Leading scientist formulates rescue plan for the Coorong

A team of Adelaide scientists has proposed a bold plan to rescue South Australia's Coorong – the iconic wetland area at the mouth of the River Murray – by pumping highly concentrated brine from its stagnant south lagoon overland into the ocean and replacing it with less salty seawater from the Murray Mouth.

The University of Adelaide team is led by renowned ecologist Associate Professor David Paton who has forwarded the plan to the South Australian Government and a Federal Government Senate Enquiry.

Professor Paton says the pumping program would need to start in early 2009 and continue for several years to reduce the salinity to a level where 'key biodiversity assets could re-occupy the southern Coorong'.

'The key to recovering the Coorong is to get the salt out,' he adds. 'What is often not appreciated is that the salt levels are so high in the south lagoon that if even it was topped up with freshwater now, the resultant salinity would still be too high to allow recovery.'

The Ramsar-listed Coorong and Lower Lakes of the Murray once formed a unique mosaic of fresh, estuarine and hypersaline wetlands that nurtured vast numbers of water birds including ducks, swans, pelicans, terns, grebes, and migratory sandpipers, and endemic shorebirds such as stilts and avocets.

However, the Coorong has received virtually no freshwater flows from the Murray for at least six years, and in the last two years, water levels in the Lower Lakes have dropped well below sea-level – the first time this is known to have occurred.

Salinities in the southern Coorong are now 5–6 times that of seawater – much higher than the maximum level tolerated by the small hardyhead fish and chironomid larvae that were the main food source for water birds.

Professor Paton and his team developed the plan when they realised that the current water availability crisis afflicting the Murray-Darling Basin was unlikely to allow for the large environmental flow required to save the Coorong and Lower Lakes.

'At least 1000 gigalitres (GL) is required to fill the Lower Lakes before any water flows over the barrages into the Coorong,' he says. 'At present there is only 1850 GL of active storage in the entire Basin.'

Many bird species including the fairy tern are on the verge of disappearing from the Coorong's South Lagoon. Dan Rogers

Preliminary studies using hydrodynamic modelling to test the impact of pumping hypersaline water out of the Coorong by CSIRO's Dr Ian Webster show that salinity in the southern Coorong could be halved if, in addition to the pumping, the channel connecting the north and south lagoons at Parnka Point was deepened. A regulator could be used to adjust water levels to achieve ecological objectives.

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The South Australian Government is currently investigating the feasibility of the Coorong pumping proposal.

Professor Paton's team has also developed a plan to create a small freshwater refuge in the Lower Lakes between Goolwa and Clayton, which could be replenished by local runoff from the Mt Lofty Ranges in the absence of environmental flows from the Murray.

This plan also calls for the disconnection of Lake Albert from Lake Alexandrina to allow some River Murray allocation to be diverted to the Coorong. Lake Albert would become an ephemeral wetland, planted with reeds, samphires and ti-tree, after acid sulphate soils had been treated.

Paton believes these 'emergency measures' of dredging, pumping and flow modification via strategically placed weirs and regulators provide the best way of conserving the region's unique wetland systems for the future.

'None of them diminish the need to address the underlying cause of these systems collapsing – the over-allocation and extraction of water for human uses across the Murray-Darling Basin.

'But they do provide a safety net – an ability to keep essential elements of a fantastic wetland system for short periods during malevolent times while still allowing the system to recover if ever we return to providing the river with a truly sustainable environmental flow.'

● **Mary-Lou Considine**