Fish in Rivers Factsheet

SERBD **Colligan Catchment** **Factsheet: 2023/02**

The Colligan Catchment is located in the South Eastern River Basin District. The total length of the river is 22km and it drains a catchment area of 101km^2, approximately. The Colligan rises in the Monavullagh mountains in Co. Waterford and flows in a southerly direction to join the sea at Dungarvan, Co. Waterford. The Colligan River is a fast-flowing spate river that provides angling for both salmon and sea trout. Angling is mainly confined to the lower reaches upstream of Dungarvan. The geology of the catchment is predominantly sandstone and limestone, with the land used primarily for agriculture and forestry. This catchment is situated beside the Comeragh Mountains Special Area of Conservation, with only a tiny portion of its eastern headwaters located within the SAC.

Inland Fisheries Ireland conducts annual nationwide fish sampling surveys to assess and report status of stocks in Ireland's rivers, lakes and transitional waters.

This report presents the results of a catchment-wide survey of the Colligan River Catchment in 2023. Twelve sites were surveyed by electro-fishing (CEN 2003) on the Colligan River Catchment between the 10th and the 13th of July 2023.

The survey methods included 10-minute timed Electro-Fishing (TEF_{10}) and Area Delineated Electro-Fishing (ADEF handset). All TEF_{10} fish count results were converted to minimum population estimates according to Matson *et al.* (2018).

The Colligan River at Lackandara Bridge, Co. Waterford (Site 7).

