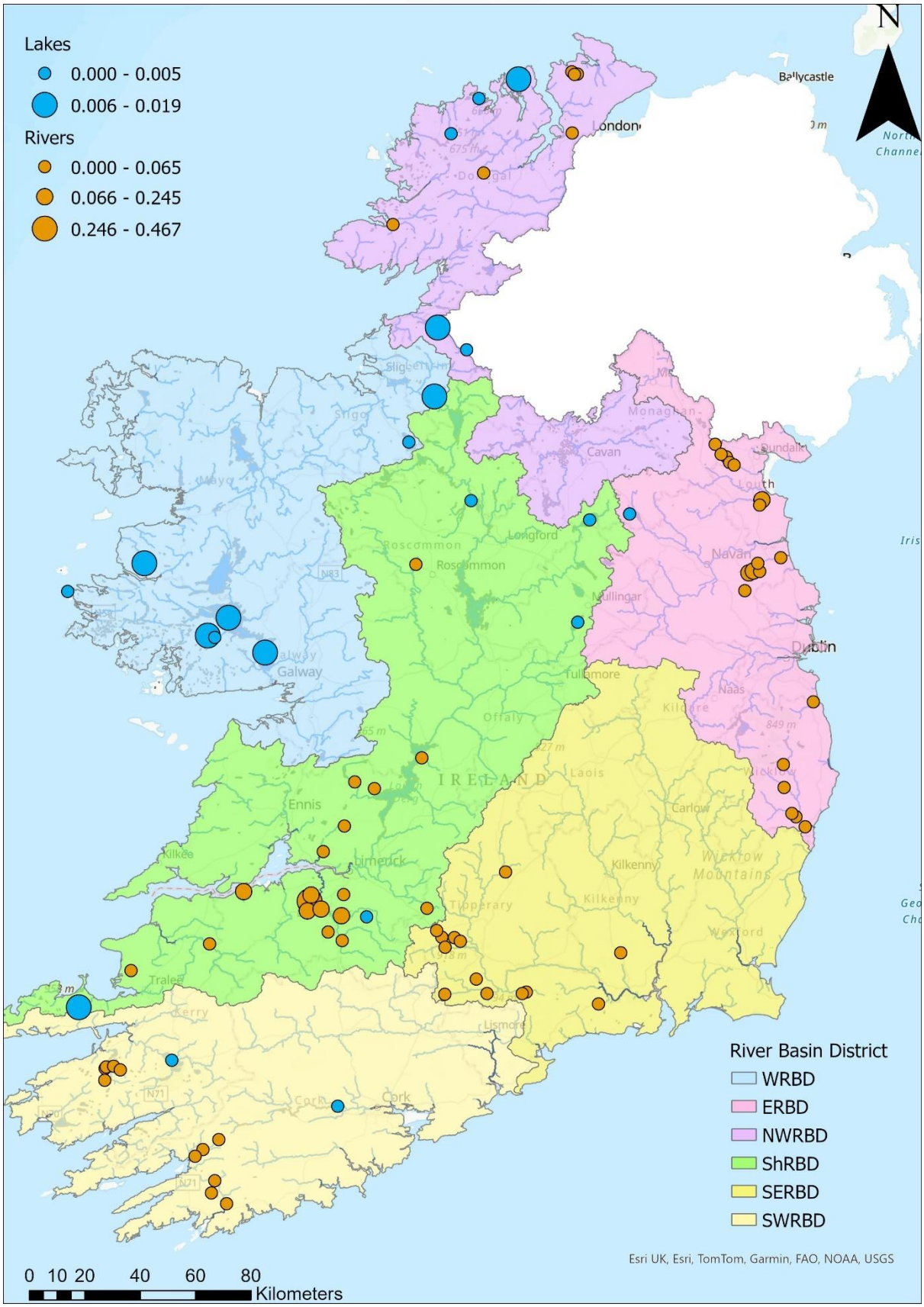


**Figure 4.13. European eel distribution and abundance in lake waterbodies (CPUE (no. fish/m net)) and rivers (density (no. fish/m$^2$)) surveyed in 2024 (CPUE and density are not comparable).**

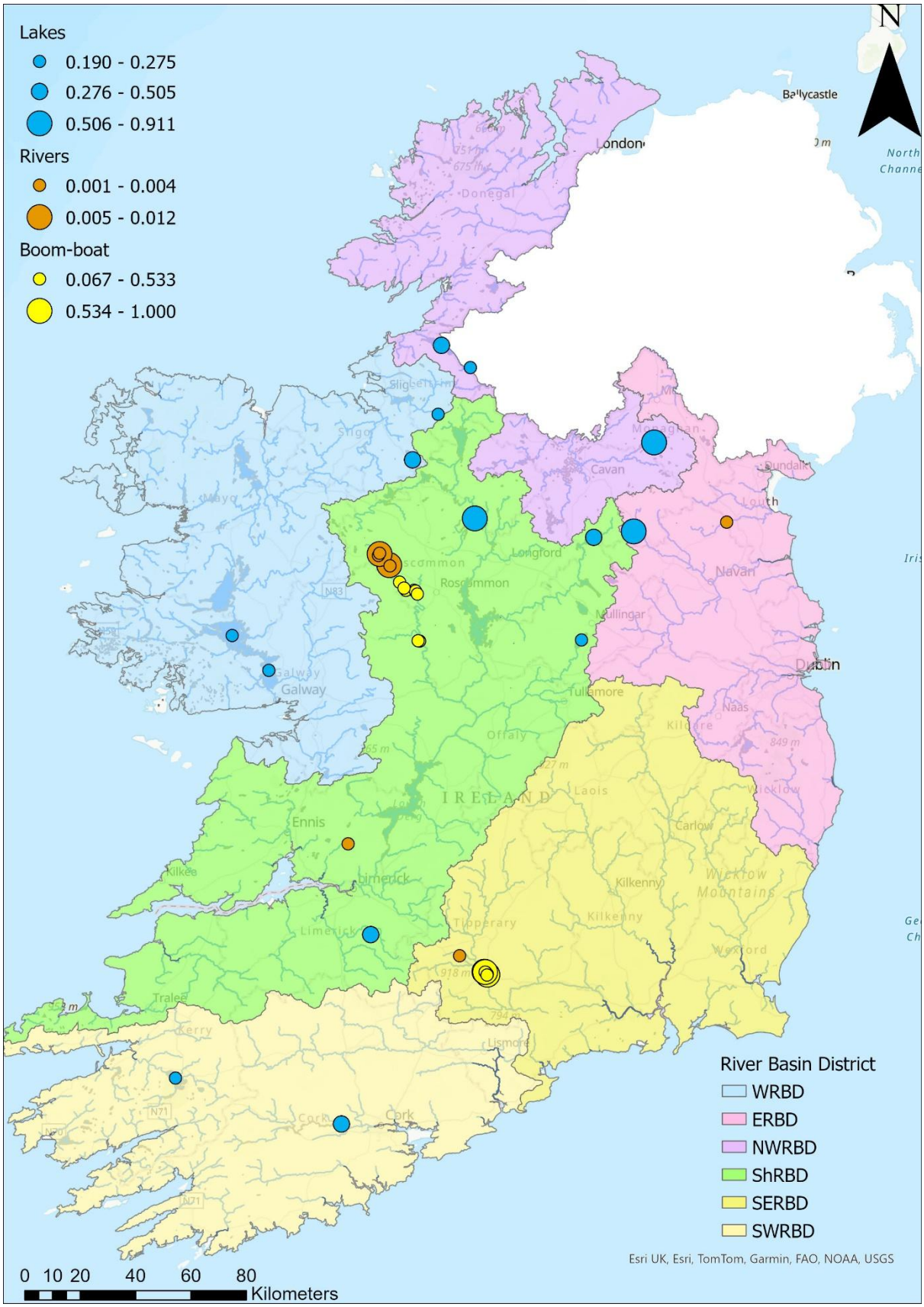


**Figure 4.14. Perch distribution and abundance in lake waterbodies (CPUE (no. fish/m net)), rivers (density (no. fish/m$^2$)) and boom-boat river sites (CPUE (no. fish per activation)) surveyed in 2024 (CPUE and density are not comparable).**

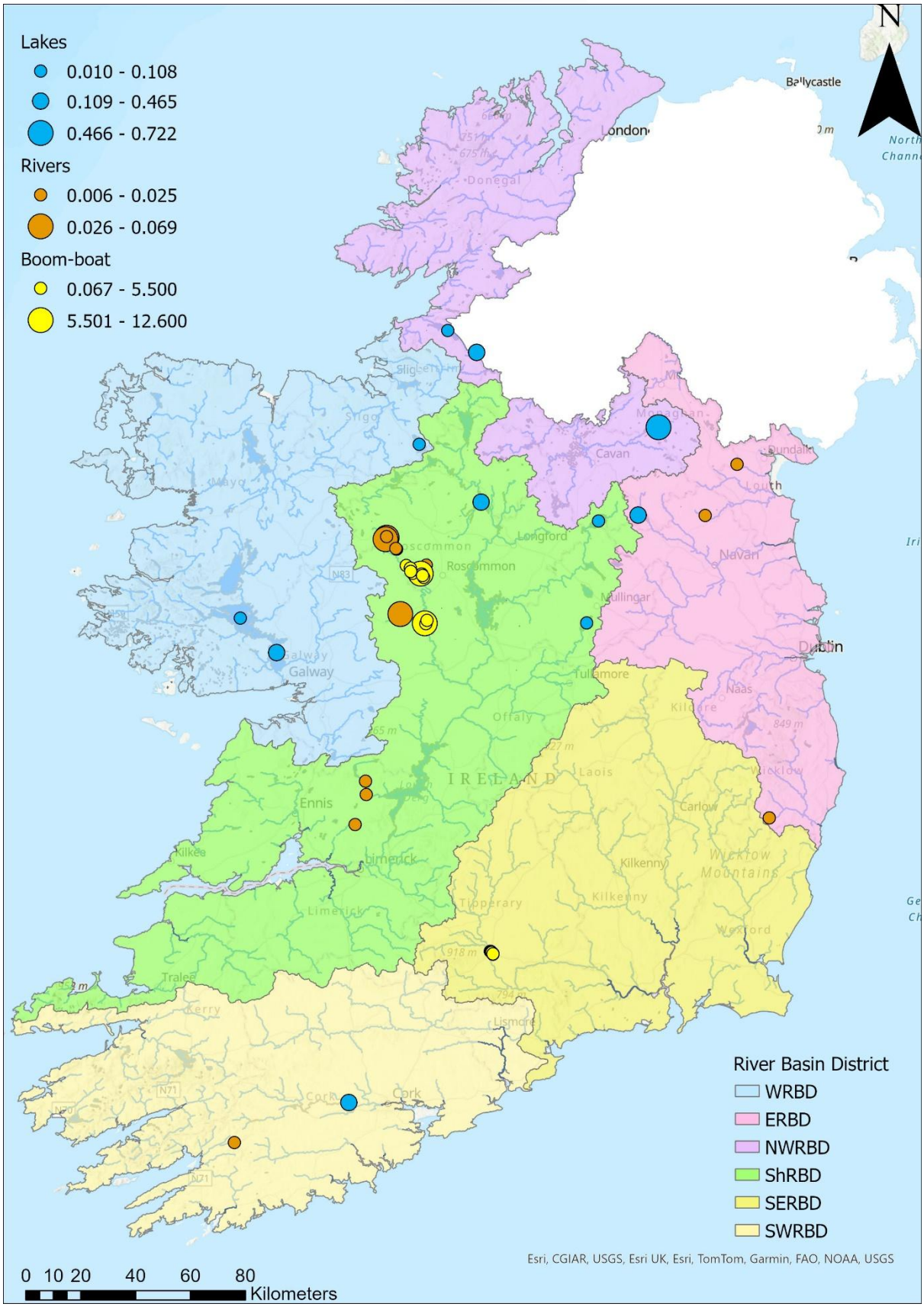


**Figure 4.15. Roach distribution and abundance in lake waterbodies (CPUE (no. fish/m net)), rivers (density (no. fish/m$^2$)) and boom-boat river sites (CPUE (no. fish per activation)) surveyed in 2024 (CPUE and density are not comparable)**

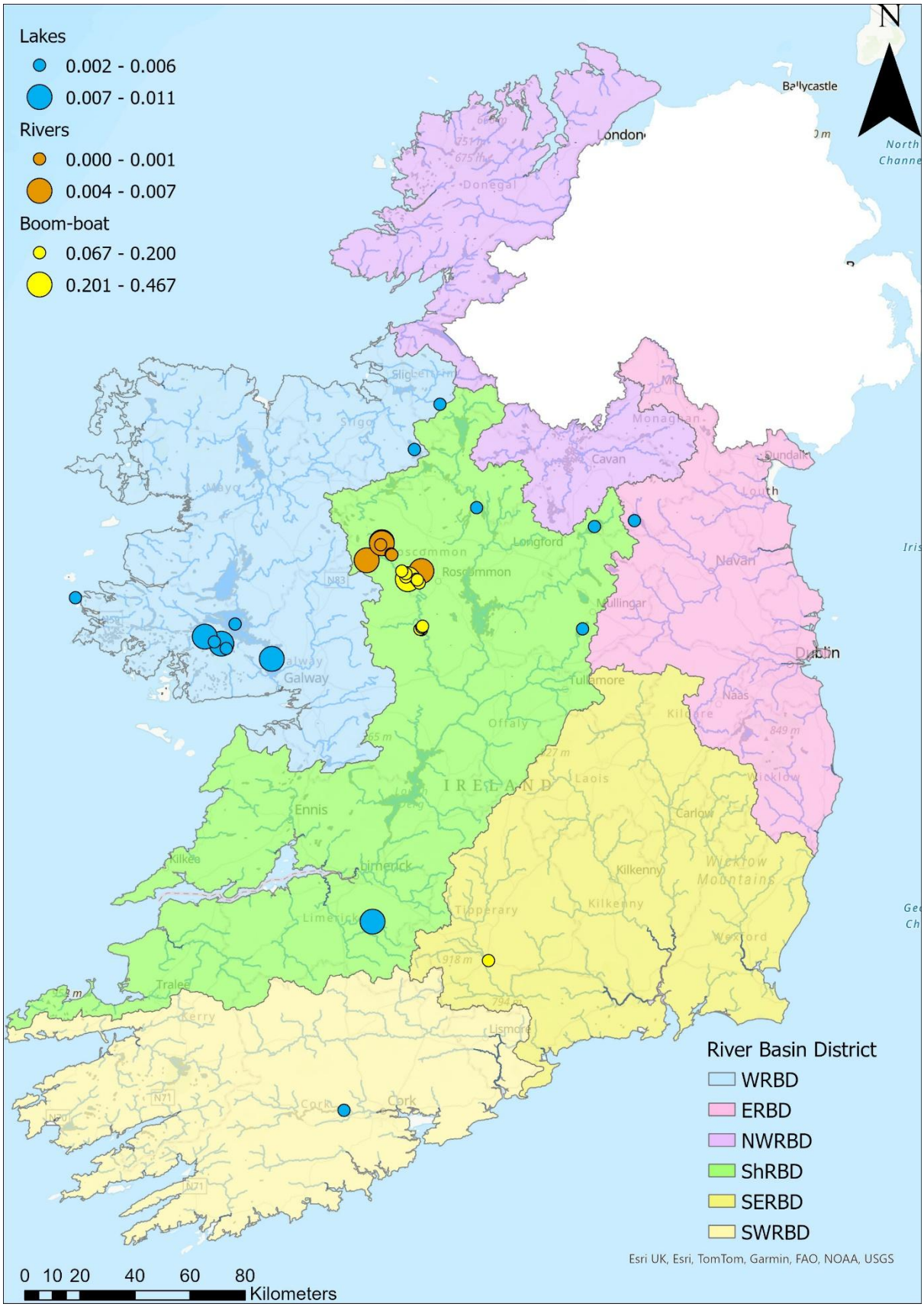


**Figure 4.16. Pike distribution and abundance in lake waterbodies (CPUE (no. fish/m net)), rivers (density (no. fish/m$^2$)) and boom-boat river sites (CPUE (no. fish per activation)) surveyed in 2024 (CPUE and density are not comparable).**

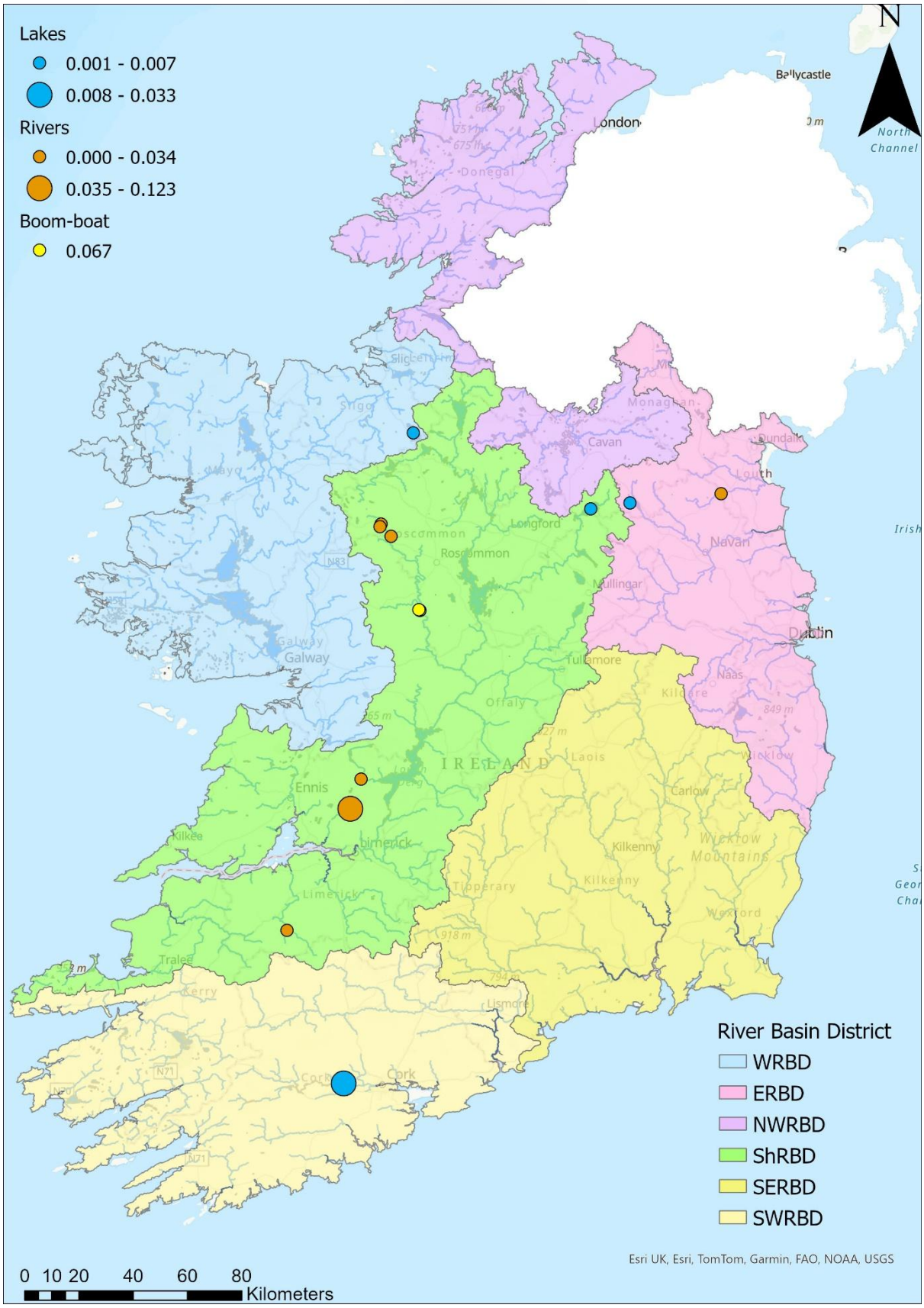


**Figure 4.17. Gudgeon distribution and abundance in lake waterbodies (CPUE (no. fish/m net)), rivers (density (no. fish/m$^2$)) and boom-boat sites (CPUE (no. fish per activation)) surveyed in 2024 (CPUE and density are not comparable).**

