

AUGUST 2009
ISSN: 1836-2761



OBJECT: To foster an interest in nature

MEETING THURSDAY 6 AUGUST 2009

7:30 pm Australian National University

Meeting details back page

***REPORT ON ACT LOWLAND NATIVE
GRASSLAND INVESTIGATION***

**BY DR MAXINE COOPER
COMMISSIONER FOR SUSTAINABILITY
AND THE ENVIRONMENT
CANBERRA**

Dr Maxine Cooper, the first full-time ACT Commissioner for Sustainability and the Environment, will give a presentation to the Field Naturalists and Friends of Grasslands on her important *Report on ACT Lowland Native Grassland Investigation*, which was submitted to the Government in March.

Her investigation considered 49 lowland native grassland sites in the ACT, on both National and Territory land. These sites are the subject of Australian and ACT Government legislation and have a number of land managers. Complex administrative arrangements exist including memoranda of understanding, licences, leases (including land management agreements) and Conservator's Directions.

Dr Cooper will outline some of her 32 recommendations to improve management of these important and threatened grasslands, including:

- the need to take urgent land management action to protect sites that are in critical, or approaching a critical condition (Recommendations 21 and 15). Of the Territory's lowland native grassland sites 20% are in critical condition, 40% are approaching a critical condition and 20% are in good condition;
- the proposal that a Majura Valley Reserve (grassland) be planned and its boundaries defined in the near future (Recommendation 23);
- the possibility of Mount Ainslie Reserve, Aranda Bushland and Black Mountain Reserve being expanded to include some areas of lowland native grassland (Recommendations 24 and 25);
- the opportunity to adopt a strategic approach to protect lowland native grassland (particularly Natural Temperate Grassland and threatened grassland species) and foster appropriate development through developing an offset policy. This policy should include the identification of offset restoration sites (Recommendation 22); and

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- the need for long-term land uses to be defined for some lowland native grassland sites (Recommendation 26).

The Report can be found at http://www.environmentcommissioner.act.gov.au/investigations_and_consultation/investigation.

Prior to taking up this position, Dr Cooper led the ACT's Water Security Taskforce. Dr Cooper has extensive senior experience in both the public and private sectors. She has held statutory positions as Conservator Flora and Fauna and as Chief Animal Welfare Officer for the ACT.

Dr Cooper's professional life began as an urban and regional planner in Western Australia. She is a full-time member of the Environment Institute of Australia and New Zealand and the Planning Institute of Australia. She was recently made a fellow of the Planning Institute for her contribution to the profession. Her focus on sustainability was particularly recognised when she received a Professional Fulbright Award to undertake work on this issue in the USA.

Astronomy Outing: Tidbinbilla Tracking Station. Sunday 9th Aug: 10:30 am

This is an important year for Natural history as it is *The International Year of Astronomy* (See Tony Lawson's article in the March Field Natter). This is to mark the 400th anniversary of Galileo turning a telescope to the sky. The goals of IYA2009 are to basically, raise awareness of Australia's contributions to astronomy and to use astronomy to encourage people, particularly young people, to engage with the natural world and science (see www.astronomy2009.org.au) or see Tony's article. Another 'astronomical' event is that this is the 40th year since Man (APOLLO XI) landed on the moon. Australia's Tracking Stations (Parkes, Honeysuckle Creek and Tidbinbilla) played a vital role in transmitting the first vision of the landing on the moon to the World. As a part of the celebrations and to help achieve the goals of IYA2009 Field Naturalists will be visiting Tidbinbilla (Canberra) Deep Space Communication Complex. More information, see http://www.cdsc.nasa.gov/Pages/pg05_events.html We will visit the Space Centre and then have lunch at Moon Rock Café. If possible the plan is also to have a special behind the scenes tour (as Benj knows a number of Tidbinbilla scientists and staff).

