

CARDWELL BUCKINGHAM RECOMMENDATIONS

Jensen, A, Hoey, P, Kopli, P, Shepherd, R, Till, M & Weinert, M (1983). 'The effect of drainage on groundwater behaviour in Counties Cardwell and Buckingham, and the effect on the Coorong.' Report for the Minister of Water Resources.

2. Artificial surface drainage in the SE of SA has had no significant overall effect on the volume of fresh water inflow to the Coorong from the SE region.

There are no data to support claims that significant inflows of fresh water reached the Coorong via Salt Creek prior to drainage.

Current volumes of fresh water inflow¹ from the SE to the Coorong approximate pre -drainage conditions (pre-1864). In the period 1864 -1912, drainage activities enhanced inflow to the Coorong at Salt Creek. These flows may have coincided with floods in the River Murray which produced increases in fish and waterbird populations, leading local residents to associate flows in Salt Creek with higher fish and waterbird densities. From 1912 to 1972, continued construction of drains gradually reduced the artificially-enhanced southern inflows until the Coorong returned to a condition similar to the pre-1864 situation. There is evidence that the present state of the Coorong including high summer salinities and annual die-back of aquatic plants has hardly altered since the 1850s.

3. The major source of fresh water inflow for the Coorong is the River Murray via Lake Alexandrina and the barrages. Floods of sufficient volume (e.g. approximately every 10 years) are necessary at intervals to reduce the rising annual maximum salinities in the Coorong system. There are indications that increasing siltation and rising annual maximum salinity may both gradually change the Coorong ecosystem if flows from the River Murray continue at the present restricted level, particularly if high flood flows are infrequent.

Careful monitoring of both salinity and siltation is required to establish the potential impact and any feasible remedial action which may be necessary.

4. With the present state of knowledge, proposals to "freshen" the Coorong by introducing additional sources of fresh water (e.g. from Lake Albert) are not considered desirable, either economically or environmentally. A ten year moratorium on the implementation of such proposals is recommended, during which baseline environmental information should be gathered, in order to establish guidelines for management of the hydrological and biological systems in the Coorong.

5. Evidence suggests that the perceived deterioration of the Coorong, as described in the media and held by popular belief, is in fact a natural process and "remedial" management is not necessarily a desirable objective. There is a lack of baseline data to assess objectively the environmental impact of introducing artificially large volumes of relatively fresh water into the Coorong system.

With the present lack of knowledge, the introduction of additional fresh water to the Coorong system other than by natural inflows via the River Murray should be opposed on environmental grounds.