Sea lice monitoring report for Torridon River estuary sampling, 25 Jul 2024.

Peter Cunningham, Biologist, WRFT. 26 Jul 2024 info@wrft.org.uk

Sea trout data

Location:		**Torridon river estuary**																		
Date:		25-Jul-24		**Time:**	13:00		High tide around 12 noon													
***Counts:**		Peter Cunningham																		
Team:		6																		
Weather:		south breeze, overcast																		
River		medium, slightly coloured																		
Other notes:		4 sweeps of channel midway down estuary, following tide out.																		
		new net 47m x 3m used, carried by 6 people on old stretcher																		
										Caligus	***Lepeophtheirus salmonis***									

No.	Location	Date	Method	Riv/Est/Beach	Fish	Fish no.	length (mm)	weight (g)	condition factor	total	Copepodid & Chalimus (estimate)	Pre-adult & adult	Ov. female	Total L. salmonis sea lice	*estimated lice/g fish weight	Dorsal fin damage	*Cryptocotyle ligua* spots per cm2 of caudal fin	Predator damage	Photo	scale sample?	Comments
1	Torridon	25-Jul-24	Sweep Net	est	Sea trout	1	315	362	1.16	0	9	5	3	**17**	0.047	1	8	N	Y	y	plump, dorsal fin photo
2	Torridon	25-Jul-24	Sweep Net	est	Sea trout	2	198	78	1.00	0	2	1	0	**3**	0.038	0	2	N	Y	y	estuarine, ?recapture
3	Torridon	25-Jul-24	Sweep Net	est	Sea trout	3	170	47	0.96	0	0	0	0	**0**	0.000	0	0	N	Y	y	
4	Torridon	25-Jul-24	Sweep Net	est	Sea trout	4	186	70	1.09	0	0	0	0	**0**	0.000	0	1	N	Y	y	
5	Torridon	25-Jul-24	Sweep Net	est	Sea trout	5	170	54	1.10	0	0	0	0	**0**	0.000	0	0	N	Y	y	parr bars visible on fish
6	Torridon	25-Jul-24	Sweep Net	est	Sea trout	6	163	36	0.83	0	0	1	0	**1**	0.028	0	0	N	Y	y	
7	Torridon	25-Jul-24	Sweep Net	est	Sea trout	7	210	100	1.08	0	7	0	0	**7**	0.070	0	2	Y	Y	y	fat fish; old tail damage
8	Torridon	25-Jul-24	Sweep Net	est	Sea trout	8	155	36	0.97	0	0	0	0	**0**	0.000	0	0	N	Y	y	

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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)]

Fish 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 of fish in sample %
1	Yes	0.047	>0.3	100%	0	8	0.00	0.00	
2	No	0.038	0.2-0.3	50%	0		0.00	0.00	
3	No	0.000	0.1-0.2	20%	0		0.00	0.00	
4	No	0.000	<0.1	0%	8		100.00	0.00	**0.00**
5	No	0.000							
6	No	0.028							
7	No	0.070							
8	No	0.000							

Notes:

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 estmated 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

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.

100% sea lice related mortality or early return to freshwater
>50% to 99% sea lice related mortality or early return to freshwater
>20% to 50% sea lice related mortality or early return to freshwater
<20% sea lice related mortality or early return to freshwater

https://www.researchgate.net/publication/266672998_Risk_assessment_of_the_environmental_impact_of_Norwegian_Atlantic_salmon_farming

Acknowledgements

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ST315mmTorridon25Jul2024

Dorsal fin of Sea trout 315mm

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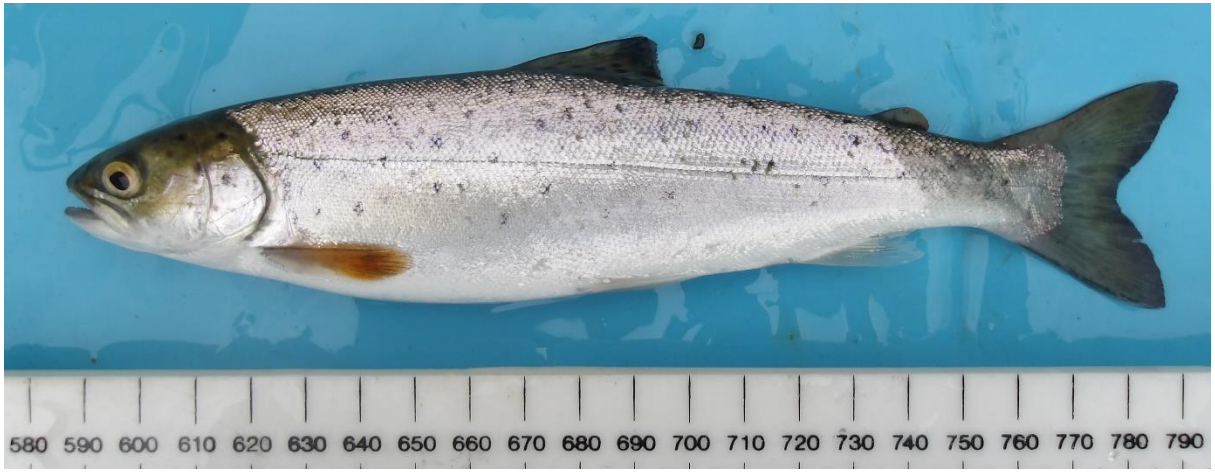
ST210mm Torridon 25Jul24



Sweep netting team 25Jul24 (minus Peter C)