The following supplement accompanies the article

Migration of Atlantic salmon post-smolts in a fjord with a high infestation pressure of salmon lice

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Table S1. Overview of the fish tagged and released in Opo (2006), Guddal (2007) and Etne (2014). Treatment refers to whether fish were protected from salmon lice by bathing with substance EX prior to release. Sizes of final groups in parenthesis (when removing malfunctioning tags and dead individuals). In 2014, the fish were tagged 3 to 6 wk prior to the 2 releases, and in order to optimize battery life, the transmitters were programmed to turn off 3 h after initiation and automatically turn on again after 7 d (early release) or 21 d (late release)

Strain	Treatment	Tagged Date	Tagged No.	Release date	Release time	Detected in fjord No.
R. Lærdal	No	02.06.2006	1[a]	05.06.2006	18:47	0
R. Lærdal	No	05.06.1006	1[a]	05.06.2006	18:47	1
Mowi	No	02.06.2006	10	05.06.2006	18:47	6
Mowi	No	05.06.1006	9	05.06.2006	18:47	2
Hybrids	No	02.06.2006	10	05.06.2006	18:47	5
Hybrids	No	05.06.1006	9	05.06.2006	18:47	0
Sum 2006			40			14
R. Lærdal	No	01.06.2007	10	15.06.2007	10:15	2
Aquagen	No	01.06.2007	10	15.06.2007	10:15	7
R. Lærdal	No	01.06.2007	11	15.06.2007	13:00	6
Aquagen	No	01.06.2007	11	15.06.2007	13:00	4
R. Lærdal	No	01.06.2007	11	15.06.2007	17:30	3
Aquagen	No	01.06.2007	11	15.06.2007	17:30	4
R. Lærdal	No	01.06.2007	8	15.06.2007	19:15	1
Aquagen	No	01.06.2007	8	15.06.2007	19:15	2
Sum 2007			80 (78)			29
R. Etne	No	28.04.2014	30	18.05.2014	21:40	23
R. Etne	Yes	28.04.2014	30	18.05.2014	21:40	26
R. Etne	No	28-29.04.2014	30	09.06.2014	21:45	23
R. Etne	Yes	28-29.04.2014	30	09.06.2014	21:45	17
Sum 2014			120 (117)			89

[a] Only 2 post-smolts from Lærdal could be tagged due to small size.

Table S2. Overview of salmon lice prevalence (% of sampled hosts infected), mean intensity (lice per infected host) and intensity growth rate (lice day^{-1}) parameters from the sentinel cages. Summary statistics were calculated within each cage, and then averaged across cages within each experiment (with the exception of maximum intensity growth rate, which shows the maximum observed within each experiment).

Year	Period	Length (mm) mean (±SD)	Prevalence (95% CI)	Intensity (95% CI)	Intensity growth rate (95% CI)	Intensity growth rate Q75, Q95, max
2006		206 ± 11	0.44 (0.34–0.55)	1.60 (1.30–1.98)	0.045 (0.025-0.064)	0.08, 0.14, 0.47
2007		197 ± 13	0.93 (0.86–0.97)	3.07 (2.34–4.02)	0.094 (0.057-0.133)	0.13, 0.18, 0.55
2014	1	236 ± 18	0.20 (0.14–0.28)	1.26 (1.06–1.50)	0.019 (0.011-0.028)	0.02, 0.09, 0.29
2014	2	242 ± 12	0.23 (0.16–0.31)	1.45 (1.25–1.68)	0.026 (0.015-0.037)	0.03, 0.11, 0.50
2014	3	243 ± 14	0.94 (0.82–0.98)	4.01 (2.58–6.22)	0.306 (0.160-0.470)	0.47, 0.66, 2.75
2014	4	202 ± 8	0.70 (0.24–0.95)	3.18 (1.59–6.36)	0.251 (0.042-0.501)	0.40, 0.55, 3.11