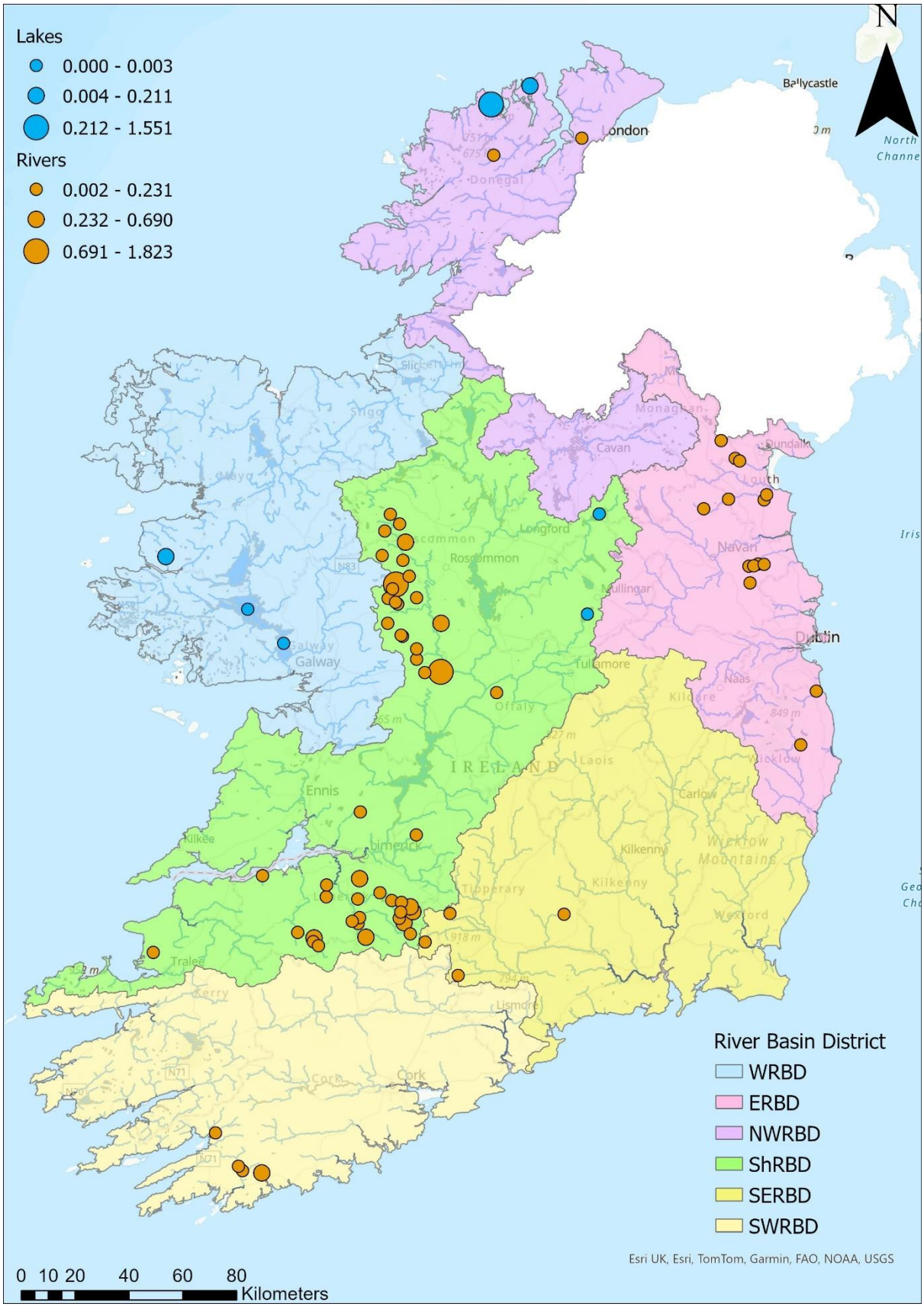


**Figure 4.18. Three-spined stickleback distribution and abundance in lake waterbodies (CPUE (no. fish/m net)) and rivers (density (no. fish/m$^2$)) surveyed in 2024 (CPUE and density are not comparable).**

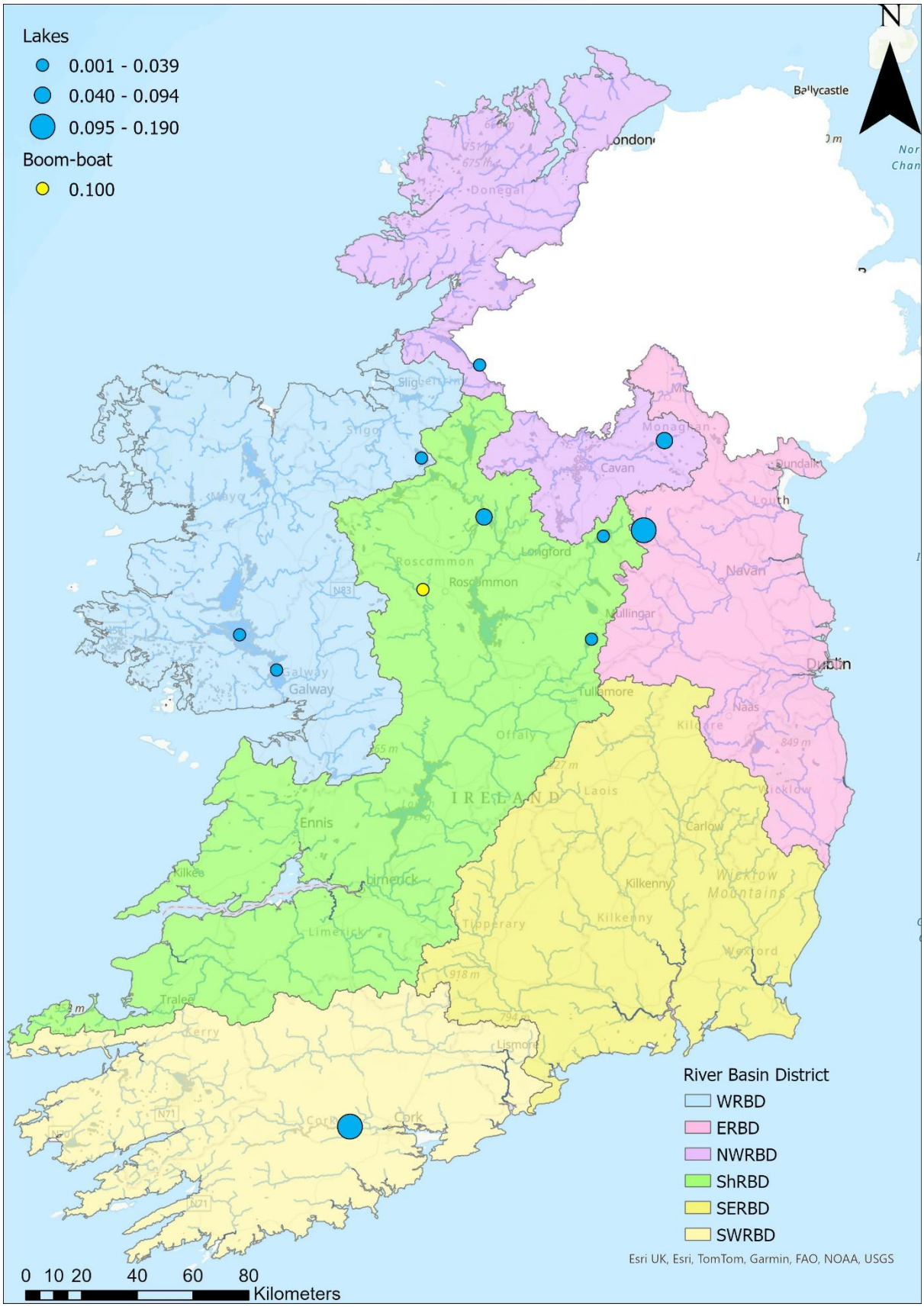


**Figure 4.19. Roach × bream hybrid distribution and abundance in lake waterbodies (CPUE (no. fish/m net)) and boom-boat river sites (CPUE (no. fish per activation)) surveyed in 2024 (CPUEs are not comparable).**

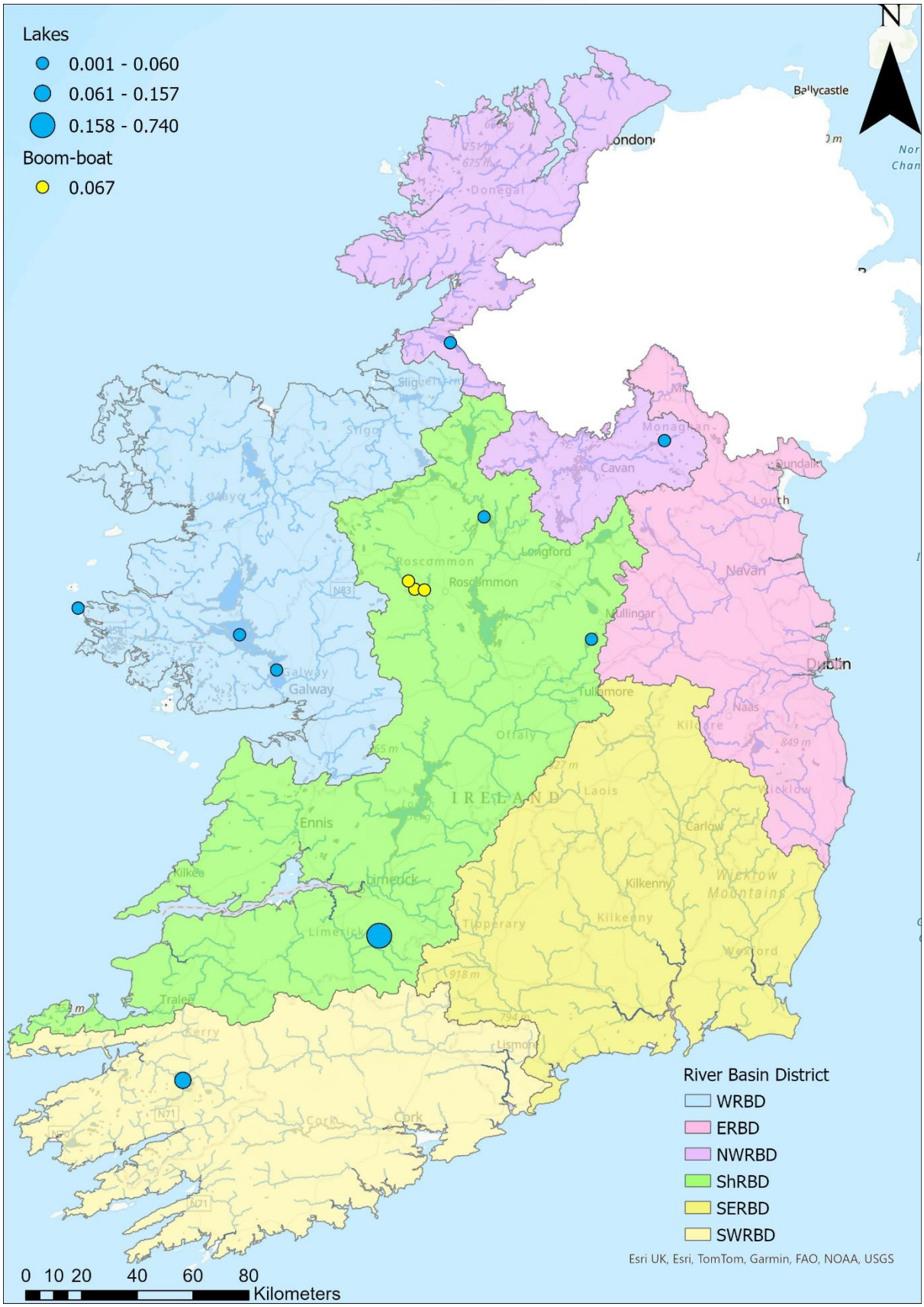


**Figure 4.20. Rudd distribution and abundance in lake waterbodies (CPUE (no. fish/m net)) and boom-boat river sites (CPUE (no. fish per activation) surveyed in 2024 (CPUEs are not comparable).**

