



Topic 5: **BANKSIAS** (Proteaceae)

Did you know that,

- The flower spike bears many individual flowers, from hundreds to thousands.
- Only a small number of the flowers produce seeds
- Banksias do not occur in Central Australia
- Aborigines used banksias for making a sweet drink and as a portable source of fire

Banksias belong to the **Proteaceae** family, a diverse group of plants which includes Grevilleas, Waratah, Hakeas, Woody Pear, Geebungs and many more.

Banksias – their characteristics

Banksias are plants with woody stems ranging from trees to prostrate shrubs. Their leaves are leathery and often rigid. The undersides of the leaves are paler than the upper. The flower [spikes](#) are conspicuous and contain between 100 and 6000 individual flowers. The flower consists of a single style and four stamens each attached to a [perianth](#) segment. Normally only a small proportion of the flowers will produce the woody seed [follicles](#) embedded transversely on a central woody cone. These follicles take a year or two to mature and may, depending upon the species, stay on the plant for many years awaiting the heat of bushfire or even the death of the plant. Two winged seeds are released from each follicle when they are opened.



Spike of Banksia flowers & woody seed follicles



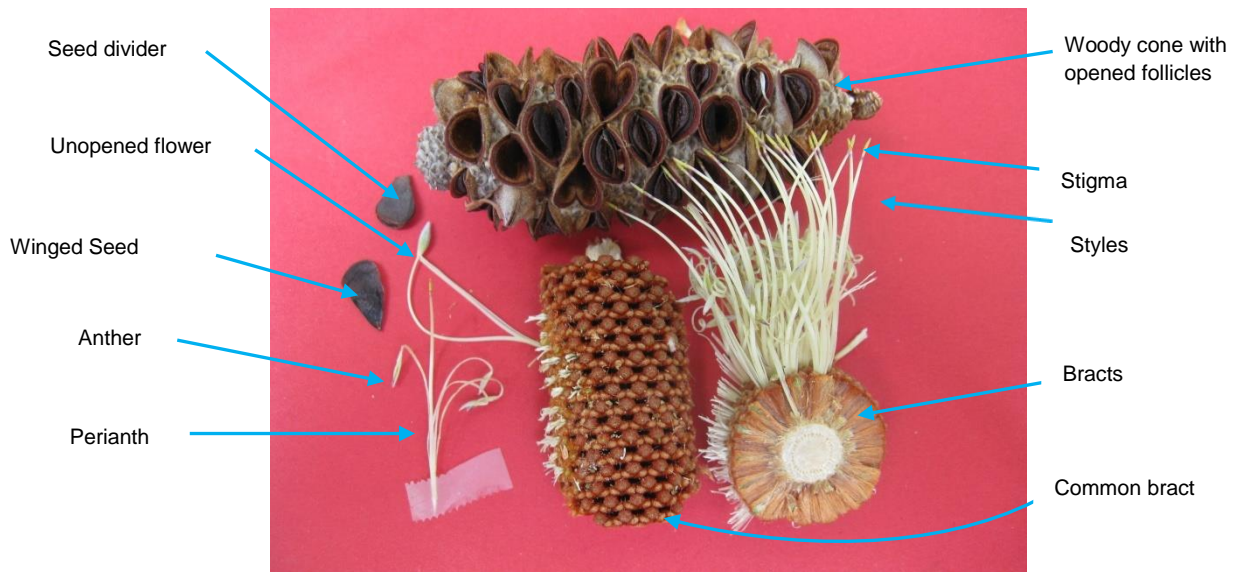
An individual flower

Distribution

Some references say there are 78 species of Banksia in Australia and some say 172. In early 2007 Mast & Thiele suggested that Dryandra be merged into the Banksia genus on the basis of extensive molecular and morphological evidence. There is a great deal of debate about this. However, Dryandras (some 90 odd species) occur only in Western Australia. There are 16 Banksias in eastern Australia and 1 across the north of Australia

(*Banksia dentata*). This tropical species also occurs in New Guinea and the Aru Islands.

The Banksia Flower, Flower Spike and Cone



Pollinators

The main pollinators are bees, nectar-eating birds and small mammals- Brown Antechinus, Pygmy Possum and Sugar Glider. The plentiful supply of nectar is especially fortuitous for birds in winter.

