

Pittwater Nature

Issue 5 April 2021



News and stories from Bushcarers, Wildlife carers, Community and home gardens

Trad biocontrol in Ingleside Chase Reserve: Success! Trad biocontrol smut takes off.

You'll have read about our October 2020 smut releases in PNHA Newsletter 86.

We're excited to announce that Trad next to where we planted some infected stems along the track to the Irrawong waterfall is looking yellow and sick. The spores of the smut, a type of fungus, have started spreading and infecting healthy Trad. We were advised to wait for up to a year for results, so to see Trad dying after only six months is wonderful.

We receive boxes of infected stems from the CSIRO in Canberra. In February this year we planted stems amongst dense Trad along Narrabeen Creek at Warriewood. This April we planted in the Avalon reserves Toongari, Palmgrove Park and Plateau Park and in Crescent Reserve Newport. A few stems were also planted in the Avalon Community Garden. McCarrs Creek Reserve had been planted in October, but in April we planted more in other areas there.

Click here: <https://blog.csiro.au/smut-to-the-rescue/> to read about the CSIRO's Wandering Trad biocontrol program.

Left: Smut spores form on the lower surface of the leaf. **Centre:** Yellow dying cells from upper surface. **Right:** Infected area. Leaves will die, the plant will collapse, native vegetation can get light. Bush regenerators and gardeners, rejoice!



Children:

Ask us a question and we will try to answer.

Here's a trick question to ask someone: How many flowers are there in one daisy? Have you only given me one flower?

Answer: I've actually given you a bunch of flowers because each daisy has lots of flowers (in the centre). Each yellow dot is a flower that can produce a seed. The petals are another type of flower but they don't produce seeds.



We care for our natural world in the Pittwater area, by looking after bushland, caring for wildlife, producing sustainable food in community gardens, and at home.

Pittwater Natural Heritage Association (PNHA) is publishing this newsletter to help us keep in touch and encourage each other in our various volunteer activities.

We welcome your contributions. Contact us: pnhainfo@gmail.com and on Facebook

Make a 'Bee Hotel'

A home-made bee hotel is a great way for children to observe insect behaviour. It's fun to see what insects investigate your hotel as a place to shelter or lay their eggs.

There is a lot of information online about the design, location and maintenance of your bee hotel. It's as easy as searching online for 'Australian native bee hotel', but your bee hotel can be as simple as a recycled plastic bottle cut to size and filled with bamboo and paper tubes.

The most likely bees that will visit are cavity-nesting bees, which include masked, leaf-cutter and resin bees. Other native insects such as solitary wasps and beetles can co-habit with bees, and may use your bee hotel for shelter and nesting. It's exciting to observe them checking out the new hotel in their neighbourhood.

This bee hotel and the mating Masked Bees *Hylaeus (Hylaeorhiza) nubilosus*, right, are in North Narrabeen.

More about Masked Bees here: <https://australian.museum/learn/animals/insects/masked-bees/>

Kerry Smith



Bees and Other Beneficial Insects; a Pocket Guide Megan Halcroft 2021

We think this is a fantastic little book. Only slightly bigger than an iPhone 11, the pocket-book gives you a quick reference to the bees' appearance with suggested pages to go to. The print is quite large and



images are descriptive. There is a guide to identifying male from female bees, flies from wasps, bees from flies and some basic anatomy (but nothing too dull, says Megan).

The beneficial insects included are some beetles, dragonflies, flies and other insects, describing their ecosystem services, i.e. why they are beneficial.

This 125 page book is available for \$15. Postage for one book is \$5, or \$7 for 2-3 books.

To get a copy, email: megan@beesbusiness.com.au, giving your postal address and how many books you'd like. She'll send you the total price and her bank details for payment. The book was printed in Lithgow. Megan's Facebook: <https://www.facebook.com/BeesBusiness/>



A Teddy Bear Bee *Amegilla bombiformis* on a Salvia in a Bayview garden. Bees love Salvias, and others in the Lamiaceae family such as Rosemary, Lavender and Mint.



