

# ECO FOCUS 2016

## ABSTRACTS

An Information Seminar by the Conservation Research unit

7 September 2016, Wednesday, 9.30 AM – 12.30 PM  
Aboriginal & Torres Strait Islander Cultural Centre  
245 Lady Denman Drive, Yarramundi Reach, Yarralumla ACT 2600



**ACT**  
Government

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Environment and Planning



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## PROGRAM

9:30 am	Introduction	Margaret Kitchin, Manager Conservation Research Unit
	Opening Address	Dorte Ekelund, Director-General Environment and Planning Directorate
9:40 am	Kangaroo fertility control research – trials of GonaCon Contraceptive Vaccine	Claire Wimpenny, Fauna Ecologist
9:55 am	Superb parrot research in the ACT	Laura Rayner, Postdoctoral Fellow, ANU
10:10 am	Fire and wet sclerophyll habitat dynamics	Tony Corrigan, Fire Ecologist
10:25 am	Vegetation mapping - what we have learnt and where to from here.	Greg Baines, Vegetation Ecologist
10:40 am	Morning Tea	
11:10 am	Grassland Restoration Program - trialing managed disturbance in urban grasslands reserves	Maree Gilbert, Grasslands Restoration Project Officer, Parks and Conservation Service
11:25 am	Technology enhancing community involvement in conservation – enhancements to Canberra Nature Map	Michael Mulvaney, Planning Team
11:40 am	Kangaroo management research	Melissa Snape, Fauna Ecologist
11:55 am	Canberra's recreational fish stocking and monitoring	Mark Jekabsons, Aquatic Ecologist
12:10 pm	Final Questions and Close	Margaret Kitchin

RVSP by 2<sup>nd</sup> SEPTEMBER 2016 to [diwani.velasquez@act.gov.au](mailto:diwani.velasquez@act.gov.au)

Places are limited (up to 100 pax only).

We welcome you to attend all or some presentations. Due to limited space, we request that those attending all sessions to sit in the front while other guests leaving early can sit at the back. Thank for your patience.

## Breeding ecology of the Superb Parrot

*By Laura Rayner, Australian National University (ANU)*

### *Highlights:*

The Superb Parrot *Polytelis swainsonii* is an iconic species of the critically endangered box-gum grassy woodlands of south-eastern Australia. The Australian Capital Territory contains some of the largest and most intact remnants of this endangered ecological community, which are increasingly favoured for urban development. A key threatening process for the Superb Parrot has been the clearing and modification of the box-gum grassy woodlands that it occupies.

Despite its high public profile, we know surprisingly little about the breeding ecology of Superb Parrots. So, last year, ACT Government paired up with researchers at the Fenner School (ANU) to take a closer look. The research, commissioned by the ACT Government as part of the Gungahlin and Molonglo Strategic Assessments, involved extensive in-field measurement to gain detailed information on the breeding territory, nest site selection and local movements of the Superb Parrot in key areas of the ACT.

Our work provides urgently needed ecological evidence for future conservation and peri-urban planning in Canberra, and addresses key knowledge gaps that currently hamper effective decision making and management. Data emerging from this study provides a valuable baseline for assessing the long-term viability of the Superb Parrot population and identifying areas critical to their persistence.

**Figure 1: Breeding super parrots at their nesthollow on Throsby Ridge.**



For more information, contact Laura Rayner 0418 414 487 [laura.rayner@anu.edu.au](mailto:laura.rayner@anu.edu.au)

# Vegetation mapping - what we have learnt and where to from here

*By Greg Baines, Vegetation Ecologist*

## *Highlights:*

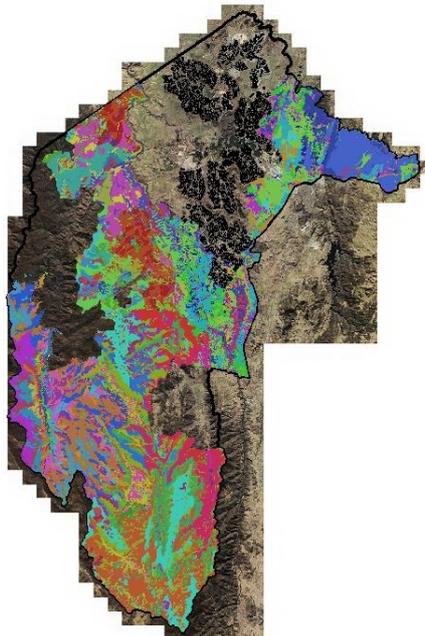
As of August 2016 over 75% of the vegetation in the ACT has been mapped to a community level using a classification developed by the NSW Office of Environment and Heritage in 2013. The mapping separates the vegetation into 61 different types, 45 of which are naturally occurring communities, the remaining 16 types consist of vegetation modified by human activity to the degree that it no longer corresponds to one of the naturally occurring communities.

