

Sea lice monitoring report for Inverianvie river estuary (Gruinard Bay) sampling, 11 July 2024.

Peter Cunningham, Biologist, WRFT. 12 July 2024 [info@wrft.org.uk](mailto:info@wrft.org.uk)

Sea trout data

<b>Location:</b>		Inverianvie estuary																			
<b>Date:</b>		11-Jul-24			<b>Time:</b>		12:00														
<b>*Counts:</b>		Peter Cunningham																			
<b>Team:</b>		6 helpers, 5 in wetsuits altogether																			
<b>Weather:</b>		overcast, light southerly breeze																			
<b>Other notes:</b>		2 sweeps of shore around high tide below car park - rocks caught lead line; then one sweep by Inverianvie river mouth - scooped up some stones but also all five sea trout light northerly breeze, cool - freshwater and flotsam up against beach. Waded out as far as we could; snorkellers de-snagged net from stones on way in. Sea trout had had more lice but mostly not for a long time . . . In great condition.																			
										<i>Caligus</i>	<i>Lepeophtheirus salmonis</i>										
No.	Location	Date	Method	Riv/Est/B each	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	<i>Cryptocotyle ligua</i> spots per cm <sup>2</sup> of caudal fin	Predator damage	Photo	scale sample?	Comments	
1	Inverianvie	11-Jul-24	Sweep Net	est	Sea trout	530	1664	1.12	0	0	2	0	2	0.001	1	0	N	Y	y	hen	
2	Inverianvie	11-Jul-24	Sweep Net	est	Sea trout	380	610	1.11	0	10	10	4	24	0.039	1	1	Y	Y	y		
3	Inverianvie	11-Jul-24	Sweep Net	est	Sea trout	405	795	1.20	0	0	0	0	0	0.000	0	0	N	Y	y	good condition hen	
4	Inverianvie	11-Jul-24	Sweep Net	est	Sea trout	405	703	1.06	0	0	5	1	6	0.009	2	1	Y	Y	y	photo of dorsal fin	
5	Inverianvie	11-Jul-24	Sweep Net	est	Sea trout	397	682	1.09	0	0	0	2	2	0.003	2	1	Y	Y	y	healed	
						<b>Averages</b>	<b>423.40</b>	<b>890.80</b>	<b>1.12</b>	<b>0.00</b>	<b>2.50</b>	<b>4.25</b>	<b>1.25</b>	<b>8.00</b>	<b>0.01</b>	<b>1.00</b>	<b>0.50</b>				
													total lice	34							
													number of fish	5							
													number infested	4							
													prevalence	80%							
													total lice	34							
													abundance	6.80							
													intensity	8.50							
													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](https://www.researchgate.net/publication/266672998)) [Risk assessment of the environmental impact of Norwegian Atlantic salmon farming \(researchgate.net\)](https://www.researchgate.net/publication/266672998)

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	0.001	>0.3	100%	0	5	0.00	0.00	
2	Yes	0.039	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	0.009	<0.1	0%	5		100.00	0.00	<b>0.00</b>
5	No	0.003							

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.	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
<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	

### Acknowledgements

Sampling carried out as part of the WRF Ardmair Salmon Farm EMP wild fish monitoring programme supported by MOWI to inform the WRASFB, The Highland Council and The Scottish Government

Thank you to Gruinard Estate and Eilean Darach estate for permissions

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Other fish

No.	Location	Date	Method	Riv/Est/B each	Fish	length (mm)				
6	Inverianvie	11-Jul-24	Sweep Net	est	Coalfish	100				
7	Inverianvie	11-Jul-24	Sweep Net	est	Coalfish	105				

Not measured: plaice or flounders (of around 120mm, plus small year class), Lesser weever fish of around 100mm

