


















Variation to Tables 5.2.15 and 5.2.16 of the Seasonal Watering Plan 2021-22

Proposed changes are shown in red text.

5.2.6 Lindsay, Mulcra and Wallpolla islands

Table 5.2.15 Potential environmental watering actions, expected watering effects and associated environmental objectives for the Lindsay, Mulcra and Wallpolla islands

Potential environmental watering action	Expected watering effects	Environmental objectives
Lindsay Island – Mullaroo Creek		
Year-round low flow (minimum of 600 ML/day)	<ul style="list-style-type: none"> Maintain fast-flowing habitat for native fish (such as Murray cod, silver perch and golden perch) Maintain habitat for aquatic vegetation and soil moisture to maintain the condition of streamside vegetation 	 
Spring high-low flow (1,200 ML/day for three months during September to November)	<ul style="list-style-type: none"> Increase the extent and velocity of fast-flowing water habitat to cue movement and spawning and improve recruitment opportunities for native fish Provide improved fish passage between Mullaroo Creek and the Murray River via the Mullaroo Creek regulator fishway 	
Lindsay Island – Lindsay River		
Winter/spring/summer low flow via the southern regulator (50 ML/ day for six months during July to December)	<ul style="list-style-type: none"> Provide temporary flowing water to connect pools and support dispersal, spawning and recruitment opportunities for native fish Wet the substrate and debris (snags) close to the bank to promote the growth of biofilms, which provide a food source for animals higher in the food chain Maintain bank soil moisture to support the growth of streamside vegetation 	  
Winter/spring/summer low flow via the northern regulator (95 ML/ day for six months during July to December)		
Lindsay Island wetlands		
Crankhandle (top-up in spring)	<ul style="list-style-type: none"> Inundate the margins of the wetland to provide foraging and breeding opportunities for frogs, reptiles and waterbirds Provide conditions for lake bed herbaceous plants to grow in the drying phase after watering Increase soil moisture to maintain and improve the condition of streamside vegetation, particularly lignum Stimulate the growth of aquatic vegetation 	   
Lake Wallawalla (partial to complete fill in winter/spring)	<ul style="list-style-type: none"> Provide shallow-water habitat, open-water habitat and shoreline habitat to create foraging opportunities for waterbirds Stimulate the release of carbon and nutrients to increase the productivity of the floodplain food web, to increase the growth rate of yabbies Provide conditions for lake bed herbaceous plants to grow in the drying phase after watering Increase soil moisture to maintain and improve the condition of streamside vegetation, particularly river red gum Provide roosting habitat over open water to support breeding colonial nesting birds 	   

Potential environmental watering action	Expected watering effects	Environmental objectives
Lindsay-Mullaroo connector (fill in autumn spring)	<ul style="list-style-type: none"> Provide shallow-water habitat to provide refuge (if conditions are dry in the next 2-3 years) and feeding habitat for frogs and waterbirds Provide conditions for lake bed herbaceous plants and semi-aquatic plants to grow in the littoral zone in the drying phase after watering Maintain habitat for aquatic vegetation and provide soil moisture to maintain and improve the condition of river red gums and black box 	 
Scotties Billabong (fill in spring)		
Stockyards (fill in autumn)		
Websters Lagoon (fill in spring)	<ul style="list-style-type: none"> Provide a connection between Websters Lagoon and the Murray River to allow the exchange of carbon, nutrients and fish between the wetland and the river Provide conditions for lake bed herbaceous plants and semi-aquatic plants in the littoral zone to grow during the drying phase after watering Provide variable water levels in the littoral zone to provide feeding habitat for shorebirds Provide open-water habitat as a refuge (if conditions are dry in the next 2-3 years) and feeding and breeding habitat for waterbirds 	   
Wetland 33 (top-up in spring)	<ul style="list-style-type: none"> Provide shallow-water habitat to provide feeding habitat for frogs, reptiles and waterbirds Maintain water of sufficient depth to encourage nesting waterbirds to complete the fledgling process 	  
Mulcra Island – Potterwalkagee Creek		
Spring low flow via the Stony Crossing regulator (115-280 ML/day for three months during September to November)	<ul style="list-style-type: none"> Provide temporary flowing water to connect pools and support dispersal, spawning and recruitment opportunities for native fish Wet the substrate and debris (snags) close to the bank to promote the growth of biofilms, which provide a food source for animals higher in the food chain Maintain soil moisture to maintain the condition of streamside vegetation 	  
Spring low flow via the upper Potterwalkagee Creek regulator (15-145 ML/day for three months during September to November)		
Winter/spring overbank flow via the Stony Crossing regulator (470 ML/day for 4 months during August to November)	<ul style="list-style-type: none"> Provide a connection between Potterwalkagee Creek and the floodplain to allow the exchange of nutrients and carbon between the floodplain and the Murray River system Provide off-channel habitat for small-bodied fish to feed and breed 	 
Winter/spring overbank flow via the upper Potterwalkagee Creek regulator (420 ML/day for 4 months during August to November)		
Mulcra Island wetlands		