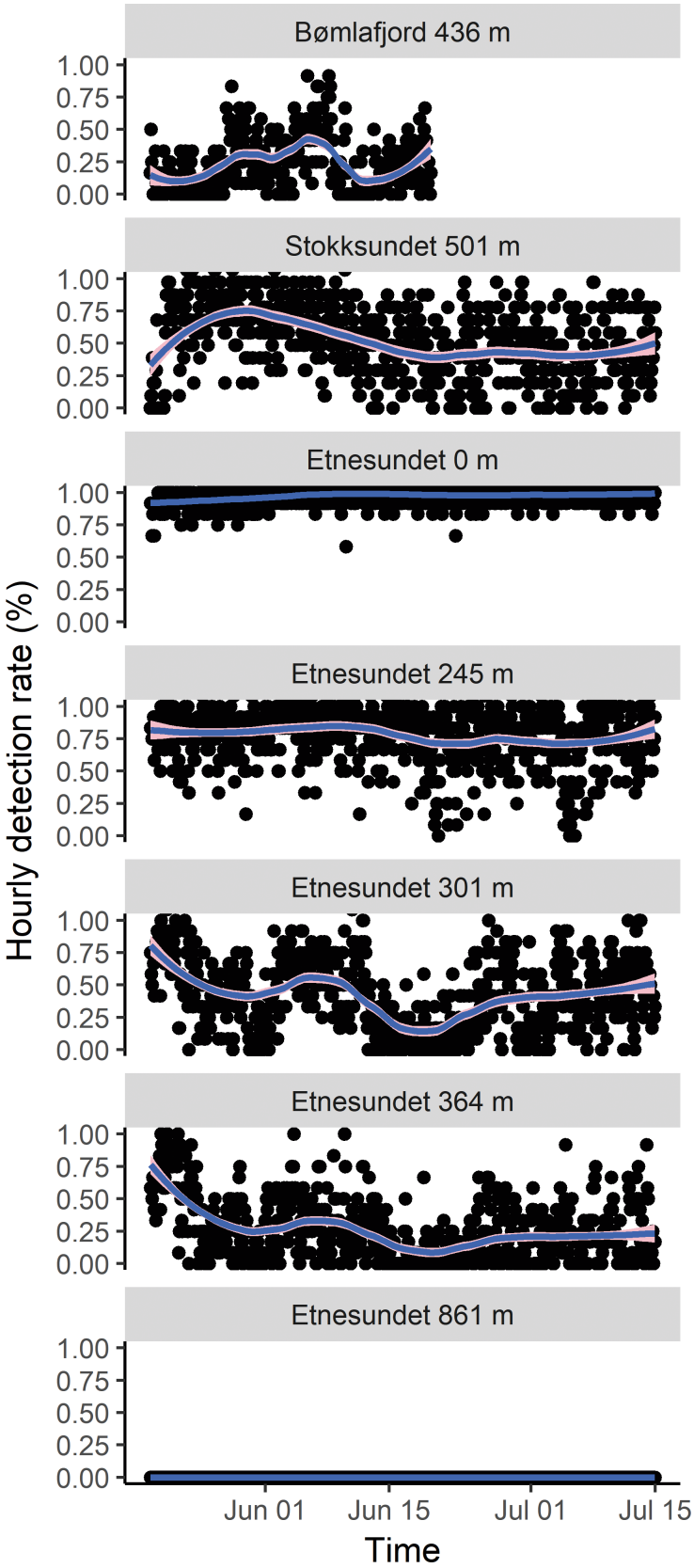

Fig. S1. Hourly detection rates in Bømlafjorden, Stokksundet, and Etnesundet (the "mouth" of the Etne fjord), data from V8-4H (147 dB re 1uPa @1m, Bømlafjorden and Etnesundet) and V9-2L (145 dB re 1uPa @1m, Stokksundet) sentinel tags, deployed at 5, 10, and 7 m depth, respectively. The blue line indicates loess mean with span = 0.5, the pink band indicate 95% confidence interval of the mean.