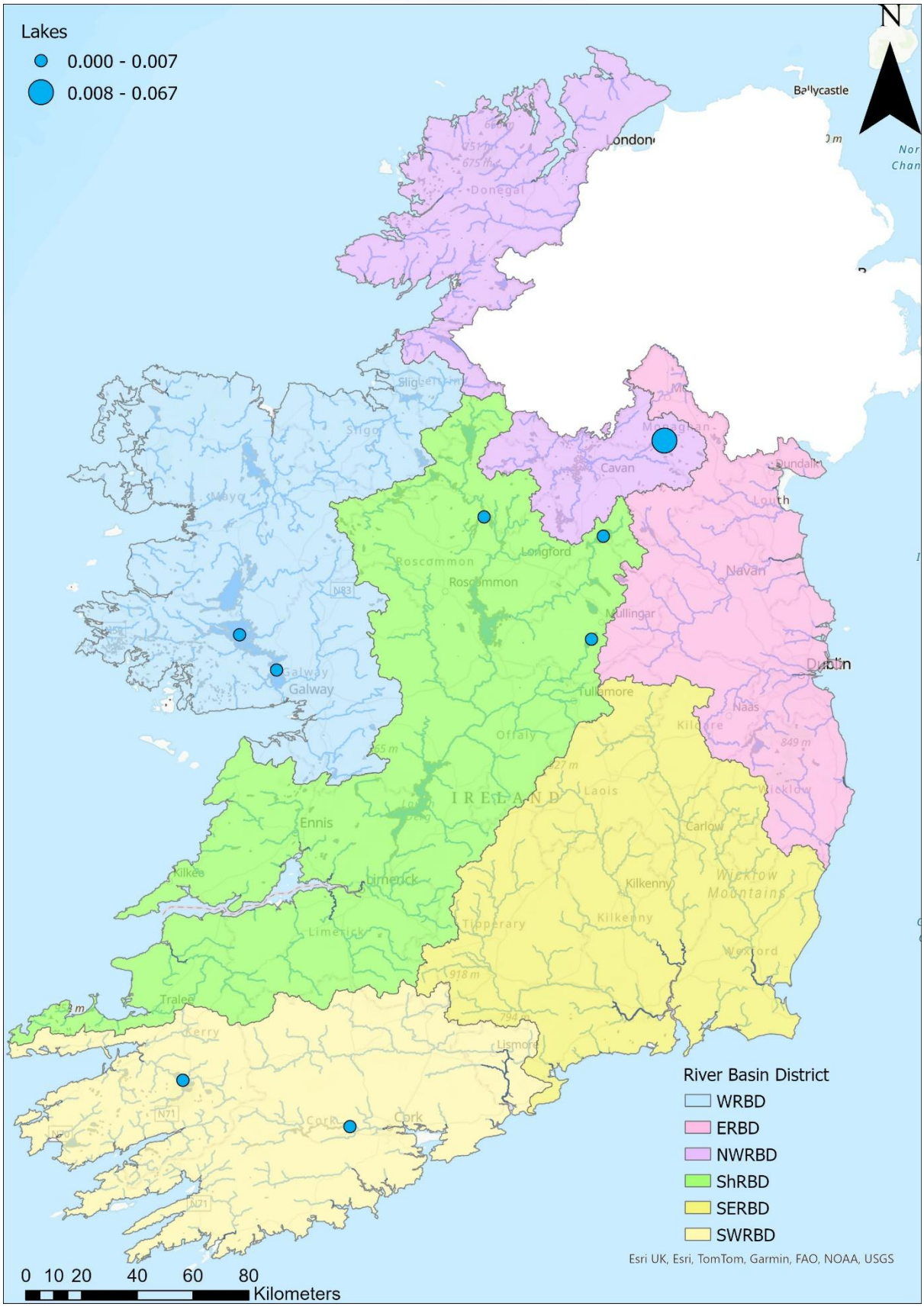


**Figure 4.21. Tench distribution and abundance in lake waterbodies (CPUE (No. fish/m net)) surveyed in 2024.**

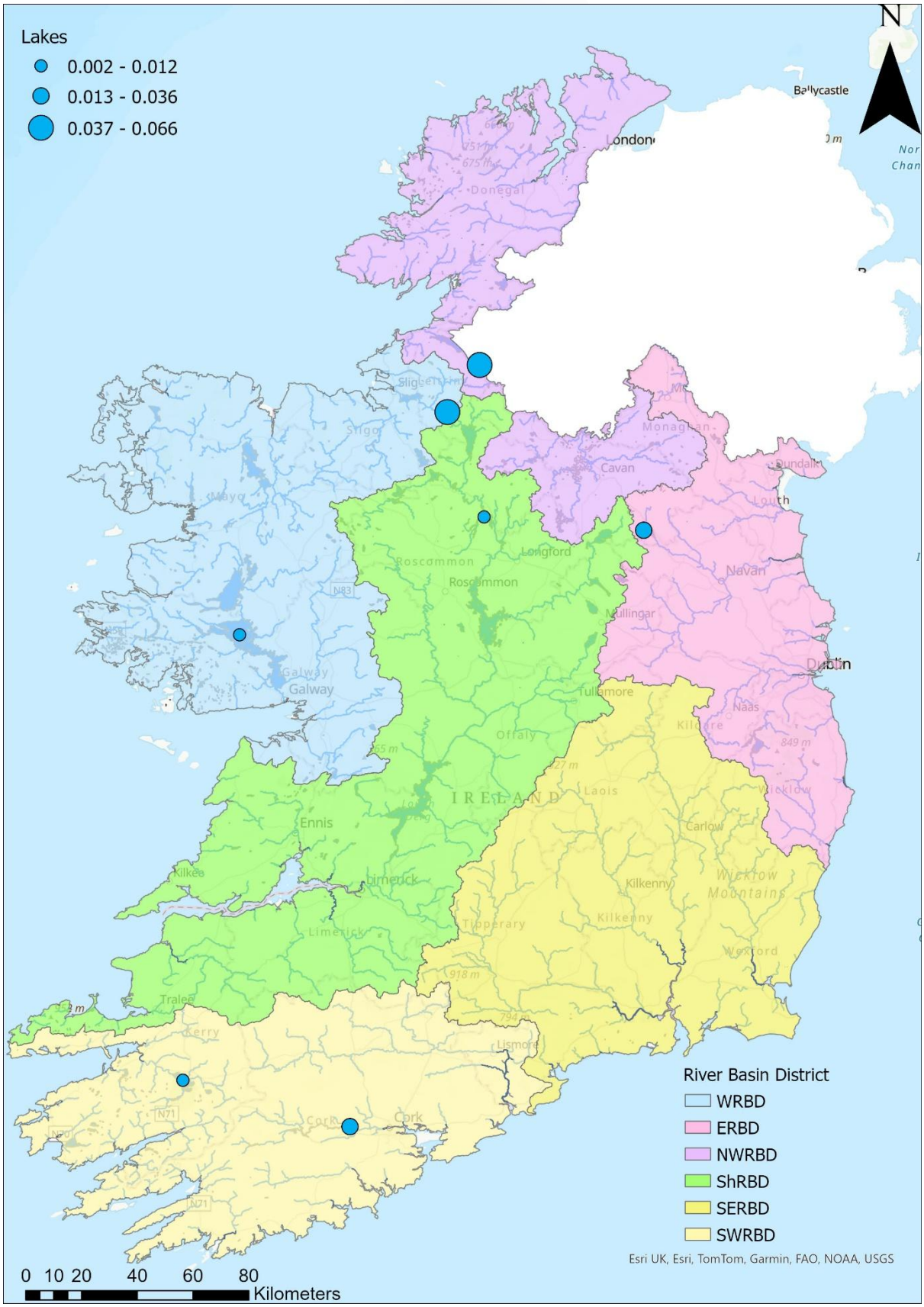


**Figure 4.22. Bream distribution and abundance in lake waterbodies (CPUE (no. fish/m net)) surveyed in 2024.**

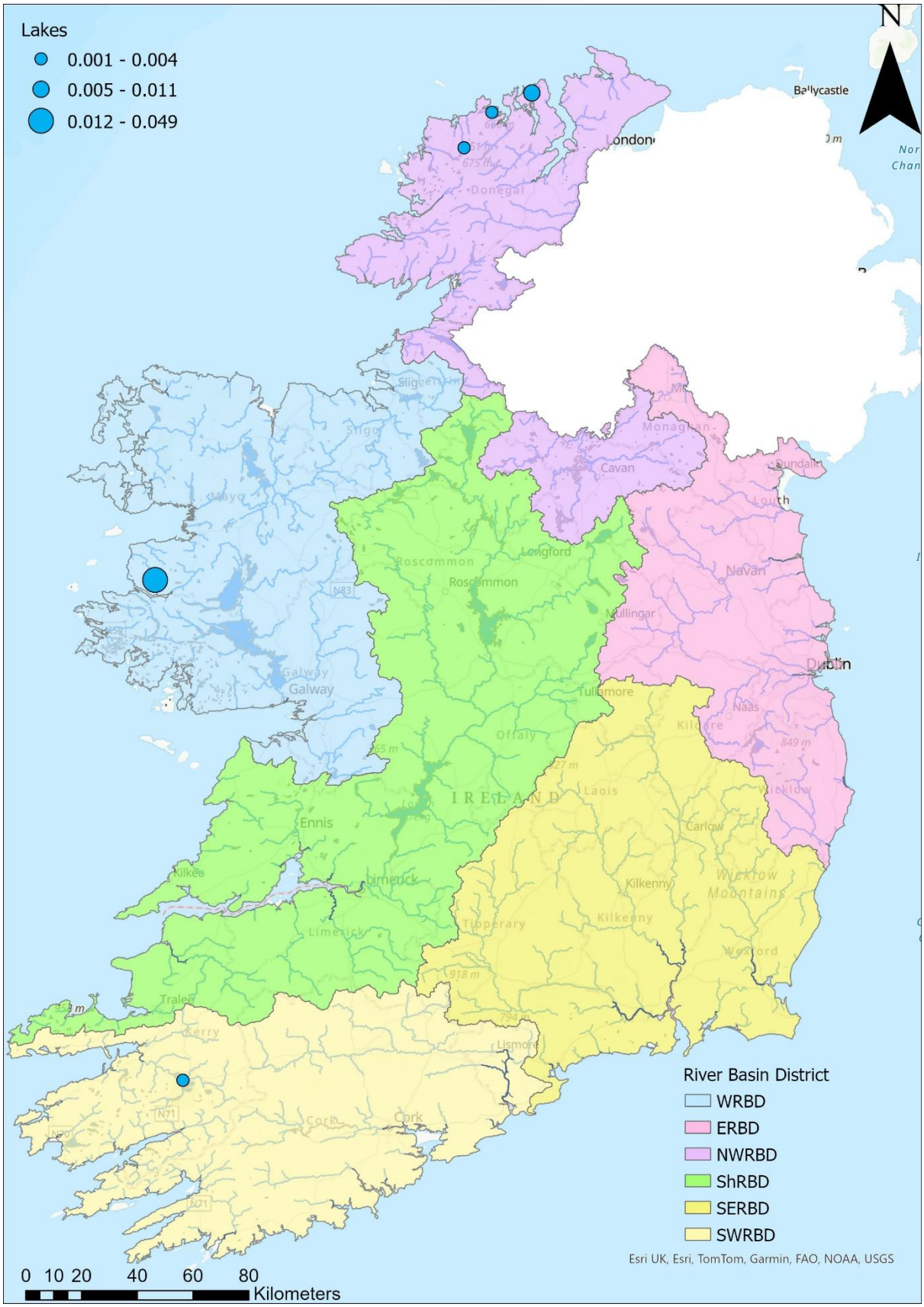


**Figure 4.23. Arctic char distribution and abundance in lake waterbodies (CPUE (no. fish/m net)) surveyed in 2024.**

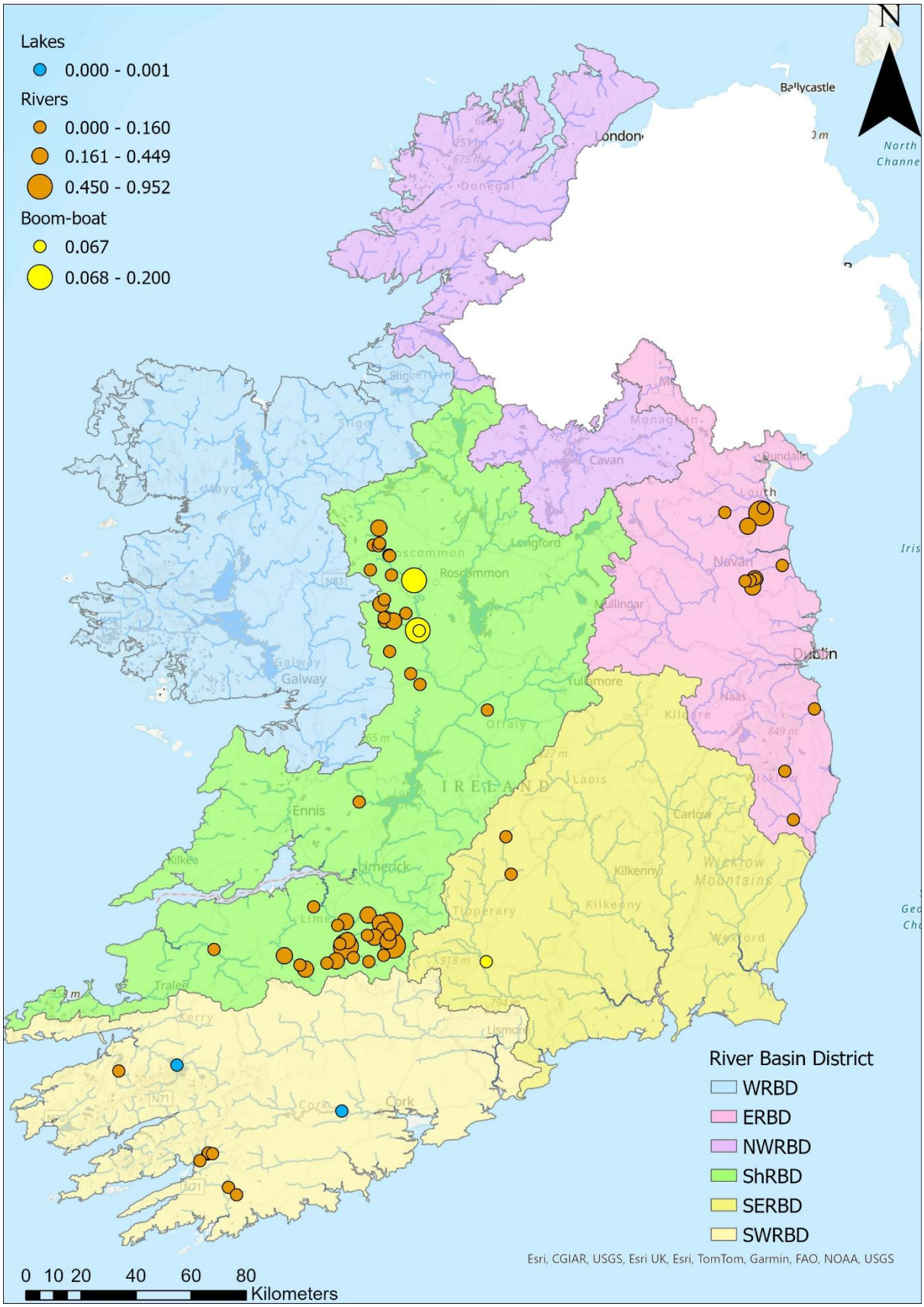


**Figure 4.24. Minnow distribution and abundance in lake waterbodies (CPUE (no. fish/m net)), rivers (density (no. fish/m$^2$)) and boom-boat sites (CPUE (no. fish per activation)) surveyed in 2024 (CPUE and density are not comparable).**

### *4.2 Rivers*

4.2.1 Fish species distribution and abundance

A total of 15 fish species (sea trout are counted as a separate "variety" of trout) and one cyprinid hybrid were recorded across all river sites surveyed in 2024 (Table 4.3). Brown trout had the widest distribution, occurring in 243 of the 273 sites surveyed (89.0%), while salmon were recorded at 136 sites (49.8%) (Table 4.3).

Nine-spined stickleback, flounder and sea trout were encountered at a limited number of sites. Nine-spined stickleback were found at four sites all in the ShRBD, three were on the River Suck and one on the Newport River. Flounder were captured at three sites, one site in the NWRBD, one in the ERBD and one site in the ShRBD. Sea trout were recorded at three sites, two in the ShRBD and one in the ERBD (Table 4.3).

Brown trout fry (0+) were recorded at 200 sites (73.3%), with 1+ and older individuals recorded at 208 sites (76.2%). Salmon fry (0+) were captured at 116 sites (42.5%) with 1+ and older individuals recorded at 105 sites (38.5%).

At wadeable sites and at sites where boat-based electrofishing was used, abundance was recorded as minimum fish density (number of fish/$m^2$). At sites where boom-boat electrofishing equipment was used, abundance was recorded as CPUE (number of fish captured per equipment activation). These two metrics are not directly comparable. The distribution and abundance (density and CPUE) of the most common fish species captured across all river sites surveyed in 2024 are shown in Figures 4.11 to 4.20, and 4.24 to 4.26.

At sites where fish density was calculated, brown trout was the most abundant species recorded at 238 sites (Figure 4.11). Hollyford on the Lackenacreena River, a tributary of the Multeen River, in the Suir Catchment had the highest density (all age classes recorded with 1.43 fish/$m^2$). This site also recorded the highest density of brown trout fry (0+) (1.12 fish/$m^2$) in 2024. Ballyduff North on the Avoca River in the ERBD, had the highest density of 1+ and older brown trout (0.67 fish/$m^2$).

The highest density of salmon (0.52 fish/$m^2$) (all age classes) was recorded at Tankards Town South on the Tankards Town South Stream located within the River Maigue Catchment in the ShRBD (Figure 4.12). The highest density of 1+ and older salmon was (0.22 fish/$m^2$) and was recorded at the Lingaun Bridge site on the Lingaun River in the Suir Catchment (SERBD). The highest density of salmon fry (0+) (0.492 fish/$m^2$) was also recorded at Tankards Town South on the Tankards Town South Stream in the ShRBD (Maigue Catchment).

The highest European eel density, (0.165 fish/$m^2$) was recorded at the site downstream of Monaster Bridge on the Camoge River, a tributary of the River Maigue in the ShRBD (Figure 4.13).

The River Suck catchment in the ShRBD produced the highest density of perch, roach, and pike. The site upstream of Joyces Bridge, on the River Suck main channel, recorded the highest density (0.01 fish/$m^2$) of perch (Figure 4.14). The highest density of roach 0.07 fish/$m^2$, was also noted on the main channel of the River Suck, at Cloondacarra Bridge (Figure 4.15). The highest density of pike, 0.007 fish/$m^2$, was recorded at Oran GAA Club on the Smaghraan River (Figure 4.16).

The bridge upstream of Doon Lough on the Broadford River, in the WRBD had the highest density of gudgeon, with 0.12 fish/$m^2$ recorded (Figure 4.17). The highest density of three-spined stickleback (1.82 fish/$m^2$) was recorded at Abbey Park on the Gorteencahill River in the Suck Catchment (Figure 4.18). The highest density of minnow, 0.95 fish/$m^2$ was noted at Coneyburrow Bridge on the White Louth River in the ERBD (Figure 4.24). The highest density of stone loach, 0.473 fish/$m^2$ was found at Grange Bridge on the Camoge River in the ShRBD. (Figure 4.25).

The highest lamprey species density of 0.171 fish/$m^2$, was found at Ballycahill Bridge on the Camoge River in the ShRBD (Figure 4.26).

Roach was the most widespread species recorded at sites surveyed using boom-boat electrofishing equipment. Roach were recorded at 17 out of 21 sites surveyed (Figure 4.15). Roach was also the most abundant species, with a highest CPUE of 12.6 fish per activation, recorded at Ballyforan Bridge on the River Suck (Figure 4.15).

In addition to the above, roach × bream hybrids were recorded at one site using boom-boat electrofishing equipment on the River Suck (Figure 4.19). Rudd were captured at three boom-boat sites in the Suck Catchment (Figure 4.20). Dace were recorded in low numbers at two boom-boat sites, on the River Suir in the SERBD.

**Table 4.3. Fish species recorded in river sites surveyed in 2024 (age cohorts for brown trout and salmon are also shown).**

| | Scientific name | Common name | Number of river sites | % river sites |
|---|---|---|---|---|
| 1 | *Salmo trutta* | Brown trout (all age classes) | 243 | 89.0 |
| | | Brown trout 0+ | 200 | 73.3 |
| | | Brown trout 1+ and older | 208 | 76.2 |
| | | Sea trout* | 3 | 1.1 |
| 2 | *Salmo salar* | Salmon (all age classes) | 136 | 49.8 |
| | | Salmon 0+ | 116 | 42.5 |
| | | Salmon 1+ and older | 105 | 38.5 |
| 3 | *Barbatula barbatula* | Stone loach | 74 | 27.1 |
| 4 | *Gasterosteus aculeatus* | Three-spined stickleback | 71 | 26.0 |
| 5 | *Phoxinus phoxinus* | Minnow | 70 | 25.6 |
| 6 | *Anguilla anguilla* | European eel | 69 | 25.3 |
| 7 | *Lampetra sp.* | Lamprey sp. | 34 | 12.5 |
| 8 | *Rutilus rutilus* | Roach | 31 | 11.4 |
| 9 | *Perca fluviatillis* | Perch | 25 | 9.2 |
| 10 | *Esox lucius* | Pike | 20 | 7.3 |
| 11 | *Gobio gobio* | Gudgeon | 9 | 3.3 |
| 12 | *Pungitius pungitius* | Nine-spined stickleback | 4 | 1.5 |
| 13 | *Platichthys flesus* | Flounder | 3 | 1.1 |
| 14 | *Scardinius erythrophthalmus* | Rudd | 3 | 1.1 |
| 15 | *Leuciscus leuciscus* | Dace | 2 | 0.7 |
| 16 | *Rutilus rutilus × Abramis brama* | Roach × Bream | 1 | 0.4 |

