Desert Rivers – *the 'boom and bust' country*

The Lake Eyre Basin occupies one-seventh of the Australian continent. It is a wide and shallow basin, created by forces deep in the Earth's mantle. Its long river systems capture monsoonal rains from the north and deliver them to South Australia's arid lands.


Gibber plain near Koonchera Waterhole

As you travel through this area the variety of landscapes is inspiring. Vast open rangelands, lignum swamps, cracking-clay plains, and rich, red, stony gibber plains merge into lines of yellow sand dunes glistening in the distance.


Warburton River

Lake Eyre Basin rivers are ranked as the most highly variable in the world, and flow toward (only periodically reaching) Kati Thanda–Lake Eyre.

When the floods from far north Queensland slowly make their way west to this parched land it is transformed into a system of flooded channels and floodplains amid a brilliant green mantle of lush clover, annual wild flowers and grasses.

The 'Boom'

From Birdsville to Goyder Lagoon the Diamantina main channel contains deep permanent waterholes that act as refuges during 'bust' times and provide important corridors for species movement during 'boom' times.

The spectacular explosion of life that floodwaters trigger as they flow through majestic arid river systems emphasises their unique and awe-inspiring nature.

The Diamantina and Warburton systems are transformed from seemingly lifeless, sparsely vegetated gibber and floodplains into a huge network of wetlands and flowing rivers supporting teeming waterbird populations and amazing prolific and diversified vegetation.


Lower Warburton River

The 'Bust'

The low average annual rainfall of 165mm, average maximum daily temperature of 30.5°C and the high mean annual evaporation rate of 3,358mm all take their toll.

Without regular flows and local rain some waterholes dry up – eventually fading into isolated saline pools.

Wetlands and clay floodplains dry out, most birds disperse as plants wither and die, insects vanish. Seeds become dormant and the land lies in wait for the next 'boom'.


Andrewilla Waterhole

Refuge waterholes, 'the freshwater arks' of survival

The most important aquatic refuges on the Diamantina in South Australia are Yammakira and Andrewilla waterholes – both are around 6m deep and 20km long. They last for up to two years, relying on annual flow from further up the catchment. These freshwater 'arks' become havens to which fish, birds and terrestrial animals retreat. As the rivers and creeks dry up further down the Warburton fewer fish and birds can tolerate the harsh and increasingly saline conditions.

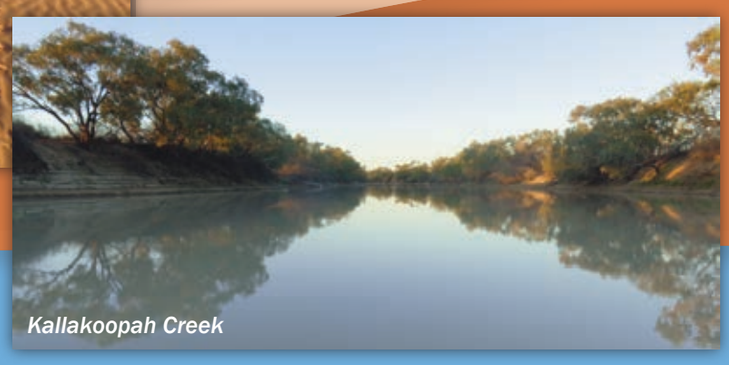
These important waterholes retain their depth because they are continually scoured out by fast flowing water constricted by the narrow, steep banks of the channel.

If we lose these 'ark refuge' sites from over exploitation we will lose species to extinction – a sobering thought indeed!


Koonchera dune and Goyder Lagoon wetlands

Rivers Run Free ...

The Diamantina's main channel to Goyder Lagoon, containing all the deep water refuges, receives flow every year. It is an unregulated, free flowing river system and is the third largest catchment of the Lake Eyre Basin. It stretches 1,000km from its source in Queensland to Kati Thanda-Lake Eyre, the gradient falls on average, 27cm every kilometre. By the time it reaches Kati Thanda-Lake Eyre the Diamantina is 15m below sea level, the lowest point on the continent.


Kallakoopah Creek

Maintaining the natural flow regime is critical!

Australian Government

Government of South Australia
South Australian Arid Lands Natural Resources Management Board

Natural Resources
SA Arid Lands

Photos courtesy of B.Enders, DEWNR and P.Katnich.