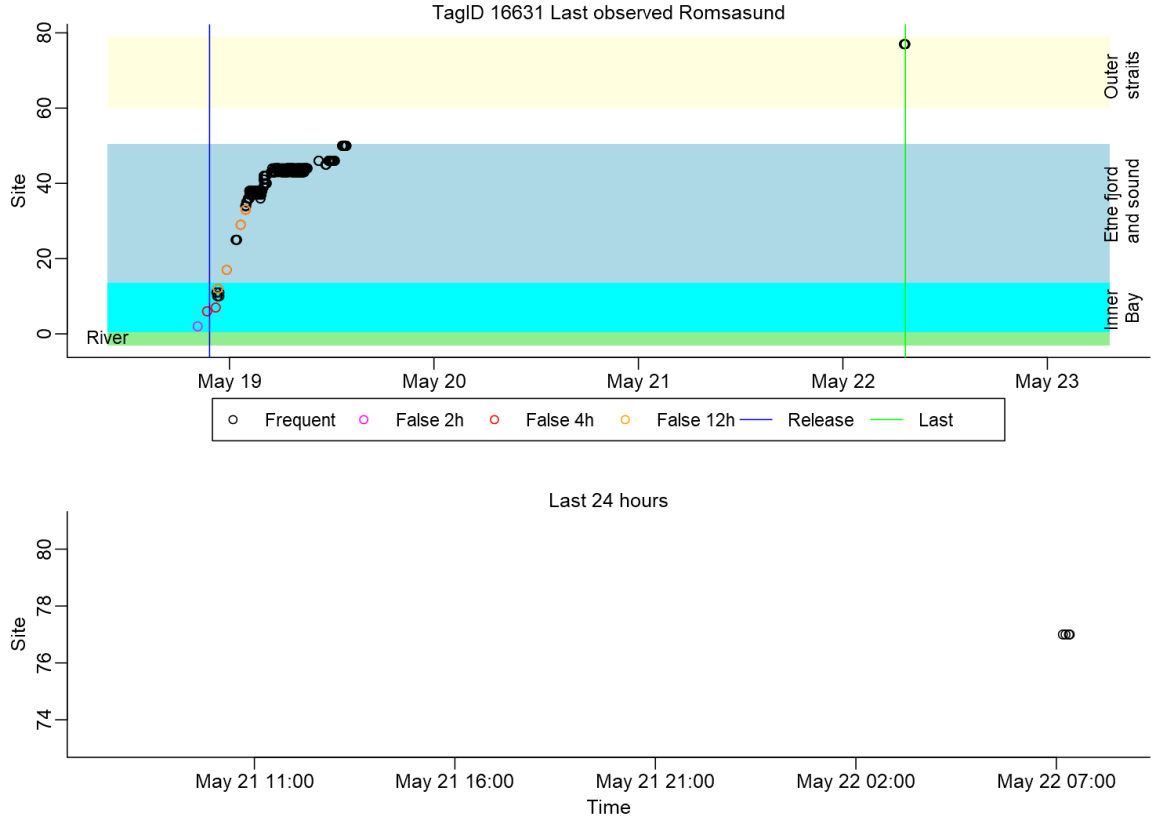

Fig. S2. Individual tracks of post-smolt released in Etnefjord in 2014 (see separate pdf file at http://www.int-res.com/articles/suppl/m592p243_suppS2.pdf, example shown here). In each individual track-plot, upper panel shows the whole route from release to last observation, while the lower panel zooms in on the receivers with detections on the last 24 h before the final detection. The colour of the circles indicate which detection would be categorized as false given the following filter alternatives; black: the detection is separated by less than 2 h from another detection on the same receiver and tagged "frequent", magenta-coloured: the detection is separated by more than 2 h from another detection on the same receiver and tagged "False 2h", red-coloured: the detection is separated by more than 4 h from another detection on the same receiver and tagged "False 4h", orange-coloured: the detection is separated by more than 12 h from another detection on the same receiver and tagged "False 12h". The individual fish-id and the last observation location are depicted in the title, date and time on x-axes, and the receiver site on y-axes. Receiver site was ordered from upstream river (river receivers have negative numbers) through Etnefjord towards the ocean, but the numbering is not indicative of the distance between the receivers. The background panel in the upper figure indicates the area in which the receiver was located; green: river, cyan: Etnefjord inner bay close to the release point, light blue: Etnefjord and strait, yellow: the outer straits Bømlafjorden, Stokksundet, Langenuen, Lukksundet and Bjørnafjord (see Fig. 1 for strait location). Blue vertical line indicates the release time of tagged fish and green vertical line indicates time of last observation (only shown in upper panel).

