Fish in Rivers Factsheet

The River Shannon is Ireland's longest river, flowing for approximately 260km. It rises in the Cuilcagh Mountains in Co. Cavan and flows through three large lakes, Loughs Allen, Derg and Ree, before entering the sea at Limerick. The Shannon is historically an important navigation route and is connected to many other waterways by a series of canals, including the Royal Canal, the Grand Canal and the Shannon–Erne Waterway, which connects to the River Erne system. There are several barriers that hinder the migration of fish upstream, including the hydro-electric power station at Ardnacrusha, a series of weirs and a number of locks used for navigation.

Inland Fisheries Ireland conducts annual nation-wide fish sampling surveys to assess the status of stocks in Ireland's rivers, lakes and transitional waters. This report presents the results from an electrofishing survey on the main channel of the River Shannon in 2022.

A total of 22 sites were surveyed by electro-fishing on the Upper Shannon River catchment from the 19th of July to the 27th of August 2022. The survey method included was SPASE (Systematic Point Abundance Sampling). All fish count results were converted to catch per unit effort (CPUE).

The Upper River Shannon at Clonmacnoise (Site 3)
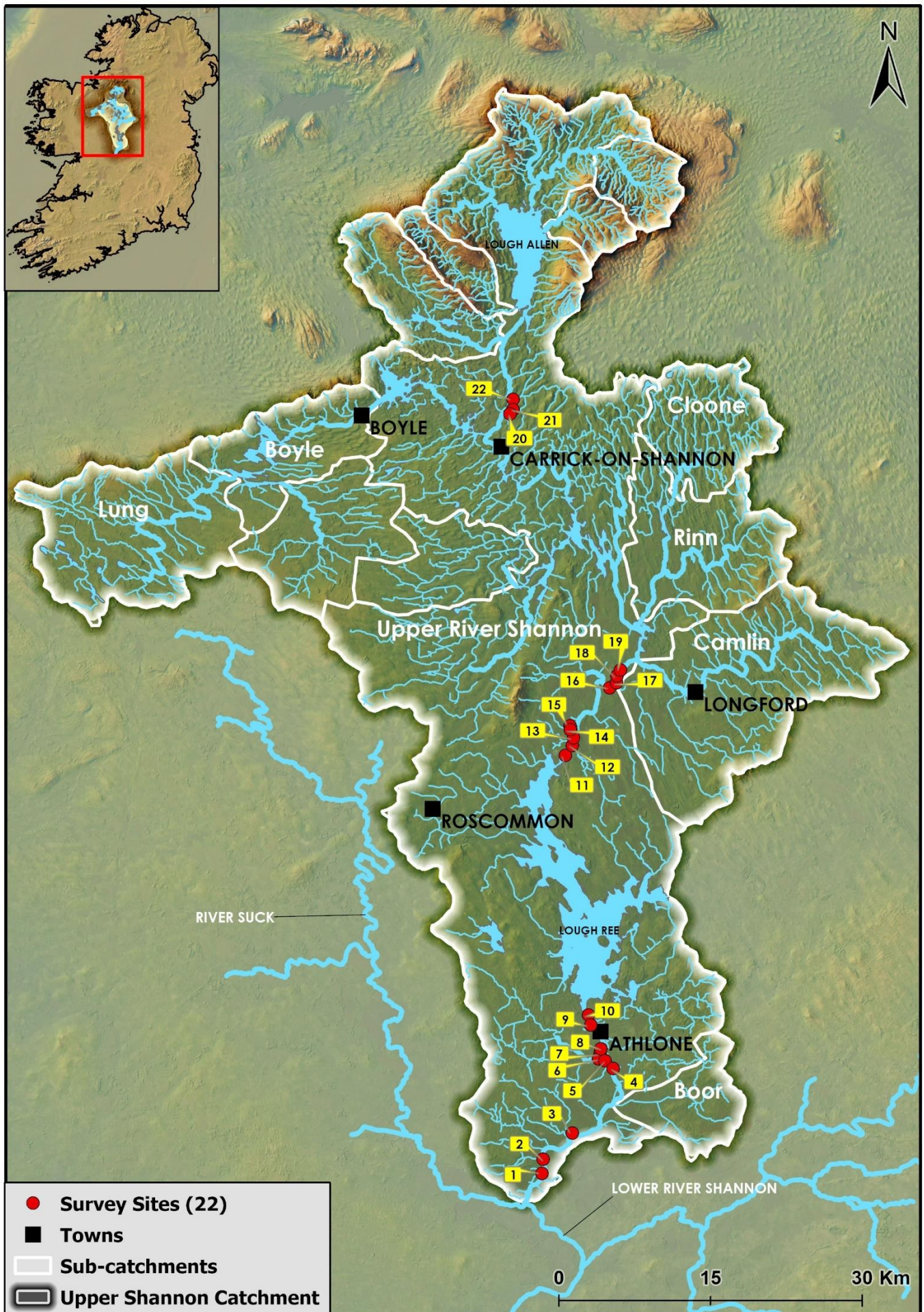
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Inland Fisheries Ireland

