Variation to the Seasonal Watering Plan 2022-23

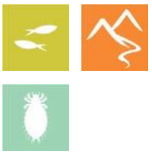
This variation was made to Section 5.4.1 Goulburn River system of the Seasonal Watering Plan 2022-23 by the VEWH Co-CEO's on 02 December 2022.

5.4.1 Goulburn River system

Amended text in Table 5.4.1 is shown in red.

Table 5.4.1 Potential environmental watering actions and objectives for the Goulburn River system

Potential environmental watering action	Expected watering effects	Environmental objectives
Goulburn River reach 1		
Year-round low flow (400-2,000 ML/day in reach 1)	• Maintain habitat for small-bodied native fish • Maintain adequate foraging habitat for platypus and reduce the risk of predation • Provide habitat and food for turtles • Wet and maintain riffles to provide habitat for biofilms and waterbugs • Additional benefits to reach 1 of the Goulburn River when flows delivered are above 800 ML/day: - scour fine sediment from the gravel bed and riffle substrate - maintain existing beds of in-channel vegetation - provide connection to off-stream wetland habitats, which increase food resources (waterbugs) available for fish and native animals	
Winter/spring fresh (one fresh of more than 5,000 ML/day for two days during July to September in reach 1)	• Encourage female platypus to select a nesting burrow higher up the bank to reduce the risk of higher flow later in the year flooding the burrow when juveniles are present • Scour fine sediment from the gravel bed and riffle substrate • Maintain existing beds of in-channel vegetation	
Winter/spring off-stream habitat flow trial (one fresh of up to 6,000 ML/ day for three days during May to June 2023 in reach 1)	• Maintain off-stream habitat for small-bodied native fish and platypus • Scour fine sediment from the gravel bed and riffle substrate • Maintain existing beds of in-channel vegetation • Connect lower Goulburn River wetlands and anabranches to the river channel	
Goulburn River reach 4 and 5		
Year-round low flow (600-800 ML/day in reach 4 and 600-1,000 ML/day in reach 5)	• Provide slow, shallow habitat required for the recruitment of larvae/juvenile fish and habitat for adult small-bodied fish • Provide deep-water habitat for large-bodied fish • Submerge snags and littoral vegetation to provide habitat for fish and	

	waterbugs and a substrate for biofilms to grow • Provide habitat and food for turtles • Maintain habitat for aquatic vegetation and water the root zone of low-bank vegetation • Vary flow within a specified range to encourage plankton production for food, disrupt biofilms and maintain water quality • Low, variable flow to enable vegetation to establish to protect against notching and bank erosion	
Winter/autumn fresh (one fresh of more than 7,300 ML/day for two days in reaches 4 and 5 during July to August 2022 and May to June 2023)	• Provide organic matter and carbon (e.g. leaf litter) to the channel • Provide connectivity to off-channel habitats and through the river for fish dispersal and greater food resources • Scour bed sediments to maintain pools and change in-channel complexity to improve habitat • Provide cues for platypus to nest higher up the bank • Provide sediment and plant propagules from tributary inflows after large rain events to encourage the establishment of new plants • Inundate and reduce terrestrial vegetation on low banks and trigger the recruitment of native, flood-tolerant streamside vegetation • Improve waterbug habitat and food availability by scouring fine sediments	
Pass a portion of the natural tributary flow in the mid-Goulburn to reaches 4 and 5 when flow in reach 3 is above 4,000 ML/day (1,000-5,000 ML/day in reaches 4 and 5 during May and October)	• Provide organic matter and carbon (e.g. leaf litter) to the channel • Transport and deposit seed, sediment and plant propagules on the riverbank	
Early-spring fresh (one fresh of up to 10,500 ML/day with more than seven days above 7,300 ML/day during September and October in reaches 4 and 5)	• Provide organic matter and carbon (e.g. leaf litter) to the channel • Provide connectivity to off-channel habitats and through the river for fish dispersal and greater food resources • Scour bed sediments to maintain pools and change in-channel complexity for improved habitat • Increase soil moisture in banks to improve the condition of existing native vegetation • Provide sediment and plant propagules from tributary inflows after large rain events to encourage the establishment of new plants • Inundate and reduce terrestrial vegetation on low banks and trigger the recruitment of native flood-tolerant streamside vegetation • Improve waterbug habitat and food availability by scouring fine sediments and biofilms from hard substrates	
Late-spring fresh (one fresh of more than 6,000 ML/day for two days during November and December in reaches 4 and 5) 	• Stimulate spawning of golden and silver perch • Scour bed sediments to maintain pools and change in-channel complexity for improved habitat • Improve waterbug habitat and food availability by scouring fine sediments and biofilms from hard substrates	

Autumn fresh (one fresh of more than 5,700 ML/ day for two to five days during March and May in reaches 4 and 5)	• Cue fish to move into and through the system to increase their abundance and dispersal • Scour bed sediments to maintain pools, and change in-channel complexity for improved habitat • Increase soil moisture in banks for existing vegetation maintenance • Scour old biofilm from hard substrates to allow new biofilm growth to improve food and habitat for macroinvertebrates	
Slow recession of unregulated flow or releases from Goulburn Weir (~~below 3,000 ML/day in summer/autumn and~~ from below 6,000 ML/ Day year-round ~~in winter/spring~~ in reaches 4 and 5)	• Minimise the risk of bank erosion associated with a rapid reduction in the water level • Transport and deposit seed, plant propagules and sediment on the riverbank • Minimise the risk of hypoxic blackwater after natural events