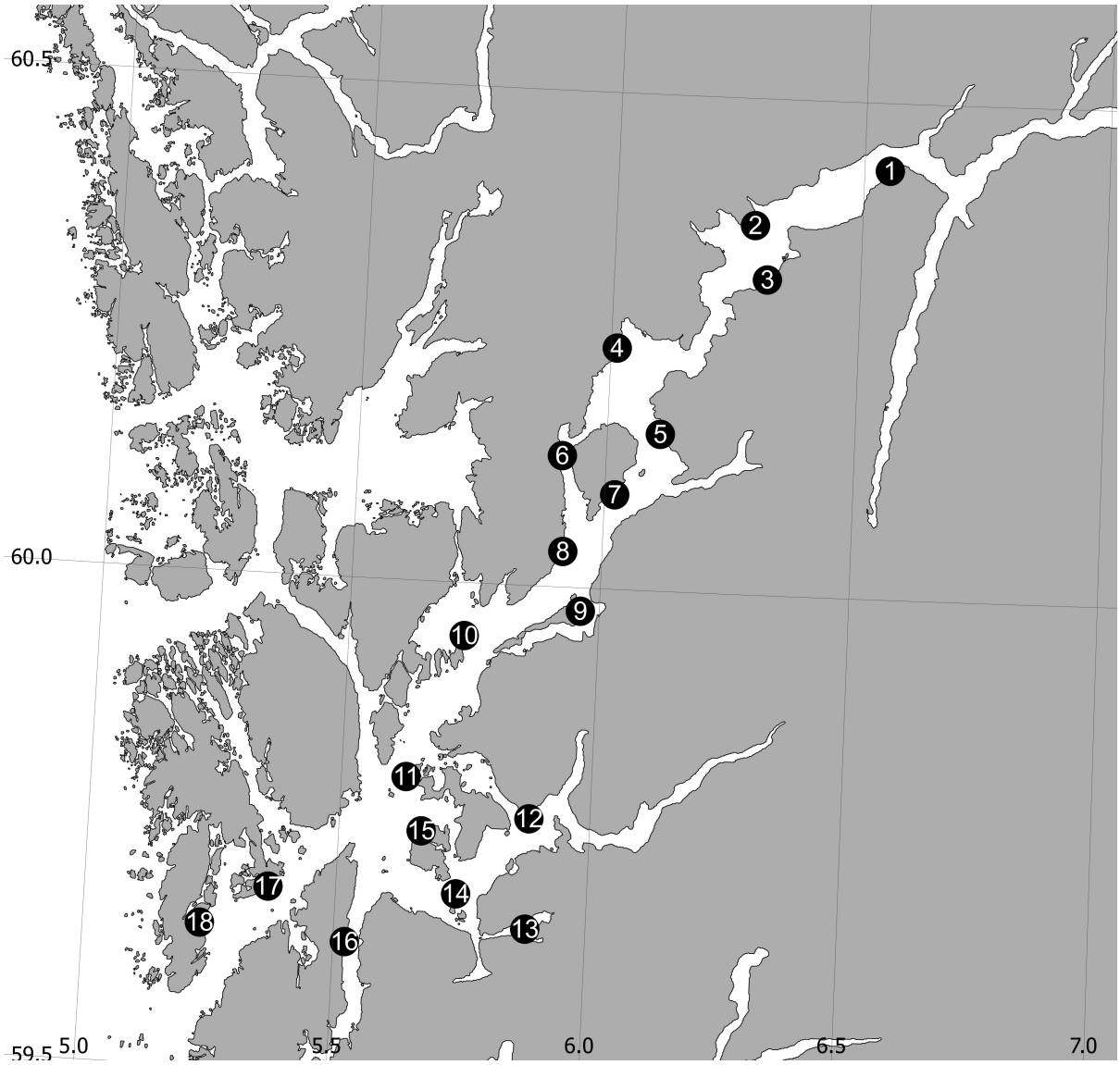

Fig. S3. Positions of sentinel cages deployed in Hardangerfjord in years 2006, 2007 and 2014. Numbers correspond to the numbering in Fig. 5. Distance from the cage to shore ranged between 35 and 1111 m (mean 311 m, median 244 m, standard deviation 253 m). Grid indicates latitude and longitude.

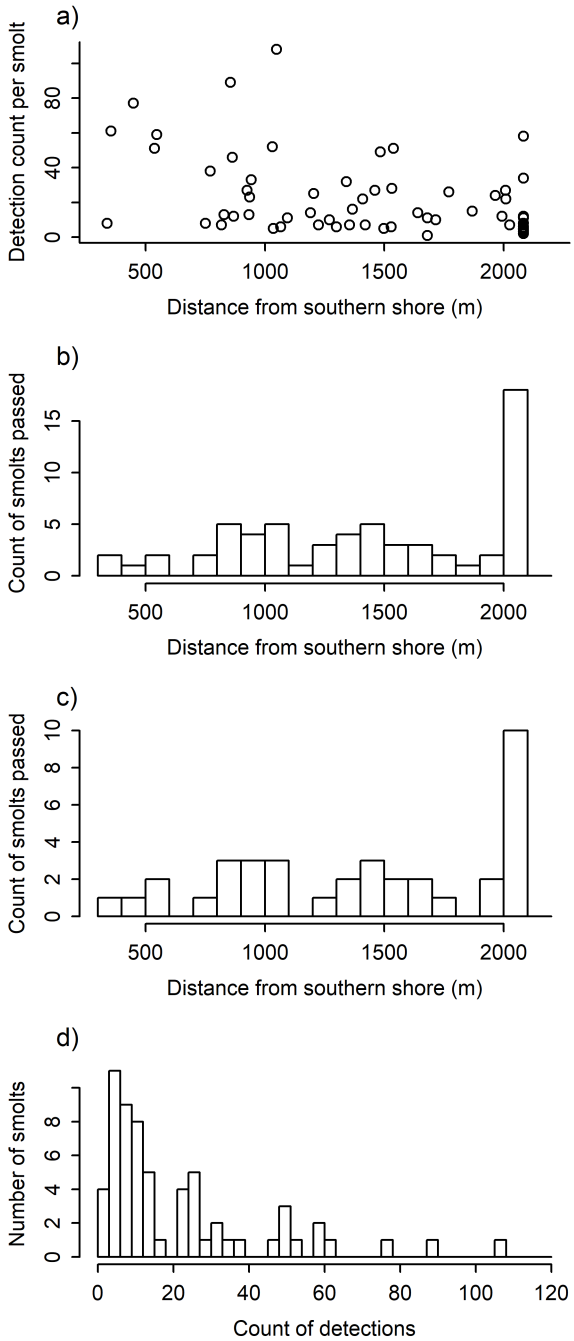

Fig. S4. Analyses of the smolt passes at the Bømlafjorden receiverline in 2014, where the majority of the post-smolt passed. a) count of detections for each post-smolt that passed the line versus the distance from the southern shore to the centre of activity for last 30 minutes of the pass. Smolts that passed >2000 m from the southern shore passed close to the northern shore. b) and c) histogram of the distribution of post-smolt passes along the receiver line for the early and late release group, respectively. d) histogram of the count of detections per post-smolt as they passed the receiver line.

