

SUPPLEMENTARY MATERIAL

Table 1: Biometrical characteristics of tagged smolts and eels, release dates and points (with the number of HPPs to cross before reaching Pébernat HPP)

Species	Campaign	Release group	Release date	Distance to Pébernat (HPPs to cross)	Number	Mean length (mm)	Min length (mm)	Max length (mm)
Atlantic salmon	2017	1	11/04/2017	19.4 km (3)	8	175.9	169	184
	2017	2	18/04/2017	19.4 km (3)	7	179.9	173	186
	2017	3	25/04/2017	1.5 km (0)	22	169.9	159	185
	2017	4	03/05/2017	14.7 km (2)	15	170.4	160	181
	2018	5	19/04/2018	19.4 km (3)	22	176.9	165	190
	2018	6	25/04/2018	19.4 km (3)	16	175.8	166	189
	2018	7	02/05/2018	19.4 km (3)	9	182.7	175	188
	2018	8	07/05/2018	19.4 km (3)	16	177.8	164	190
<i>Total</i>					<i>115</i>	<i>175.3</i>	<i>159</i>	<i>190</i>
European eel	2017-2018	1	10/01/2018	20.5 km (4)	25	679	549	930
		2	16/01/2018	20.5 km (4)	10	672.8	600	748
	2018-2019	3	07/12/2018	20.5 km (4)	30	714.4	595	955
<i>Total</i>					<i>65</i>	<i>694.4</i>	<i>549</i>	<i>955</i>

Table 2: Hydraulic parameters used in the study, acquisition time and availability periods

Hydraulic parameters	Time step	Availability periods
Total river discharge, intake discharge and bypass discharge ($\text{m}^3 \cdot \text{s}^{-1}$) and ratios between these values	1h	Every campaign
BTG discharge class	1 min	Every campaign except: 1 st salmon smolt campaign from April 11 th to 18 th and May 12 th to 15 th 2017, and 2 nd silver eel campaign from December 7 th 2018 to January 22 nd 2019 and April 20 th to May 7 th 2019.
Head loss through each sub-section of the bar rack (m)	1 min	2 nd salmon smolt campaign / silver eel campaigns



Figure 1: Picture of Pébernat fine-spaced rack during construction