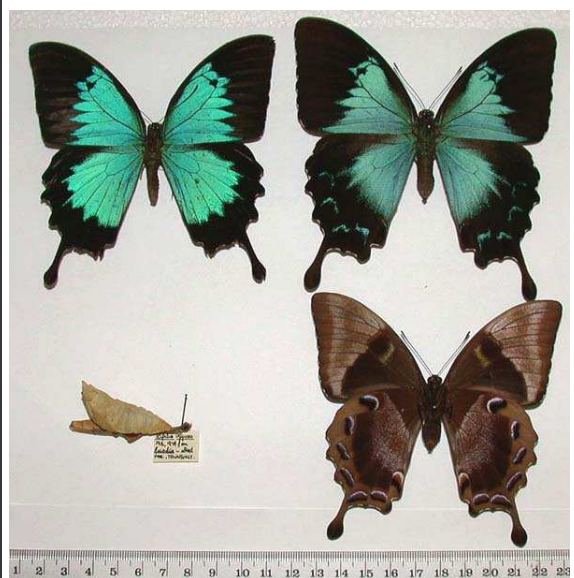
Please book-in with Benj at the meeting. Numbers limited. Meet at 10:30 am at the Tidbinbilla (Canberra) Deep Space Communication Complex, 35 kilometres outside Canberra along Tourist Drive 5. Turn off Cotter Road onto Discovery Drive.

Some disturbing news. We use geocities for our main Field Nats website. We have been advised that geocities will be closing in October

We will need to find someone who can construct a new site, which hopefully will combine our two current sites and include putting our newsletter up on the web each month. We have until 26 October.

The annual meeting is coming up and we need fresh blood on the committee. We especially need a new Treasurer and someone to look after distribution of the newsletter (print and internet copies) - both functions at present admirably handled by Bob.

Benj



“...we gazed at a magnificent specimen of the Ulysses (*Papilio ulysses*), one of the biggest butterflies in Australia that is found in the wet tropical rainforests...”

An Iconic bird



Photo: Chris Bunn

Last month Sandra and I had a wonderful trip to South Africa spending a week exploring Kruger National Park. We saw the big 5 –elephant, rhinoceros, lion, buffalo (including one herd of about 1000 animals and leopard. But just as spectacular and exciting was looking at the birdlife. They are large black turkey-sized birds, weighing in at about 4 Kg. Most of the day they spend walking over the African veld on long legs with the stubby toes elevated so that they are almost on tiptoe. Other features include long eyelashes and a long bill (So they can see the tip of their bill).

The Southern Ground Hornbill *Bucorvus leadbeateri* is a group-living bird, usually with a single female (recognised by the dark violet-blue patch on the red throat skin) that is joined by her mate, the alpha male (with all-red facial skin), and often by additional adult males and immature offspring of both sexes. Groups normally comprise 4-5 individuals but may range from 2-12. They spend most of the day walking on the

ground, they are almost entirely carnivorous, they are the largest hornbills in the world and the Southern Ground Hornbill is the largest bird species that breeds as a co-operative group.

Ground hornbills nest in large natural cavities in trees or on rock faces. Males bring nest lining of dry leaves and food for the breeding female. The female lays 1-2, rarely 3, eggs and incubates them for about 42 days. All but one chick die of starvation and is brooded by the female for about a month, after which she joins the rest of the group in providing food for the remaining two months of the nesting period.

Ground hornbills are reluctant to fly, although they will fly strongly to escape predation or to reach a roosting site or take part in aerial pursuits to rid neighbouring groups from their territories.

Historical records indicate a much wider distribution. The principle causes for their decline appear to be habitat change, in particular loss of large trees for nest sites, and loss of foraging habitat to monocultures such as crops and timber. Their territories are also very large covering many kilometres

Ground hornbills are naturally very slow breeders that fledge on average one chick every nine years. Their delayed maturity until six years old and low adult mortality of about 2% per annum make them vulnerable to persecution and slow to recover from the effects of increased mortality such as poisoning, electrocution and direct persecution.

Congratulations

From Paula and Damon

We are pleased to announce that our gorgeous little boy arrived on Thursday June 18th This was a few days before his due date - he must have known that our obstetrician was starting a four-week holiday on the 19th! We have named him **Evan Isaac** Banks. Evan is the Welsh equivalent of John (English) and Ian (Scottish) - the names of his grandfathers. Isaac is Paula's Mum's maiden name but as this can also be used as a forename, it allows us to recognise that important part of Evan's heritage.