*Note: *sea trout are counted as a separate "variety" of trout.*

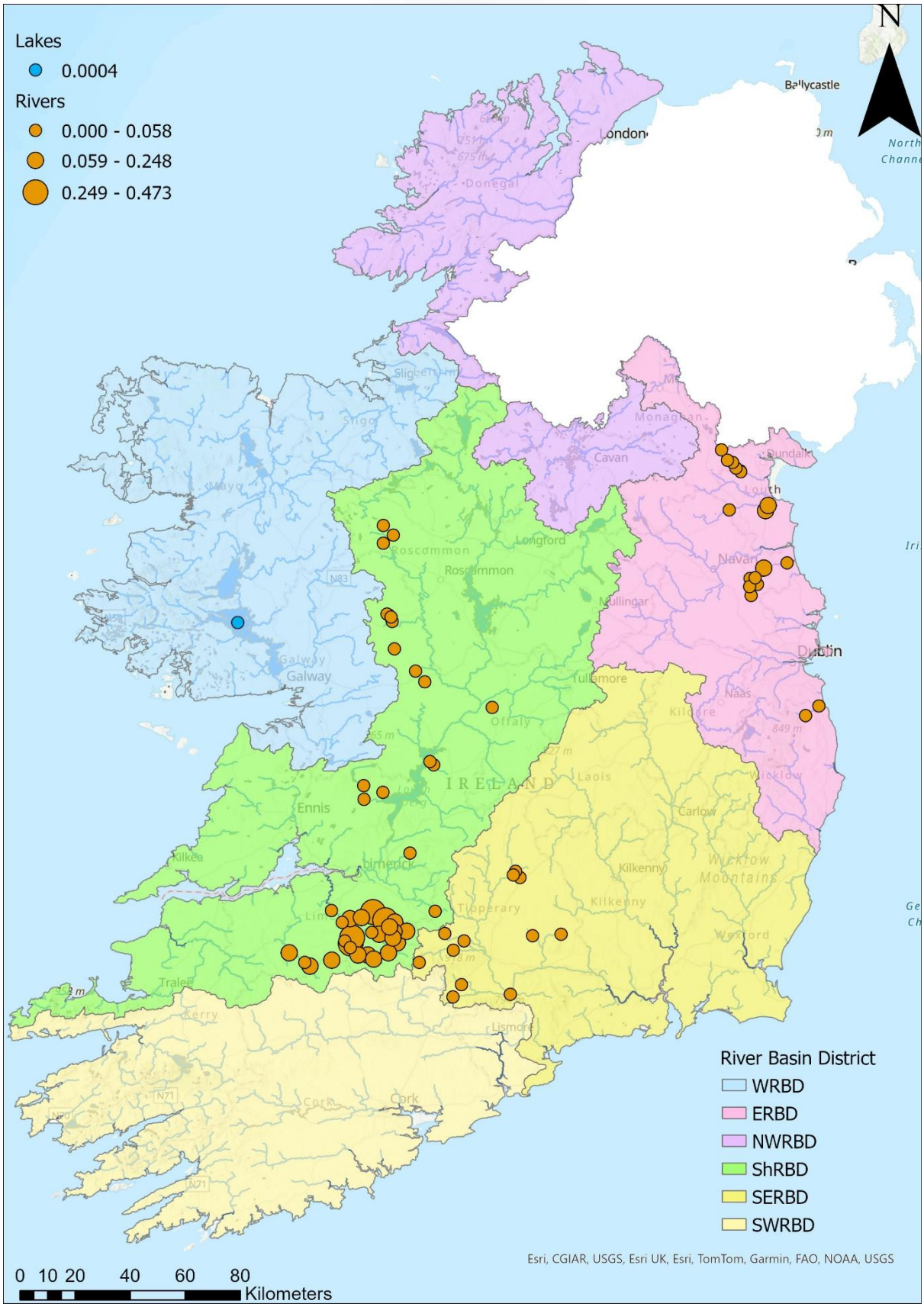


**Figure 4.25. Stone loach distribution and abundance in lake waterbodies (CPUE (no. fish/m net)) and rivers (density (no. fish/m$^2$)) surveyed in 2024 (CPUE and density are not comparable).**

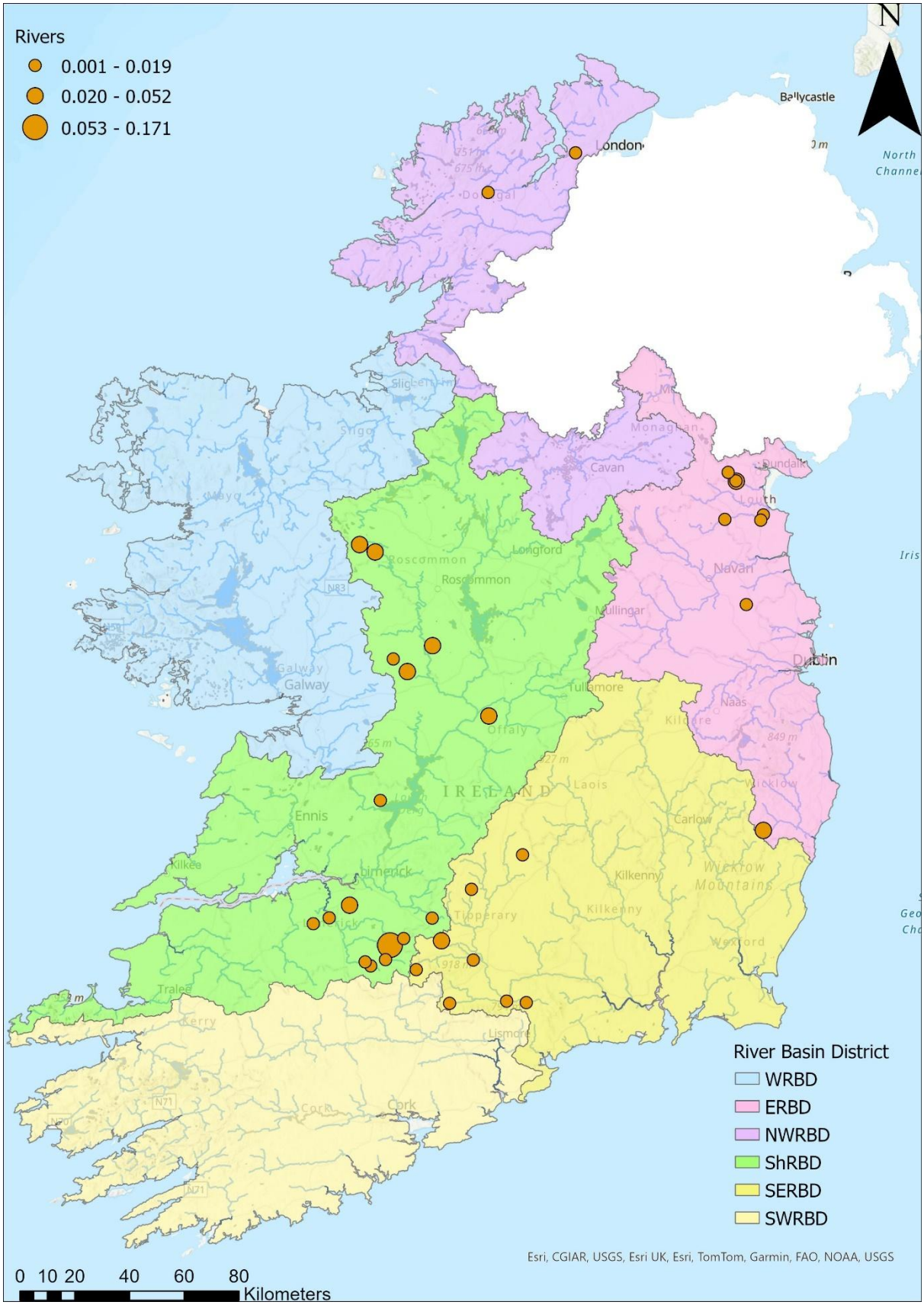


**Figure 4.26. Lamprey sp. distribution and abundance in rivers (density (no. fish/m$^2$)) surveyed in 2024.**

4.2.2 Fish ecological status in rivers

The FCS2-Ireland ecological classification tool was applied to all 273 river sites surveyed in 2024, the results were then sense checked with expert opinion. In total, 272 sites were assigned a fish ecological status, while one site was unassigned. A total of 73 sites were assigned a status of Good or High (26.8%), and 199 sites (73.2%) were assigned a status of Moderate or worse (Table 4.4, Figure 4.27 and 4.35). Of the 272 sites assigned an ecological fish status, 79 sites had previously been surveyed and designated a status. Of these, the status of 44 (55.7%) sites remained the same between surveys, while 26 sites (32.9%) deteriorated in status, and nine sites (11.4%) improved (Figure 4.28 and 4.35).

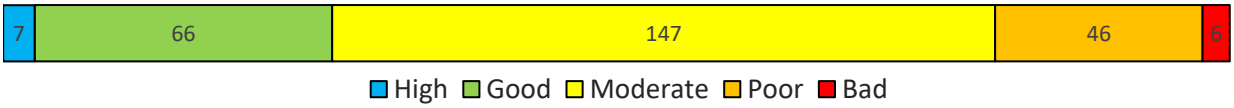


**Figure 4.27. Fish ecological status for rivers surveyed in 2024.**


**Figure 4.28. Change in fish ecological status for rivers surveyed in 2024.**

A total of 32 sites assigned status were surveillance monitoring (SM) sites. Of these sites, ten were classified as having Good status (31.3%) while 22 sites were classified as having a status of Moderate or lower (68.8%) (Table 4.4; Figure 4.29 and 4.35). A total of 31 SM sites had previously been assigned a fish ecological status. Of these, the status of 20 (64.5%) sites remained the same between surveys, while seven sites (22.6%) deteriorated in status, and four sites (12.9%) improved (Figure 4.30 and 4.35).

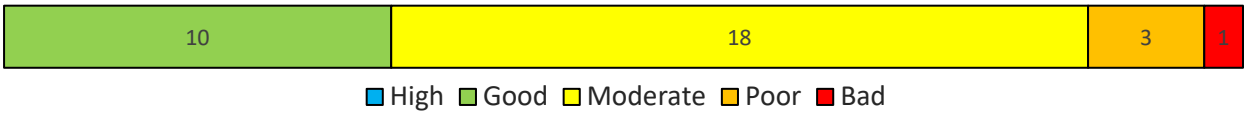


**Figure 4.29. Fish ecological status for SM river sites surveyed in 2024.**


**Figure 4.30. Change in fish ecological status for SM rivers surveyed in 2024.**

4.2.3 Rivers ecological status three-year summary 2022-2024

A total of 591 river sites were assigned fish ecological status in the three-year period between 2022 and 2024. A total of 175 sites (29.5%), were assigned a status of High or Good, and the remaining 417 sites (70.5%) were assigned a status of Moderate or worse (Figure 4.31 and 4.36). A total of 174 sites were previously surveyed and assigned status. Of these, the status of 107 (61.5%) sites remained the same between surveys, while 47 sites (27.0%) deteriorated in status, and 20 sites (11.5%) improved (Figure 4.32).

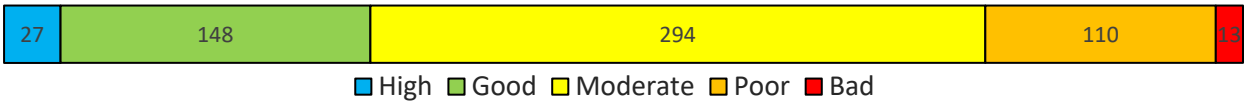


**Figure 4.31. Fish ecological status for rivers in the survey period of 2022 to 2024.**

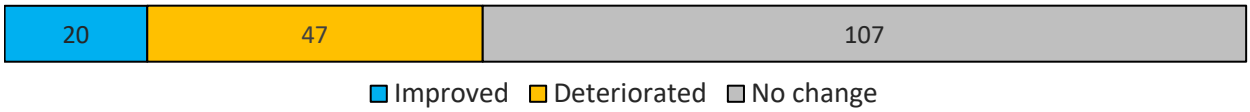


**Figure 4.32. Change in fish ecological status for rivers in the survey period of 2022 to 2024.**

A total of 97 SM sites were assigned status between 2022 and 2024. Of these sites, 33 were classified as having High or Good status (34.0%). A total of 64 sites were classified as having a status of Moderate or lower (66.0%) (Figure 4.33). A total of 96 of these SM sites had previously been assigned a fish ecological status. Of these, the status of 62 (64.6%) sites remained the same between surveys, while 22 sites (22.9%) deteriorated in status, and 12 sites (12.5%) improved (Figure 4.34).

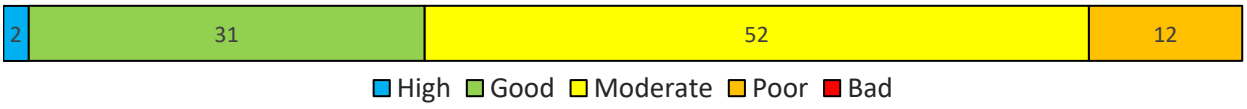


**Figure 4.33. Fish ecological status for SM river sites in the survey period of 2022 to 2024.**

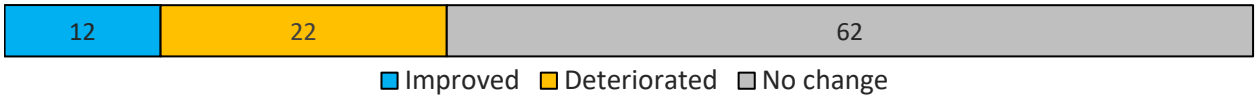


**Figure 4.34. Change in fish ecological status for SM river sites in the survey period of 2022 to 2024.**

**Plate 4.4. Electrofishing on the Burnfoot River, Co. Donegal in the NWRBD (2024).**

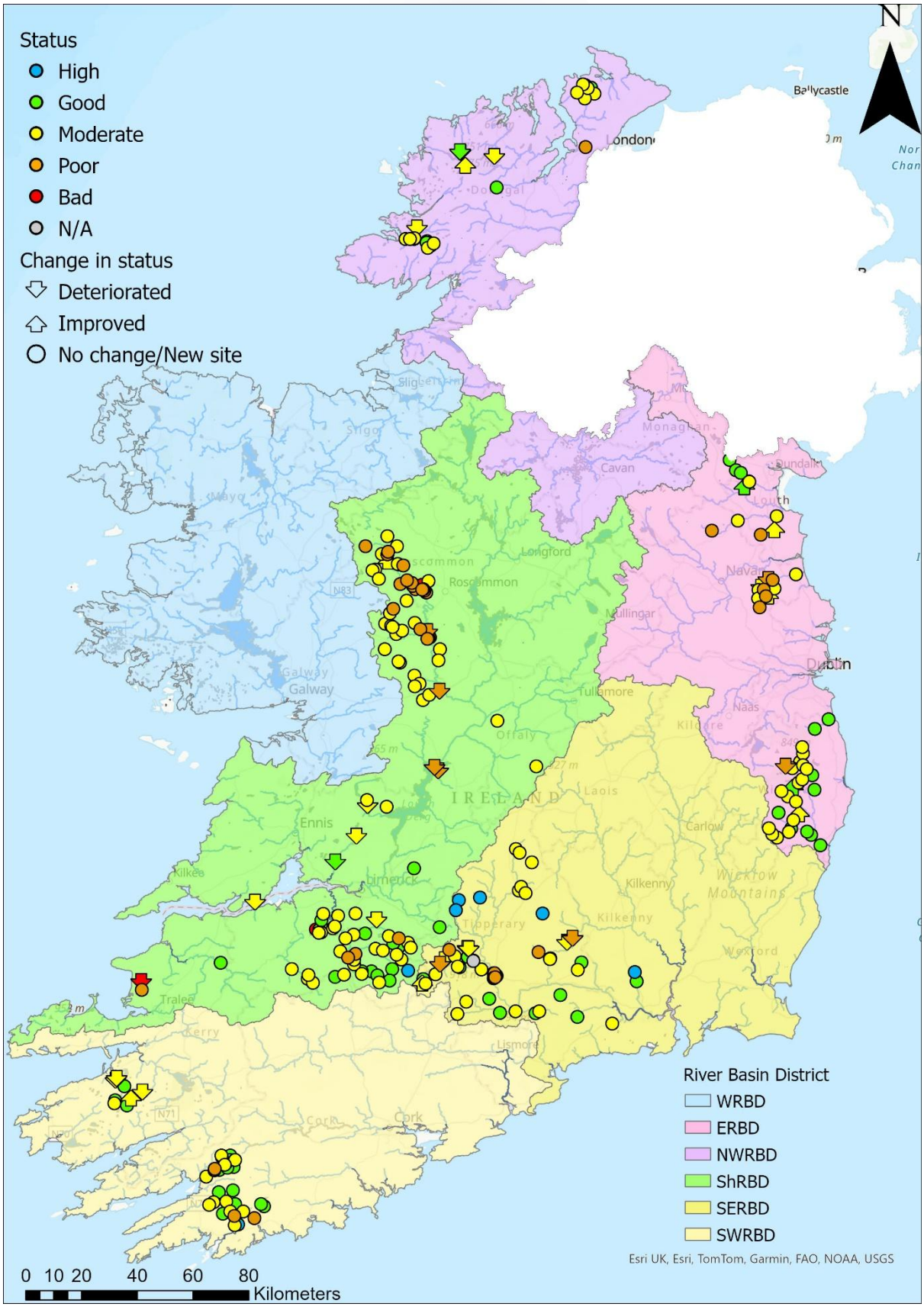


**Figure 4.35. Ecological status of the 273 river sites including boom boat sites surveyed during 2024 using the FCS2-Ireland ecological classification tool. Improvements or deteriorations in fish ecological status since the previous survey is indicated by an arrow where applicable.**

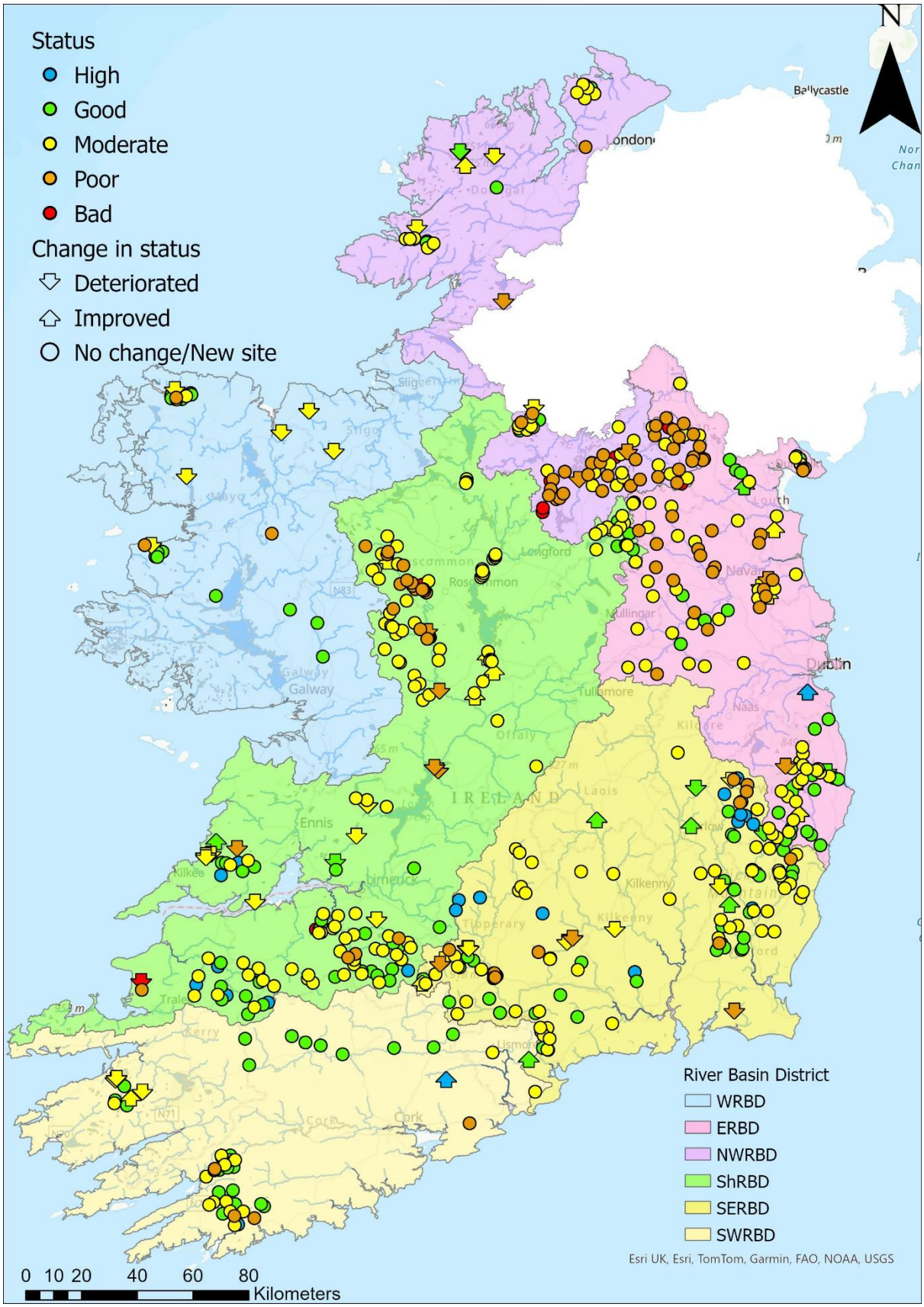


**Figure 4.36. Ecological status of river sites surveyed between 2022-2024 using the FCS2-Ireland ecological classification tool. Improvements or deteriorations in fish ecological status since the previous survey is indicated by an arrow where applicable.**