Figure 1. Location of electrofishing sites on the River Shannon (Upper), 2022 (Sites 1-22)

Table 1. Site survey details, Shannon River, 2022

No.	River	Site	Method	WFD	Date
Upper River Shannon (main channel) Sub-catchment					
1	Shannon	Devenish Island	SPASE	No	28/07/2022
2	Shannon	Creevagh	SPASE	No	28/07/2022
3	Shannon	Jetty at Clonmacnoise	SPASE	Yes	28/07/2022
4	Shannon	Carrickobreen	SPASE	Yes	26/08/2022
5	Shannon	Carrickynaghtan	SPASE	Yes	26/08/2022
6	Cross	Bridge u/s Shannon River	SPASE	Yes	26/07/2022
7	Shannon	Bunnaribba	SPASE	Yes	26/08/2022
8	Shannon canal	Athlone Canal	SPASE	No	27/08/2022
9	Shannon	Bogganfin	SPASE	Yes	27/08/2022
10	Shannon	Hillquarter	SPASE	Yes	27/07/2022
11	Shannon	Ballyleague Bridge - Lanesboro	SPASE	Yes	21/07/2022
12	Shannon	Lanesboro (Site B)	SPASE	No	21/07/2022
13	Shannon	Lanesboro (Site C)	SPASE	No	21/07/2022
14	Shannon	Lanesboro (Site D)	SPASE	No	21/07/2022
15	Shannon	Kilnacarrow	SPASE	Yes	21/07/2022
16	Shannon	Tarmonbarry (Site A)	SPASE	No	20/07/2022
17	Shannon	Tarmonbarry (Site B)	SPASE	No	20/07/2022
18	Shannon	Tarmonbarry (Site C)	SPASE	No	20/07/2022
19	Shannon	Tarmonbarry (Site D)	SPASE	No	20/07/2022
20	Shannon	Caldragh	SPASE	Yes	19/07/2022
21	Shannon	Battle Bridge	SPASE	Yes	19/07/2022
22	Shannon	Cloonfad	SPASE	No	19/07/2022

The River Shannon (Upper) at Lanesboro (Site 12)

Table 2. CPUE (no. fish/activation), Sites 1-22, River Shannon (Upper) catchment, 2022 (previous results are shown where applicable).

Site no.	1		2		3		4		5	
Species	2016	2022	2016	2022	2016	2022	2016	2022	2016	2022
Perch	0.167	0.133	0.167	0.133	0.167	0.067	0.067	–	0.050	–
Pike	–	0.067	0.067	0.133	0.100	0.067	0.033	0.200	0.050	0.143
Roach	1.833	5.333	2.400	9.333	3.333	4.933	0.833	1.467	3.650	5.214
Roach x bream hybrid	0.056	–	–	–	–	–	–	–	–	–
Rudd	–	0.133	–	0.400	–	0.133	–	–	–	–
Tench	–	–	–	–	–	–	–	0.067	–	–
All fish	**2.056**	**5.667**	**2.633**	**10.000**	**3.600**	**5.200**	**0.933**	**1.733**	**3.783**	**5.357**

