

# Sea lice monitoring report for Flowerdale 25th August 2025

Peter Cunningham (WRFT Biologist) 29th Aug 2025 [info@wrft.org.uk](mailto:info@wrft.org.uk)

## Fish data

Flowerdale Estuary																				
25-Aug-25	Time:	net in about 1.15pm																		
Peter Cunningham																				
6 assistants																				
warm sunny spells																				
one sweep, from spit - usual sweep. Thought we were a bit early but did well.																				
largest catch for August; record large sea trout for WRFT sweep netting team.																				
sea trout seen jumping in estuary during week before. 30+ other mostly maturing trout released																				
largest two trout and salmon selected from fish caught in sweep, thereafter sample random sizes of those caught																				
three finnock and a larger sea trout died despite best efforts at refreshing water; oxygen level in anaesthetic bucket may have been too low so it was refreshed																				
the larger sea trout which expired was dissected by Dr Toby Landeryou in WRFT office following netting session demonstrating how to check gills for gill disease and how to look for internal parasites																				
								Caligus		Lepeophtheirus salmonis										
Date	Method	Riv/Est/Beach	Fish	length (mm)	weight (g)	body condition factor	total	Copepodid & Chalimus (estimate)	Pre-adult & adult	Ov. female	Total L. salmonis sea lice	*estimated lice/g fish weight	Dorsal fin damage score	Cryptocotyle ligula spots per cm <sup>2</sup> of caudal fin	Predator damage	Photo	scale sample?	Comments		
Flowerdale	25-Aug-25	Sweep Net	est	Salmon	590	2231	1.09	0	60	25	0	85	0.038	0.5	0	Y	Y	Y	predator scar on flank; red ven	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	405	730	1.10	0	15	8	0	23	0.032	1	3	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	580	1996	1.02	0	6	6	1	13	0.007	1	2	Y	Y	Y	healed bashes	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	585	2210	1.10	0	5	40	3	48	0.022	0	10	N	Y	Y	biggest sea trout	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	490	1341	1.14	0	5	4	10	19	0.014	2	8	N	Y	Y	split tail	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	400	810	1.27	0	3	8	3	14	0.017	2	0	N	Y	Y	had lice previously; damage behind vent	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	280	220	1.00	0	50	14	0	64	0.291	2	0	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	380	550	1.00	1	4	14	1	19	0.035	3	0	?	Y	Y	missing dorsal fin, tail damage, lice off	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	375	570	1.08	0	65	25	1	91	0.160	3	1	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	420	914	1.23	1	40	3	0	43	0.047	1	0	N	Y	Y	dead, ?Toby dissected N7799	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	425	813	1.06	0	8	4	1	13	0.016	2	1	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	250	206	1.32	0	30	3	0	33	0.160	2	1	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	380	600	1.09	0	4	3	4	11	0.018	2	0	N	Y	Y	is split dorsal fin	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	400	705	1.10	0	5	12	2	19	0.027	2	0	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	350	380	0.89	0	0	4	0	4	0.011	1	0	Y	Y	Y	beak on back dorsal fin healing	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	400	730	1.14	0	1	6	0	7	0.010	2	0	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	328	213	0.60	0	11	7	1	19	0.089	0	0	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	245	163	1.11	0	4	8	6	18	0.110	2	5	N	Y	Y	no scale sample; silver finnock'	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	380	532	0.97	2	2	8	3	13	0.024	1	1	N	Y	Y	split dorsal fin	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	230	109	0.90	1	10	6	0	16	0.147	0	0	N	Y	Y	died N7796	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	248	156	1.02	0	14	14	6	34	0.218	2	1	N	Y	Y	dorsal fin split died N7798	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	250	154	0.99	0	4	10	2	16	0.104	1	0	N	Y	Y	N7797	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	142	153	5.34	0	7	4	0	11	0.072	1	2	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	262	198	1.10	0	3	4	0	7	0.035	0.5	2	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	240	150	1.09	0	20	14	2	36	0.240	1	1	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	390	620	1.05	0	6	4	3	13	0.021	2	0	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	242	155	1.09	0	13	3	0	16	0.103	2	0	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	352	503	1.15	0	12	6	4	22	0.044	2	6	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	240	143	1.03	0	70	15	2	87	0.608	2	1	?	Y	Y	possible predator damage	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	238	130	0.96	0	3	8	6	17	0.131	2	0	N	Y	Y		
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	213	104	1.08	0	3	2	2	7	0.067	0.5	0	N	Y	Y	missing top of tail	
Flowerdale	25-Aug-25	Sweep Net	est	Sea trout	255	170	1.03	0	2	0	1	3	0.018	0.5	8	N	Y	Y		
				<b>Sea trout averages</b>	<b>334.677</b>	<b>529.935</b>	<b>1.195</b>	<b>0.161</b>	<b>13.710</b>	<b>8.613</b>	<b>2.065</b>	<b>24.387</b>	<b>0.093</b>	<b>1.468</b>	<b>1.710</b>					