Pittwater slug colours

The most unusual thing about this slug is the vast range of colours. One thinks of slugs as dull grey or black-spotted. Our fellow ranges from pale avocado to rich green, or mostly orange to a spectacular scarlet. They feed mostly on the fungi and slimy /powdery 'mildew' on tree trunks, and leave broad, very visible feeding tracks on the slender trunks for instance of the blackbutts in NENP. These tracks are so visible that you can clearly see them as you drive at 60mph through the Park, indicating their extreme commonness. However the slugs are very cryptic. They rest by day deep in the fallen bark and leaf detritus at the base of the trees. On a dull and wet day they can emerge. The Mt. Kaputar specimen (Narrabri) is the most spectacular. This incredible bright scarlet form, as a 10cm (4") beast standing out on a bare wet rock face is a sight to behold. The Sydney form is usually a pale olive green or avocado, but with a signature, red-bordered, large triangle patch (mantle) surrounding a breathing pore on the dorsal surface and the trade-mark red trim, which also borders the foot.

Unless you are lucky, all the slugs in your backyard are imported. There are 10-15 species in Australia now, but if they don't have that scarlet trim and red triangle, they're worth stepping on.

Phil Colman

The unlikely survival of the Kaputar slug

An article in The Conversation of March 16 2021 described the survival of five species including the Mt Kaputar slug, described above:

Creatures such as kangaroos or birds have a chance to flee bushfires, but smaller, less mobile species such as native slugs and snails have a much tougher time of surviving.

The 2019-2020 bushfire season significantly threatened the brilliantly coloured Mount Kaputar pink slug, found only on the slopes of Mount Kaputar, NSW. When fires ripped through the national park in October and November 2019, conservationists feared the slug may have been entirely wiped out.

But park ranger surveys in January 2020 found at least 60 individuals managed to survive, likely by sheltering in damp rock crevices. Community scientists have spotted more individuals since then.

You've heard the saying – "Beware of the Agapanthus. If attacked, back slowly towards the gate".

Let's try another. "Stop to admire the *Triboniophorus graeffei* on the path". If this is a mouthful, enjoy the flow of syllables that spell *Athoracophoridae*, its family name.

Commonly called the Red Triangle Slug, this handsome slug is represented by only one species in Australia, with a range along our eastern sea-board encompassing many habitats, but all moist. I have found them in the bracts of grass trees (*Xanthorrhoea*) in near sea-level shrubby heathlands of Royal National Park and collected them on the mist-shrouded, lichen-covered and wind-swept top of Thornton Peak in North Queensland. It is extremely common in New England National Park (NENP). Interestingly, there are 28 species of this family in New Zealand.



Another local native slug that bush regenerators were lucky to spot is this marine one, beside Careel Creek. It's about 6cm long.

Phil Colman identified it for us as in the Onchidiidae family, but was unsure of the species. See the two short eye stalks on the right side.

More info here:

<https://en.wikipedia.org/wiki/Onchidiidae>



Bushcare

Bangalley Head Reserve bushcarers celebrate with tea (right)

At last bush regeneration contractors have started work in this weed infested part of the reserve, near the track above Whale Beach Rd Avalon. Just when we thought we might as well give up!

Below, **Angophora Reserve bushcarers** pause for a chat. Give bushcare a go! It's marvelous being in the bush with friends, learning about the plants, hearing birds, enjoying



good company, feeling at one with nature even if you wish some of it (the weeds) wasn't there.

Look on Northern Beaches Council's website for a bushcare group in a reserve near you.

Plateau Park, Bilgola Plateau

This bushland reserve and the grounds of Bilgola Plateau Public School next door contains some special bushland called Duffys Forest Endangered Ecological Community, EEC for short.

The laterite soil underlying this area gives rise to particular associations of plant species called a plant community. The soil is rusty-red because of high iron oxide content. This community is generally situated on ridgetops, plateaus and upper slopes, on shale lenses and lateritic soils in Hawkesbury Sandstone.

