Sea lice monitoring report for Inverianvie river estuary (Gruinard Bay) sampling, 19 Jun 2024.

Peter Cunningham, Biologist, WRFT. 27 Jun 2024 info@wrft.org.uk

Sea trout data

Location:		**Inverianvie estuary**																	
Date:		19-Jun-24		**Time:**	11 oclock														
***Counts:**		Peter Cunningham																	
Team:		5 helpers																	
Weather:		overcast, light southerly breze																	
Other notes:		4 exploratory sweeps of shallow estuary of Inverianvie river to mouth of Little Gruinard River at low tide																	
		only sea trout caught was netted in sweep near mouth of Little Gruinard River. No deep pools found in estuary where sweep netting effective at low tide.																	
		mis-judged tide, it had dropped faster than I anticipated so target area already too shallow when we arrived																	
		next time aim to go at high tide to sweep area just below stony channel																	
									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
1	Inverianvie	19-Jun-24	Sweep Net	est	Sea trout	160	42	1.03	0	0	0	0	**0**	0.000	0	0	N	Y	y	slightly estuarine
					Averages	**160.00**	**42.00**	**1.03**	**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%

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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)]

Sea trout 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	No	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.

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

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

Acknowledgements

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Thank you to Gruinard Estate and Eilean Darach estate for permissions