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SEPTEMBER 2003 NEWSLETTER

Meetings and Field Trips

We meet on the third Thursday of the month at 7:30 pm. General meetings conclude by 8:00pm and are followed by a Guest Speaker beginning at 8:15 pm. There is time for a cuppa inbetween the meeting and the guest speaker. The venue for our meeting is Marrara Christian School, on the corner of Amy Johnson and McMillans Drive. All welcome. Bring plants to swap, sell or have identified.

COMING EVENTS COMING EVENTS COMING EVENTS

~ Next Meeting Thursday September 18th ~

~ Guest Speaker: Nicky Link ~

The next meeting will be held on Thursday September 18th at 7:30 pm. Following our General Meeting, Nicky Link from "Answers in Genesis" is our Guest Speaker. His topic will be looking at plants from a Creation perspective - an alternative view to Evolution.

~ September Field Trip Saturday 20th September ~

Meeting at Holmes Jungle Car Park at 9:00am on Saturday 20th for a walk through Holmes Jungle - This should be a pleasant morning's leech free stroll at this time of the year with many species coming into flower.

~ October Meeting Thursday 18th Guest Speaker: Don Franklin ~

Don Franklin is our featured Guest Speaker for October. He will be speaking on "Bamboo" Put this date in your Diary and come along to our October meeting to learn more!

~ October Field Trip ~

October Field Trip Saturday 18th we will be meet at Casuarina Costal reserve at 3 o'clock. Come along for a walk/tour and check out what there is to see in the area. with the Casuarina Costal Reserve Landcare Group.

~ November 20th Annual General Meeting ~

Our Annual General Meeting is to be held on 20th November. In accordance with our constitution, all Committee Positions will be declared vacant. If you would like to nominate someone for these positions, or you are willing to stand, please fill in the form with this newsletter and return it to any of the committee members as soon as possible. If we have an indication of who is willing to fill these positions prior to the meeting, it makes everything easier. Remember, it is YOUR society!

**Casuarina Coastal Care Land Group
Sunday 21st September
Propogating Workshop at Greening Australia.**

**Meet at the Nursery
on the corner of Dinah Beach Rd and Tiger Brennan Drive
Sunday 21st 10:00 am.**

All Welcome



DIGITAL CAMERA

At a recent Committee Meeting we discussed a number of issues concerning the digital camera. These included such things as insurance of the camera, the borrowing of the camera by Society members for personal use and TENPS related use.

A number of potential "problems" were raised and the Committee felt it appropriate that these issues should be discussed at a General Meeting. Cost of Insurance would be just under \$400 per year and would really only cover us against theft, not damage. If we decide as a group that the camera can be loaned out to members, then there would need to be some guidelines put in place. Think about these things and be ready to have a discussion at the next meeting.

THREATENED SPECIES NETWORK (J. HOLMES)

The Threatened Species Network (a community-based program of the Australian Government's Natural Heritage Trust and WWF Australia) is working with local 'plant people' to write a book on interesting plant species in the Litchfield region. The book will help people in identifying local threatened species, as well as some of our lesser known species (technically known as Data Deficient). The book will encourage the community to collect and contribute information on data deficient and threatened species for the NT Herbarium database, as well as raise general awareness of our local plant species. We are currently in the process of pulling information together on Data Deficient species and are seeking help from anybody who has an interest in plants to help with either providing information or with design/layout. If you would like to be involved in the writing of this book, or would like to know what species are classified as Data Deficient, please contact Jarrad Holmes on 08 8941 7554 or jholmes@wwf.org.au.

Biodiversity Month

Sunday 21st September at McMinns Lagoon from 3:30pm

Guest Speakers from Mcminns Lagoon Land Care Group, Lorrae MacCarthur from Northern Territory University (Frog Research), Max Finlayson (Wetlands) and Frogwatch.

Come along for a family fun afternoon, enjoy the sunset and learn something more about this fascinating habitat on our back doorstep

Contact Jared Holmes for more details on 8941 7554 or jholmes@wwf.org.au.

SEED GERMINATION AND DORMANCY

BY SEAN BELLAIRS.

