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BUMPER ISSUE

October 1988

General News, Views and Moves

1988 has been a year of change for the Manjimup Research Centre. There have been a number of staff changes beginning with Gary Inions to Como to complete his Phd studies - he was replaced by Penni Hewett from Wanneroo. Next was the arrival of Dr Janet Farr the entomologist appointed to solve the 'bugs' problem of the forest. To assist Janet a temporary Forest Ranger was also appointed, Bill Frost. Both these new staff members originated from South Australia. Along with our new appointments we've also had staff transferring around. Rob Hopkins was appointed as Regional Admin. Assist. and he was replaced by Michelle Pree (previously Lab. Assist. at the Centre) and Linda Simmonds was appointed as Clerical Officer at the District office. Linda was replaced by Joanne Healey. As I said, there have been one or two changes! Oops, forgot there were three more changes - Neil Burrows and Karan Maisey now operate from Woodvale Wildlife Research Centre, and Pete Walsh is now Senior Computer Operator at Como. Lachlan McCaw took over as Centre Manager from Neil. Phew, now that really is all the changes!

You may be thinking we couldn't possibly be achieving much with all this upheaval but that's just not so. There have been a number of large projects going on and of course the setting up of new projects with the development of the Entomological programme. Staff have travelled the length and breadth of the State, from the Hamersleys to the Gibson Desert to the Stirling Ranges. There have been lots of specimens taken and the odd fire or two and all in all its been a full year. On the more mundane side, those of us in the office have set up and are using some pretty good compute systems (thanks to our computer section) which means all our problems are little ones (except for the odd gremlin or two).

Michelle Pree

Missing Person

Gavin Ellis, ex Regional Projects Officer, was recently found napping in the Manjimup Research Project Room after being proclaimed a missing person since leaving the "Region" in early September.

Gavin has been seconded to the bluegum project team funded by Commonwealth monies under the National Afforestation Program (N.A.P.)

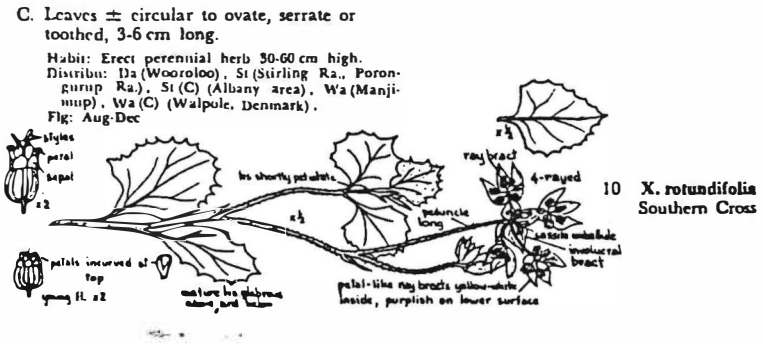
The project is linked closely with the Hardwood Sharefarming Scheme whereb: farmers (landowners) are paid an annuity for allowing CALM to grow Tasmanian Bluegums (*E.globulus* ssp.*globulus*) on their property for the purpose of pulpwood. The aim of the project is to:

- classify land into site of similar productivity (i.e. land classification system) and
- to develop a series of trial plantings on a range of sites so that site productivity can be accurately predicted. This includes such things as the effect of seedling pot type, planting density, ripping, mounding, fertilising and ecto-mycorrhizal fungi on the productivity of the stand.

The team is also interested in the economics of trees on farms as part of a farm management system, and the role of trees in reducing salinity on farmland and in rivers and in reducing nutrification of estuaries due to fertilisation.

Gavin is under contract to this project until the end of 1990. When he is not available on ext. 250 in Manjimup you'll probably find him in Como on ext 484 otherwise there is a fair bet he'll be somewhere south of the 26th parallel on this side of the border!

Gavin Ellis



10 X. rotundifolia
Southern Cross

Ecology

CALM survey of the Walpole Nornalup National Park
Field work for the survey in December 1987, in both the bird counts and site mapping. Over 250 sample points were located on a grid basis in 3 areas of the park. Analysis has shown that the "community types" are closely associated with the landform soils maps of the area suggesting that a vegetation map of the park will be based on already produced landform soils maps.