**Table 4.4. Summary details of rivers sites surveyed and fish ecological status 2024.**

| River | WFD sub basin | Site name | Survey type | Water body ID | Previous status | 2024 Status |
|---|---|---|---|---|---|---|
| **NWRBD** | | | | | | |
| **Clonmany Catchment** | | | | | | |
| Ballyhallan | Ballyhallan_010 | Br. u/s Clonmany River | SM | NW_40_1082 | M (2020) | M |
| Ballyhallan | Ballyhallan_010 | Effishmore | SM/AV | NW_40_1082 | - | M |
| Clonmany | Clonmany_010 | Glassmullen | AV | NW_40_593 | - | M |
| Clonmany | Clonmany_020 | Cleagh | AV | NW_40_1082 | - | M |
| Clonmany | Clonmany_020 | Jockeys Town | AV | NW_40_593 | - | M |
| Cloontagh | Cloontagh_010 | Cloontagh | AV | NW_40_566 | - | G |
| Cloontagh | Cloontagh_010 | Cloontagh Bog | AV | NW_40_566 | - | M |
| Cloontagh | Cloontagh_010 | Gortaran | AV | NW_40_566 | - | G |
| **Burnfoot Catchment** | | | | | | |
| Burnfoot | Burnfoot_020 | Br. In Burnfoot_B | SM | NW_39_1105 | P (2020) | P |
| **Clady Catchment** | | | | | | |
| Cronanvin Burn | Cronaniv Burn_010 | Br u/s Dunlewy Lough | SM | NW_38_800 | H (2020) | G |
| Cronanvin Burn | Cronaniv Burn_010 | Dunlewy | SM/AV | NW_38_800 | H (2014) | G |
| Dunlewy | Cronaniv Burn_010 | Bunleanarudda | SM/AV | NW_38_800 | P (2020) | M |
| **Glaskeelan Catchment** | | | | | | |
| Glaskeelan | Glaskeelan _010 | Br. W of Roshin (L. Gartan) | SM | NW_39_1136 | G (2015) | M |
| **Owentocker Catchment** | | | | | | |
| Cuskercraghan | Owentocker_020 | Cashel | SM/AV | NW_38_1527 | G (2017) | G |
| Owenroe | Owentocker_010 | Cronaslieve House | AV | NW_38_3022 | N/A | G |
| Owenroe | Owentocker_010 | Glenree Field | AV | NW_38_3022 | - | G |
| Owenroe | Owentocker_010 | Tullybane Br. | AV | NW_38_3022 | M (2021) | M |
| Owentocker | Owentocker_020 | 500 m d/s Br. in Ardara | SM | NW_38_3037 | M (2021) | M |
| Owentocker | Owentocker_020 | Cashel School | SM/AV | NW_38_3037 | N/A | M |
| Owentocker | Owentocker_020 | Crockaslowra | SM/AV | NW_38_3037 | G (2015) | M |
| Owentocker | Owentocker_020 | Lurganboy | SM/AV | NW_38_3037 | M (2017) | M |
| Owentocker | Owentocker_010 | Ivy Br. | AV | NW_38_4041 | N/A | G |
| Owentocker | Owentocker_010 | Sir Alberts Br. | AV | NW_38_1057 | N/A | M |
| Tulaigh na gCloigeann | Owentocker_010 | Tullynaglaggin Br. | AV | NW_38_997 | - | G |
| **Swilly Catchment** | | | | | | |
| Swilly | Swilly_010 | Swilly Br. (near Breenagh) | SM | NW_39_1508 | G (2021) | G |
| **ShRBD** | | | | | | |
| **Deel Catchment** | | | | | | |
| Deel | Deel (Newcastlewest)_050 | Accrour Br. | AV | SH_24_863 | - | M |
| Deel | Deel (Newcastlewest)_050 | Ballymongaun | AV | SH_24_863 | - | M |
| Deel | Deel (Newcastlewest)_060 | Br. near Balliniska | SM | SH_24_863 | M (2014) | M |
| Finglasha | Deel (Newcastlewest)_050 | Finglasha Br. | AV | SH_24_1547 | - | M |
| **Feale Catchment** | | | | | | |
| Feale | Feale_060 | Br. ENE of Duagh Ho | SM | SH_23_2941 | G (2014) | G |

**Table 4.4. contd. Summary details of rivers sites surveyed and fish ecological status 2024.**

| River | WFD sub basin | Site name | Survey type | Water body ID | Previous status | 2024 Status |
|---|---|---|---|---|---|---|
| **Maigue Catchment** | | | | | | |
| Ballynamona | Ballynamona_010 | Ballinlough | AV | SH_24_157 | - | P |
| Camoge | Drumcomoge_010 | Ballincarroona | AV | SH_24_775 | - | M |
| Camoge | Drumcomoge_010 | Ballycahill Br. | AV | SH_24_775 | - | M |
| Camoge | Camoge_020 | Cloghnamanagh Br. | AV | SH_24_796 | - | G |
| Camoge | Camoge_030 | d/s Monaster Br. | AV | SH_24_796 | - | M |
| Camoge | Camoge_020 | Grange Br. | AV | SH_24_796 | G (2019) | M |
| Camoge | Camoge_010 | Moohane | AV | SH_24_796 | - | M |
| Clonshire | Clonshire_030 | Kiltenan North | AV | SH_24_807 | - | G |
| Clonshire | Clonshire_030 | Kiltenan South | AV | SH_24_1494 | - | M |
| Clonshire | Clonshire_040 | Rower more | AV | SH_24_1680 | - | G |
| Currahchase North | Greanagh_010 | Mullanmosheen Br. | AV | SH_24_1647 | - | M |
| Finshenagh | Clonshire_020 | Oldcourt | AV | SH_24_807 | - | M |
| Greanagh stream | Greanagh Stream_010 | Croagh | AV | SH_24_1468 | - | B |
| Killeennagallive | Mahore_010 | Garryncahera | AV | SH_24_1582 | - | M |
| Mahore | Mahore_020 | Bridge hospital | AV | SH_24_776 | - | G |
| Mahore | Mahore_010 | Kildrum | AV | SH_24_764 | - | M |
| Mahore | Mahore_020 | O'Carrolls Br. | AV | SH_24_776 | - | G |
| Flemingstown | Flemingstown Stream_010 | Ballynamoloogh | AV | SH_24_1543 | - | M |
| Knocksouna | Loobagh_030 | Kilbreedy Br. | AV | SH_24_189 | - | M |
| Loobagh | Loobagh_010 | Bosnetstown | AV | SH_24_738 | - | G |
| Loobagh | Loobagh_020 | Deebert | AV | SH_24_189 | - | G |
| Loobagh | Loobagh_020 | Riversfield Br. | AV | SH_24_189 | - | G |
| Tankardstown South | Loobagh_030 | Tankards Town South | AV | SH_24_371 | - | G |
| Bishopsfield | Morningstar_030 | Bishopsfield | AV | SH_24_983 | - | G |
| Mitchelstowndown | Morningstar_010 | Pinkers Cross | AV | SH_24_1101 | - | H |
| Morningstar | Morningstar_060 | Athlacca | AV | SH_24_838 | - | P |
| Morningstar | Mormingstar_050 | Bruff | AV | SH_24_838 | - | M |
| Morningstar | Morningstar_040 | Kyle | AV | SH_24_838 | - | M |
| Ballyania | Ballyania stream_010 | Dromacommer East | AV | SH_24_836 | - | M |
| Barnakyle | Barnakyle_020 | Marlbrook | AV | SH_24_382 | - | M |
| Dunnaman | Maigue_090 | Derryvinanne | AV | SH_24_1595 | - | M |
| Glenma | Maigue_050 | Knockannacreeva | AV | SH_24_1646 | - | P |
| Maigue | Maigue_040 | Buree Park | AV | SH_24_189 | - | M |
| Maigue | Maigue_080 | Castleroberts Br. | SM | SH_24_1675 | M (2016) | M |
| Maigue | Maigue_020 | Drewscourt Bridge | AV | SH_24_173 | - | G |
| Maigue | Charleville Stream_020 | Fort Bridge East_B | AV | SH_24_173 | - | M |
| Maigue | Maigue_070 | Toreen | AV | SH_24_1675 | - | M |
| Mondellihy | Mondellihy_010 | Ballyloughnaan | AV | SH_24_1688 | - | M |
| West Liskennett | West Liskennett_010 | Kilmore demense | AV | SH_24_433 | - | M |
| **Shannon Catchment** | | | | | | |
| Ballyfinboy | Ballyfinboy_070 | Ballinderry Br. | SM/AV | SH_25_1854 | M (2020) | P |
| Ballyfinboy | Ballyfinboy_070 | Br. just u/s L. Derg | SM | SH_25_1853 | M (2020) | P |
| Bow | Bow_010 | Bow River Br. | SM | SH_25_2145 | M (2020) | M |
| Glenafelly | Glenfelly Stream_010 | Br. 3km E of Longford | SM | SH_25_779 | M (2021) | M |
| Dead | Dead_010 | Pope's Br. | SM | SH_25_1893 | G (2020) | G |
| Broadford | Broadford_030 | Br. u/s Doon Lough | SM | SH_27_287 | M (2022) | M |
| Cloghaun | Cloghaun_030 | Core Br. | AV | SH_25_3361 | G (2016) | M |

**Table 4.4. contd. Summary details of rivers sites surveyed and fish ecological status 2024.**

| River | WFD sub basin | Site name | Survey type | Water body ID | Previous status | 2024 Status |
|---|---|---|---|---|---|---|
| **Shannon Catchment contd.** | | | | | | |
| Corra | Corra_020 | Gortavrulla | AV | SH_25_2078 | M (2016) | M |
| Gourna | Gourna_010 | Beside Railway Br. | SM/AV | SH_27_885 | H (2013) | G |
| Little Cloghan | Little (Cloghan)_020 | Br. 2km SW of Cloghan | SM | SH_25_3014 | M (2020) | M |
| Newport | Newport (Tipperary)_030 | Rossaguile Br. | SM | SH_25_320 | G (2013) | G |
| Owvane Lim. | Owvane (Limerick)_030 | Br. u/s (SE of) Loghill | SM | SH_24_878 | G (2012) | M |
| **Suck Catchment** | | | | | | |
| Ballinure | Ballinure_010 | Tristaun Br. | AV | SH_26_2610 | - | M |
| Ballyglass | Ballyglass_010 | Ballyglass Br. | AV | SH_26_3779 | - | M |
| Bunowen | Ahascragh_020 | Fohanagh | AV | SH_26_3041 | - | M |
| Bunowen | Ahascragh_020 | Garrafine | AV | SH_26_3612 | - | M |
| Castlegar | Castlegar_010 | Rahins | AV | SH_26_480 | - | M |
| Cloonard | Francis_020 | Cloonard Br. | AV | SH_26_1230 | - | M |
| Cloonlyon | Shiven (South)_060 | Cloonlyon | AV | SH_26_2788 | - | P |
| Cloonlyon | Shiven (South)_060 | Hermitage u/s Crooked Br. | AV | SH_26_2788 | - | M |
| Cloonroughan | Cloonroughan_010 | Clooncran | AV | SH_26_2631 | - | M |
| Derryhippoo | Derryhippoo_010 | Skehaghard | AV | SH_26_4081 | - | M |
| Derrymullen | Derrymullan Stream_010 | Kilmalaw Br. | AV | SH_26_1520 | - | M |
| Derrymullen | Derrymullan Stream_010 | Northbrook | AV | SH_26_1520 | - | M |
| Glinsk | Suck_060 | Glinsk Carpark | AV | SH_26_2968 | - | P |
| Gortdrishagh | Springfield_020 | Templetogher | AV | SH_26_2628 | - | M |
| Gorteencahill | Ballinure_020 | Abbey Park | AV | SH_26_2610 | G (2019) | P |
| Hardwood | Ballinure_010 | Kilnahown | AV | SH_26_2610 | - | M |
| Island | Island_030 | Clough Br. | AV | SH_26_2775 | - | M |
| Island | Island_030 | Kilberg | AV | SH_26_2775 | - | M |
| Killeglan | Killeglan_010 | Cregganycarna | AV | SH_26_2808 | - | M |
| Killian | Killian_030 | Lahacrogher | AV | SH_26_3093 | - | M |
| Laragh | Suck_050 | Ballyfinegan | AV | SH_26_1258 | - | P |
| Lenafin | Derrymullan Stream_020 | Cloonigny | AV | SH_26_476 | - | M |
| Shiven | Shiven (South)_020 | Ballinlahy | AV | SH_26_2636 | - | M |
| Shiven | Shiven (South)_020 | Cloonconore Br. | AV | SH_26_2636 | - | M |
| Shiven | Killian_010 | Coracullen Br. | AV | SH_26_3093 | - | P |
| Shiven | Killian_020 | Derrnabrin | AV | SH_26_3093 | - | M |
| Shiven | Shiven (South)_030 | d/s Tinur Br. | AV | SH_26_2636 | - | M |
| Shiven | Shiven (South)_020 | Spring Garden | AV | SH_26_2636 | - | M |
| Shiven | Shiven (South)_020 | Tully Village | AV | SH_26_2636 | - | M |
| Smaghraan | Suck_070 | Oran GAA Club | AV | SH_26_1441 | - | M |
| Smaghraan | Suck_070 | Carrigan's Park | AV | SH_26_1441 | - | B |
| Suck | Suck_020 | Br. d/s Lough O Flynn | AV | SH_26_1359 | - | P |
| Suck | Suck_030 | Cloondacarra Br. | SM | SH_26_1447 | P (2016) | M |
| Suck | Suck_040 | Cloontrask Forest | AV | SH_26_1447 | P (2016) | P |
| Suck | Suck_050 | d/s Joyces Br. | AV | SH_26_1447 | - | M |
| Suck | Suck_030 | Harristown | SM/AV | SH_26_1447 | P (2016) | P |
| Suck | Suck_050 | u/s Joyces Br. | AV | SH_26_1447 | - | M |
| Termon | Termon Stream_010 | Ardass | AV | SH_26_1083 | - | M |
| Suck | Suck_120 | Ballyforan Br. | SM | SH_26_1447_4 | - | P |
| Suck | Suck_120 | Ballyforan B | AV | SH_26_1447_4 | - | P |
| Suck | Suck_120 | Ballyforan C | AV | SH_26_1447_4 | - | B |

**Table 4.4. contd. Summary details of rivers sites surveyed and fish ecological status 2024.**

| River | WFD sub basin | Site name | Survey type | Water body ID | Previous status | 2024 Status |
|---|---|---|---|---|---|---|
| **Suck Catchment contd.** | | | | | | |
| Suck | Suck_120 | Ballyforan D | AV | SH_26_1447_4 | - | B |
| Suck | Suck_070 | Dunamon 1 | AV | SH_26_1447_3 | - | P |
| Suck | Suck_070 | Dunamon 2 | AV | SH_26_1447_3 | - | P |
| Suck | Suck_070 | Dunamon 3 | AV | SH_26_1447_2 | - | P |
| Suck | Suck_070 | Dunamon 4 | AV | SH_26_1447_2 | - | P |
| Suck | Suck_060 | Dunamon u/s 1 | AV | SH_26_1447_2 | - | P |
| Suck | Suck_060 | Dunamon u/s 2 | AV | SH_26_1447_2 | - | P |
| Suck | Suck_060 | Dunamon u/s 3 | AV | SH_26_1447_2 | - | P |
| Suck | Suck_060 | Dunamon u/s 4 | AV | SH_26_1447_2 | - | P |
| **Tyshe Catchment** | | | | | | |
| Tyshe | Tyshe_010 | West Br. Ardfert at Friary_B | SM | SH_23_427 | P (2012) | P |
| Tyshe | Tyshe_020 | West Br. Ardfert at Friary_C | SM/AV | SH_23_427 | P (2020) | B |
| **SWRBD** | | | | | | |
| **Caragh Catchment** | | | | | | |
| Cappamore | Caragh_030 | Dromstabla | SM/AV | SW_22_3854 | N/A | G |
| Caragh | Caragh_040 | Bridia | AV | SW_22_3205 | H (2017) | M |
| Caraghbeg | Caragh_030 | Gortmaloon East | SM | SW_22_3404 | P (2017) | M |
| Coomavoon | Caragh_040 | Drom East | AV | SW_22_1970 | G (2017) | M |
| Glashawee | Caragh_040 | Ballaghbeama Gap | AV | SW_22_2489 | - | G |
| Knocknacrusha | Coomnacarrig_010 | Coomnacarrig | AV | SW_22_2509 | N/A | M |
| Knocknacrusha | Coomnacarrig_010 | Kealboy | AV | SW_22_2509 | N/A | G |
| Owbeg | Caragh_040 | Corrawoolia | AV | SW_22_1970 | G (2017) | M |
| **Ilen Catchment** | | | | | | |
| Ahacrinduff | Ilen_030 | Hollybrook | AV | SW_20_958 | - | M |
| Coomnagoragh | Owennashingaun_020 | Cullomane Crossroads | AV | SW_20_1945 | - | M |
| Coomnagoragh | Owennashingaun_020 | Dromoureen | AV | SW_20_1945 | - | M |
| Glanaphuca | Ilen_030 | Ballyourane Br. | AV | SW_20_1569 | - | G |
| Ilen | Ilen_010 | Castledonavan | AV | SW_20_883 | - | G |
| Ilen | Ilen_030 | Derreeny | AV | SW_20_2266 | - | P |
| Ilen | Ilen_030 | Madore Br. | AV | SW_20_2266 | - | M |
| Lissalohorig | Ilen_030 | Bunalunn | AV | SW_20_1210 | - | H |
| Lissalohorig | Ilen_030 | d/s Lough Gorm | AV | SW_20_1210 | - | P |
| Owennashingaun | Owennashingaun_010 | Glandarta Br. | AV | SW_20_1750 | - | G |
| Owennashingaun | Owennashingaun_020 | Inchingering Br. | AV | SW_20_1862 | - | M |
| Ruagagh | Ilen_020 | Garranes Br. | AV | SW_20_876 | - | G |
| Saivnose | Saivnose_010 | Coomatallin Br. | AV | SW_20_1635 | - | G |
| Saivnose | Saivnose_010 | Drinagh | AV | SW_20_1635 | - | G |
| Saivnose | Saivnose_020 | 300 m S of Bredagh Crossroads | AV | SW_20_1642 | - | M |
| **Owvane (Cork) Catchment** | | | | | | |
| Gortloughra | Owvane (Cork)_010 | Inchinroe | AV | SW_21_5558 | - | M |
| Owenbeg | Owvane (Cork)_020 | Ahildotia | SM/AV | SW_21_7066 | - | P |
| Owenbeg | Owenbeg (Owvane)_010 | Clogherane | AV | SW_21_7066 | - | M |
| Owenbeg | Owenbeg (Owvane)_010 | Cappaboy Beg | AV | SW_21_7066 | - | M |
| Owngar | Owngar (Cork)_010 | Ballynamought Br. | AV | SW_21_5516 | - | G |
| Owngar | Owvane (Cork)_020 | Cahermoanteen Br. | SM/AV | SW_21_4750 | - | G |
| Owngar | Owngar (Cork)_010 | Leenanae Br. | AV | SW_21_4750 | - | G |

