

Fish in Rivers Factsheet

The Doonbeg Catchment is located in Co. Clare within the Shannon International River Basin District and covers an area of approximately 112km². The Doonbeg River rises near Kilmaley, Co. Clare and flows in a southwesterly direction for about 11km, before turning west for about 24km, passing Cooraclare (approximately 3km downstream from Site 4) and flowing into the sea at Doonbeg. The Doonbeg is one of Inland Fisheries Ireland's index catchments for the Climate Change Mitigation Research Programme.

Inland Fisheries Ireland conducts annual nationwide fish sampling surveys to assess the status of stocks in

Ireland's rivers, lakes and transitional waters. This report presents the results of an electrofishing survey of the Doonbeg River Catchment in 2023.

Four sites were surveyed by electro-fishing (CEN 2003) on the Doonbeg River catchment from the 16th to the 17th August 2023.

The survey methods included 10-minute timed Electro-Fishing (TEF₁₀) and Area Delineated Electro-Fishing (ADEF handset). All TEF₁₀ fish count results were converted to minimum population estimates according to Matson *et al.* (2018).



The Doonbeg River at Clooncullin, Co. Clare (Site 4).



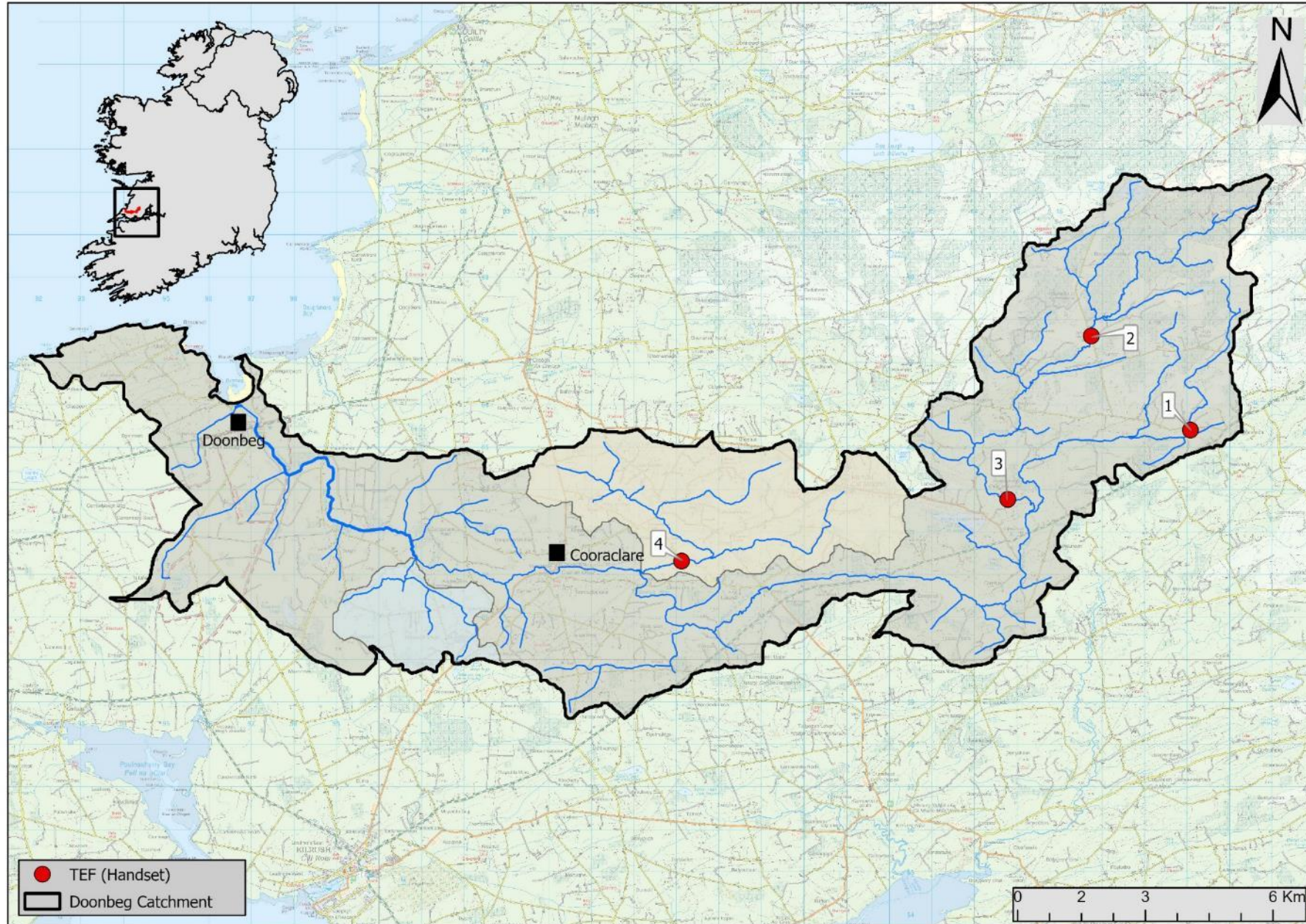


Figure 1. Location of electrofishing survey sites Doonbeg Catchment, August 2023.