Also on the grapevine that Deb Saunders had a daughter, **Jasmine**, in July ago - all doing well.

THE AUSTRALIAN NATIONAL INSECT COLLECTION

From Judy Kelly

On a chilly Saturday afternoon on 4 July, Dr Beth Mantle, Collection Manager, took a group of Field Naturalists on a tour of the Australian National Insect Collection (ANIC) at CSIRO, Black Mountain. Insects are the underdogs of the natural world, often referred to disparagingly as “bugs”. Whether flies, mosquitoes, or cockroaches, they variously annoy, alarm or revolt people. The other side of the equation is that many insects have colours and designs that are inspirational works of art, are a source of wonder in themselves and perform essential functions in the ecological world: they may be pollinators, a source of food for birds and invertebrates, and a means of breaking down the soil and reducing leaf litter (which should appease the rural fire service).

Insects have an external skeleton, six legs and belong to the Phylum Arthropoda, Class Insecta. They include beetles, flies, moths and butterflies, grasshoppers, bees and wasps.

Before entering the storage areas for the insects, Beth gave us an overview of ANIC. The collection holds more than 13 million insect species. As well as having the largest collection of Australian insects in the world, ANIC also holds collections from other countries. The number of insect species in the world is more than 800,000, greater than all other animal and plant species combined. Many insect species are new to science and have yet to be described and named.

The collections are an invaluable reference for researchers and taxonomists to identify insects and to establish a database. Identification can help establish whether an insect is a pest to agronomists, or is a public health concern, what insect is infesting a species of plant and why, and what insect might be used as a means of biological control. An insect might also act as an indicator with changes in the ecosystem due to climate change. Beth explained that CSIRO Entomology started from an economic base because insect pests were affecting agricultural crops.

Our first stop was the Lepidoptera Hall for moths and butterflies. The entomology team numbers seven full time scientists and twelve technical staff plus dedicated volunteers. Naphthalene and camphor form an odour barrier to prevent live insects from harming the collection which is stored in steel cases with glass lids housed in drawers in metal cabinets. Alternative storage is in specimen jars or insect parts may be preserved on glass slides. The temperature is maintained at a constant 21 degrees C. throughout the year and humidity at 50%.

In case of an earthquake, ANIC has better protection than most of us in our houses: metal cross-bracing provides extra wall support and strengthening.

We scrutinised a glass case of pinned apple green moths with delicate markings, their collection details annotated on a minute card with incredibly minuscule and neatly written details. What is the difference between a moth and a butterfly? Beth said that moths are predominantly nocturnal, an exception being the Golden Sun Moth, (*Synemon plana*) an endangered species which is resident in the equally endangered grasslands in and near Canberra. This is just one feature to look for, also the antenna shape and the manner of holding the wings.

A Guide to Australian Moths by Paul Zborowski and Ted Edwards (CSIRO Publishing 2007) states: “Both moths and butterflies have a coiled proboscis and scaly wings. On the family tree of Lepidoptera about 140 branches are moths and five are butterflies.” and that “the difference between butterflies and moths is not great, and is comparable with the differences between moth families.” (p.1).

To distinguish between male and female moths Beth told us to look at the thickness of the antennae: the male has fluffier antennae. A great diversity of moths can be found in a small area, as at Wingham Brush, a 5 square hectare reserve, north of Tarree on the Manning River floodplain.

Moving on to butterflies, we gazed at a magnificent specimen of the Ulysses (*Papilio ulysses*), one of the biggest butterflies in Australia that is found in the wet tropical rainforests of north Queensland (see page 2). It is a brilliant blue when viewed from above, its wings consisting of overlapping scales. Seen from below, the Ulysses is an anticlimax in brown. The stark difference between above and below is another characteristic that can take the uninitiated by surprise.

The collections many specimens of the same species to show species variation.

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We looked briefly at mites (which belong to the Class Arachnida, the same as spiders) some of which are no bigger than a pinhead. Dr Halliday, an honorary fellow, was happy to take a break from his microscope to talk about the value of mites and their role as part of the soil biota. The disappearance of birds and animals in the face of climate change causes consternation but of equal concern are the soil biota which are particularly vulnerable to control burns which is why many ecologists would advocate control burns in small patches or stripes, especially when it takes more than five years for biota to recover.