This talk on seed germination and dormancy of Australian native plant species started off by discussing the process of ovule (an unfertilised seed) and seed development. A unique feature of fertilisation in the flowering plants is that a double fertilisation process occurs. The pollen tube grows down the style from the pollen grain on the stigma and two male nuclei from the pollen grain fuse with the female structures. One pollen nucleus fuses with the egg cell to form the embryo of the new plant. The other male nucleus fuses with two female nuclei near the egg cell to form a triploid food reserve. The process allows the flowering plants to develop seeds much faster than other plants such as conifers and cycads. The seed then develops through a number of stages until a mature embryo is formed. At one of these stages the seed of the majority of plants dries to a low water content and is dispersed from the parent plant. The seed coat may be derived from maternal tissue rather than from the embryo.

While the seed is in a dried state it needs to expend some stored energy to maintain and repair vital components in the seed. Thus eventually, if the seed does not germinate, the seed will run out of reserves to maintain vital repairs and it will then become inviable.

Viability can be assessed by examining the seed and determining that the flesh of the seed is firm and of unblemished colour. It can also be assessed in a seed testing laboratory by using a chemical stain, tetrazolium chloride, which stains living tissue red. Viability in native species varies considerably with some species tending to have low viability levels. In other species it can be variable depending on conditions during filling of the seeds (whether it has adequate moisture and nutrients), seed collection techniques and the genetics of the parent plants.



For a seed to germinate requires water and oxygen at a suitable temperature for metabolism to occur. Then the tissues of the seed rehydrate and food reserves are mobilised for further growth of the embryo. The embryo forces its way through the seed coat and grows to the soil surface. Once it has reached the soil surface it can then start to use sunlight to produce its own food through photosynthesis. This is the most vulnerable stage in the life of a plant so germination has to occur under favourable circumstances. Therefore most native plants use environmental cues to predict when circumstances are favourable and only allow germination to proceed when those conditions are met. Thus seeds of most native species will not germinate when they are moist and exposed to oxygen. Rather the seed has evolved blocks that prevent germination from occurring except if another factor is also present. This is called seed dormancy.

Seed dormancy may be due to blocks in the seed coat that

- prevent water uptake,
- prevent oxygen uptake,
- prevent embryo expansion,
- or inhibit metabolism by the flow of inhibitor substances.

There can also be blocks in the embryo of the seed. The seed may also be dispersed when it is immature and it may take several weeks or months before the embryo is developed sufficiently to germinate.



Seeds have evolved to react to a wide range of stimuli. It may take years for a hard seed coat to degrade sufficiently for germination to occur. For other seeds fire is important as a fire produces a nutrient rich seed bed and eliminates competition from other plants. Some plants rely on the heat of fire to break a water impervious hard seed coat. Other species utilise smoke to trigger germination by creating pores in the seed coat and by altering the metabolism of the seed. Many fleshy coated seeds require that inhibitors in the fleshy coat be removed manually or by animal digestion. In some seeds light or the daily temperature regime may change the balance of germination promoter and inhibitor substances in the seed.

Some recent developments to promote seed germination include soaking seeds in smoke impregnated water, treating the seeds with growth hormones, and soaking the seeds in enzymes that simulate the action of soil bacteria and fungi. Otherwise simple treatments such as scratching the seed, exposing it to hot water or keeping the seed in a flushing toilet cistern for a week are effective for some plants.

Editors Note: Thanks Sean for your interesting and informative talk at our last meeting and this follow up article. As a Society we pass on our thanks to Sean. Well done!

AUGUST FIELD TRIP

For our Field Trip in August we spent some time at the Meehan's block in Stow Road, Howard Springs. Even though our number were limited we were able to recommend some species that would be suitable for their block. Part of their requirements were for species that wouldn't block their sunset views. Our thanks to the Meehans for providing a great lunch for those that were able to attend. This proved to be a meaningful activity for TENPS and we thank the Meehan's for this opportunity.



SUBSCRIPTIONS ARE NOW OVERDUE!

For those of you who have not yet paid our Treasurer, Jen Cooke, this will be your LAST newsletter. In order to keep receiving newsletters, please make sure your membership is up to date. So far only about half (30 or so) people have paid their subscriptions which were due in July.

**NEXT MEETING THURSDAY SEPTEMBER 18TH
GUEST SPEAKER: NICKY LINK**

**SENDER: TOP END NATIVE PLANT SOCIETY
PO BOX 135 PALMERSTON
NT 0831**

**SUBSCRIPTION FORM - MEMBERSHIP DUE 1ST JULY 2003
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