Table 1. Site survey details, Doonbeg Catchment, August 2023.

No.	River	Site	Method	WFD	Date
1	Greygrove	Gortygeehan	TEF (handset)	No	16/08/2023
2	Doonbeg	Sorrel Island Bridge	TEF (handset)	No	17/08/2023
3	Doonbeg	Knockalough Bridge	TEF (handset)	No	17/08/2023
4	Kilmihil	Clooncullin	TEF (handset)	No	17/08/2023

Table 2. Minimum density estimates of fish (no. fish/m²), Doonbeg Catchment, August 2023.

Site no.	1	2	3	4
Species	2023	2023	2023	2023
Brown trout	0.361	0.227	0.080	0.227
0+ brown trout	0.361	0.029	0.008	0.106
1+ & older brown trout	-	0.198	0.072	0.120
Salmon	0.490	-	0.308	0.340
0+ salmon	0.232	-	0.133	0.099
1+ & older salmon	0.258	-	0.175	0.241
European eel	0.129	-	-	-
Sea trout	-	-	-	0.007
Three-spined stickleback	-	-	-	0.042
All fish	0.981	0.227	0.388	0.616

Table 3. Salmonid age class structure Doonbeg Catchment, August 2023.

Species	Site No.	% of catch		
		0+	1+	2+
Brown trout	1	100	-	-
	2	16	63	21
	3	10	50	40
	4	47	33	20
Salmon	1	47	53	-
	3	44	56	-
	4	29	71	-

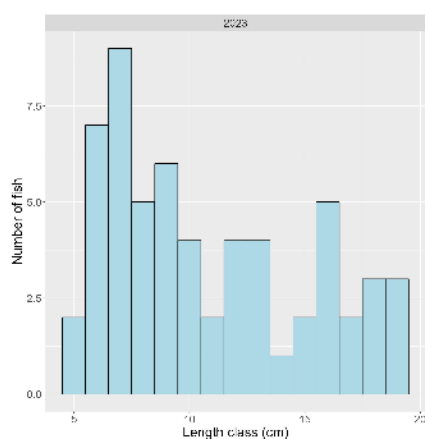


Figure 3. Length frequency distribution for brown trout (N=59), Doonbeg Catchment, August 2023 (N=4 sites).

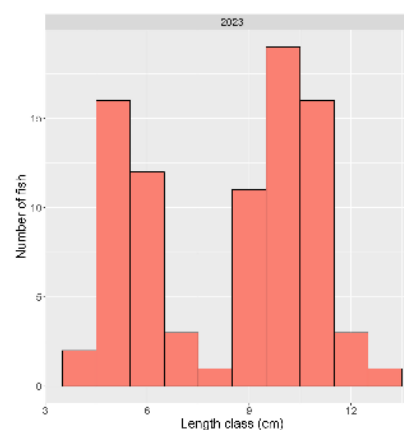


Figure 4. Length frequency distribution for salmon (N=84) in the Doonbeg Catchment, August 2023 (N=4 sites).

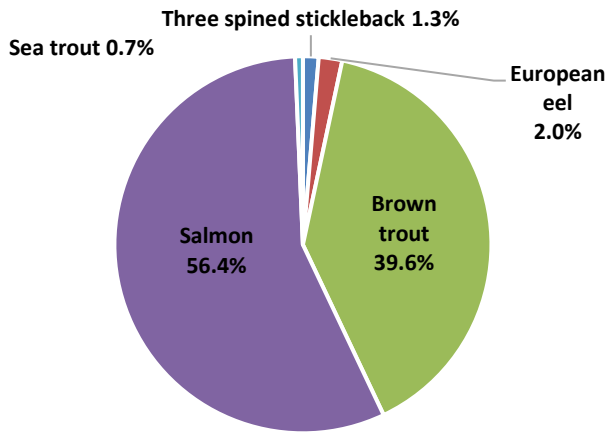


Table 4. Fish ecological status, Doonbeg Catchment, August 2023.

