

WILDLIFE DIARY

July 2017



Great Finds

Bush Curlews, *Burhinus grallarius*, at Bayview Mt Cotton.

Echidnas, *Tachyglossus aculeatus*, seen at Bayview Mt Cotton. Echidnas are named after Echidna, a creature from Greek mythology who was half-woman, half-snake.

POPULATION MATTERS

Studies of cities around the Baltic Sea (Folke et al. 1997) suggest that on average around 1,000 km² of forests, arable land, wetlands, and inland and marine waters are required to provide natural resources and assimilate carbon, nitrogen and phosphorus wastes per km² of city. Over 80 per cent of the area was required for assimilation of carbon and other wastes. Extrapolating the analyses to the 744 largest cities in the world, it was estimated that the world's need for carbon sequestration already outstrips capacity substantially (Folke et al. 1997).

<http://www.environment.gov.au/system/files/resources/11543d24-9f2c-44ee-a52c-83dfa6adb7d9/files/ecosystem-services.pdf>

World population clock

<http://www.worldometers.info/world-population/>

Pollination

About 92 per cent of plants worldwide are pollinated by animals, and in about half of these, reproduction is determined more by the numbers of pollinators visiting the plants than by weather, soil fertility, diseases, parasites or animals that eat their flowers (Nabhan & Buchmann 1997). There are more than 1,200 vertebrate species and between 100,000 and 200,000 invertebrate species involved in pollination of flowering plants (Nabhan & Buchmann 1997), yet most crops in the USA and Australia are pollinated mainly by introduced honey bees (Gill 1989; Nabhan & Buchmann 1997).

Flowers & Fruit

Grey Mangroves, *Avicennia marina* are in fruit. Mangroves produce live seedlings (vivipary) which is rare in plants other than mangroves. Named in honour of the famous Arabian physician and scientist, abu-Ali al-Husayn ibn-Sina, known as Avicenna (980-1037) - his Qanun remained the standard medical textbook on plants for 500 years after his death. Keep an eye out for red and bright yellow fruit they indicate albinism a symptom of genetic damage caused by too much hydrocarbons in the system. ***Eucalyptus tereticornis*** are in flower and the insects, birds and flying foxes are loving it.

Did You Know?

Did you know Plants have had significant and multiple roles in past and present Aboriginal people's lives. Aboriginal people extracted the food, medicine and material resources they needed from their immediate environment. Seasonal changes in plants and animals were markers in regional calendars and today they continue to influence some Aboriginal people's resource use, environmental management and movements.

Across Australia, about 4000 plant species were, and some still are, used by Aboriginal people as food and medicine, equating to about 20% of named Australian vascular plants (Isaacs 1987). Many more species are known to have uses, including as utensils, shelter and other materials, food for game and totems (Clarke 2007). For example, on Arrente lands, over 30% vascular plants have uses (Walsh and Douglas 2011). Aboriginal people, such as Senior Marra expert Betty Roberts (pers. comm.) have said, 'Every plant has a use!' Such statements reflect both Aboriginal people's resourcefulness and understanding of the ecological connections between species. Source: In book: Australian vegetation, Edition: 3rd, Chapter: 4, Publisher: Cambridge University Press, Editors: David Keith, pp.89-112.



Great Walks

If you like to see our native plants up close and even purchase some for your garden then visit Indigiscapes.

<http://www.indigiscapes.com.au/Pages/default.aspx>

WWW

Government attacking community groups?

<https://tinyurl.com/ybyjm235>

Toondah harbour & political donations

<https://tinyurl.com/jnbqqqk>

Mine threatens endangered species

<https://tinyurl.com/ybl3xx5n>

Wildlife Matters: Climate Change

<http://wildlife.org.au/whats-on-page/>

What is Eco System Services?

Ecosystem services are the many and varied benefits that people obtain from ecosystems. The Millennium Ecosystem Assessment framework identified ecosystem services within four categories:

- provisioning services, such as food and water
- regulating services, such as flood and disease control
- supporting services, such as nutrient cycling, that maintain the conditions for life on Earth, and
- cultural services, such as spiritual, recreational, and cultural benefits.

While many ecosystem service benefits flow either directly or indirectly to markets, the full environmental cost of providing these services is not usually included in the market price signals. If an ecosystem service is regarded as ‘free’, there will be no incentive to value its specific role or use. Hence, the undervaluing of many ecosystems services, and the valuing of only a narrow range of services, has led to patterns of unsustainable resource use resulting in environmental degradation.

An **ecosystem** is a dynamic community comprising populations of plants, animals, microorganisms and the non-living environment interacting together as a functional unit. Environmental factors, such as soil type, position in the landscape, climate and water availability, determine the presence and distribution of ecosystems. The main inputs to ecosystems are sunlight, soil, nutrients and water, while wastes from one part of the system form fuel for other parts. A key output is biomass (or carbon-based life) regenerating itself.

Biodiversity—comprising animals, plants and microorganisms, their genetic variation and their organisation into populations that assemble into ecosystems—is fundamental to the provision of ecosystem services. The diversity of organisms is the direct source of many services, such as food and fibre, and underpins others including clean water and air, through the role of organisms in energy and material cycles. Changes in and the loss of biodiversity directly influences the capacity of an ecosystem to produce and supply essential services, and can affect the long term ability of ecological, economic and social systems to adapt and respond to global pressures.

Resilience describes the capacity of a system to maintain its equilibrium in the face of impacts or pressures that arise from natural or human-made interactions or events. ‘Resilience’ comes from the Latin word resilire, which means to ‘leap back’ after adversity. A resilient system has the capacity to absorb disturbance and essentially retain the same function, structure and feedbacks. **Ecosystem resilience** is thought to be a product of the diversity of ecosystem functional groups, the diversity of species within those functional groups, and diversity within species and populations. These different aspects of biodiversity maintain ecological and evolutionary phenomena, flows and processes across a spectrum of local and global scales.

Connectivity is a key concept in thinking about retaining and linking ecosystem services that maintain resilience (Crooks & Sanjayan 2006). As natural landscapes are transformed for development, remnant areas become isolated from established patterns of ecological and genetic movement across habitats. Inevitably, the mix of ecosystem services is reduced and the overall resilience of the landscape is weakened.

Conserving remnant biodiversity, building connectivity and restoring depleted ecosystems are wise strategies for strengthening long-term resilience, thus ensuring the ongoing provision of ecosystem services into the future.

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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