Ku-ring-gai Wildflower Garden Banksias

Banksias growing naturally in the Garden are:-

<i>B. serrata</i>	Recorded flowering time	November to March
<i>B. ericifolia</i>	"	March to July
<i>B. marginata</i>	"	January to July
<i>B. oblongifolia</i>	"	February to June
<i>B. spinulosa</i> (var. <i>spinulosa</i>)	"	March to August

Banksias which have been introduced into KWG are:

B. robur, *B. integrifolia*, *B. aemula* and *B. spinulosa* var. *collina*, but all occur naturally in the Sydney Region

Regeneration after Fire

B. ericifolia is killed by fire, but regenerates from seed released from the woody fruit, by the fire's heat. But it may take as long as 7-8 years from germination to the new plant's seeding. Therefore fires in quick succession may eliminate *B. ericifolia* from an area. There is also a fire sensitive variant of *B. marginata*, which having no [lignotuber](#), regenerates only from seed. The other KWG Banksias regenerate from seed too, but some can also regrow from underground lignotubers. *B. serrata*, *B. aemula* and *B. integrifolia* resprout from [epicormic](#) buds beneath the bark of their trunks. Thick corky bark like that of *B. serrata* is very effective in this regard.

ABOUT KU-RING-GAI WILDFLOWER GARDEN BANKSIAS

Flowers with hooked styles

B. ericifolia ("heath leaved")

Heath-leaved Banksia



B. ericifolia
flower spike.

Bushy shrub or small tree to about 6 m tall. Small crowded narrow leaves, margins revolute, apex has 2 small teeth; light green when young. Attractive orange-red flower spikes to 20 cm with hooked styles produce copious amounts of nectar, attracting birds, insects and small mammals. March-August flowering. Solid, woody seed cones follow. Grows in heath and woodland in sandy coastal areas and Sydney district plateaux.



B. spinulosa var. *spinulosa* ("small spine")

Hairpin Banksia

Spreading shrub to about 3m high, with lignotuber and often multi-stemmed. Leaves long, dark green, narrow, stiff and finely toothed near apex; margins revolute, whitish green underneath. Yellow reddish flower spikes; hooked styles, red to black. March-August flowering. NSW and Qld.

B. spinulosa var. *collina* ("of hills")

Hill Banksia



This variety is much the same as *var. spinulosa*, but has wider leaves and finely toothed recurved margins. It is generally found north of the Hawkesbury River. Flowers April-August.

At left...*B. collina* spike KWG

Left of coin,
B. spinulosa leaves.
Right of coin,
var. collina leaves



Flowers with straight styles – leaf white underside

B. marginata ("margined" i.e. recurved margins)

Branched shrub or small tree to about 5 or 6m locally, although reported to grow to 12m in deep rich soil. Leaves vary between 3-10 mm wide and 3-9 cm long; upper surface dark green with recessed midvein, under surface is silver grey with raised midvein extending just past the apex. Margins are recurved, but variable as to teeth (from none to many)- generally the younger plants have toothed margins. Late summer to early winter flowering; yellow spikes about 8cm. Scattered through Sydney heath and woodland.



Silver Banksia



B. oblongifolia ("oblong leaf")

Rock Banksia



A multi stemmed shrub to about 3m tall with dark brown/grey bark, arising from a lignotuber. Its new growth is a ready identifier, having a dense covering of felt-like rusty brown hairs, which persist on the branchlets (see image left). Leaves are dark green above, and pale green under, with prominent raised

midvein and distinctive venation; margins are generally sharply toothed. Woody seed cone has spiny protruding bracts, following a February to June flowering of greenish / yellow to yellow spikes. Grows in woodlands and open forest. It can survive well on rocky sites and on the margins of swamps or wet places



Banksia integrifolia ("entire leaf" refers to margins of adult leaves)

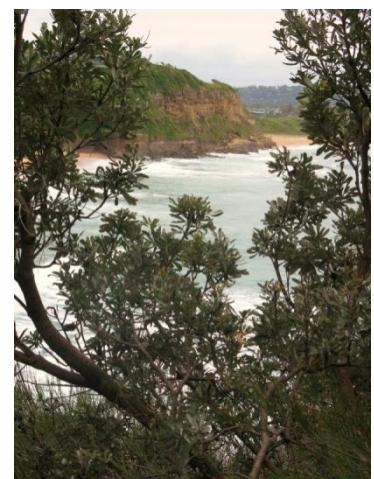
Coast Banksia

Small to large tree, 3m -20m high, depending upon where growing e.g. stunted on exposed headland. Young trees may have brown trunk with small horizontal grey dashes; older trees have rough, furrowed, sometimes tessellated grey bark. Adult leaves are in whorls, dark green with entire margins,