**Table 4.4. contd. Summary details of rivers sites surveyed and fish ecological status 2024.**

| River | WFD sub basin | Site name | Survey type | Water body ID | Previous status | 2024 Status |
|---|---|---|---|---|---|---|
| **Owvane (Cork) Catchment contd.** | | | | | | |
| Owvane Cork | Owvane (Cork)_030 | Ardnacloghy | AV | SW_21_8048 | - | M |
| Owvane Cork | Owvane (Cork)_020 | Cappabo Br. | SM/AV | SW_21_7068 | - | M |
| Owvane Cork | Owvane (Cork)_010 | Curraglass Waterfall | AV | SW_21_7057 | - | G |
| Owvane Cork | Owvane (Cork)_020 | Killkeel | SM/AV | SW_21_8048 | - | M |
| Owvane Cork | Owvane (Cork)_020 | Maulavanig | SM/AV | SW_21_7068 | - | M |
| Owvane Cork | Owvane (Cork)_010 | N of Cappabue School | AV | SW_21_7057 | - | G |
| **SERBD** | | | | | | |
| **Suir-Aherlow Catchment** | | | | | | |
| Aherlow | Aherlow_020 | Ardrahin | AV | SE_16_1178 | P (2016) | M |
| Aherlow | Aherlow_020 | Curraghkilbran | AV | SE_16_1178 | - | G |
| Aherlow | Aherlow_010 | u/s Assaroola Confl. | AV | SE_16_2514 | M (2016) | M |
| Clydagh | Aherlow_040 | Gortaclivore | AV | SE_16_1177 | G (2016) | M |
| Knockanebrack | Aherlow_040 | Knockanebrack | AV | SE_16_3300 | M (2016) | M |
| Knockastakeen | Aherlow_060 | Rossadrehid Br. | AV | SE_16_3161 | G (2016) | G |
| Moneynaboola | Aherlow_040 | Moneynaboola | AV | SE_16_1178 | M (2016) | P |
| Rossadrehid | Aherlow_060 | Dromamarka Br. | AV | SE_16_3305 | M (2016) | M |
| Toureen | Aherlow_080 | Toureen Peacaun | SM/AV | SE_16_540 | M (2016) | M |
| **Suir-Ara Catchment** | | | | | | |
| Ara | Aherlow_080 | 400m d/s Ara Br. | SM/AV | SE_16_2303 | - | N/A |
| Ara | Ara_040 | Ara Br. | SM | SE_16_2303 | G (2016) | G |
| Ara | Ara_040 | Bansha | SM/AV | SE_16_2303 | G (2016) | G |
| Ara | Ara_040 | Bansha Castle | SM/AV | SE_16_2303 | G (2016) | M |
| Ara | Ara_030 | Cordangan | AV | SE_16_2303 | - | M |
| Ara | Ara_040 | Lismacue | SM/AV | SE_16_2303 | G (2016) | M |
| Ara | Ara_020 | Station Rd. Tipp | AV | SE_16_1127 | - | P |
| **Suir-Anner Catchment** | | | | | | |
| Anner | Clashawley_010 | Ballinunty | AV | SE_16_3632 | - | H |
| Anner | Anner_030 | Drummon Br. | SM | SE_16_2342 | G (2020) | M |
| Anner | Anner_030 | Gurteen East | SM/AV | SE_16_2342 | M (2020) | P |
| Anner | Anner_040 | Killusty | AV | SE_16_2342 | G (2016) | G |
| Anner | Anner_040 | Killusty North | AV | SE_16_2342 | M (2016) | M |
| Anner | Clashawley_030 | Spidalfield | AV | SE_16_440 | P (2020) | P |
| **Suir-Duag Catchment** | | | | | | |
| Duag | Duag_010 | Br. u/s Ballyporeen | SM | SE_16_639 | M (2014) | M |
| **Suir-Multeen Catchment** | | | | | | |
| East | Multeen (East)_010 | Turraheen Br. | AV | SE_16_579 | - | H |
| Lackenacreena | Multeen_010 | Hollyford | AV | SE_16_2459 | - | H |
| Multeen | Multeen_010 | Lackenacoombe | AV | SE_16_3267 | - | H |
| **Suir-Nier Catchment** | | | | | | |
| Nier | Nier_020 | Br. ENE of Ballymacarby | SM | SE_16_1059 | G (2013) | G |
| Nier | Nier_020 | Knockalisheen Br. | SM/AV | SE_16_1059 | - | M |
| **Suir-Tar Catchment** | | | | | | |
| Glengalla | Glengalla_010 | Glengalla Br. | AV | SE_16_2837 | - | G |
| Shanbally | Shanbally_010 | Shanbally | AV | SE_16_3940 | - | M |

**Table 4.4. contd. Summary details of rivers sites surveyed and fish ecological status 2024.**

| River | WFD sub basin | Site name | Survey type | Water body ID | Previous status | 2024 Status |
|---|---|---|---|---|---|---|
| **Suir Catchment** | | | | | | |
| Aughall Beg | Aughall Beg_010 | Castleleiny | AV | SE_16_2378 | - | M |
| Blackwater | B'water (Kilmacow)_010 | Mullinavat | AV | SE_16_1475 | - | G |
| Breegagh | Drish_060 | Archerstown | AV | SE_16_750 | - | M |
| Breegagh | Breagagh (Tipperary)_020 | Lahardan Br. | AV | SE_16_2745 | - | M |
| Dawn | Dawn_010 | Kildermodey | AV | SE_16_4252 | - | M |
| Derrylackey | B'water (Kilmacow)_010 | Lukeswell Br. | AV | SE_16_1474 | - | H |
| Drish | Drish_060 | Drish | AV | SE_16_1530 | - | M |
| Glasha | Glasha (Waterford)_010 | Coolishal Carpark | AV | SE_16_1057 | - | G |
| Glen | Glenbrook_010 | Glenbower | AV | SE_16_869 | - | M |
| Ire | Clodiagh (Portlaw)_030 | Kilclooney Br. | AV | SE_16_326 | - | G |
| Linguan | Lingaun_020 | Lingaun Br. | AV | SE_16_3309 | - | G |
| Moloughnewtown | Suir_160 | Newcastle | AV | SE_16_3081 | - | M |
| Rossestown | Rossestown_020 | Lisaticy Br. | AV | SE_16_4121 | - | M |
| Suir | Suir_030 | 150m u/s Aughall Br. | AV | SE_16_3997 | - | M |
| Suir | Suir_130 | 650 metres u/s Bakery Weir | AV | SE_16_4181 | - | P |
| Suir | Suir_130 | 1.3km u/s Bakery Weir | AV | SE_16_4181 | - | P |
| Suir | Suir_130 | 2km u/s Bakery Weir | AV | SE_16_4181 | - | P |
| Suir | Suir_130 | 2.6km u/s Bakery Weir | AV | SE_16_4181 | - | M |
| Suir | Suir_140 | 70 metres u/s Bakery Weir | AV | SE_16_4181 | - | B |
| Suir | Suir_140 | 1.7km d/s Bakery Weir | AV | SE_16_4181 | - | P |
| Suir | Suir_140 | 2.4km d/s Bakery Weir | AV | SE_16_4181 | - | P |
| Suir | Suir_140 | 450m d/s Bakery Weir | AV | SE_16_4181 | - | M |
| Suir | Suir_140 | 1.1km d/s Bakery Weir | AV | SE_16_4181 | - | P |
| Thonge | Thonoge_030 | Tubbrid | AV | SE_16_3786 | - | G |
| **ERBD** | | | | | | |
| **Avoca Catchment** | | | | | | |
| Aughrim | Aughrim (Wicklow)_020 | Knocknamohill | AV | EA_10_133 | - | G |
| Ballycreen | Ballycreen Brook_020 | Macreddin Br. | AV | EA_10_131 | - | M |
| Derry | Derry Water_030 | Annacurra | AV | EA_10_138 | - | M |
| Derry | Derry Water_030 | Ballinglen Br. | AV | EA_10_183 | - | M |
| Derry | Derry Water_020 | Ballycumber Br. | AV | EA_10_183 | - | M |
| Derry | Derry Water_020 | Slieveroe | AV | EA_10_183 | - | M |
| Gold Mine | Gold Mine_010 | Coolgaroo Br. | AV | EA_10_134 | - | G |
| Ow | Ow_020 | Iron Br. | AV | EA_10_111 | - | G |
| Ow | Aughrim (Wicklow)_010 | Rednagh Br. | AV | EA_10_111 | - | G |
| Ballyduff | Avoca_030 | Ballyduff North | AV | EA_10_1394 | - | G |
| Avonbeg | Avonbeg_020 | Drumgoff Br. | SM/AV | EA_10_99 | - | M |
| Avonbeg | Avonbeg_030 | Greenan Br. | SM | EA_10_99 | P (2017) | M |
| Avonbeg | Avonbeg_020 | Mine | AV | EA_10_99 | N/A | M |
| Avonbeg | Avonbeg_030 | Riverside | SM/AV | EA_10_99 | - | M |
| Avonmore | Glenealo_020 | Ballard Br. | SM/AV | EA_10_1477 | N/A | M |
| Avonmore | Avonmore_010 | Luggala Lodge | AV | EA_10_407 | - | M |
| Avonmore | Avonmore_030 | Oldbridge | AV | EA_10_721 | - | M |
| Avonmore | Avonmore_040 | Trooperstown | AV | EA_10_721 | - | M |
| Ballinacorbeg | Avonmore_030 | Ballinacorbeg | AV | EA_10_995 | M (2023) | M |
| Carrigeenshinnagh | Avonmore_020 | Carrigeenshinnagh | AV | EA_10_721 | - | M |
| Cloghoge | Cloghoge Brook_010 | Knocknacloghoge | AV | EA_10_938 | - | M |
| Garryduff | Avonmore_060 | Montiagh East | AV | EA_10_1005 | G (2023) | G |

**Table 4.4. contd. Summary details of rivers sites surveyed and fish ecological status 2024.**

| River | WFD sub basin | Site name | Survey type | Water body ID | Previous status | 2024 Status |
|---|---|---|---|---|---|---|
| **Avoca Catchment contd.** | | | | | | |
| Glendasan | Glendasan_010 | Leadworks | AV | EA_10_949 | M (2017) | P |
| Glendasan | Glendasan_010 | Roundtower | AV | EA_10_949 | M (2017) | G |
| Glenmacnas | Glenmacnass_010 | Mall Hill | AV | EA_10_723 | N/A | M |
| Moneystown | Avonmore_040 | Castlekevin | AV | EA_10_492 | G (2023) | G |
| **Dargle Catchment** | | | | | | |
| Dargle | Dargle_030 | 1 km u/s People's Park | SM | EA_10_1275 | - | G |
| Glencree | Glencree_010 | Br. u/s Dargle R confl | SM | EA_10_367 | G (2017) | G |
| **Dee Catchment** | | | | | | |
| Dee | Dee_090 | Br. At Drumcar | AV | NB_06_1099 | M (2021) | M |
| Dee | Dee_050 | Burley Br. | SM | NB_06_50 | M (2021) | M |
| Dee | Dee_040 | Nobber | AV | NB_06_50 | - | P |
| **Fane Catchment** | | | | | | |
| Ballykelly | Fane_050 | Coolcreedan | AV | NB_06_229 | - | M |
| Fane | Fane_050 | Br. d/s of Inniskeen | SM | GBNI1NB060604052 | G (2016) | G |
| Fane | Fane_040 | Moyles | SM/AV | GBNI1NB060604052 | N/A | G |
| Fane | Fane_050 | Castlering Br. | AV | GBNI1NB060604052 | N/A | G |
| Fane | Fane_050 | Drumgonnelly | AV | GBNI1NB06060405 | M (2018) | G |
| Fane | Fane_040 | Kilmurray | SM/AV | GBNI1NB060604052 | N/A | G |
| **Nanny Catchment** | | | | | | |
| Hurley | Nanny (Meath)_030 | Boolies Little | AV | EA_08_282 | M (2020) | P |
| Hurley | Hurley_030 | New Br. North | AV | EA_08_286 | G (2016) | M |
| Hurley | Hurley_010 | Painstown | AV | EA_08_286 | - | P |
| Hurley | Hurley_020 | Rathbeag | AV | EA_08_286 | M (2016) | M |
| Lunderstown | Nanny (Meath)_030 | Johnstown East | AV | EA_08_266 | M (2020) | M |
| Nanny Meath | Nanny (Meath)_020 | Ballynagarvey Village | AV | EA_08_370 | - | M |
| Nanny Meath | Nanny (Meath)_020 | Balrath Br. | AV | EA_08_370 | - | P |
| Nanny Meath | Nanny (Meath)_030 | Boolies Little East | AV | EA_08_370 | P (2020) | M |
| Nanny Meath | Nanny (Meath)_050 | Br. At Julianstown | SM | EA_08_814 | M (2012) | M |
| Nanny Meath | Nanny (Meath)_040 | Knockisland | AV | EA_08_310 | P (2020) | P |
| Riverstown | Hurley_030 | Gilliamstown | AV | EA_08_771 | - | P |
| **White (Louth) Catchment** | | | | | | |
| White Louth | White (Louth)_030 | Coneyburrow Br. | SM | NB_06_550 | P (2021) | M |
| White Louth | White (Louth)_010 | Martinstown Wood | AV | NB_06_239 | P (2016) | P |

### *4.3 Transitional waters*

#### 4.3.1 Fish species richness and distribution

Species richness, the number of species captured, is often used as an indicator of the health of transitional water bodies. A total of 35 species were captured across the nine transitional waterbodies surveyed in 2024. There were 31 species captured in the Barrow-Nore-Suir Complex, and 11 species in the Gweebarra Estuary (Table 4.5). Species richness ranged from eight species in the Barrow Nore Estuary Upper and Upper Suir Estuary to 21 species in the Barrow-Suir-Nore Estuary waterbody (Figure 4.41).

Sand goby, flounder, and European eel were the most widely distributed fish species, recorded in all nine waterbodies. Flounder was the most dominant species captured in the Barrow Estuary Upper, Barrow Nore Estuary Upper, and Suir Estuary Upper. Sprat was the most common species caught in the Barrow-Suir-Nore waterbody, New Ross Port, and Suir Estuary Lower. Sand goby was the dominant species captured in the Nore Estuary and Suir Estuary Middle. Sprat was the most abundant species captured in the Barrow-Nore-Suir Complex (Table 4.5). In the NWRBD, flounder was the dominant species captured in the Gweebarra Estuary (Table 4.5).

#### 4.3.2 Transitional water ecological status classification

All nine transitional waterbodies surveyed during 2024 were surveillance monitoring and were assigned a fish ecological status class using the Estuarine Multimetric Fish Index (EMFI) ecological classification tool (Harrison and Kelly, 2013), together with expert opinion (Table 4.5 and Figure 4.42).

Of the eight waterbodies surveyed in the SERBD, all eight were classified as Moderate (Table 4.5 and Figure 4.42). Seven of these waterbodies were also assigned a Moderate status in 2022, while New Ross Port deteriorated from Good in 2022 to Moderate in 2024. All eight sites had previously been assigned Good status in the 2019 survey.

The data from all eight waterbodies were merged to form the Barrow-Nore-Suir Complex. This data was then processed using the EMFI classification tool. This combined site complex was assigned a status of Good for 2024. The Barrow-Nore-Suir Complex had also been previously assigned a Good status in 2022 (Table 4.5).

One waterbody was surveyed in the NWRBD, the Gweebarra Estuary. The Gweebarra Estuary showed a decline in status, having previously been assigned Good in 2018, declining to Moderate status in 2024 (Table 4.5).

