Sea lice monitoring report for Torridon River estuary sampling, 13 June 2024.

Peter Cunningham, Biologist, WRFT. 14 June 2024 info@wrft.org.uk

Sea trout data

Location:		**Torridon river estuary**																				
Date:		13-Jun-24		**Time:**	1200-16-30		High tide	13.09 3.8m (Ullapool)														
***Counts:**		Peter Cunningham																				
Team:		7 assistants																				
Weather:		light winds, overcast																				
River		medium, slightly coloured																				
Other notes:		2 sweeps of sea pool on main channel, sweep of sea pool on south channel (wee flounder), sweep on main channel mid tide (one small sea trout)																				
		new net 47m x 3m used, carried by 4 - 6 people arould estuary.																				
		exploratory session, started at high neap tide. Sea pool may have too many shelves and boulders to sweep easily; success in mid-tide pool																				

									Caligus	***Lepeophtheirus salmonis***												
No.	**Location**	**Date**	**Method**	**Riv/Est/Beach**	**Fish**	**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**	**≥13 lice/fish?**	**Lice/g fish weight**
1	Torridon	13-Jun-24	Sweep Net	est	Sea trout	141	28	1.00	0	0	0	0	**0**	0.000	0	0	N	Y	y	estuarine colouring	No	0.000
					Averages	**141.00**	**28.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						

total lice	0
number of fish	1
number infested	0
prevalence	0%
total lice	0
abundance	0.00
intensity	#DIV/0!
fish with >0.3 lice / g	0
fish with >0.3 lice / g	0%

Other fish

No.	**Location**	**Date**	**Method**	**Riv/Est/Beach**	**Fish**	**length (mm)**
2	Torridon	13-Jun-24	Sweep Net	est	3 sp stkbk	75

Small c. 50mm flounder also caught – not measured.

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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)]

For the one sea trout caught:

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 %
0.000	>0.3	100%	0	1	0.00	0.00	
	0.2-0.3	50%	0		0.00	0.00	
	0.1-0.2	20%	0		0.00	0.00	
	<0.1	0%	1		100.00	0.00	**0.00**

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

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