Vegetation mapping contributes to conserving biodiversity by providing information on ecosystem scale diversity. Ecosystem scale diversity can include measures such as the number of vegetation communities present in an area, or the number of age classes within those communities.

Maximising ecosystem diversity is one of the best ways of maximising species diversity and the underlying genetic diversity that allows organisms to adapt to changing environments.

The mapping has raised a number of different issues relating to conservation management in the ACT. For example Snow Gum (*Eucalyptus pauciflora*) is a key component of the three most widespread natural communities, this adds importance to the need to understand the way Snow Gum responds to fire fuel management activities and climate change. The mapping has identified 13 natural vegetation communities that are largely restricted to the ACT. The responsibility for conservation of these communities therefore falls predominantly on the ACT Government. Another 6 natural communities have very restricted distributions within the ACT and should be considered for nomination as threatened under the Nature Conservation Act.

**Figure 2: Extent of vegetation mapping, September 2016**



The mapping of communities is being supplemented with data on vegetation structure derived from LIDAR. The structural information that is currently being attributed to the mapping includes percent canopy cover, percent shrub cover, mean canopy height and maximum canopy height. The addition of these structural measures allows the maps to be used for more sophisticated modelling exploring the distribution of age classes within communities and associated fauna habitat. In the future it may be possible to link particular fauna groups to age classes within vegetation communities. This information will give us the most detailed picture of ecosystem diversity that we have ever had in the ACT and allow improved management and planning decisions.

For more information, contact Greg Baines at [greg.baines@act.gov.au](mailto:greg.baines@act.gov.au)

# Tailored use and coverage expansion of Canberra Nature Map

*By Dr Michael Mulvaney, Senior Environmental Planner and  
Aaron Clauson, Computer Programmer*

## *Highlights:*

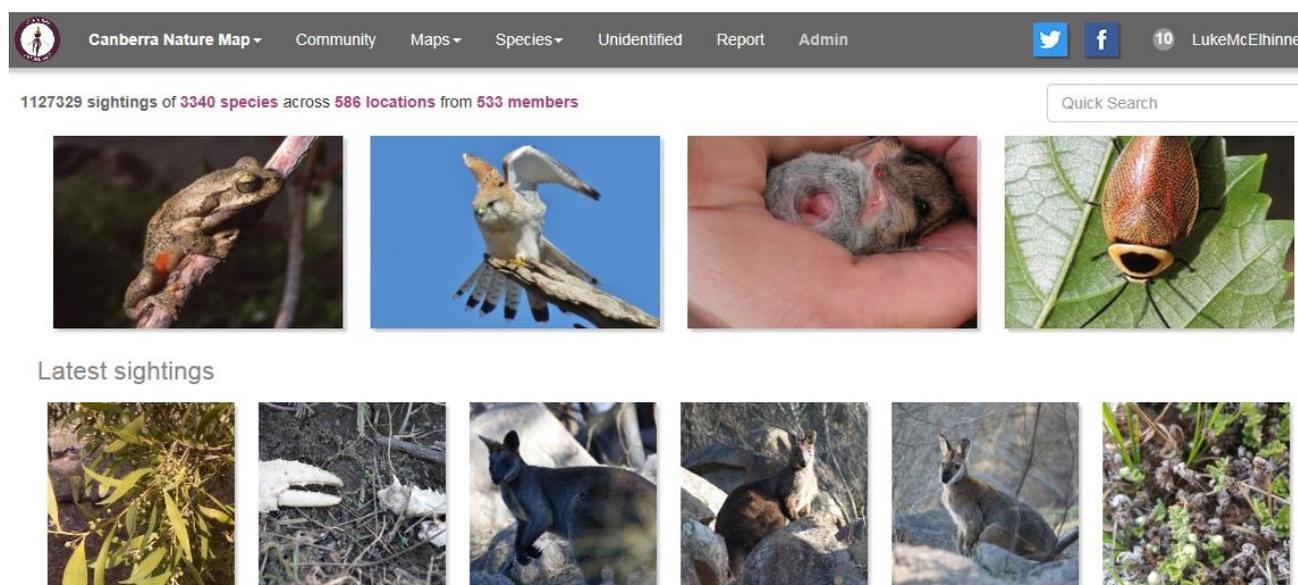
Canberra Nature Map is an on-line regional wildlife database that provides public access to over 1.127 million records of 3340 species and provides species lists for 570 locations. A radar tool can be utilised to click on any point of interest such as an activity area to get a list of all plants, fungi, frogs, reptiles, birds, mammals and insects within 100m, 500m or 1km. Smart phone applications enable users to rapidly search for species of interest in nature reserves and suburbs or capture a photo of a species and have it identified by a team of over forty experts in our environmental community.