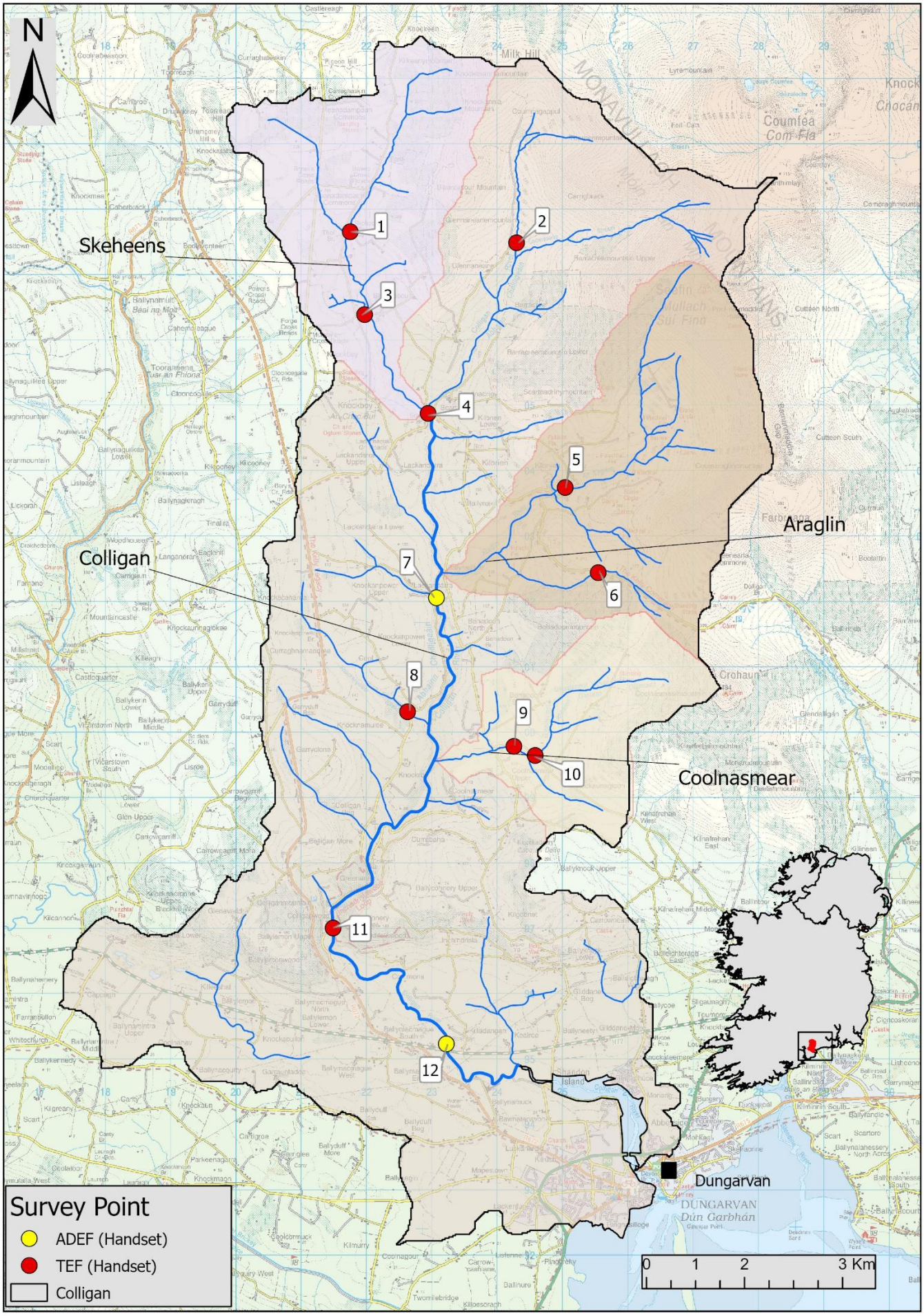

Figure 1. Location of electrofishing survey sites, Colligan Catchment, July 2023.

Table 1. Site survey details, Colligan Catchment, 2023.

No.	River	Site	Method	WFD	Date
Colligan Catchment					
1	Skeheen's	Skeehan's Bridge	TEF (handset)	No	13/07/2023
2	Colligan	Glennaneane	TEF (handset)	No	10/07/2023
3	Reandampaun	Lagg Bridge	TEF (handset)	No	10/07/2023
4	Reandampaun	Scart Bridge	TEF (handset)	No	10/07/2023
5	Araglin	Upstream Coum Bridge	TEF (handset)	No	17/07/2023
6	Bohadoon Mountain (Araglin)	Coumeraglin Mountain	TEF (handset)	No	13/07/2023
7	Colligan	Lackandara Bridge	ADEF (Handset)	Yes	12/07/2023
8	Knockanpower	Knockanpower Lower	TEF (handset)	No	12/07/2023
9	Glendermot	Coolnasmear Upper	TEF (handset)	No	12/07/2023
10	Glendermot	Bohadoon	TEF (handset)	No	13/07/2023
11	Colligan	Colliganwood	TEF (handset)	No	12/07/2023
12	Colligan	Bridge near Killadangan	ADEF (Handset)	Yes	11/07/2023

Table 2. Minimum density estimates of fish (no. fish/m^2), Colligan Catchment, 2023 (previous results where applicable).

Site no.	1	2		3		4		5		6
Species	**2023**	**2017**	**2023**	**2017**	**2023**	**2017**	**2023**	**2017**	**2023**	**2023**
Brown trout	0.098	0.301	0.074	0.537	0.39	0.548	0.048	0.277	0.245	–
0+ brown trout	0.026	0.246	0.041	0.405	0.127	0.49	0.021	0.175	0.038	–
1+ & older brown trout	0.072	0.055	0.033	0.133	0.263	0.058	0.028	0.101	0.207	–
Salmon	0.052	–	–	–	–	0.077	0.014	–	–	–
0+ salmon	0.039	–	–	–	–	0.077	–	–	–	–
1+ & older salmon	0.013	–	–	–	–	0.000	0.014	–	–	–
European eel	–	0.021	–	–	–	–	–	–	–	–
Sea trout	–	–	–	–	–	–	–	–	–	–
Three-spined stickleback	–	–	–	–	–	–	–	–	–	–
All fish	**0.150**	**0.322**	**0.074**	**0.537**	**0.39**	**0.625**	**0.062**	**0.277**	**0.245**	**no fish**

Site no.	7		8		9		10	11		12
Species	**2017**	**2023**	**2017**	**2023**	**2017**	**2023**	**2023**	**2017**	**2023**	**2023**
Brown trout	0.467	0.012	0.602	0.379	0.837	0.588	1.205	0.087	0.073	0.006
0+ brown trout	0.334	0.004	0.354	0.179	0.665	0.346	0.424	0.041	0.006	0.004
1+ & older brown trout	0.133	0.008	0.248	0.2	0.173	0.242	0.781	0.046	0.067	0.002
Salmon	0.185	0.037	–	–	–	–	–	0.139	–	0.025
0+ salmon	0.081	0.015	–	–	–	–	–	0.128	–	0.015
1+ & older salmon	0.104	0.023	–	–	–	–	–	0.012	–	0.009
European eel	-	0.004	0.035	0.032	–	–	–	0.134	0.041	0.013
Sea trout	-	–	–	–	–	–	–	–	–	–
Three-spined stickleback	-	–	–	–	–	–	–	–	–	0.004
All fish	**0.652**	**0.053**	**0.637**	**0.411**	**0.837**	**0.588**	**1.205**	**0.36**	**0.114**	**0.047**

Table 3. Salmonid % age class structure Colligan Catchment, 2023.

