5.2.3 Central Murray wetlands

Variation to the Seasonal Watering Plan 2019-20

This variation was made to the Central Murray wetlands section of the *Seasonal Watering Plan 2019-20* by the VEWH Commission on 6 December 2019.

Third Reedy lake is a new site, not previously identified for environmental watering in 2019-20. The delivery of environmental water is sought to protect critical habitat for the threatened (and previously considered regionally extinct) southern purple-spotted gudgeon.

Please note the amended text in red below in Table 5.2.5 and Table 5.2.6 and new site included in Figure 5.2.3.

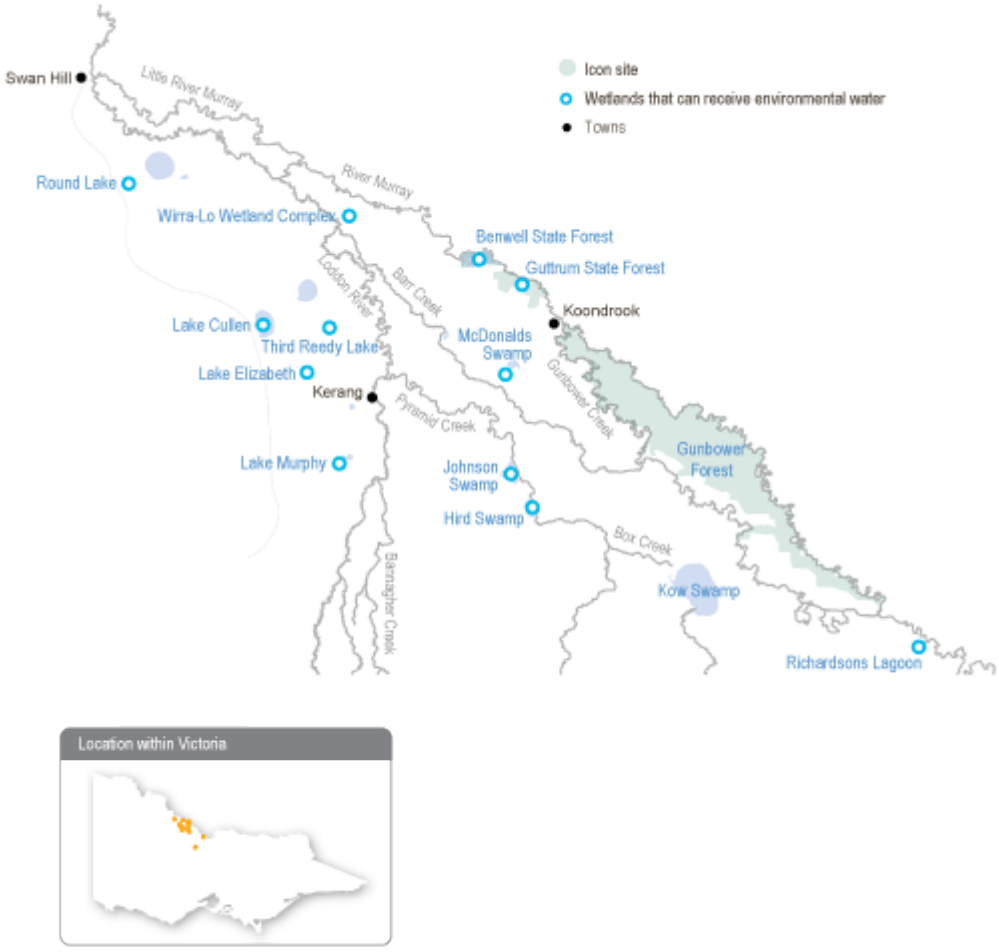

Figure 5.2.3 The central Murray wetlands

Table 5.2.5 Potential environmental watering actions and objectives for the central Murray wetlands

Potential environmental watering action	Functional watering objective	Environmental objective
Round Lake (top-ups as required to maintain water quality targets)	• Maintain salinity within 25,000–40,000 EC[1] to support suitable habitat and breeding conditions for Murray hardyhead and growing conditions for submerged aquatic plants	• Fish • Vegetation
Lake Elizabeth (top-ups as required to maintain water quality targets)	• Maintain salinity within 25,000–40,000 EC[1] to support suitable habitat and breeding conditions for Murray hardyhead and growing conditions for submerged aquatic plants • Provide permanent water as habitat for waterbirds	• Fish • Vegetation • Waterbirds
Wirra-Lo wetland complex – Duck Creek North, Duck Creek South, Lignum Swamp North and Brolga Swamp (fill in spring)	• Maintain the health of open woodland vegetation, lignum and other aquatic vegetation • Provide feeding and breeding habitat for growling grass frog and other frog species • Provide foraging habitat for shallow-wading waterbirds and mudflat specialists • Provide refuge and recruitment sites for freshwater turtles	• Amphibians • Turtles • Vegetation • Waterbirds
Wirra-Lo wetland complex – Red Gum Swamp (fill in spring)	• Maintain the health of existing red gum trees	• Vegetation
Wirra-Lo wetland complex – Bittern West and Bittern East wetlands (partial fill in spring)	• Support the growth of newly-established reed beds to create nesting habitat for Australasian bittern	• Birds • Vegetation
Guttrum Forest (fill in spring and autumn, with top-ups in summer if required to support waterbird breeding)	• Inundate the existing adult river red gums to support their growth and drown river red gum saplings in the open-water habitat • Promote the growth and re-establishment of aquatic and tall marsh vegetation • Maintain the depth of the wetland to support waterbird feeding and breeding	• Vegetation • Waterbirds • Aboriginal icon
Johnson Swamp (fill in spring – with through-flow to Pyramid Creek, with top-ups in summer/autumn to support bird breeding if required[2])	• Promote waterbird breeding and feeding • Restrict the growth of tall marsh vegetation by preventing otherwise favourable warm, shallow-water conditions • Promote the growth of aquatic herbland species • Provide refuge and recruitment sites for freshwater turtles • Provide carbon and nutrients to Pyramid Creek	• Birds • Connectivity • Turtles • Vegetation
McDonalds Swamp (partial fill in autumn)	• Promote the growth of planted and naturally recruited river red gums • Support the germination of aquatic vegetation • Promote winter feeding conditions for waterbirds	• Amphibians • Birds • Vegetation