New flower spike on young *B. integrifolia*. (Some leaves are partly notched as this

the underside being a silvery light grey. In contrast, juvenile leaves are irregularly toothed, often with a 'cut off' apex. An abundance of small spikes, densely packed with yellow flowers are produced, January to July. Woody follicles follow, but these, unlike other Banksias, release their winged seeds when ripe. Common on coastal scrubs, open forest, behind sand dunes or on coastal headlands and beside tidal estuaries e.g. Marramarra and Berowra Creeks. *B. integrifolia* is an adaptable Banksia tolerating a variety of soil types and differing locations, from windswept ocean headlands to sheltered slopes below cliffs or behind dunes.



Flowers with straight styles – leaf non-white underside

Banksia serrata ("saw edged" referring to the saw toothed margins of leaves).

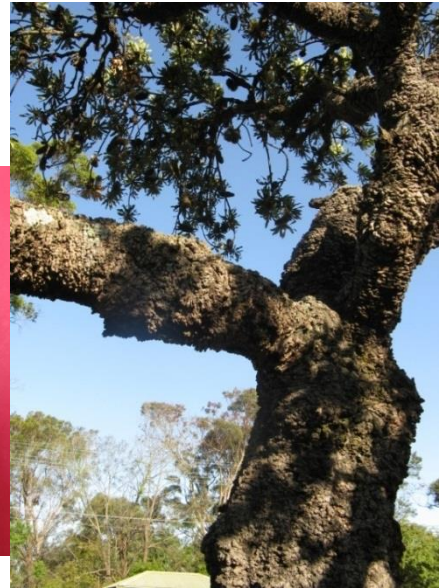
Old Man Banksia



Spike of buds.. *B. serrata*.

Opened follicles

Leaves, under, top



A thick-trunked shrub to small gnarled tree up to about 8m tall; has brown/grey, warty, thick bark. Leaves are tough and leathery, often undulate with coarsely serrated margins; glossy, dark green above, light green under; prominent mid-vein extending just beyond the apex of the leaf. It likes the coastal sandstone soils and rocky sites in heaths, woodland and open forest. Flower spikes are dove grey becoming yellow as flowers open in summer (November to April).

B. robur ("Strong" referring to the leaves)

Swamp or Large Leaf Banksia



B. robur spike

Spreading or erect shrub, 1-2m tall with single or several grey/brown stems arising from a lignotuber. Leaves are very large, dark green with sharply serrated margins and a raised midvein especially on the light green underside, which may also have rusty felt-like hairs. Flowers January to July; spikes up to 12cm long; blue/green flowers turn yellow/brown with age. Scattered distribution both north and south of Sydney, along creek lines or hanging swamps in moist sandy or peaty soils. However *B. robur* can tolerate a range of conditions under cultivation.



B. robur growing naturally in Pindar Brook floodway 200m above Hawkesbury River

B. aemula ("like" referring to similarity to B. serrata)

Wallum Banksia

As the name suggests, *B. aemula* is very similar to *B. serrata*. However its leaves are generally narrower. The best identifier is its pollen presenter, which is only about 1mm long and club shaped whilst that of *B. serrata* is 2-3mm long and cylindrical. *B. aemula* grows in the coastal area north from La Perouse and also at Agnes Banks. Flowers February to June.



B. aemula shrub in KWG

References

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Fairley, A & Moore, P *Native Plants of the Sydney Region* Allen & Unwin
Holliday, I & Watton, G *A Field guide to Banksias* Rigby
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Australian Plants Summer 2013/2014 Vol 27 No 217

[Plantnet \(Banksias\)](#)

Revised 2011/TE, 2013/EB, 2014/HT for Australian Plants Society North Shore Group, Walks & Talks Program.

Acknowledgement

These notes contain hyperlinks to materials, including images, illustrations, plant descriptions and a glossary from PlantNET, with the courtesy of The Royal Botanic Gardens & Domain Trust, 2014.

For general access to PlantNET see also <http://plantnet.rbgsyd.nsw.gov.au/>

KEY TO BANKSIA SPECIES –KWG.

