

Sea lice monitoring report for Applecross River estuary sampling, 29 May 2024.

Peter Cunningham, Biologist, WRFT. 30 May 2024 info@wrft.org.uk

Sea trout data

Location:	Applecross River estuary																						
Date:	29-May-24	Time:	11:00																				
*Counts:	Peter Cunningham																						
Team:	6 helpers																						
Weather:	light northerly breeze																						
River	low, slightly coloured																						
Other notes:	2 sweeps of sea pool in same place and using same method and with same team that caught many fish in May 2023																						
	4 snorkellers to herd fish to tail of pool where net set (as in 2023)																						
	three small sea trout seen, swimming back upstream passed snorkellers; these were not caught. No larger sea trout seen by snorkellers.																						
	neep tide did not reach sea pool. Bank of seaweed fragments on shore where sweep net pulled up.																						
	However no fish seen inside net by snorkeller as it was drawn in, so no evidence that many fish were present but escaped.																						
	Conclusion reached was that there were few trout present in the pool, and certainly not the numbers of fish encountered in May 2023																						
										Caligus	Lepeophtheirus salmonis												
No.	Location	Date	Method	Riv/Est/B each	Fish	length (mm)	weight (g)	condition factor	total	Copepodid & Chalmus (estimate)	Pre-adult & adult	Ov. female	Total L. salmonis sea lice	*estimated lice/g fish weight	Dorsal fin damage	<i>Cryptocotyle ligua</i> spots per cm ² of caudal fin	Predator damage	Photo	scale sample?	Comments	≥13 lice/fish?	Lice/g fish weight	
1	Applecross	29-May-24	Sweep Net	est	Sea trout	170	46	0.94	0	4	2	0	6	0.130	0	0	Y	Y	y	bird damaged caudal fin	No	0.130	
					Averages	170.00	46.00	0.94	0.00	4.00	2.00	0.00	6.00	0.13	0.00	0.00							
													total lice	6									
													number of fish	1									
													number infested	1									
													prevalence	100%									
													total lice	6									
													abundance	6.00									
													intensity	6.00									
													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 \(researchgate.net\)](#)

For the one sea trout caught:

≥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 %
No	0.130	>0.3	100%	0	1	0.00	0.00	
		0.2-0.3	50%	0		0.00	0.00	
		0.1-0.2	20%	1		100.00	20.00	
		<0.1	0%	0		0.00	0.00	20.00



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 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
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.	<div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; margin-right: 5px;"></div> 100% sea lice related mortality or early return to freshwater </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: orange; margin-right: 5px;"></div> >50% to 99% sea lice related mortality or early return to freshwater </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; margin-right: 5px;"></div> >20% to 50% sea lice related mortality or early return to freshwater </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: lightgreen; margin-right: 5px;"></div> <20% sea lice related mortality or early return to freshwater </div>
https://www.researchgate.net/publication/266672998 Risk assessment of the environmental impact of Norwegian Atlantic salmon farming	

Acknowledgements

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