

the United National conference was put together by Mr Williams, with Mr Henk Suijendorp and Mr David Wilcox, of the Western Australian Department of Agriculture, using funds provided by the Commonwealth Department of Environment, Housing and Community Development.

Early in 1961, severe flooding by the Gascoyne River of the town of Carnarvon and of nearby vegetable and plantation crops focused attention on the river's arid catchment. The Western Australian government's early studies indicated that 60 years of grazing by sheep had seriously degraded the Gascoyne basin. A government report issued soon after the flooding recommended that steps should be taken to prevent further erosion and loss of vegetation.

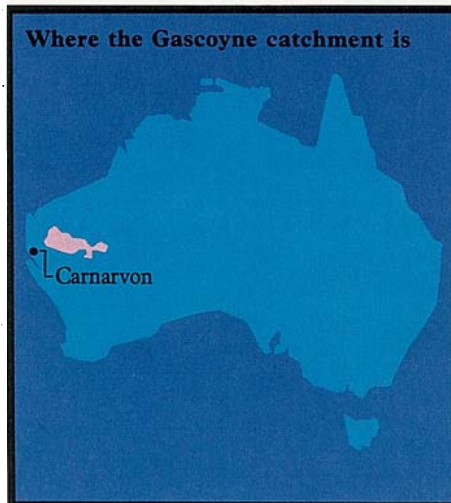
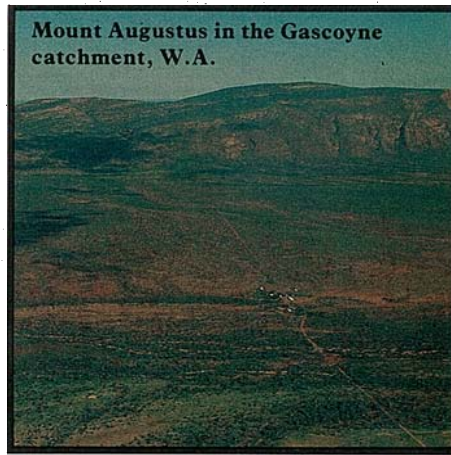
Another study, carried out in 1969 and 1970 by Mr Wilcox, and Mr Ed McKinnon of the Western Australian Department of Lands and Survey, described the catchment in detail in terms of its range types and their susceptibility to erosion. They did this for every property.

Their report stated that about 15% of the catchment was so badly eroded that it could become irreversibly damaged if it wasn't protected from grazing. A further 52% of the 64 000-sq.-km catchment was drastically degraded and would need careful management if it wasn't to go further downhill. Only 33% remained in an acceptable condition.

Mr Wilcox and Mr McKinnon found that much of the land still in an acceptable condition was hill country or short-grass country with poor natural productivity. Land capable of supporting the most sheep had suffered the most devastation.

They recommended that stock numbers on the Gascoyne catchment should be reduced to nearly half their level—a suggestion that was not well received by the local graziers. Nevertheless, the State government accepted the report, and negotiated agreements with every property-owner on how the stock reductions should take place over a 10-year period. The agreements also specified the degraded areas from which stock should be either partly or wholly excluded. As well as trying to regulate stock numbers, the State government put in monitoring sites to check on the recovery of the vegetation once grazing had ceased.

Mr Williams doubts that the situation in the Gascoyne catchment differs much from that elsewhere in the Australian arid zone. Certainly the long-term trend towards all properties carrying less stock



corresponds to trends throughout the zone.

Drought reserve gone

Both in the Gascoyne basin and elsewhere, stock numbers and their breeding performance have fluctuated greatly over short periods and have seemed closely related to the rainfall. This suggests that the pastoral industry in arid areas now depends on short-lived plants. In other words, desirable long-lived forage plants (some of which may live for more than 100 years, and provide the backstop during long droughts) are well on the way to being eaten out.

Evidence from the Gascoyne basin and other parts of the Australian arid zone suggests that the desirable long-lived species will germinate and grow if they are protected from grazing during the early stages. They will continue to grow after that if they are not too heavily grazed. So it should be possible to strike a balance so that grazing may continue at a reasonable level indefinitely (see *Ecos 8*).

The snag is, as Mr Williams points out, that in much of the arid zone individual properties receive only very low financial returns, and there's little that their owners can do. They can't afford to spend much money on stopping deser-

tification. Even putting in adequate fencing to keep sheep or cattle off segments of country while it regenerates would often cost too much. (And of course it would be essential to keep rabbits off too.)

In the Gascoyne basin, as elsewhere, the only feasible course of action has been to try to force station-owners to drastically reduce stock numbers—a financially painful solution for the graziers concerned and not one that is necessarily acceptable to the companies that service their debts.

Can Australia help?

What has the experience of the Gascoyne and other parts of the Australian arid zone to do with the hard-pressed semi-arid parts of Africa, India, and elsewhere?

At most only a few hundred people are affected in the Gascoyne basin, and it has not proved possible to greatly reduce stock numbers there by government regulation.

In many of the less-developed countries removal of domestic stock is no longer even a theoretical option. There, people have already moved into the arid areas in very large numbers, and often they have cultural reasons for wanting to keep their herds as large as possible (more cattle represent more wealth for example). There's nowhere for these people and their stock to go. So reducing stock numbers can hardly seem appropriate to the administrators of such countries, and putting in fences to control grazing animals may be far beyond the means of the nation, as well as being socially unacceptable.

Here in Australia we don't have the problems of population pressure in our drier areas, so we have been able to experiment with regenerating parts of our degraded arid lands. Perhaps, Mr Williams thinks, some of this knowledge may find an application in other parts of the world.

More about the topic

'Gascoyne Basin: a Case Study on Desertification; Presented by the Government of Australia to the United Nations Conference on Desertification.' O.B. Williams, H. Suijendorp, and D.G. Wilcox. (Department of Environment, Housing and Community Development: Canberra 1977.)

'A Report on the Condition of the Gascoyne Catchment.' D.G. Wilcox and E.A. McKinnon. (Department of Agriculture and Department of Lands, Western Australia: Perth 1972.)