**Table 4.5. Species richness and fish ecological status of transitional waters surveyed in 2024.**

| Water body | WFD Code | Survey type | Species Richness | Dominant species | | Previous Status | 2024 status |
|---|---|---|---|---|---|---|---|
| | | | | Scientific name | Common name | | |
| **SERBD** | | | | | | | |
| Barrow Estuary Upper | SE 100 0300 | SM | 8 | *Platichthys flesus* | Flounder | M (2022) | Moderate |
| Barrow Nore Estuary Upper | SE 100 0250 | SM | 21 | *Platichthys flesus* | Flounder | M (2022) | Moderate |
| Barrow-Suir-Nore Estuary | SE 100 0100 | SM | 14 | *Sprattus sprattus* | Sprat | M (2022) | Moderate |
| New Ross Port | SE 100 0200 | SM | 15 | *Sprattus sprattus* | Sprat | G (2022) | Moderate |
| Nore Estuary | SE 100 0400 | SM | 14 | *Pomatoschistus minutus* | Sand goby | M (2022) | Moderate |
| Suir Estuary Upper | SE 100 0600 | SM | 9 | *Platichthys flesus* | Flounder | M (2022) | Moderate |
| Suir Estuary Middle | SE 100 0550 | SM | 11 | *Pomatoschistus minutus* | Sand goby | M (2022) | Moderate |
| Suir Estuary Lower | SE 100 0500 | SM | 8 | *Sprattus sprattus* | Sprat | M (2022) | Moderate |
| **Barrow-Nore-Suir Complex** | **NA** | **NA** | **31** | ***Sprattus sprattus*** | **Sprat** | **G (2022)** | **Good** |
| **NWRBD** | | | | | | | |
| Gweebarra Estuary | NW 120 0100 | SM | 11 | *Platichthys flesus* | Flounder | G (2018) | Moderate |

4.3.3 Transitional waters ecological status three-year summary 2022-2024

A total of 18 transitional waters were assigned fish ecological status in the three-year period between 2022 and 2024 (Figure 4.43). The eight waterbodies that make up the Barrow-Nore-Suir complex were surveyed in both 2022 and 2024. Over the three-year survey period, one site was assigned a status of Good, and the remaining 17 waterbodies failed to meet the minimum threshold (Figures 4.37 and 4.43). All 18 waterbodies had previously been assigned status prior to this survey period. Of these, the status of two waterbodies (11.1%) remained the same, while 15 sites (83.3%) deteriorated in status, and one site (5.5%) improved (Figure 4.38).

Fifteen of the 18 transitional waterbodies surveyed between 2022-2024 were long-term surveillance monitoring waterbodies. One site Kinvara Bay in the WRBD, was assigned a status of Good, the remaining 14 sites failed to meet the minimum ecological standard (Figures 4.39 and 4.43). All 15 waterbodies had been assigned fish ecological status previously. The status of seven 14 waterbodies (93.3%) deteriorated between survey periods, and one waterbody (6.7%) improved (Figure 4.40).

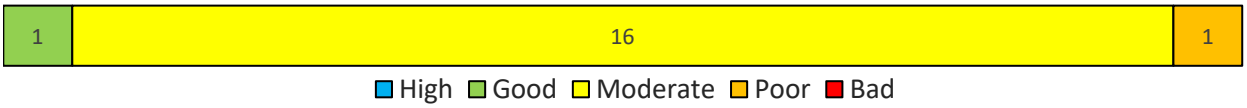


**Figure 4.37. Fish ecological status for transitional waters surveyed in the period 2022 to 2024.**


**Figure 4.38. Change in fish ecological status for transitional waters surveyed in the period 2022 to 2024.**

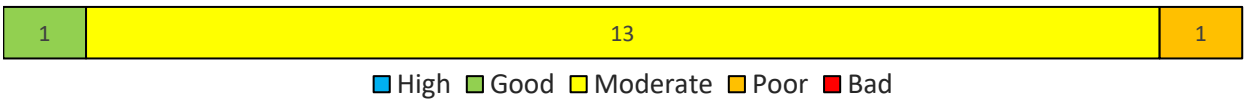


**Figure 4.39. Fish ecological status for SM transitional waters surveyed 2022 to 2024.**


**Figure 4.40. Change in fish ecological status for SM transitional waters surveyed in the period 2022 to 2024.**

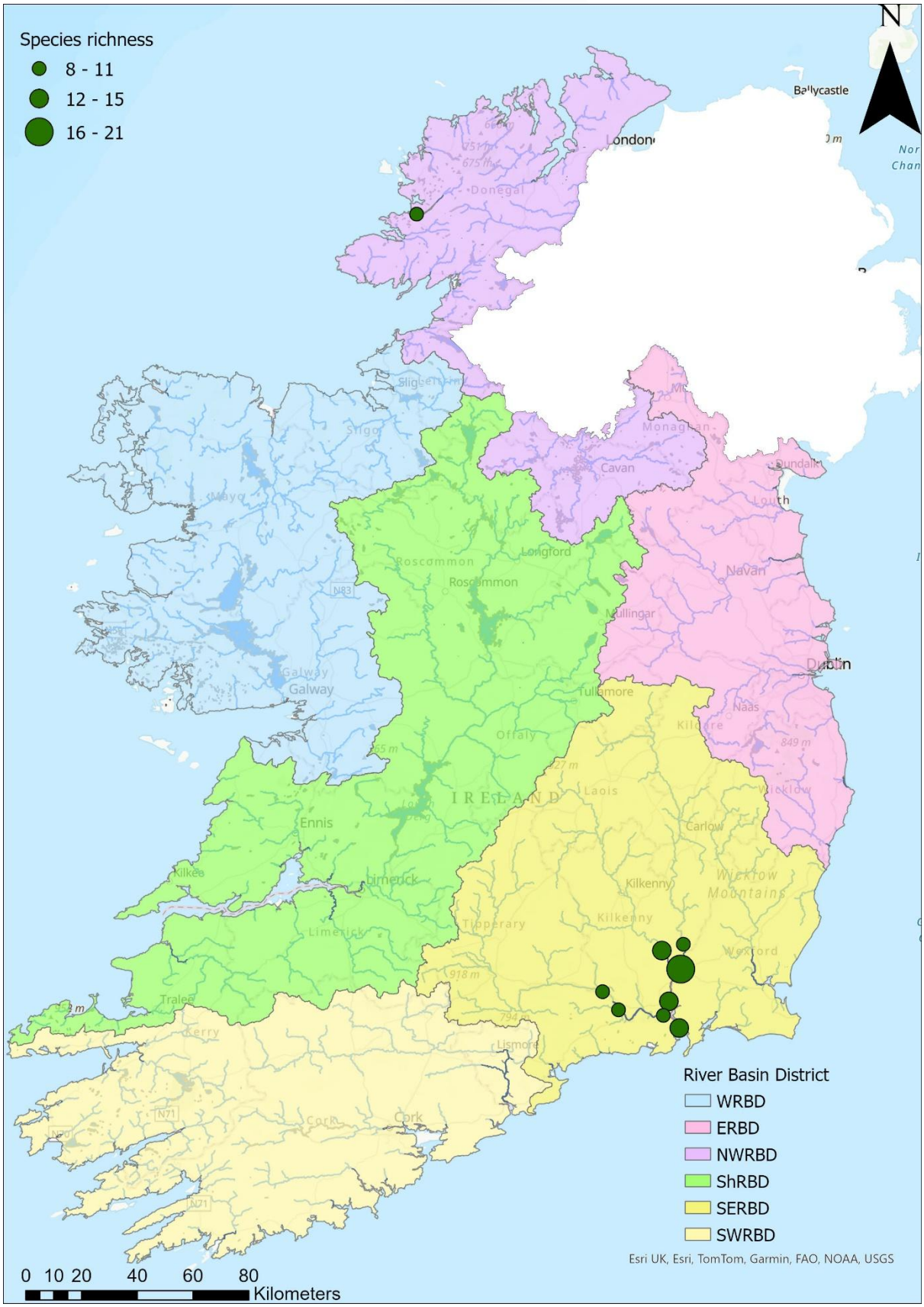


**Figure 4.41. Species richness recorded at the nine transitional waterbodies surveyed in 2024.**

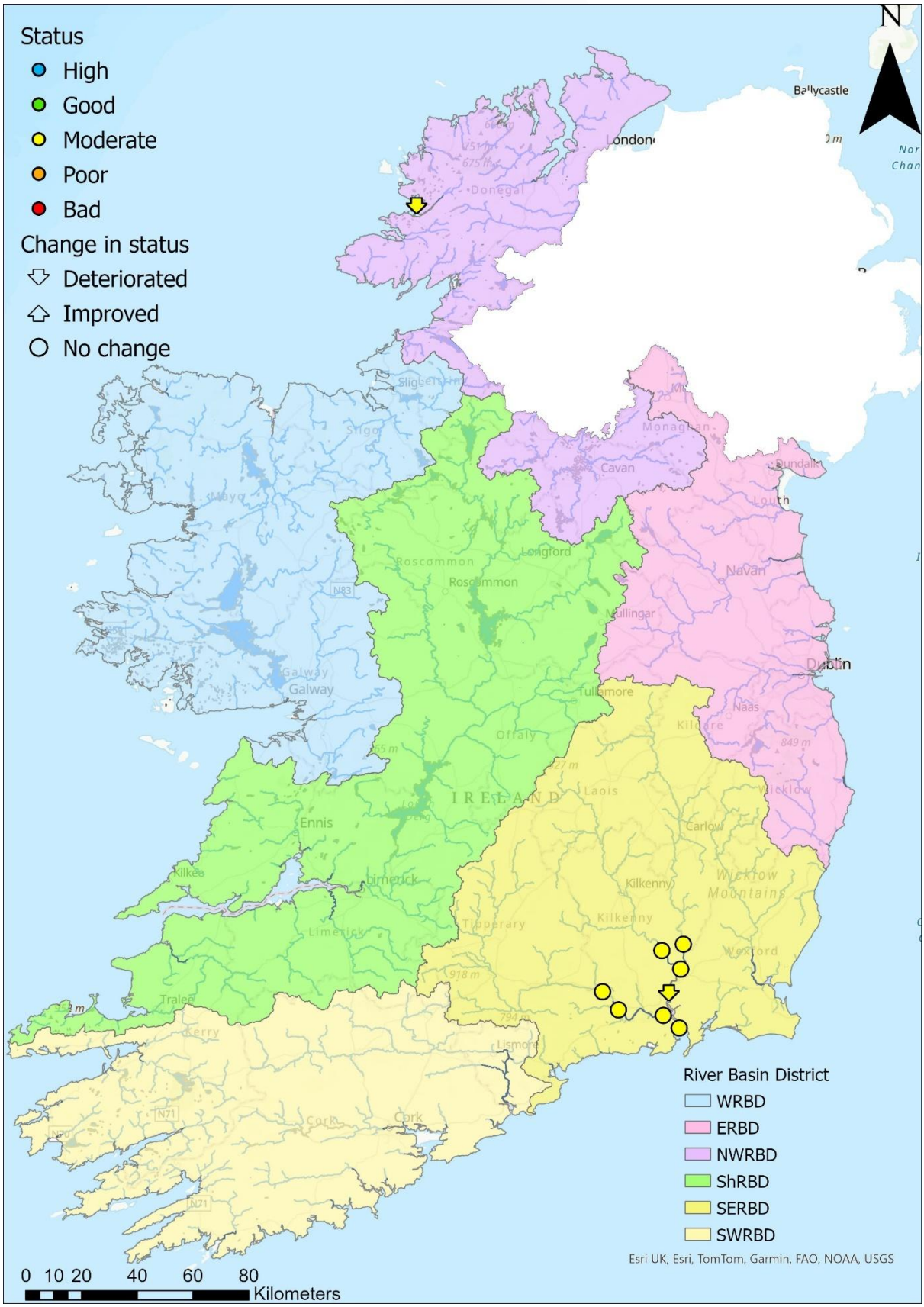


**Figure 4.42. Ecological status of the nine transitional waterbodies surveyed in 2024. (Note: Arrows indicate change in fish ecological status since previous survey).**

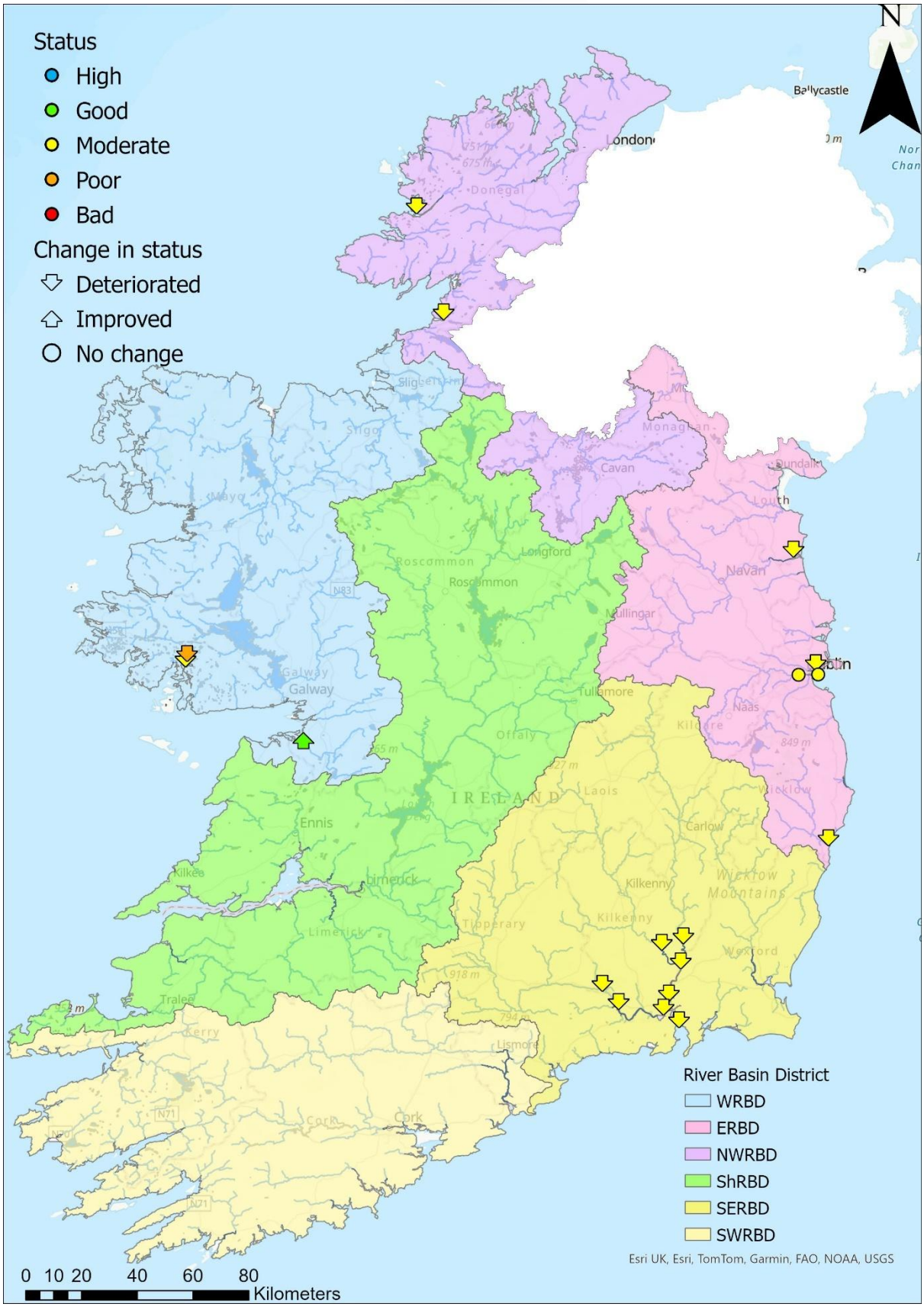


**Figure 4.43. Ecological status of long-term surveillance monitoring transitional waterbodies surveyed between 2022-2024 using the EMFI ecological classification tool.**

## 5. DISCUSSION

### *5.1 Lakes*

A total of 17 fish species and two cyprinid hybrids were recorded across the lake waterbodies surveyed in 2024. European eel was the most widely distributed species recorded, while perch was the most abundant species, dominating catches in 11 of the 13 lake waterbodies in which they were recorded.

A total of 26 lake waterbodies were assigned a fish ecological status in 2024. Lough Doon was not assigned a status, as a complete suite of nets was not utilised on the lake. Of the 26 lake waterbodies assigned status, three lake waterbodies (11.5%) were assigned High status, eight lake waterbodies (30.8%) were assigned Good status, three lake waterbodies (11.5%) were assigned Moderate status, two lake waterbodies (7.7%) were assigned Poor status, and ten lake waterbodies (38.5%) were assigned Bad status.

The most common reason for lakes failing fish ecological status is the absence of type-specific indicator species, such as brown trout and Arctic char, or a large biomass of tolerant fish species (e.g. cyprinids). Cyprinid species are more tolerant of low water quality and increases in water temperature than species such as brown trout and Arctic char, and they can proliferate when water quality declines. In many lakes, a failing status will result from a combination of both factors.

The absence of type-specific indicator (intolerant) fish species, particularly brown trout, was the likely reason for the failing status of seven lake waterbodies located in the WRBD. These include six lake waterbodies in the Owenriff Catchment, Lough Adrehid, Agraffard, Ateeaun, Bofin, Loughaphreaghaun, Shanagree and Aughrusbeg, one of the most westerly lakes in the Connemara area of Galway. McLoone *et al.* (2018), describes how the introduction of pike can alter the fish communities in small lakes. It is likely the introduction of pike into the Owenriff lakes has negatively affected the trout population. However, low water levels combined with high water temperatures (>20$^{o}$C) during heatwaves and any deterioration in water quality could also prevent recovery. Aughrusbeg Lough was assigned a fish ecological status of Bad in 2024. This lake has been assigned a fish status of Poor or worse in all WFD surveys carried out by IFI since 2007 (e.g. McLoone *et al.*, 2022a). These surveys typically recorded rudd as the dominant species and few, if any, wild brown trout. Previously, Gargan (1994) noted the paucity of natural recruitment in the lake. During the previous survey in 2021, pike were recorded in the lake for the first time (McLoone *et al.,* 2022a). It's likely the presence of rudd and pike, together with naturally low trout numbers, are the reasons for the failure in fish ecological status in this lake rather than any water quality pressures.

A large biomass of tolerant (cyprinid) fish species was identified as the likely driver of the failing status for six lakes in 2024, i.e. Lattone Lough, White Lough, Lough Boderg, Lough Ennell, Lough Gur, and Lough Ramor. A relatively high biomass of tolerant fish species can be an indicator of poor water quality (Kelly and Harrison, 2016).

Kindrum Lough was assigned a fish ecological status of Moderate in 2024. McLoone *et al.* (2022b), reported that Kindrum Lough has been assigned a status of Moderate in all WFD surveys carried out on the lake since 2007. The relatively low abundance of type-specific indicator species, such as brown trout and Arctic char, are the likely drivers of this status. The Arctic char population has contracted since surveys began in 2008 (McLoone *et al*., 2022b).

Lough Leane was assigned a status of Moderate in 2024. This is a deterioration from the Good status assigned in 2021. McLoone *et al.* (2025), recorded the presence of bream (*Abramis brama*) and their associated rudd × bream hybrid, for the first time in the lake. The presence of this introduced species contributed to an increase in tolerant fish species (mainly cyprinids) biomass in the lake. This increase in biomass, together with a decrease in brown trout abundance, are the likely causes of this decrease in status. This may be an indication of a decline in water quality.