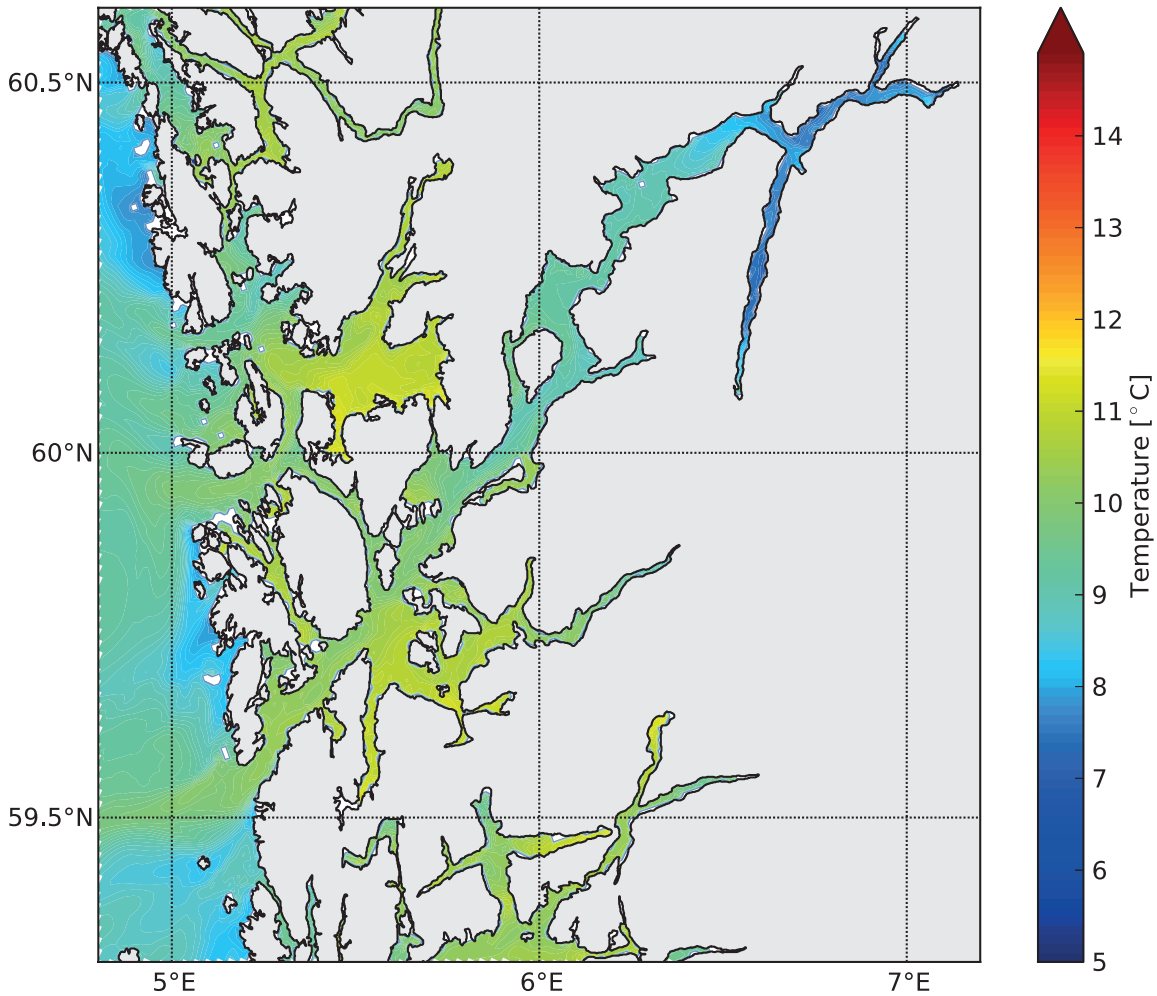

Fig. S5. Modelled temperature at 2 m depth on 5 June 2006.