It's listed as endangered because the estimated original extent was approximately 1450 ha, of which less than 16%, or approximately 240 ha, remains. The critically endangered Caley's grevillea is commonly found in this plant community, though not at Plateau Park.

Canopy trees here include Sydney Red Gum *Angophora costata*, Red Bloodwood *Corymbia gummifera*, Scribbly Gum *Eucalyptus haemastoma*, Silvertop Ash *E. sieberi*, Bangalay *E. botryoides* and Broad-leafed White Mahogany *E. umbra*.



Woody Pear fruit and flower spikes

The Proteaceae family is generously represented here with many species, including Waratah, which occurs in no other nearby reserves as far as we know, though it was formerly in Angophora Reserve nearby. If you are lucky enough to see a Waratah please **don't pick it** as this prevents seed pods developing and more Waratahs in future.

The unusual small tree Woody Pear *Xylomelum pyrifolium* grows in Plateau Park, and on road reserves further east in Plateau Rd. The "pear" is avocado-sized.

The Duck Orchid and Large Tongue Orchid *Cryptostylis subulata* was flowering there recently. The upside-down flower gives off the scent of a female wasp, attracting a male which in copulating with the flower, pollinates it. The wasp is in the *Lissopimpla* genus. They must find a real female sometimes, as the orchid relies on their breeding success for its pollination. Another of the **Wonders of Nature**.



Parts of Plateau Park had hazard reduction burns in 2011 and 2018. These have had remarkable results in stimulating bushland renewal. Christmas Bells flowered after one fire.

That male wasp. See more about these wasps at one of our very favourite websites: http://www.brisbaneinsects.com/brisbane_ichneumonwasps/OrchidDupeWasp.htm



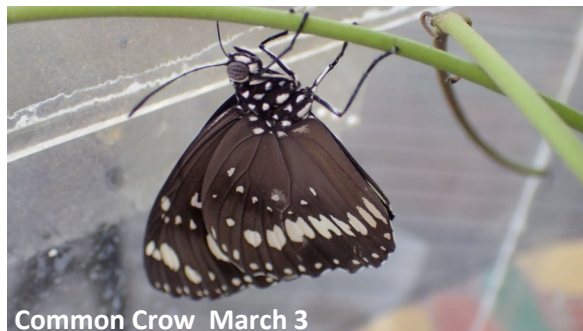
Seed pods developing on pollinated orchid flowers.

A bushcare group meets here on the first Friday of each month. Next date will be May 7. Contact Ken Hughes on 0417 287 320 for more information. We'd love some more helpers.

Common Crow Butterfly

Danaines or Milkweed butterflies are a sub-family of Nymphalidae, one of the five butterfly families. Caterpillars of this group sequester toxic combinations of chemicals in their bodies, gained from feeding on foliage of plants in the three plant families, Apocynaceae, Asclepiadaceae and Moraceae.

The Common Crow *Euploea core*, right, is frequently seen in Sydney suburbs along with the related (but introduced) Wanderer or Monarch *Danaus plexippus*. Some common native host plants eaten by Crow caterpillars are *Parsonsia straminea*, *Marsdenia* spp (climbers) and *Ficus coronata* (Sandpaper fig). There is also a record (Scheermeyer & Zalucki 1985) of crow larvae using the thorny *Maclura cochinchinensis* (Moraceae), a plant which grows locally on sand dunes at Avalon Beach. The exotic and once popular Oleander *Nerium oleander* is perhaps the plant used most by Crow larvae in our area, but these shrubs are falling out of favor in our gardens owing to their toxic milky sap.



Common Crow March 3



Blue Tiger

Two other butterflies, closely related to the Common Crow are the Blue Tiger (*Tirumala hamata*) and the Lesser Wanderer (*Danaus chrysippus*), both migratory species which make sporadic appearances in Sydney.



Wanderer or Monarch

On February 5 Marita Macrae collected two Common Crow butterfly eggs, deposited on Oleander flower buds on Bilgola Plateau. I offered to breed them on to adulthood, and with *Parsonsia straminea* growing in our yard, food for them would be easily provided.