All 26 lake waterbodies assigned a fish ecological status in 2024 had previously been surveyed and assigned a status. When the results between surveys were compared, 15 lake waterbodies (57.7%) had an unchanged ecological status. Three lakes (11.5%) improved in status, while the remaining eight (30.8%) had deteriorated. In Lough Doo, a decrease in the biomass of indicator species, particularly brown trout, was the likely driver behind the deterioration from High to Good status. White Lough dropped from Poor status in 2018 to Bad status in 2024; this is likely due to a large increase in tolerant fish species biomass. Lough Ennell and Lough Gur both dropped from Moderate status in 2017 and 2021, respectively, to Poor status in 2024. This was also likely due to an overall increase in tolerant fish species (cyprinid) biomass recorded in both lakes, indicating that there may have been a deterioration in water quality in these lakes.

In the three-year period between 2022-2024, 77 lake waterbodies were assigned a fish ecological status. Almost half of all lake waterbodies (50.6%) met or exceeded the minimum standard. This is a decrease from the previous three-year cycle (2019-2021, 54 lakes), when 64.8% of lakes met the Good status threshold. Furthermore, in the current cycle, 27.3% of all lakes have deteriorated in ecological status, compared to just 14.9% in the 2019-2021 cycle (Corcoran *et al.,* 2022).

Of the 78 lake waterbodies surveyed between 2022-2024, 53 were WFD surveillance monitoring waterbodies. Of these lake waterbodies, 31 (58.5%) were assigned a fish ecological status of Good or

higher, while 22 lake waterbodies (41.5%) failed to meet the minimum ecological threshold. This is again a decrease from the 2019-2021 cycle. Between 2019 and 2021, 37 SM lake waterbodies were surveyed, with 28 (75.7%) lake waterbodies being assigned a status of High or Good, and just nine (24.3%) lakes failing to meet the minimum threshold. There was a noted increase in the deterioration of ecological status for SM lakes between 2022 and 2024, with 14 lake waterbodies (26.4%) deteriorating in this time frame. This compares with just 13.5% of lake waterbodies deteriorating between 2019 and 2021. However, in contrast to the deterioration noted, ten lakes (18.9%), showed an improvement in status between 2022-2024. This is an increase from the 8.1% improvement recorded between 2019-2021.

### *5.2 Rivers*

A total of 15 fish species and one cyprinid hybrid were recorded across all river sites surveyed in 2024. Brown trout had the widest distribution and was the most abundant species encountered.

Overall, 272 of the 273 river sites that were surveyed during 2024 were assigned a fish ecological status following a quality assurance/sense-checking exercise. Of the 272 sites, 73 sites (26.8%) were classified as having High or Good fish ecological status, and the remaining 199 (73.2%) sites failed to meet this standard.

In the NWRBD, ten sites (40%) achieved a fish ecological status of Good or High in 2024, with 15 sites (60%) failing to meet the required standard of Good. In the Owentocker River Catchment, 54.5% of sites failed to meet the required ecological standard (Corcoran *et al*., 2025a). In the Clonmany River Catchment, also in the NWRBD, 75% of sites failed to meet the minimum standard (Corcoran *et al*., 2025b). Six sites surveyed in the NWRBD were surveillance monitoring sites. Of these sites, two were assigned a status of Good, while four sites were assigned a status of Moderate or worse.

A total of 16 (14.8%) sites in the ShRBD achieved a fish ecological status of Good or High in 2024, while the remaining 92 (85.2%) sites failed to meet the minimum standard. In the River Maigue Catchment in the ShRBD, 11 sites (28.2%) achieved an ecological status of Good or High, while the remaining 28 sites (71.8%) failed to meet the required ecological status (Corcoran *et al*., 2025c). In the River Suck Catchment (ShRBD) out of a total of 50 sites, no site in this catchment met the required fish ecological standard (Corcoran *et al*., 2025d). Thirteen sites surveyed in the ShRBD were long-term surveillance monitoring sites. Of these sites, two were assigned a status of Good, while 11 sites were assigned a status of Moderate or worse.

In the SWRBD, a total of 15 out of 36 sites (41.6%) were assigned a status of Good or High. The remaining 21 sites (58.3%) failed to meet the required status. In the Caragh River catchment, just three of eight sites surveyed received a status of Good, while the remaining five sites were assigned a status of Moderate (Corcoran *et al*., 2025e). In the River Ilen Catchment, 6 out of 15 sites (46.7%) were assigned a status of Good or High. The remaining eight sites (53.3%) were assigned a status of Moderate or worse (Corcoran *et al*., 2025f). In the Owvane (Cork) River, 38.5% of sites met the minimum ecological status of Good, while the remaining 61.5% of sites failed to meet this standard (Corcoran *et al*., 2025g). A single site surveyed in the SWRBD was an SM site. This site, on the Caragh River, was assigned a status of Moderate.

A total of 55 sites were surveyed in the River Suir Catchment (SERBD). Of the 55 sites surveyed, 54 had an ecological status assigned. Seventeen sites (31.5%) were assigned a status of Good or High, the remaining 37 (68.5%) sites failed to meet the minimum standard (Corcoran *et al*., 2025h). Of the sites surveyed in the SERBD, four were SM sites. Of these sites, two were assigned a status of Good, and two sites were assigned a status of Moderate (Corcoran *et al*., 2025h).

In the ERBD, 50 sites were surveyed in 2024. A total of 15 (30%) sites achieved the required standard of Good or higher, 35 sites (70%) failed to meet the minimum standard. Of the 26 sites surveyed in the Avoca River Catchment in 2024, only eight sites (30.8%) were assigned a status of Good or higher, the remaining 18 sites (69.2%) failed to meet the requirements (Corcoran et al., 2025i). No sites in the River Nanny Catchment achieved the required standard of Good fish ecological status (Corcoran *et al*., 2025j). Of the sites surveyed in the ERBD, seven were SM sites. Of these sites, three were assigned a status of Good, and four sites were assigned a status of Moderate.

Of the 272 sites assigned an ecological fish status in 2024, 79 sites had previously been surveyed and designated a status. Of these, the status of 44 (55.7%) sites remained the same between surveys, while 26 sites (32.9%) deteriorated in status, and 9 sites (11.4%) improved. Therefore, there was no overall improvement in the fish ecological status of river sites that were previously surveyed.

Where a site was assigned a Good or High ecological status, or where a site showed an improvement in ecological status between surveys, the reason was generally due to the presence and/or increase in the abundance of the required type-specific fish species (e.g. salmon and trout), or the presence and/or increase of all age cohorts. In 2024, two sites which previously failed to meet the minimum ecological status, improved to Good status. The site Roundtower on the Glendasan River (Avoca Catchment) in the ERBD, improved from Moderate status to Good status. This was due to a combination of the increased abundance of 0+ and 1+ brown trout, compared to the previous survey in 2017, and the presence of 1+ salmon, which were absent from the previous survey. The site

Drumgonnelly on the Fane River in the ERBD, also improved from Moderate status to Good status. This improved status was driven by an increased abundance of 0+ salmon between surveys and the presence of 0+ brown trout, which were absent from the previous survey in 2018. The remaining seven sites; Ardrahin on the Aherlow River (SERBD), Boolies Little East on the Nanny River, Coneyburrow Bridge on the White (Louth) River and Greenan Bridge on the Avonbeg River (ERBD), Bunleanarudda on the Dunlewy River (NWRBD), Cloondcarra Bridge on the River Suck (ShRBD), and Gortmaloon East in the Caragh Catchment (SWRBD), although an improvement in EQR was observed, still did not meet the minimum ecological standard, improving from Poor status to Moderate.

The most common reasons for a site failing to achieve the required standard of Good fish ecological status, or for deteriorating between surveys, were a decrease in the abundance of type-specific fish species and missing age cohorts. This was probably caused by various pressures affecting fish recruitment, such as a decline in water quality and modification of the natural hydromorphology of a river (including sedimentation and the presence of barriers to fish migration). In some cases, an age cohort previously recorded at the site was not captured during the most recent survey, indicating a failure in recruitment. This suggests either the presence of water quality issues, physical habitat degradation (or a combination of both), and other pressures that affect fish species recruitment and persistence. In several catchments, such as the Nanny catchment in the ERBD, it was a combination of these factors that contributed to the failing ecological status observed.

Hydromorphology pressures, mainly artificial barriers affecting fish movement, arterial drainage, and sedimentation, continued to be an issue at river sites surveyed in 2024. No sites on the River Suck catchment in the ShRBD met the required ecological standard. While water quality issues were also evident, the presence of artificial barriers to fish migration and sediment were the most likely pressures. Mathers *et al.* (2002) describe the negative effect hydro-electric dams have on migratory fish species in Ireland. The Parteen Weir, located at the southern end of Lough Derg, spans the entire width of the River Shannon. The weir diverts the normal flow of the River Shannon into the 12km long headrace canal to the 30m high dam at Ardnacrusha Power Station and has a negative impact on fish movements in the Shannon (including the Suck) Catchment. The dam restricts the migration of diadromous fish species (e.g. salmon and eel) and is likely one of the main pressures causing the Moderate or lower status assigned throughout this catchment. Smaller barriers to fish migration can also have a negative effect on fish abundance. A bridge apron acts as a barrier to salmon migration on the Derry River in the Avoca Catchment. Two survey sites upstream of this barrier, Slieveroe and Ballycumber Bridge were assigned a Moderate status due to the absence of salmon. Bakery Weir, situated on the Suir main channel in the SERBD was identified as the main contributing factor to nine

sites failing to meet the minimum environmental standard. The weir was identified as having affected fish movements and negatively modified habitat types in the area (Corcoran *et al*, 2025h).

Drainage schemes and ongoing channel maintenance are another man-made pressure facing many Irish rivers. Modifications to channels alter the natural flow and shape of rivers, disrupting both instream and riparian habitats, as well as the continuity of the channel. These physical changes negatively affect fish, invertebrates, and vegetation by degrading the conditions they rely on to thrive (Fleming *et al.,* 2020). Several sites throughout the country, such as Tully Bridge on the Shiven River in the ShRBD and Ardnacloghy on the Owvane River in Cork in the SWRBD, had significant channel modifications recorded by IFI staff.

Many sites had water quality issues. Fish species such as minnow, three-spined stickleback, and stone loach show a high level of pollution tolerance. These species proliferate in the absence of salmonids, which are more sensitive to deteriorations in water quality and habitat. A high abundance of these species, or an absence of salmonids, is a good indication that a site has water quality issues or has a high proportion of sediment present (Kelly *et al*., 2007b). In the Maigue Catchment, a relatively high abundance of these tolerant species was associated with 13 sites which failed to meet the ecological standard. Data from the 2016-2021 WFD survey period shows that several sub-catchments in the Maigue Catchment had nutrient enrichment issues (EPA, 2021b).

As well as the presence and absence of tolerant and sensitive fish species, physical observations recorded on site can highlight water quality issues. Excessive algal growth was noted by IFI staff at several sites during the 2024 surveys: for example, Bredagh Crossroads on the Saivnose River in the Ilen Catchment (SWRBD) and Annacurra on the Derry River in the ERBD. Excess algal growth can be an indication of nutrient enrichment in the area (Canning and Death, 2020). Other issues observed included cattle poaching, excess sediment, absence of essential habitat types, domestic and agricultural waste dumping, and invasive species.

In the current three-year WFD monitoring cycle, 591 river sites were assigned a fish ecological status. Only 175, or 29.5% of sites met or exceeded the minimum ecological standard. This is a decrease from the previous three-year cycle (2019-2021), when 38.4% of sites met the Good status threshold. In the current cycle, 27.0% of sites deteriorated in status, this is broadly in line with the result of the 2019-2021 cycle, when 29.4% of sites deteriorated. There was, however, a reduction in the proportion of sites showing an improvement in status. Between 2019 and 2021, Corcoran *et al* 2022, showed 20.8% of repeat sites improved, this dropped to 11.5% between 2022 and 2024.

Of the 591 river sites surveyed between 2022-2024, 97 were WFD SM sites. Of these, 33 (34.0%), were assigned a status of Good or higher, while 64 sites (66.0%) failed to meet the minimum ecological threshold. This is a decrease in overall status since the 2019-2022 cycle (73 sites), when 40.0% of sites were assigned a status of Good or higher, and 60.0% of sites failed to meet the minimum environmental threshold. A total of 96 of these SM sites had previously been assigned a fish ecological status. Of these, the status of 62 (64.6%) sites remained the same between surveys, while 22 sites (22.9%) deteriorated in status, and 12 sites (12.5%) improved. This compares to 2019-2021 when out of 70 repeat sites, 52.9% of sites remained stable, 37.1% of sites deteriorated, and 10.0% of river sites improved.

### *5.3 Transitional waters*

Two estuaries containing nine waterbodies were surveyed by IFI in 2024. They were the Barrow-Nore-Suir Complex in the SERBD, and the Gweebarra Estuary in the NWRBD.

The Barrow-Nore-Suir Complex, is made up of eight different waterbodies. In 2024, 32 fish species were captured across these eight waterbodies. Sand goby, sprat, and flounder were the most widespread and abundant species, occurring in high numbers across all waterbodies. Important angling species such as European seabass, brown trout, cod, pollack, and Atlantic salmon (listed in Annex II of Directive 92/43/EEC of 1992 and classified as vulnerable on the Irish Red List (King *et al.,* 2011)) were also recorded. In 2024, 11 fish species were recorded in the Gweebarra Estuary, and flounder was the most abundant species present.

Of the eight waterbodies surveyed in the Barrow-Nore-Suir Complex, all eight were assigned a fish ecological status of Moderate and therefore failed to meet the required objective. The reasons for failure can be complex, but species richness and species dominance are key indicators used. In many cases where a site achieves a status of Moderate or worse, the reason is either low species richness or an overabundance of one or two dominant species. This can be a natural occurrence, particularly in smaller estuaries or waterbodies where habitat variation is low or can be an indicator of a change in water quality. As many transitional waters are close to large urban centres, there can also be anthropogenic pressures in place. Urban run-off, development works, and hydromorphological issues such as dredging are among the reasons for declining ecological status in transitional waterbodies. Agricultural run-off, resulting in high influxes of nitrogen and phosphates, can also negatively affect transitional waters.

EPA data from the 2016 to 2021 WFD survey period, shows several sub-catchments on the rivers Barrow, Nore, and Suir (e.g. the Anner_030 sub-catchment on the Suir and the Barrow_210 sub-

catchment on the Barrow) experienced issues with nitrogen and phosphorous conditions (EPA, 2021b). The EPA (2023) describes how coastal waters are sensitive to increased nitrogen levels, and how human activities in upstream catchments can affect water quality. The report also described how increased phosphate concentrations can affect the ecology and functioning of estuary ecosystems. The report showed that 20% of coastal waterbodies were in unsatisfactory condition for dissolved inorganic nitrogen. The Upper Barrow Estuary was 83% above the threshold value. The report showed that between 2012-2022, there was a significant increase in winter median phosphate in ten water bodies. The Barrow Nore Estuary Upper, the Nore Estuary, the Upper Barrow Estuary, and New Ross Port were among the waterbodies showing this increase. Together, this could indicate that nitrogen and phosphorous issues further up in the catchment, are having a detrimental effect on the coastal waterbodies downstream. Encouragingly, EPA (2025) reported a reduction in nitrogen levels in Irish rivers in 2024, potentially signalling early progress in addressing agricultural runoff; however nitrogen levels remained too high in the southeast. Should this improvement continue, the ecology in estuaries would greatly benefit.

The Barrow, Nore, and Suir rivers also face many anthropogenic issues. All three rivers run through urban areas, such as the River Barrow running through Athy and Carlow, the River Nore running through Kilkenny City, and the River Suir running through Clonmel. The associated issues, such as urban runoff, artificial modifications, and man-made structures, increase the pressures on the rivers.

It is likely that increased nitrogen and phosphorous concentrations in the upper catchments of the system, combined with the anthropogenic pressures facing the rivers, is driving the Moderate fish status assigned to the waterbodies in the Barrow-Nore-Suir Complex.

Despite all the individual waterbodies in the Barrow-Nore-Suir Complex being assigned an ecological status of Moderate, when the survey data from all eight waterbodies were combined and analysed in their entirety, the Barrow-Nore-Suir Complex was assigned a status of Good. This is likely because the larger estuary offers a wider variety of habitats, which increases species richness. The complex has a higher species richness value (31) than any of the associated waterbodies. The increased habitat available also means the complex is less likely to be dominated by any particular species. The Barrow-Nore-Suir Complex was also assigned a Good fish ecological status in 2019 and 2022.

The Gweebarra Estuary has declined in status since 2018, deteriorating from Good in 2018 to Moderate in 2024. In 2018, 23 fish species were recorded in the Gweebarra Estuary, but this dropped to 11 in 2024. The EPA (2024) reported that agriculture and hydromorphological pressures are the top significant pressures on the Gweebarra Estuary. It is likely that a combination of these pressures has

led to the decline in species richness. It is this reduction in species that was the likely driver of the estuary failing to meet the minimum ecological status.

In the current three-year WFD monitoring cycle, 18 transitional waterbodies were assigned a fish ecological status. Only one waterbody, Kinvara Bay, met or exceeded the minimum ecological standard. The remaining 17 sites failed to meet the minimum threshold. This is a decrease from the previous three-year cycle (2019-2021), when 50.0% of sites met the Good status threshold. Furthermore, 83.3% of transitional waters surveyed in 2022-2024 deteriorated in status, this compares to just 8.7% of sites deteriorating in the 2019-2021 period (Corcoran *et al*., 2022).

Of the 18 waterbodies surveyed, 15 were SM waterbodies. Kinvara Bay in County Galway was the only SM waterbody assigned Good status; the remaining 14 SM waterbodies failed to meet the required standard. This is a large decrease in status since the 2019-2021 period, when out of 14 SM waterbodies surveyed, 12 (85.7%) were assigned Good status, and only 2 (14.3%) failed to meet the minimum standard. Furthermore, 14 (93.3%) SM waterbodies deteriorated in status in the 2022-2024 period, compared to just one waterbody (7.1%) in the 2019-2021 period. In the 2019-2021 period, 12 waterbodies (85.7%) remained at their previous status. This large decrease in overall status observed in transitional waters between 2022-2024 can be attributed to the decreased status observed in all eight waterbodies in the Barrow-Nore-Suir complex. Corcoran *et al.*, 2023 assigned the complex a Moderate status in 2022. This was the first time the complex had failed to meet the minimum standard, with all eight waterbodies were assigned Good status in the 2019 survey.

**Plate 4.5. Aerial photo of the Lower Suir Estuary showing Little Island, Co. Waterford. (Photo courtesy of IFI and No. 3 Operational Wing, Irish Air Corps [Aer Chór na hÉireann]).**

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