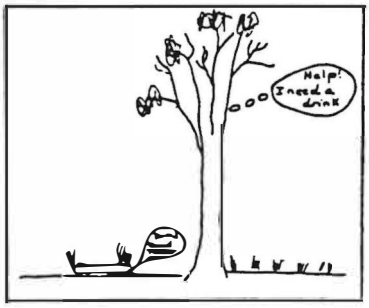
Field work in 1987 was also successful in determining those sites that do not fit the classification scheme. Granite outcrops, granite headland, riparian zones and swampy sites of the owing up landform unit were found not to fit the classification scheme (< 5% of the park). Survey points have since been located at these sites and a year round flowering calendar is being derived. Monthly visits to 130 points enables annuals, ephemerals and herbs that were poorly collected to be included in our species lists by community types for the park. The response of each species to disturbance is also being documented. Over 450 vascular plant species (including many undescribed) have now been collected from the park. Flowering patterns differ markedly between community types, particularly between coastal dunes and granitic based areas.

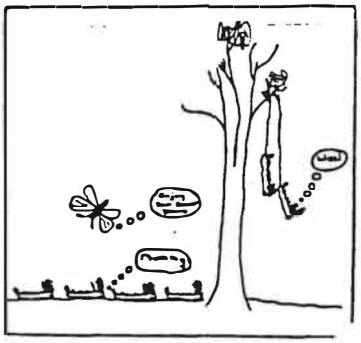
Two classification schemes were compared in the high forest of the Walpole Nornalup National Park. Karri-tingle forest defined as one "community type" using the classification scheme derived for the park separated into 3 "community types" on a scheme designed to classify karri forest sites.

Bird surveys in 1987 showed changes in community composition following the wildfire of January 1987. Bird surveys in December 1988 will be particularly valuable in determining the speed of change in bird communities following fire as a comparison with the original survey in known burn ages.

Field work on the survey will continue. The principal aim of this work will be to examine secondary succession in floristics, herpetofauna and birds following fire in the 90 hilltop survey sites and the 25 sites (some of which were burnt by prescribed fire) along Conspicuous Beach, Ficifolia and Nut Roads.

Grant Wardell-Johnson
Tony Annels
Graeme Liddelow
Chris Vellios
Ian Wheeler





Entomology

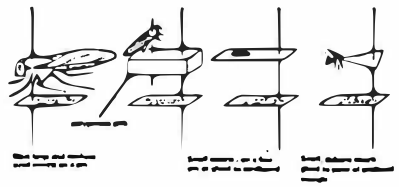
Since its inception in February 1988 the Entomology Section has established a laboratory and submitted plans for an insectary to be built on CALM Manjimup grounds.

Ips grandicollis
Dr F.D. Morgan from South Australia visited CALM and the south-west in April to monitor the extent of the bark beetle problem in Western Australia and to give advise on its biological control. Predators and parasites bred in South Australia will be imported and released in pine plantations in Western Australia. Pine stands near Kirup have already been selected for releases and other sites in the Blackwood Valley will be targeted for releases this summer.

Gum leaf skeletonizer
The survival of GLS on different food plants is being investigated on the Manjimup CALM grounds. Preliminary results are expected in February next year. Meanwhile Entomology requests that no-one interferes with GLS infested gum trees on Manjimup CALM grounds as this will be detrimental to our experiment. The distribution of GLS within the canopy is also being investigated.

Psyllids
A visit to the Lower Great Southern areas of infestation in planned for late October/November. The possibility for setting up trapping stations with the cooperation of farmers in the area will be investigated. By this means the fluctuations in adult psyllid population can be monitored.

Insect Collection
A collection of the insect fauna of the south west has now been started and will be housed with the Entomology section in Manjimup. Knowledge of the insect fauna of Western Australia is sparse. The collection will aid future researchers in the diversity and ecology of insects.



Seminars
A seminar on insect related Eucalypt decline held at Como on 22 August in response to a visit from Dr Jill Landsberg was attended by Entomology. Dr Landsberg also visited CALM Manjimup and was given a Cooks tour by Entomology. Dr Landsberg specialises in the ecological aspects of insect/host plant interrelations.

Dr Janet Farr
Pete Skinner
Bill Frost

Heathland Fire Research

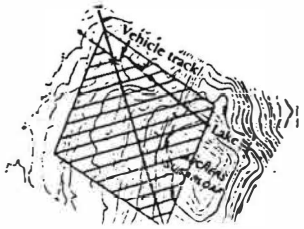
The long wet winter found the members of the Heathland Fire crew with little opportunity to ignite anything and consequently their attentions were directed towards devising ways and means of avoiding the less palatable aspects of research such as data analysis and writing up past work.

The design and manufacture of a large number of electronic timers which will be used to measure fire spread patterns provided and excellent diversion. The units are activated when heat from a fire melts the length of fusible wire that completes the electronic circuitry; the units themselves are protected from fire by burying them in the soil. By burying timers on a grid pattern within an area to be burnt the pattern of spread of a fire can be accurately monitored. Many thanks to Apprentice Radio Technician Barry Flett for his advice and assistance with designing the electronic circuits.

