BUSHLAND NEWS

KATANDRA BUSHLAND SANCTUARY NEWSLETTER
Summer 2024

Best wishes for the New Year.

As usual, Katandra has been closed over summer. It will be open to visitors from the general public on the first Sunday in July, 10am to 4pm, and then every Sunday until the end of October. In the mean-time, track maintenance and weeding will be undertaken in preparation for the opening.
Katandra is maintained by volunteers, with many "Friends of Katandra" assisting by making donations to help cover costs. A donation form has been included with this edition of the Bushland News. Any assistance, whether physical or financial, is most gratefully appreciated.

There is not an abundance of plants flowering currently in the Sanctuary, those that are tend to be small with white flowers. They include *Epacris pulchella* (NSW Coral Heath), *Mitrasacme polymorpha, Platysace lanceolata* (Native Parsnip), *Pratia purpurascens* (White Root), *Pseuderanthemum variabile* (Pastel Flower), *Actinotus helianthin* (Flannel Flower) and *Actinotus minor* (Lesser Flannel Flower).

Congratulations to Roberta Conroy, Vice-President of the Katandra Bushland Sanctury Trust, for being awarded the Medal of the Order of Australia (OAM) for service to the community of the Northern Beaches of Sydney in the 2024 Australia Day Honours List.. This is a just recognition of the tremendous contribution Roberta has made over many years to our local area while being involved in numerous community groups and local council committees, including Katandra.

We look forward to seeing you at Katandra in 2024.

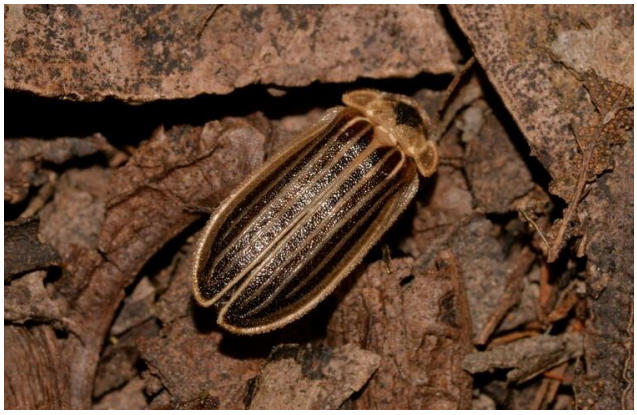
David Seymour

Night Walk and Firefly Spectacular

A Southern Boobook Owl photographed while illuminated with red light during the PNHA night walk in Katandra

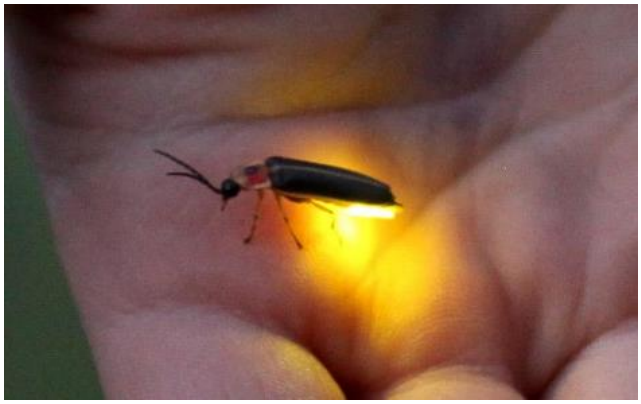
An evening/night walk through Katandra was organised by the Pittwater Natural Heritage Association (PNHA) in mid-October last year. Sightings included a Southern Boobook Owl (*Ninox boobook* - shown above) and some Eastern Water Dragons (*Physignathus lesueurii*) perched on some branches reaching out over the creek. The highlight of the night, however, was a spectacular display put on by hundreds of fireflies flittering throughout the bushland.

Contrary to their name, fireflies are carnivorous beetles of the family ***Lampyridae***, ranging in size from 5 to 25 millimetres long. They have a soft, flattened body that is dark brown or black, sometimes with orange or yellow markings. Found along the coast of NSW, Queensland and Northern Territory, they prefer warm and moist wooded habitats. There are about 25 different types of fireflies in Australia, each with a life cycle similar to that of a butterfly, spending most of their life in a larval stage as a caterpillar. Adult fireflies generally emerge and live for only a few weeks during spring and summer, their mating season. A follow-up walk in Katandra just a few weeks after the firefly spectacular found only a relatively small number of fireflies scattered in the bushland. Fireflies are usually active for about an hour after sunset, the male adults using their flashing light to attract a female who responds by returning a signal. The rate and speed of the flashing light is important for identifying other members of the species as well as discriminating between members of the opposite sex.



