

Supplementary Material

Risk v. reward for responsive movements by a highly mobile fish species in a flow-constrained and barrier-laden river

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Table S1. Table of morphology, tagging and release details, and movement summaries of golden perch in the Gwydir River system from February 2021 to October 2023.

ID	Date tagged	Sex	Length (mm)	Weight (g)	Release location	Cumulative distance (km)	River range (km)	Day in array	Number of movements
51052	19/4/21	F	355	690	Mehi	0	0	3	0
51053	19/4/21	F	450	2877	Mehi	0	0	2	0
51054	19/4/21	F	372	825	Mehi	25.58	28.4	41	6
51055	19/4/21	F	437	1595	Mehi	0	0	2	0
51056	19/4/21	F	350	671	Mehi	0	0	256	0
51057	19/4/21	M	357	678	Mehi	354.12	49.6	112	51
51058	19/4/21	F	339	566	Mehi	0	0	4	0
51059	20/4/21	F	378	780	Gwydir	2.46	2.5	407	1
51060	20/4/21	F	559	1870	Gwydir	345.57	68.7	285	44
51061	20/4/21	F	333	529	Gwydir	NA	NA	0	NA
51062	20/4/21	M	392	916	Gwydir	103.67	22.9	68	22
51063	20/4/21	F	372	780	Gwydir	474.49	62.2	570	81
51064	20/4/21	F	472	2057	Gwydir	56.1	5.2	75	18
51065	20/4/21	F	382	1021	Gwydir	137.23	20.5	60	23
51066	11/2/21	F	436	1257	Gwydir	79.71	34.5	151	15
51067	12/2/21	F	404	1003	Gwydir	141.83	18.1	64	28
51068	13/2/21	M	387	871	Gwydir	147.74	29.5	431	16
51069	11/2/21	M	436	1203	Gwydir	9.01	1.3	66	7
51070	11/2/21	F	510	2398	Gwydir	19.46	4.9	266	6
51071	12/2/21	F	387	1032	Gwydir	NA	NA	0	NA
51072	13/2/21	F	433	1286	Gwydir	73.81	13.9	286	25
51073	9/2/21	M	469	1750	Mehi	11.04	5.5	3	2
51074	9/2/21	F	440	1410	Mehi	2.51	2.5	3	2
51075	10/2/21	F	500	1798	Gwydir	59.14	15.4	18	7
51076	10/2/21	F	360	774	Gwydir	291.59	72.7	173	36

A 'movement' was defined as per our statistical analysis, a 24-h period where an individual was detected on multiple separate receivers.

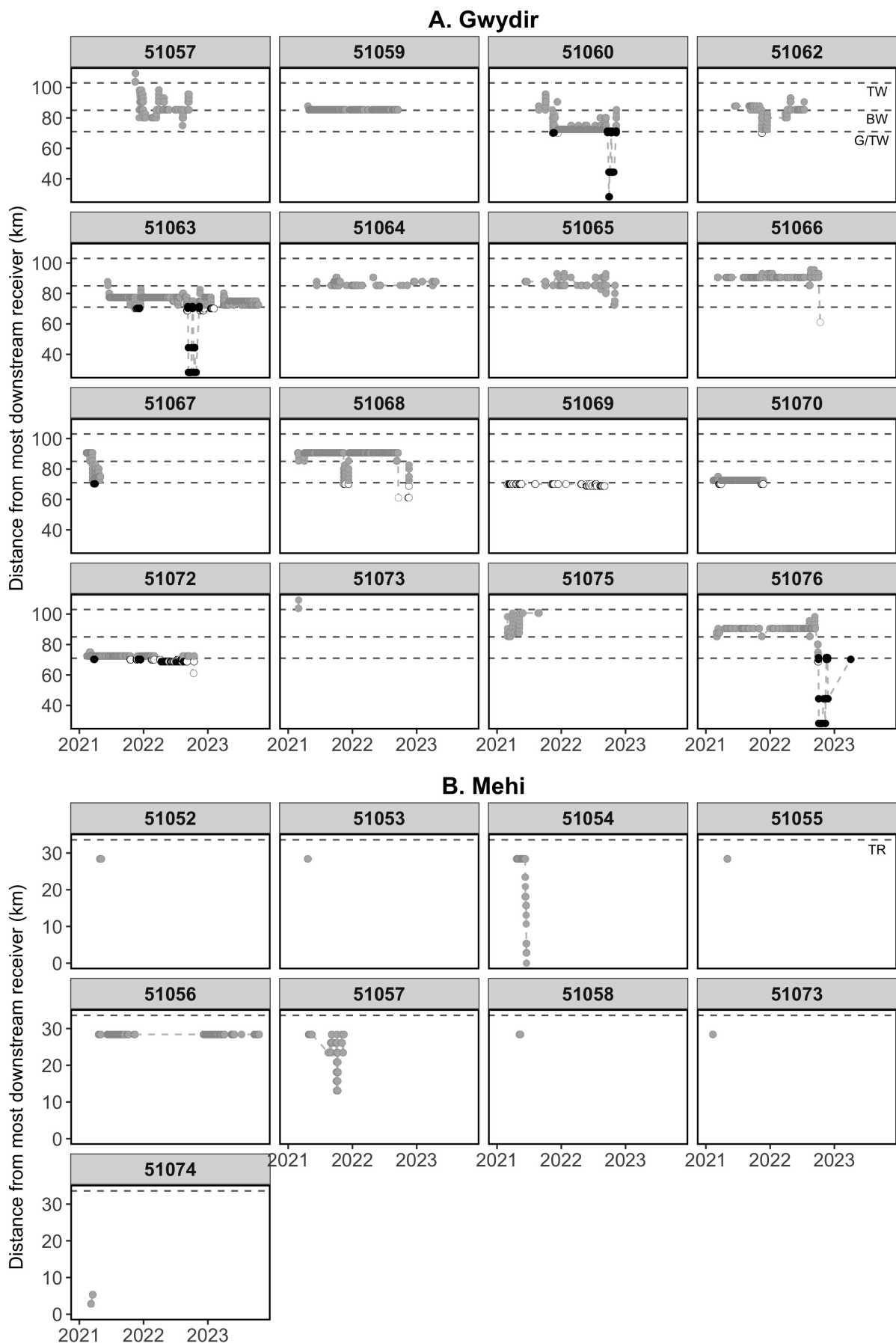


Fig. S1. Linear distance travelled from most downstream receiver for all detected golden perch (*Macquaria ambigua*) in the Gwydir and Mehi rivers for the recording period of February 2021 to October 2023. Dashed horizontal lines denote weir or regulator position (TW, Tareelaro Weir; BW, Boolooroo Weir; G/TW, Gingham–Tyreel Weir; TR, Tareelaro Regulator). The Gingham and Tyreel weirs are located approximately equidistant down their respective tributaries. River position is denoted by colour (grey circles, Gwydir (A) – Mehi (B); black circles, lower Gwydir River; white circles, Gingham Watercourse).