

WILDLIFE DIARY

November 2014

Great Finds

We are hoping to make a great find by looking for **Platypus** in the Redlands. If you like to help contact Steve bhomewoo@bigpond.net.au.

Water Water everywhere

Leslie Harrison dam North Stradbroke Island currently supplies 75% or about 26–30 ML/day of Redlands potable water. It is the geomorphology of the island, with its sandy soils and impervious bedrock that traps a large unconfined lens of freshwater. While some think the water on North Stradbroke Island is a bottomless well nothing could be further from the truth. It's a lens of freshwater surrounded by undrinkable saltwater. The removal of too much freshwater has potential to allow the intrusion of saltwater contaminating our valuable water supply.

Population

Ending world population growth as soon as possible is critical if the world is to limit global warming to 2oC.

<http://www.population.org.au>

Trees in flower

As a rainforest species from far North Queensland the **Cadaghi**, *Corymbia torelliana* has naturalised beyond its native range in south-eastern and central Queensland and has become a weed. That said it is currently in flower and attracting many native species to its abundant white flowers are borne in small groups (of 3-7 flowers) that are arranged into larger clusters at the tips of the branches (i.e. in terminal panicles).

<http://weeds.brisbane.qld.gov.au/weeds/cadaghi>

The Big Bird Event

Wildlife Queensland calls all bird lovers to celebrate our feathered friends at this end-of-year event. Guest speakers Tim Low, Darryl Jones and Steve Parish will share their passion and expertise for Australia's avian realm; Brisbane bird enthusiasts will mix and mingle; afternoon tea will be served and prizes will be won! VENUE: George Williams Hotel Brisbane 317 - 325 George Street Brisbane. Date Sunday 7th December 14.00 pm. CONTACT DETAILS: Wildlife Queensland Head Office: (07) 3221 0194 or wpsq@wildlife.org.au

Did you Know?

Divergence, convergence and **parallel** evolution what do they mean? The flipper of a whale has the same structure as that of the front leg of a frog and crocodile and the wing of a bird or bat. Divergent evolution is evidence of how species diverged during evolution and departed from a common ancestor. Convergent evolution organisms are from different unrelated (or distantly related) lineages and come to resemble one another superficially. The Echidna is similar in appearance to the European Hedgehog but is distantly related. Parallel evolution is where organisms that are closely related independently evolve similar features such as African Elephant and now extinct Woolly Mammoth.

Speciation is the formation of new species a process that has occurred. **Allopatric** speciation is whereby populations of an ancestral species becomes geographically isolated and diverge to such an extent that they become reproductively isolated and ultimately speciate. Sympatric speciation is where a species can diverge and speciate not because it's isolated but due to Polyploidy (has more than two sets of chromosomes) or the ancestral species specialised on different resources or breed in different habitats or at different times and so the gene flow was restricted.

What is the Wallace line? This is a line and perhaps more appropriate as a region that markedly separates the fauna of the Orient from Australia. To the East of the line are marsupials and birdlife typical of Australia to the West was placental mammals, tigers and monkeys. This is quite interesting as Lombok with its Australian fauna and Bali with its Oriental fauna is separated only by 20km of water but at a depth of 250m.

Great Walks

Some interesting birdlife and potential aquatic life can be along the length of Coolnwynpin Creek. Try Macquarie Street at Capalaba and Melaleuca Drive Sheldon and Indigiscapes at Alexandra Hills. All offer opportunities and potential nice surprises particularly early in morning.

Web Sites

WPSQ Coastal Community Science

<http://wpsqccs.wordpress.com/>

monthly oceanographic reports

<http://www.gpem.uq.edu.au/oceanography-reports>

Sand, Wind and Water – North Stradbroke Island

North Stradbroke island is thought to have been formed by Aeolian (pertain to wind activity) movement of siliceous sand during glacial periods of the Pleistocene-Holocene where SE Trade Winds were dominant. Some believe dune development which started in glacial periods continued into interglacial times. The sand regolith that dominates (99.38%) North Stradbroke Island originated in New South Wales and was transported by longshore sediment transport and was trapped behind older meta-sedimentary (Triassic Woogaroo Sandstone) and volcanic rock (Carboniferous Rocksburg Greenstone and Triassic Rhyolite).

The Vegetation Management Regulation 2012 show that North Stradbroke Island supports a variety of vegetation ranging from Mangroves (12.1.3), Araucarian vine forest (12.2.3), Heath (12.2.13), closed sedgelands (12.2.15), Mallee (12.2.10) to Eucalyptus open forest (12.2.8).

Sand mining has drastically altered the vegetation on North Stradbroke Island in a very short space of time. Nature has similarly resulted in changes but in contrast in gentler timeframes. For example. Core samples taken from Paperbark Forest near Flinders Beach revealed dark sediment consistent with deposits found in mangroves. The vegetation found at the coring sites is currently freshwater sedges and *Melaleuca quinquenervia* and other wetland species.

Flinders Beach is considered to be the result of a prograding shoreline where the beach ridges, a major feature of this system, are linked to storm events and a falling sea level. A core sample, taken over 800 metres from the rear of the current sandy shoreline, contained evidence of mangrove peat estimated to be 457 ± 20 years Before Present (BP). This accords well with studies of 18 Mile Swamp an area of similar features, beach, fore dunes, wetland and high dunes a wetland that changed from an estuarine system to freshwater system about 650 - 420 years BP.

Important to note that evidence of a falling sea level is found in the changing indigenous food gathering practices recorded in middens studied by researchers.

Studies have also shown that with increasing distance from the shoreline there was evidence of an increasing A1 soil horizon which is consistent with the Podzol soil development on strandplains and Aeolian dunes. Research found organic enrichment only in the top few centimetres of young dunes. Where an A1 horizon exists organic acid is available to combine with the sesquioxidic coating (yellow stain) found on sand grains to produce chelates, which are readily leached into the lower soil horizons. This A1 horizon increased in depth as vegetation matter accumulated. Perhaps not surprising that there is a relationship between the increase in biomass and species diversity with the degree of soil development.

However, with constant leaching there is also a decrease in diversity and biomass on the oldest dunes with the deepest soils (a retrogressive succession). This is attributed to leaching of the B horizon nutrient store beyond the sinker and tap roots of eucalypt forest (~10 m). There is also a pattern of vegetation stratification which parallels the soil development.

Never doubt that a small, group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.

- Margaret Mead



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