The two tiny caterpillars emerged about four days later. One didn't survive beyond the second instar (growing phase) but inadvertently I'd

collected another small Crow larva on *Parsonsia* foliage. Caterpillars fed openly during the day and developed quickly, the first reaching 25mm in body length by February 18, pupating a week later on the 25th. The handsome butterfly emerged mid-afternoon on March 7 and after a few photos was released. Complete life cycle was around thirty days.



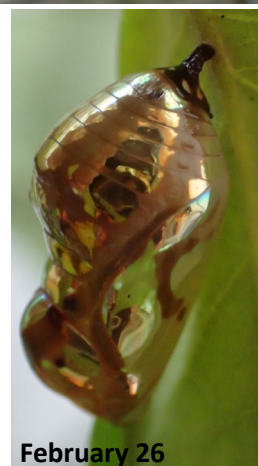
February 13



February 23



Lesser Wanderer



February 26

In the wild parasitism of butterfly and moth larvae is common, either by species of wasp or Tachinid flies and as an example, of eight *Danaus plexippus* caterpillars that pupated on cotton bush *Gomphocarpus fruticosus* in our yard earlier this year, all had been attacked by parasites, the outcome very poor for the caterpillars. No butterflies developed.

Gary Harris

References: Butterflies of Australia, Their Identification, Biology and Distribution, Michael F. Braby C.S.I.R.O Publishing 2000

When Bill Nicholson, a spritely friend of the Avalon Community Garden turned 94 this year, I asked him what the secret to his longevity was. Without hesitation he answered, "Converting to organics". Born in 1927, Bill grew up in the days when there was no such term as 'organic gardening' because there were no chemicals back then. All gardens were 'organic'. He remembers his grandpa's method of enriching the soil with horse manure and sawdust in Melbourne around the time of WW2.

When he married he lived in Bendigo, but it wasn't until he lived in Geelong that Bill was involved with Geelong Organic Growers and successfully converted a largely concreted backyard to an organic garden without using any chemicals which were flooding the markets after the wars. The important thing about organic vegetable gardening is creating a healthy soil which includes an abundance of living organisms such as bacteria, fungi, earthworms, beetles and spiders. As Bill will tell you, *"modern agricultural chemicals and fertilisers kill many of these organisms, starting a spiral where more and more chemicals are necessary to produce marketable food"*. Back in Geelong, he *"didn't think the chemicals sounded right ... so just kept using Grandpa's methods"*.

While not often recommended these days Bill composted with lawn clippings very successfully using a hot Compost method which he learned from a CSIRO booklet on *Composting – making soil improver from rubbish* (Hendrick, Kevin Arthur, 1938 © CSIRO 1978).

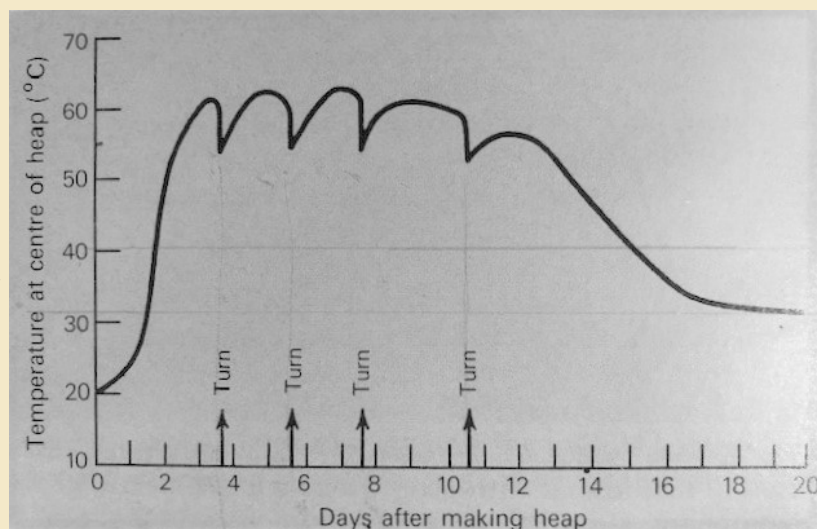


Knowing the local mower man was paying \$20 a load to dump his lawn clippings at the tip, Bill did a deal the mower man couldn't resist – *"You can dump the clippings at my place for free and, in exchange, I'll give you fruit and vegetables"*. He also collected sawdust at the local timber mill for free. Bill's two large compost bays consisted of nothing more elaborate than a couple of sheets of reinforcing steel mesh lined with plastic and a sheet of corrugated iron for the roof.