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Summary

total lice on sea trout	756
number of sea trout	31
number infested	31
prevalence	100%
total lice	756
abundance	24.39
intensity	24.39
fish with >0.3 lice / g	1
fish with >0.3 lice / g	3%

Mortality / early returned estimates for sea trout in sample based on method from Taranger et al 2015, Risk assessment for the environmental impact of Norwegian salmon farming ([PDF](#)) Risk assessment of the environmental impact of Norwegian Atlantic salmon farming ([researchgate.net](https://www.researchgate.net))

No.	≥13 lice/fish?	Lice/g fish weight	Range	Mortality category	Number of fish in category	Total number of fish in sample	% of sample in category	projected mortality for category %	Projected mortality %
1	Yes	0.038	>0.3	100%	1	32	3.125	3.125	
2	Yes	0.032	0.2-0.3	50%	3		9.375	4.6875	
3	Yes	0.007	0.1-0.2	20%	7		21.875	4.375	
4	Yes	0.022	<0.1	0%	21		65.625	0	12.1875
5	Yes	0.014							
6	Yes	0.017							
7	Yes	0.291							
8	Yes	0.035							
9	Yes	0.160							
10	Yes	0.047							
11	Yes	0.016							
12	Yes	0.160							
13	No	0.018							
14	Yes	0.027							
15	No	0.011							
16	No	0.010							
17	Yes	0.089							
18	Yes	0.110							
19	Yes	0.024							
20	Yes	0.147							
21	Yes	0.218							
22	Yes	0.104							
23	No	0.072							
24	No	0.035							
25	Yes	0.240							
26	Yes	0.021							
27	Yes	0.103							
28	Yes	0.044							
29	Yes	0.608							
30	Yes	0.131							
31	No	0.067							
32	No	0.018							

<b>Notes:</b>	
based on the assumption that small salmonid post-smolts (<150g body weight) will suffer 100% lice-related marine mortality, or return prematurely to freshwater for sea trout in the wild if the are infected with >0.3 lice per g of fish weight.	
Furthermore, the lice related marine mortality is estimated to 50%, if the infection is between 0.2 and 0.3 lice per g fish weight, 20% if the infection rate is between 0.1 and 0.2 lice per g fish weight, and finally 0% if the salmon lice infection is <0.1 g fish weight.	
0.05 and 0.1 lice per g fish weight, 20% for lice infections between 0.05 and 0.01 lice per g fish weight, and finally 0% if the salmon lice infection is <0.01 lice g fish weight.	
colour code	
100%	100% sea lice related mortality or early return to freshwater
>50% to 99%	>50% to 99% sea lice related mortality or early return to freshwater
>20% to 50%	>20% to 50% sea lice related mortality or early return to freshwater
<20%	<20% sea lice related mortality or early return to freshwater
Taranger, G. L., Karlsen, Ø., Bannister, R. J., Glover, K. A., Husa, V., Karlsbakk, E., Kvamme, B. O., Boxaspen, K. K., Bjørn, P. A., Finstad, B., Madhun, A. S., Morton, H. C., and Sva'sand, T. (2014) Risk assessment of the environmental impact of Norwegian Atlantic salmon farming. – ICES Journal of Marine Science, doi: 10.1093/icesjms/fsu132.	
<a href="https://www.researchgate.net/publication/266672998">https://www.researchgate.net/publication/266672998</a> Risk assessment of the environmental impact of Norwegian Atlantic salmon farming	

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Fish photos

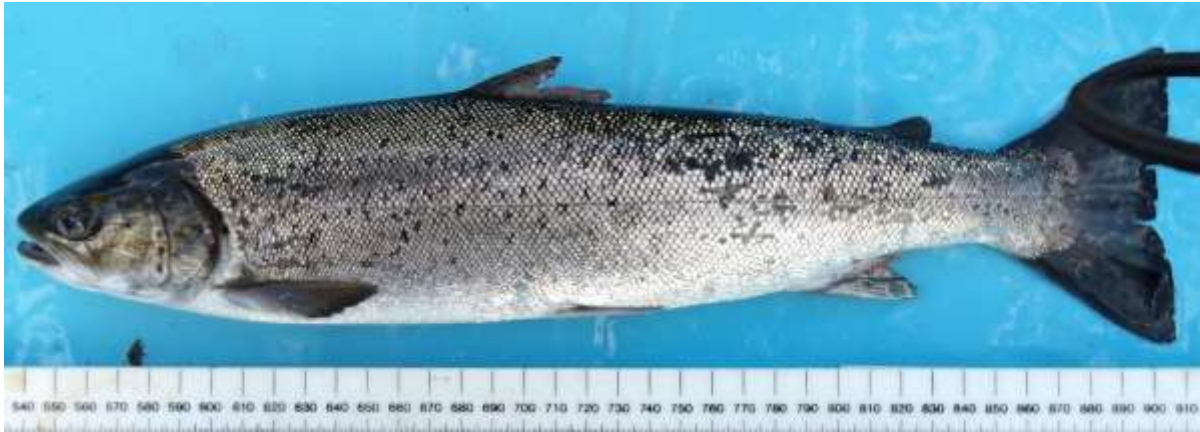
Maturing female sea trout 380mm with healed louse damage dorsal fin