An adult firefly beetle (image – Nick Lambert)

Fireflies produce light with special organs on the underside of the body. These organs make light by mixing chemicals with oxygen from the air. This method of light production, called ***bioluminescence***, produces a “cold” light with almost no energy being lost as heat (unlike a light bulb which produces more heat than light). The light flashing can be controlled by changing the availability of oxygen. When oxygen is available the light is on, if not available it is off.



An adult firefly with its light turned on (image Jessica Lucia Flickr.com)

Females die soon after laying eggs, which hatch into larvae within a few weeks. It then takes larvae one or two summers to grow into adults. The larvae of some species can glow, but much more faintly than adults and only for a few seconds at a time. While these firefly larvae are sometimes referred to as “glow worms”, they are different to the well-known glow worms that exist in damp caves and rock overhangs in areas along the east coast of Australia and in New Zealand. These glow worms are not worms but the larval stage of a primitive fly, the fungus gnat, of the ***Arachnocampae*** genus. The chemical processes producing the light in glow worms are the same as those in the fireflies.

Australia is home to 8 of these glow worm species, the only other known species are found in New Zealand. For glow worms, it is in the larval stage of their life cycle that they glow. The adults are delicate flies that do not have working mouthparts, and as such, only live for a small number of days. As the adults are unable to feed, glow worms must gain enough sustenance during the larval stage to get them through the rest of

Glow worms in a disused railway tunnel in the Blue Mountains (Image - Secret Blue Mountains)

their lifecycle. Glow worms build ‘snares’ made of silk fibres coated with mucous. The snares consist of tubes in which the glow worms are suspended, as well as long, hanging filaments coated in sticky beads of mucous designed to catch passing insects. The light emitted by the glow worms attracts insects towards these sticky threads. The larvae are believed to live for approximately one year, although this is heavily dependent on environmental conditions and the availability of food. The adult gnats are poor fliers and so will often remain in the same area, building a colony of glow worms. Over time, isolation of these colonies from each other has resulted in the evolution of the different species. *Arachnocampa richardsae* is the species found the Newness glow worm tunnel in the Blue Mountains of NSW.

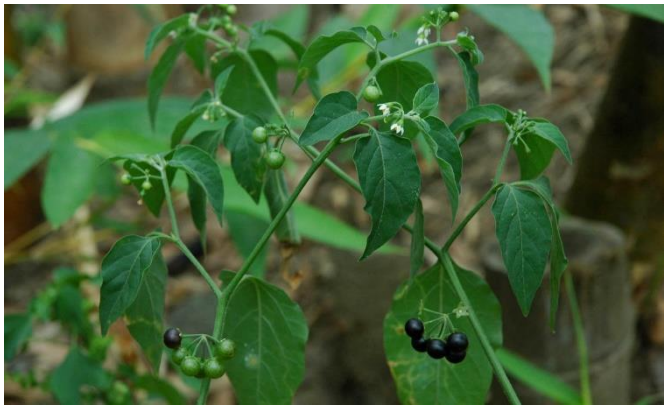
Fireflies and glow worms are not the only animal species that use bioluminescence. Others include some species of fungi, bacteria, jellyfish, lanternfish and dinoflagellates, a type of tiny marine plankton that can sometimes cause the surface of the ocean to sparkle at night.

NOTE - Bioluminescence is not to be confused with ***fluorescence*** or ***phosphorescence***. ***Fluorescence*** is the emission of light by a substance that has absorbed light or other electromagnetic radiation, for example certain minerals glowing under uv light. (Some laundry detergents contain fluorescent granules that lodge in clothing to make them appear ‘whiter than white” when exposed to the sun.) Fluorescent materials cease to glow almost immediately when the radiation source stops, unlike ***phosphorescent*** materials, which continue to emit light for some time after.

