

Local Plant Selection For Raingardens

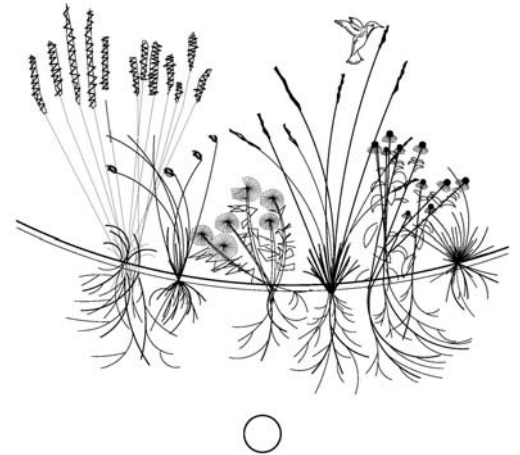
Guidance for Water Sensitive Design Provisions of the Great Lakes Development Control Plan

Selecting the appropriate species and planting density for a raingarden is fundamental to their performance. The best species to plant for nitrogen removal are those with high growth rate, and a dense root system which penetrates the entire soil filter media depth. A combination of plants (eg: *Carax*, *Juncus* and *Melaleuca*) derives the ideal combination of traits for both hydraulic conductivity and nitrogen removal (FAWB, 2009).

The selection of plant species should be carefully matched to the conditions of the site:

"The healthy growth of plants in a bioretention system [raingarden] is dependent on the careful matching of plant species to soil type, microclimate and hydrologic (wetting and drying) conditions. Slight variations in these factors will favour some plant species over others. It is therefore prudent to plant several species that are considered to be viable into every bioretention system [raingarden] so that if some species do not fare as well as expected it is likely that others may flourish. There may also be a succession of species over time".

(<http://waterbydesign.com.au/forum/topic.php?id=92>)



Plants serve multiple roles including providing amenity, habitat and biodiversity. These are all important aspects of water sensitive urban design which are unlikely to be achieved by planting a monoculture.

Localised species list for raingarden planting and planting densities:

Species Name	Common Name	Planting density /m ²
Shrubs / trees		
<i>Melaleuca ericifolia</i>	Swamp paperbark	1
<i>Melaleuca linariifolia</i>	Flax-leaf paperbark	1
<i>Melaleuca nodosa</i>	Prickly-leafed paperbark	2
<i>Melaleuca quinquenervia</i>	Broad-leafed paperbark	1
<i>Melaleuca sieberi</i>	Small-leaved paperbark	1

Species Name	Common Name	Planting density /m ²
Sedges / rushes		
<i>Carex appressa</i>	Tall Sedge	10
<i>Carex fascicularis</i>	Tassel Sedge	10
<i>Carex polyantha</i>	Creek Sedge	10
<i>Cyperus exaltatus</i>	Tall flat sedge	6
<i>Ficinia nodosa</i> (formerly <i>Isolepis nodosa</i>)	Knobby club rush	6
<i>Juncus kraussii</i> (suitable for salty conditions)	Sea rush	8
<i>Dianella longifolia</i> var. <i>longifolia</i> (shade tolerant)	Pale flax-lily	6
<i>Lomandra longifolia</i>	Matt Rush	6
<i>Lomandra hystrix</i>	Creek matt rush	6

Where shrubs or trees are selected for the raingarden an understorey of sedges / rushes should also be planted at the density specified.

References / Further Information

Facility for Advancing Water Biofiltration [FAWB],(2009), *Adoption Guidelines for Stormwater Biofiltration Systems*, Facility for Advancing Water Biofiltration, Monash University, Vic.

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Moreton Bay Waterways and Catchments Partnership and WBM Oceanics and Ecological Engineering, (2006), *Healthy Waterways Water Sensitive Urban Design Technical Guidelines for .South East Queensland Version 1 June 2006*, Brisbane City Council and the Moreton Bay Waterways and Catchments Partnership, Qld.

Water by Design, (2010), *Is uniform planting of tufted grass in a large (>450m²) deep (1.0m filter) bioretention basin approp*, SEQ Healthy Waterways Partnership, Qld, viewed on: November 3, 2010, <http://waterbydesign.com.au/forum/topic.php?id=92>.

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