A Hotbed of Biodiversity? A Natural History of the Ku-ring-gai Council Area

Introduction
If rarity is the spice of life then biodiverty is the quintessential flavour!

The Ku-ring-gai Council Area, though relatively small, is a diverse melting pot of habitats and species. A vertebral hot bed of biological diversity the area is peppered with at least 28 plant communities and numerous habitat types that support over 830 plant, 170 bird and over 690 fauna species (including invertebrates and fish). This poster presents an overview of species and habitats in the Ku-ring-gai Council Local Government Area (LGA).

Geographic and geologic setting
Ku-ring-gai is located on the Hornsby Plateau between Hornsey and Chatswood on the upper north shore of Sydney. Most development is restricted to four main shale capped ridges which are roughly followed by the Pacific Highway, Mona Vale Road, Fox Valley Road and Bobbin Head Road. The gently sloping ridge-top clay soils of the Wianamatta Shales drop away into steep sided gorges characterised by a series of sandstone scarps and benches dominated by low scrub and woodlands. One of the highest rain fall totals in Sydney averaging around 1400mm per annum which supports the tall forest area the landscape is formed by Ku-ring-gai LGA covers 86km² with about 1,100 ha of Council bushland reserves many of which are contiguous with about 18,000 ha of State National Parks (Ku-ring-gai Chase, Garigal and Lane Cove) or Nature Reserve (Darlymple-Rye).

Habitats
The relatively high species diversity in the LGA largely is due to the diverse range of habitats. Habitats and vegetation types range from meadows, tall open forest and woodland to open and closed closed heath to mangroves, rain forest and riparian forest and perched wetlands. Plant communities or associations include Blue Gum High Forest (Eucalyptus camaldulensis Flood Forest and Turpentine Ironbark Margin Forest, Sydney Sandstone Ridge Top forest and Sydney Sandstone Gully Forest. The most common and widespread coastal vegetation communities are the ridged habitat types include estuarine tidal inlets, steep rocky sandstone cliffs, freshwater streams, dry exposed ridge tops, caves, "beached" wetlands dominated by wet heath species and urban landscapes.

Most of Ku-ring-gai’s heathlands are largely riparian in character, with a high dominance of rainforest and other indigenous vegetation. Rainforest is common, but well represented only in the lower sections of steep valley sides. Species diversity is low with many of the richer diversity indicating that these heathlands are generally in good condition. The remainder of the area is generally characterized by dry heathland, which is typically characterized by a rich diversity of species. These heathlands are usually found on well exposed ridges, with a rainshadow effect, and generally have a low diversity of species. The heathland types are dominated by Eucalyptus species, which are generally relatively low in diversity. The heathlands are generally found on well exposed ridges, with a rainshadow effect, and generally have a low diversity of species. The heathland types are dominated by Eucalyptus species, which are generally relatively low in diversity. The heathlands are generally found on well exposed ridges, with a rainshadow effect, and generally have a low diversity of species. The heathland types are dominated by Eucalyptus species, which are generally relatively low in diversity. The heathlands are generally found on well exposed ridges, with a rainshadow effect, and generally have a low diversity of species. The heathland types are dominated by Eucalyptus species, which are generally relatively low in diversity. The heathlands are generally found on well exposed ridges, with a rainshadow effect, and generally have a low diversity of species. The heathland types are dominated by Eucalyptus species, which are generally relatively low in diversity. The heathlands are generally found on well exposed ridges, with a rainshadow effect, and generally have a low diversity of species. The heathland types are dominated by Eucalyptus species, which are generally relatively low in diversity. The heathlands are generally found on well exposed ridges, with a rainshadow effect, and generally have a low diversity of species.

