

THE ORD RIVER SCHEME

At the meeting of 2 September 1998, the Society heard from Bob Humphries, a graduate of the University of W.A. who completed his Ph.D in Canberra. His career has involved management of water resources and catchments (Canberra), estuaries (EPA, Perth), water resource management (Water and Rivers Commission). He is now Environment Manager for the W.A. Water Corporation with responsibility for 150 water harvesting locations including the Ord River Irrigation Scheme.

Bob gave a fairly detailed account of the Ord project and highlighted the environmental limitations of the area and the effects of introduced nutrients and pesticides. The currently irrigated area (Stage One) includes 2500 hectares irrigated on the Packsaddle Plain and a larger area on Ivanhoe Plain. In Stage Two it is proposed to irrigate land at East Mantinea, West Mantinea and Mantinea Loop (approx. 850 ha, 1500 ha and 1000 ha respectively). The irrigation infrastructure (channels and pumps) is developed by the Water Corporation, then handed over to a farmers' cooperative for management. From Lake Kununurra the main channel (M1) carries one million tonnes of water a day to irrigate sugar cane, cotton and horticultural crops. Because of the high water temperature (30°C) there is a huge growth of ribbon weed which is controlled in the channel by a very toxic herbicide. From the M1 water is pumped into supply channels then gravity fed into the cane fields.

Waste water from Kununurra has secondary sewage treatment before being fed into the M1 with high levels of nitrates and phosphates but is diluted 4000 to 1 by the irrigation water. Sugar cane is mechanically harvested with as much as 3% soil adherent which is separated during milling and the mud returned to the irrigation channel.

Residual water from irrigation is collected by drains and returned to the Ord River, along with 6- 7000 tonnes of silt per year. Silting of the channels is removed mechanically by excavators, one in the channel passing silt to another on the bank. Fish kills in the river from time to time have been caused by the insecticide Endosulphin draining from the cane fields, 0.2 pts/billion is toxic to fish. Endosulphin is banned from many irrigation areas but is still permitted in the Ord River Scheme.

As well as problems from nutrients and pesticides in the irrigation water the nature of the subsoil and consequent rise in the water table is a long term problem, worse in some areas than others. On the Ivanhoe Plain the water table is 30 metres below the surface and rises at 0.05 to 0.3 m/yr due to palaeo-channels of cobbles underlying the plain whereas drainage is poor on the edge of the Ivanhoe Plain where the water table rises 0.6 m/yr. As well as water soaking down from irrigated

areas there is substantial leakage from channels and drains. It is estimated that by the year 2015 most areas will have the water table less than 2 metres below the surface whereas at present it is 5-10 m down.

In Stage Two it is proposed to irrigate the Weaber Plain next but this is less favourable for drainage with saline water at a fairly shallow depth. Pumps would have to be used to keep the water table down to a reasonable level. The Ord River Dam, contrary to early predictions, is expected to last for about 200 years before it silts up.

Overall Bob gave a fairly positive picture of the Ord River Scheme but there are some quite serious environmental problems which will need to be addressed. The Environmental Protection Authority will have the power to enforce regulations to improve practices which have an adverse impact on the environment.

Loisette Marsh

Editor's note: It has not been possible for the speaker to check the above summary of his talk and the summary is therefore presented without correction of possible recording errors. It is noted that, in *The West Australian*, 31 October 1998, p. 44 (Classified Liftout) the Department of Resources Development invited applications to develop for tropical horticulture part, all, or in stages, the farming land at East and West Mantinea.