Next we saw cockroaches and learnt that only five species were “badly behaved” in terms of carrying disease. There are more than 400 species of native cockroaches in Australia and the mothers of some species, like the Giant Burrowing Cockroach (*Macropanesthia rhinoceros*), form parental groups for their young. Close at hand in the Brindabellas we have brightly coloured cockroaches that are similar to the Mitchell Desert cockroaches.

Identifying cockroaches involves dissecting their genitalia to distinguish between species which means using a high powered microscope which drew our attention to the technology needed for taxonomy.

We finally had a look at wasps and beetles; wasps are brightly coloured to ward off their predators and are duped into having sex with orchids because of their shape, colour, and design which is how the plant is pollinated. A look at beetles introduced us to the long horned beetle *Xixuthrus heros* one of the largest beetles in the world which is native to the island of Viti Levu in Fiji. It measures about 15 cm long, excluding legs, antennae or jaws.

Beth rounded off our visit with a brief explanation of taxonomy where the insects are sorted into roughly thirty orders, identified to family, then genus and species.

The complexity, diversity and beauty of the insect world was brought home to us along with all the work that goes into collecting identifying and maintaining ANIC's collection.

Thank you very much to Beth for showing us around ANIC and to Tony Lawson for organising the outing.

Judy Kelly

WEBSITE OF THE MONTH

Species Profile and Threats Database

The database is designed to provide information about species and ecological communities listed under the *Environment Protection and Biodiversity Conservation Act 1999*.

It provides information on what the species looks like, its population and distribution, habitat, movements, feeding, reproduction and taxonomic comments. The information has been compiled by summarising information from a range of sources and contributors. At this stage profiles are not available for all species and ecological communities, but will be regularly added to the database. <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

SPRAT Profile Group Selection

This tool allows you to search EPBC listed species within taxonomic groups. <http://www.environment.gov.au/cgi-bin/sprat/public/profileindexform.pl>

Editor's note: This site is very comprehensive and informative. It should be invaluable for people or organisations making submissions to governments etc. As one example below is an extract provided on population numbers for the orange-bellied parrot (*Neophema chrysogaster*)

“The current total wild population of Orange-bellied Parrots is unlikely to exceed 150 individuals (M. Holdsworth 2005 pers. comm. cited in OBPRT 2006a) and captive-bred parrots number around 100 (Nettleford 2008).

The entire known Orange-bellied Parrot population exists as one population (Starks & Holdsworth 2003). However, some recent evidence suggests that small unknown sub-populations may exist, and further investigation is required (OBPRT 2006a).”

Who are the Field Naturalists?

The Field Naturalists' Association of Canberra (FNAC) was formed in 1981. Our aim is to foster interest in natural history by means of meetings and regular field outings. Meetings are usually held on the first Thursday of each month. Outings range from weekend rambles to long weekends away. Activities are advertised in our monthly newsletter. We emphasise informality and the enjoyment of nature. New members are always welcome. If you wish to join FNAC, please fill in the member application below and send it in with your subscription to the FNAC Treasurer at the address below:

President: Benj Whitworth

Secretary: Tony Lawson
fieldnaturalist@yahoo.com.au

Website: www.geocities.com/fieldnaturalist/index.html

Newsletter editor: Chris Bunn <chris_b@webone.com.au>
Member contributions welcome.

Published and distributed by Bob Lehman



Monthly meeting venue: Division of Botany and Zoology, Building 116, Daley Rd, Australian National University. Park (occasionally the adjacent building 44). Meetings start at 7:30 pm and are followed by refreshments.

MEMBERSHIP APPLICATION OR RENEWAL

Family name: First name:

If a family membership, please include the first names of other members of the family:

.....

Postal address:

Suburb: State: Postcode: Home phone:

Work phone: Email address:

Subscription enclosed: \$.....(Single/Family \$20) Donation: \$.....

How did you hear about FNAC? Please circle: FRIEND? OTHER? Please specify: