

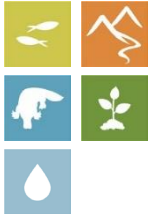
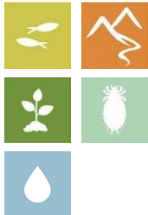

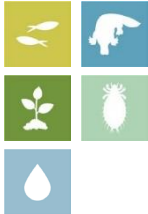


## Variation to the Seasonal Watering Plan 2020-21

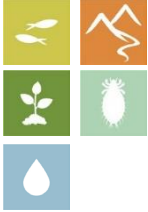
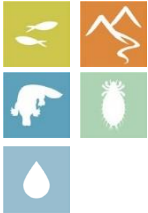
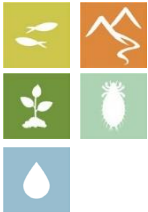




This variation was made to Section 5.7.1 Loddon River system of the Seasonal Watering Plan 2020-21 by the VEWH Commission on 26 May 2021.


### 5.7.1 Loddon River system

Amended text in Table 5.7.1 is shown in red.

**Table 5.7.1 Potential environmental watering actions and objectives for the Loddon River system**

Potential environmental watering action	Functional watering objectives	Environmental objectives
<b>Loddon River (targeting reach 4)</b>		
Summer/autumn fresh (one to three freshes of 50–100 ML/day for three to four days during December to May) <sup>1</sup>	<ul style="list-style-type: none"> <li>Flush fine sediment from hard surfaces</li> <li>Increase the water level, to promote the growth of fringing emergent macrophytes</li> <li>Increase connectivity to promote the local movement of fish and platypus including juvenile dispersal in autumn</li> <li>Freshen water quality and re-oxygenate pools</li> </ul>	
Winter/spring high flow (one high flow of 450–750 ML/day for six to 10 days during August to November) <sup>2</sup>	<ul style="list-style-type: none"> <li>Scour accumulated sediment from pools and scour biofilms</li> <li>Flush accumulated organic matter from the bank and benches, to increase productivity and reduce the risk of a hypoxic blackwater event in summer</li> <li>Increase the wetted area, to promote the recruitment and growth of streamside and emergent vegetation</li> <li>Stimulate native fish movement and breeding</li> </ul>	
Summer/autumn low flow (25–50 ML/day during December to May) <sup>3</sup> 	<ul style="list-style-type: none"> <li>Maintain an adequate depth in pools for aquatic plants and to provide habitat for waterbugs, fish and rakali (water rats)</li> <li>Provide continuous flow through the reach, to maintain water quality</li> <li>Maintain connecting flows to support in-stream and fringing non-woody vegetation</li> </ul>	
Winter/spring low flow (50 <sup>4</sup> –100 ML/day during June to November)	<ul style="list-style-type: none"> <li>Increase the water depth for fish, platypus and rakali (water rats) dispersal and to provide foraging habitat</li> <li>Prevent silt and fine sediment settling on submerged wood and other hard surfaces</li> <li>Water the native fringing bank vegetation and prevent the growth of exotic terrestrial plants in the river channel</li> </ul>	
Autumn high flow (one high flow of 400 ML/day for six to 10 days during March to May)	<ul style="list-style-type: none"> <li>Trigger and facilitate the upstream movement of golden perch, silver perch and Murray cod older than one year</li> <li>Facilitate platypus dispersal</li> </ul>	

Potential environmental watering action	Functional watering objectives	Environmental objectives
<b>Serpentine Creek<sup>5</sup></b>		
Summer/autumn fresh (one to three freshes of 30–40 ML/day for one to three days during December to May)	<ul style="list-style-type: none"> <li>Maintain the channel form by inundating benches</li> <li>Flush fine sediment and scour biofilms, to replenish the food supply</li> <li>Transport organic matter that has accumulated in the channel</li> <li>Provide flow variability to maintain the diversity of fringing vegetation</li> <li>Wet exposed woody habitat for waterbugs and provide a sufficient depth of water and variability of flow to maintain microbial biofilms</li> <li>Freshen water quality by diluting salt and oxygenating pools</li> </ul>	
Winter/spring fresh (one fresh of 40–150 ML/day for two days during August to November)	<ul style="list-style-type: none"> <li>Maintain the channel form and scour pools</li> <li>Provide connectivity for fish and waterbugs to access different habitat areas</li> <li>Transport organic matter that has accumulated in the channel, to increase productivity and reduce the risk of a hypoxic blackwater event in summer</li> <li>Provide a cue for adult platypus to construct burrows above the higher water level</li> </ul>	
Summer/autumn low flow (10–20 ML/day during December to May)	<ul style="list-style-type: none"> <li>Provide flow variability to prevent notching of riverbanks</li> <li>Provide connectivity between pools to allow the dispersal of small-to-medium-bodied native fish</li> <li>Wet exposed roots, leaf packs and woody debris, to provide habitat for aquatic animals</li> <li>Provide sufficient flow to maintain water quality by oxygenating pools</li> <li>Maintain foraging habitat for platypus</li> <li>Maintain the wetted area to support in-stream aquatic vegetation (such as water ribbons, eel weed and milfoil)</li> </ul>	
Winter/spring low flow (20–30 ML/day during June to November)	<ul style="list-style-type: none"> <li>Maintain spawning habitat for native fish</li> <li>Wet exposed roots, woody debris, emergent vegetation and leaf packs, to provide habitat for aquatic animals</li> <li>Maintain water quality by preventing stagnation</li> <li>Provide flow variability, to prevent notching of riverbanks and maintain diversity of fringing vegetation</li> <li>Provide a sufficient depth of water and variability of flow to maintain microbial biofilms</li> </ul>	
<b>Pyramid Creek and Loddon River (reach 5)</b>		
Spring high flow (one high flow of 700 ML/day for 10 days during September to October)	<ul style="list-style-type: none"> <li>Trigger the migration, spawning and recruitment of native fish species including Murray cod</li> <li>Maintain connectivity between habitats and improve water quality</li> </ul>	
Autumn/winter low flow (90–300 ML/day during May to August)	<ul style="list-style-type: none"> <li>Maintain connectivity between pools and provide habitat for fish and waterbugs outside of the irrigation season</li> <li>Improve water quality by reducing salinity levels</li> <li>Enhance the wetted area to maintain and promote the growth of fringing emergent (non-woody) vegetation along the lower banks of the channel</li> <li>Redistribute fine sediment on benches and bars</li> </ul>	
Autumn high flow (up to one high flow of 700–900 ML/day)	<ul style="list-style-type: none"> <li>Trigger the migration, spawning and recruitment of native fish species including Murray cod</li> </ul>	

Potential environmental watering action	Functional watering objectives	Environmental objectives
for 10 days during March to May)	<ul style="list-style-type: none"> <li>Facilitate the upstream movement of golden perch, silver perch and Murray cod older than one year</li> <li>Maintain connectivity between habitats and improve water quality</li> <li>Facilitate platypus dispersal</li> </ul>	

1 The recommended magnitude and duration may be increased if needed to prevent a decline in oxygen levels.

2 Due to the potential wetting of private land, environmental flows above 450 ML per day in reach 4 will not be provided without the agreement of landholders who could potentially be affected.

3 Recommended magnitude may be increased if needed to prevent adverse declines in oxygen levels.

4 Winter/spring low flow of 50 ML per day is below the passing flow magnitude and will result in the VEWH banking passing flows savings, for use in other potential watering actions.

5 Flows in Serpentine Creek will be allowed to either return to the Loddon River or continue down Pennyroyal/Bannacher Creek or Nine Mile Creek with the agreement of landholders.