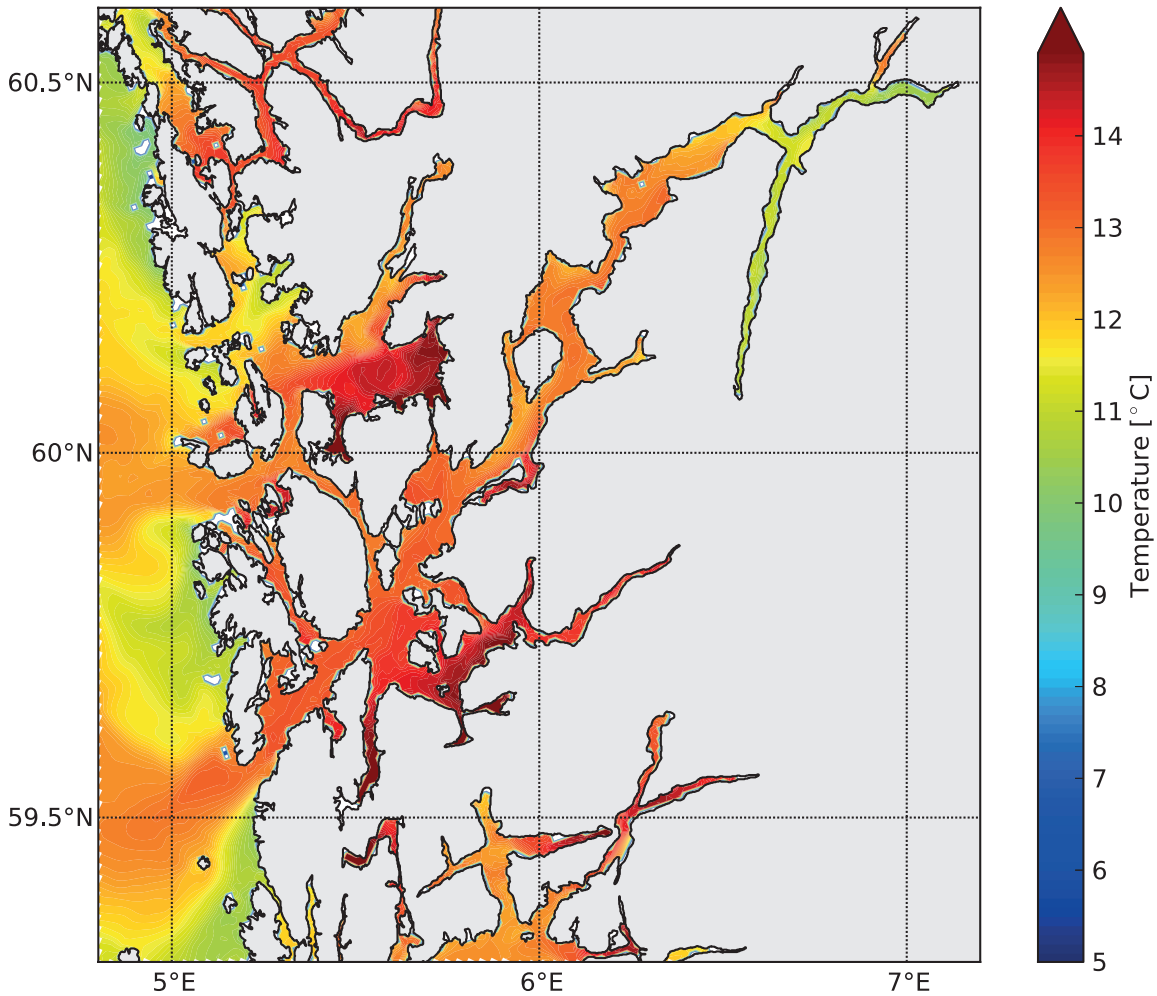

Fig. S6. Modelled temperature at 2 m depth on 15 June 2007.

