

PILBARA LAND REHABILITATION GROUP

NEWSLETTER NO 4 JULY 1993

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IDENTIFICATION OF *TRIODIA* SPECIES - GETTING IT RIGHT!!

You think you are almost there ... the leaf blades, sheafs, panicles, spikelets, all match the key but .. oh no ... the lemmas are SO different ... it could be, but it may not be ... Do you know the feeling??

In order for your revegetation program to get off (or out of) the ground successfully, and so that our proposed *Triodia* Species Research Program is worthwhile, it is imperative that we know our species. Considering the keys we have available, that, I agree is very difficult. Help is at hand, however, thanks to a very generous gentleman by the name of Mike Lazarides, who has worked on Australian grasses most of his working life. Although officially "retired", Mike has agreed to identify for us any material we send. In fact, he is currently working on a project which involves "sorting out" *Triodia* and *Plectrachne* species! This is a golden opportunity for the PLRG to begin to establish a reliable data base for these species, so we want you to begin collecting from your area. For the specimens to be worthwhile, please note the following:

1. Specimens MUST be flowering or seeding (glumes are persistent - don't mistake these for seeding specimens). If they are seeding, collect seeds at the same time for the Research program. If not seeding, mark the plants in some way for collection at a later date.
2. Collect three good specimens; one to send to Mike for identification, one for inclusion in the Pilbara Regional Herbarium so we have a permanent reliable record there, and one for your own reference.
2. Tag each specimen and record in your field notes the **collection date, location and your name**, as the collector. This is the absolute minimum information we require.
3. Preferably, record land form (i.e. plain, hill slope, top of mesa etc.), and if possible other plants the *Triodia/Plectrachne* is growing in association with.
4. Record basic soil data, i.e. texture, pedality (structure and strength and soil fragments), and if possible a simple pH test.*

5. Press your specimen.
6. When pressed, send one specimen of each of your collections, with information on each to myself - Vicki Long, Astron Environmental, PO Box 713, Karratha 6714.

If you have any further queries on collection, please do not hesitate to contact me on (091) 441 679 or fax (091) 442 638.

* It would be helpful to obtain as much soil data as possible. Ben Rose (Department of Agriculture) has devised a procedure which you may wish to use. Ben informs me that simple pH and EC (electroconductivity) meters can be obtained from PERTH SCIENTIFIC, ph (09) 245 1930, fax. (09) 341 1434. If you have any problems with your soil recording, please contact Ben on (091) 442 065.

Vicki Long

GOLDFIELDS INTERNATIONAL CONFERENCE ON ARID LANDCARE

The Green and Gold Goldfields International Conference on Arid Landcare is to be held in Kalgoorlie from 29 October to 1 November. The conference will focus on WA's arid land management practices and provide a forum for academics, researchers, land users and conservationists on present and future care of arid lands around the world.

Session themes include: Rehabilitation, Maintaining the rangelands, Assessment

and planning, Working together for landcare, Education and Possibilities and challenges.

For further information on the conference and for registration forms contact Executive Management Services on (09) 481 7005 (phone and fax), or the Department of Agriculture in Kalgoorlie on (090) 210 888.

NEW INTERNATIONAL JOURNAL

A new international journal, the International Journal of Environmental Issues In Mineral and Energy Industry, has issued a call for papers. The journal deals with numerous environmental issues such as Impact assessment, compliance, waste management practices, acid mine drainage, decommissioning and reclamation. A sample copy can be obtained by writing to A.A. Balkema Publishers, PO Box 1675, Rotterdam, Netherlands.

PLRG NEXT MEETING

The next meeting will be held courtesy of BHP at Newman in early November. The meeting will include a tour of some of BHP's rehabilitation work and Stephen van Lewin from CALM to discuss provenance seed collecting. Further details will be available in the next newsletter.

PLRG

SPINEFIX RESEARCH: SUB-COMMITTEE REPORT

At the May meeting of the PLRG in Pannawonica it was agreed that the Group should provide direction on the research priorities for land rehabilitation in the Pilbara Region. Since the problem of re-establishing the keystone *Triodia* hummock grass species on waste dumps had been discussed at all the PLRG workshops, it was agreed that this was the first research area requiring attention. A sub-committee of the PLRG was established to draft specific research proposals to go before the Chamber of Mines and Energy CELM committee in early August 1993.

The sub-committee has completed its task and will report in full at the next PLRG meeting. A summary of the sub-committee's findings is given below:

1. *Literature search.* A search revealed 33 papers dealing entirely or primarily with *Triodia*. A bibliography is available from the sub-committee (courtesy of Andrew Craig).

2. *Research Areas.* Five specific research areas were identified, those being:

- i) Germination biology
- ii) Hummock grassland seed stores
- iii) Vegetative propagation
- iv) Depth of burial - Field trial
- v) Distribution of *Triodia spp* in relation to soil types

3. *Options for carrying out research.* Several options were identified as means for carrying out various projects. These will be presented to the Chamber of Mines and Energy CELM committee and discussed at the PLRG November meeting.

FLORA NAME CHANGES

It seems you think you know the Pilbara flora pretty well--that is until you meet someone else who also thinks they know. After much discussion about leaf length, numbers of stamen and shape of fruiting body it becomes apparent that it is probably the same plant but it probably has two names. A universal curse is passed over all taxonomists who have nothing better to do but divide species, introduce subclasses and unilaterally change names

without the slightest consideration for the poor joker in the bush.

Well, now you can relax. Keeping up to date will become a simple matter of reading your PLRG Newsletter. Beginning with the next newsletter Steve van Lewin from CALM will provide a concise and understandable update on all Flora name changesso stay tuned.

SOIL MICROBIOLOGY IN REVEGETATION

A JOINT PROJECT BETWEEN AMIRA (UWA) & HAMERSLEY IRON

Vesicular-arbuscular (VA) mycorrhizal fungi live in the soil and form a symbiotic association with almost all plants. The thread like mycelia of the fungi grow from the plant root through the soil and act as extensions to the root system of the plant. VA mycorrhizal fungi are important in the uptake of phosphorous and also help to bind the soil, promoting soil structure and restricting erosion. VA mycorrhizal fungi may enhance the revegetation of chemically hostile soils because of the tolerance of certain species of fungi to acidity, salinity or toxic concentrations of metals.

Hamersley Iron's Tom Price Operations have been participating in an AMIRA (UWA) research program looking at how the establishment and diversity of revegetation areas can be enhanced by maximising the infectivity of VA mycorrhizal fungi in local soils. The company's involvement goes back many years but the current program began in 1991 and will conclude in 1994. The

ultimate aim of the project is to be able to inoculate soils in rehabilitation areas with VA mycorrhizal fungi to enhance plant growth and possibly obviate the need for topsoil recovery.

Results to date indicate that the levels of VA mycorrhizal fungi in Pilbara soils is naturally very low and that the fungus is basically wiped out by disturbance. Two soil types have been studied, these being the slightly acid mulga soils and the alkaline cracking clay snakewood soils. The UWA team have successfully isolated a fungi from the mulga soils which has shown promising results in glasshouse experiments. In June this year trial plots were established on the Southern Plains Detritals at Tom Price to determine how effectively the fungi will work in the field.

This is interesting research which has the potential to significantly improve Hamersley Iron's rehabilitation efforts.

Alan Vasey