

5.2.2 Gunbower Creek and Forest

Variation to the Seasonal Watering Plan 2017-18

This variation was made to the Gunbower Creek and Forest section (Table 5.2.4 and Table 5.2.5) on pages 121 and 123 of the seasonal watering plan. Please note the amended text in red below.

Table 5.2.4 Potential environmental watering actions and objectives for Gunbower Creek and Forest

Potential environmental watering	Environmental objectives
Gunbower Forest	
Reedy Lagoon and Black Swamp (fill in autumn/winter if the wetlands have dried completely)	<ul style="list-style-type: none"> Reduce the number of carp in permanent wetlands Maintain/enhance the health and resilience of vegetation communities in permanent wetlands Maintain suitable feeding, breeding and refuge habitat for waterbirds including colonial nesting species
Reedy Lagoon and Black Swamp (fill in winter/spring and provide top-ups if significant bird breeding event occurs)	<ul style="list-style-type: none"> Maintain the health and resilience of vegetation communities in permanent wetlands Maintain suitable feeding and refuge habitat for waterbirds Support a significant bird breeding event if one is triggered naturally
Reedy Lagoon and Black Swamp (top-ups in autumn/winter)	<ul style="list-style-type: none"> Maintain the health and resilience of vegetation communities in permanent wetlands Maintain suitable feeding and refuge habitat for waterbirds
Winter/spring fresh in Yarran Creek (variable flow rates and duration based on unregulated flows in the River Murray)	<ul style="list-style-type: none"> Provide connectivity between Gunbower Creek and River Murray, through Yarran Creek and Shillinglaws regulators, to increase flowing habitat for the lateral movement of native fish, turtles and seed propagules Provide migration and spawning opportunities for native fish
Extend natural flooding in Gunbower Forest floodplain, floodrunners and wetlands (with variable flow rates to maintain appropriate inundation extent)	<ul style="list-style-type: none"> Improve the health of river red gum communities Maintain/enhance healthy populations of native fish in wetlands and increase opportunities for riverine fish to access floodplain resources Maintain suitable feeding, breeding and refuge habitat for waterbirds including colonial nesting species Support a significant bird breeding event if one is triggered naturally
Winter/Spring 2018 inundation of Gunbower Forest floodplain, floodrunners and wetlands (Commencing June 2018) (with variable flow rates to maintain appropriate inundation extent)	<ul style="list-style-type: none"> Improve the health of river red gum communities Maintain/enhance healthy populations of native fish in wetlands and increase opportunities for riverine fish to access floodplain resources Maintain suitable feeding, breeding and refuge habitat for waterbirds including colonial nesting species Support a significant bird breeding event if triggered naturally
Gunbower Creek	
Winter low flows (up to 400 ML/day between July-August and May-June)	<ul style="list-style-type: none"> Increase the survival rate and maintain the growth of native fish (such as Murray cod) by maintaining access to food and habitat resources

Spring/summer high flows (targeting a gradual increase in flows up to 700 ML/day including various periods of stable flows in August-January)	<ul style="list-style-type: none"> Increase the recruitment, growth and survival of native fish (such as Murray cod) by maintaining access to breeding habitat and food resources
Summer/autumn low flows (above 300 ML/day, between January to May)	<ul style="list-style-type: none"> Maintain the survival rate and growth of native fish by increasing access to food and habitat resources
Increased winter/spring low flows (up to 500 ML/day between July-August and May-June, if unregulated conditions occur in the River Murray)	<ul style="list-style-type: none"> Increase native fish recruitment by providing cues for migration and spawning, in line with larger flows in the River Murray Increase the survival rate and maintain the growth of native fish (such as Murray cod) by maintaining access to breeding habitat and food resources

Table 5.2.5 Potential environmental watering for Gunbower Creek and Forest under a range of planning scenarios

Planning scenario	Drought	Dry	Average	Wet
Expected river conditions	<ul style="list-style-type: none"> No natural inflows into Gunbower Forest 	<ul style="list-style-type: none"> Minor natural inflows into Gunbower Forest may occur in winter/spring 	<ul style="list-style-type: none"> Some natural inflows into Gunbower Forest are likely in winter/spring but unlikely to be significant 	<ul style="list-style-type: none"> Overbank flows are likely in winter/spring
Potential environmental watering - tier 1 (high priorities)	<ul style="list-style-type: none"> Reedy Lagoon and Black Swamp (autumn/winter fill) Gunbower Creek winter low flows Winter/spring (2018) inundation of Gunbower Forest floodplain, floodrunners and wetlands Gunbower Creek spring/summer high flows Gunbower Creek summer/autumn low flows 	<ul style="list-style-type: none"> Reedy Lagoon and Black Swamp (winter/spring) Gunbower Creek winter low flows Winter/spring (2018) inundation of Gunbower Forest floodplain, floodrunners and wetlands Gunbower Creek spring/summer high flows Gunbower Creek summer/autumn low flows 	<ul style="list-style-type: none"> Reedy Lagoon and Black Swamp (winter/spring) Gunbower Creek winter low flows Winter/spring (2018) inundation of Gunbower Forest floodplain, floodrunners and wetlands Gunbower Creek spring/summer high flows Gunbower Creek summer/autumn low flows Yarran Creek winter/spring fresh 	<ul style="list-style-type: none"> Reedy Lagoon and Black Swamp (winter/spring) Winter/spring (2018) inundation of Gunbower Forest floodplain, floodrunners and wetlands Yarran Creek winter/spring fresh Gunbower Creek winter low flows Gunbower Creek spring/summer high flows Gunbower Creek summer/autumn low flows
Potential environmental watering - tier 2 (lower priorities) ¹	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Yarran Creek winter/spring fresh Reedy Lagoon and Black Swamp (autumn/winter top-ups) 	<ul style="list-style-type: none"> Gunbower Creek winter/spring increased low flows Reedy Lagoon and Black Swamp (autumn/winter top-ups) 	<ul style="list-style-type: none"> Extension of natural inundation of Gunbower Forest floodplain, floodrunners and wetlands Gunbower Creek winter/spring increased low flows
Possible volume of environmental water required to meet objectives ^{2,3}	<ul style="list-style-type: none"> 28,000 ML (tier 1) N/A 	<ul style="list-style-type: none"> 28,400 ML (tier 1) 3,500 ML (tier 2) 	<ul style="list-style-type: none"> 31,000 ML (tier 1) 5,500 ML (tier 2) 	<ul style="list-style-type: none"> 33,500 ML (tier 1) 17,000 ML (tier 2)
Priority carryover requirements	<ul style="list-style-type: none"> 11,000 ML 	<ul style="list-style-type: none"> 12,000 ML 	<ul style="list-style-type: none"> 10,000 ML 	<ul style="list-style-type: none"> 8,000 ML

- ¹ *Tier 2 actions are lower-priority actions to be considered if water is available.*
- ² *Represents the estimated volume of water required to underwrite the losses associated with the delivery of consumptive water en route (except for discrete wetland watering actions).*
- ³ *Environmental water requirements for tier 2 are additional to tier 1 requirements.*