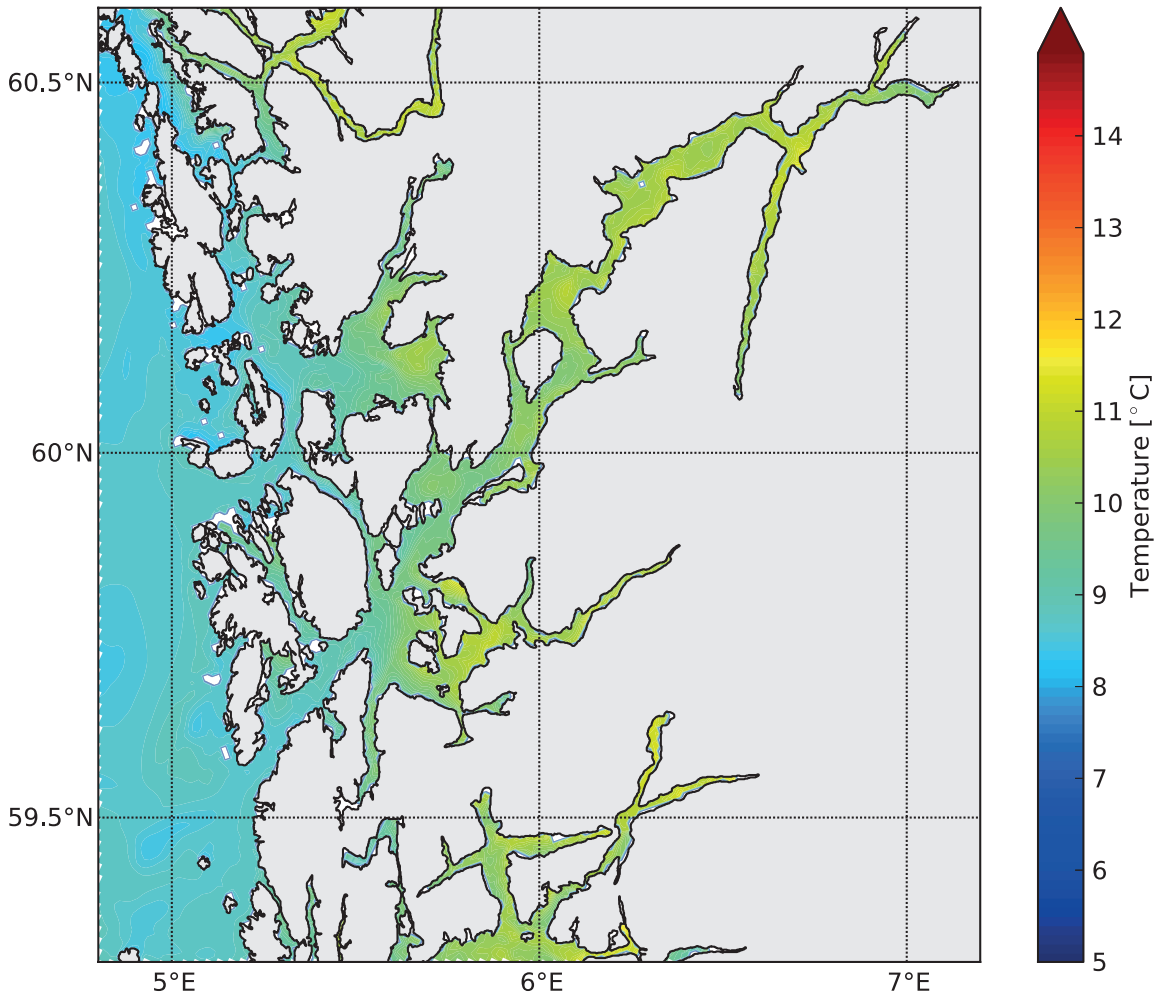

Fig. S7. Modelled temperature at 2 m depth on 18 May 2014.

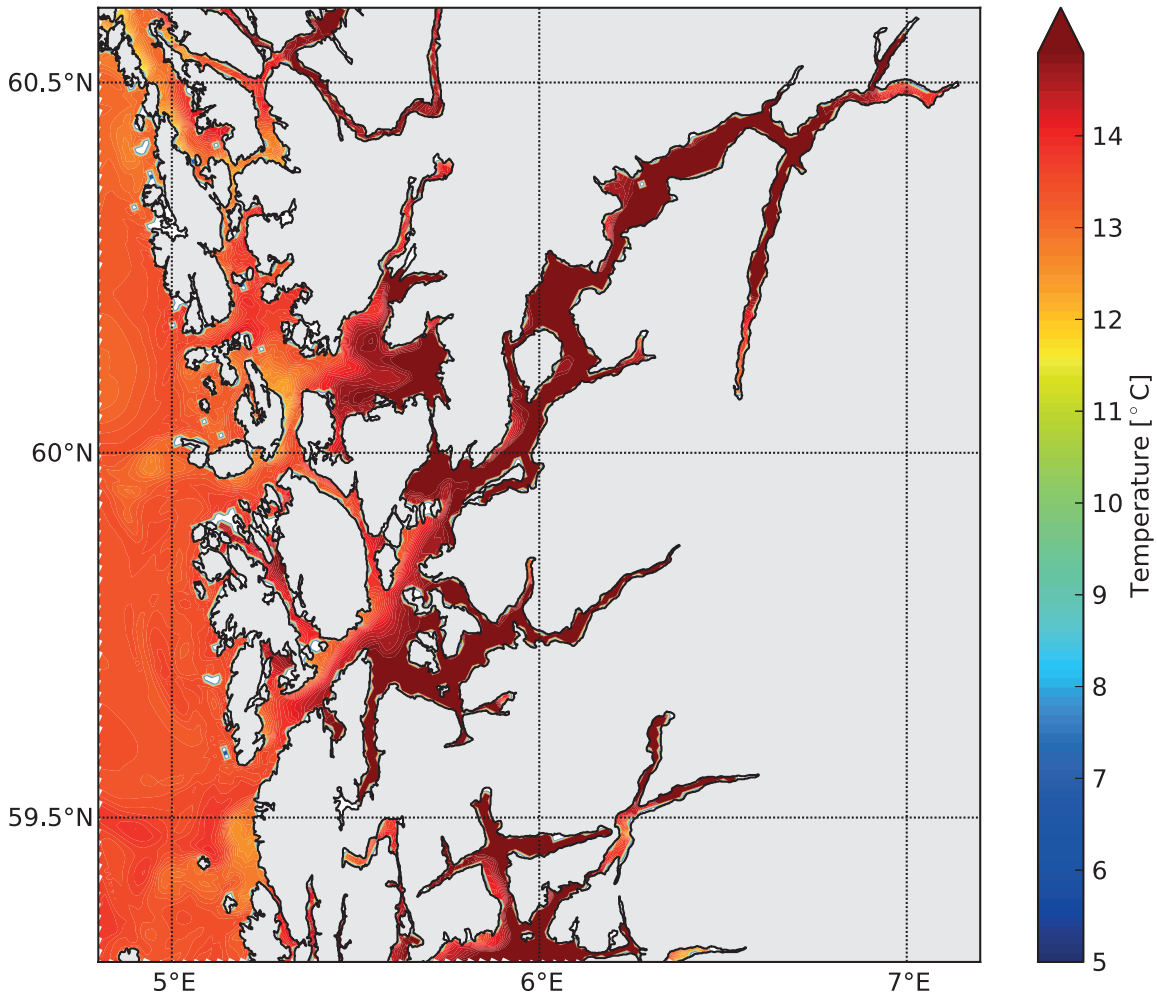

Fig. S8. Modelled temperature at 2 m depth on 9 June 2014.