Site No.	2023
1	Good
2	Moderate
3	Good
4	High

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

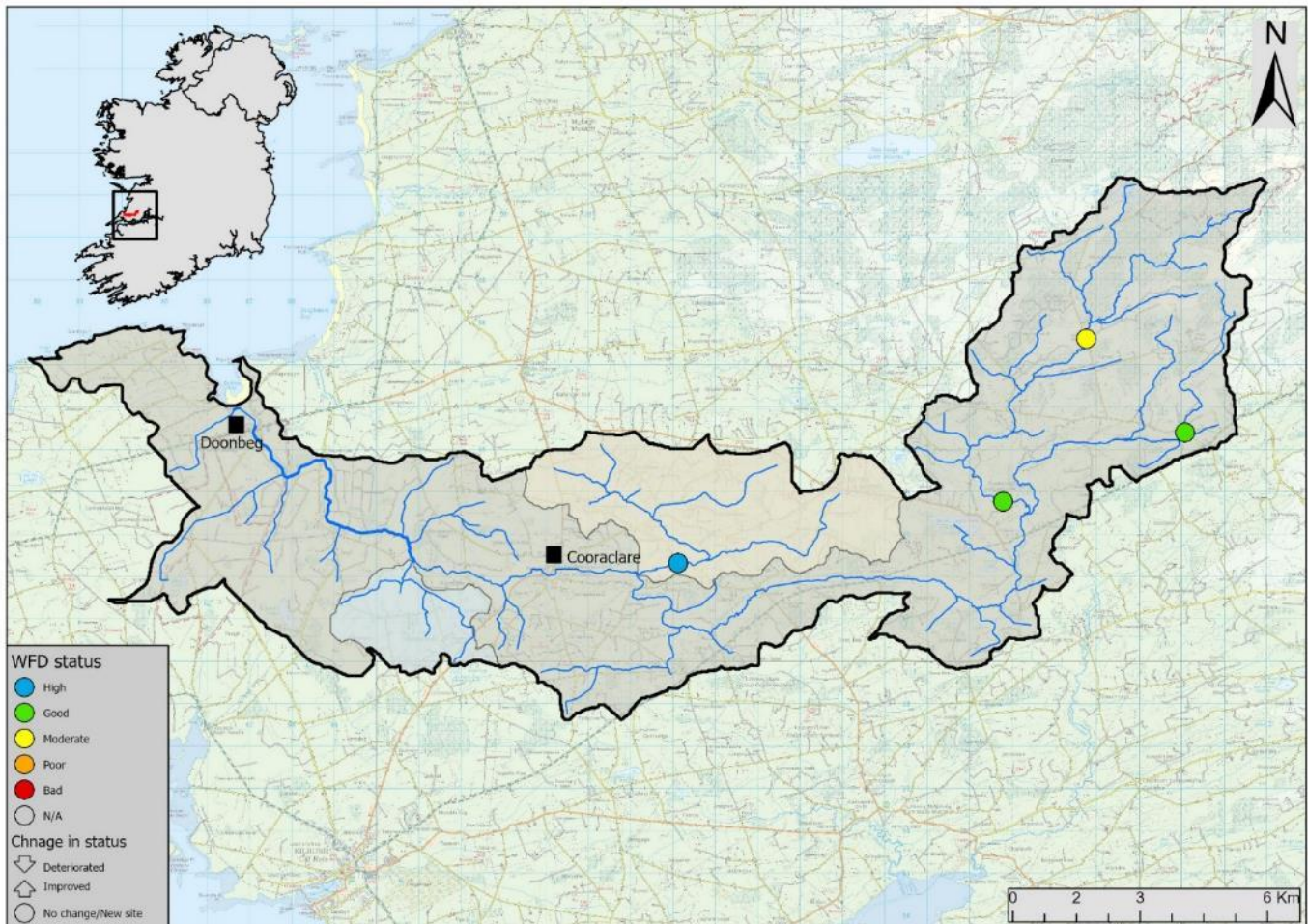


Figure 8. Fish ecological status in the Doonbeg Catchment, 2023.

Summary

Four fish species and sea trout (a separate 'variety' of trout) were recorded at four sites surveyed on the Doonbeg Catchment in 2023.

Brown trout was the most common species present (100% sites), followed by salmon (75%) and European eel, three-spined stickleback and sea trout were present at one site each.

Salmon was the most abundant species recorded captured at three sites, followed by brown trout), European eel, three-spined stickleback, and sea trout.

Salmon ranged in length from 4.7 to 12.5cm. Two age classes were present (0+ and 1+), with 1+ being the most abundant cohort. The highest density of salmon (all ages combined) (0.490 fish/m²) was recorded at Site 1 on the Greygrove River at Gortygeeheen. The highest density of both 0+ and 1+ salmon (0.232 fish/m²) and (0.258 fish/m²) was also recorded at Site 1, respectively.

Brown trout ranged in length from 5.0 to 19.6cm. Three age classes were present (0+, 1+ and 2+) with 0+ being the most abundant cohort. The highest density of brown trout (all ages combined)(0.361 fish/m²) was recorded at Site 1 on the Greygrove River at Gortygeeheen, with the highest density of 0+ brown trout (0.361 fish/m²) also recorded at Site 1. The highest density of 1+ and older brown trout (0.198 fish/m²) was recorded at Site 2 on the Doonbeg River at Sorrel Island Bridge.

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 four sites surveyed in the Doonbeg catchment during 2023 (Table 4 and Figure 8). One site achieved High status, with two sites Good and one site Moderate. No sites were assigned fish ecological status previously.

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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