

## Connectivity (Koalas and Kangaroo Poo)!

Development and urbanisation can cause dramatic changes in the landscape resulting in the fragmentation of habitats and the potential isolation of various species. This can often lead to local extinctions of species. Conservation scientists and land managers are interested in how the landscape is interconnected in order to minimise the potential impacts on local flora and fauna.

There are three types of connectivity:

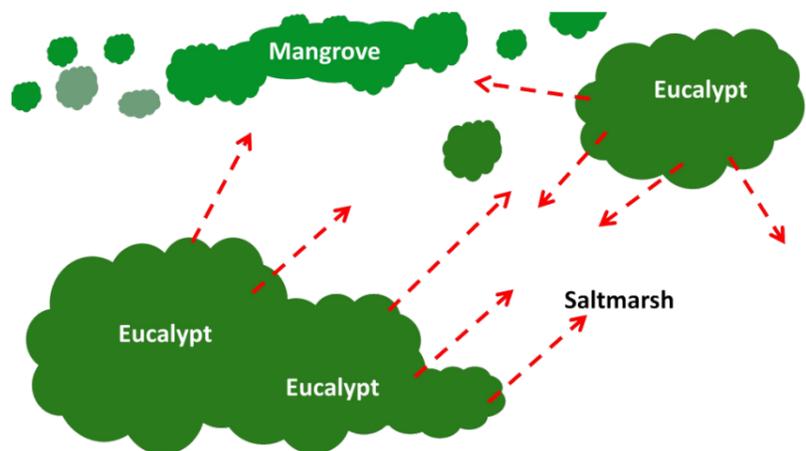
**Habitat connectivity** which considers the connectivity between patches of suitable habitat for a species

**Landscape connectivity** which is the degree to which the landscape facilitates animal movement and other ecological flows.

**Ecological Connectivity** which is the degree to which ecological processes are connected including food and nutrient webs, disturbance processes and hydroecological flows (how plants interact and impact on the water table).

### Landscape Connectivity for Koalas

If you look at the images at the top of the page you can see photographs of koalas utilising Melaleuca, Casuarina and even mangrove trees.



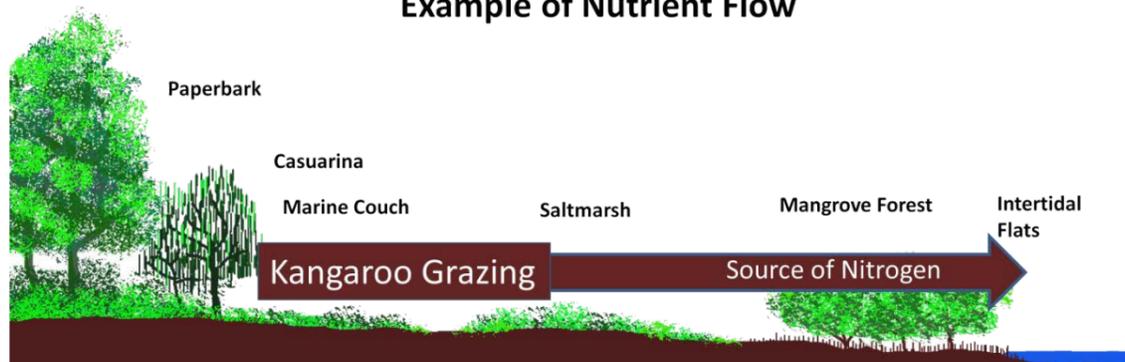
Here we can see that the Casuarina trees have provided a safe corridor connecting the two patches of Eucalypt which is needed for foraging. When the Koala is in transit it can use the Casuarina trees to avoid attack from predators including wild dogs as well as use them as a resting site.

Here is an example of two patches of Eucalypt without a tree corridor. The Koalas in this scenario will need to cross on the ground exposing them to the risk of predation from either wild dogs or even raptors (especially with young koalas).

### Kangaroo Poo

The Eastern Grey Kangaroo (*Macropus giganteus*) is a herbivore and grazes on marine couch and other vegetation associated with the saltmarsh and stands of Melaleuca and Casuarina. Their droppings contain partially digested vegetation and are a rich source of nitrogen which can be utilised by other plants. Because the stools float they can be transported from these forests and grasslands directly to the saltmarsh, mangrove and estuarine habitats by the ebbing tide or rainfall. This is another example of the connection in this case of nutrients between the various habitat types.

### Example of Nutrient Flow



In this case marine couch is consumed in the forest and pasture areas by kangaroos and the droppings which contain both carbon and nitrogen are carried into the saltmarsh, mangrove and intertidal flats by the ebbing tide or rainfall.

(Photographs and diagrams by Bob Crudginton and the first 2 koala images provided by the MBRL Project Team)