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Marine and Freshwater Research

Supplementary Material

Movement patterns of Murray cod (*Maccullochella peelii*) and golden perch (*Macquaria ambigua*) in a northern Murray–Darling Basin dryland river

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Table S1. Flow metric values for pre-development (PD) and full development (FD) simulated daily discharge time series (1900–2022) at three stream gauge locations in the study area.

Location		Culgoa River at Brenda (GS 422015)		Condamine River at Brigalow (GS 422336A)		Balonne River at Weribone (GS 422213A)		Culgoa River at Brenda		Condamine River at Brigalow		Balonne River at Weribone
		Modelled flow scenario						Percentage difference between PD and FD				
Flow component and metric description		PD		FD		PD	FD	PD		FD		
Flow volume and variability												
Mean daily flow	Mean daily flow (ML day^{-1})	1730.2	747.7	1271.3	873.7	3272.2	2779.7	–56.8	–31.3	–15.1		
Variability	Coefficient of variation of mean daily flow	3.1	5.4	6.0	7.8	4.1	4.6	72.0	30.2	11.9		
High flows												
Magnitude	10th percentile flow (ML day^{-1})	4976.6	1098.9	1449.3	596.6	5787.3	3933.4	–77.9	–58.8	–32.0		
Frequency	Mean annual number of spells above the PD 10th percentile flow (*n* year^{-1})	2.1	0.9	3.7	2.3	3.2	2.8	–59.6	–39.7	–12.5		
Duration	Mean annual duration of spells above the PD 10th percentile flow (days)	18.1	12.5	8.9	7.6	10.9	10.2	–31.0	–14.3	–6.3		
Timing	Mean of annual Julian day of year of maximum flow (day)	64.2	76.8	59.0	59.0	63.5	64.1	19.6	0.0	0.9		
Low flows												
Magnitude	90th percentile flow (ML day^{-1})	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Frequency	Mean annual number of spells below the PD 90th percentile flow (*n* year^{-1})	2.8	2.8	5.7	7.0	2.9	4.5	2.3	23.0	52.5		
Duration	Mean duration of spells below the PD 90th percentile flow (days)	57.3	81.4	17.2	35.7	16.2	29.7	42.2	108.1	83.5		
Timing	Mean of annual Julian day of year of minimum flow (day)	54.5	34.8	51.5	39.8	48.9	56.5	–36.2	–22.7	15.6		
Rate of change in flow events												
Rise rate	Mean annual rate of positive changes in flow (ML day^{-1})	233.8	147.2	474.0	368.2	816.8	754.6	–37.0	–22.3	–7.6		
Fall rate	Mean annual rate of negative changes in flow (ML day^{-1})	144.6	91.8	252.8	199.7	577.5	535.8	–36.6	–21.0	–7.2		

The percentage difference in flow metrics between PD and FD modelled flow scenarios for each location are also shown. Flow metrics were calculated using the Time Series Analysis module of the River Analysis Package (www.toolkit.net.au).