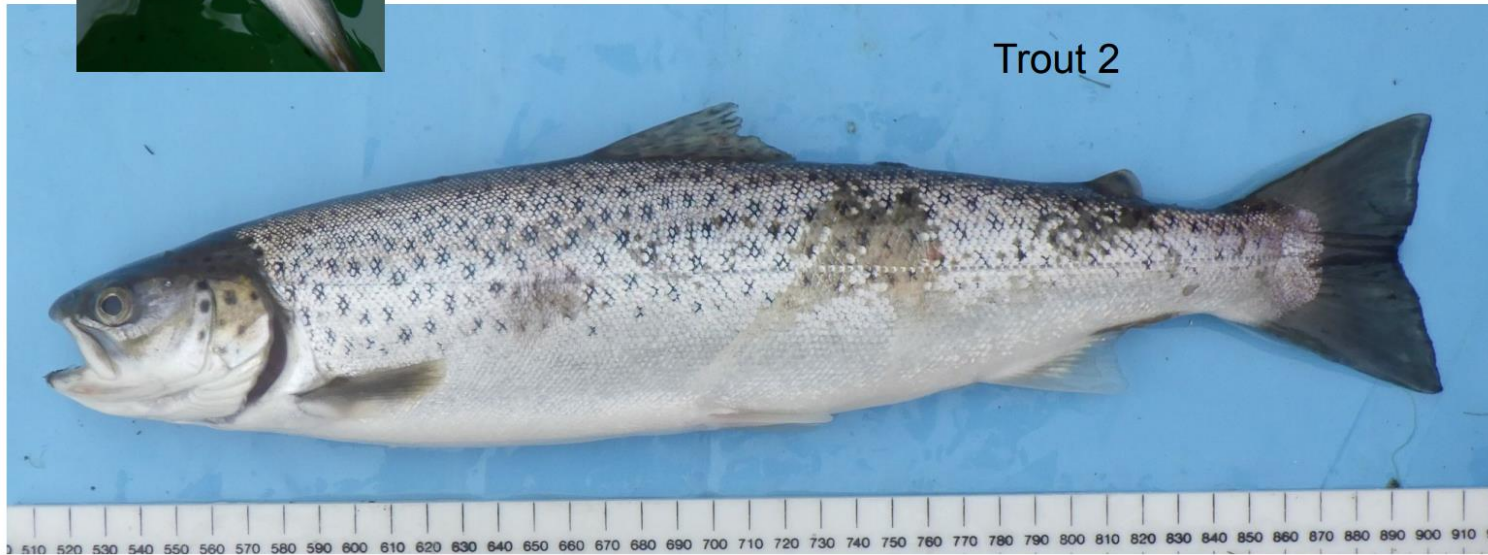
Pictures by Chloe Hall

ST530mmInverianvie11Jul24



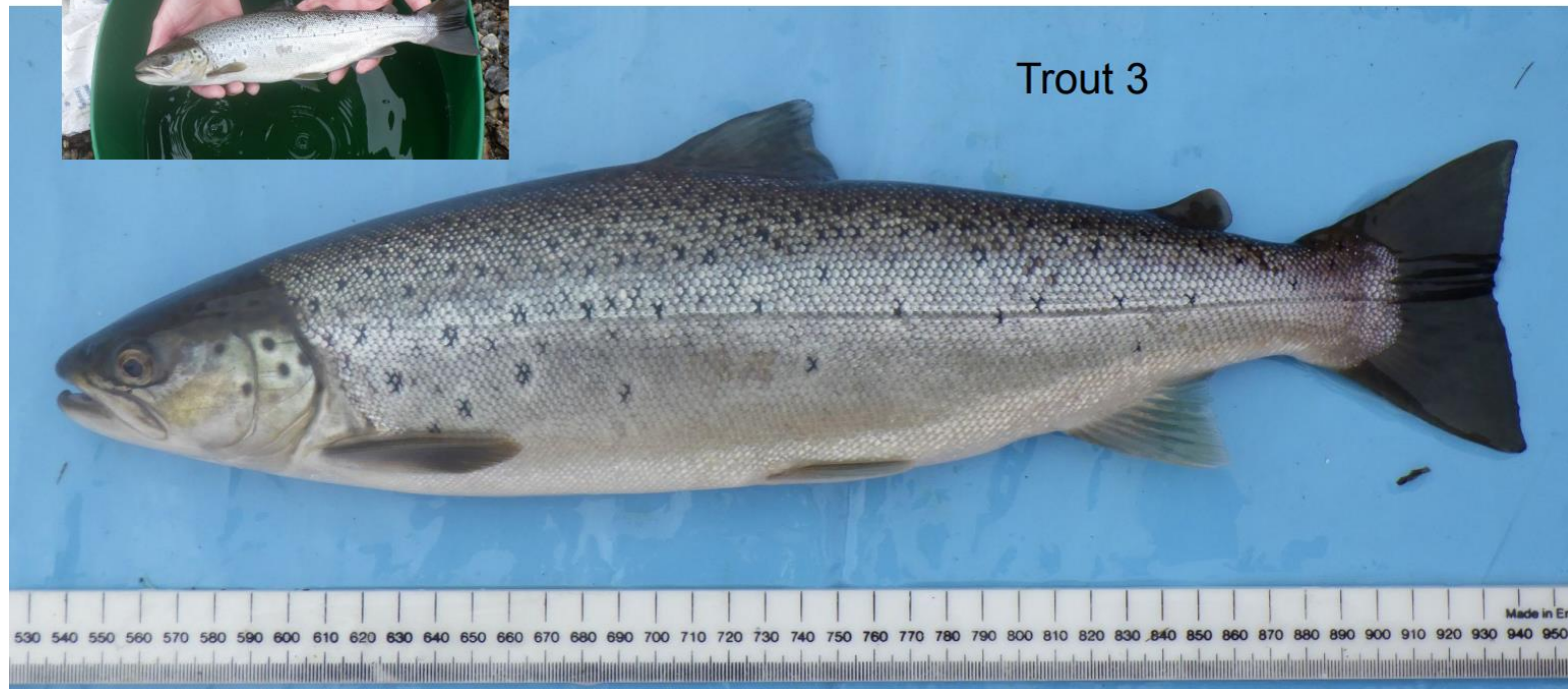
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Trout 4



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