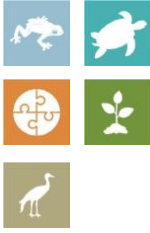
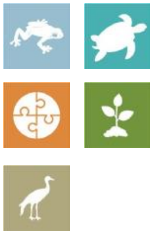




<p>Mulcra Horseshoe (fill in spring)</p>	<ul style="list-style-type: none"> • Provide shallow and open-water habitat to create foraging and breeding opportunities for waterbirds • Provide shallow-water habitat to provide refuge (if conditions are dry in the next 2-3 years) and feeding habitat for frogs and turtles • Stimulate the growth of emergent, aquatic and streamside vegetation • Provide moisture for lake bed herbaceous plants to grow during the drying phase of the wetland • Stimulate the release of carbon and nutrients to increase the productivity of the floodplain food web 	
<p>Mulcra Island floodplain (floodplain inundation in spring)</p>	<ul style="list-style-type: none"> • Provide shallow- and open-water habitat to create foraging and breeding opportunities for waterbirds • Provide shallow-water habitat to provide feeding habitat for frogs and turtles • Increase soil moisture to maintain and improve the condition of streamside and floodplain vegetation, specifically river red gum, black box and lignum • Stimulate the release of carbon and nutrients from the sediment to increase the productivity of the floodplain food web • Provide a connection to the Murray River to allow the exchange of carbon and nutrients between the floodplain and the river 	
<p>Wallpolla island</p>		
<p>Finnigans Creek (low flow in spring)</p> 	<ul style="list-style-type: none"> • Provide connections between Wallpolla Horseshoe and Finnigans Creek to allow the dispersal of stocked native fish from Wallpolla East to Finnigans Creek and eventually to the Murray River via Wallpolla Creek • Provide variable water levels in the littoral zone to promote the growth of aquatic vegetation and increase soil moisture for streamside vegetation, particularly river red gums • Provide shallow-water habitat to provide refuge (if conditions are dry in the next 2-3 years) and feeding habitat for wetland-dependant species including frogs and waterbirds 	
<p>Wallpolla Horseshoe Lagoon (partial or complete fill in spring/autumn)</p> 	<ul style="list-style-type: none"> • Provide connections between Wallpolla Horseshoe and Finnigans Creek to allow the dispersal of stocked native fish from Wallpolla East to Finnigans Creek and eventually to the Murray River via Wallpolla Creek • Wet/drown river red gum saplings in the inlet channel to Wallpolla Horseshoe to limit their coverage • Increase soil moisture to maintain and improve the condition of streamside and vegetation, specifically river red gum • Provide suitable breeding conditions for waterbirds • Provide permanent habitat for fish in the wetland • Provide shallow- and open-water habitat to create foraging and breeding opportunities for frogs and turtles • Provide the conditions for lake bed herbaceous plants and semi-aquatic plants to grow in the littoral zone during the drying phase after watering 	

Table 5.2.16 Potential environmental watering for Lindsay, Mulcra and Wallpolla islands under a range of planning scenarios

