

# Basin instinct

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Lake Eyre, some 100 kilometres North of Adelaide, Australia, could become a thriving centre of bio-saline agriculture and trade and industry if an ambitious macro-engineering project were to be implemented.

The Australian outback is well known for being arid or semi-arid. The climate across the continent is dominated by a subtropical high-pressure belt that keeps about three-quarters of its more than 3 million square kilometres mostly dry. Lake Eyre receives just 125 millimetres of rainfall annually and average annual pan-evaporation is almost 4000 mm. The lake and surrounding area, the Lake Eyre Basin, is an area of more than 1 million square kilometres but a mere 60,000 people live there.

Now, Viorel Badescu of the Candida Oancea Institute, at the Polytechnic University of Bucharest, in Romania and colleagues there and in the USA, have suggested a macro-engineering project that couples anti-evaporation measures with an inexpensive water transport system could bring brackish water from the coast and keep it there, allowing biosaline agriculture to thrive and communities to expand in this vast region. Moreover, sunshine is abundant making photovoltaic energy production appropriate for powering the [water pumps](#) and for driving development.

The team points out that plans have been mooted periodically for more than 150 years to stimulate growth across this part of Australia, but none has yet met with sufficient enthusiasm to be implemented. The team suggests that the low cost of their approach and the adoption of non-traditional agriculture could be the turning point for the Lake Eyre Basin.

The team describes their plan thus: "Lake Eyre is gradually filled to a higher level by controlling evaporation and by pumping seawater from the nearby ocean using cheap tensioned textile tubes. Most of the necessary energy could be produced by photovoltaics, in a very attractive application without electricity storage requirements. Eventually, [Lake Eyre](#) is to be lidded with a floating impermeable plastic cap or with buoyant hollow plastic balls that reduce evaporation."

"While Australia's decade-long drought seems to be reversing, freshwater supplies will always be limited in quantity on that vast continent," says team member Richard Cathcart of Geographos, based in Burbank, California. "So, biosaline agriculture is very likely to find increasing favour with farmers and because it would be necessary. Nature seems to have provided the perfect physiographic situation for our macro-project. More and more plants are being discovered to have the capability of adapting to saline-brackish water irrigation techniques," he adds.

**More information:** Badescu, V. et al. (2013). Macro-engineering Australia's Lake Eyre with imported seawater, *Int. J. Environment and Sustainable Development*, 12 (3) 264-284.

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