Species Diversity Summary - Vertebrates and the Other 99 %

Table 1. Summary of biodiversity in Ku-ring-gai LGA

<table>
<thead>
<tr>
<th>Category</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fauna species</td>
<td>28</td>
</tr>
<tr>
<td>Flora species</td>
<td>843</td>
</tr>
<tr>
<td>Fungi species</td>
<td>171</td>
</tr>
<tr>
<td>Threatened Species</td>
<td>28</td>
</tr>
<tr>
<td>Threatened Ecological Communities</td>
<td>26</td>
</tr>
<tr>
<td>Threatened Ecological Communities</td>
<td>47</td>
</tr>
<tr>
<td>Total species</td>
<td>693 (inc invertebrates)</td>
</tr>
</tbody>
</table>

Table 2. Ten of the least abundant or least frequently sighted species

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common name</th>
<th>Sightings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mormopterus sp.</td>
<td>Freetail Bat Species 2</td>
<td>1 1</td>
</tr>
<tr>
<td>Hypocysta euphemia</td>
<td>Rock Ringlet Butterfly</td>
<td>1 1</td>
</tr>
<tr>
<td>Galacromyces illica</td>
<td>Black-faced Cinclides</td>
<td>241</td>
</tr>
<tr>
<td>Gomphotheris bicolor</td>
<td>Green-faced Spider Monkey</td>
<td>321</td>
</tr>
<tr>
<td>Lumbricus terrestris</td>
<td>Earthworm</td>
<td>116</td>
</tr>
<tr>
<td>Leptoglossus vigilis</td>
<td>Lycosoidea 7</td>
<td>116</td>
</tr>
<tr>
<td>Marpissa manul</td>
<td>Red Fox Ant</td>
<td>116</td>
</tr>
<tr>
<td>Hypsipyla grisea</td>
<td>Green Moth</td>
<td>116</td>
</tr>
<tr>
<td>Euphryia conspicua</td>
<td>Red-eyed Cricket</td>
<td>462</td>
</tr>
<tr>
<td>Orthoptera sp.</td>
<td>Orthoptera</td>
<td>161</td>
</tr>
<tr>
<td>Rattus fuscipes</td>
<td>Black Rat (Rodentia)</td>
<td>767</td>
</tr>
<tr>
<td>Parthenolepis microphysa</td>
<td>Grey-headed Flying Fish</td>
<td>276</td>
</tr>
</tbody>
</table>

Table 3. Ten of the most abundant or most frequently sighted species

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common name</th>
<th>Sightings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eucalyptus camaldulensis</td>
<td>Blue Gum High Forest</td>
<td>121</td>
</tr>
<tr>
<td>Macropus giganteus</td>
<td>Eastern Grey Kangaroo</td>
<td>116</td>
</tr>
<tr>
<td>Parma tetradactyla</td>
<td>Red-necked Wallaby</td>
<td>116</td>
</tr>
<tr>
<td>Lonchura striata domestica</td>
<td>House Sparrow</td>
<td>462</td>
</tr>
<tr>
<td>Thrushes (family Turdidae)</td>
<td>Thrushes</td>
<td>161</td>
</tr>
<tr>
<td>Posidonia australis</td>
<td>Sedge</td>
<td>767</td>
</tr>
<tr>
<td>Restoring Blue Gum High Forest: lessons from Sheldon Forest.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

References and Further Reading
- Basham, A. 2005. Habitat and vegetation types range from meadows, tall open forest and woodland to open and closed closed heath to mangroves, rain forest and riparian forest and perched wetlands.
- Cane, J. 2005. Biodiversity of Sydney’s urban landscapes: are they persisting, and what factors influence their presence? Honours Thesis, School of Biological, Earth and Environmental Sciences, University of Wollongong.
- Cane, J. 2005. Biodiversity of Sydney’s urban landscapes: are they persisting, and what factors influence their presence? Honours Thesis, School of Biological, Earth and Environmental Sciences, University of Wollongong.
- Cane, J. 2005. Biodiversity of Sydney’s urban landscapes: are they persisting, and what factors influence their presence? Honours Thesis, School of Biological, Earth and Environmental Sciences, University of Wollongong.
- Cane, J. 2005. Biodiversity of Sydney’s urban landscapes: are they persisting, and what factors influence their presence? Honours Thesis, School of Biological, Earth and Environmental Sciences, University of Wollongong.
- Cane, J. 2005. Biodiversity of Sydney’s urban landscapes: are they persisting, and what factors influence their presence? Honours Thesis, School of Biological, Earth and Environmental Sciences, University of Wollongong.