

1984 NORTHERN AUSTRALIA MINE REHABILITATION WORKSHOP

Species for Regeneration Programmes in the Pilbara

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Introduction

The topic 'species selection for regeneration programmes' may suggest to the reader that lists are available to provide a packaged answer to stabilize any disturbed site in the Pilbara.

Unfortunately this stage has not been reached and therefore highlights the basic research being carried out by mining companies.

However because there is an urgent need for plants, for this role, species which show early promise in gardens and trial plots are being made available.

Hardy native plants from the region, form the core of species grown at Karratha Nursery. These are supplemented by exotic plants which have shown an ability to perform under arid conditions.

The Forests Department received responsibility for nursery management in 1982 and has not been directly involved in plant evaluation trials on large minesites. However, plants have been made available on request and some species show early promise. These are included in the attached list.

Our wide brief has precluded detailed studies of regeneration practices in the Pilbara because as a service organisation, without trained scientists, we respond to a variety of land use problems.

The Role of the Forests Department in the Pilbara

- 1 The Forests Department at Karratha is essentially an information service and nursery which is involved in evaluation and promotion of appropriate plants for the region. This has been mainly related to landscaping in urban situations.
2. The Department is responsible for policing aspects of relevant Acts of Parliament which protect trees and plants on Crown land.
3. The Nursery raised over 100,000 plants during 1983-84. Of these 34,000 were trucked to Carnarvon for soil stabilization. We have also been involved with revegetation of salt affected land near Karratha townsite.

4. In co-operation with PWD and DCE and major companies there has been an active campaign to persuade people that it is necessary to conserve water in town landscaping. This includes aspects of appropriate plant selection and landscape design. Native plants are continually evaluated at the nursery where over 120 species are grown.

5. Seed collection is carried out for the nursery and departmental requirements. Pilot studies to break seed dormancy using especially concentrated sulphuric acid have been quite successful. This may have application for minesite studies.

6. A species evaluation trial using arid area shrubs has commenced at Karatha Station and planting trials continue along main roads.

7. Planting began in 1983 at an Arboretum site. Aspects of water harvesting are being evaluated. A River Gum provenance trial is under way, watered by sewerage effluent.

8. Plants are provided for Aboriginal villages for shade, fuel and food. Advice is given on planting and care. Opportunities are given at Broome and Karatha nursery's for Aboriginal people to be trained in Horticulture.

9. A number of attractive hardy species are being propagated from cuttings at the nursery.

Rehabilitation

I have visited the minesites at Newman, Tom Price and Paraburdoo and appreciate some of the difficulties which must be faced by rehabilitation staff.

I remain convinced that more preparation is needed and slopes need to be reduced to cater for successful regeneration.

The best plants to use are those from the area, but it may take a succession of species before the desired community is obtained. This can only be proven by detailed, long term studies. This work needs to be carried out to demonstrate to the public before mining proceeds on more sensitive areas.

Under the subject of rehabilitation I include the broader topics of townsite landscaping and the revegetation of such things as borrow pits. I also include the thorough use of waste water eg sewerage or excess runoff.

In many cases, fruit trees could be planted in towns instead of River Gums. Treated sewerage water could be used to irrigate trees. I believe that as things pick up, places like the Paraburdoo fruit orchard should be given a new lease of life. I believe the orchard at Newman is a very successful addition to the towns way of life. More use could be made of effluent in a town like Tom Price to grow trees.

* The brochures which are attached give some insight into our water conservation involvement through landscaping. The plant list is by necessity, the more obvious members of various hardy plant communities.

References

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* Design and siting guidelines . developments in hot and zones
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