These timers, together with 35mm photographs taken from the top of an 8m tall portable tower will be used to measure the behaviour of a number of experimental fires in heathland vegetation at the Stirling Range National Park. A suitable experimental site has been identified in the park and the necessary liaison with Albany District is underway. Formal R.P.P.'s (Research Project Proposals) have been submitted to the RDPG (*enough of the jargon! ed.*) for studies examining the behaviour of fires and the response of vegetation to fires in different seasons. In addition, Gordon Friend and his team from Woodvale will be examining the response of invertebrates ("bugs and beasties") and reptiles ("scalies") to fire at the same sites.

Bob, John and Lach also enjoyed a week long excursion to Kalbarri in late August. An interesting sideline to the trip was the reassessment of a series of quadrats established to monitor the response of vegetation in the chained fire protection buffer along the southern boundary of the park. The purpose of the chaining treatment was to modify the structural arrangement of the heath vegetation so that it could be burnt during mild conditions with low risk of fires escaping into the adjacent sections of the park. The most striking short term response has been the rapid growth of fire ephemeral plants including *Tersonia* and *Gyrostemon*. We look forward to returning to these quadrats for many years to come - for scientific motives, of course.

Lachlan McCaw
Bob Smith
John Neal



Karri Silviculture Research

Since the last edition of the "Woylie Rag" there have been quite a few people changes in Karri Silviculture Research. Gary Inions has moved up to the big smoke to work on his Phd and he's been replaced by Penni Hewett. John Rooney and Colin Ward have left their nest boxes in ecology and also joined the silviculture team.

All these new faces hasn't meant that no work's been done. Apart from re-measurement of the Warren and Treen Brook Thinning Trials, we have been busy with a number of other projects:

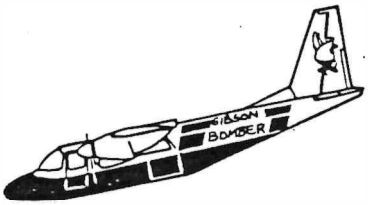
Gordon 1 Spot Sowing Trial
A small trial was initiated (in conjunction with the Southern Region) in July to look at the feasibility of sheltercup sowing in late winter and spring. Lines of sheltercups and scratch spots have been put in weekly and assessed for successful germination, the number of germinants, leaf stage, seedbed etc. Periodic assessment will be made over summer - as this will be a critical time for the late sown seedlings.
Results from this trial will be used in developing an operation trial next planting season.

Nairn Spacing Trial
This trial was established by Richard Breidahl in 1982. We have recently completed a measurement of Nairn and the data is being put onto the computer. Apart from the normal tree measurements (diameter, bark thickness and height), we also measured some of the larger branches. This data will give more information on the effect of density (spacing) on karri branch development. Future measurements will be especially important as they will show what size branches are being retained or shed at different spacing levels.

Karri Site Classification
Gary Inions has completed the work on this, and, since his leaving, we have undertaken a 'trial mapping' to assess the feasibility of mapping the 13 community types that were identified. This will be written up as a technical report.

Perup Seed Orchard
Clover was sown at the seed orchard in May this year - at that time John Rooney noticed some insect damage to the trees. We assessed the orchard (with help from entomologists Janet and Bill) in July and found that approximately 13% of the remaining trees were infested with a borer of some sort (probably *Tryphocaria*). A decision has yet to be made on the future of the orchard.

Penni Hewett
John Rooney
Colin Ward



Jarrah Fire Research
As well as the odd desert trip (more about that later) there have been some local projects going on as well.

Fire Effects Plots
The fire effects plots at Perup and McCorkhill have had post burn assessments on vegetation seedling regeneration and flowering completed.

Wandoo regeneration trial
This trial is being carried out at Jarrahdale and assessments have been done for germination, ash bed and crop tree damage. These assessments were done 6 months after a successful burn last Autumn. Good ashbeds were created and germination was high with counts ranging from 0 on bare ground to over 5 million/ha. Work is continuing to establish amount of seedfall.

Gibson Desert Aero Burn in Spinifex
An operational trial to test the effectiveness of aircraft ignition using incendiaries was conducted last September with the aim of producing a patchy burn and approx. 15% of area the area burnt.
The result of this trial was highly successful with rates of spread maintained within $\pm$ 10% of that predicted. A good patch burn effect was achieved with 15-20% of area burnt. Approx. 75 000ha was treated in 5 burns at an overall operational cost of 68c/ha.

Neil Burrows
Bruce Ward
Alex Robinson