Site no.	6	7		8		9		10
Species	2022	2016	2022	2016	2022	2016	2022	2022
Brown trout	0.200	–	–	–	–	–	–	–
0+ brown trout	–	–	–	–	–	–	–	–
1+ & older brown trout	0.200	–	–	–	–	–	–	–
Gudgeon	–	–	–	–	0.067	–	–	–
Perch	0.200	0.200	0.333	0.800	0.933	0.267	0.667	–
Pike	0.100	0.067	0.133	0.500	0.200	–	0.267	0.067
Roach	3.300	16.133	2.400	14.800	4.667	0.733	4.467	2.800
Roach x bream hybrid	–	–	–	0.100	–	–	–	–
All fish	**4.000**	**16.400**	**2.867**	**16.200**	**5.867**	**1.033**	**5.400**	**2.867**

Site no.	11		12	13	14	15		16	17
Species	2016	2022	2022	2022	2022	2016	2022	2022	2022
European eel	–	–	–	–	–	–	–	0.067	–
Gudgeon	–	–	–	–	–	–	–	–	0.071
Perch	0.661	–	0.133	–	0.067	0.410	0.133	–	0.143
Pike	0.097	0.200	–	0.067	0.067	0.154	0.067	–	–
Roach	2.581	1.000	3.333	2.067	2.733	2.385	2.200	1.800	6.857
Roach x bream hybrid	–	–	–	–	–	–	–	0.067	0.071
Rudd	0.097	–	0.133	0.267	–	–	–	0.067	0.071
Tench	–	–	–	–	–	–	–	0.067	–
All fish	**3.452**	**1.200**	**3.600**	**2.400**	**2.867**	**2.949**	**2.400**	**2.067**	**7.214**

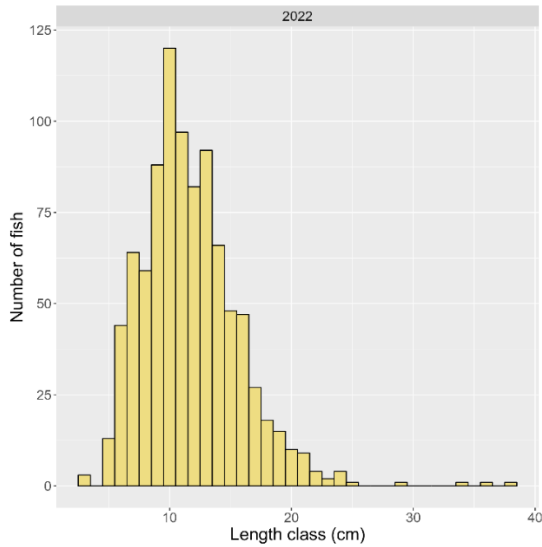| Site no.	18	19	20		21		22	
Species	2022	2022	2016	2022	2016	2022	2016	2022
Bream	–	–	0.033	–	–	–	0.033	–
Gudgeon	–	–	–	–	0.037	–	–	–
Perch	0.267	0.200	0.167	0.333	0.111	0.050	–	–
Pike	–	–	–	0.067	–	0.050	–	–
Roach	4.533	4.400	2.133	1.133	2.481	1.350	2.600	1.200
Roach x bream hybrid	–	–	–	–	0.111	–	0.033	–
Roach x rudd hybrid	0.067	–	–	–	–	–	–	–
All fish	**4.867**	**4.600**	**2.400**	**1.533**	**2.741**	**1.450**	**2.667**	**1.200**

Figure 4. Length frequency distribution for roach (n=919) in the Upper Shannon catchment, 2022 (N= 18 sites)
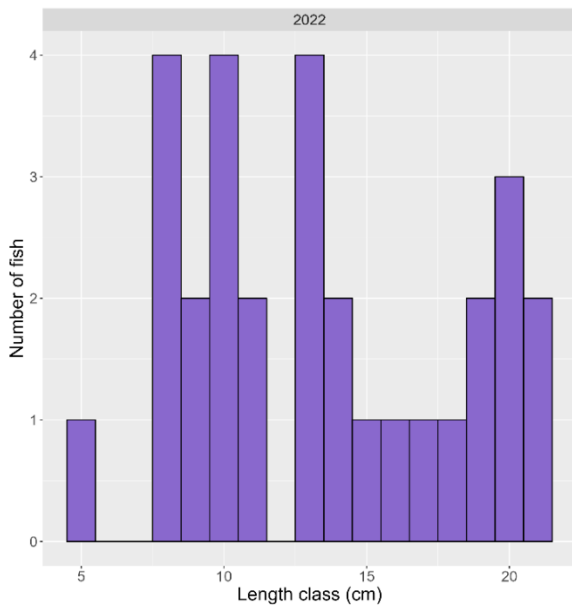

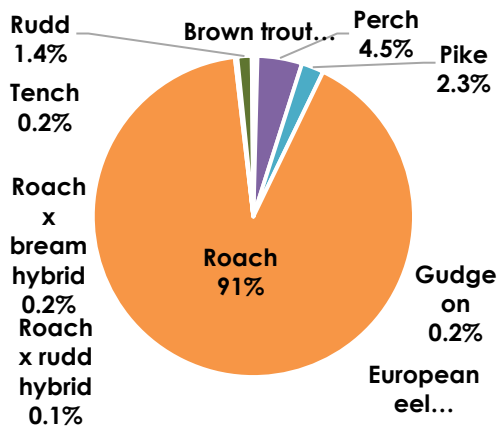**Figure 5. Length frequency distribution for perch (n=30) in the Upper Shannon catchment, 2022 (N=18 sites)**

Fig. 6. Fish species composition (%), Upper Shannon catchment, 2022

Table 4. Fish ecological status, Upper Shannon catchment, 2022

Site No.	2010	2016	2022
Upper Shannon Catchment			
1	–	N/A	M
2	–	P	M
3	M	M	M
4	–	P	M
5	–	M	M
6	–	M	M
7	–	–	M
8	–	N/A	N/A
9	–	M	M
10	–	P	M
11	M	M	M
12	–	–	M
13	–	–	M
14	–	–	M
15	M	M	M
16	–	–	M
17	–	–	M
18	–	–	M
19	–	–	M
20	M	M	M
21	M	N/A	M
22	–	N/A	M

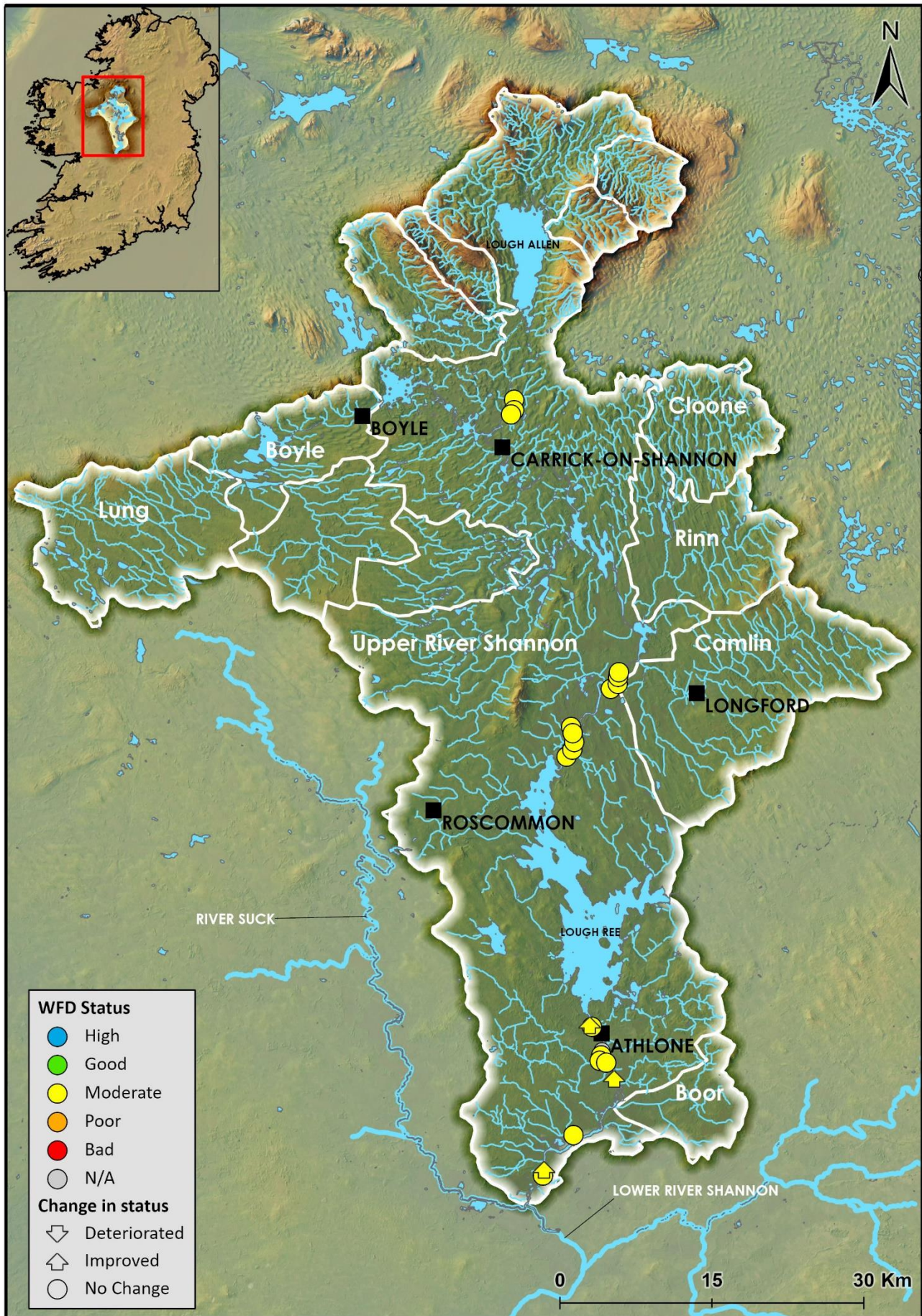**The Upper River Shannon at Battle Bridge (Site 21)**

