



# The Natural News

Central North Field Naturalist inc.  
(CNFN)

Patron: Dr. Peter McQuillan

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## WALKS PROGRAM: (see insert for details)

**FEBRUARY 3RD ARBORETUM**

Meet at 10.00 at the Arboretum

**FEBRUARY 29TH - MARCH 2ND TARKINE**

**MARCH 14TH - 16TH Federation Weekend**  
at Tiger Hut, Liawenee. Hosted by the  
Tasmanian Field Naturalist Club

**April 13th PENGUIN SHELF**

**(NB This is the 2nd Sunday in April)**

Meet at 10.00 at the parking lot at the  
western end of Penguin

**MAY 4th HOLWELL**

Meet at 10.00 at the Holwell Gorge car  
park at the southern end

**JUNE 1st LANDSLOW CRESCENT WETLANDS**

Meet at 10.00 Devonport

## THAT SHE BLOWS!

by Rod McQueen

Though I'm an old hand at whale-watching now — for two years in a row I have had the opportunity of spotting a few *Megaptera novaeangliae*, or humpback whales, off the NSW coast at Merimbula during their annual southward trek — I believe the thrill of watching these leviathans ply their cetacean trade could never wear off. (One species down, only about 35 more to go!)

In 2006, Martha and I did the tourist bit and booked a ticket on an expensive whale-watching safari. Since some friends who had gone fishing the day before had been treated to the magnificent spectacle of a number of whales leaping and frolicking, we set out with great expectations. Though we were disappointed at the meagre results — we saw only the backs and tails, from a considerable distance, of a mother and calf who were stubbornly disinclined to perform any balletic leaps — the disappointment was tempered by the zing that accompanies the first sighting of one's life. For about an hour we tracked the duo as they deliberately moved ever so slowly towards Antarctica and its tons of tucker. A few times we were treated to the sight of the calf lunging half-heartedly from the water before returning with a gracious splash.

Since the individuals we saw were hugging the coastline closely, probably no more than 100 metres from the shore, I decided that this year I would do my whale spotting from cliff-tops with a pair of binoculars. Well, I saw quite a few specimens this time, but all were stubbornly determined to stay hundreds of metres offshore. And once again, no sign of tail slapping or breaching (leaping). Foiled again. Oh well, better luck next time. And now that we have been bitten by the whale bug, numerous "next times" there will be.

As I found from experience, the first visible evidence of a whaleberg passing by is usually the universally-recognized spout of tiny water droplets, the shape of which differs by species, followed shortly thereafter by a vignette view in slow motion of the tip of the back as it breaks the surface, glides along, then sinks back in a steep arch into the depths with an upward flick of the massive tail before disappearing from sight. Most of the time that's all you get to see. Very modest creatures, these acrobatic giants. Either that, or they love taunting hopeful observers. If you are truly lucky, as my fishing friends were, you may witness the spectacular behaviour known as breaching — a full-on leap from the water during which they roll in the air with their

huge fins outstretched like wings, followed by a thunderous and dramatic return crash. Though experts differ as to the purpose of this phenomenon, they can tell you with assurance that such leaps constitute "the most powerful single action performed by any animal" (Hal Whitehead, *Why Whales Leap*, *Scientific American*, March 1985), entailing the lifting of a biomass equivalent to about 485 people weighing 68 kgs each. These gentle giants are also known to lift their pectoral fins out of the water and wave them about as well as to roll over and smack the fin down on the surface.

