

Sea lice monitoring report for Inverianvie river estuary (Gruinard Bay) sampling, 7th Oct 2024.

Peter Cunningham, Biologist, WRFT. 8<sup>th</sup> October 2024 [info@wrft.org.uk](mailto:info@wrft.org.uk)

Sea trout data





<b>Location:</b>		Inverianvie estuary																				
<b>Date:</b>		07-Oct-24		<b>Time:</b>		10:30 - 14:30																
<b>*Counts:</b>		Peter Cunningham																				
<b>Team:</b>		4 helpers																				
<b>Weather:</b>		overcast, light rain faded; calm, slight northerly swell																				
<b>Other notes:</b>		3 sweeps of shore by river mouth from about 30 minutes after high tide water murky with swell waves, waded out as far as could go. Lead line snagged on many stones; snorkeller desnagged net and removed stones as net pulled in two of trout are recaptures from July sweep																				
										<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	07-Oct-24	Sweep Net	est	Sea trout	510	1450	1.09	0	0	15	0	15	0.010	0.5	0	N	Y	y	Fem, Chloe photo		
2	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	405	688	1.04	0	0	3	0	3	0.004	0.2	1	N	Y	y	Fem, Chloe photo		
3	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	375	600	1.14	0	2	4	0	6	0.010	0.5	4	N	Y	y	Fem, Chloe photo		
4	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	480	1230	1.11	0	0	0	0	0	0.000	0	1	N	Y	y	Fem, WRFT photo with male#5		
5	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	435	1005	1.22	0	2	2	0	4	0.004	0.2	0	N	Y	y	Male, photo with fish above		
6	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	354	469	1.06	0	0	4	0	4	0.009	0	0	N	Y	y	silvery		
7	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	395	668	1.08	0	3	0	0	3	0.004	0.5	1	N	Y	y	Fem		
8	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	410	769	1.12	0	1	2	0	3	0.004	0	1	N	Y	y	Male		
9	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	425	860	1.12	0	0	1	0	1	0.001	0	0	N	Y	y	Male		
10	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	390	645	1.09	0	0	0	0	0	0.000	1	0	N	Y	y	Male, healed dorsal fin		
11	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	380	565	1.03	0	2	1	0	3	0.005	2	0	N	Y	y	Male, healed dorsal fin		
12	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	410	744	1.08	0	0	0	0	0	0.000	1	2	N	Y	y	Fem, healed dorsal fin		
13	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	410	810	1.18	0	1	4	0	5	0.006	1	0	N	Y	y	Fem		
14	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	395	736	1.19	0	2	7	0	9	0.012	1.5	0	N	Y	y	Fem, healing dorsal fin		
15	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	350	453	1.06	0	4	3	0	7	0.015	2	0	N	Y	y	Fem, healing dorsal fin		
16	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	282	238	1.06	0	0	0	0	0	0.000	1	0	N	Y	y	Plump		
17	Inverianvie	07-Oct-24	Sweep Net	est	Sea trout	345	476	1.16	0	1	1	0	2	0.004	0	0	N	Y	y	Male		
<b>Averages</b>						<b>397.12</b>	<b>729.76</b>	<b>1.09</b>	<b>0.00</b>	<b>1.06</b>	<b>2.76</b>	<b>0.00</b>	<b>6.00</b>	<b>0.01</b>	<b>0.67</b>	<b>0.59</b>						
													total lice	65								
													number of fish	17								
													number infested	13								
													prevalence	76%								
													total lice	65								
													abundance	3.82								
													intensity	5.00								
													fish with >0.3 lice / g	0								
													fish with >0.3 lice / g	0%								

Sea lice monitoring report for Inverianvie river estuary (Gruinard Bay) sampling, 7th Oct 2024.

Peter Cunningham, Biologist, WRFT. 8<sup>th</sup> October 2024 [info@wrft.org.uk](mailto:info@wrft.org.uk)

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	Yes	0.010	>0.3	100%	0	17	0.00	0.00	
2	No	0.004	0.2-0.3	50%	0		0.00	0.00	
3	No	0.010	0.1-0.2	20%	0		0.00	0.00	
4	No	0.000	<0.1	0%	17		100.00	0.00	<b>0.00</b>
5	No	0.004							
6	No	0.009							
7	No	0.004							
8	No	0.004							
9	No	0.001							
10	No	0.000							
11	No	0.005							
12	No	0.000							
13	No	0.006							
14	No	0.012							
15	No	0.015							
16	No	0.000							
17	No	0.004							

<b>Notes:</b>									
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.									
									
									
									
<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									

Sea lice monitoring report for Inverianvie river estuary (Gruinard Bay) sampling, 7th Oct 2024.

Peter Cunningham, Biologist, WRFT. 8<sup>th</sup> October 2024 [info@wrft.org.uk](mailto:info@wrft.org.uk)

Other fish

No.	Location	Date	Method	Riv/Est/B each	Fish	length (mm)	weight (g)
18	Inverianvie	07-Oct-24	Sweep Net	est	Coalfish	160	nr
19	Inverianvie	07-Oct-24	Sweep Net	est	Coalfish	150	nr
20	Inverianvie	07-Oct-24	Sweep Net	est	Coalfish	160	nr
21	Inverianvie	07-Oct-24	Sweep Net	est	Coalfish	150	nr
22	Inverianvie	07-Oct-24	Sweep Net	est	Coalfish	120	nr
23	Inverianvie	07-Oct-24	Sweep Net	est	Coalfish	135	nr
24	Inverianvie	07-Oct-24	Sweep Net	est	Pollack	130	nr
25	Inverianvie	07-Oct-24	Sweep Net	est	Pollack	125	nr
26	Inverianvie	07-Oct-24	Sweep Net	est	Pollack	135	nr
27	Inverianvie	07-Oct-24	Sweep Net	est	Flounder	320	364
29	Inverianvie	07-Oct-24	Sweep Net	est	Brill	155	nr

**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.

Team photo 7<sup>th</sup> October 2024 (JH)



Brill 142mm Inverianvie 7 Oct 2024



Sea lice monitoring report for Inverianvie river estuary (Gruinard Bay) sampling, 7th Oct 2024.

Peter Cunningham, Biologist, WRFT. 8<sup>th</sup> October 2024 [info@wrft.org.uk](mailto:info@wrft.org.uk)

Male sea trout 435mm & female sea trout 480mm Inverianvie, 7<sup>th</sup> October 2024



Female sea trout 410mm Inverianvie, 7<sup>th</sup> October 2024