Parks and Conservation Service rangers and other staff can now be provided with special status, which enables:

- the reporting of wildlife without having GPS details embedded in an photographic image;
- the reporting of wildlife without having a photographic record;
- bulk loading of historic data on excel tables; and
- access to location and distribution maps for all species and locations across the ACT, including sensitive orchid species

There is some overlap with the reporting functions within the Collector App and the ACT Wildlife Atlas. In these circumstances staff should use what ever they are most comfortable with. Canberra Nature Map should be used whenever there is uncertainty about species identification and when there is urgent need for locational information to be provided to the public.

Figure 3: Home Page – Canberra Nature Map



For more information, contact Michael Mulvaney at [Michael.mulvaney@act.gov.au](mailto:Michael.mulvaney@act.gov.au)

# Kangaroo Management Research

*By Melissa Snape, Fauna Ecologist*

## *Highlights:*

Kangaroo density has been managed in selected areas of the ACT's conservation estate since 2009 to protect the grassy layer habitat upon which many local species depend. Counts are conducted annually within each kangaroo management unit (KMU) to determine current kangaroo density, whilst the target density is determined based on ecological modelling of the relationship between kangaroos and pasture (see [Calculation of the Number of Kangaroos to Cull](#)).

The kangaroo management policy, outlined in the [ACT Kangaroo Management Plan](#) and updated more recently in the [Eastern Grey Kangaroo: Controlled Native Species Management Plan](#), adopts an adaptive management approach. As such, research to quantify the relationships between kangaroo density, grazing pressure (off-take), grassy layer structure and indices of biodiversity was undertaken between 2012 and 2016.

**Figure 4: Kangaroos grazing at Aranda Snowgums**



The driving influences affecting grazing pressure in the ACT's critically endangered grassy ecosystems were examined for five different grass associations ('small tussock', 'medium tussock', 'native tuft', 'exotic perennial' and 'annual'). Results showed that the consumption of 'medium tussock' (*Austrostipa* dominated) and 'native tuft' (*Themeda* and *Bothriochloa* dominated) grasses increased with increasing kangaroo density, but that grass consumption declined both when grass was very short (lack of available food) or when it became long and rank (lack of palatable food) for all grass associations. The rate of grass growth (and hence availability of fresh 'green pick') was the strongest driver of rates of off-take during this study.

The results from this research have identified climate, grass association type, and existing grassy layer condition as important factors for consideration when managing grazing in grassy ecosystems. This study has also provided greater insight into the circumstances under which kangaroo grazing alone can (and cannot) maintain grassy layer structure appropriate for conservation more generally in our fragmented and critically endangered grassy ecosystems.

For more information, contact Melissa Snape at [melissa.snape@act.gov.au](mailto:melissa.snape@act.gov.au)

# ACT Recreational Fish Stocking and Monitoring Program

*By Mark Jekabsons, Aquatic Ecologist*

## *Highlights:*

The Riparian and Aquatic team of Conservation Research within EPD manage the ACT's recreational fisheries. As part of this program, the urban lakes are stocked with fingerlings and monitored to assess the status of these stocked populations.

The ACT Government fish stocking is formalised in the Fish Stocking Plan for the ACT. The Plan is reviewed every five years and outlines locations, species, principles and a schedule for stocking. The National Capital Authority (NCA) and the Canberra Fisherman's Club (CFC) are also guided by this plan. The native species of Murray Cod and Golden Perch are currently the only species being stocked into the urban lakes.

Monitoring of fish in the urban lakes is conducted with an electrofishing boat. This boat passes an electric current through the water which temporarily stuns the fish, allowing them to be collected and measured. Prior to 2010 monitoring was done with the use of gill nets. This method was more resource-intensive and inefficient in catching Murray Cod.

Generally, Redfin are the most common species by number in the ACT urban lakes, but are predominately small fish making up a small proportion of the total biomass. Carp are the dominant species by biomass in all the lakes except Yerrabi Pond where this species was detected for the first time in 2011. Monitoring of artificial habitat placed into Yerrabi Pond in 2013 suggests native fish are favoured by structure. Murray Cod declined in number and biomass in Yerrabi Pond after a fishkill in October 2014 affected only this species. The cause of this fishkill was likely to be from low dissolved oxygen levels.

**Figure 5: A Murray Cod caught during monitoring of Lake Ginninderra**



The stocking program in the urban lakes and the effects of artificial habitat installation will continue to be monitored. A review of the Fish Stocking Plan for the ACT is scheduled for 2020. The pending release of a Carp Herpesvirus may facilitate an earlier review.

**For more information, contact Mark Jekabsons at [mark.jekabsons@act.gov.au](mailto:mark.jekabsons@act.gov.au)**