One of about 76 species of whales and dolphins of the mammalian order Cetacea, the humpback whale belongs to the suborder Mysticeti, or baleen whales. This suborder includes the grey whale, right whales (three species) and the rorquals (six species, including the humpback). These beasts sieve out small organisms such as krill from the water using combs of baleen plates made up of thick bristles suspended from the upper jaw on both sides of the mouth. Wikipedia informs us that the largest of these sets of plates can measure up to 3.5 metres long and weigh as much as 90 kgs. The other suborder of whales, the Odontoceti, includes toothed species such



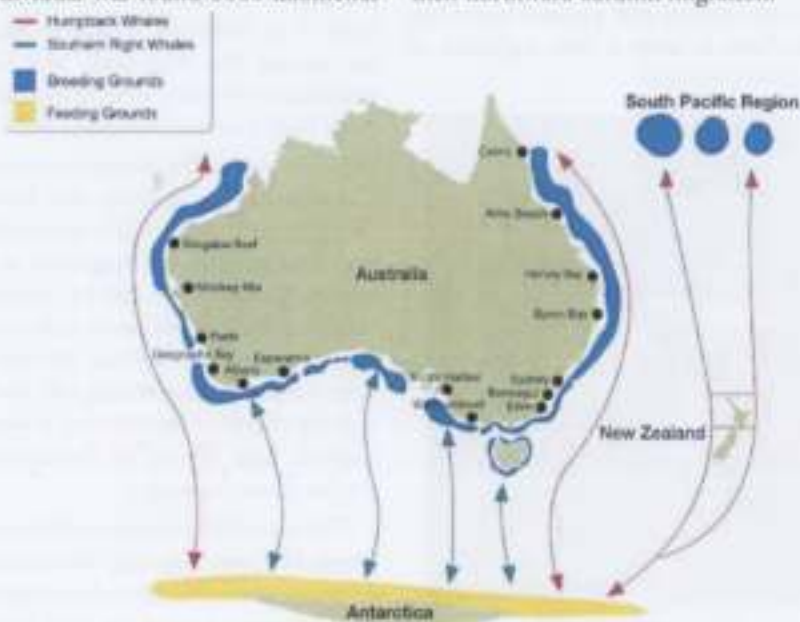
Humpback Whales: [NSW National Parks & Wildlife Service]

as dolphins, white whales, sperm whales, and beaked whales.

The humpback whale, noted for the huge pectoral fin which can attain lengths of up to one third of its 16 metre body length, is found in all the world's oceans. Females give birth in tropical waters where the warmth provides suitable conditions for the calves to feed and put on a layer of fat before heading towards the colder poles for their summer orgy of eating. Despite their enormous size, humpback calves are born without a protective blubber layer and would quickly freeze to death in frigid waters. Growth is rapid as calves drink 400 litres of mother's milk — which is about forty times fattier than human milk — every day. The conflicting needs of warm waters for the survival of the newborn and cold waters for the provision of enormous amounts of food explain their annual migration. Humpbacks hold the record for mammalian migration; one individual was found 8000 kilometres

removed from a previous sighting five months earlier. Only in the Arabian Sea do you have a year-round population that defies this general pattern.

Eastern Australian humpbacks spend the winter off the Queensland coast and the summer in cold Antarctic waters where the direct rays of the sun maintain huge populations of photosynthesising diatoms and their predators, including the 4 to 8 cm shrimp-like krill that makes up the lion's share of the humpback's diet. (Humpbacks also eat whatever else, including fish, that their baleen plates sieve out.) They can best be seen during the southbound leg of their annual pilgrimage between late September and late November, the peak time for viewing along southern NSW's Sapphire Coast being late October. At this time mothers and new-born calves are often seen together, and individuals are more inclined to travel in groups than during their northward autumn migration.



Map: NSW National Parks & Wildlife Service



Whaling was Australia's first primary industry; oil was used in lamps and candles and as a base for perfumes and soaps. Baleen was used in corsets, whips, and umbrellas. By 1845, twenty six thousand whales had been killed in eastern Australian waters, most of which were southern right whales. Few humpback whales were taken by comparison; hunting them in earnest began in eastern Australia around 1950. In typical who-cares-about-tomorrow style, they were pursued so relentlessly and efficiently that by 1962 over 12,500 had been killed and processed leaving only 200 to 500 survivors; the industry collapsed due to its own stupid success. Since 1965, when they became protected, numbers have been steadily increasing, so that now about 8000 are estimated to pass along the coast, with the number increasing by about 10% each year. Although that's still a long way short of the estimated 30,000 that once took part in the annual migration, it's enough to ensure any determined person with a pair of binoculars and an hour to spare at least a glimpse of this majestic creature.