Species	Site No.	% of catch		
		0+	1+	2+
Brown trout	1	29	71	-
	2	60	40	-
	3	38	62	-
	4	60	40	-
	5	19	73	8
	7	24	72	4
	8	53	47	-
	9	64	36	-
	10	39	61	-
	11	9	73	18
	12	67	33	-
Salmon	1	75	25	-
	4	-	100	-
	7	49	51	-
	12	68	32	-

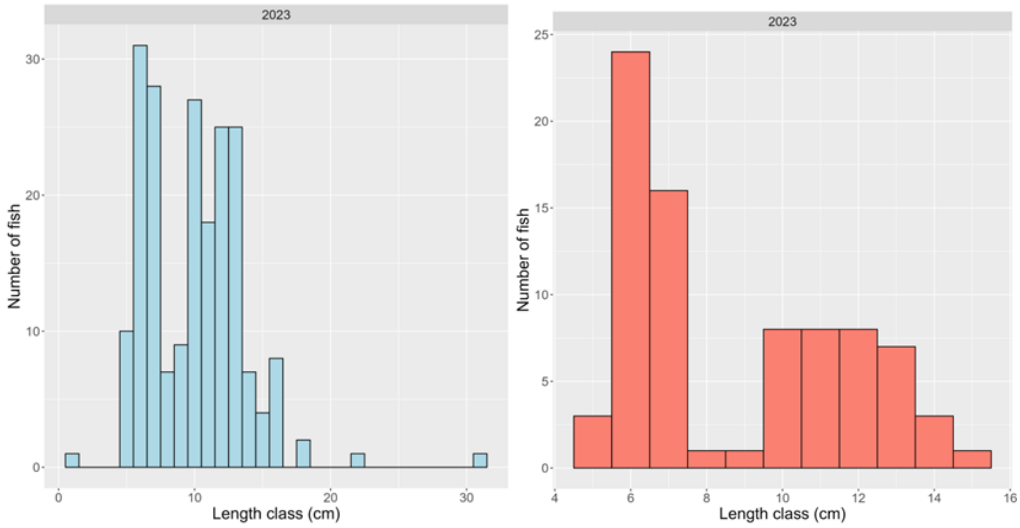

Figure 3. Length frequency distribution for brown trout (n=204) and salmon (M=80) in the Colligan Catchment, July 2023 (No. sites = 11 and 4 respectively).

Knockanpower stream (Site 8)

Table 4. Fish ecological status for the Colligan Catchment, July 2023. Previous results are shown where applicable.

Site No.	2017	2023
1	–	Moderate
2	Moderate	Moderate
3	Moderate	Moderate
4	Moderate	Moderate
5	Moderate	Moderate
6	–	N/A
7	High	N/A
8	Good	Good
9	Good	Moderate
10	–	Good
11	Good	N/A
12	N/A	N/A

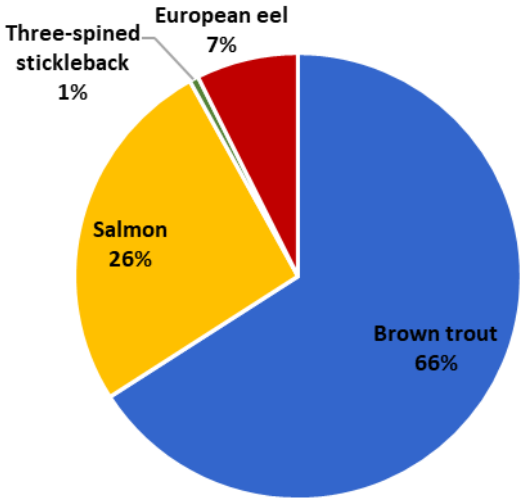

Figure 7. Fish species composition (%), Colligan Catchment, 2023.

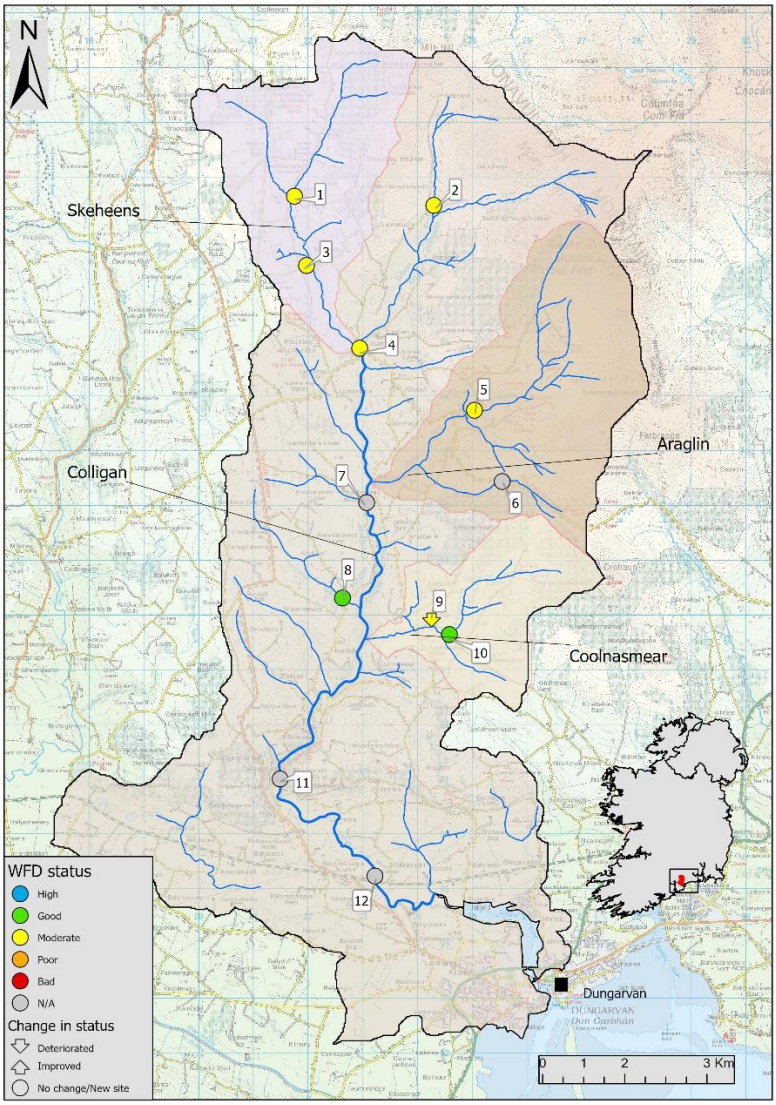

Figure 8. Fish ecological status in the Colligan Catchment, 2023. Arrows indicate a change in status since previous surveys (where applicable).

Summary

Four fish species were recorded at twelve sites surveyed on the Colligan Catchment in July 2023.

Brown trout was the most common species present (eleven sites, 92%), followed by salmon (four sites, 33%), European eel (four sites, 44%) and three-spined stickleback (one site, 8%). One site recorded no fish caught.

Brown trout was the most abundant species recorded (n=205), captured at eleven sites, followed by salmon (n=81), European eel (n=23) and three-spined stickleback (n=2) (Figure 7 and Table 2).

Salmon ranged in length from 5.2 to 14.4cm. Two age classes were present (0+ and 1+), with 0+ being the most abundant cohort. The highest density of salmon (all ages combined) (0.052 fish/m²) was recorded at Site 1 on the Skeehan's River at Skeehan's Bridge, with the highest density of 0+ salmon (0.039 fish/m²) also recorded at Site 1. The highest density of 1+ and older salmon (0.023 fish/m²) was recorded at Site 7 on the Colligan River at Lackandara Bridge.

Brown trout ranged in length from 4.6 to 17.9cm. Three age classes were present (0+, 1+ and 2+), with 1+ being the most abundant cohort. The highest density of brown trout (all ages combined)(1.205 fish/m^2) was recorded at Site 10 on the Glendermot River at Bohadoon. The highest density of 0+ brown trout (0.424 fish/m^2) and 1+ and older brown trout (0.781 fish/m^2) was also recorded at Site 10.

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 eight sites surveyed in the Colligan Catchment during 2023 (Table 4 and Figure 4). Two sites achieved Good status, with six Moderate. Six of these sites were surveyed previously on this catchment and assigned fish ecological status. When compared with their most recent previous surveys, one site deteriorated in status and five remained unchanged.

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

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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