Bill was scientific about his composting method checking the heap temperature every day and turning the heap with a

pitch fork from one end of the bay to the other every two to five days to keep it aerated. It is important to know what is happening with the temperature of the heap as the type of microorganisms in the heap depend on it. It is the organisms that break down the material. If the temperature exceeds 65 degrees you will lose nutrients. When you turn the heap and it no longer heats up, then it is ready to use. This method takes on average 2 – 4 weeks to make compost in areas like Sydney and Geelong.

This picture of the CSIRO temperature chart shows how the temperature changes in a typical heap over time.



All the compost went into every bed and built up the height of them. A truckload every year was produced, and from it, avocados, lemons, peaches, raspberries, pomegranate, pumpkins, herbs and leafy green vegetables grew. His under-producing avocado tree went from producing paltry amounts of small fruit, to having an abundance of big avos growing 8 to 11 fruit in each cluster.

As a chemical engineer and senior scientist, Bill knows a lot about successful composting, organic vegetable growing and the resulting higher nutritional values contained in organic vegetables. He summarises the major benefits of growing the world's food organically as:

It is healthier – a 12 million pound study in the EU investigating the difference between organic and ordinary farming showed that “organic foods have far more nutrient value, and contain minimal toxins”. Bill adds to that- “healthier people reduce medical costs”.

Organic soils retain more water than chemically farmed soils and so the organic soils need less water to grow food and pastures.

Organic soils sequester so much carbon that the effects of climate change can at least be reduced.

The warmth from Bill's composter was also useful for sprouting seedlings, so when raising seeds, Bill would switch the corrugated iron roof of the bin to clear Alsonite so the newly sprouted seedlings got light.

Bill knew that success also depended on attracting beneficial insects to his garden, knowing which insects were friend and which were foe. Any he could not identify he would send to the Museum for identification.

If you wish to see successful composting in action or learn more about the technical aspects of this wonderful scientist's composting method, or his ideas about carbon in the soil via organic gardening and global warming, the link between human health and farming, please reach out to the Avalon Community Garden on Mob: 0403 111 020 and we can put you in touch.

Phyllis Agius



In early April David Seymour saw this young Powerful Owl from last year's brood in Katandra Bushland Sanctuary. The owls are getting ready to breed again now. The male hoots loudly to let others know he's defending his territory. More Powerful and other Owl info: <https://youtu.be/BCqg6aJxRts>



Like the Powerful Owl, the Sugar Glider needs old canopy trees, with holes big enough to live in with its family or clan of up to seven adults and their youngsters. It is like a tiny possum but it has a furry membrane extending from its fifth finger to its ankle enabling it to glide up to 50m between trees. A male weighs about 140g and a female 115g. In comparison, a Common Ringtail Possum weighs up to 1100g. Thanks to Total Earth Care ecologists for this photo.

Lots more information about this marvellous little marsupial here:

https://en.wikipedia.org/wiki/Sugar_glider

Listen for its night time call, like a yapping small dog. Here:

https://www.youtube.com/watch?v=CUWimnGi_w4

If you plant a canopy tree tomorrow, maybe in about 150 years a Sugar Glider clan will call it home. Or join a bushcare group to care for a tree already with a hole? Your great grandchildren will bless you for this. Especially if you have kept your cat inside!

Wildlife Rescue

Have you ever rescued an injured native animal, dropped it to a vet and then wondered what happened to it thereafter?

Depending on the type of animal and the severity of its injury, chances are that the animal ended up with a volunteer wildlife carer.