Figure 7. Fish ecological status in the Upper River Shannon, 2022. (Arrows indicate a change in status where relevant).

Summary

A total of eight fish species and two cyprinid hybrids (roach x bream and roach x rudd) were recorded during the Upper Shannon River Survey in 2022.

Roach was the most common species present (22 sites, 100%) followed by pike (17 sites, 77%), perch (15 sites, 68%), rudd (seven sites, 32%), tench, roach x bream and gudgeon (two sites each, 9%), European eel, brown trout and roach x rudd (one site each, 5%)

Roach was also the most abundant species captured, followed by perch, pike, rudd, brown trout, tench, roach x bream hybrid, gudgeon, European eel and roach x rudd hybrid (Figure 6).

Roach ranged in length from 2.6 to 24.5cm The highest Catch per Unit Effort (CPUE) of roach (9.3 fish/activation) was recorded at Site 2 at Creevagh and the second highest CPUE of roach (6.6 fish/activation) was recorded at Site 17 at Tarmonbarry Site B.

A Water Framework Directive fish classification tool (FCS2) was developed for Irish rivers in 2011 (SNIFFER 2011). The tool works by comparing various fish community metric values within a site to those predicted for a site under un-impacted conditions. In general, a site will achieve High status if indicator species (e.g., both salmonid cohorts 0+ and 1+ and older) are present and in expected numbers. Status will decline if such cohorts are missing, are in poor abundance, or if more tolerant species proliferate.

Fish ecological status was assigned to 22 sites surveyed in the Shannon Catchment during 2022 (Table 4 and Figure 7). Twenty-one sites achieved Moderate status, with one site unassigned. Fourteen sites were surveyed previously on this catchment and assigned fish ecological status. When compared with their most recent previous surveys, three sites improved in status and seven sites remained unchanged. Three of the four sites which had unassigned status have now been assigned as Moderate. (Table 4 and figure 7).

The reasons for the failures in fish ecological status (i.e., Moderate or worse) were due to lower-than-expected abundance of type specific indicator species (e.g., salmon and trout) or the absence of certain age cohorts indicating recruitment failures. Failures and deteriorations in fish ecological status can be caused by pressures such as nutrient enrichment, hydromorphological issues and habitat modification, or fish passage obstruction due to artificial barriers.

References

CEN 2003 Water Quality Sampling of Fish with Electricity. CEN EN 14011:2000. Brussels. European Committee for Standardization.

Matson, R., Delanty, K., Shephard, S., Coghlan, B. and Kelly, F. (2018). *Moving from multiple pass depletion to single pass timed electrofishing for fish community assessment in wadeable streams*. Fisheries Research, 198, 99-108.

SNIFFER River Fish Classification Tool: Science Work. WFD68c, Phase 2. Final Report. Version 6. Edinburgh. Scotland and Northern Ireland Forum for Environmental Research.

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