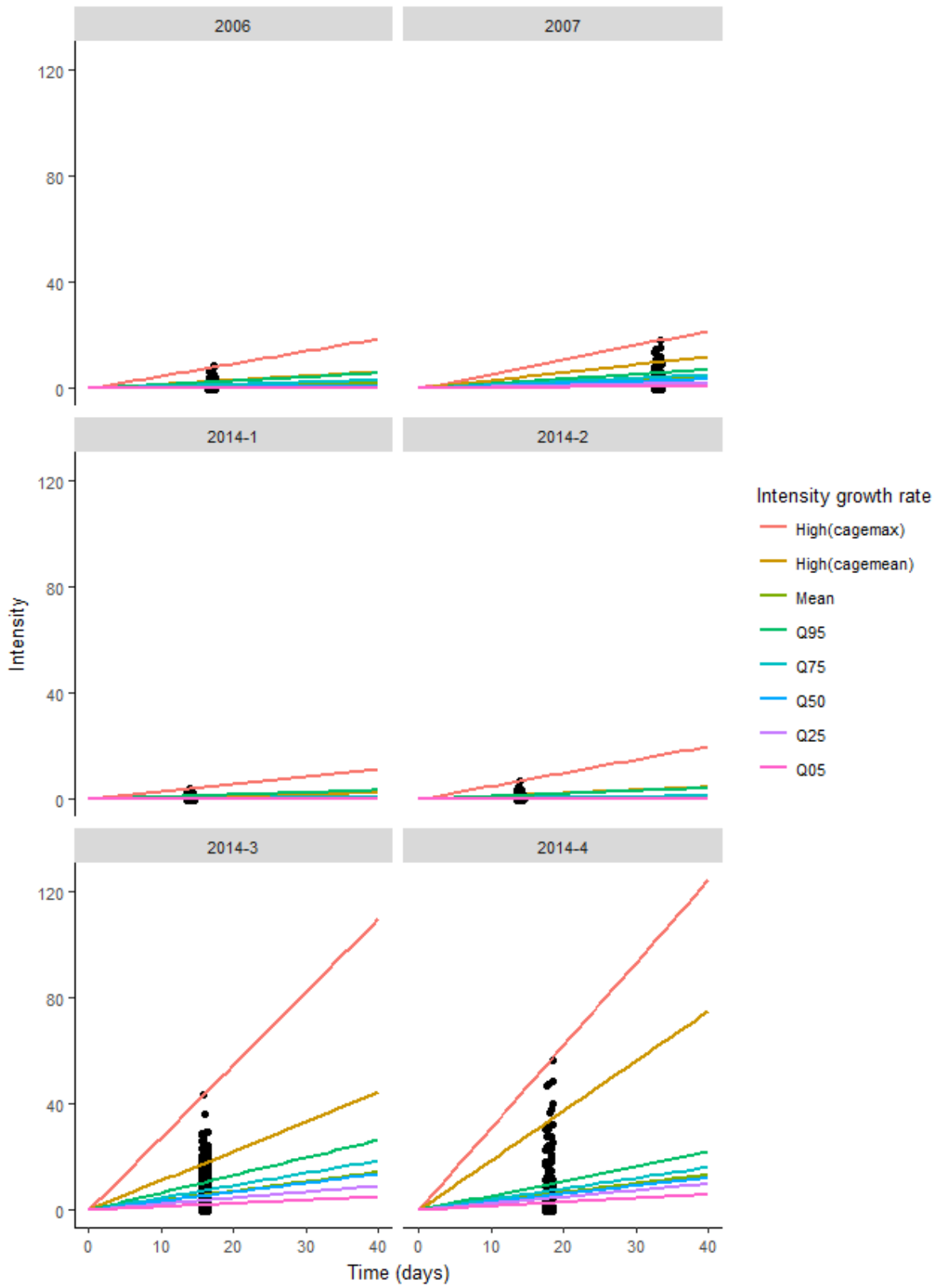

Figure S9. Black dots: Salmon lice infection intensities on Atlantic salmon smolts in the cage experiments at the end of each experiment (with some small jitter added in x- and y-direction to help resolve individual points). Lines: Intensity prediction over time, corresponding to the scenarios in Table 4 .