

## **Area use and movement patterns of wild and escaped farmed Atlantic salmon before and during spawning in a large Norwegian river**

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### **Supplement 1.**

Table S1. Summary table showing the number of individuals (N) and size ranges (min. – max. cm) for each origin (farmed and wild) and sex (males, females and unknown sex) of tagged Atlantic salmon.

<b>Number of tagged fish</b>	<b>Farmed</b>	<b>Wild</b>
Males (N)	15	24
Males length (min. – max. cm)	68 - 93	77 - 103
Females (N)	15	49
Females length (min. – max. cm)	64 - 88	71 - 109
Unknown sex (N)	13	1
Unknown sex length (min. – max. cm)	65 - 90	67
Total number used in analysis	43	74

Table S2. Summary table showing the number of individuals (N) and size ranges (min. – max. cm) for each origin (farmed and wild) and sex (males, females and unknown sex) used in the different analysis in both the pre spawning and the spawning period.

<b>Area use (use of river zones and probability of migrating to the barrier)</b>	<b>Pre spawning period</b>		<b>Spawning period</b>	
	<b>Farmed</b>	<b>Wild</b>	<b>Farmed</b>	<b>Wild</b>
<b>Males (N)</b>	7	8	6	7
<b>Males length (min. – max. cm)</b>	68 - 93	78 - 100	68 - 92	78 - 100
<b>Females (N)</b>	5	11	5	10
<b>Females length (min. – max. cm)</b>	70 - 85	71 - 101	70 - 85	71 - 101
<b>Unknown sex (N)</b>	6	-	6	-
<b>Unknown sex length (min. – max. cm)</b>	72 - 90	-	72 - 90	-
<b>Total number used in analysis</b>	18	19	17	17
<b>Daily total migration distances</b>				
<b>Males (N)</b>	7	8	6	7
<b>Males length (min. – max. cm)</b>	68 - 93	78 - 100	68 - 92	78 - 100
<b>Females (N)</b>	5	11	5	9
<b>Females length (min. – max. cm)</b>	70 - 85	71 - 101	70 - 85	71 - 101
<b>Unknown sex (N)</b>	6	-	6	-
<b>Unknown sex length (min. – max. cm)</b>	72 - 90	-	72 - 90	-
<b>Total number used in analysis</b>	18	19	17	16
<b>Daily downstream migration distances</b>				
<b>Males (N)</b>	6	8	6	7
<b>Males length (min. – max. cm)</b>	70 - 93	78 - 100	68 - 92	78 - 100
<b>Females (N)</b>	5	10	3	9
<b>Females length (min. – max. cm)</b>	70 - 85	71 - 101	70 - 83	71 - 101
<b>Unknown sex (N)</b>	6	-	6	-
<b>Unknown sex length (min. – max. cm)</b>	72 - 90	-	72 - 90	-
<b>Total number used in analysis</b>	17	18	15	16
<b>Daily movements</b>				
<b>Males (N)</b>	7	8	6	7
<b>Males length (min. – max. cm)</b>	68 - 93	78 - 100	68 - 92	78 - 100
<b>Females (N)</b>	5	11	5	10
<b>Females length (min. – max. cm)</b>	70 - 85	71 - 101	70 - 85	71 - 101
<b>Unknown sex (N)</b>	6	-	6	-
<b>Unknown sex length (min. – max. cm)</b>	72 - 90	-	72 - 90	-
<b>Total number used in analysis</b>	18	19	17	17

## Supplement 2.

Ranked model selection tables based on AIC-values of the linear models on the movement distances in the river, and the number of movements. K: *numbers of parameters estimated*, AICc: *the corrected (according to number of observations) Akaike's Information Criterion*, Delta AICc: *the difference in AICc value of the particular model and the most supported model*. The most supported models (with a delta AICc-value less than two) are highlighted.

Table S3. Model selection of daily total migration distances (m/day) in the pre-spawning period.

<b>Model structure</b>	<b>K</b>	<b>AICc</b>	<b>Delta AICc</b>
<b>Origin * Length</b>	<b>5</b>	<b>565.9</b>	<b>0.0</b>
<b>Origin</b>	<b>3</b>	<b>567.2</b>	<b>1.3</b>
Origin * Length + Sex	7	568.1	2.2
Origin + sex	5	569.1	3.2
Sex	4	569.5	3.7
Origin + Length	4	569.27	3.8
Length	3	571.1	5.2
Sex + Length	5	571.3	5.5
Origin * Sex	6	571.9	6.0
Origin + Length + Sex	6	572.0	6.1
Sex * Length	7	573.3	7.4
Origin + Length * Sex	8	575.1	9.2

Table S4. Model selection of the daily downstream migration distances (m) in the pre-spawning period.

<b>Model structure</b>	<b>K</b>	<b>AICc</b>	<b>Delta AICc</b>
<b>Origin * Length</b>	<b>5</b>	<b>491.7</b>	<b>0.0</b>
Origin * Length + Sex	7	493.8	2.1
Origin + length	4	495.5	3.8
Origin	3	496.0	4.3
Sex	4	497.0	5.4
Length	3	498.0	6.3
Origin + Sex	5	498.4	6.7
Origin + Length + Sex	6	498.5	6.8
Origin * Sex	6	498.6	6.9
Sex + Length	5	499.0	7.3
Sex * Length	7	503.6	11.9
Origin + Length * Sex	8	504.1	12.4

Table S5. Model selection of daily movements in the pre-spawning period.

<b>Model structure</b>	<b>K</b>	<b>AICc</b>	<b>Delta AICc</b>
<b>Origin * Sex</b>	<b>5</b>	<b>-43.5</b>	<b>0.0</b>
<b>Origin + Sex</b>	<b>4</b>	<b>-43.1</b>	<b>0.4</b>
Origin + Length + Sex	5	-40.4	3.1
Sex + Length	4	-37.8	5.8
Origin + Length * Sex	6	-37.4	6.1
Origin * Length + Sex	6	-37.3	6.2
Sex	3	-37.2	6.3
Origin	3	-37.0	6.5
Sex * Length	5	-34.9	8.6
Origin + Length	4	-34.4	9.1
Length	3	-33.9	9.7
Origin * Length	5	-32.5	12.0

Table S6. Model selection of the probability of migrating to the barrier Nedre Fiskumfoss waterfall.

<b>Model structure</b>	<b>K</b>	<b>AICc</b>	<b>Delta AICc</b>	<b>AICc weights</b>
<b>Origin</b>	<b>2</b>	<b>42.1</b>	<b>0</b>	<b>0.42</b>
<b>Origin + Length</b>	<b>3</b>	<b>43.0</b>	<b>0.9</b>	<b>0.26</b>
<b>Origin * Length</b>	<b>4</b>	<b>44.1</b>	<b>2.0</b>	<b>0.16</b>
Origin + Sex	4	45.9	3.8	0.06
Sex	3	47.2	5.1	0.03
Origin + Length + Sex	5	47.6	5.5	0.03
Origin * Sex	5	48.6	6.5	0.02
Origin * Length + Sex	6	49.3	7.2	0.01
Length	2	49.3	7.2	0.01
Sex + Length	4	49.7	7.6	0.01
Sex * Length	6	49.8	7.7	0.01
Origin + Length * Sex	7	49.9	7.8	0.01
Origin * Sex+Length	6	50.5	8.4	0.01
Origin*Sex*Length	10	53.5	11.43	0