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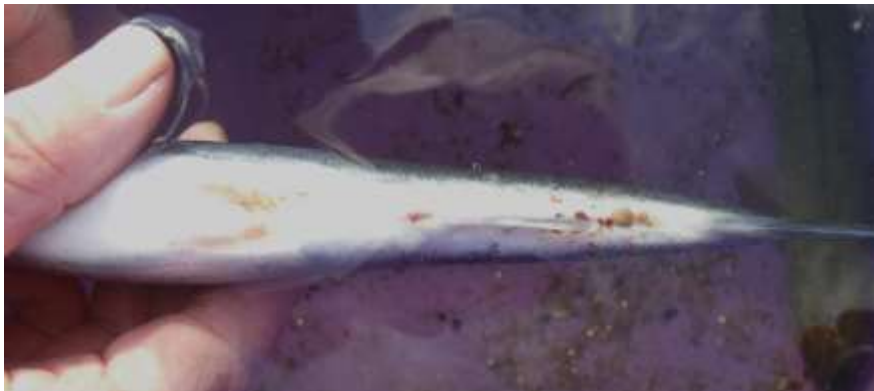
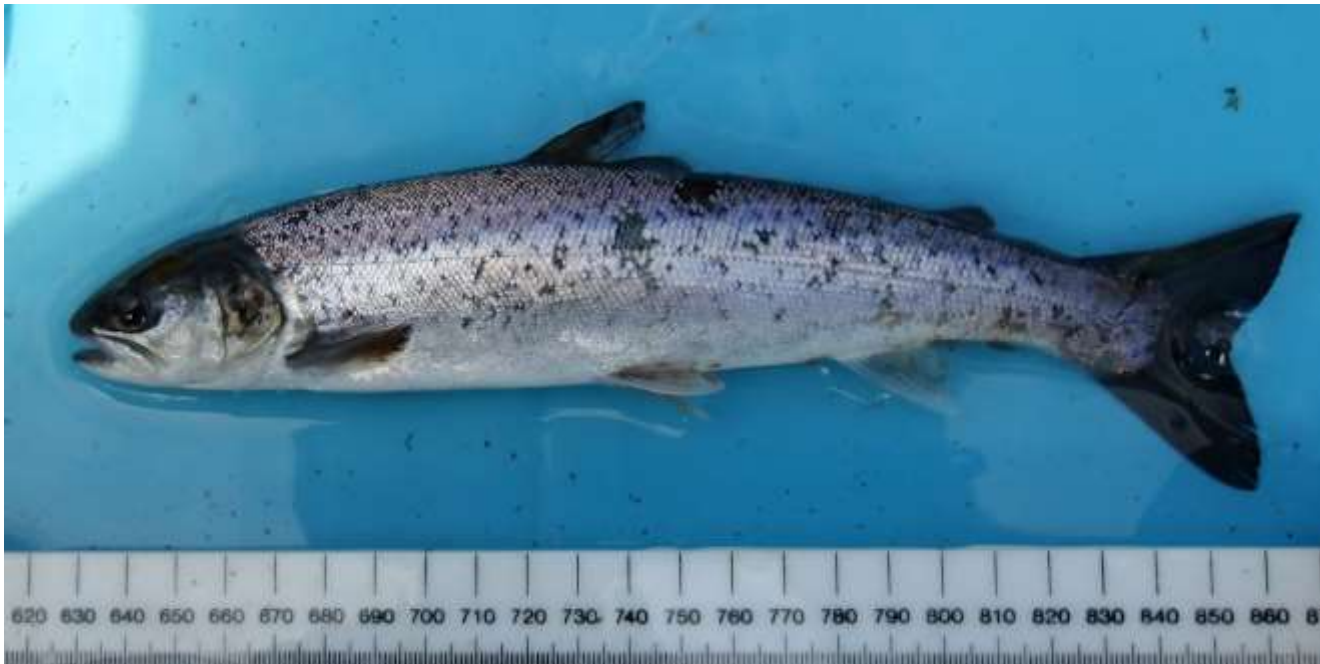
Sea trout of 375mm, Flowerdale 25<sup>th</sup> August 2025, with 91 sea lice (the lousiest fish in the sample)



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Sea trout 240mm Flowerdale 25<sup>th</sup> August 2025, 87 sea lice



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Sampling team with Sea trout 585mm, 2210g; 48 sea lice



Thank you to The Estate of Gairloch and Gairloch Harbour for permissions to net trout in the Flowerdale estuary.

Sea trout sampling carried out to inform the Loch Torridon salmon farms Environment Management Plan for The Highland Council, supported by MOWI, Bakkafrost and WRASFB.