This is basically the process that is followed:

1. You rescue and drop a native animal to your local vet clinic (with details of its rescue address)
 2. The vet on duty examines and treats the animal (occasionally an animal may need to be referred to a specialist veterinarian or to Sydney Wildlife's Mobile Care Unit)
 3. It is placed into an appropriate enclosure whilst a member of staff makes contact with one of the wildlife rescue organisations (in the Pittwater area, it is either Sydney Wildlife Rescue, WIRES or Australian Seabird Rescue)
 4. A record number is assigned to that animal
 5. The wildlife rescue organisation puts out a call to all the volunteer carers within that area
 6. A volunteer accepts the "job" and collects the animal from the vet clinic, along with any medications and instructions for ongoing treatment
 7. The volunteer then cares for the animal in their home until it is ready for release
 8. Sometimes the animal may need to spend some time in a rehabilitation facility to build up its strength
 9. Multiple veterinary follow-ups may be required throughout an animal's rehabilitation
- The fully-rehabilitated animal is returned to its home range

Many injured or orphaned native animals can spend weeks or even months in care and each animal's rehabilitation journey is different. Orphaned animals can take as little as 3 months to become fully independent (such as ringtail possum joeys) or as much as 18 months (in the case of joey kangaroos)! Many of these orphaned animals become very humanised during the months that it takes for them to be hand-raised. This means that they often require time in our Sydney Wildlife Rehabilitation Facility to become dehumanised. At the Rehab Facility, joeys are given an opportunity – in a predator-free environment – to get used to the vagaries of the weather, parasites and seasonal changes to food sources. They also get an opportunity to build up their muscle mass by having a large area in which to run and become "bush-fit".

Rehabilitation time can vary greatly between species. Reptiles, for example, usually spend up to double the amount of time in care that would be required by a mammal or a bird. A turtle with a fractured carapace (shell) can be in care for up to 12 months, but a bird with a fracture can heal in as little as 3 weeks!

Raptors (eagles, owls and other birds of prey) may require more specialised rehabilitation and our volunteers often make the long journey to the Southern Highlands to transport a wedge-tailed eagle or a powerful owl or a peregrine falcon to **Higher Ground Raptor Centre**. See: <https://www.highergroundraptors.com/>

Most of our volunteers are no strangers to making long trips to ensure that a native animal receives the best care or treatment during its rehabilitation. Sometimes animals need to be transported long distances to be released to an area that will ensure a better outcome for their survival. Two of our volunteer rescuers recently made the long journey to Bellingen with a car full of bats! The hand-raised bat pups all needed to graduate from "bat creche" and join a colony in Bellingen. Sea-snakes are another animal that often need to be transported long distances from Sydney back to, say, Ballina, after being caught in fast-moving currents and being washed up, exhausted, on beaches too far south.

You would be surprised at the amount of time, resources and money our vets and volunteers spend on ensuring that wildlife are treated with the same respect and care that is given to "paying customers". We are all very grateful for the support of our amazing local veterinarians and their clinic staff.

Lynleigh Grieg

Here are some Before and After photos of animals that have spent time in care/rehab before being released back to the wild:



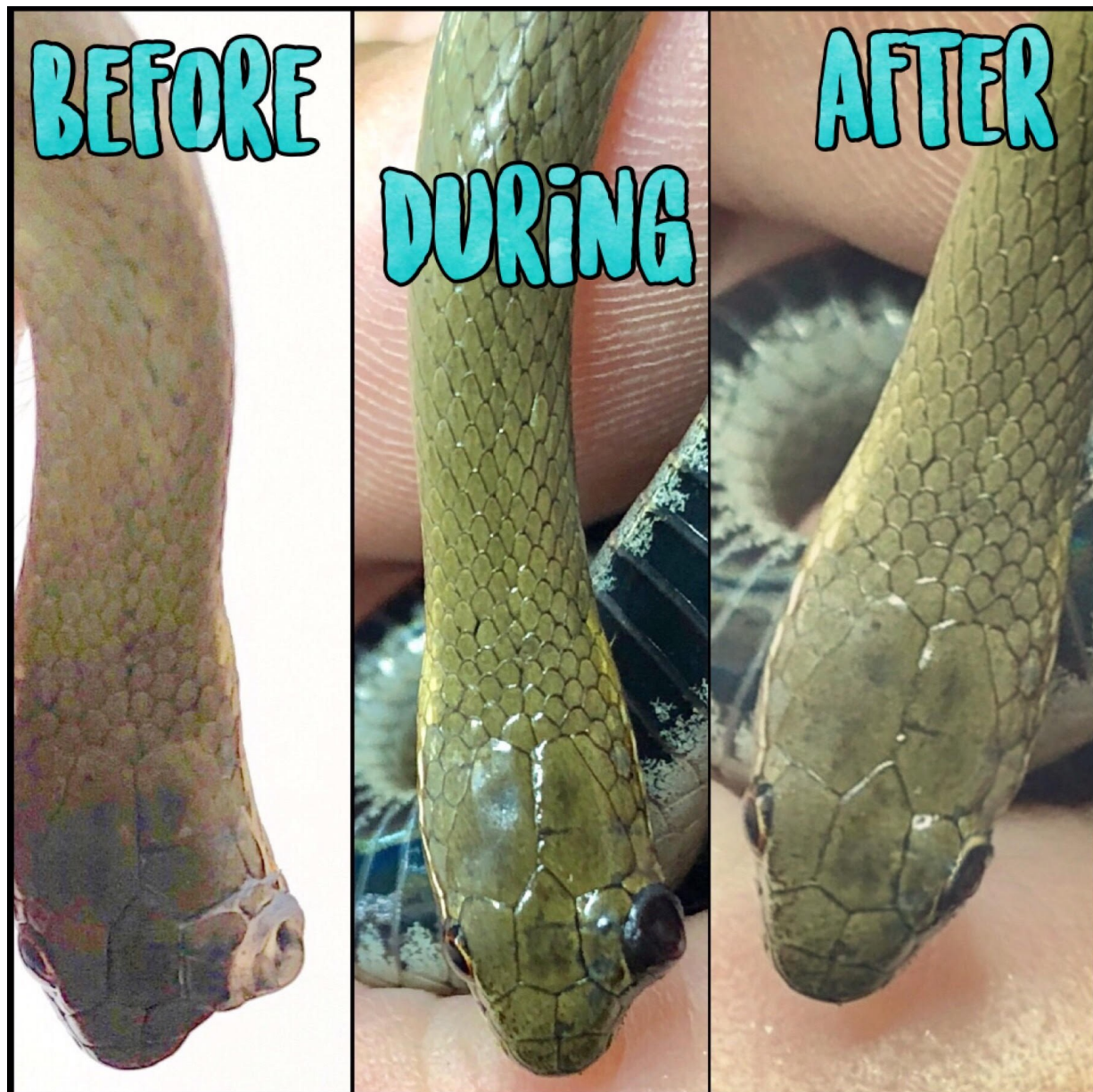
Wedge tailed eagle - in care for 6 months. Rescued by Sydney Wildlife Rescue, ICU treatment by Taronga Wildlife Hospital and rehabilitated by Higher Ground Raptor Centre. Released by Dr Charles Carter.



Water dragon with fungal infection. Rescued by Sydney Wildlife Rescue and treated in their Mobile Care Unit.



Diamond python rescued by WIRES and treated by Dr Izi Sladakovic in Sydney Wildlife's Mobile Care Unit.



Marsh snake with eye anomaly. Rescued by Sydney Wildlife Rescue and treated by Dr Izi Sladakovic.



PNHA's Mission Statement is:

To promote and facilitate the enhancement and understanding of the natural heritage and ecological systems within the Pittwater area.

The PNHA vision is:

An engaged and aware community working to conserve and enhance its natural heritage.

Find us: pnha.org.au and Facebook <https://www.facebook.com/PNHAaus/>