Breaching Humpback  
Photo: Max Egan

## IN DEFENCE OF CUCKOOS

by Sarah Lloyd

### LATE WINTER

The pallid cuckoo  
Sent up in frail  
Microtones  
His tiny scale  
On the cold air.  
What joy I found  
Mounting that tiny  
Stair of sound.

- James MacAuley

I'm always defending cuckoos! Some people consider that birds that lay their eggs in another bird's nest and leave the rearing of their young to foster parents are so despicable that they shouldn't be allowed to exist. But cuckoos have several redeeming features that make them worth defending: their songs herald spring's arrival, their plumage is either toned in camouflaging hues or is strikingly iridescent and they are among the few birds that control populations of hairy caterpillars that most other birds find distasteful and avoid.

All four cuckoos in Tasmania are migratory and after arriving in about mid September they sing their songs (which admittedly lack the varied repertoire of songbirds) to attract a mate. Fan-tailed and Pallid Cuckoos often sing from an exposed perch such as a dead branch, power line or fence. The Fan-tailed sings a mournful descending trill, the Pallid a rising octave of microtones, a song that inspired "Late Winter" by Tasmanian poet, the late James MacAuley.

The beautifully coloured iridescent green Horsfield's and Shining Bronze-cuckoos usually keep well hidden in dense vegetation, their incessant singing the only indication

of their presence. That is, unless you're fortunate, as I was recently, to encounter a trio of displaying males.



Shining Bronze-cuckoo

At the Kate Reed Reserve I watched three Shining Bronze-cuckoos as they preceded my walk along the track. They displayed with spreading wings, sang repeatedly and searched for insects amongst the foliage of the sheoaks and native cherries. But they were not after just any insects. On three occasions in the space of ten minutes I watched the cuckoos capture caterpillars - two hairy, one smooth.

Caterpillars have a number of defences that make them unpalatable. Firstly, toxins from their food plant accumulate in their bodies; and secondly, many are coated in hairs, some of which are urticating. Urticating hairs (like those on stinging nettles *Urtica* spp.) come in two types: some are tubular and contain venom which is injected into the unwary; others simply break off and are small enough to penetrate clothing or skin and cause irritation (something akin to handling fibreglass insulation).

Cuckoos cope with the caterpillars' gut contents by first biting off their heads then shaking them about to expel the toxic innards. After this the caterpillar is swallowed whole - hairs and all. The caterpillars' hairs form a felted mat on the stomach lining which is eventually expelled as a pellet.

Further on in the reserve I noticed a Black-headed Honeyeater moving between a silver wattle and a eucalypt. While this is a reasonably common sight, an intermittent "cheep" that emanated from the wattle prompted closer examination. I had walked right past a young Pallid Cuckoo whose colouring so closely resembled the mottled wattle bark that I'd failed to see it. Though still quite young, it was twice the size of its black-headed honeyeater foster parents who were kept extremely busy ramming food into the mouth of the hungry chick.

A month or so later I witnessed a similar event. The Pallid Cuckoo was a substantial size, almost fully fledged and flying around. It was being dive bombed by Dusky Woodswallows, among other birds,



young Pallid Cuckoo



Black-headed Honeyeater feeding Pallid Cuckoo

who obviously regard any cuckoos as a threat to their own reproductive success. Undeterred, the surrogate parents, in this instance Strong-billed Honeyeaters, were diligently feeding their enormous offspring.

As mentioned above, all four cuckoos that breed in Tasmania are brood parasites. They lay their eggs in the nests of other birds and leave the rearing of young to the foster parents. Horsfield's and Shining Bronze-cuckoos use the nests of thornbills, fairy-wrens, scrubwrens, flycatchers, silvereyes or honeyeaters; Pallid Cuckoos lay their eggs and leave their young in the care of honeyeaters, flycatchers, woodswallows or cuckoo-shrikes; Fan-tailed Cuckoos lay their eggs in the domed nests of fairy-wrens, thornbills or scrubwrens and sometimes in the cup nests of honeyeaters and flycatchers.