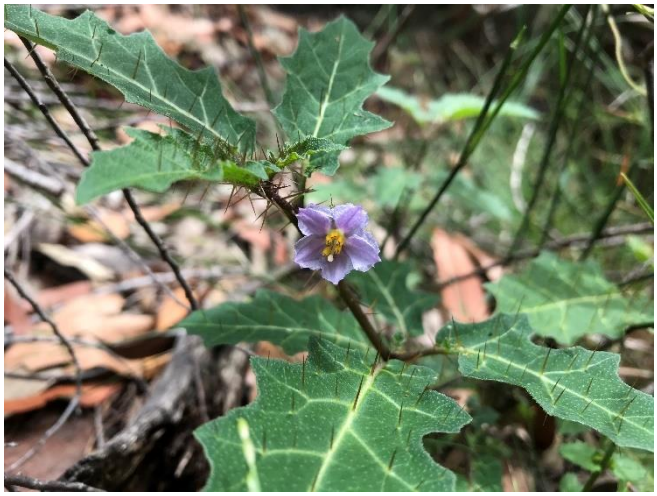
Nightshades

Solanum is a genus within the **Solanaceae** (or Nightshades) family of herbs and shrubs. This family contains some of the world’s most useful crops including tomato, potato, capsicum and chilli peppers, egg-plant and tobacco. 94 of the over 2000 species that occur world-wide are native to Australia. While many species bear some edible parts, such as fruits, leaves and tubers, many have parts that are poisonous to humans (although not necessarily to other animals), especially the green parts and unripe fruit. The toxicity is due to the presence of chemicals called alkaloids, such as solanine. Solanine is what makes the leaves and stem of potato plants toxic. It is also found in the skin and flesh of green or sprouted potatoes. Other alkaloids produce powerful or poisonous drugs. Two Australian species, *Solanum.avicular* and *S. laciniatum*, produce solacidine, an alkaloid used to produce many of the synthetic steroids made in the former USSR. *S.avicular* is also known as kangaroo apple and produces berries which required cooking before being consumed by aboriginal peoples.

Several species of Blackberry nightshade are common weeds that grow in garden beds and other disturbed areas. There is uncertainty as to whether one of these species, *S. americanum (pictured below)* is true native of Australia or not.



Katandra has three species of Solanum - ***S.americanum*** (Blackberry or Glossy Nightshade) ***S. prinophyllum*** (Forest Nightshade) a low spreading prickly shrub ***S. vescum***.(Gunyang), another species found in Katandra that is uncommon in the Sydney area.



Solanum prinophyllum

KATANDRA BUSHLAND SANCTUARY
Foley's Hill, Lane Cove Rd, Ingleside NSW
Department of Lands Reserve No 86487
Founder: the late Harold Alfred Seymour
Managed by Katandra Bushland Sanctuary Trust.
Phone: 0431857407

OPEN: Every Sunday: July, August, September, October
HOURS: 10 am — 4 pm
ADMISSION: $5 donation

KATANDRA BUSHLAND SANCTUARY TRUST
PO Box 365 Mona Vale NSW 1660

President: David Seymour
Vice-President: Roberta Conroy OAM
Secretary: David Seymour
Treasurer: Peter Hammond
Minutes Secretary: Julie Emerson OAM
Bushland News Editors: Marita Macrae OAM
David Seymour

(Cover Design by the late Walter Cunningham)

Enquiries: phone 0431857407 or via the Contact Us page on the Katandra website

Katandra website -
katandrabushlandsanctuary.com

PUBLIC OPEN DAYS 2024

Each Sunday of July–October
10 am – 4 pm

Picnic tables are available for use should you wish to bring along a picnic lunch to enjoy in the Sanctuary.

DIARY DATES 2024

SANCTUARY MAINTENANCE 2024

Maintenance days are generally once a month from March to November.

The schedule of days for 2024 is currently under review. Dates for the maintenance days will soon be available on the Katandra website.

Volunteers are needed

If you can assist on maintenance days or with welcoming visitors to Katandra on open days, please phone 0431857407

Friends of Katandra

PO Box 365 Mona Vale NSW 1660

I / We, ...
(full name)

of .....
(address including postcode) (phone)

Email : (please print clearly).....

☐ would like to join the Friends of Katandra mail list and receive copies of the Bushland News quarterly newsletter

☐ would like to make a donation to assist in caring for the sanctuary. I enclose a cheque / money order made payable to the Katandra Bushland Sanctuary Trust for

☐ $10.00 ☐ $15.00 ☐ other (please specify).....

Alternatively donations can be made by direct deposit into the Katandra Bushland Sanctuary Trust account BSB 082132 Account No. 509347998

Signature..... Date.....