

WILDLIFE DIARY

November 2011



Great Finds

Mother **Humpback whale**, *Megaptera novaeangliae* and her calf, sighted around Peel Island.

The Storm birds continue to make themselves heard, **Channel-billed Cuckoo** *Scythrops novaehollandiae* and **Koel**, *Eudynamys scolopacea*.

Amazing sighting. A very large male **Eastern Water Dragon**, *Physignathus lesueurii lesueurii*, seen apparently sleeping at night many metres up a paperbark above Tarradarrapin Creek.

POPULATION MATTERS

One of the great challenges today is the population explosion. Unless we are able to tackle this issue effectively we will be confronted with the problem of the natural resources being inadequate for all the human beings on this earth.

So now the question is...the population of the human being...So the only choice...limited number...happy life...meaningful life. Too many population...miserable life and always bullying one another, exploiting one another...there's no use.

His Holiness the Dalai Lama, 14th leader of Tibetan Buddhists.

Wandering Wildlife

Defining the movements of nomadic animals could help position certain species as indicators of landscape and ecosystem health. Although no one species would be an ideal indicator, the potential usefulness of nomadic species as combined ecological indicators relates to their high mobility. Occurring over very large ranges, nomadic birds can potentially move vast distances, opportunistically tracking and choosing favourable areas, and by implication, giving an indication of ecological condition. Source: http://www.ecosmagazine.com.au/?act=view_file&file_id=EC117p29.pdf

Using satellite transmitters **Grey Teal**, *Anas gracilis* were found to move large distances (up to 343 km) between occupied sites in a short period (hours), remained in the vicinity of those sites for extended periods (months), ventured up to 453 km from their point of release and travelled more than 2000 km in one year. These patterns of movement occurred over 15 months from September 2003, which was a period of severe drought.

We must be mindful that while some habitats used by migratory species may be used infrequently they could still be crucial to a species survival.

Did You Know?

Did you know researchers have found the distributions of many terrestrial organisms are currently shifting in latitude or elevation in response to changing climate. Using a meta-analysis, they estimated that the distributions of species have recently shifted to higher elevations at a median rate of 11.0 meters per decade, and to higher latitudes at a median rate of 16.9 km per decade. These rates are approximately two and three times faster than previously reported. The distances moved by species are greatest in studies showing the highest levels of warming, with average latitudinal shifts being generally sufficient to track temperature changes. However, individual species vary greatly in their rates of change, suggesting that the range shift of each species depends on multiple internal species traits and external drivers of change. Rapid average shifts derive from a wide diversity of responses by individual species.

Source: <http://www.sciencemag.org/content/333/6045/1024>

Did you know in 2008 the tropical seagrass *Halophila minor* was found in Moreton Bay that's 300km south of its southern extent (Connolly, 2009; QLD Museum, 2011)?

Swathes of Australia's seaweed are shifting south to escape warming oceans and many risk becoming extinct, a new study has found. Source:

<http://www.abc.net.au/news/2011-10-28/seaweed-advances-south/3605740>



Great Walks

Who would have thought that getting stuck in the mud would be fun let alone be a place to find wildlife yet it's one of the most productive and biologically diverse places on Moreton Bay. From dolphins, turtles, dugongs, to wader birds, gastropods, seagrass, mangroves and all manner of mud dwelling invertebrates the mud flats support them all. Its home for a rich array of life that will capture ones curiosity for a life time. Best spots, Ormiston and Wellington Point.

WWW

Super Quarry - it's back again

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

She be Apples

<http://www.youtube.com/watch?v=D1R-jKKp3NA>

Seagrass Watch blog

<http://seagrassmb.wordpress.com>

Landscape Ecology

Landscape ecology is the study of spatial variation in landscapes at a variety of scales. It includes the biophysical and societal causes and consequences of landscape heterogeneity. Above all, it is broadly interdisciplinary.

The landscape consists of 4 elements, Patches, Corridors, Matrix and Mosaics. They occur over a variety of scales.

A matrix is the major cover in which objects (like patches) are interspersed. While a mosaic is defined as an aggregation of different types of patches, corridors and a matrix; it is heterogeneous at multiple scales and it's where interactions are determined by the functions that the mosaic is developing. Patches are relatively homogenous nonlinear areas that differ from its surroundings. A bushland patch in a rural environment for example.

Why is landscape ecology so important? Its because of its interdisciplinary nature that it can help answer many questions in particular those relating to conservation. For example, lets use the Redlands and its koalas.

The Matrix

According to Forman (1995) and Farina (2006a) a matrix is the major cover in which objects are interspersed. This definition would suggest the Redland landscape (mainland supports 43% native vegetation) is a vegetated landscape perforated and fragmented by rural and urban patches. However, under the *SEQ Regional Plan* 50% of this same land is designated as belonging within the urban footprint and 49.3% as Regional Landscape and Rural Production Areas. The urban footprint contains 25% of the mainland native vegetation. There is clearly a mismatch between what is observed and what planning is delivering and as a consequence the koala is suffering.

An EPA (2007) report on the status of the Koala Coast koala population indicated the largest koala declines occurred in the urban footprint because of loss of habitat and permeability. The same report highlighted koala declines are associated with vehicle strikes, predation by domestic dogs and disease, all impacts that arise from urbanisation. These impacts are severe and McAlpine *et al* (2006) suggested high road density in an urban matrix was one of the more extreme impacts on the species movement. Changing from an bushland or even rural matrix to an urban matrix represents a significant threat to the koala. This is because that it's the type of land cover that separates patches that chiefly affects a species sensitivity to the size of a bushland patch and its isolation. Research showed that the probability of a species persisting is enhanced by matrix quality and when it comes to the koala it was shown agricultural land use achieved this more so than an urban matrix. This is not to say intense agriculture would not have an impact, as urban and intense agriculture do impact upon matrix quality.

Therefore, while it's important to minimize further loss of koala habitat (patches) we must not lose sight of the important habitat values a koala friendly matrix can provide.

Be careful about scale

Koala densities in SEQ are said to be 0.2 – 0.5 koalas/ha where they are common but can reach 2 koalas/ha (EPA, 2006). Work undertaken by Amir (2010) in the Redlands found two koalas utilised a 13.9ha patch near Kinross Road and this equates to a koala density of 6.95koalas/ha. This is perhaps not surprising as the majority of this habitat is designated as regional ecosystem 12.3.6 - *Melaleuca quinquenervia*, *Eucalyptus tereticornis*, *Lophostemon suaveolens* woodland on coastal alluvial plains. While RE 12.3.6 supports koala habitat species these species are not predominately koala food trees. The exception is *Eucalyptus tereticornis*, which is identified as a preferred koala food tree. This preference for a particular eucalypt species is consistent with research that reveals koalas are highly specialized folivores and have a preference for certain eucalypt species (McAlpine et al, 2008). Therefore, at one scale the habitat may be overlooked because its not considered good quality koala habitat but on a smaller scale individual trees may be very valuable habitat and or a food source for local koalas.

What this brief 101 lesson on Landscape Ecology suggests is that the conservation of koalas requires an understanding of the species ecology in the context of the threats it and its habitat face. This would emphasize that planning needs to find options that not only protects koala habitat but creates a koala friendly matrix and reduces the road density and the number of dogs within that matrix. Improving the quality of koala habitat and the matrix that habitat is found within would provide substantial benefits to the koala.

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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