Before laying her eggs the unobtrusive female cuckoo will closely watch the nest building activities of a potential host and memorise the locations of the nests in an area. While the conspicuous male cuckoo sings loudly and distracts the chosen host, the female will fly to the nest, remove the host's egg and lay (or place) one of her own. Unlike most birds whose egg laying can take minutes, she can lay her egg (which has evolved to closely resemble the hosts'

eggs) in seconds. After hatching, the cuckoo chick will use its flattened back to eject any other eggs or chicks that happen to be in the nest.

Cuckoos are often maligned for their parasitic nesting habits, but this anthropomorphism ignores their value. A month ago I saw a Horsfield's Bronze-cuckoo eating hairy leaf skeletonisers; more recently I watched a young Shining Bronze-cuckoo (below), while waiting for its Brown Thornbill parents to bring food, eat the pear and cherry slugs that cause unsightly damage to fruit trees during summer. Surely reasons enough for their existence.





AN ENDANGERED CRAYFISH:  
CAN WE MAKE A DIFFERENCE?  
by Jim Nelson

### About The Species

*Engaewa granulatus* is a Tasmanian endemic burrowing crayfish occupying a restricted distribution in the Central North,



*Engaewa granulatus* Photo: Peter Tonelli

The specific name of the crayfish refers to the prominent granulations found on its claws, which makes it one of our more easily identified *Engaewa* species. The species seldom exhibits the vigorous colonies that are often typical of the genus. For this reason as well as the fact that this crayfish often occurs in areas that are experiencing considerable development with subsequent habitat loss, *E. granulatus* is probably even less secure than the other threatened species of *Engaewa*.

I carried out the field investigation followed by a Report in 2003 on behalf of the *Engaewa* Recovery Team that led to the Commonwealth nomination and listing of *E. granulatus* under the EPBC act as Endangered. It is my opinion that the listing under the category Endangered is a conservative one. It reflects our current lack of resources and tools to properly measure

the vigour and population numbers in order to meet the requirements for a Critically Endangered listing.

Unlike other threatened Tasmanian *Engaewa* species, individual *E. granulatus* colonies typically exhibit low numbers of burrows and crayfish. The listings for the other threatened species are largely the result

of their restricted distributions, while their actual individual colonies can often be quite vigorous. For instance, one buttongrass flat near Scottsdale has been calculated to carry a huge number of the very restricted and therefore Endangered *E. spinicaudatus*. *E. granulatus*, on the

other hand, has a wider distribution than the other listed species, and is usually found in small, scattered colonies containing relatively few burrows; they appear to be just hanging on as mere remnants from former, more abundant times.

### Preferred Habitat

It is my speculation after several years of observation that *E. granulatus* was once a relatively wide spread and vigorous species which typically occupied areas of tea tree (*Melaleuca ericifolia*) swamps. Such swamps would have occurred in areas along the north coast from the Don River to the Dazzler Ranges; extending south to Railton and Elizabeth Town. It is within this area that there are now isolated, remnant colonies of the crayfish; and it is mainly within a few relatively intact tea tree swamps that strong colonies showing similar vigour to most other *Engaewa* species are now found.

The species appears to particularly flourish in saturated areas with permanent water flowing through their habitat.

Devonport may once have had significant habitat, because it very likely had many springs, streams and tea tree swamps. These were drained and cleared as the town grew and eventually became a city. The springs and streams have been diverted into storm drains that empty into the Don and Mersey Rivers.

Latrobe also appears to have been a population centre for the crayfish, as there are a number of small remnant areas where they still occur, even within the town. The Kings Creek which still flows above ground through the town into the Mersey River could more properly be called "Kings Drain" these days. This creek which rises within the Latrobe Municipality is reputed to be the most polluted creek in the Mersey River catchment.