Planning scenario	Drought	Dry	Average	Wet
Expected river conditions	<ul style="list-style-type: none"> Year-round low flow in the Murray River and no natural floodplain wetting Weir pools will be maintained at full supply level in winter and drawn down below full supply level during spring, summer and autumn Substantial wetland drying will occur 	<ul style="list-style-type: none"> Rare high-flow events in the Murray River and no natural floodplain wetting Weir pools will be raised in winter and spring and drawn down below full supply level in summer and autumn Substantial wetland drying will occur 	<ul style="list-style-type: none"> Short periods of high flow, most likely in late winter/spring, providing minor wetting of the floodplain Weir pool levels will be raised in winter/spring and drawn down in summer/autumn 	<ul style="list-style-type: none"> Long periods of high flow, with major spills from storages resulting in widespread wetting of the floodplain and wetting of most wetlands Weirs would be removed to allow the passage of natural flow
Lindsay Island				
Potential environmental watering – tier 1 (high priorities) ¹	<ul style="list-style-type: none"> Year-round low flow (Mullaroo Creek) Spring low flow (Mullaroo Creek) Stockyards (fill in autumn) Websters Lagoon (fill in spring) 	<ul style="list-style-type: none"> Year-round low flow (Mullaroo Creek) Spring low flow (Mullaroo Creek) Winter/spring/summer low flow (Lindsay River via the north and south regulator) Crankhandle (top-up in spring) Lake Wallawalla (partial to complete fill in winter/spring) Lindsay-Mullaroo connector (fill in autumn spring) Scotties Billabong (fill in spring) Stockyards (fill in autumn) Websters Lagoon (fill in spring) 	<ul style="list-style-type: none"> Year-round low flow (Mullaroo Creek) Spring low flow (Mullaroo Creek) Winter/spring/summer low flow (Lindsay River via the north and south regulator) Crankhandle (top-up in spring) Lake Wallawalla (partial to complete fill in winter/spring) Lindsay-Mullaroo connector (fill in autumn spring) Scotties Billabong (fill in spring) Stockyards (fill in autumn) Websters Lagoon (fill in spring) 	<ul style="list-style-type: none"> Year-round low flow (Mullaroo Creek) Spring low flow (Mullaroo Creek) Winter/spring/summer low flow (Lindsay River via the north and south regulator) Crankhandle (top-up in spring) Lake Wallawalla (partial to complete fill in winter/spring) Lindsay-Mullaroo connector (fill in autumn spring) Scotties Billabong (fill in spring) Stockyards (fill in autumn) Websters Lagoon (fill in spring)
Potential environmental watering – tier 2 (additional priorities)	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Wetland 33 (top-up in spring) 	<ul style="list-style-type: none"> Wetland 33 (top-up in spring) 	<ul style="list-style-type: none"> Wetland 33 (top-up in spring)
Possible volume of water for the environment required to achieve objectives ²	<ul style="list-style-type: none"> 800 ML (tier 1) 	<ul style="list-style-type: none"> 9,000 ML (tier 1) 50 ML (tier 2) 	<ul style="list-style-type: none"> 13,000 ML (tier 1) 50 ML (tier 2) 	<ul style="list-style-type: none"> 0-6,000 ML (tier 1)
Mulcra Island				

Planning scenario	Drought	Dry	Average	Wet
Potential environmental watering – tier 1 (high priorities) ¹	<ul style="list-style-type: none"> Mulcra Horseshoe (fill in spring) 	<ul style="list-style-type: none"> Spring low flow (Potterwalkagee Creek via Stony Crossing and upper Potterwalkagee Creek) Mulcra Horseshoe (fill in spring) 	<ul style="list-style-type: none"> Overbank flow (Potterwalkagee Creek via Stony Crossing and upper Potterwalkagee Creek) Mulcra Horseshoe (fill in spring) Mulcra floodplain inundation (floodplain inundation in spring) 	<ul style="list-style-type: none"> Spring low flow (Potterwalkagee Creek via Stony Crossing and upper Potterwalkagee Creek) Overbank flow (Potterwalkagee Creek via Stony Crossing and upper Potterwalkagee Creek) Mulcra Horseshoe (fill in spring) Mulcra floodplain inundation (floodplain inundation in spring)
Possible volume of water for the environment required to achieve objectives ³	• 1,500 ML (tier 1)	• 1,900 ML (tier 1)	• 3,300 ML (tier 1)	• 0-3,300 ML (tier 1)
Wallpolla Island				
Potential environmental watering – tier 1 (high priorities) ¹	Wallpolla Horseshoe (partial or complete fill in spring and autumn)	<ul style="list-style-type: none"> Wallpolla Horseshoe (partial or complete fill in spring and autumn) Finnigans Creek (low flow in spring) 	<ul style="list-style-type: none"> Wallpolla Horseshoe (partial or complete fill in spring and autumn) Finnigans Creek (low flow in spring) 	<ul style="list-style-type: none"> Wallpolla Horseshoe (partial or complete fill in spring and autumn) Finnigans Creek (low flow in spring)
Possible volume of water for the environment required to achieve objectives	400 (tier 1)	1,200 (tier 1)	1,200 (tier 1)	0-1,200 (tier 1)

- 1 Tier 1 environmental watering at Lindsay, Mulcra and Wallpolla islands is not classified as tier 1a or tier 1b, because the water available to use is shared across various systems, and it is not possible to reliably determine supply specifically available for the islands.
- 2 These estimates include the use of water for the environment for Mullaroo Creek, Lindsay River and the Lock 7 weir pool. Water for the environment used at these sites may be accounted for in Victoria or New South Wales.
- 3 The estimates include the use of water for the environment for Potterwalkagee Creek, Mulcra Island and the Lock 8 weir pool. Water for the environment used at these sites may be accounted for in Victoria or New South Wales.