Potential environmental watering action	Functional watering objective	Environmental objective
	and frogs	
Lake Cullen (top-up in spring, and as required to support waterbird breeding[2])	• Maintain waterbird refuge • Promote the growth and recruitment of submerged aquatic plants • Maintain water levels to support waterbird breeding	• Birds • Vegetation
Third Reedy Lake (fill in summer to support breeding of Southern purple-spotted gudgeon, top-up in autumn and winter as required)	• Maintain target water level (> 74.0m AHD) to support critical habitat and breeding for the Southern purple-spotted gudgeon	• Fish
Wetland drying		
Lake Murphy, Hird Swamp and Richardsons Lagoon will not be actively watered in 2019–20	• Prevent drowning existing trees in the bed of wetlands • Promote herbland species and establish fringing vegetation around the edge of each wetland • Reduce the extent of water-dependent invasive species (such as cumbungi) • Allow for oxidation of the soil (Richardsons Lagoon)	• Vegetation

Note

1 *EC stands for electrical conductivity, which is a measure of water salinity.*

2 *Top-ups to support waterbird breeding may occur if species of high conservation significance display breeding behaviour or nesting activity, or if large numbers of waterbirds have nests with live chicks.*

Table 5.2.6 Potential environmental watering for the central Murray wetlands under a range of planning scenarios

Planning scenario	Drought	Dry	Average	Wet
Expected catchment conditions	• Catchment run off and unregulated flows into the wetland are unlikely	• Some catchment run off and unregulated flows into the wetlands are possible, particularly in winter/spring	• Low-to-moderate catchment run off and unregulated flows into the wetlands are likely, particularly in winter/spring	• Catchment run off and unregulated flows into the wetlands may significantly contribute to water levels in some wetlands, particularly winter/spring
Potential environmental watering – tier 1 (high priorities)[1]	• Guttrum Forest (winter/spring) • Johnson Swamp • Lake Cullen • Lake Elizabeth	• Guttrum Forest (winter/spring) • Johnson Swamp • Lake Cullen • Lake Elizabeth	• Guttrum Forest (winter/spring) • Johnson Swamp • Johnson Swamp through-flow	• Guttrum Forest • Johnson Swamp • Johnson Swamp through-flow • Lake Elizabeth

	• Round Lake • Wirra-Lo wetland complex (Brolga Swamp, Red Gum Swamp, Bittern West and Bittern East) • Third Reedy Lake	• Round Lake • Wirra-Lo wetland complex (Brolga Swamp, Red Gum Swamp, Bittern West and Bittern East) • Third Reedy Lake	• Lake Elizabeth • Round Lake • Wirra-Lo wetland complex (Brolga Swamp, Red Gum Swamp, Bittern West and Bittern East) • Third Reedy Lake	• Round Lake • Wirra-Lo wetland complex (Brolga Swamp, Red Gum Swamp, Bittern West and Bittern East) • Third Reedy Lake
Potential environmental watering – tier 2 (additional priorities)	• Johnson Swamp through-flow • McDonalds Swamp	• Guttrum Forest (autumn/winter) • Johnson Swamp through-flow • McDonalds Swamp	• Guttrum Forest (autumn/winter) • Lake Cullen	• Lake Cullen
Possible volume of water for the environment required to achieve objectives[2]	• 18,200 ML (tier 1) • 600 ML (tier 2)	• 18,200 ML (tier 1) • 1,000 ML (tier 2)	• 10,800 ML (tier 1) • 400 ML (tier 2)	• 10,800 ML (tier 1) • 0 ML (tier 2)
Priority carryover requirements	• 2,300–2,400 ML			

Notes

1 *It is not possible to distinguish between tier 1a and 1b demands for the Central Murray wetlands as there is no individual entitlement (and therefore no expected supply volume) for them. Rather the water is shared and prioritised across several systems. Wetlands are listed in priority order for tier 1 and tier 2 under all climate scenarios.*

2 *Water for the environment requirements for tier 2 actions are additional to tier 1 requirements.*