Areas with thriving populations of *E. granulatus* can be counted on one's fingers, and some of these are currently under threats from development. While it might be expected that a species listed as Endangered would be protected from development impacts (isn't that partly why we list species?), it has not been the case with this species, especially around the fast growing Latrobe area.

It is my opinion based on observation that the decline of the species relates directly to loss of preferred habitat. However, the species seems robust enough that it has managed to persist in areas where their habitat has been considerably disturbed (although I have watched them disappear from a few sites). This persistence seems to me to offer an opportunity to try to reverse the process of habitat decline, as well as test the obvious theory of habitat decline being

responsible for population decline. Using small colonies to test habitat improvements would have the advantage of making the observations easier to carry out and assess.

### **Making Habitat Improvements**

Assuming that habitat is a key factor relating to abundance isn't exactly rocket science, but actually re-creating tea tree swamps isn't a simple or even a practical matter in many situations. Therefore, sites need to be chosen where habitat improvements can provide useful clues of what might be done to assist population growth.

The ongoing monitoring and assessments of the efforts could prove difficult, given a species which lives below ground, and for which we have no known way of accurately measuring numbers that doesn't involve massive disturbance – thus defeating our purpose. Therefore, burrow activity (counting burrows before and after) must be used as a monitoring device. Where it can be determined that a cluster of burrow openings to the surface all appear to link to the same burrow, these will be counted as one burrow. It is accepted that counting burrow numbers is a crude monitoring device, but it should be able to show trends over the longer term.

When it comes to choosing the sites, a prime consideration needs to be easy accessibility for monitoring, as well as a reasonably small number of accessible burrows in order to assist counting and accuracy. Mianetta Park is a useful area for this study as the population is small, with only 20 burrows counted. A spring in the Park currently feeds a pond, which overflows down the hill and eventually goes into a drain underground and to the Mersey River. The saturation zone of the outlet stream contains the only burrows of the crayfish, which



appear to be barely hanging on to the stream edges. The stream has actually become little more than a channel that flows into a storm drain. The Devonport Council's Bushland Coordinator, Phil Murray, has been keen to assist with a crayfish project at this site.

Phil has taken the initiative to bring a small machine to Miandetta Park to create some saturation areas with small berms to slow the flow of the water and back it up to saturate more ground.



The creation of saturation areas at Miandetta Park. Photo: J. Nelson

These areas have been planted with suitable plants, and the Miandetta School has been involved in that aspect of the project. Involving the school has created a sense of local ownership, as well as an education experience for the students regarding their local endangered species. We have no idea how long it might take for the crayfish to discover this new potential habitat, but the frogs have moved in quickly.

At Latrobe one of the better known populations for the crayfish is in a paddock along Kings Creek, where the stream crosses the highway at the roundabout near the Mersey Hospital. At this site a flood retention dam has now been built with Commonwealth funding. With encouragement and design input from the CNFN, a wetlands habitat to benefit the crayfish was included in this dam proposal, especially since over 100 burrows were to

be covered by the dam wall. We drew up the plan for a wetlands which was to be included as part of the Council's submission showing that measures were being taken to protect the species. This was a requirement under endangered species legislation for construction to be approved by the DPIWE.

However, the Latrobe Council Engineer, in his wisdom, later decided against the

wetlands (without telling us or the DPIWE) due to the extra cost which the Council decided it would not fund, even though approval for the dam supposedly needed to include the environmental considerations for the listed crayfish (at least in theory, according to my understanding of threatened species legislation). Our objections, once we discovered the duplicity, led to a meeting on site with various government officials which determined that the flood retention dam needed to go ahead within a required time frame, and money for the wetland would have to be found later. At least the wetland idea didn't get totally removed from the picture! The Latrobe Council did manage to simply step away from taking any responsibility for the species, just as they have repeatedly done with other developments involving this species in their municipality.

Once the dam was built, there was practically no sign that more than a tiny number (4 burrows observed) of those

crayfish covered by the dam wall survived, so the project practically wiped out one of the best populations. It did leave a couple of other active areas intact, but these were unable to benefit from any of the water from the dam as they were too far away.

It was left to the hard working Latrobe Landcare group to find funding for the Kings Creek wetland, which they successfully accomplished through the NRM. The wetland was constructed during spring 2007, and has already proved to be a popular spot for water birds and an amazing frog breeding habitat for 5 species. It remains to be seen what the crayfish will do, and the monitoring of any recovery there will necessarily be long term as the environment slowly changes back to being a flood plain.

The Landcare group has now diverted the flood waters of the Kings Creek back onto the original flood plain to be captured by the new dam wall to create a wetland. It is hoped that by planting out the diversion



Kings Creek Wetland Photo: J. Nelson

area, especially with *Melaleuca ericifolia*, much of the pollution of the creek can be remediated through the plants grabbing many of the pollutants as nutrients. Since Kings Creek flows through Latrobe's industrial area, the Council has been advised by the state government that they will also need to monitor the water quality of the creek and enforce pollution control measures.

A monitoring program for determining the response of the crayfish to more saturation and the planting of suitable vegetation will soon begin. The area will be pegged out and burrows counted so that the burrow numbers can be monitored.

The Miandetta Park site and the new Kings Creek wetland are experiments in habitat restoration with the intention of gaining an understanding as to whether habitat improvements can benefit the crayfish. Both involve saturating more ground, and planting with suitable plants. What we learn from these experiments will hopefully be transferred to further habitat works.

### **Landslow Crescent Wetland**

There is quite a different kind of proposed project at the Landslow Crescent wetlands. This area has a wonderful population of crayfish, but has recently had a housing development built around the wetlands, with storm drains put into the wetlands. Storm drains can be nasty sources of pollution if the water is left untreated. Hydrocarbons in particular coming from oil spills on the road and from the road materials themselves can be deadly sources of pollution and runoff from garden fertilizers and sprays, detergents from washing cars, driveways, etc., can all impact badly on water quality. We have proposed that a series of remediation ponds be established to deal with the storm water,

and that the local residents be informed as to ways to look after the wetlands and the endangered species.

The remediation ponds, sited just above the wetlands, would use a series of suitable plants to clean the water before it enters the wetlands, where the additional water would be welcome as long as it is safe for the crayfish. In many places on the mainland of Australia, and in the United States, storm water is now required to be dealt with in this way. Tasmania is a long way behind the times in addressing its storm water pollution issues. This could be a small start.

The CNFN has recently agreed to put some money towards fencing off the Landslow Crescent wetland. Hopefully, this area can become a small showcase for a community working together in looking after our environment. Anyone wishing to get involved in the crayfish projects, or who would like more information, please feel free to contact me.

The June outing will be to these wetlands (see insert for more details)



typical *Engaeus* burrows Photo: J. Nelson



## References

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- Nelson, J. *Engaeus. Habitat Management Through Community Work For Burrowing Crayfish Engaeus Species* Launceston Environment Centre, April 2002
- Nelson, J. *Report to Engaeus Recovery Team on Engaeus granulatus Survey Work* July 2003, DPIWE Hobart, Tas

## CNFN AGM

Many thanks to Lynn and John Hayward for allowing us to have the AGM in the picturesque surroundings of their cabin near the Mersey River. After a leisurely walk along the river, where we caught fleeting glimpses of the resident platypus, the meeting was held at 4.00.

Lisa Clarkson has taken over as vice-president from Jacinta Allen; all other office bearers were re-elected to their positions.

### Membership fees

In order to cover basic expenses membership fees have been increased.

Family membership will increase from \$20 to \$25.00 and individual membership from \$15 to \$20.00.

Membership fees for 2008 are now due. There is a form included with this newsletter.

Best wishes to all members and associates for a happy and fulfilling 2008.



*Engaeus* species come in a variety of colours. The bright orange *E. leporrhynchus* inhabits northeast Tasmania.  
Photo: S. Lloyd